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MACROECONOMIC PERSPECTIVES OF ECOLOGICAL TOURISM IN SOUTHERN EU MEMBER STATES

ANALYSES ON THE EXAMPLE OF GREECE

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In a world where death is the hunter ... there is not time for regrets or doubts. There is only time for decisions. ... It doesn't matter what the decision is. Nothing could be more or less serious than anything else.¹

Carlos Castaneda

*To my parents making this possible,
To my friends² supporting me,
To Dina*

¹ **Journey to Ixtlan: The Lessons of don Juan**, Carlos Castaneda, 1972

² especially Karol

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ABSTRACT

This work shall give an overview on impacts that tourism and tourism related industries put on the environment. How can these impacts be localized? And how do they interact with national economy? Out of a macroeconomic perspective we will show how ecologically tourism was and is – and what ecological tourism could be in the future.

Market studies of this type must be based on a coordinated approach concerning similar research methods. More importantly, a common concept of the term *ecotourism* has to be defined, if it is meant to deliver well-founded conclusions and global recommendations. However, concepts of ecotourism clearly vary, not only from one country to another, but also within the same territory. Likewise, the specific attributes of each of the examined markets do not permit a strict comparability of the different papers researched to underline this work. Therefore readers are asked to consider the results of these studies as general trends relative to the ecotourism market, rather than absolute reference data.

The European Commission determines in its *Renewed Strategies for EU Sustainable Development* that, in spite of the fact that “unsustainable trends in relation to ... management of natural resources, biodiversity loss, land use ... still persist and new challenges are arising”³, short term actions are required to face a long term perspective. Having in mind that the planet’s natural resources are restricted, the main challenge is to change our current unsustainable consumption and production patterns step by step. In these terms tourism has to reach an economically and ecologically meaningful level of utilization for the benefit of current and future generations.

We will paint the picture of an emerging new tourist that demands for more than sun and beach - vacation. This new species of travellers’ requests also fun and adventure in an ecologically intact environment. In order not to loose important market shares to other regions, tourism management has to answer with new and alternate offers. As Athletic-, Adventure- and Agro-Tourism are more than ever popular upcoming components of recreation, we will put an eye on these ecologically meaningful segments of the tourism industry.

In the recent past several studies of the European Commission showed the need of sustainable development in the environmental sector to consequently gain sustainability in different sectors of economy. Since tourism, especially ecological tourism cannot work outside a healthy environment, this scope achieves special attention.

Exploitation of marine resources goes not only directly. Tourism absorbs a remarkable amount of local fishing industry. Also having in mind the seafood dish that was consumed during their vacations, more and more consumers of inlands request for fresh marine products at home. This growing demand puts an extra pressure on marine ecosystems.

³ **Review of the EU Sustainable Development Strategy – Renewed Strategy**,
Council of the European Union, June 2006

Tourism mainly depends on nature in several ways as the most important resource. Degradation of environment affects tourism more than any other industry. Water pollution – caused from tourism overload or delivery industry that produces goods for this sector – soil damage or air pollution – that destroys important cultural and archaeological sites via acid rain – are maybe not clear sighted yet, but have to be kept an eye on in order not to destroy the most important capital this economy depends on.

Remarks

A main problem in the field of statistical analyses is that in Greece official unique statistical figures are published very rarely – especially data concerning environmental or employment⁴ matters. Data – even from the *General Secretariat of National Statistical Service of Greece* - is either incomplete and for certain years not available or numbers are not definite because different publications show up different figures about the same statistical value or topic. So comparisons with other European Nations are not always clear cut and some values could only be collated very generally. Nether the less, aggregations were made and available data from countries with a similar profile was assimilated. So in many cases a clear statement could be made and certain conclusions were possible.

As this seems to be a general problem in the field of describing sustainable development, the Agenda 21⁵ and later the Johannesburg Summit⁶ calls countries to publish indicators in order to set focus on sustainability and support local and global policy makers in implementing programs to reach certain goals. Furthermore National Strategies for Sustainable Development (NSDS) have to be installed that “should build upon and harmonize the various sectoral economic, social and environmental policies and plans that are operating in the country.”⁷

⁴ **Employment trends in all sectors related to sea or using sea resources,**

European Commission, Directorate-General for Fisheries and Maritime Affairs, July 2006

⁵ United Nations Conference on Environment and Development (Earth Summit 1992), held in Rio de Janeiro

⁶ World Summit on Sustainable Development (Earth Summit 2002), held in Johannesburg

⁷ **Agenda 21** – Chapter 8: Integrating environment and development in decision-making, United Nations Division for Sustainable Development, 1992

VISION 2020 – A TOURISM OVERVIEW

According to the World Tourism Organization's (UNWTO) Report *Tourism 2020 Vision*⁸ on the development of world wide tourism, international arrivals are expected to double within the next 15 to 20 years. 1.6 billion leisure travellers worldwide will give the tourist industry an enormous impulse.

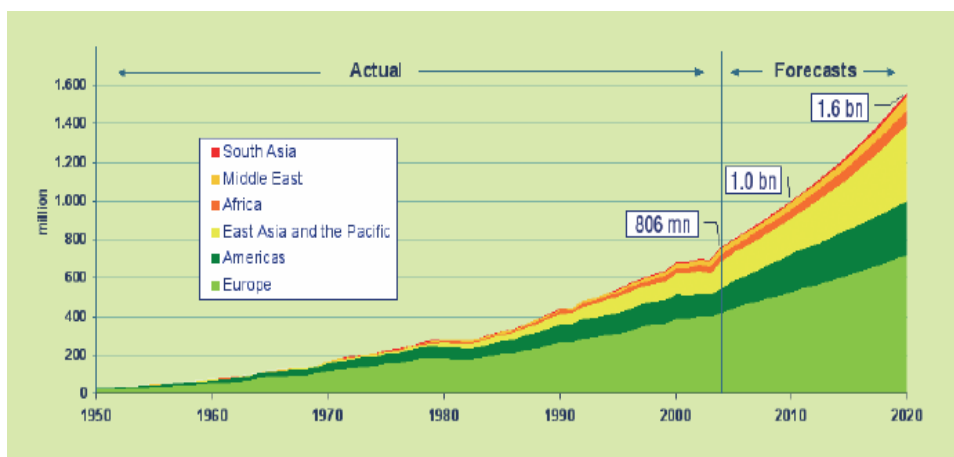


Figure 1 - Evolution of Tourism

By 2020 the top three destinations for tourist arrivals will be Europe – with nearly 717 million tourists, East Asia and the Pacific – with around 397 million tourists, followed by the North-, Central- and South-American regions –with approximately 282 million tourists.

World average growth rates will be around 4.1 per cent. While regions with lower market shares like East Asia and the Pacific, Asia, the Middle East and Africa will show higher than average growth rates at about 5 per cent, the more mature destinations Europe and the Americas will be slightly behind.

Although by 2020 Europe will still be the biggest market for tourists, its overall market share will decline from over 60 per cent in 1995 to about 46 per cent by 2020.

While Western European destinations showed up with a loss of 8 per cent points of market share in the European region in tourist arrivals within the past 15 years, the South European market still grows and stays stable at around 36 per cent of the total European market – or 19.6 per cent of the world wide leisure travel. Greece – in the South EU competition behind Spain and Italy, which have an European market share about 13 and 8 per cent – showed up the third biggest part in international tourist arrivals as well as in given international tourist receipts⁹ since 1990.¹⁰ 13.3 million tourist arrivals in 2004 put Greece at place 17 in the ranking of the World's Top Tourism Destinations.

⁸ **Source:** World Tourism Organization (UNWTO) <http://www.unwto.org>

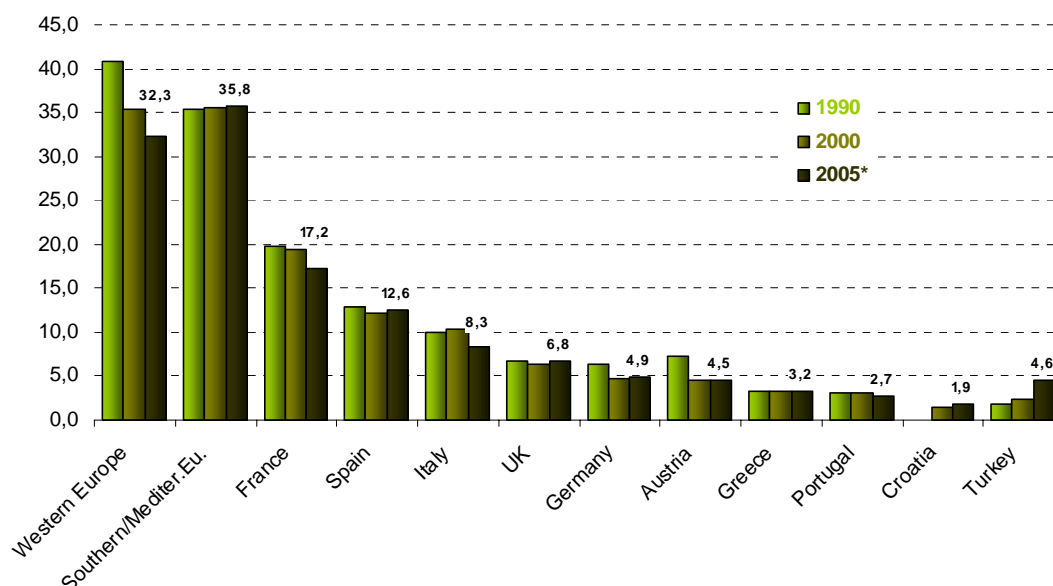
⁹ **International Tourist Arrivals** and **International Tourist Receipts** are the two key indicators monitoring tourism trends.

¹⁰ **Tourism Market Trends - 2006 Edition** (Data collected in UNWTO database November 2006)

	Base Year	Forecasts		Market share (%)		Average annual growth rate (%)
	1995	2010	2020	1995	2020	1995-2020
	(Million)					
World	565	1006	1561	100	100	4.1
Africa	20	47	77	3.6	5.0	5.5
Americas	110	190	282	19.3	18.1	3.8
East Asia and the Pacific	81	195	397	14.4	25.4	6.5
Europe	336	527	717	59.8	45.9	3.1
Middle East	14	36	69	2.2	4.4	6.7
South Asia	4	11	19	0.7	1.2	6.2

Figure 2 - International Tourism Forecast

The excellent results in Southern Europe and the Mediterranean where managed by the stable results of Spain – with a one year growth rate of 6 per cent – as well as the excellent performance of Turkey. Turkey has consolidated its position over the past years to be the Mediterranean's 4th important travel destination. With a 2005 growth rate of 20.5 per cent this EU candidate country shows a sustainable growth after a plus of 26.1 per cent the year before.



**Figure 3 - International Tourist Arrivals by Country of Destination
(in % of European Destinations)**

Highlighting the performance of different sub-regions in Europe from 2001 until 2005 Northern and Southern/Mediterranean Europe were lately the big winners in terms of sub-regional growth. These areas recorded increases in international tourist arrivals of 7.1 and 6.2 per cent. While Southern/Mediterranean Europe generated a 36 per cent share of arrivals in Europe overall, Northern Europe accounted for a relatively modest 12 per cent.¹¹

In addition, from 2004's level Northern Europe's growth was nearly two percent points down, when Southern/Mediterranean Europe increased its annual growth more than 5-fold in 2005. 2004's best performer in growth, Central/Eastern Europe, registered in contrast to this a marked slowdown, from 11 to 3.7 per cent. Due to the opening of the European Union in 2004 this sub-region saw a boom in this year. Growth for Western Europe fell not noticeable, from 1.9 to 1.7 per cent.

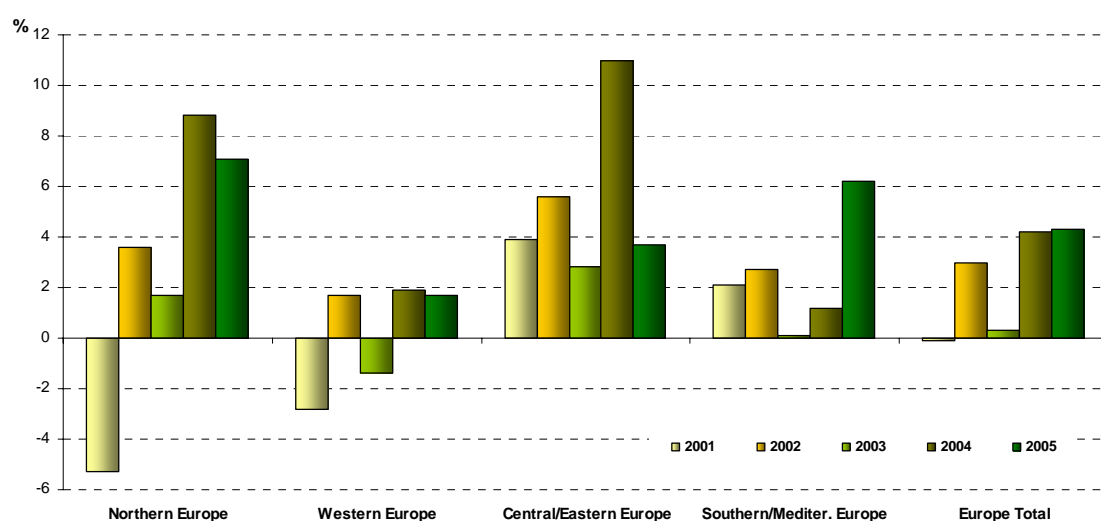


Figure 4 - International tourist arrivals in Europe by region, 2001-05 (% annual growth)

In view of the sustained growth of tourism activity world-wide, it would be reasonable to assume that the ecotourism sector will develop along parallel lines. However, no extensive international market research has yet been conducted with the view to tighten this hypothesis.

...

¹¹ **European Tourism Insights 2005 – Outlook for 2006**, European Travel Commission (ETC), 2006

DEFINITION, TERMINOLOGY AND FIGURES

ECOLOGICAL TOURISM

Purposeful travel to natural areas to understand the culture and natural history of the environment, taking care not to alter the integrity of the ecosystem while producing economic opportunities that make the conservation of natural resources beneficial to local people.

THE ECOTOURISM SOCIETY

First of all we have to understand the differences in the several existing definitions of ecological tourism or eco-tourism like it is widely used in the English spoken areas.

While *Ecotourism* (or *Ecoturismo*) in the English (or Spanish) speech areas stands for tourism within nature¹², in Europe and Southeast Asia the terminology *Ecological Tourism* defines more than that. It describes a travel without affecting nature and cultural goods a country has to offer¹³.

It means a first-hand experience – containing education and interpretation features – with a net benefit for the ecosystem. Furthermore ecological tourism is generally, but not exclusively, organised for small groups by specialized and small locally-owned businesses and doesn't allow that nature is altered by or for the tourist to supply more convenience.

Ecological Tourism supports the protection of natural areas by:

- generating economic benefits for host communities, organizations and authorities that are responsible for conserving natural areas;
- creating jobs and income opportunities for local communities; and
- increasing awareness both among locals and tourists of the need to conserve natural and cultural assets.

Given these assumptions, Eco-Tourism is chanceless as a standalone offer – since at least inbound and outbound journeys have negative impacts on the environment. Ecological Tourism has to be a *Soft Tourism*¹⁴ and part of any travel-offer to preserve natural resources and prevent from over-exploitation.

With the view on the principle of sustainable development, ecological tourism has to be defined as tourism that to goes easy on resources, is ecologically and socially harmless and happens mostly in natural environments.

¹² **Nature Tourism:** a form of tourism in which the main motivation is the observation and appreciation of nature.

¹³ In this study the terminology **Ecological Tourism** and **Eco-Tourism** shall be treated equal and will orient themselves on the more strict definition of Europe and Southeast Asian areas. For the more loose description the term *Nature Tourism* is used.

¹⁴ The terminology **Soft Tourism** (*"Sanfter Tourismus"*) is widely used in German papers concerning Eco-Tourism.

THE 8 CHARACTERISTICS OF ECOTOURISM¹⁵

- It must promote positive environmental ethics - fostering preferred behaviour in its participants.
- It does not degrade the resource - There is no consumptive erosion of the natural environment visited.
- It concentrates on intrinsic rather than extrinsic values. Facilities and services may "facilitate" the encounter with the intrinsic resource; they never become attractions in their own right, nor do they distract from the natural attraction itself.
- It is biocentric rather than homocentric in philosophy. Ecotourists enter the environment accepting it on its terms, not expecting it to change or be modified for their convenience.
- It must benefit the wildlife and environment. If the environment has not at least achieved a net benefit toward its sustainability and ecological integrity, then the activity is not ecotourism.
- It is a first-hand experience with the natural environment. Movies and zoological parks do not constitute an ecotourism experience. Visitor centers and interpretive slide shows are included.
- It has an "expectation of gratification."
- It has a high cognitive and effective experiential dimension.

MACROECONOMIC ASPECTS

Considering the small dimension of the tour operators that offer this segment and the small number of tourists they cater for, the tourism sector that most closely matches the concept of ecotourism, represents a relatively small share of the market.

While the economic impact is still very small, tour operators of this segment apparently believe that the growth of ecological tourism may outpace that of other tourism activities overall. Moreover, this growth appears to be consolidating irrespective of the destination considered. A priori, no world region appears to have a head-start although each region does have several landmark destinations.

Tourism is the strongest and most competitive sector of the Greek economy internationally. To succeed in keeping tourism as one of the most important deliverers to the Greek GDP, a more complex picture has to be painted and sectors that offer comparative advantages and potential for growth must be involved.

¹⁵ **Ecotourism: Its Changing Face and Evolving Philosophy**, Dr. James R. Butler, Department of Forestry, University of Alberta, Canada, 1992

To sustain tourism, it has to be understood not only as the classic picture that exists from the supply side of an industry. Tourism has to be seen as a horizontal sector – as source of domestic and international consumer demand for goods and for services such as transport, accommodation, catering, clothing, entertainment and cultural goods.

GEOGRAPHIC AND DEMOGRAPHIC KEY-FIGURES

20 per cent of the 131,985 km² of Greece's surface area is distributed to its 3,000 islands. About 66 per cent of the Greek territory is mountainous. Greece's coastline is the longest in Europe with a total length above 15,000 km of which 5 per cent belong to areas of unique ecological value.

The national population reaches 10.964.020 million with one of the lowest population densities in Europe, measuring about 84 inhabitants per km². About 30 per cent of the population settles along the coastline.

ECONOMIC KEY-FIGURES¹⁶

Greece's estimated GDP¹⁷ in 2005 exceeded 181 billion Euro while the per capita GDP is put at 19,200 Euro. The distance between Greece and the other EU member states is still noticeable as the per capita GDP consists only 82.4% of the EU-25 average. The structure of the Greek economy shows a high share in the service sector, contributing with 74 per cent to the Gross Value Added at basic prices (GVA), what critical voices in the recent years often blamed for the bad economic growth.

The contribution of the industrial sector is with 13.2 per cent in 2005 one of the lowest in Europe. Manufacturing activities concentrate in traditional sectors dominated by a large number of small and medium sized enterprises making the sector vulnerable to external pressures from international competition. Within the last years strict monetary policy has reduced the public deficit and inflation which fell from 7.9 per cent in 1996 to 3.5 per cent in 2005. Public investments have increased significantly during the last decade mostly financed by the EU Community Support Framework¹⁸.

Greece is divided into 13 NUTS¹⁹ 2 regions, or peripheries - all of which are eligible for Objective 1 funding by the European Union. According to their development state they can be divided into 3 groups. Attiki, Central Macedonia and two island regions (Crete, and Southern Aegean) are forming the wealthiest regions in Greece and all of them are growing adequately or rapidly. Epirus,

¹⁶ **Europe in figures - EUROSTAT yearbook 2006-07**, EUROSTAT, February 2007

¹⁷ Gross Domestic Product at current market prices or purchasing power standard (PPS)

¹⁸ The **Community Support Frameworks** (CSFs) coordinate EU regional activities, occasionally involving the four Structural Funds (ERDF, ESF, EAGGF, FIFG) and the EIB. In each case, however, the projects must be incorporated into plans already developed by national authorities, regional authorities and their economic partners.

http://ec.europa.eu/regional_policy/funds/prord/pro2000_en.htm

¹⁹ **Nomenclature of Territorial Units for Statistics** (NUTS) is a geo-code standard for referencing the administrative division of countries in the European Union for statistical purposes.

Western Greece, and Peloponnese content some of the most remote, sparsely populated and poorest regions in the mountainous backbone of Greece and are severely lagging behind. The remaining regions form the third group. They are developing moderate but not catching up – with a GDP/capita around 60 to 65 per cent of the EU average.

The principal strengths and weaknesses of the Greek economy – as described in the EU Community Support Framework – are as follows²⁰:

Strengths

- Macroeconomic stability within the European Monetary Union;
- Active privatisation programmes;
- Regional disparities less than in other Member States.

Weaknesses

- major infrastructure deficits, especially in the fields of transport, environment and in urban areas;
- unemployment rate (9.8% in 2005) above the EU-25 average (8.8%), high long term unemployment (5.1% in 2005; EU: 3.9%) and low female employment rate (46.1% in 2005; EU: 56.3%);
- low productivity mainly due to
 - underdeveloped or not up to date systems for science, technology and innovation,
 - low quality level of human resources and unavailability of skilled workforce, and
 - low level of business investment;
- backward but improving in the New Information Technologies;
- high share of employment in agriculture.

Tourism plays an important role as Greece was ranked 2004 at place 17 among global top tourism destinations with a market share of 1.7 per cent²¹ of world wide travel. Behind agriculture the tourism industry represents in Greece the second biggest economic segment. The biggest part of the labour force – over 65 per cent worked 2002 in the services sector²² which is directly connected to tourism.

14,276,000 travellers in Greece – 95 per cent came from European countries – caused 2005 Tourism receipts with a total value of 11,037 million Euro²³, what corresponds 6 per cent of the national GDP (181 billion Euro)²⁴.

The Greek Minister of Development estimates that in 2003 the tourism sector employed directly and indirectly around 16.8 per cent of the total labour force or

²⁰ **Summary of the Community Support Framework Greece, 2000–2006**, European Commission, 2001

²¹ **World's Top Tourism Destinations**, World Tourism Organization (UNWTO), 2005

²² **Source:** Organisation for Economic Co-operation and Development (OECD), <http://www.oecd.org/greece>

²³ **Tourism Market Trends** – 2006 Edition, World Tourism Organization (UNWTO), 2006

²⁴ **Key figures on Europe – Statistical Pocketbook 2006**, EUROSTAT, 2006

687,000 people – 35 per cent employed yearly, 40 per cent for 6 to 8 months and 25 per cent only during the peak season for 2 or 3 months. About 74 per cent of the labour is employed in accommodation, 21 per cent in travel agencies, transportation and the public sector and the remaining 5 per cent are working in sea transportation.

According to the Oxford Economic Forecasting the real effect of tourism on the GDP is guessed with nearly 15 per cent. Other sources claim that the black or parallel economic effect of tourism on the official GDP could be as high as 25 to 50 per cent. Since tourism is a seasonal activity, it often complements other economic segments such as agriculture and education. And therefore side economic effects in tourism are much greater than in other industries.²⁵

Prognoses from the World Council for Travel and Tourism see increases of 5 per cent in demand for goods and services, 4.8 per cent in investment and 2.1 per cent in direct employment in the sector until 2010 with a further increase of tourists reaching nearly 20 million per year.²⁶

The World Tourism Organization forecasts in its 2005 report that Greek tourism will grow at an average annual rate of 4.1% until 2015, with overall revenues reaching 60.3 billion Euro. Furthermore 20.8 per cent of local employment will be linked to tourism, while investments of the sector will represent 10.7 per cent of total Greek investments.

The National Bank of Greece SA says in its 2005 report that tourism's contribution to growth of the domestic economy was about 0.9 per cent in 2005, up from 0.5 per cent in 2004. The sector contributes 16 per cent of the country's gross domestic product and 18 per cent of total employment. In 2001, the last year for which comparative figures are available, earnings from tourism covered nearly 48 per cent of Greece's merchandise trade deficit.²⁷

²⁵ **Tourism in Greece: Strategic Analysis and Challenges**, Dimitrios Buhalis, 2002

²⁶ **The "Charter" for Tourism in Greece**, Haris Kontokolias, 2004

²⁷ **Source:** INV International Ltd., 2007, <http://www.invgr.com/>

SUSTAINABILITY

Sustainable development means that the needs of the present generation should be met without compromising the ability of future generations to meet their own needs. It is about safeguarding the earth's capacity to support life in all its diversity and is based on the principles of democracy, gender equality, solidarity, the rule of law and respect for fundamental rights, including freedom and equal opportunities for all. It aims at the continuous improvement of the quality of life and well-being on Earth for present and future generations.

Council of the European Union²⁸

Tourism has become over the last recent years the world's number one industry. A further objective in building up or revitalizing existing tourism industries in an ecological way means to sustainable develop it.

Present generations must not be allowed or able – and this must be a general matter of local and trans-regional governments – to destroy or over-exploit cultural and natural heritage. Sustainability stands for a dynamic economy with a high level of education and high employment. And it should enable and protect cultural and biological diversity²⁹.

Greek's National Strategy for Sustainable Development (NSSD) is based on an analysis of the broader context of the geopolitical and economic development framework and on the assessment of the pressures on the Greek environment.³⁰ Or rather, since tourism is one of the most important segments in Greece, it means to conserve natural, cultural and archaeological heritage in order to develop economy steadily.

To stabilize economic development, in a first step, strengths and weaknesses of the current state have to be put out in order to react on 24/7 changing conditions. Indicators – similar to sustainability indicators³¹ – have to be established and analysed to monitor and handle trends and an organized management has to be developed.

²⁸ **Review of the EU Sustainable Development Strategy – Renewed Strategy**, Council of the European Union, June 2006

²⁹ **Biodiversity:** The 1992 United Nations Earth Summit in Rio de Janeiro defined "biodiversity" as "the variability among living organisms from all sources, including, 'inter alia', terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems".

³⁰ **The Greek National Strategy Towards Sustainable Development**, Hellenic Ministry for the Environment - Physical Planning and Public Works, May 2002

³¹ **Sustainable Development Indicators** were developed with the help of a group of national experts, known as the 'Sustainable Development Indicators Task Force'. They are organised within 10 themes reflecting the political priorities of the strategy, and related subsequent political commitments.

<http://epp.eurostat.ec.europa.eu/> Sustainable Development

Indicators for sustainable tourism describe the integration of tourism in its environmental and socio-cultural context. To achieve overall sustainability for the area, they should reveal the regions' weak points and their connection between necessary actions and the environment.³²



Figure 5 - Integration of economic, socio-cultural and ecologic dimensions to sustainable develop of tourism

As a result of social impacts like crime, drugs, loss of cultures or traditions and pollution, there is a rise and fall of the local's acceptance of tourists. *The International Institute for Industrial Environmental Economics (iiiee)* describes this effect in 4 steps:

- *EUPHORIA* – visitors are welcome, little formal development
- *APATHY* – visitors taken for granted, contacts become commercial and superficial
- *IRRITATION* – locals concerned about tourism, efforts made to improve infrastructure
- *ANTAGONISM* – open hostility from locals, attempts to limit damages and tourism flows

The response to prevent from the arrival of irritation and antagonism – what would also lead to a breakdown of this economy – is to break this chain and develop towards a sustainable tourism that “respects the environment, ensures long-term conservation of historical and cultural resources, and is socially and economically acceptable and equitable”³³.

Following the approach of sustainable development, we can define a set of *Principles for Sustainable Tourism*:

- Sustainable use of resources, reduction of waste and over-consumption and maintenance of diversity
- Support and involvement of local communities

³² **Sustainable Tourism Indicators for Mediterranean established destinations**, Yianna Farsari and Poulicos Prastacos – Foundation for the Research and the Technology Hellas (FORTH), 2002

³³ **Sustainable Tourism & Nature Conservation**, Mikael Backman – Rhodes Tourism Forum, November 2006

- Research, staff training and consultation of stakeholders and the public
- Marketing of tourism responsibility and integration into planning

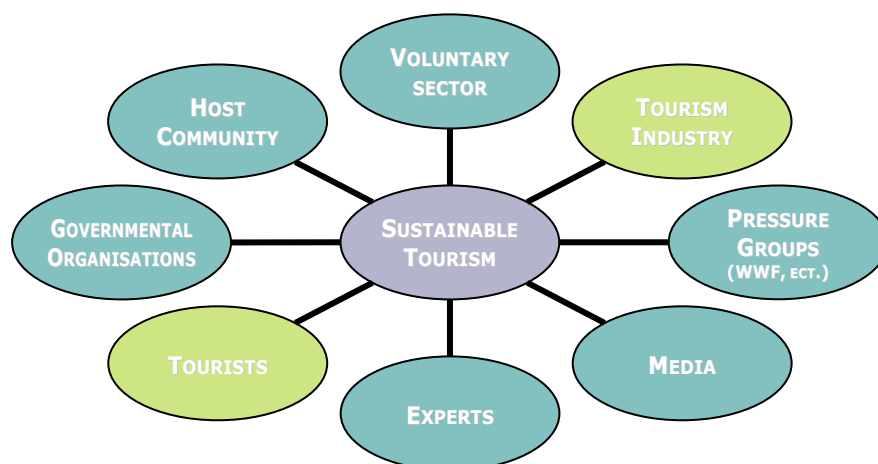


Figure 6 - Sustainable Tourism and responsible stakeholders

A NEW TOURIST ARRIVES

*To be sustainable, tourism development in any destination requires coordinated policy-making, development planning and management.*³⁴

In the last centuries tourism industry in Mediterranean regions was outlined by hosting “masses”. A big amount of “consume” tourists were concentrated in relatively small areas and impacts were easy to handle. These travelling patterns have changed within the last years and a new tourist has emerged.

This new tourist is full of knowledge and looking for memorable experiences. He is more selfish and the importance of costs in holiday selection has given way the demand for a vacation within clean and healthy environment and a high quality of service. Intellectual activities, the discovery of other cultures and local identities or authentic experiences have risen in value.

The trend goes away from mass tourism – in resorts disconnected from local reality – to individual packages and destinations within regional spheres. This – in Europe by only 10 big tour operators dominated – pattern will yield a fast growing market for thematic products like Adventure-, Nature- or Health-Tourism.

It will give space for new competitions, new public-private partnerships as well as product and service diversification. In the same turn it pushes local communities to more environmental awareness – to protect nature and culture – and promotion of their local identity.

³⁴ The International Institute for Industrial Environmental Economics (iiiee)

THE TOURISM INDUSTRY

The substantial growth of the tourism activity clearly marks tourism as one of the most remarkable economic and social phenomena of the past century.³⁵

Worldwide international arrivals in the 1950's showed up around 25 million tourists. Since then evolution of activities in the leisure travel sector have reached approximately 806 million tourists. With an average grow rate of 6.5 per cent per anno tourism has become one of the fastest growing industries worldwide.

While Europe's market share of world tourism declined the last 55 years by 10 percent points and lies with 6 per cent growth slightly behind the world's average, the overall market share lies still above 50 percent of the whole segment. Neither the less business with tourism – direct or indirect – is one of the labour market's most important sectors.

Tourism related business in Greece shows up between 17 and 21 per cent of total employment and contributes directly and indirectly probably the same range to the GDP³⁶ – with a still growing tendency and a prognosticated average annual growth rate until 2015 at about 4.1 per cent³⁷.

ECOLOGICALLY MOTIVATED TOURISM

The Greek ecotourism market is small and seasonal, although it is growing rapidly and shows great potential. About 20 per cent of Greece's landscape is part of the *European Ecological NATURA 2000 Network*³⁸ – a program established by the European Commission to accomplish and preserve a network of sanctuaries – creating a lot of possibilities to establish regions for ecological tourism.

According to tour operators, ecotourism enthusiasts are mostly people from relatively high social brackets and with relatively high levels of education; they are over 35 and women slightly outnumber men. Environmental awareness, while still in its infancy, is clearly growing.

In Greek tourism market the term "ecotourism" is used rarely, as regards both supply and demand. About 50 per cent of the tour operators investigated use the

³⁵ **Historical perspective of world tourism**, World Tourism Organization (UNWTO), 2004

³⁶ Because there are many sources of statistical data about the sector - all with their own particular definition and interpretation – figures are estimates and expressed in qualified terms.

³⁷ **Source:** World Tourism Organization (UNWTO) Database, 2005

³⁸ **MANAGING NATURA 2000 SITES** – The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, European Commission, 2000

term “ecotourism” when promoting their catalogues and less declared themselves in complete agreement with the WTO’s definition of ecotourism³⁹.

Rural, landscape and nature tourism, the segments with the most significant demand for ecotourism, account for almost 7 per cent of income from overnight stays in the Greek tourism market as a whole. The *Sun and Beach* sector accounts, due to the fact that most South European countries are “classic” holiday destinations, for about 75 to 80 per cent⁴⁰. As well as this, between 2 and 3 per cent of Greek tourist traffic from abroad is estimated to have “pure” or primarily ecotourism motives. In absolute terms this market is made up of between 200,000 and 300,000 people.

A recent study⁴¹ identified 26 sectors as suitable for Greece in international tourism markets. It was investigated how important each segment of the market is and which areas should be forced. Therefore *the attractiveness of the demand* – based on current and future evolution trends projected on the profitability of the sector – was put in relation to *the competitiveness of the supply* – acknowledged by the competitive situation of the market in view of the accomplishment to satisfy the expectations of the demand.

Combined with researches among tourists it was found that the ecologically relevant sectors

- *Specialised and themed cruises* – Cruises on ships of limited dimension, themed on: archaeology, food, etc.
- *Learning and Education* – Stays dedicated to learn traditions and customs: dances, cuisine, music, etc. as well as
- *Nature and Adventure* – Active vacation with a “soft” adventure component: rafting, canoeing, etc.

should have high priority for development and that the fields

- *Green Tourism* – Vacations in a natural environment,
- *Sea and Land Sports* – Holidays based on the practice of a sport activity: scuba, biking, fishing, etc. and
- *Standard yachting* – Vacations renting sailing boats: less than 15m, no crew, with lodging facilities

still have existing potential, but investments in marketing and competitiveness should be done carefully and selectively with regard to their level of strategic importance.

³⁹ **Source:** World Tourism Organisation (UNWTO), 2007

⁴⁰ Data in this section is aggregated and guessed based on figures from various sources – including The National Statistical Service of Greece (NSSG), The Greek National Tourism Organisation (GNTO), The Hellenic Chamber of Hotels and other Greek national tourism agencies – and examines the years 2001 until 2005.

⁴¹ **Marketing Plan for Greek tourism after the Olympics**, THR - International Tourism Consultants, October 2004

	Demand projections	Profitability	Attractive-ness	Competitive situation	Accomplishment of key factors	Competitive-ness
Sightseeing touring	7	6	6,5	5	9	7
Short breaks	7	7	7	5	6	5,5
Green tourism	8	6	7	3	2	2,5
Sea and land sports	7	6	6,5	5	7	6
Thalassotherapy	9	8	8,5	2	3	2,5
Gastronomy	8	9	8,5	6	2	4
Events	7	5	6	4	6	5
Learning and education	6	8	7	8	7	7,5
Nature and adventure	7	6	6,5	8	6	7
Luxury yachting	7	9	8	7	8	7,5
Standard yachting	7	6	6,5	4	7	5,5
General interest cruises	6	7	6,5	4	5	4,5
Specialised and themed cruises	7	7	7	7	9	8
Integrated resorts	4	4	4	5	9	7
Hotel comfort and grand comfort	7	9	8	7	4	5,5
Hotel economy	4	3	3,5	3	5	4
Apartments	5	4	4,5	3	4	3,5
Villas	6	8	7	4	3	3,5
Campsite	3	4	3,5	4	5	4,5
Private accommodation	3	3	3	2	4	3
Big congresses	4	3	3,5	5	9	7
Standard congresses	6	5	5,5	5	9	7
Conventions	7	8	7,5	6	9	7,5
Corporate meetings	6	5	5,5	6	8	7
Incentive travels	8	8	8	7	5	6
Sport events	4	3	3,5	7	8	7,5

Figure 7 - Suitable sectors for Greek tourism market portfolio

Actually all the operators analysed prolonged that their ecotourism business has grown in recent years and forecast that it will continue to do so in the coming ones. Approximately 49 per cent of the products offered by the tourist operators that have collaborated with this study are considered by them as *"ecotourism packages combined with conventional content"* or mixed packages.

The clients demand packages that offer a change of scenery, the chance to practise activities in contact with nature and introduce themselves into the local culture. Although in general, tourists opt for combining these activities with an eco-touristic character with classic ones and so prefer *"mixed"* packages.

ATHLETIC TOURISM

Sport has become a very important impact on tourism in the last 2 decades. Consumer habits have changed over the last years so leisure tourism has become more and more an important part of this industry. Sport is the biggest sector of the leisure industry. Together with the economic value of different sub sectors, like professional competitions and its side effects, tourism gets huge revenue from this sector.

In Germany, the number one generating market in proportion with their population, by 2005 the amount of sports-related travel were 55 per cent of total trips, in Holland 52 per cent and in France 23 per cent.

Sports and Tourism together can have a major impact in creating new destinations or revitalizing regions that have come out of fashion. Major sporting events can provide regions with an unbeatable impulse to their tourism industry and image.

Four different types of sport events can be identified which also have quite a different influence on a region's tourism.

- *WORLD EVENTS* like the Olympic games have global media interest and can bring a whole countries tourism back to the top
- *NATIONAL EVENTS* with international relevance like Wimbledon or the Tour de France
- *LOCAL EVENTS* that have a high relevance for people who practice the sport
- *NON-COMPETITIVE PURPOSE EVENTS* for people who practice the sport in an amateur level. For example the introduction of Canyoning in Aragon/Pyrenees brought new life to the whole region

In 1999 the WTO signed a cooperation agreement with the IOC (International Olympic Committee) to strengthen the connection between tourism and sports. Furthermore at the 1st Conference on Sport and Tourism in 2001 in Barcelona recognized "...a need to encourage participation of local communities ... enhancing the local culture and heritage as well as ensuring social and economic benefits ..."⁴²

The impact of Olympic Games to a city can be quite great as we can see on the example of Athens. After the games were held in 2004 the city has become a totally new face.

There were lots of improvements in infrastructure, renovation and all to the front a complete redesign of the cities traffic system. Instead of the old 2 airports in the city, a new airport was built 20 km outside of town, public transport was reorganized, new metro and tram lines were installed and a new high speed train connects the new airport with the city.

Car traffic was redesigned and some streets in the centre were made pedestrians areas with a lot of new shops, renovated parks and recreation possibilities for tourists.

New centres for sports were installed and not only local athletes will use the facilities after the reason of their construction has past a long time. They became destinations for not only domestic athletes for training and competitions.

So the effects on the cities upgrades to infrastructure last much longer than for the reason they were made. Citizens will take effort of them not only primarily due to their existence but also in a secondary way that gives work to people who have to supply an maintain those facilities.

⁴² **Occasion of the World Tourism Games 2004**, remarks by Luigi Cabrini - Regional Representative for Europe - World Tourism Organisation (UNWTO), Austria – June 2004

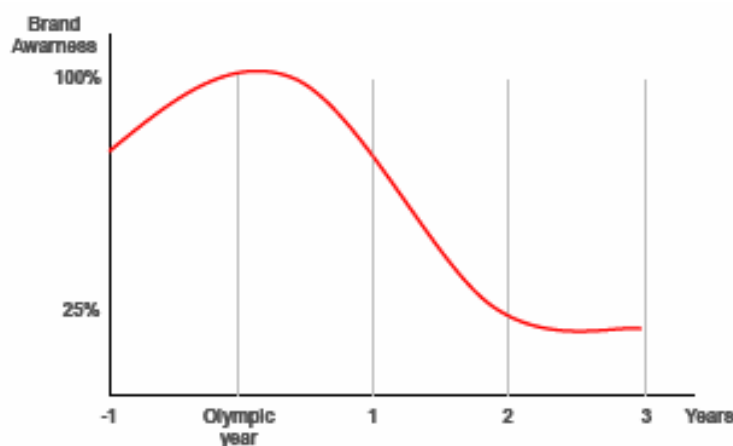


Figure 8 - Evolution of brand awareness in relation to the Olympic Games

Statistically the impact of Olympic Games lasts for about 5 to 6 years – before and after the games. Because of the world wide interest in the games and the broadcasting via television the marketing effect for this country is enormously. Within the 20 days the games were held, the value of the tourist promotion of Greece and Athens was ways higher than the cost for holding the games.

AGRO-TOURISM

Evaluations showed that enthusiasm for nature tourism invariably goes hand-in-hand with a desire for meeting local communities and discovering different facets of their culture. The offer to present gastronomy, handicrafts and customs to tourists does not only give travellers an insight into country and culture.

Agro-Tourism or Rural-Tourism preserves cultural habits and delivers its biggest revenue to local people, especially in mountainous regions and in areas with a developing economy. This kind of touring nature, that has been popular in middle European regions for centuries, now also emerges at south European markets to fill niches and open possibilities for travellers that want to escape the classic mass tourism facilities.

Multi-activity in rural areas gives visitor the opportunity to get familiar with agricultural areas, agricultural occupations, local products, traditional cuisine and the daily life of the people. It gives travellers insights into the cultural elements and the authentic features of an area, while showing respect for the environment and tradition. Agro-Tourism brings visitors closer to nature and rural activities in which they can participate, be entertained and feel the pleasure of touring, learning and discovering.

At the same time, it activates the productive, cultural and developmental resources of an area. And in this way it contributes to the sustainable environmental, economic and social development of the rural area.

The production of traditional products that would otherwise possibly vanish – mainly traditional products such as fruit preserves and jams, embroidery, the cultivation of aromatic herbs and pasta – is so ensured. Rural-Tourism assists in the preservation of crafts that would otherwise die out with the last

manufacturer. It preserves human memory through the revival of customs and traditional festivities, offers a communication channel between regions isolated from the large population centres and provides opportunities to local youth that could otherwise not keep the cultural heritage.

The Greek government highly supports all agro-tourism programs spread all over the country. Although there are no concrete figures available, a growing number of people are occupied with Agrotourist activities and logging facilities are permanently increasing. The architectural heritage is preserved through the renovation of buildings and the regional cultural heritage is promoted.

Several villages throughout the country offer guesthouses built in the traditional style with comfortable, but simple accommodations. Away from the summer-season depending beach tourism, Agrotourism prevents from depopulation of the countryside and serves opportunities to establish a year-round business.

ADVENTURE TRAVEL

All kinds of activities happening in nature without altering the environment can be put together in a package associated with adventure and ("soft") extreme sports. In order to bring to their everyday urban life a greater contrast, the mostly young performers in this category also demand for physical activities within an intact environment.

Action and adventure within a healthy nature arises lately as a very popular segment among recreation seeking people from many European countries – all to the front Great Britain, Germany, Italy, Austria and Switzerland.⁴³ They demand for activities that are also domiciled in their own countries, but due to the fact that outside sports are very weather dependent, they honour the mild climate of southern European regions.

Besides from the classic and well known and still popular adventure activities like yachting, the last years brought up several new divisions. Tourists are emerging that are no longer satisfied with relaxing and soft activities. Canoeing, kayaking, rafting, river trekking and mountain climbing are only few of these new discovered sports. They are mostly combined with rural travel and bring so off-season revenue to people in outskirt regions and help preserve nature through admission fees to National Parks and similar facilities.

Due to the fact that Greece lagged behind in the creation of a domestic road network, transportation mostly took place via paths to which the elderly inhabitants of mountainous settlements still refer today as *dimosia* (in Greek "a public, main road"). A great number of those formerly chief access roads have still survived, running through mountains, dales and gorges. To turn the backlog into an advantage, financing from various public and private bodies within the last years has enabled a 3,500 km long network of footpaths – mostly within National Parks.

⁴³ **Source:** THR – International Tourism Consultants, 2004

TOURISM RELATED ENVIRONMENTAL ISSUES

*It signifies that all living organisms are linked together.
In the ocean, for example,
despite our great impact,
we are only one of many predators.
We must learn to behave responsibly in a realm
where we are the intruders.*

EcoPath

Safeguarding the earth's capacity to support life in all its diversity, respect the limits of the planet's natural resources and ensure a high level of protection and improvement of the quality of the environment must be a key objective of mankind.

As one of the world's largest industries, tourism has a multitude of complex impacts – both positive and negative – on people's lives and on the environment. The quality of the environment - whether it is artificial or natural – is essential for tourism. Tourism involves many activities that have adverse effects on the environment. Negative impacts from tourism will especially arise, when the level of environmental use is exceeding nature's capacity to deal with it.

Uncontrolled coastal tourism development poses potential threats to many natural areas. It can put enormous stress on a very narrow and sensitive area. Impacts are linked to the construction of general infrastructure – like roads, harbours and airports – and to the development of tourism facilities – including holiday resorts, hotels, restaurants, shops, golf courses and marinas. Soil erosion, increased pollution, waste discharges into the sea, natural habitat loss and associated loss in biodiversity and increased pressure on endangered species are some of several serious impacts arising from this evolution.

Ecologically fragile areas such as wetlands, coral reefs and sea grass beds are one of the first affected resources. Often a stress is put on water resources, and local population is forced to compete with tourists for the use of critical natural resources such as fish. By involving activities that have derogatory environmental effects – and usually these effects are dynamic and often interactive – tourism has the potential to gradually destroy the natural resources on which it depends.

European economic systems depend on natural resources like raw materials or environmental media like air, water and earth. Without reference to which assignment they are desired, those resources are for the functioning of economy of essential importance. According to the latest report of the *Millennium Ecosystem Assessment*⁴⁴ mankind has altered ecosystems in the last 50 years faster and more comprehensive than in any epoch before.

If our consummation patterns resist like they are, exploitation of resources will 4-fold within the next 20 years. Negative environmental impacts would be

⁴⁴ **Ecosystems and Human Well-being: Synthesis**, Millennium Ecosystem Assessment, 2005

disastrous. An alternate approach could only reside in an adjustment to sustainable consumption patterns.

Policy-makers are challenged to support and stimulate economic growth and at the same time take care that environmental quality is not declining. However, these targets do not compete with each other. Efficient exploitation of resources contributes economic growth, while in the long run inefficient over-exploitation of renewable resources economic growth retards.

FISHERIES POLICY

Fishing in Mediterranean Countries is close connected to Tourism. Since many travellers honour the possibility to consume fresh and often cheaper products in the origin countries, tourism could not live without a certain fishing industry. So the market in marine products must be serviced to match supply and demand to benefit both producers and consumers – also harmonizing with the eco-system.

According to the European Environment Agency (EEA) most fish stocks of commercial importance in European waters are considered to be *outside safe biological limits*⁴⁵. The increasingly precarious situation was highlighted in September 2006 by a World Wildlife Fund (WWF) study, pointing out that the example of the *Bluefin Tuna* is a warning signal for overfishing in European waters. Bad management and overfishing have already wiped out 80% of the Mediterranean's tuna stock.

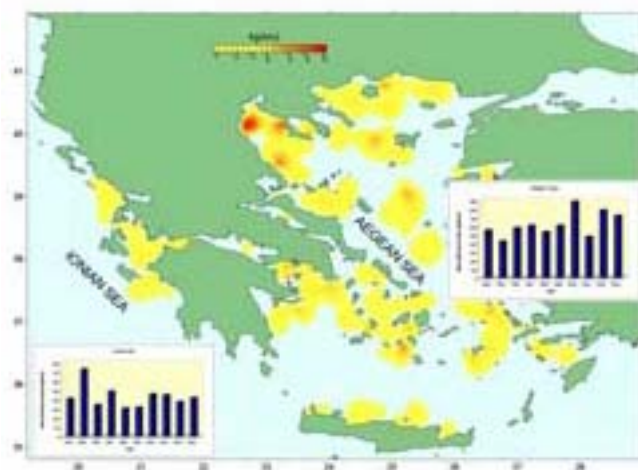


Figure 9 - Tuna Production in the Ionian and Aegean Sea

⁴⁵ This structural key indicator on EU policy – Environment is based on fish catches taken from stocks in European marine areas considered to be **outside of safe biological limits** (SBL). Catches have been estimated by the International Council for the Exploration of the Sea (ICES). A stock is considered to be outside SBL (or overfished) when its size has fallen below sustainable levels, i.e. when its size does not guarantee replenishment by reproduction. Stocks selected are those for which ICES provides management advice to the Community.

Most of the marine fish resources in the Greek Waters are heavily exploited. The reduction of over-exploitation of marine resources could only go hand in hand with an increase in prices for fish. (Super-)Market prices for seafood in Greece still lie around 25 to 50 per cent of the prices in middle European average. And this is only at a very small part predicated upon transport costs to the ultimate consumer. So there is plenty of play to control fishing quotes managing the market price. Providing a fair standard of living for those who depend on fishing activities, policy has to take impact to facilitate an economic and competitive fishing and aquaculture industry.

Since fish resources are part of our common heritage, EU member states found it necessary to set up rules preventing overfishing by some to the disadvantage of all.

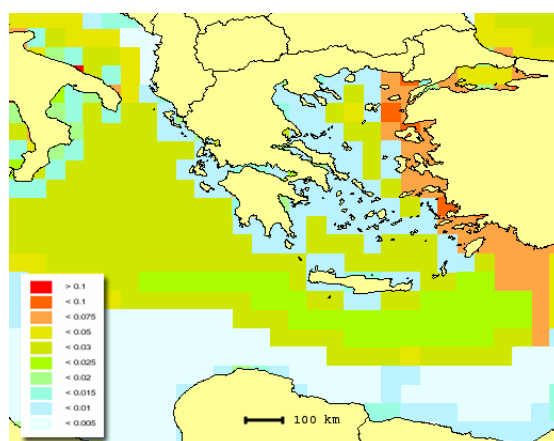


Figure 10 - Tuna Catches 2000 in tons per km²

Where European Union territorial waters are concerned, the *Common Fisheries Policy (CFP)*⁴⁶ covers fishing activities within territories of member states. It was funded in 1983 based on first common measures dated back to the 1970's. The CFP provides first of all a quota system in the form of total allowable catches (TACs) for certain species and allocates annual quotas to member states per geographical area and per species as agreed by the Council of Ministers of the European Union.

It was agreed that "the CFP has to take into account the biological, economic and social dimension of fishing" to maintain four main areas:

- *Conservation and limitation of the environmental impact of fishing* - to protect fish resources by regulating the amount of fish taken from the sea, by allowing young fish to reproduce, and by ensuring that measures are respected.
- *Structures and fleet management* - to help the fishing and aquaculture industries adapt their equipment and organisations to the constraints imposed by scarce resources and the market
- *Markets* - to maintain a Common Organisation (CO) of the market in fish products.

⁴⁶ **Source:** European Commission – Directorate-General for Fisheries and Maritime Affairs, 2007, <http://ec.europa.eu/fisheries/>

- *Relations with the outside world* - to set up fisheries partnerships agreements and to negotiate at the international level within regional and international fisheries organisations.

The main content of the Common Organisations is to balance the needs of the EU market and the interests of European Union fishermen and to ensure that the rules on fair competition are respected. Specifically it means setting up rules for trade with non-EU countries as well as establishing Producers' Organisations (POs), which are voluntary associations of fishermen, set up to help stabilise markets and to protect fishermen from sudden changes in market demand.

It also means to establish common marketing standards for fresh products on quality, grades, packaging and labelling of fisheries products. An *eco-labelling of fishery products*⁴⁷ should show consumers that the purchased seafood has been produced in accordance with certain environmental standards – sustainable resources and a sustainable ecosystem.



Furthermore an issue of COs is to adopt a price support system which sets minimum prices below which fish products cannot be sold. Financial support is available to POs if they have to take fish and shellfish off the market, store them for later use or process them.

Until now the European Commission has established several multi-annual management plans for the reduction of fishing efforts and the rebuild of fish stocks to re-establish ecosystem integrity. To ensure sustainable exploitation it will be also necessary to establish new indicators. Especially for the Mediterranean Sea indicators do not exist yet or give the amount of information necessary for a sustainable intervention.

To have enough mature fish to renew stocks, small fish must be left to grow and reproduce the species. Further plans also will cover the recovery of depleted stocks and the conservation of biodiversity and minimising the impact on habitats, to ensure high and stable yields⁴⁸. Always having in mind that the measures towards environmental preventive care must not go to the expense of the mostly poor employers working in that sector.

An alternative to fishing could consist of breeding fish in marine aquacultures. This path has actually been taken increasingly the last recent years, both in sea and in fresh water cultures.

Since 1990 the production of marine fish in aquaculture farms have been increase more than tenfold – with a quantity of 9,523 tons to over 97,068 tons in 2004.⁴⁹ The aquaculture sector in Greece provides direct and indirect jobs for around 10,000 workers and others in associated industries.⁵⁰

⁴⁷ **Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries** – Food and Agriculture Organization of the United Nations, 2005

⁴⁸ **Common Fisheries Policy – Multiannual management plans**, European Commission – Directorate-General for Fisheries and Maritime Affairs, 2002

⁴⁹ **Source:** FAO's Fisheries Global Information System, <http://www.fao.org/fi/figis/>

⁵⁰ **Study of the market for aquaculture produced seabass and seabream species**, Report to the EC – DG Fisheries, Stirling Institute of Aquaculture, 2004

Being the third largest agriculture export good – after olive oil and tobacco – fish, mainly farmed sea bass and bream, is treated as a strategic product by Greek government. Around 80 per cent of Greece's fish production is exported – primarily to Spain and Italy. This is due to the fact that Greek consumers show a clear concern and reluctance about eating farmed fish (especially for marine species produced in Greece). Originating from concerns about fish feeds – having in mind worldwide problems such as dioxins in chickens, mad-cow disease and foot-and-mouth disease – the *Greek Federation of Marineculture* and the *Ministry of Agriculture* is planning to start a campaign to educate the public about the quality of Greek aquaculture products.

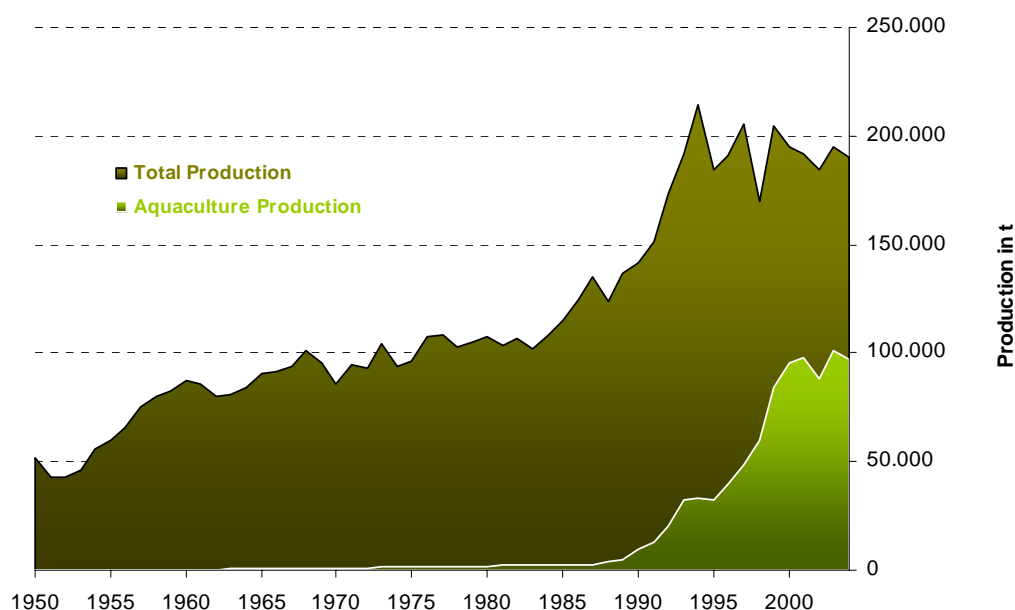


Figure 11 - Reported fish production in Greece (1950 - 2004)⁵¹

Researches and developments at the *Marine Biology Institute of Crete*, funded partially by the European Union, played an important roll on rejuvenating islands fishing industry. Greece's production in bream and sea bass increased from 100 tons per year in the 1980's to over 88,000 tons in 2004.⁵² Finfish aquacultures made Greece the leading country in this sector and created over 2,500 jobs over the last four years.

The new "Mesocosm" technology for larval rearing – invented by research centres on Crete – gives an important contribution to sustainable development and competitiveness of small islands – not only restricted to Greek territorial water. Technology transfers between Crete, the Canary Islands and Madeira have resulted in an international network, focusing on the objective to unite regions with similar climatic and environmental characteristics.

⁵¹ Fish production in Greece is not easy to estimate, due largely to the unreliability of official statistics and the reluctance to declare accurate production results. Official statistics put for example the European sea bass and gilthead sea bream production at 64,700 tonnes in 2002, whilst industry analysts put this value at a more realistic 103,000 tonnes (Stirling Report). The figures published by FAO for these two species 61,804 tonnes are closer to the official figures and are used.

⁵² **Source:** EUROSTAT – Statistics in focus 4/2007

Three main factors make finfish marine aquacultures an important potential and source of income in areas with low population density and economic infrastructure often below the critical level of the continental equivalent:

- *Competitive production costs for the European Market* as a result of excellent water quality and optimal temperature range, giving high biological performance with fast and stable yields and low pathology.
- *High quality products* for European markets that can be distinguished as *Fish of Island-Fish Quality*, as a fact of high renewal rate of sea water via currents that also prevent from negative impacts of aquacultures on the environment.
- *Local Markets* related to tourism and traditional food habits also absorb an appropriate amount of production.

Aquaculture can only thrive in a healthy environment and major improvements are being made possible through technological innovations. But at the same time aquaculture can also represent a potential risk to the environment, either through the pollution which can result from the discharge of waste or the risk of infection of wild fish by diseases in farmed fish stocks.

This also means that water pollution may represent a major threat to fish stocks. Polluting agents and waste from industrial, agricultural and household or tourism sources are a major concern.

These various linkages have stimulated interest in marine ecosystems and in finding a more strategic approach to the management of the marine environment.

MACROECONOMIC FIGURES

Fishing is one of the primary sources of income for many Mediterranean countries. The importance of fisheries can not only be measured by the benchmark of its contribution to GDP. It must also be put in mind that fish stocks and products are key factors for food production and jobs – not only in direct economic branches like fishing industry, but also in mediate sectors as tourism since this cannot work without natural resources.

As far as food is concerned, in some European countries 40 per cent of protein intake comes from fish products, accounting for about 15 per cent of the population's expenditure on food.

In social terms, there are currently over 420,000 fishermen in the EU-25. Given that each job at sea generates at least four jobs on land, we could say that nearly two million workers operate in the various fisheries sectors. So it is not an exaggeration to say that about six million people depend on fishing activities (if a family unit is taken to consist of three people).

According to a EU study, total labour in Greece's fisheries sector – including processing and aquaculture – reached in the examined period 2002/2003 a level

of 37,701 employees - or 0.9 per cent of total employment⁵³. This puts Greece at the third place in the EU-25, where only Latvia with 1.1 per cent and Malta with 1.0 per cent, describing fishing as a share of the total labour force, top this result.

Almost 119,000 persons were in 2003 employed in the Mediterranean fisheries sector, giving Greece about 30 per cent of the share in this region⁵⁴. Fisheries products represented in 2001 0.19 per cent of Greek GDP, whereas total production including aquaculture reached 0.39 per cent of GDP.

...

MARINE POLLUTION AND WASTEWATER TREATMENT

Ecological improvement of wastewater treatment contributes in many respects to the quality of water dependent ecosystems. In the same way they also improve conditions for several water depending economic sectors. Due to a certain interaction with the GDP, amplified investments in new sewage treatment plants to improve water quality will benefit tourism, agricultural and fishing industry.

From an economic point of view wastewater treatment needs high investments and current expenses. Wastewater occurrence is strictly connected to building infrastructure and density of settlement. In areas with a high fluctuation of inhabitants over the year like tourism regions, this means an additional challenge to local environmental politics. Facilities have to be equipped for peak times – and this means higher investment – but also need certain running costs for off season.

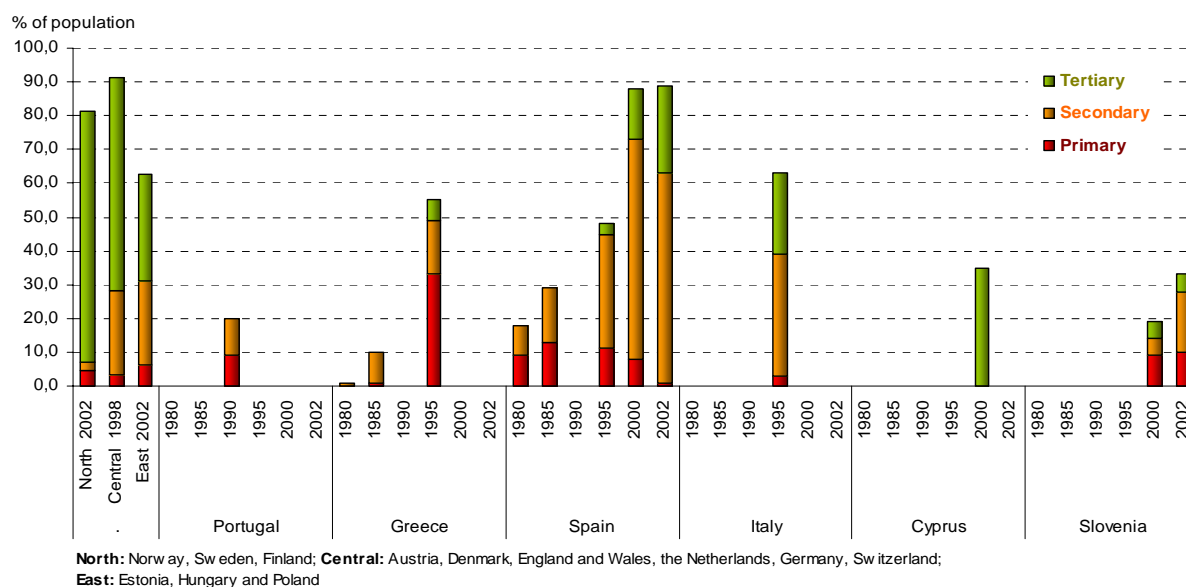


Figure 12 - Waste Water Treatment in southern EU member states

⁵³ **Employment in the fisheries sector: Current situation** (FISH/2004/4), European Commission, April 2006

⁵⁴ Figures about Greece differ, as mentioned above in a very wide range. Employment in the fisheries sector assumed to be 2003 according to the Greek Ministry of Agriculture 37,702 people. The same statistic value from EUROSTAT shows a total amount of employees in this sector for the same period of 18,885.

While around 90 per cent of the population in north and central Europe is connected to sewer and treatment systems the figure is generally poor among southern European EU-15 members. Between 50 and 80 per cent of households are connected to wastewater treatment plants and only 30 to 40 per cent to secondary or tertiary treatment.⁵⁵

According to the European Environment Agency (EEA), Greece has made significant progress in wastewater management within the past years. Approximately 70 per cent of the national population was serviced by wastewater treatment plants in 2004. And Greek officials claim in a 2003 statement⁵⁶ that "...by 2005 the part of the population served will rise to 94.8 %." and that "...the percentage of primary, secondary and tertiary treatment is actually 65%, 33% and 2% respectively."⁵⁷

However, the main problem does not seem to be the share of treatments. Not only the quantity of cleaned wastewater is of importance. Moreover the level of treatment turns to be an essential issue. Primary (mechanical) treatment removes part of the suspended solids, while secondary (biological) treatment uses aerobic or anaerobic micro-organisms to decompose most of the organic matter and retain some of the nutrients (around 20–30 %). Tertiary (advanced) treatment removes the organic matter even more efficiently. It generally includes phosphorus retention and in some cases nitrogen removal. Primary treatment alone removes no ammonium whereas secondary (biological) treatment removes around 75 %.⁵⁸

Appropriate sewage treatment is recognised as an important factor to ensure a flourishing tourist industry, a key sector of the Greek economy. A lack of wastewater treatment means that the health of inhabitants – tourists as well as citizens – in these areas is being put at risk. Untreated sewage can contain harmful bacteria and viruses. It contains nutrients like nitrogen and phosphorus which can damage the marine environment by encouraging excessive growth of algae blooms.

⁵⁵ **The European Environment – State and Outlook 2005**, European Environment Agency (EEA), 2005, <http://www.eea.eu.int/>

⁵⁶ **Report on sustainable development indicators – Greece 2003**, National Center For The Environment and Sustainable Development (NCESD)

⁵⁷ However these figures seem to be irritating. According to the European Commission, Greece is taken to the European Court of Justice *"...for failing to ensure proper treatment of urban waste water ..."* (Brussels, 29 June 2006, Reference: IP/06/878) Although the EU Urban Waste Water Treatment Directive (UWWTD) was dead lined by the end of 2000 and Greece *"has received, considerable EU funding for improvements to its environmental infrastructure through the Structural and Cohesion Funds ... waste water collection systems and secondary treatment facilities are still lacking in 24 towns and cities with populations of 15,000 or more. (Artemida, Rafina, N.Makri, Koropi, Markopoulo, Megara, N.Kydonia, Malia, Chrysoupoli, Porou-Galata, Tripoli, Katerini, Preveza, Litohoro, Zakynthos, Alexandreia, Lefkimi, Nafpaktos, Igoumentitsa, Thessaloniki-touristic zone, Irakleio, Edessa, Kalymnos and Paroikia Parou)."* In some regions *"... the permitting procedures for building the necessary infrastructure have not even begun ..."* or *"... the collection and treatment systems are not expected to be fully operational for some time."*

⁵⁸ **The European Environment – State and Outlook 2005**, European Environment Agency (EEA), 2005

Harmful Algal Blooms as the result of wastewater sewage have been another increasing issue of marine pollution in the Mediterranean Sea. Microscopic algae (phytoplankton) are common components of all aquatic environments. Sudden population explosions of certain species, also called algal blooms, also occur naturally. However, there is good evidence that many blooms are caused by eutrophication (especially nitrogen and phosphorus enrichment) from land-based sources like agricultural run-off through fertilization as well as urban and industrial sewage.

When marine algae occur in significant numbers and produce biotoxins they are termed Harmful Algal Blooms (HABs). HABs are truly a global phenomenon, and evidence is mounting that the nature and extent of the problem has been increasing over the last 2 decades. This worldwide increase of HABs has also affected the Mediterranean Sea.⁵⁹

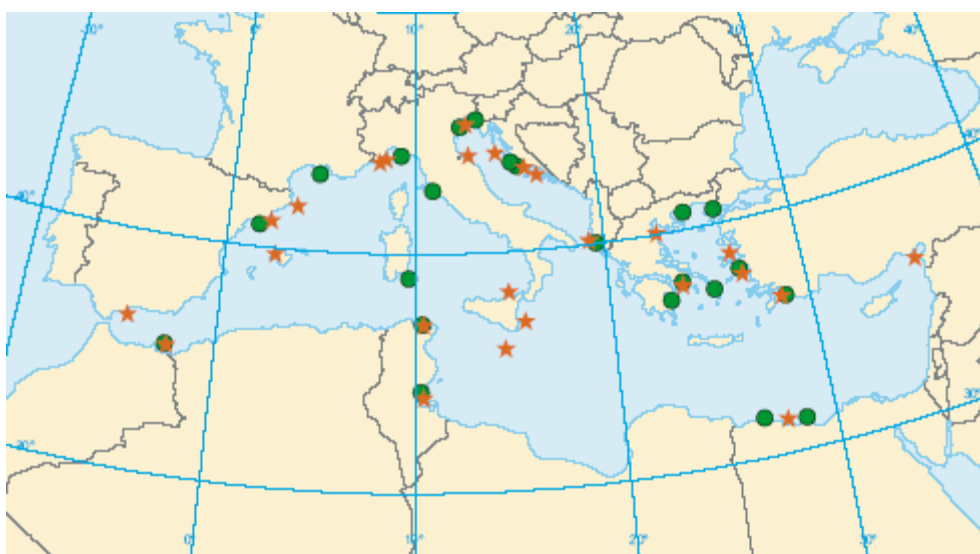


Figure 13 - Harmful Algal Blooms (HABs) and Seafood Toxin Blooms (STBs) in the Mediterranean

HAB phenomena take a variety of forms and have multiple impacts which can be differentiated into the following main impact categories whether they are toxic HABs (first 2 categories) or harmful effects associated to high-biomass HABs (bottom 2 categories):

- *Intoxication of humans* through consumption of food that have bioaccumulated microalgal toxins caused for example via filter-feeding of shellfish and fish. The most significant public health problem caused by consuming HBA contaminated seafood is called Seafood Toxin Blooms (STB).
- *Mass fish mortality* caused by high level of toxicity in HABs. Although in 2001, no HAB monitoring occurred for fish farms in Spain, Greece and Italy, there is increasing discussion on the potential role of aquacultures in HAB development.

⁵⁹ **Novel and nuisance phytoplankton blooms in the sea** – Evidence for a global epidemic, Smayda T. J., 1990

- *Ecosystem changes* like mass mortalities of fish or marine mammals, accumulation of unpleasant foam and mucilage on the coast, discolouration of the water or low oxygen levels in bottom water caused by degradation of HABs also take influence on tourism – meaning HABs also have
- *Socio-economic effects* through intoxication of humans, costs for health treatment and economic loss because of days they miss their work. Also there is a certain effect in loss of reputation for the country as a healthy recreation area.

Even though harmful effects associated to toxic HABs may differ from harmful effects associated to high-biomass HABs their negative impact on tourism is undisputed. Toxic HABs, for example, may cause mass fish mortality damaging the commercial fishery industry, or cause the accumulation of toxins in shellfish threatening the health of humans feeding on them. High-biomass HABs may cause water discoloration and the accumulation of foam and mucilage on the coast damaging recreational activities and tourism.

Shipping – including fuel deliveries to island petrol stations for tourist-vessels - puts a significant pressure on the environment. There is always the risk of an accident of supply boats. It is estimated that about 220,000 vessels of more than 100 tons each cross the Mediterranean annually.

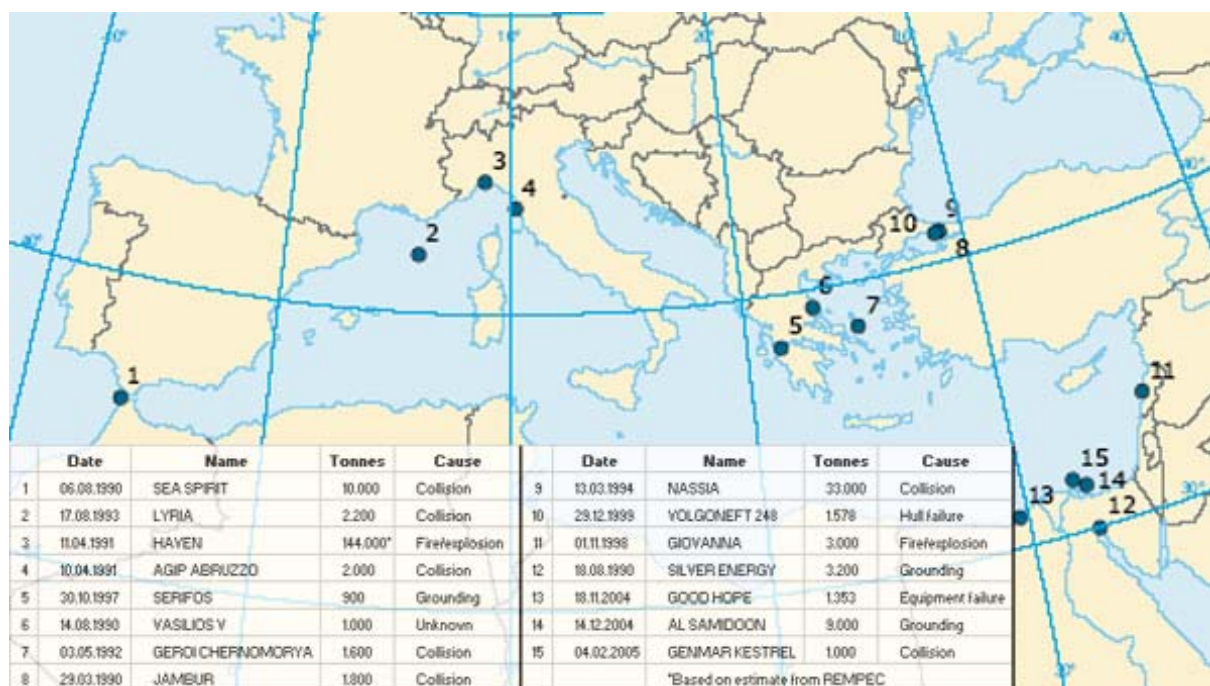


Figure 14 - Major tanker oil spills (> 700 tons) 1990–2005

In total 470 accidents, those caused or were likely to cause pollution of the Mediterranean Sea by oil and hazardous or noxious substances other than oil, occurred between 1977 and 2003. Over 120 ships involved in these harmful or nearly harmful accidents were sailing under Greek flag – 25 per cent of all

accidents reported in this period; 3 times more than Italy, the second worst in this category.⁶⁰

Additionally to the aggravated risk of accidentally caused pollution – with the biggest incident in 1991, when an explosion and fire on board of MT “HEAVEN” caused the loss of her entire load of 144,000 tons and nearly doubled the amount of total accidental oil spills reported in the area – increasing shipping activity in the Mediterranean Sea is held responsible for deliberate oil spill discharges of 250,000 tons⁶¹ due to “normal shipping operations” such as deballasting, tank washing, dry-docking, fuelling and unloading oil.

An EMEP-study⁶² found, that ship traffic contributes to more than 50 per cent of exceedence of critical loads for nutrient nitrogen⁶³ in wide parts of the coastline of Greece, Italy, Croatia and Spain. Eutrophication appears very often in sheltered marine water bodies like bays and harbours along the Mediterranean coast, primarily in the surrounding of coastal towns.

Untreated or – due to overload of facilities – only partly treated urban and industrial wastewater contains significant loads of degradable or inert nutrients and suspended sediments. These deposits are often rich in organic matter and contaminated with metals and other pollutants.



Figure 15 - Greek coast with areas of major environmental concern and pollution hot spots

⁶⁰ **Alerts and Accidents in the Mediterranean**, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), 2004

⁶¹ **Priority issues in the Mediterranean environment**, European Environment Agency (EEA), 2006

⁶² **Effects of international shipping on European pollution levels**, Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air pollutants in Europe (EMEP), 2000

⁶³ The **critical load of nutrient nitrogen** is the maximum acceptable deposition of nitrogen not causing **eutrophication** (“excess nutrient enrichment”) of terrestrial and marine ecosystems.

Along the Greek coastline, at a length of approximately 15,000 km, 50 per cent of the country's population and the majority of the industrial activity is hosted.⁶⁴ Although most coastal cities operate wastewater treatment plants environmental problems are mainly caused by poorly treated urban and industrial sewage as well as run-off from agricultural areas.

The major source of nitrogen stress of Greek marine coastal zones is run-off from agricultural land, which contributes from 45 per cent – from islands in the Aegean Sea to 70 per cent of the total load in the eastern Peloponnese at the area of Argos. Further endangered marine coastal areas in Greece are the areas around the cities of Thessaloniki and Volos and the Kalohori industrial area in the north – with treated industrial and urban wastewater- as well as Irakleio, Preveza and the area around Patra, a heavy load harbour for in- and outbound travellers direction west.

In the area around Athens – where more than 1,000 industrial plants with untreated industrial and partially treated urban wastewater pollute the Saronikos Gulf and Elefsis Bay – heavy metals⁶⁵ in high concentrations are detected in water, sediment and mussels and signs of eutrophication are clearly present.

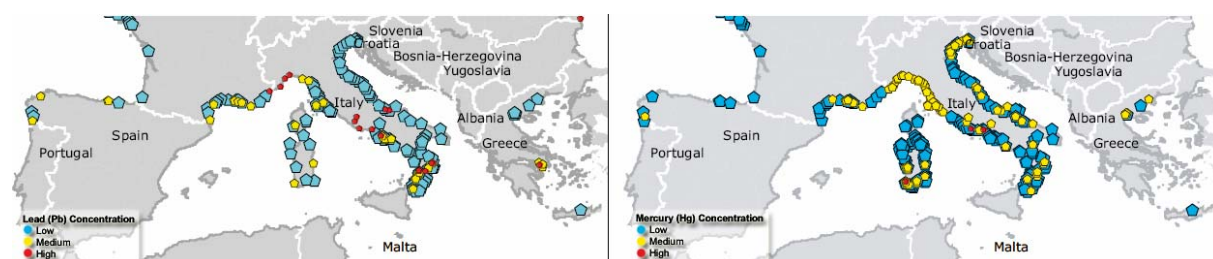


Figure 16 - Heavy metals in mussels (*Mytilus edulis*), median concentration 1996–2002

Heavy metals – from urban and industrial wastewater run-off – tend to precipitate after they are dumped into the coastal marine environment and accumulate in sediments and biota. In that way, contaminated coastal sediments constitute an important pollution source because they release afterwards metals into the overlying water. Especially in sheltered harbours and semi-enclosed bays along many Mediterranean coastal areas – such as the coast of Tuscany (Tyrrhenian Sea), Kastella Bay (Adriatic Sea), Haifa Bay and the coast of Alexandria (eastern Mediterranean), or Izmir Bay and Elefsina Bay (Aegean Sea) – increased metals concentrations have been identified.⁶⁶

Especially Mercury is of particular concern because it is easily released from the sediments into the overlying water and hence re-enters the aquatic food chain, making populations with a high intake of fish and seafood particularly vulnerable. High consumption of mercury-contaminated fish has been proven to cause detrimental effects on humans. Even relatively low doses can have “serious adverse neurodevelopmental impacts, and have recently been linked with

⁶⁴ **Source:** National Statistical Service of Greece, 2003

⁶⁵ **Heavy Metals:** arsenic, cadmium, chromium, copper, nickel, lead and mercury

⁶⁶ **Priority issues in the Mediterranean environment**, European Environment Agency (EEA), 2006

possible harmful effects on the cardiovascular, immune and reproductive systems”⁶⁷. The weekly intake of most people in coastal areas of Mediterranean countries, and between 1 and 5 per cent of the population in central and northern Europe is around the half of the international *Provisional Tolerable Weekly Intake* (PTWI) for *methylmercury*⁶⁸ – which is 1.6 µg per kg body weight per week. Additionally parts of Mediterranean fishing communities lie above the US *Benchmark Dose Limit* (BMDL) of 10 times the US *Reference Dose* (RfD) – which is 0.7 µg per kg body weight per week – the level at which it is generally recognized that there are certain neurological effects.

BATHING WATER QUALITY

European citizens are very concerned about water quality in sea, coasts, rivers and lakes. They put good bathing water quality as a high priority objective when evaluating their immediate living environment. The knowledge to have clean and safe water to swim or play is more than ever an important factor in choosing of a holiday destination. This means that for the tourist industry, clean and safe water is an important argument to attract visitors to an area.

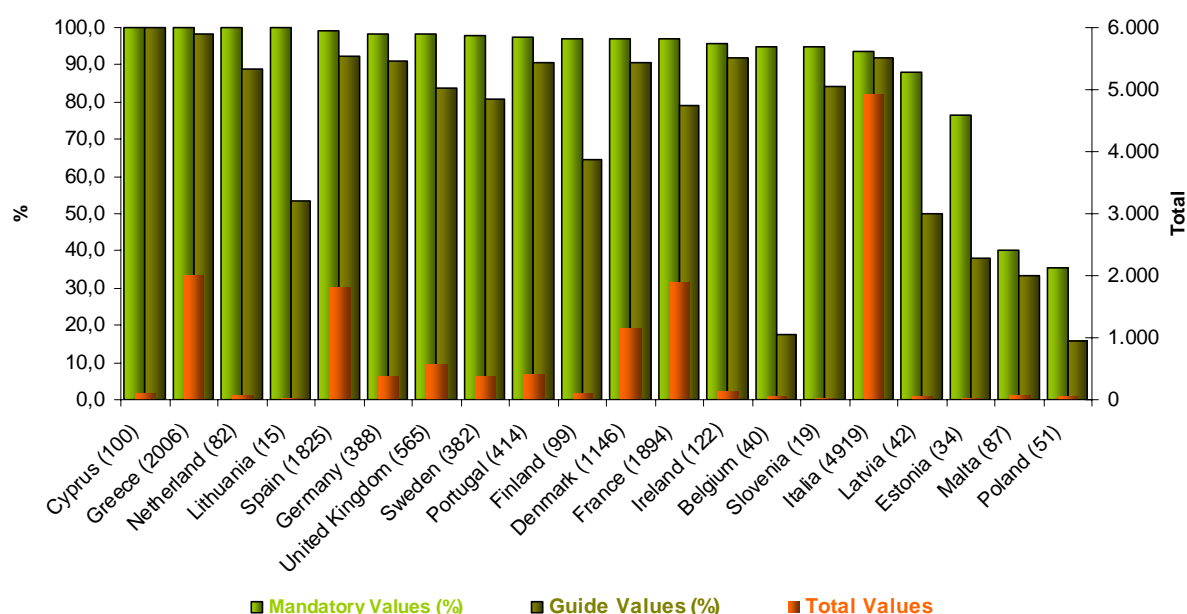


Figure 17 - Bathing water samples complying with Guide or Mandatory values – 2005

During 2005 season, Greece monitored a total of 2006 coastal bathing areas, 41 more than in the previous bathing season and the amount of bathing areas is

⁶⁷ **Annex to the Communication from the Commission to the Council and the European Parliament on Community Strategy Concerning Mercury** – Extended Impact Assessment, European Commission (EC), 2005

⁶⁸ **Mercury** and its compounds are highly toxic to humans, ecosystems and wildlife. It is persistent and can change in the environment into methylmercury, the most toxic form. Methylmercury readily passes both the placental barrier and the blood-brain barrier, inhibiting potential mental development even before birth.

increasing steadily since 1992. All coastal bathing areas with the exception of one complied with the *mandatory values* set in the directive. Compliance with the more tight *guide values* further increased to 98.1 per cent. All the areas were open for bathing and were sufficiently monitored.⁶⁹

Although Greece has, according to the European Environment Agency (EEA), one of the EU-25s finest bathing waters, governmental environmental policy has to take impact to preserve this important but difficult and slow to control good in order to sustain tourism in future years.

However it has to be mentioned that this indicator can be dazzling. According to the European Commission's Environmental Department, Section Water, several Member States have been "removing bathing sites from their official lists and thereby avoiding to apply EU rules aimed at protecting the health of bathers."⁷⁰ In Greece the total amount of 204 bathing sites or 9.2 per cent of initially listed sites were dropped between 1991 and 2004. Many previously recognised bathing waters were removed from the official list of monitored bathing areas⁷¹ without explanations.

Eco-label awards for clean and safe beaches like the *Blue Flag* can also help to improve water quality, litter management and promotion of environmental actions in general. The Blue Flag is awarded for one bathing season and works towards sustainable development at beaches and marinas through strict criteria expanding the water quality subject for matters of environmental education and information, environmental management as well as safety and service. In that way, the Blue Flag Campaign – owned and run by the independent non-profit organisation *Foundation for Environmental Education* (FEE) – aims to improve the understanding and appreciation of the coastal environment and promote the incorporation of environmental concerns in decision-making. In Greece 411 beaches and 5 marinas were awarded by the International Jury in 2006⁷².



WETLANDS AND COSTAL ECOSYSTEMS

Tourists most likely associate the natural beauty of sandy beaches, rocky shorelines and waves of coastal areas with holiday and recreation. However, they have an economic value beyond their aesthetic benefit.

Many costal areas in the Mediterranean – especially near congested urban and tourist areas – are becoming littered mainly with plastic debris. Not only that it becomes an aesthetic detriment, the removal of plastic litter also requires costly clean-up procedures. Marine litter also becomes a threat to humans when divers, ships or boats become enmeshed in it. Further impacts arise from entanglement

⁶⁹ **Annual Bathing Water Quality Report – 2005 bathing season**, Environment Directorate-General of the European Commission, 2006

⁷⁰ **Bathing Water Quality - De-listed sites 2005 bathing season**, Environment Directorate-General of the European Commission, 2007, <http://ec.europa.eu/environment/>

⁷¹ **EU COUNCIL DIRECTIVE concerning the Quality of Bathing Water** (76/160/EEC), 8 December 1975

⁷² **Source:** The Blue Flag, <http://www.blueflag.org/>

of marine animals in plastic debris or from ingestion of plastic by them. Even though the degree of stress has not been quantified yet, growing evidence indicates that when dumped, lost or abandoned in the marine and coastal areas, plastic debris has an adverse impact on the environment.

Coastal ecosystems support human lives and livelihoods through the provision of food and materials, nutrient cycling and waste processing and work in that way as a natural sewage plant. These powerful but also very sensitive territories are not only important for humans; they are also of enormous relevance for the proper function of whole eco-systems.

Wetlands are areas of land that are conglomerates of terrestrial and aquatic ecosystems.⁷³ Inland wetlands persist of creeks, swamps, marshes, and shallow aquifers while coastal wetlands include estuaries, tidal basins, marshes, deltas and mangroves. Almost 5 per cent of Greece's extensive coastline consists of those ecologically sensitive wetlands. These water covered areas are highly biologically diverse and provide a home for a wide variety of fish, amphibians, water fowl and other birds, insects, and mammals.

In addition to their role as a productive habitat, wetlands also play an important role in the larger ecosystem. Because of their dense aquatic and semi-aquatic vegetation and thick mud, wetlands act as a filter, purifying water that passes through them. Water containing pollution such as nitrogen and phosphorus from fertilizers and agricultural runoff, and heavy metals from industrial waste is filtered and detoxified by passing through wetlands. Wetlands also reduce the impacts of floods, direct river flow, reduce erosion, and sequester carbon helping to regulate the climate.⁷⁴

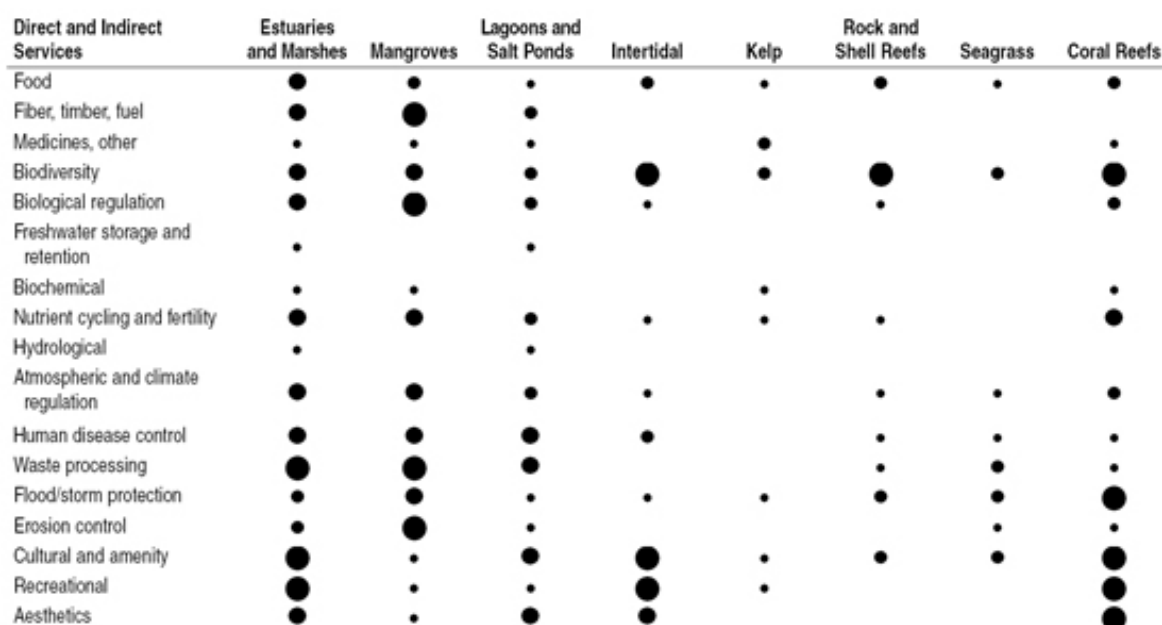


Figure 18 - Coastal System Subtypes and contributed Ecosystem Services.
Larger circles represent a higher relative magnitude.

⁷³ **Source:** EarthTrends – Environmental Information, World Resources Institute, 2007

⁷⁴ **Source:** EarthTrends – Environmental Information, World Resources Institute (WRI), 2006, <http://earthtrends.wri.org/>

Experts guess that the combined global value of goods and services from coastal ecosystems exceeds 9.1 trillion Euro annually⁷⁵ – nearly the European Union's 2004-GDP (€ 10.5 trillion). Since many of these services are not explicitly dealt in world market prices, governments, businesses, and individuals have quite few incentives to protect and maintain them.

A study of the *Board of the Millennium Ecosystem Assessment (MA)* identified coastal ecosystems as "among the most productive yet highly threatened systems in the world"⁷⁶. Population growth, tourism and technological advances have put an unprecedented and unsustainable exploitation of coastal resources in the past century and have lead to declines in the overall health of many coastal ecosystems.

Local as well as Community politics have to take impact to protect important costal ecosystems as the National Marine Park of Zakynthos and to solve conflicts between environment protection and tourism. Since 1999, when the park was established, after decision by in the European Court of Justice, Greece has a legal obligation to protect the Loggerhead Sea Turtles (*Caretta-caretta*) and their nesting areas from tourist development in Zakynthos. At Laganas Bay, at the south side of the island, 80 per cent of the Mediterranean Loggerhead population nest and make this site the most important in Europe for this critically endangered species.

After the Greek government – preparing to host the Olympic Games – in 2004 directed all available funds to the Olympic constructions in Athens, there was no payment for the staff of the National Marine Park and beach wardens went on strike. As a result mostly unsuspecting tourists destroyed with their summer furniture thousands of turtle nests. Illegal buildings at the beach – especially for tourists built discotheques and night clubs – disoriented the freshly slipped turtles, which are driven to the lightest spot on the horizon, what is - in an environment without humans – the sky above the open water.

The situation finally relaxed in 2005 in the middle of the season. As the European Community put pressure on the Greek government, salaries were paid again and signs to inform the tourists about the nesting area of Sea Turtles were re-established.

⁷⁵ **The Value of the World's Ecosystem Services and Natural Capital**, Costanza, R., 1997

⁷⁶ **Ecosystems and Human Well-being: Current State and Trends**, Millennium Ecosystem Assessment Board, 2005, <http://www.maweb.org/>

CONCLUSIONS AND OUTLOOKS

This study has demonstrated that tourism in environmental related sectors is crucial to the economic prosperity of the European Union's Mediterranean countries – especially Greece. It provides employment – direct and indirect – for an estimated total of 5 million individuals in the Mediterranean basins' costal strip and an income of more than 76 billion Euros representing about 7 per cent of the Gross Domestic Product.⁷⁷

Since the exploitation of the growth potential of tourism is critical, a holistic policy approach – strategically combining maritime, labour market, environment and tourism – is required to fully exploit this economic and employment creating potential in a sustainable way. WTO calculations forecast a long-term trend of 3 per cent growth in the European tourism sector until 2020 and increases of up to 17.9 per cent – for Malta – in employment by 2016. A growing number of environmental and coastal protection projects and the need to develop coastal tourism and port infrastructure generate demand for new jobs.

Mediterranean countries are mostly associated with sun, sand and sea. Even though some regions of this recreational tourism are expected to reach their optimum level of development in the upcoming years, coastal tourism is still seen as a growth sector. Still a great amount of travellers do – and also in the midterm future will – doorstep the recreation areas at south European costal zones.

But also alternative types of tourism have become more and more fashionable within the past decade. The trend will move away from mass tourism to an individually journey-composing vacation seeker. Especially in the more mature tourism regions in Southern Europe policy makers have to set up strategies. Indicators have to be implemented and analyzed in order to respond to this new demand of the tourism industries and to avoid loss of market shares to the emerging destinations in Asian and Pacific regions. Governments have to adapt to a certain trend that shows the near future tourist more interested in nature, biodiversity and an intact landscape with a “living culture”.

ENVIRONMENTAL-ECONOMICS

It has to be a main objective to preserve nature and culture heritage in order to sustain the whole economy that depends in a wide range from this sector. Politics and tourism management have to answer with the creation of new and ecological attractions that ensure the flow of tourism to Mediterranean holiday regions in the next decade.

To break the link between economic growth and environmental degradation, not only local policy makers must devote attention on prevention and reduction of environmental pollution. Sustainable consumption and production must be put

⁷⁷ **Tourism Carrying Capacity in Mediterranean Coastal Areas**, Alessio Satta, United Nations Environment Programme Workshop, Italy, November 2004

into practice to preserve biodiversity of life forms and in order to secure stable returns of professional exploitation of restricted resources.

From a financial point of view environmental awareness helps to perpetuate cash flow for dependent sectors. Tourism industry in Greece is built upon the countries most important stock - rich natural and cultural heritage. It has to be an overarching objective to maintain this stock value – a good barometer of both profitability and investor confidence – at a high level, to sustain the long-term performance of the sector. Market participant whose products and processes are not seen to help protect or restore ecosystems will be seen as inherently more risky and in turn loose market shares.

Costa Rica is a famous paradigm of a country that has become a popular tourist destination – besides of its political stability – thanks to its extensive system of National Parks and Reserves that now cover about one fifth of the country's territory. Even though critical voices claim that Costa Rica's eco-tourism is not an ecological tourism, it is a good example how ecological thinking can revitalize a stuck tourism industry.

In 2003 more than 1.25 million tourists visited the country – a four fold increase since 1987.⁷⁸ This extensive growth has not only made the sector the biggest contribute to Costa Rica's economy, but also generated detrimental effects on the environment. In order to respond to these environmental problems, the Costa Rican government established in 1997 a *Certification for Sustainable Tourism (CST)* program for hotels, to verify the implementation of environmental compliance practices that are known to be valued by the large percentage of "green" tourists visiting Costa Rica. Beyond the bottom line, hotels participating in the program with higher levels of environmental performance appeared to show a significant association with higher room prices. But on the other hand they were also taking advantage of incentives from a market with a significant segment of environmentally aware tourists.

In ecological terms, tourism has not only a destructive potential. It can also create beneficial effects on nature by contributing to environmental protection and conservation. It can raise awareness of environmental values and serve as a tool to finance protection of natural areas and increase their economic importance.

DATA AVAILABILITY

To manage integration of environmental dimension into policies, the relevant research and data collection plays an essential part in this area. EU countries are currently lacking a systematic and ongoing methodology for data collection, and the definitions of different maritime sectors in the EU are not uniform. Definitions vary from source to source, from country to country, even from region to region and often the definitions are not available and therefore make it difficult to compare and collate data for a European level.

The situation is made worse by the overall lack of comparable data as the statistics gathered by the national statistical offices concerning employment, are

⁷⁸ **Annual report of statistics**, Costa Rican Institute of Tourism, 2003

mostly only available for the industrial sector. In order to improve the knowledge and monitoring abilities of development trends in the tourism sectors, the availability of comparable data must be improved. This study also found that the range of definitions for indirect coefficients – like employment or economy capacity – in different sea related sectors is even greater than for direct ones. For example indirect employment of an individual maritime sector often encompasses most other sea related sectors and has the potential of 'double counting'.

TOURISM

Tourism is the largest sector of the economy in many Mediterranean coastal zones, and construction of hotels, apartments and similar tourist infrastructure is the dominant form of development. Tourism is now having a major environmental impact on many coastal areas and is expected to continue to grow even though a certain desire by tourists for emptier and less-developed resorts is visible. Besides land-grab, its demand for resources and need for waste disposal facilities cause pressure on water resources and natural coastal habitats and structures such as wetlands and sand dunes. Demand for water on the Greek island of Patmos increases sevenfold during the tourist season. Many regions, including Spanish resorts and Malta, are running out of water and investing in desalination of sea water.

However, tourism can sometimes have a positive influence on nature conservation and environment. The growing business of Eco-Tourism provides an example of shifting consumer preference for different ecosystem services and the opportunities this can provide. A challenge of nature conservation in the 21st century is to take place outside parks and other protected areas and become integrated into agricultural, marine, and urban systems.

Conservation outside parks opens significant new business opportunities. As agro-tourism can help to conserve cultural landscapes, add value to farming and fishing systems, cultural tourism can serve to educate people about the importance of cultural diversity, as well as the importance of the latter for the conservation of biodiversity. In the future only competitive destinations will be able to maximise their benefits and if Greece would like to benefit from tourism, it should learn from the international experience and adapt its strategies and operational practices.

Bathing water quality is a good example of how environmental regulation, when combined with efficient monitoring and public information, has a beneficial effect on economies. Failure to comply with the directive has demonstrably influenced tourists' choices of destination, while nominations such as the Blue Flag awards have shown clear benefits.

Increasingly, tourists demand high aesthetic standards, including clean beaches, scenic beauty and amelioration of urban areas. They also provide the income for investment in clean-ups and other environmental measures and so form a tourism development which respects the environment, ensures long-term conservation of historical and cultural resources, and is socially and economically acceptable and equitable and therefore deserves the term Ecological Tourism.

GLOSSARY

Aquaculture

Rearing or cultivation of aquatic organisms – including fish, molluscs, crustaceans, and aquatic plants – using techniques designed to increase the production of the organisms in question beyond the natural capacity of the environment; the organisms remain the property of a natural or legal person throughout the rearing or culture stage, up to and including harvesting. Aquatic organisms that are exploitable by the public as a common property resource are included in the harvest of fisheries. (Source: EC)

Aquaculture, total production

includes marine, freshwater, and diadromous fish, molluscs, crustaceans, cephalopods, miscellaneous aquatic animals, and aquatic plants cultivated in marine, inland or brackish environments. (Source: EarthTrends)

Capture, fish

is defined by the FAO as "the nominal catch of fish, crustaceans and molluscs, the production of other aquatic animals, residues and plants and catches of aquatic mammals, taken for commercial, industrial, recreational and subsistence purposes from marine waters." Production of fish, crustaceans and molluscs is expressed in live weight – the nominal weight of the aquatic organisms at the time of capture. Data include all quantities caught and landed for both food and feed purposes but exclude discards. Figures are national totals which include fish caught by a country's fleet anywhere in the world. (Source: EarthTrends)

Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP)

is a scientifically based and policy driven program for international co-operation to solve transboundary air pollution problems. The EMEP programme provides scientific support on

- Atmospheric monitoring and modelling,
- Emission inventories and emission projections,
- Integrated assessment modelling.

Common Fisheries Policy (CFP)

The European Union's instrument for the management of fisheries and aquaculture. It was created to manage a common resource and to meet the obligation set in the original Treaties of the then European Community. Because fish are a natural and mobile resource they are considered as common property. In addition, the Treaties which created the Community stated that there should be a common policy in this area, that is, common rules adopted at EU level and implemented in all Member States. (Source: EC)

Food and Agriculture Organization of the United Nations (FAO)

leads international efforts to defeat hunger. Founded in 1945 – serving both developed and developing countries, FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. FAO is also a source of knowledge and information and helps developing countries and countries in transition modernize and improve agriculture, forestry and fisheries practices. (Source: FAO)

Fund, Cohesion

Fund created in 1993 to complement the structural aid of the European Union in the four least prosperous Member States (Greece, Spain, Ireland and Portugal) by financing projects concerned with environmental protection and European transport networks. (Source: EC)

Funds, Structural

The main four financial instruments providing aid for the Union's 'structural' actions, meaning those actions aimed at narrowing economic and social gaps. The Structural Funds are complementary to national or private funding and are used to implement large-scale programmes, which cover a very broad range of local, regional or national activities. The funds combine their interventions depending on the needs. There are four funds.

- *European Regional Development Fund (ERDF)*: Supports the building of infrastructure, productive and job-creating investments, local development projects and aid for small and medium-sized enterprises in disadvantaged regions.
- *European Social Fund (ESF)*: Supports training actions and employment schemes and promotes the social and occupational inclusion of unemployed people and less favoured groups.
- *European Agricultural Guidance and Guarantee Fund (EAGGF)*: The Guidance Section supports rural development and assistance measures for farmers in regions lagging behind in development (Objective 1) and the Leader+ initiative throughout the Union. The

Guarantee Section supports the same measures outside Objective 1 areas and certain specific measures across the Union.

- *Financial Instrument for Fisheries Guidance (FIFG)*: Supports the adaptation and modernisation of the sector's facilities. (Source: EC)

Funds, Structural, objectives

Objectives to which the Structural Funds devote most (94 %) of their resources, which amount to a total of EUR 195 billion between 2000 and 2006 (for EU-15 in 1999 prices).

- *Objective 1 (territorial)*: Aid to help regions whose development is lagging behind to catch up, by providing them with the basic infrastructure they lack and by supporting investment in enterprise to boost economic activities.
- *Objective 2 (territorial)*: Aid for areas having difficulties with economic and social conversion (urban, industrial, rural or fisheries-dependent areas).
- *Objective 3 (thematic)*: Measures to modernise training systems and to promote employment. Objective 3 covers the entire Union except for the Objective 1 regions where these measures are included in the catch-up programmes. (Source: EC)

Gross domestic product (GDP)

is an indicator for a nation's economic situation. The GDP is an aggregate measure of production which is equal to the sum of the gross value added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). It reflects the total value of all goods and services produced less the value of goods and services used for intermediate consumption in their production. The sum of the final uses of goods and services – except intermediate consumption – is measured in purchasers' prices, less the value of imports of goods and services. For a comparison of EU regions, GDP is usually expressed as a percentage of the EU average (= 100 %). Expressing GDP in purchasing power standards (PPS) eliminates differences in price levels between countries, and calculations on a per head basis allows for the comparison of economies significantly different in absolute size. GDP per capita in PPS makes different prices comparable across Member States.

Gross value added at market prices

represents the final output (at basic prices) minus intermediate consumption (at purchasers' prices). Gross value added can be broken down by industry. It is a measure of productivity in a sector and shows how much it contributes to the economy. For the economy as a whole, it usually makes up more than 90% of GDP.

Indicators, structural

Structural indicators are drawn up for use in the annual communication from the Commission on progress towards realising the objectives of the Lisbon strategy.⁷⁹ The list of key indicators is reassessed every year, taking into account political priorities, as well as progress with regard to the development of indicators. They cover six areas: economic performance; employment; education, research and innovation; economic reforms; social cohesion; the environment. Since the spring of 2003, reports and structural indicators have included coverage of the acceding and candidate countries. (Source: EC)

Marine Fish Captured

include cods, hakes and haddocks; flounders, halibuts and soles; herrings, sardines and anchovies; jacks, mullets and sauries; redfishes, basses and congers; tunas, bonitos and billfishes; and miscellaneous marine fishes. Marine capture totals exclude freshwater species, brackishwater species, and harvest totals from Marineculture and aquaculture. (Source: EarthTrends)

Marine and Diadromous Fish

Diadromous fish include sturgeons, paddlefishes, river eels, salmon, trouts, smelts, shads, and miscellaneous diadromous fishes. Marine Fish include cods, hakes and haddocks; flounders, halibuts and soles; herrings, sardines and anchovies; jacks, mullets and sauries; redfishes, basses and congers; tunas, bonitos and billfishes; and miscellaneous marine fishes. (Source: EarthTrends)

Marine - Molluscs and Crustaceans

Molluscs include freshwater molluscs, abalones, winkles, conchs, oysters, mussels, scallops, pectens, clams, squids, and miscellaneous marine molluscs. Crustaceans include freshwater crustaceans, sea-spiders, crabs, lobsters, shrimps, prawns, and miscellaneous marine crustaceans. (Source: EarthTrends)

⁷⁹ **Competitiveness, sustainable development and cohesion in Europe** — From Lisbon to Gothenburg, European Commission – DG for Regional Policy, 2003

Marine - Aquatic plants

include brown, red, and green seaweeds, and miscellaneous aquatic plants. (Source: EarthTrends)

Sustainable development

Concept based on the choice of balanced economic growth which takes account of the requirements of employment and social inclusion, the needs of businesses, public health and welfare, and environmental protection. The aim is to satisfy present needs without jeopardising the capacity of future generations to satisfy theirs. The Structural Fund interventions are required to reflect upon the principle of sustainable development. (Source: EC)

Tourism

activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes (Source: Eurostat)

Tourism, cultural

all cultural activities undertaken by visitors and the supply of products for cultural visitors during their visit (Source: Eurostat)

Tourism, inbound

activities of non-residents travelling in a given area that is outside their usual environment (Source: Eurostat)

Tourism, international

consists of 'inbound tourism' and 'outbound tourism' (Source: Eurostat)

Tourism, outbound

activities of residents of a given area travelling to and staying in places outside that area (and outside their usual environment) (Source: Eurostat)

Tourism receipts, international

expenditures of international inbound visitors, including their payments to national carriers for international transport. They should include any other pre-payments or payments made afterwards for goods and services purchased from the country visited (Source: Eurostat)

Tourism supply

supply of all assets, services and goods to be enjoyed or bought by visitors and occasioned by the journeys of visitors. Statistics on tourism supply may be approached in two ways:

- statistics on the production (structure) of enterprises, etc., e.g. supply has been interpreted as activities of enterprises such as the supply of Horeca, transport and retail services
- statistics on the results of such activities, i.e. products, which also may be services, consumed by visitors (Source: Eurostat)

Tourist

visitors who stay at least one night in collective or private accommodation in the place/country visited (Source: Eurostat)

Visitor

'any person travelling to a place other than that of his/her usual environment for less than 12 consecutive months and whose main purpose of travel is other than the exercise of an activity remunerated from within the place visited' (Source: Eurostat)

World Tourism Organization (UNWTO),

is the leading international organization in the field of tourism. It serves as a global forum for tourism policy issues and practical source of tourism know-how and plays a central and decisive role in promoting the development of responsible, sustainable and universally accessible tourism. The UNWTO plays a catalytic role in promoting technology transfers and international cooperation, in stimulating and developing public-private sector partnerships and in encouraging the implementation of the Global Code of Ethics for Tourism, with a view to ensuring that member countries, tourist destinations and businesses maximize the positive economic, social and cultural effects of tourism and fully reap its benefits, while minimizing its negative social and environmental impacts. (Source: UNWTO)

Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)

is a United Nations regional centre and part of the Regional Seas Network of the United Nations Environment Programme (UNEP). Based in Malta and administered by the International Maritime Organization (IMO) REMEC's main objectives and functions are research in the field of prevention of marine pollution from sea-based sources, as well as preparedness for and response to accidental marine pollution. (Source: REMPEC)

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