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**Figure 1: View of the Orthodox Academy of Crete (foreground)**

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Andreas Matzarakis, Chris de Freitas and Daniel Scott
November 2004

# THE DEVELOPMENT PROSPECTS FOR GREEK HEALTH TOURISM AND THE ROLE OF THE BIOCLIMATE REGIME IN GREECE

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## ABSTRACT

The tourism sector has experienced significant growth in recent years, which is expected to continue into the future. In attempting to control mass tourism so as to preserve the environment upon which tourism thrives, and to minimize tourism's negative impact on the environment, new forms of tourism have been developed, e.g. health tourism, and cultural tourism. The country's tourism advantages are enriched by introducing such alternative forms of tourism to the Greek tourism profile.

The differentiation and enrichment of the composition of the Greek health tourism product can be a comparative advantage in relation to competitors of neighbouring countries. Also, the climate of Greece is a natural factor that contributes to the development of a successive and competitive product. The analysis of existing climate and bioclimate material from point stations and the generated maps by GIS and other geo-statistical methods provides relevant results. The obtained and calculated information can be helpful in the quantification of climatic and bioclimatic conditions for application in health and wellness tourism destinations in Greece

***KEYWORDS:*** *Health tourism, Bioclimate regime, Greece*

## INTRODUCTION

Health tourism is not a new phenomenon. People have used thermal and mineral waters for bathing and their health for many thousands of years. In Greek mythology miraculous powers of healing were attributed to many springs, and by the fifth century B.C. this belief in medical waters was well incorporated in the practice at the "Asclepeia" which were built near mineral based thermal springs (1). During the Roman period water was used for treatment, fitness and fun. After the fall of the Roman Empire many of the public baths stopped working. The gradual evolution of spas in Europe

began in the 19th century. In Greece the evolution of hydrotherapy stops with the end of Byzantine times. The exploitation of the spas started again in the beginning of the 20th century. The first balnear stations which were developed were those of Ipati, Aidipsos, Kythnos, Kyllini, Loutraki, Kaiafas. Many spas, because of their proximity to the sea, became great, fashionable resorts which attracted not only those who 'take the waters', but also many tourists. In recent years the market for health and wellness tourism has become more sophisticated, as different people are attracted to different forms of tourism for different reasons. However segmented, such tourism can contribute towards the diversification and enrichment of the Greek tourism product, and to the reduction of seasonal demand.

This article aims to discuss the concept of the Greek health tourism product and to identify key components for success. Also, as climate is one of the top factors that tourists consider when choosing a tourism destination, the climatic and bioclimatic characteristics of Greece are examined (Fig. 1).

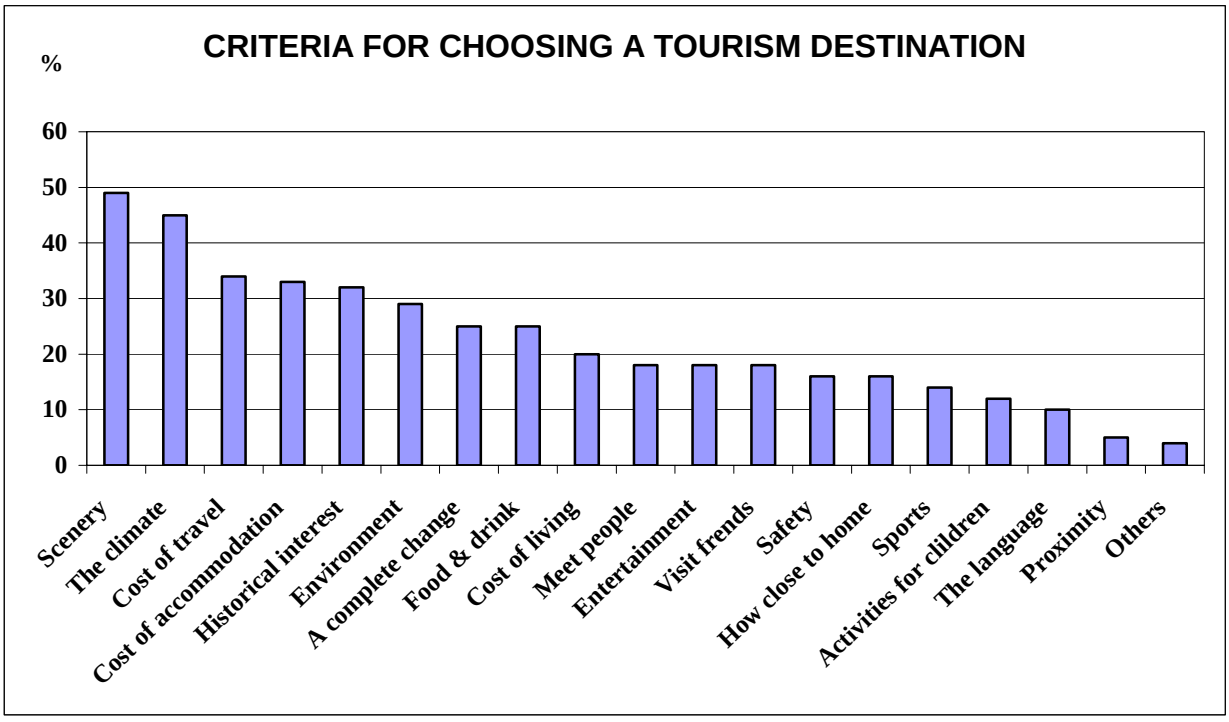


**Figure1: From Eurobarometer Survey: Europeans on holiday 1997-1998**

## HEALTH TOURISM PRODUCT

We define health tourism as the attempt on the part of a tourist facility or destination to attract tourists by deliberately promoting health-care services and facilities, in addition to its regular tourist amenities. These health-care services may include medical exams, hydrotherapy, special diet, etc (2). Based on this explanation, there are many countries with health-care tourism facilities, such as Switzerland, Germany, Austria, Hungary, Britain, and the U.S.A. (3) (4). Many health tourism

facilities have been developed around mineral/thermal springs and health spas (5). Today, the health tourism market in Europe spans two different segments –those visiting spas and health resorts for primarily medical reasons, and those for purposes more akin to traditional tourism (6).

The factors that most influence a consumer's choice of a spa are: a) ambience of the destination, b) location and access, c) spa programs and facilities, d) characteristics of the visitors to this destination (e.g. average age of the visitors).

Health tourism facilities may function 12 months a year, giving services such as: medical examinations, hydrotherapy (e.g. bathing, inhalations, and nose rinsings), aquatics, physiotherapy, exercise or movement, natural therapeutics agents (muds), beauty care, etc. It should be pointed out that the presence of auxiliary facilities are now having a major impact on the preference of a tourist destination, and as a result they are very important elements for the future development of spa/health resorts (7) (8). Treatment facilities can be used not only for spa treatments and cures but also for programs that refresh and revitalize the body and mind. Those programs refer to: reducing weight, quitting smoking and drinking, eliminating or reducing stress, skin treatment, muscle development, etc. If there are constraints in creating and operating a resort that will provide all services (treatment facilities, accommodation facilities, ancillary facilities) it is preferable to operate a hydrotherapy center.

**Table 1: National Mineral Springs/Spas, Greece**

| Name of mineral spring | Department | Kind of mineral spring |
|---|---|---|
| Edipsos | Evia | Saline water spring |
| Elefteres | Kavala | Alcaline saline water spring |
| Ikaria | Samos | Radioactive super warm spring |
| Kaiafas | Ilia | Sulphurated hydrogen saline water spring |
| Kamena Vourla | Fthiotida | Radioactive – saline water spring |
| Kythnos | Kyklades | Chalybeate acid water spring |
| Kyllini | Ilia | Sulphured hydrogen saline water |
| Lagadas | Thesaloniki | Akratothermi |
| Loutraki | Korinthia | Slightly warm – saline water, hypotonic |
| Methana | Attiki | Sulphureous brine water spring, warm |
| Nigrita | Serres | Alcaline carbonated water spring |
| Platystomo | Fthiotida | Alcaline sulphureous spring |
| Smokovo | Karditsa | Alcaline – sulphureous spring |
| Thermopyles | Fthiotida | Sulphurated hydrogen saline water spring, warm |
| Vouliagmeni | Attiki | Saline water spring, hypertonic |
| Ypati | Fthiotida | Sulphurated hydrogen saline water spring |

The nature of the services provided by spas/health resorts are not only defined by the chemical characteristics of water, but also by the geographical position of the springs. The chemical characteristics are closely related to the specific treatment offered, whereas the geographical position is related to the characteristics of the auxiliary facilities, which should help in the creation of a special identity for the resort.

In Greece the development possibilities for health tourism are based on different types of health centers providing a range of services, such as thalassotherapy centers, or spa centers. There are already two thalassotherapy centers operating in Kriti, and another two are under construction in other regions. The 16 spa centers operating in Mineral Water Sources of National Importance (Table 1) are used annually by 90.000 people and provide 1.300.000 curative baths and other cures. There are also 40 spa centers operating in Mineral Water Sources of Local Importance (Source: NSSG).

**Table 2: Spas of tourist importance, Greece. Individuals using the springs, and bathing or other hydrotherapy effected within 1978 and 1997**

| Year | Individuals using the springs | Bathings etc. effected |
|---|---|---|
| 1978 | 112858 | 1868154 |
| 1979 | 116117 | 2056993 |
| 1980 | 116376 | 2018432 |
| 1981 | 109400 | 1779103 |
| 1982 | 115227 | 1873877 |
| 1983 | 116063 | 1752649 |
| 1984 | 124654 | 1877316 |
| 1985 | 134890 | 1872369 |
| 1986 | 118449 | 1781155 |
| 1987 | 104247 | 1555694 |
| 1988 | 109912 | 1485751 |
| 1989 | 114787 | 1555214 |
| 1990 | 111306 | 1470730 |
| 1991 | 106161 | 1440780 |
| 1992 | 109164 | 1395731 |
| 1993 | 113320 | 1438110 |
| 1994 | 109631 | 1477159 |
| 1995 | 101676 | 1398392 |
| 1996 | 95690 | 1276700 |
| 1997 | 92635 | 1303446 |

Statistical data on mineral springs are based on individuals using the springs, bathings, or other hydrotherapy for the period 1978 to 1997. Analysis of the data (Figure 2 and 3) indicates a trend of decline, and thus a need to tap a new receptive market. To achieve this requires improvements in facilities, equipment and a need to develop ancillary services that could appeal to other tourists than those simply seeking a cure for physical disabilities. The development of health tourism contributes to the improvement and competitiveness of Greek tourism, because it can tap the needs of new sectors of the tourism market.

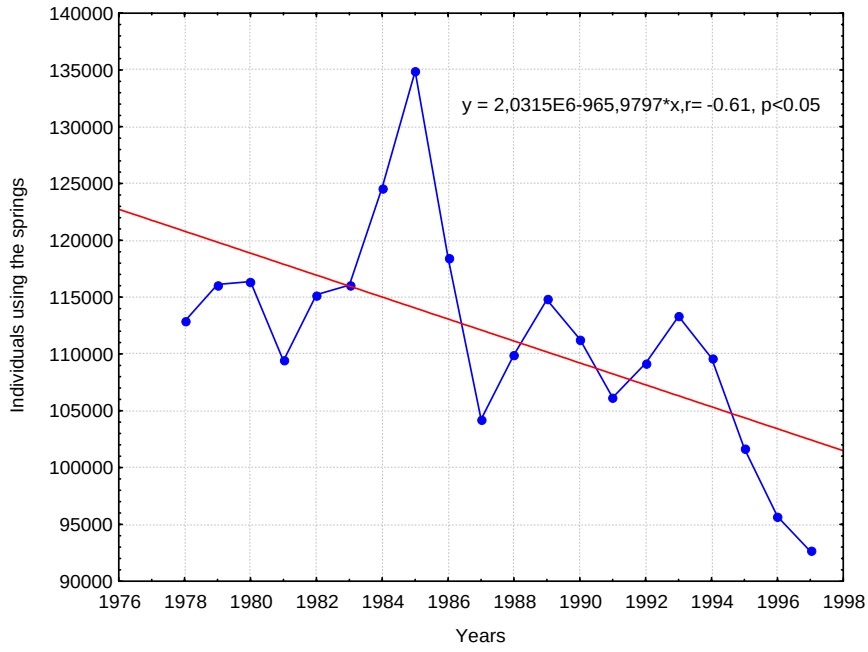


**Figure 2: Number of Individuals, who used the springs, for the period 1978 to 1997**

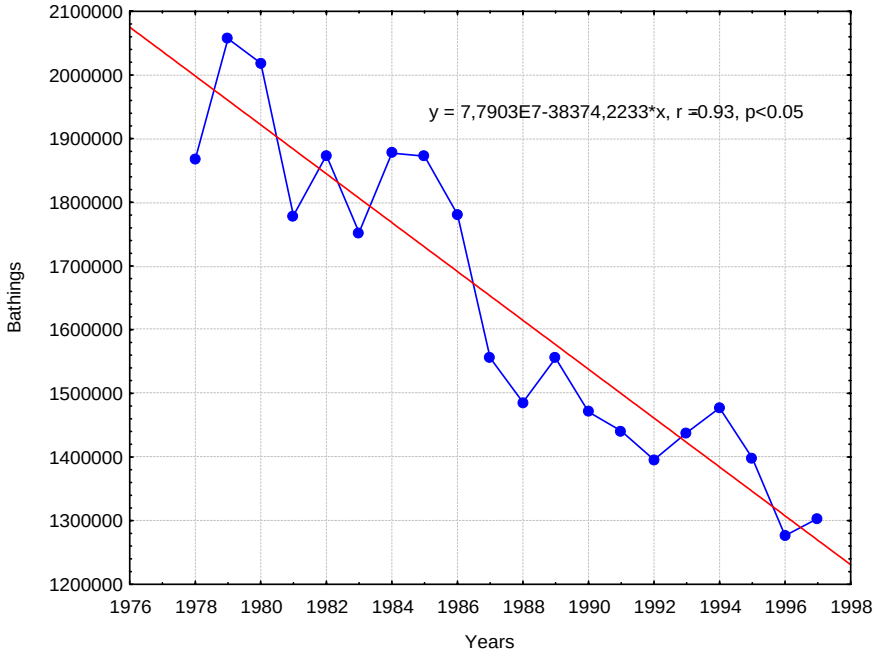


**Figure 3: Bathings or other hydrotherapy for the period to 1978 to 1997**

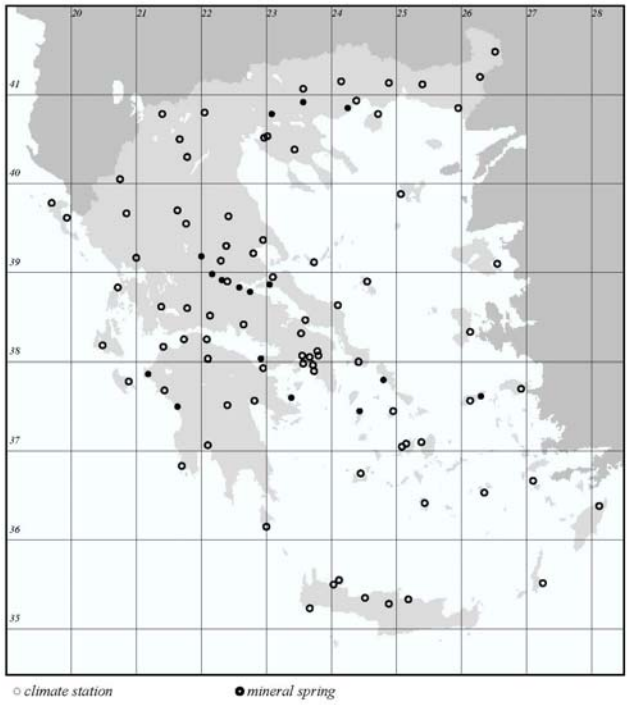


**Figure 4: Geographical distribution of climate stations of the Greek Weather Service and mineral springs**

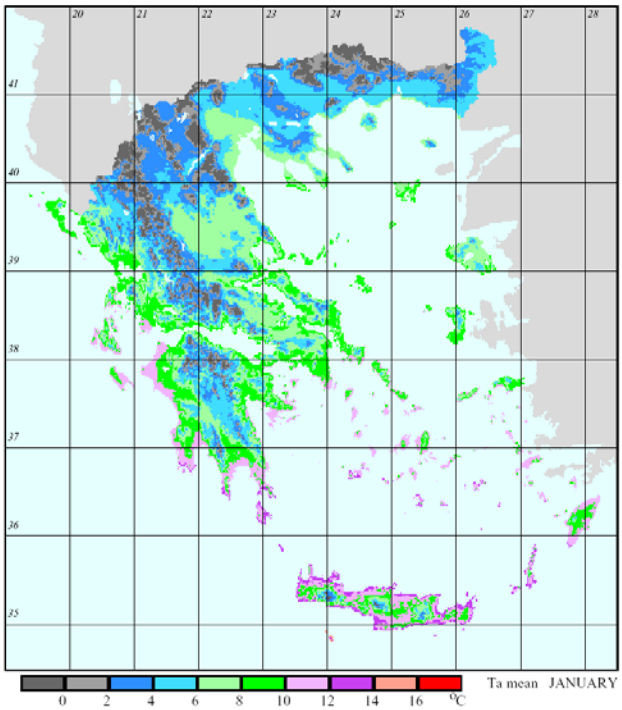


**Figure 5: Geographical distribution of the monthly mean air temperature in January in Greece**

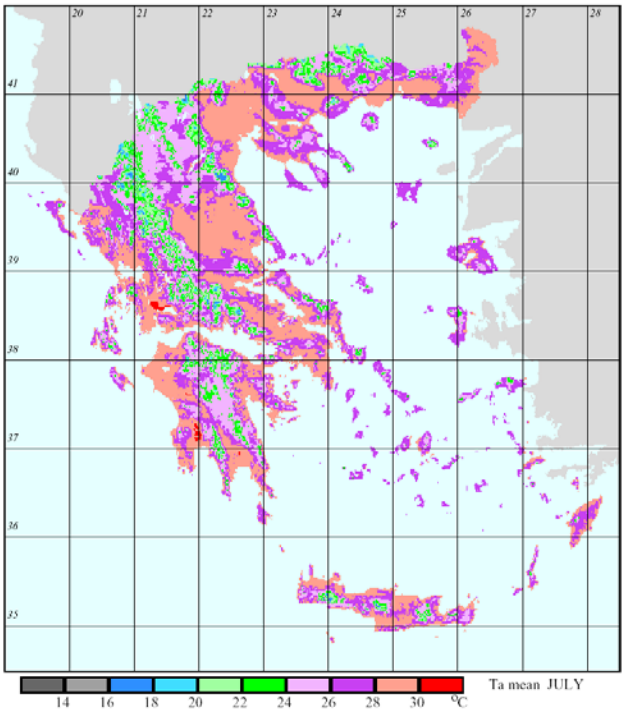


**Figure 6: Geographical distribution of the monthly mean air temperature in July in Greece**

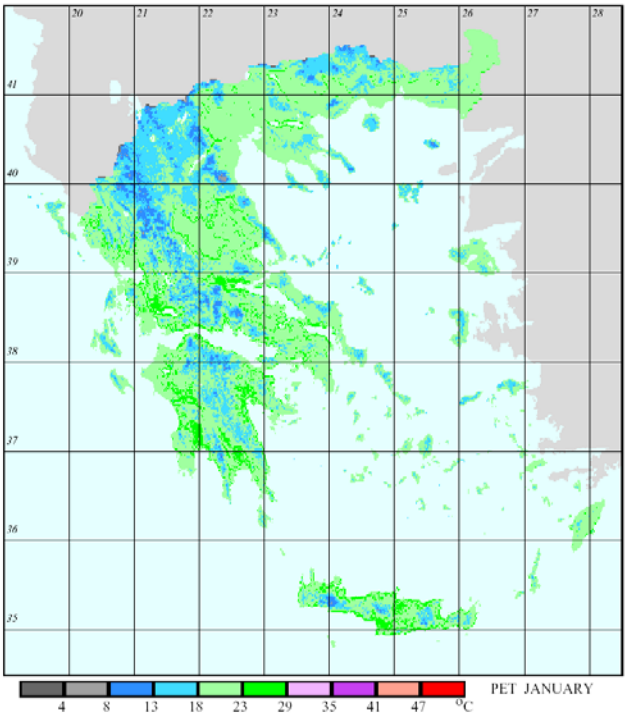


**Figure 7: Geographical distribution of the monthly mean physiologically equivalent temperature in January in Greece**

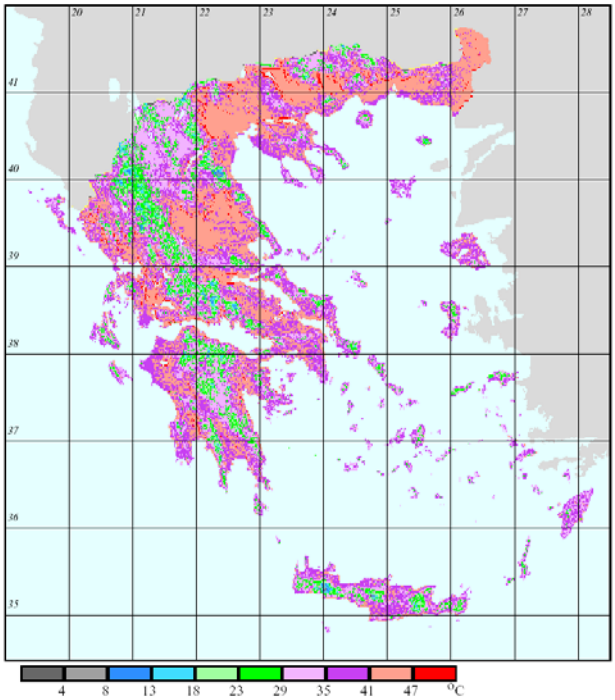


**Figure 8: Geographical distribution of the monthly physiologically equivalent temperature in July in Greece**

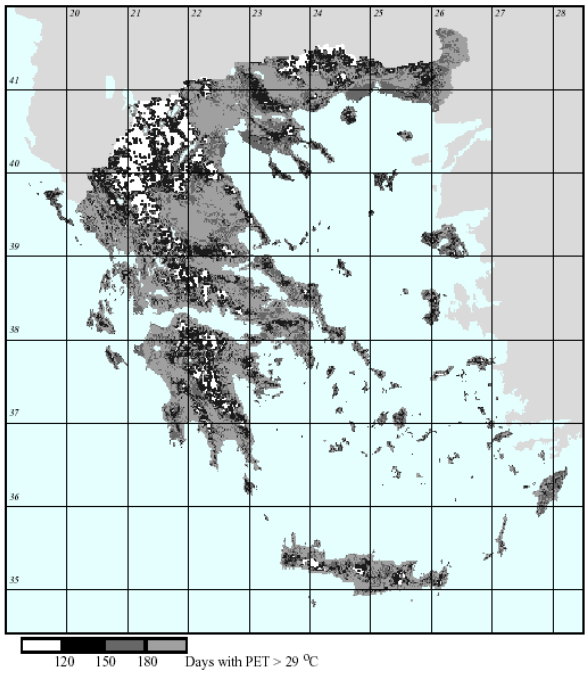


**Figure 9: Geographical distribution of the frequency of days with a Physiologically equivalent temperature over 29 ° C in Greece**

A major aim of this study was how to add biometeorological information to the classification of health and spa resorts for Greece. First we examined the possibility of relevant data by checking the health and spa resorts proximity to synoptical stations, or stations from the Greek climatic network (Fig. 4). Unfortunately, the number of stations in the Greek climatic network are very limited. A gap of information also exists in the spatial realm. For this paper it has been attempted to take into consideration existing climatic and bioclimatic maps (9, 10, 11). In Fig. 5 and 6 are shown the mean monthly values of air temperature for January and July. Another possibility is the distribution of human-biometeorological information i.e. the Physiological Equivalent Temperature for January (Fig 7) and July (Fig 8), which represents the conditions for 12 UTC for the whole area of Greece. Additionally, Figure 9 shows the geographical distribution of the frequency of days with a PET value higher than 29 °C, which represents thermal perception in the level of moderate to high heat stress.

With the existing information it is possible to describe and quantify climatic and bioclimatic conditions for Greek spas and health resorts without existing measured data from networks. The differentiation and enrichment of the Greek health tourism product is associated with the offer of health-care treatments in combination with services which aim for the mental prosperity of their

visitors. The good climatic conditions of Greece are a comparative advantage in relation to competitors of neighbouring countries.

## CONCLUSIONS

Alternative forms of tourism are flourishing as more and more people are interested not only in trying out new places but also in discovering different forms of tourism. They are also placing greater emphasis on quality products, more environmentally conscious forms of tourism and on shorter but more frequent trips. One way to meet these new challenges is to consider developing the more specialised, and increasingly popular, tourism of health and wellness tourism.

This paper has attempted to provide an overview of the Greek spa tourism product. The climatic and bioclimatic conditions of Greece were also examined, as both have an important effect on the development of spa tourism. Whatever the motivation to go to a spa and health resort almost everybody is looking for a personal experience. If the holiday climate is not satisfactory it is not possible to have the holiday replaced, and thus climate is a crucial variable, regardless of the quality of the product. The good climatic and bioclimatic conditions of Greece contribute to satisfying the needs of visitors.

Furthermore, an important method for spa and health resorts to gain more clients is not only by diversify their product, but also by creating a new image, as most believe that spa and health resorts are a place for those with various ailments. This image is a critical element which influences individual's not to visit a place with hot/mineral springs. Also, it is important to point out that spa/health resorts must be easily accessible through normal means (e.g. airplane, automobile, etc.).

The development of health tourism contributes to the improvement and competitiveness of Greek tourism, as it bears in mind the sustainable development of each area, taps the needs of new parts of the tourism market, and promotes the proper use of natural, and cultural resources. The goal of a competitive health tourism product requires the study of trends, and the identification of the characteristics of visitors. Also, study is needed on what the future uses of springs will be, and the potential of natural supplies combined with the offering of health treatments.

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