

# Eco-Certification as a Tool of Sustainable Tourism: A Preliminary Approach

Christina Milioti<sup>1</sup>, Antreas Fousteris<sup>2</sup>, Eleni Didaskalou<sup>3</sup>, Dimitrios Georgakellos<sup>4</sup>

<sup>1</sup>University of West Attica

<sup>2,3,4</sup>University of Piraeus, School of Economics, Business and International Studies, Department of Business Administration, 80, M. Karaoli & A. Dimitriou St., 18534 Piraeus, Greece

**Abstract:** As tourism is the fastest growing sectors of the global economy, environmental quality acquires a decisive role in sustainable tourism development. Tourism, like any activity, has environmental impacts that directly or indirectly affect and alter the resources that make up the tourism product. Adoption of the principles of sustainable development is essential in tourism since the protection and safeguarding of environmental quality is a prerequisite for the development and maintenance of tourism activity. Environmental management systems and ecolabel scan help business to minimize their environmental impact and furthermore to set a communication channel between actors. Also, may inform customers of new green features of tourism services, on in a visual way. The paper highlights the role of environmental certification in protecting and upgrading tourism product.

**Keywords:** sustainable tourism, environmental management systems, eco-labels

## 1. Introduction

Tourism can be a profitable source of revenue for a destination, but it can also have a significant negative impact on it [1]. Tourism can put strong pressure on the environment [2] and tourism activities may cause significant deterioration of a region's natural resources, if are not managed in an environmentally sensitive way [3]. Environmental resources, is an integral part of tourism product [4], [5] and the relationship between tourism and the environment is so direct and decisive, so as when the natural environment is degraded the tourist product is affected. As tourism industry is composed of many different sectors (Fig. 1) is difficult to quantify the real impact of tourism on the environment [6].



**Figure 1:** Components of the tourism system [6]

As the number of tourists increases, according to World Tourism Organization (UNWTO) international tourist arrivals (overnight visitors) worldwide grew 4% in 2019 to reach 1.5 billion, and in 2020 a growth of 3% to 4% is expected [7], Environmental Management Practices in the tourism sector can help organizations to minimize their environmental impacts.

The article focuses on the examining the connection between environmental quality and tourism and the role of environmental certification towards sustainable tourism.

## 2. Environmental Quality and Tourism

In 1972, the first conference of the United Nations on human environment took place in Stockholm [8]. Twenty seven principles on how the natural and the built environment (social, politic, economic environments) should flourish together were stated [9]. Environmental awareness grew in the second half of the twentieth century [10]. Nowadays, environmental management systems and firm performance is a key issue [11], as also the strengthening of corporate environmental responsibility and practicing green sustainable practices [12].

Environment and quality is of a growing interest in recent years. Quality assurance has been the subject of study with industrialization and since then total quality management (TQM) and environmental excellence provides a framework to organizations to achieve improved environmental performance [13]- [14]. An Environmental Management Systems (EMS) provides a structured management process aiming to help businesses to reduce environmental impacts and to certify their achievements [15]. An EMS is being approached through the Deming's PDCA (Plan-Do-Check-Act) cycle [16]. Two well-known environmental management systems are the Eco-Management and Audit Scheme (EMAS) and ISO 14000 standards [17].

It has to be pointed out that for tourism the environmental quality of tourist destinations has been recognized of a fundamental importance and consideration of overall environmental quality includes measures for minimizing all kinds of environmental problems of the travel and tourism industry, and includes investments in environmental protection and restoration of already degraded environment [18]. Various environmental pressures from tourism services are given below (Fig. 2) [19]. Activities/Services in tourism organisations (hotels, campsites, restaurants and tour operators) that are associated with environmental pressures are Administration, Technical services, Restaurant/bar, Kitchen, Room use, Laundry, Purchasing, Activities,

Transport, Additional services, Building and construction [20].



Figure 2: Tourism service inputs and outputs [19]

In this context, we should consider both the concept of sustainability and sustainable tourism. Sustainability can be defined as the improvement of the quality of human life and exists in the inherent capacity of ecosystems to support their populations, thus taking actions simultaneously for biological system, economic system and social system [21]. In line with this, is the definition of UNTO for sustainable tourism: "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" [22].

### 3. Environmental Certification in Tourism Industry

The measurement of sustainability, is a complex task and has been a topic of study among researchers, policy makers and other stakeholder [23]. Certification systems and standards bring needed clarity to business strategy on sustainability and can drive business performance towards minimizing its environmental impacts. Environmental certification of tourism and hospitality operations states that the adopted practices are in line with environmental management rules. These methods have to be verified by a third party as to ensure that these practices and methods are not just a green wash [24]. As sustainability, is a key part of tourism policies in 101 UNWTO Member States [25], and environmental concerns have been increasing in tourism industry [26] certification programs in tourism sector are very important tools that enables businesses to consciously offer environmentally friendly services and products and to distinguish from those businesses that arbitrarily display an "eco-friendly" image. Standards can help private and public organizations to improve their tourist services. EMSs and eco-labeling schemes verify that tourism products and services comply with certain pre-determined environmental criteria.

#### 3.1 Environmental Management Systems

##### ISO

In 1996, the family of ISO 14000 standards was introduced, in order to guide and support companies to monitor and

improve their environmental performance, while constantly transforming and moving their operational processes towards reducing their environmental footprint [27]- [28]. As tourism is one of the world's fastest developing sector with increasing growth forecasted for the coming years (Fig. 3) [29]- [30], ISO published standards for tourism and related services which cover the following areas [31]:

- Diving Services
- Health Tourism Services
- Adventure Tourism
- Yacht Harbours
- Bareboat Charters
- Sustainable Tourism
- Accessible Tourism
- Accommodation
- Restaurant
- Event sustainability management systems

International Tourist Arrivals by World Region

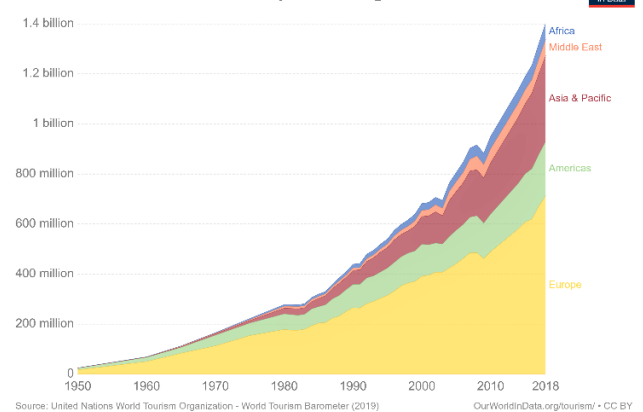


Figure 3: International arrivals by world region [30]

##### EMAS

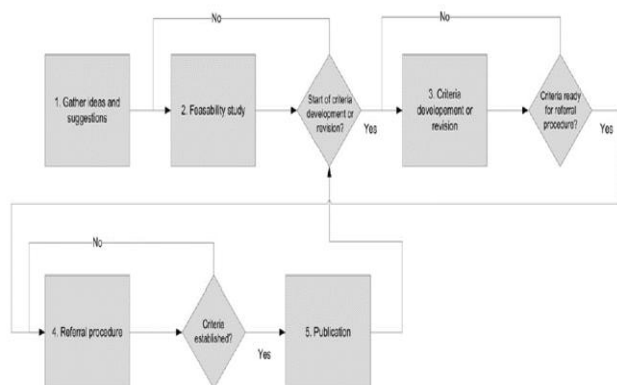
The EU Eco-Management and Audit Scheme (EMAS) is a management instrument developed by the European Commission and is open to every type of organisation (e.g. tour operators, destinations and accommodation facilities). A key element in EMAS Scheme is the environmental statement and report, which provides to stakeholders information on actual environmental performance of verified organisations [31]. EMAS, differently from other EMS standards, an organisation has to manage and improve not only direct environmental aspects, but also "indirect" ones [32].

#### 3.2 Ecolabels

Ecolabels addresses companies that provide services, produce products and / or market products under their own brand names for which specific compliance criteria for fewer impacts on the environment have been established. Ecolabelling schemes enhance transparency and consumer trust in environmental claims so as to help consumers to choose products that are acceptable from an environmental point of view [33]- [34]. In most cases Life-Cycle Assessment (LCA) is a key to eco-labeling schemes [35]. Ecolabels can act as a tool of environmental communication to guest hotels, for its efforts not to harm the environment

[36]- [37].

Generic criteria development process for eco-labelling is given in Fig. 4. [38]



**Figure 4:** Generic criteria development process for ecolabelling [38]

Known ecolabels schemes are

#### EU Ecolabel

EU-Ecolabel promotes environmental excellence in products and services and provides a framework to hotel managers to the implementation of green practices [36] [39]. Receiving EU Ecolabel Tourist Accommodation, hotel is committed to protecting the environment [40]. There are 24 certified hotels in EU and 7 camp sites [41].

#### Green Globe

Green Globe is designed to cover all sectors of the tourism industry [42] and provide standards for the following industry categories [43]:

- Attraction
- Business (Whole Sale / Retail)
- Congress Center, Meeting Venues
- Cruise Ships (River & Ocean)
- Golf Course
- Hotel & Resort
- Meeting & Events
- Organization
- Restaurant
- Spa, Health Center
- Transportation (Mass Transportation, Bus Company, Limousine Service, Car Rental)
- Travel Industry (Tour Operators, Destination Management Company, Meeting & Incentive Industry)

#### Blue Flag

Blue Flag is a voluntary eco-label awarded to beaches, marinas, and sustainable boating tourism operators. Nowadays, has been certified 4573 beaches, marinas and boats in 47 countries [44]. To be awarded a Blue Flag, beaches must meet 33 criteria concerning four categories: environmental education and information, water quality, environmental management, and safety and services; three out of four categories have an environmental focus [45].

#### Green Key

Green Key, is an eco-label for tourism. Interested tourist entrepreneurs must comply with certain ecological requirements. Rewarding the Green Key signal requires that a number of ecological requirements be met. Green Key eco-label awarded to more than 3, 100 hotels and other establishments in 66 countries [46].

Today, there are criteria for:

- hotels
- hostels
- campings
- conference centers

#### Green Restaurant

To be verified restaurants have to be complied with standards in eight categories [47]:

- Water Efficiency
- Waste Reduction and Recycling
- Sustainable Durable Goods & Building Materials
- Sustainable Food
- Energy
- Reusables & Environmentally Preferable Disposables
- Chemical and Pollution Reduction
- Transparency & Education

## 4. Final Remarks

A destination tourism product depends on various attributes and one of these are physical and environmental attributes, such as natural attractions, built attractions, accommodation, restaurants climate, social life etc. [48]. Each one of these components may influence consumer choice when selecting a holiday because they contribute to a destination's attractiveness. EMS and ecolabelling as marketing tools have been addressed mainly to green consumers and reflect the change in social attitudes towards the environment, concerning both businesses and consumers. From an entrepreneurial point of view, this phenomenon creates new business opportunities. However, corporations should choose to perform in a sustainable way not just to enhance their brand name or just to take advantage of this trend, but also to contribute to the economic, social and behavioral environments in which they fit it. It is mandatory that companies understand that the long term preservation of the natural environment is totally linked to their own on-going growth.

## References

- [1] Ecological Tourism in Europe - ETE, "Sustainable Tourism Development in UNESCO Designated Sites in South-Eastern Europe, " *UNESCO*. [Online]. Available: [http://portal.unesco.org/es/files/45338/12417872579Introduction\\_Sustainable\\_Tourism.pdf/Introduction\\_Sustainable\\_Tourism.pdf](http://portal.unesco.org/es/files/45338/12417872579Introduction_Sustainable_Tourism.pdf/Introduction_Sustainable_Tourism.pdf). [Accessed: 17-Feb-2020].
- [2] A. Łapko, A. Panasiuk, R. Strulak-Wójcikiewicz, and M. Landowski, "The State of Air Pollution as a Factor Determining the Assessment of a City's Tourist Attractiveness—Based on the Opinions of Polish

- Respondents, ” *Sustainability*, vol. 12, no. 4, 2020, doi: 10.3390/su12041466.
- [3] V. May, “Tourism, environment and development: Values, sustainability and stewardship, ” *Tourism Management*, vol. 12, no. 2, pp. 112–118, Jun. 1991, doi: 10.1016/0261-5177(91)90065-2.
- [4] T. Mihalič, “Performance of Environmental Resources of a Tourist Destination: Concept and Application, ” *Journal of Travel Research*, vol. 52, no. 5, pp. 614–630, Sep. 2013, doi: 10.1177/0047287513478505.
- [5] S. L. J. Smith, “The tourism product, ” *Annals of Tourism Research*, vol. 21, no. 3, pp. 582–595, Jan. 1994, doi: 10.1016/0160-7383(94)90121-X.
- [6] “Tourism, ” *European Environment Agency*. [Online]. Available: <https://www.eea.europa.eu/soer-2015/europe/tourism>. [Accessed: 18-Feb-2020].
- [7] “UNWTO World Tourism Barometer and Statistical Annex, January 2020, ” *UNWTO World Tourism Barometer (English version)*, vol. 18, no. 1, pp. 1–48, Jan. 2020, doi: 10.18111/wtobarometereng.2020.18.1.1.
- [8] L. B. Soiin, “The Stockholm Declaration on the Human Environment, ” p. 94.
- [9] “United Nations Conference on the Human Environment (Stockholm Conference), ” *United Nations*. [Online]. Available: [https://www.un.org/ga/search/view\\_doc.asp?symbol=A/CONF.48/14/REV.1](https://www.un.org/ga/search/view_doc.asp?symbol=A/CONF.48/14/REV.1). [Accessed: 18-Feb-2020].
- [10] D. Vallero, “Chapter 3 - The Science of Air Pollution, ” in *Fundamentals of Air Pollution (Fifth Edition)*, D. Vallero, Ed. Boston: Academic Press, 2014, pp. 43–81.
- [11] A. Rishabh and J. Tiwari, “The Integration of Quality Management and Environmental Management - A Review, ” *IPEDR*, vol. 75, no. 3, pp. 9–13.
- [12] L. Guo, Y. Xu, G. Liu, and T. Wang, “Understanding Firm Performance on Green Sustainable Practices through Managers’ Ascribed Responsibility and Waste Management: Green Self-Efficacy as Moderator, ” *Sustainability*, vol. 11, no. 18, p. 4976, Jan. 2019, doi: 10.3390/su11184976.
- [13] R. D. Klassen and C. P. McLaughlin, “TQM and Environmental Excellence in Manufacturing, ” *Industrial Management & Data Systems*, vol. 93, no. 6, pp. 14–22, Jan. 1993, doi: 10.1108/02635579310040924.
- [14] M. D. Hanna and W. Rocky Newman, “Operations and environment: an expanded focus for TQM, ” *International Journal of Quality & Reliability Management*, vol. 12, no. 5, pp. 38–53, Jan. 1995, doi: 10.1108/02656719510089984.
- [15] A. Disterheft, S. S. Ferreira da Silva Caeiro, M. R. Ramos, and U. M. de Miranda Azeiteiro, “Environmental Management Systems (EMS) implementation processes and practices in European higher education institutions – Top-down versus participatory approaches, ” *Journal of Cleaner Production*, vol. 31, pp. 80–90, Aug. 2012, doi: 10.1016/j.jclepro.2012.02.034.
- [16] R. 06 US EPA, “Environmental Management Systems (EMS), ” *US EPA*, 05-Nov-2014. [Online]. Available: <https://www.epa.gov/ems>. [Accessed: 18-Feb-2020].
- [17] L. M. S. Campos, “Environmental management systems (EMS) for small companies: a study in Southern Brazil, ” *Journal of Cleaner Production*, vol. 32, pp. 141–148, Sep. 2012, doi: 10.1016/j.jclepro.2012.03.029.
- [18] T. Mihalič, “Environmental management of a tourist destination, ” *Tourism Management*, vol. 21, no. 1, pp. 65–78, Feb. 2000, doi: 10.1016/S0261-5177(99)00096-5.
- [19] F. team, “Best Environmental Management Practice in the Tourism Sector, ” *EU Science Hub - European Commission*, 11-Sep-2013. [Online]. Available: <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/best-environmental-management-practice-tourism-sector>. [Accessed: 18-Feb-2020].
- [20] “COMMISSION DECISION (EU) 2016/ 611 - of 15 April 2016 - on the reference document on best environmental management practice, sector environmental performance indicators and benchmarks of excellence for the tourism sector under Regulation (EC) No 1221 / 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) - (notified under document C(2016) 2137), ” p. 43.
- [21] [21] A. E. Fousteris, E. A. Didaskalou, M.-M. H. Tsogas, and D. A. Georgakellos, “The Environmental Strategy of Businesses as an Option under Recession in Greece, ” *Sustainability*, vol. 10, no. 12, p. 4399, Dec. 2018, doi: 10.3390/su10124399.
- [22] [22] “Sustainable development | UNWTO.” [Online]. Available: <https://www.unwto.org/sustainable-development>. [Accessed: 18-Feb-2020].
- [23] [23] A. Miola and F. Schiltz, “Measuring sustainable development goals performance: How to monitor policy action in the 2030 Agenda implementation?, ” *Ecological Economics*, vol. 164, p. 106373, Oct. 2019, doi: 10.1016/j.ecolecon.2019.106373.
- [24] [24] X. Font, “Environmental certification in tourism and hospitality: progress, process and prospects, ” *Tourism Management*, vol. 23, no. 3, pp. 197–205, Jun. 2002, doi: 10.1016/S0261-5177(01)00084-X.
- [25] [25] World Tourism Organization (UNWTO), Ed., *International Tourism Highlights, 2019 Edition*. World Tourism Organization (UNWTO), 2019.
- [26] [26] W. W. Chan and K. Ho, “Hotels’ environmental management systems (ISO 14001): creative financing strategy, ” *International Journal of Contemporary Hospitality Management*, vol. 18, no. 4, pp. 302–316, Jan. 2006, doi: 10.1108/09596110610665311.
- [27] [27] K. A. Babakri, R. A. Bennett, and M. Franchetti, “Critical factors for implementing ISO 14001 standard in United States industrial companies, ” *Journal of Cleaner Production*, vol. 11, no. 7, pp. 749–752, Nov. 2003, doi: 10.1016/S0959-6526(02)00146-4.
- [28] [28] P. Castka and M. A. Balzarova, “The impact of ISO 9000 and ISO 14000 on standardisation of social responsibility—an inside perspective, ” *International Journal of Production Economics*, vol. 113, no. 1, pp. 74–87, May 2008, doi: 10.1016/j.ijpe.2007.02.048.
- [29] [29] “Tourism-WTTC-Global-Economic-Impact-Trends-2019.pdf, ” *World Travel & Tourism Council’s (WTTC)*. [Online]. Available: <https://www.wttc.org/-/media/files/reports/economic-impact-research/regions-2019/world2019.pdf>. [Accessed: 20-Feb-2020].

- [30] [30] "International Tourist Arrivals by World Region," *Our World in Data*. [Online]. Available: <https://ourworldindata.org/grapher/international-tourist-arrivals-by-world-region>. [Accessed: 20-Feb-2020].
- [31] "EMAS – Environment - European Commission." [Online]. Available: [https://ec.europa.eu/environment/emas/index\\_en.htm](https://ec.europa.eu/environment/emas/index_en.htm). [Accessed: 20-Feb-2020].
- [32] F. Iraldo, F. Testa, and M. Frey, "Is an environmental management system able to influence environmental and competitive performance? The case of the eco-management and audit scheme (EMAS) in the European union," *Journal of Cleaner Production*, vol. 17, no. 16, pp. 1444–1452, Nov. 2009, doi: 10.1016/j.jclepro.2009.05.013.
- [33] J. Thøgersen, P. Haugaard, and A. Olesen, "Consumer responses to ecolabels," *European Journal of Marketing*, vol. 44, no. 11/12, pp. 1787–1810, Jan. 2010, doi: 10.1108/03090561011079882.
- [34] OECD, "Environmental labelling and information schemes." [Online]. Available: <https://www.oecd.org/env/policy-perspectives-environmental-labelling-and-information-schemes.pdf>. [Accessed: 20-Feb-2020].
- [35] K. M. R. Taufique, C. Siwar, B. Talib, F. H. Sarah, and N. Chamhuri, "Synthesis of Constructs for Modeling Consumers' Understanding and Perception of Eco-Labels," *Sustainability*, vol. 6, no. 4, pp. 2176–2200, Apr. 2014, doi: 10.3390/su6042176.
- [36] "The role of environmental practices and communication on guest loyalty: Examining EU-Ecolabel in Portuguese hotels | Elsevier Enhanced Reader." [Online]. Available: <https://reader.elsevier.com/reader/sd/pii/S0959652619325090?token=A276E5AF268C72B3EBF6051B30098AD2676F463CFE0F6F5FF724885399F043596AEA6CB66249515A82210E720FCDC7FB>. [Accessed: 22-Feb-2020].
- [37] Y. Yılmaz, E. Üngüren, and Y. Y. Kaçmaz, "Determination of Managers' Attitudes Towards Eco-Labeling Applied in the Context of Sustainable Tourism and Evaluation of the Effects of Eco-Labeling on Accommodation Enterprises," *Sustainability*, vol. 11, no. 18, p. 5069, Jan. 2019, doi: 10.3390/su11185069.
- [38] C. Bratt, S. Hallstedt, K.-H. Robert, G. Broman, and J. Oldmark, "Assessment of eco-labelling criteria development from a strategic sustainability perspective," *Journal of Cleaner Production*, vol. 19, no. 14, pp. 1631–1638, Sep. 2011, doi: 10.1016/j.jclepro.2011.05.012.
- [39] G. L. Baldo, G. Cesarei, S. Ministrini, and L. Sordi, "6 - The EU Ecolabel scheme and its application to construction and building materials," in *Eco-efficient Construction and Building Materials*, F. Pacheco-Torgal, L. F. Cabeza, J. Labrincha, and A. de Magalhães, Eds. Woodhead Publishing, 2014, pp. 98–124.
- [40] "EU Ecolabel - Environment - European Commission." [Online]. Available: [https://ec.europa.eu/environment/ecolabel/index\\_en.htm](https://ec.europa.eu/environment/ecolabel/index_en.htm). [Accessed: 23-Feb-2020].
- [41] "EU Ecolabel: EU Ecolabel Hotels and campsites - European Commission." [Online]. Available: <http://ec.europa.eu/ecat/hotels-campsites/en>. [Accessed: 23-Feb-2020].
- [42] R. Harris, P. Williams, and T. Griffin, *Sustainable Tourism*. Routledge, 2012.
- [43] "Green Globe Certification," *Green Globe*. [Online]. Available: <https://greenglobe.com/green-globe-certification/>. [Accessed: 23-Feb-2020].
- [44] "Blue Flag," *Blue Flag*. [Online]. Available: <https://www.blueflag.global>. [Accessed: 23-Feb-2020].
- [45] S. Zielinski and C. M. Botero, "Myths, misconceptions and the true value of Blue Flag," *Ocean & Coastal Management*, vol. 174, pp. 15–24, May 2019, doi: 10.1016/j.ocecoaman.2019.03.012.
- [46] "Green Key," *Green Key*. [Online]. Available: <https://www.greenkey.global>. [Accessed: 23-Feb-2020].
- [47] "Green Restaurant Association Certification Standards," *Green Restaurant*. [Online]. Available: <https://www.dinegreen.com/certification-standards>. [Accessed: 24-Feb-2020].
- [48] A. M. Benur and B. Bramwell, "Tourism product development and product diversification in destinations," *Tourism Management*, vol. 50, pp. 213–224, Oct. 2015, doi: 10.1016/j.tourman.2015.02.005.

## Author Profile

**Dr. Christina Milioti** is an adjunct assistant professor at the Department of Civil Engineering of the University of West Attica. She holds a Diploma in Civil Engineering from the National Technical University of Athens (NTUA), a MSc degree in Mathematics of Production and Finance from the Athens University of Economics and Business and a PhD from NTUA in the research area of transport demand analysis. Her areas of research and expertise involve econometric transport modeling, travel behavior and statistics, transport economics, traffic and transport surveys and supply chain management. Since 2007 she works as a researcher in the Department of Transportation Planning and Engineering of NTUA and has participated in various research projects, focusing on public transportation operations, urban mobility, congestion pricing and logistics. Moreover, she has published more than 40 papers in scientific journals and peer-reviewed academic conferences.

**Dr. Antreas Fousteris** holds a Ph.D from the University of Piraeus-Greece, Department of Business Administration and a Master's Degree in Industrial and Management Systems with specialization in Energy Management and Environment, from Department of Chemical Engineering, National Technical University of Athens and Department of Industrial Management and Technology, University of Piraeus, and a Master's Degree in Business Administration (Executive-MBA) from Department of Business Administration, University of Piraeus. His research interests include Ecological Economics, Energy Economics, Environmental Sustainability, Environmental Strategy, Innovation, Economic Growth, Microeconomics and Macroeconomics.

**Dr. Eleni Didaskalou** is an Assistant Professor at the University of Piraeus, Department of Business Administration. Her research interests include Technology Systems, Energy Management, Environmental Management, Entrepreneurship and Sustainable Development, Sustainable Tourism Development. She has published her research in journals such as *Sustainability*, *Energies*, *Urban Science*, *Anatolia: An International Journal of Tourism and Hospitality Research*. She is a reviewer in scientific international Journals.

**Dr. Dimitrios Georgakellos** is a Professor in the Department of Business Administration at the University of Piraeus. His current academic and research interests focus on Environmental Economics and Management, Technology and Innovation Management, Business Plans Preparation & Entrepreneurship and Energy Management. Some of his work has been published in: Journal of Cleaner Production, International Journal of Innovation and Technology Management, Management of Environmental Quality: An International Journal, Technological Forecasting and Social Change, Energy Economics, etc. His work has been cited in many scientific papers etc. He is/has been reviewer in many scientific international Journals and Conference Proceedings.