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REVITALISING THE HEALING TRADITION - HEALTH TOURISM POTENTIAL OF THERMAL SPRINGS IN THE WESTERN CAPE

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DECLARATION

I, Mark Simon Boekstein, declare that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed **Date**

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ABSTRACT

Revitalising the healing tradition – health tourism potential of thermal springs in the Western Cape

There are 11 thermal springs in the Western Cape, seven of which have been developed into eight resorts. Only one of these resorts has a focus on health and wellness, with appropriate facilities, with the others functioning primarily as family leisure resorts. Internationally there has been a move by traditional thermal spring resorts to begin offering a combination of health (medical and wellness) services in combination with leisure activities. In light of current international trends, as well as perceived domestic needs, it appears that the Western Cape's thermal spring resources are not being optimally utilized as tourist attractions, neither for domestic nor for international tourist markets.

This research sets out to evaluate the potential for health tourism development of thermal springs in the Western Cape. It analyses relevant aspects of both the supply and demand sides of thermal spring tourism in the Western Cape. A database is compiled of thermal spring resorts and undeveloped thermal springs in the Western Cape, which includes facilities and services, and relative locations with respect to tourist attractions and tourism routes. The mineral and radon gas contents of the respective thermal waters are measured and discussed in relation to known medicinal properties.

A questionnaire-based survey was undertaken, involving 383 respondents at six resorts, and activity-based market segmentation was carried out using k-means cluster analysis. A four-segment user profile (typology) of current visitors, based on activity preferences, was compiled. It was found that there is considerable potential for the development of thermal spring health (medical and wellness) tourism products in the Western Cape, based on available resources. A framework for thermal spring health tourism product development in the Western Cape is proposed, and recommendations are made for future development and marketing. Key recommendations include the development of balneological treatments, and radon therapies, at certain resorts, and investigating of the availability of local resources that could be incorporated into medical or wellness tourism products.

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GLOSSARY

Balneotherapy
Balneotherapy can simply be defined as "the therapeutic use of mineral and thermal waters" (Karagülle, 2009: 1). Altman (2000: 18) provides a more detailed definition, describing balneotherapy as "a natural approach to health and healing that uses hot spring water, gases, mud and climatic factors as therapeutic elements".

Health tourism
There are many definitions of health tourism. Mary Tabacchi (quoted in Ross, 2001: 1) sees it as "any kind of travel to make yourself or a member of your family healthier", while Goodrich (1994: 228) defines health tourism as "the attempt on the part of a tourist facility or destination to attract tourists by deliberately promoting its health-care services and facilities, in addition to its regular tourist amenities".

Market segmentation
Market segmentation is the classification of heterogeneous customers with different needs, characteristics and behaviour patterns, into homogeneous groups, called segments (Bennett, 2000).

Medical tourism
Medical tourism involves people who "travel to a place to undergo treatment for a disease, ailment or condition, and who are seeking lower cost of care, better access to care, or different care than what they could receive at home" (Global Spa Summit, 2011: 114). It is "a niche market that caters for patients who seek medical operations packaged with touring and travel experiences" (George, 2004: 239).

New age treatments
Many of the more esoteric aspects of wellness are sometimes described as 'new age'. The term is closely related to what Smith & Puczkó (2009: 50) refer to as 'non-religious spirituality'. Typical new age activities include meditation, massage, acupuncture, crystal healing, iridology, reflexology, yoga and aromatherapy, all part of what is often referred to as 'holistic health'.

Spa
The European Spa Association (ESPA) defines a spa as "a mineral spring or place or resort where such a spring is found" (Smith & Jenner, 2000: 42). However, the definition has been broadened by the American-based International Spa Association (ISPA), where a spa is defined as "a place where active and sustained use of natural therapeutic agents and health-giving elements are applied within a hospitable environment over a period of time" (Smith & Jenner, 2000: 42). Today almost any service provider with some kind of health-related services can and does call itself a spa (Smith & Puczkó, 2009).

Taking the waters
The centuries-old act of bathing, soaking, or ingesting mineral-rich spring or seawater to cure a broad range of ailments, such as arthritis, rheumatism, and various aches and pains (Efrurt-Cooper & cooper, 2009).

Thermalism
The therapeutic use of hot-water springs, similar to balneotherapy.

Thermal spring/hot spring
A thermal spring is a naturally occurring spring with a water temperature of at least 25°C (Kent, 1952), although some authors, such as. Petraccia *et al*. (2006) and Harris (2010) believe that water warmer than 20°C should be considered to be thermal.

Tourist typology
A tourist typology is the grouping of tourists together on the basis of their preferences for particular vacation experiences in terms of travel motivations and/or activities (Swarbrooke & Horner, 1999).

Wellness tourism
Wellness tourism involves travelling in the pursuit of wellness. Loverseed (1998: 48) defines wellness as "an emphasis on preventative health, the importance of a balanced lifestyle, adequate rest and relaxation, as well as physical, mental and emotional wellbeing". Wellness involves helping the healthy to stay healthy, both physically and mentally (Ross, 2001). The growing wellness industry offers individuals the chance to experience a wide range of activities which claim to balance body, mind and soul (Smith & Puczkó, 2009).

CHAPTER 1

INTRODUCTION AND CONTEXT OF THE STUDY

"South Africa has in its medicinal springs a potential national asset which is capable of considerable development" (Rindl, 1936: 7).

1.1 Introduction

People have used thermal mineral water since ancient times to cure ailments such as rheumatism, skin infections and poor digestion (Goodrich, 1994). Travel to thermal springs for the sake of health and healing can be traced at least as far back as the ancient Greeks and Romans, with the earliest forms of tourism based on apparent curative powers of mineral waters. The Romans laid great stress both on the therapeutic and social value of thermal springs, which they called *thermae*. Many of the famous European baths, such as Aix-les-Bains and Vichy in France, Aachen and Baden-Baden in Germany, Bath in England and Bursa in Turkey, were developed by the Romans (Towner, 1996).

South Africa has some 87 documented thermal springs (Tshibalo, Olivier & Venter, 2010), although only about one-third of these have been developed into resorts of various sizes. There are 11 thermal springs in the Western Cape, with eight thermal spring resorts (two of these resorts use the same thermal water source), and four thermal springs that are currently not open to the public. Most of South Africa's thermal springs, particularly those in the Western Cape, have been used at some time in the past for medicinal purposes, both by European settlers after they arrived in the 17th century, and by indigenous tribes before them (Booyens, 1981). While the Dutch settlers arrived with a well-developed spa culture, cultivated in the famous European spa resorts, such as Baden Baden in Germany and Spa in Belgium, it was the indigenous people who led them to springs that they had been using for centuries as places of healing (Booyens, 1981)2. The earliest holiday destinations in South Africa were developed around thermal springs, and include Caledon and Montagu in the Western Cape, Aliwal North in the Eastern Cape, Warmbaths (Bela Bela) in Limpopo and Badplaas in Mpumalanga.

Since the 1980s there have been significant changes in the thermal spring/mineral spa tourism product, with an initial decline in demand for the medically-oriented services offered by

traditional thermal spas, and an increase in demand for 'wellness' facilities and experiences, focusing on a healthy lifestyle, as well as fitness and relaxation (Bell & Vazquez-Illa, 1996). At the same time there is also a growing recognition of the benefits of preventative medicine, which now includes a revival of the tradition of 'taking the waters' as an antidote to the stresses of urban living (Gilbert & Van de Weert, 1991; English Tourism Council, 2002). There would thus seem to be a need for thermal spring resorts to position, or reposition, themselves in line with contemporary trends.

Eight different types of 'medicinal' thermal waters have been distinguished in South Africa, three of which occur in the Western Cape, each of which has specific therapeutic uses (Kent, 1952), and stories abound of amazing 'cures' that have taken place over the years (Proctor, 1948; Booyens, 1981). In the words of Wilmot (1914: 23), "It is quite unnecessary to go to Baden-Baden or Carlsbad when we possess waters superior in efficacy".

In the light of rapidly increasing demand for healthy holidays in major tourist generating countries (Smith & Puczkó, 2009), developing countries, particularly those in Africa, should develop their thermal spring resources as combined leisure, and health and wellness resorts. The combination of thermal water with a good climate, spectacular scenery, abundant wildlife and interesting culture could result in unique and very attractive tourism products. Countries such as New Zealand, Hungary and Japan have developed their thermal spring resources to the extent that thermal spring tourism now plays a major role in attracting international and domestic tourists (Erfurt-Cooper & Cooper, 2009), and some countries, including Turkey, Argentina and Chile, are now prioritizing thermal spring development in their strategic tourism development plans.

1.2 Thermal springs in the Western Cape

There are eleven thermal springs in the Western Cape, including both developed and undeveloped springs. Currently there are eight thermal spring resorts in the province, namely Caledon Casino, Hotel & Spa, Goudini Spa (near Worcester), Avalon Springs (Montagu), Baden Klub (Montagu), Warmwaterberg Spa (near Barrydale), Calitzdorp Spa, The Baths (near Citrusdal) and Uhuru Guest Farm, recently developed adjacent to Calitzdorp Spa, utilizing the same water source. Caledon has a sophisticated health spa, offering a wide range of wellness and beauty treatments, while a more limited range of beauty treatments is available at Avalon Springs and Goudini Spa. Medical treatments are not offered at any of the

Western Cape's thermal spring resorts. These resorts are all year-round destinations, and are generally fully-booked during school holidays and long weekends. Most of them offer lower rates for mid-week and multi-day stays during off-peak periods, and are thus popular among retired people.

Of the undeveloped springs, Toorwater, near Uniondale, currently has no facilities or services, not even a swimming pool, but campers are slowly starting to return. Brandvlei, near Rawsonville, is situated on property belonging to the Department of Correctional Services, and has facilities for picnics, but not for bathing. A shopping mall has been built on the site of the warm spring in Malmesbury, but the water can still be accessed, although there are no bathing facilities. The pools at De Kelders are also not open to the public at present, but can be visited with the permission of the owner.

1.3 Thermal spring water

Thermal water can originate from natural groundwater (meteoric water), rain or lake water (seepage and replenishment), infiltrated water (seepage), artesian water (confined in an aquifer and rising under pressure through artificial boreholes), water trapped in sediments (connate water), water introduced by magmatic processes (juvenile water), or water re-injected into the ground (Erfurt-Cooper & Cooper, 2009). A spring is defined as "a natural flow of water from the ground, which can occur when geologic, hydrologic or human forces cut into underground layers of soil and rock where water is circulating, thus allowing water to rise to surface under pressure" (Erfurt-Cooper & Cooper, 2009: 131). The water is heated either as a result of direct volcanic activity, or by the geothermal temperature gradient as it passes through fractures and fissures in subterranean rock formations, resulting in pressure build-up that heats the water as it passes (Erfurt-Cooper & Cooper, 2009).

All of South Africa's thermal springs are of meteoric origin, and are associated with crustal faulting, and occur mainly in areas with high rainfall (Tshibalo *et al*., 2010). South Africa is relatively well-supplied with thermal springs for a non-volcanic country. There are no specific thermal regions, with springs occurring sporadically throughout the country (Kent, 1949). In countries such as Hungary, Argentina and Uruguay there is also considerable commercial extraction of thermal water from groundwater aquifers that were identified during earlier oil exploration where deep boreholes were drilled, and health and wellness facilities, as well as

recreational and leisure resources have been established, contributing considerably to the respective local economies (Erfurt-Cooper & Cooper, 2009).

In most countries thermal water is simply categorized by temperature, a common categorization being cold (<25°C), tepid (25°C-34°C), warm (35°C-42°C) and hot (>42°C) (Erfurt-Cooper & Cooper, 2009). It is largely a matter of opinion where the dividing line should be drawn between thermal and non-thermal water. Petraccia, Liberati, Masciullo, Grassi, & Fraioli (2006) classify mineral/medicinal/healing water as cold (up to 20°C), or thermal (higher than 20°C). Ghersetich, Brazini, Hercogova, & Lotti (2001) classify 'mineral' water as cold (less than 20°C), hypothermal (20°C-30°C), thermal (30°-40°C) and hyperthermal (more than 40°C), while Harris (2010) remarks that in order to be classified as thermal the water temperature should be at least 20°C. Thermal waters may be acidic (pH <7.0), neutral (pH = 7.0) or alkaline (pH >7.0).

Some countries, such as Japan, Taiwan, Korea, Germany, France and Italy, have specific legislation to control appropriate use of natural thermal springs. These laws also stipulate the temperature and mineral content necessary to be classified as a natural thermal spring that could be used for medicinal purposes (Erfurt-Cooper & Cooper, 2009). Minerals are chemical elements or compounds that occur naturally in the crust of the earth, from where they find their way into circulating groundwater (Erfurt-Cooper & Cooper, 2009). The concentration of minerals and trace elements in thermal water is directly determined by the composition of the subsurface rock environment through which it passes. Tshibalo *et al*. (2010) point out that since the chemical composition of thermal springs in South Africa is determined by the geochemistry of the strata from which they arise, this leads to an interesting anomaly, where two adjacent springs may differ significantly with regard to their thermal and chemical properties.

1.4 Balneotherapy

The study of the therapeutic effects of naturally occurring thermal and mineral water is known as balneology. Balneotherapy, the use of balneology in medical treatments, is defined as "a natural approach to health and healing that uses hot spring water, gases, mud and climatic factors as therapeutic elements" (Altman, 2000: 180). Throughout the ages interest in the use of thermal water in medicine has fluctuated from century to century and from country to country. The medical world has viewed it with differing opinions, from very enthusiastic to

extremely critical, and from beneficial to harmful (Van Tubergen & Van der Linden, 2002). Today, however, thermal water (spa) therapy is receiving renewed attention from many medical specialities and health tourists, and is undergoing a revival.

Different types of water have different therapeutic effects, depending on the content of elements such as bicarbonates, sulphur, sulphates, chlorides, radon, iron, calcium, magnesium, potassium, lithium, arsenic and silica (Altman, 2000; Košić *et al*., 2010). Waters used in balneotherapy are classified according to chemical content and known balneological (healing) properties, although a number of different classifications exist (Kristmannsdóttir & Björnsson 2003; Petraccia *et al*., 2006). While 'taking the waters' is one of the oldest forms of medical treatment, it has, however, always been difficult to establish an exact correlation between chemical composition and balneological, or healing, properties of thermal water.

1.5 Thermal spring tourism and links to leisure and recreation

Traditional definitions of tourists and tourism commonly explain a 'tourist' as "a person undertaking a tour, a circular trip that is usually made for business, pleasure or education, at the end of which one returns to the starting point, normally the home" (Williams, 2009: 5), and 'tourism' is seen as "a composite concept involving not just the temporary movement of people to destinations that are removed from their normal place of residence, but in addition, the organization and conduct of their activities and of the facilities and services that are necessary for meeting their needs" (Williams, 2009: 5). Tourism occurs both between and within countries (international and domestic tourism respectively), and covers visitors who stay overnight, and those who only stay for the day or part of the day (excursionists).

Tourism, thermal spring tourism in particular, is closely related to the concepts of leisure and recreation (Figure 1.1), although Williams (2009) points out that a tradition of separate modes of investigation has emerged within these three fields, with an emphasis on the separation of these concepts. Patmore (1983, cited in Williams, 2009: 7), defines 'leisure' as "free time and/or a free frame of mind in which people believe themselves to be at leisure", and 'recreation' as "an activity normally voluntarily undertaken primarily for pleasure and satisfaction during leisure time". A great deal of tourism takes place within the leisure time/space framework, but much of it also centres upon recreational activities and experiences, such as sightseeing, shopping and socializing, that may occur just as easily outside the framework of tourism (Williams, 2009). Most thermal spring tourism, except that

which is specifically prescribed for medical purposes, takes place during leisure time, and increasingly involves a range of recreational activities.

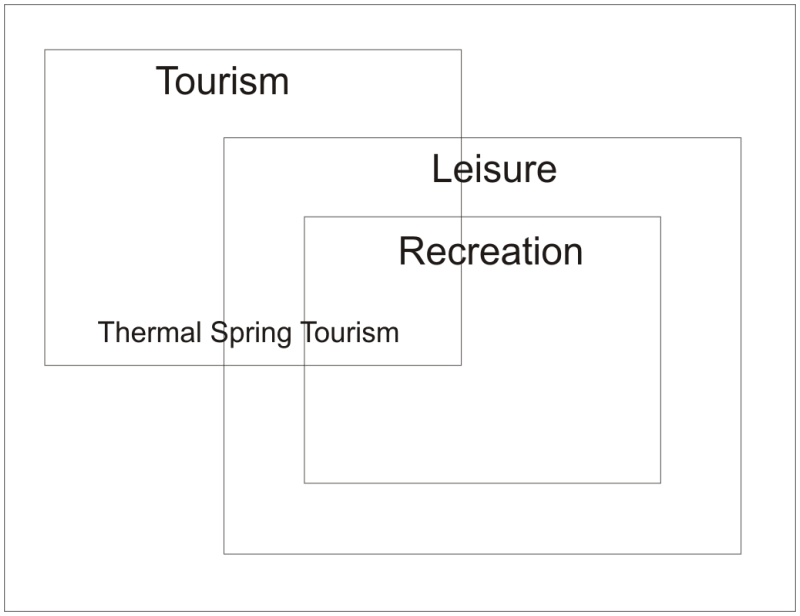

Figure 1.1: The relationship between leisure, recreation and tourism
Source: Adapted from Williams (2009: 7)

Attempts at categorization of tourism normally use the activity that is central to the trip as the criterion around which to construct a sub-division (Williams, 2009), and thus distinctions may be made between, for example, recreational tourism, where activities focus on the pursuit of pleasure, which may be passive, such as sightseeing, or active, such as sports or adventure activities. People may also travel for medical or health reasons, for educational reasons, for social reasons, or for religious reasons, amongst other reasons. Most of these categories may themselves be further sub-divided. This type of sub-division of tourism is often referred to as niche tourism, and travelling for a specific purpose, even within one of these sub-divisions, may be considered to be a form of special interest tourism. Williams (2009) points out that it is risky to push such distinctions too far, or to assume that tourists always travel for a narrow range of reasons. Most tourists, including health tourists, choose destinations for a variety of reasons, and a whole spectrum of motives and behaviours might co-exist within a visit to a destination such as a thermal spring resort.

1.6 Health tourism

Since the 1980s there has been a rapid expansion of ‘health tourism’, a type of tourism that the International Union of Official Travel Organisations (IOUTO, 1973, cited in Hall, 1992:

151) defines as “the provision of health facilities utilising the natural resources of a country, in particular mineral water and climate”. However, there are many definitions of health tourism, and there is considerable debate in the academic literature on this topic (e.g. Goodrich, 1994; Ross, 2001; Messerlu & Oyama, 2004; Erfurt-Cooper & Cooper, 2009; Smith & Puczkó, 2009). Health tourism is generally sub-divided into medical tourism, such as travel to undergo surgery or other medical treatment, and wellness tourism, which involves helping healthy people stay healthy, both physically and mentally, by offering them pampering and feel-good treatments, which includes massage, herbal wraps, exfoliating scrubs, manicures, pedicures and other beauty treatments.

The terms health tourism and wellness tourism are sometimes used together, as in ‘health and wellness tourism’, and the terms ‘health spa tourism’ and ‘thermal spa tourism’ are also commonly used. The former usually refers to visiting a day spa, destination spa or resort spa, while the latter refers to visiting a resort where there is thermal water, and which usually, but not necessarily, offers medical/or wellness services. Thermal spring tourism refers to visiting any thermal spring, whether for health or leisure purposes, or a combination of both.

Among the factors contributing to the growth, in recent years, of what has become known as ‘wellness’, is an emphasis on retaining fitness and good health in retirement, and a changing value placed on health, where more people are realising that a healthy lifestyle contributes directly to disease prevention and wellbeing (Messerlu & Oyama, 2004). With the global increase in environmental awareness, the wellness concept is also related to ensuring personal environmental sustainability in our daily lives (Erfurt-Cooper & Cooper, 2009). As part of the environment we ourselves need to be sustained, and wellness is able to reinforce this at an individual level.

There has been a move from passive health to active health, to taking personal responsibility for making decisions that improve one’s quality of life. Health tourists are looking for something new and different in their trips, but at the same time seek meaningful experiences (Messerlu & Oyama, 2004). While people will gladly invest in their health, they are also eager to be entertained, to be active in sports and to consume local culture. Health tourism supports this trend, because it helps consumers pursue self-discovery and provides a spectrum of opportunities to improve mental, emotional and physical wellbeing. A wide variety of services can be supplied, ranging from fitness, nutrition, skin care and stress management, to nature and cultural experiences, and sporting activities. Traditional treatments can be

integrated with alternative ones, including healing therapies from local cultures (Smith & Puczkó, 2009), and in fact the modern concept of wellness now also incorporates healing therapies from diverse cultures and ancient traditions. Tourists are prepared to travel long distances to experience indigenous healing and location-specific natural products (Smith & Puczkó, 2009).

It is believed that medical geography has, since the mid-1990s, been in "the transitional phase of a paradigm shift" (Kearns & Gesler, 1998, cited in Smyth, 2005: 488) as it moves out of the "shadow of medicine" and becomes "reinvented as geographies of health and healing". Symptomatic of such changes in the discipline has been the emergence of a significant body of research focused on the relationship between place and varied therapeutic processes. The notion of a 'therapeutic landscape' could be seen as a geographical metaphor that would facilitate new ways of thinking about the relationship between health and place (Smyth, 2005). As early as 1992, Gesler (1992, cited in Smyth, 2005) sought to develop a framework within which medical geographers (or geographers of health) could appreciate and, more specifically, understand how the healing process works itself out in places (or situations, locales, settings and milieus). In recent years there has been a significant growth in the practice of alternative and complimentary medicine, and within the context of complementary medicine, a "strong sense of place" potentially enhances the healing process (Andrews, 2003, cited in Smyth, 2005: 493), hence the growing demand for authentic, location-based products and services (Global Spa Summit, 2011).

A new kind of health spa travel has emerged worldwide in recent years (Erfurt-Cooper & Cooper, 2009), where the curative properties of thermal mineral waters are successfully combined with other wellness treatments and therapies, as well as with enjoyable holidays. The challenge for modern thermal spa resorts is to incorporate older water-based healing traditions into the satisfaction of current demands for health and wellness, often in a leisure environment. This change of focus has led several historic thermal destinations, such as Spa in Belgium and Bath in England, to update their facilities and reinvest in their natural resources, and combine the use of healing waters with new and upgraded wellness resorts (Smith, 2009). The basic offerings of such centres are wide-ranging and varied, and include thermal baths with an array of treatments such as balneotherapy and hydrotherapy, face and body beauty treatments, massages, alternative therapies for relaxation, slimming cures, aromatherapy and other new-age treatments. However, it is the natural environment, or more specifically natural healing assets, particularly water and climate, that are increasingly starting

to constitute the most important comparative advantage for health and wellness tourism in most regions of the world (Wellness Tourism Worldwide, 2011).

1.7 Health spa tourism in South Africa

The health spa tourism industry in South Africa is dominated by day spas, resort spas and destination spas (Global Spa Summit, 2011). There are currently very few links between South Africa's health spa industry and its thermal springs. While there are numerous thermal spring resorts in South Africa, only a few offer health or wellness treatments.

The South African health spa industry is relatively new, with most spas being less than 10 years old at the time of a survey undertaken by the Global Spa Summit (2011). South Africa's national tourism website (South African Tourism, 2011) lists a number of products under the labels 'Health and Wellness' – Treats & Treatments (African-inspired, crystal massage), Therapies (vinotherapy, fynbos therapy), Medical (surgery, dental), Retreats (spiritual) and Open Mind (yoga safaris, song and sound safaris, drumming workshops). A number of destination spas and day spas are included in these categories. No thermal spring resorts are included, which may be because these resorts currently have family leisure as their primary function, despite the fact that at least three thermal spring resorts in South Africa do have sophisticated wellness centres.

In South Africa wellness tourism tends to be closely linked to, and packaged with, outdoor activities, such as adventure tourism, safaris and beaches. South Africa has numerous (non-thermal) spa resorts that combine spa visits with safaris, golf, wine tasting and nature-based tourism, while indigenous plants and traditional African healing rituals are increasingly incorporated into their treatment offerings. Spiritual retreats are also gaining in popularity, tending to offer alternative therapies, meditation, wellbeing workshops and spiritual guidance (Global Spa Summit, 2011).

In 2009 the South African government stated that it was developing a national strategy for medical tourism, to promote South Africa as a cost-effective international medical tourism destination (Global Spa Summit, 2011). The inaugural South African Health Tourism Congress was held in July 2009, with its aim being to stimulate the health tourism market in South Africa, focusing primarily on medical tourism, and to foster greater cooperation in this sector. Following the Congress it was decided that the industry should organize itself into an

association, as well as establish guidelines and codes of conduct. As a result the Medical Tourism Association of South Africa (MTASA) was established, as "a trade association representing the medical, health and wellness tourism industry" (www.medicaltourismassociation.org.za), its main purpose being to promote South Africa as a destination of choice for health, wellness and medical care, often in combination with holidays.

The South African Spa Association (SA Spa Association) was also recently established, as a result of tremendous growth in the spa industry, not only in the number of spas, but also in the diversity of spas and therapies available, which has resulted in the necessity to define and unite the spa industry, and to ensure a consistent quality spa experience for the spa visitor (www.saspaassociation.co.za). A large variety of sophisticated spa therapies are offered in South Africa, including the Western Cape, but unfortunately no thermal spring resorts, not even those which do offer wellness treatments, are listed among the members of the SA Spa Association, nor of the Medical Tourism Association of South Africa.

1.8 Research

While health tourism can still be considered a niche or special interest tourism market, it is increasingly contributing to the economy of a number of countries, and is thus enjoying increasing research interest from both academics and the tourism industry (Bennett, King & Milner, 2004, cited in Laesser, 2011). Medical and wellness tourism are among the fastest growing areas of academic research in both tourism and health studies, yet relatively little research has been undertaken in this field, particularly on the profiles and motivations of these tourists (Hall, 2011; Voigt, Brown & Howat, 2011). Laesser (2011) adds that although the delimitation of health travel appears to be demand driven, there is little empirical knowledge, neither on the travel motivations of health travellers, nor on their activity profile. Douglas (2001) points out that collecting data on participation, expenditure and development in this sector is difficult, with a lack of agreement on what actually constitutes health tourism, and very little consistency in available statistics.

There appears to be a strong link between peoples' lifestyles and their propensity to engage in health tourism, although, according to Smith & Puczkó (2009), many traditional tourist typologies are at least a decade old, and fail to reflect current lifestyle trends and values. Swarbrooke & Horner (1999) suggest that academic typologies should be combined with

market segmentation to build up a clearer understanding of tourist profiles, and may combine geographical, socio-economic, demographic, psychographic, behaviouristic or lifestyle factors. It is pointed out by Wellness Tourism Worldwide (2011) that to date there has also been very little research regarding the relationship between travel, quality of life and wellbeing, and that none of the standard quality of life models include tourism (or travel) as an optional free-time or leisure activity. Their research shows that the opportunity to travel regularly is almost as important in one's quality of life as friends or income. Some interesting ethical and moral issues are also raised by the increase in health tourism research, regarding the commoditization of individual health, particularly the extent to which medical services should be exported while local populations often suffer ill-health and/or poor medical services (Hall, 2011).

While there is a considerable amount of scientific research being conducted in relation to thermal springs and their use in medical treatments or balneotherapy, as well as for a variety of purely wellness-related purposes, the field of thermal spring tourism is still considered to be under-reported, especially in the tourism literature (Erfurt-Cooper & Cooper, 2009). Three recent publications have contributed considerably to closing some of the research gaps, namely those of Erfurt-Cooper & Cooper (2009), Smith & Puczkó (2009), and Altman (2000). Erfurt-Cooper & Cooper's (2009) publication, *Health and Wellness Tourism – Spas and Hot Springs*, is the first book to focus on the academic aspects of thermal spring tourism. It is designed to redress the lack of academic research on thermal spa health and wellness tourism, and to provide a framework for analysis and discussion. Altman (2000) elaborates on the medicinal properties of thermal springs around the world, while Smith & Puczkó (2009) focus on health and wellness spa tourism in general, although they also give a considerable amount of attention to thermal spring tourism.

As far back as 1946, the *S.A. Medical Journal* (Vol. XIV, No. 22) published an edition in which the focus was on balneology, with articles on South Africa's thermal springs in general, articles on the use of balneotherapy for cardiac diseases and children's diseases, and articles on the specific thermal waters of Caledon and Warmbaths. The journal *Clinics in Dermatology* devoted a whole edition (Vol. 14) in 1996 to mineral water, spas and balneotherapy in various countries, and *Tourism Review* published a complete issue on Health and Medical Tourism in 2011 (Vol. 66, No. 1/2).

A number of journal articles and reports have focused specifically on changes in the health tourism market, of which thermal spring tourism forms an important part. These include:

- Assessments of the health and wellness tourism market (Hall, 2011; Messerlu & Oyama, 2004; Mueller & Lanz-Kaufmann, 2001; Smith & Jenner, 2000; Loverseed, 1998; Cockerell, 1996 and Gilbert & Van De Weert, 1991).
- Country-specific health tourism studies, such as Italy (Becheri, 1989), the United Kingdom (Witt & Witt, 1989; English Tourism Council, 2002), Israel (Niv, 1989), Spain (Bell & Vazquez-Illa, 1996) and Argentina (Miranda, 2005).
- Country-specific thermal spa/thermal spring tourism studies, such as Slovenia (Ogorlec & Snoj, 1998), Greece (Stathi & Avgerinos, 2001) and Bulgaria (Bojadgieva, Dipchikova, Benderev & Koseva, 2002; Košić, Pivac, Romelić, Lasić & Stojanović, 2010).
- Country-specific studies focusing on balneotherapy, such as Germany (Titzmann & Bernd-Rüdiger, 1996), France (Karam, 1996), Spain (Ledo, 1996), Italy (Andreassi & Flori, 1996), Bulgaria (Tsankov & Kamarashev, 1996), Poland (Omulecki *et al*., 1996), Iceland (Kristmannsdóttir & Björnsson, 2003), Korea (Seung-Kyung, 1996), and Israel (Wolf, 1996).
- Medical studies on balneotherapy, such as Nasermoaddeli & Kagamimori (2005), David *et al*., (2000), and Sukenik *et al*. (1999).
- Industry marketing research reports on the health and wellness tourism markets, such as Wellness Tourism Worldwide (2011) and Global Spa Summit (2011).

Research and publications on thermal springs and thermal spring tourism in South Africa include:

- Medicinal uses of thermal springs in South Africa (Rindl, 1936; Kent, 1952).
- The historical development of South Africa's thermal springs (Booyens, 1981).
- A visitors' guide to hot springs and mineral spa resorts in Southern Africa (Boekstein, 1998).
- The role of health in the motivation to visit mineral spa resorts in the Western Cape (Boekstein, 2001).
- An overview of geothermal resources in South Africa (Tshibalo *et al*., 2010).

1.9 Problem statement

Internationally there has been a move towards traditional thermal spring resorts offering less medically-orientated services, and more wellness services, often in combination with leisure activities (Erfurt-Cooper & Cooper, 2009; Smith & Puczkó, 2009). Medical services do, however, remain an important part of thermal spring offerings, particularly in Europe, and are increasingly forming part of alternative medicine therapies. Although fitness and wellness treatments are offered at two of the Western Cape's eight thermal spring resorts, all of these resorts function primarily as family leisure resorts, catering almost exclusively to the domestic market (Boekstein, 1998; Boekstein, 2001). Despite the fact that there is no longer any direct medicinal use of thermal waters in the Western Cape, and the fact that health tourism activities do not enjoy as high a degree of popularity as other activities, such as nature attractions, beaches and scenic drives (Cape Town Routes Unlimited, 2009a; Cape Town Routes Unlimited, 2009b), it has nevertheless been found that domestic leisure visitors to thermal spring resorts, who have an intrinsic belief in the apparent healing powers of the water, report considerable health benefits from their visits, and express a desire for information on the health benefits of the water (Boekstein, 2001).

In light of international and domestic trends and needs, outlined above, it would seem that potentially valuable natural resources (mineral-rich thermal springs) in the Western Cape are not being optimally utilized as tourist attractions, neither for domestic nor for international tourist markets. There is thus a need to research and evaluate the development potential of these springs. This would undoubtedly assist in the positioning and marketing of the thermal spring tourism product in the Western Cape, so as, firstly, to better satisfy the needs of domestic leisure tourists who have an inherent belief in the healing qualities of the water, and secondly, to attract the growing international health (medical and wellness) tourism market. It would contribute to revitalising a centuries-old healing tradition that is in danger of being lost altogether.

1.10 Aims of the research

The main aim of this research is to evaluate the potential for thermal spring health tourism product development in the Western Cape.
Specific objectives are to:

a) Provide an overview of the historical development of thermal spring tourism, both internationally, and in South Africa.
b) Analyse literature on the classification and use of thermal spring water for health purposes.
c) Analyse literature on international trends in thermal spring tourism, and their links to the health and leisure tourism markets.
d) Compile a database of developed and undeveloped thermal water resources in the Western Cape, including facilities and services, water temperature and pH, mineral content and radioactivity of the water.
e) Segment the thermal spring visitor market in the Western Cape, using activity-based market segmentation, and produce a user profile or typology of visitors based on their activity preferences, with an emphasis on health tourism activities.
f) Evaluate each thermal spring in the Western Cape according to its water quality (for health purposes), facilities and services offered, and the potential for further development, with a focus on health tourism, in the light of both domestic activity preferences and international trends.
g) Create a conceptual framework to guide the development of thermal springs in the Western Cape.

1.11 Significance of the research

The Western Cape has all four of what Niv (1989) describes as the basic characteristics which can transform a destination into a leading centre for health tourism, namely:

- thermal mineral springs
- a stable, comfortable climate all year round
- a good medical system
- attractive scenic locations

Wellness holidays are now a mega-trend with room for continuous growth in the future (Erfurt-Cooper & Cooper, 2009). Thermal spring resources are under-utilised as health tourism attractions in South Africa (Boekstein, 1998), including the Western Cape (Boekstein, 2001), and to date very little research has been done to determine potential uses of the various thermal springs in South Africa (Tshibalo *et al*., 2010). A framework or model for the development of the health tourism potential of thermal spring resources in the Western Cape should make a significant contribution towards economic development, leading to increased

numbers of both domestic and international tourists, entrepreneurial opportunities, job creation, skills development and distribution of wealth.

The *White Paper on Sustainable Tourism Development and Promotion in the Western Cape* (Western Cape, 2001), advocates the development of crosscutting tourism themes, which could include general scenic beauty, food and wine tasting, arts and culture, adventure, eco-experiences, backpacking, heritage experiences, and a large variety of special interest activities. A well-developed thermal spring tourism product could contribute to the linking of tourism sectors, such as wildlife tourism, adventure tourism and cultural tourism, together with health tourism, and at the same time create opportunities for local community involvement by incorporating traditional healing practices and beliefs, and locally available medicinal herbs and plants.

1.12 Overview of the research design and methodology

The research consists of the following steps (summarized in Table 1.1):

1. A review of relevant literature, including academic journals, books, newspapers, government reports, and papers delivered at conferences, in order to provide an overview of:
    a) The historical development and spatial distribution of thermal spring tourism, internationally, in South Africa, and more specifically in the Western Cape.
    b) Balneotherapy and the use of thermal water for health purposes.
    c) Current international trends in thermal spring health tourism, and their links to the leisure and general tourism markets.
    d) Relevant aspects of tourism product development and marketing, with an emphasis on thermal spring tourism.
    e) The policy framework for tourism development and marketing in the Western Cape, and its relevance to thermal spring tourism.
2. A supply-side analysis of all thermal spring resources in the Western Cape, both developed and undeveloped, including all thermal water-based and treatment-based (medical and wellness) facilities and services, the temperature, pH, mineral and radon content of the thermal water, together with potential medicinal uses, sporting and exercise opportunities, recreation and entertainment, and links to the tourism industry, such as relative locations with regard to attractions, activities and tourism routes.

3. A demand-side analysis of current visitors to thermal springs in the Western Cape, including an overview of tourism patterns in the province, and a questionnaire-based empirical survey carried out at thermal spring resorts (discussed in detail in Chapter 7), with questions focusing on activity preferences, including health activities, as well as demographic and trip-related information, followed by activity-based market segmentation (cluster analysis) of visitors, and the creation of visitor typologies. The resulting segments are cross-tabulated with geographic, demographic and trip-related variables, to compile a profile, or typology, of thermal spring visitors. This provides insight into visitors' general tourism motivations and benefits sought, as well as their attitudes towards health tourism activities, as well as other activities. The potential for health tourism development is also assessed.
4. A conceptual framework was constructed for the development of thermal springs as tourist attractions in the Western Cape, for both domestic and international tourists, with an emphasis on the development potential of health tourism.

Table 1.1: Overview of the research design and methodology

1. Literature review • Historical development and spatial distribution of thermal spring tourism, internationally, in South Africa, and in the Western Cape • Balneotherapy and the use of thermal water for medicinal and healing purposes • Current international trends in thermal spring health and wellness tourism, and their links to the leisure and general tourism markets • Aspects of tourism product development and marketing, with an emphasis on thermal spring tourism • Policy framework for tourism development and marketing in the Western Cape
2. Supply-side analysis of thermal spring tourism resources in the Western Cape • Thermal water resources – temperature, pH, mineral content, radon content and potential medicinal uses • Thermal water-based facilities and services • Treatment-based health (medical and wellness) facilities and services • Sporting and exercise opportunities • Recreation and entertainment • Links to the tourism industry – relative locations with regard to attractions, activities and tourism routes
3. Demand-side analysis of thermal spring tourism resources in the Western Cape • Tourism patterns in the Western Cape – roles of thermal springs, spas, health tourism • Thermal spring visitor preferences – reasons for visiting, motivations, health benefits gained, activity preferences, activity-based market segmentation (cluster analysis) of visitors to thermal spring resorts in the Western Cape, creation of visitor typologies
4. Conceptual framework for the development of thermal springs in the Western Cape • International trends and demand • Domestic preferences • Medical tourism – balneotherapy, recovery & rehabilitation • Wellness tourism - leisure-based wellness, water-based wellness, treatment-based wellness, nutrition-based wellness • Conservation and sustainability

1.13 Organisation of the thesis

The remainder of the thesis is divided into the following chapters:

Chapter 2: Historical development and spatial distribution of thermal spring tourism
This chapter contains an overview of the historical development and spatial distribution of thermal spring tourism, both internationally and in South Africa.

Chapter 3: Using thermal water for health purposes
Chapter 3 includes discussions of the balneological (medicinal) uses of thermal water, and the medicinal properties of minerals and gases commonly found in thermal water, as well as balneological classification of thermal water types found in South Africa.

Chapter 4: Conceptualising the links between health and thermal spring tourism
This chapter contains an overview of different types of health tourism, including medical tourism, wellness tourism and spa tourism, and their links to thermal spring tourism.

Chapter 5: International trends in health tourism - the changing role of thermal springs
The changing roles of thermal springs are discussed in the light of current international trends in health tourism, together with examples from around the world of thermal spring product offerings.

Chapter 6: Theoretical perspectives on marketing and product development for thermal spring tourism

An overview is provided of tourist motivation, market segmentation and product development, with an emphasis on thermal spring tourism, as well as the policy environment for tourism development in the Western Cape.

Chapter 7: Thermal spring tourism in the Western Cape – supply-side analysis
This chapter contains a description and discussion of all thermal spring resources in the Western Cape, both developed and undeveloped, including health and recreational facilities and services, as well as an analysis of the water according to mineral composition, radon gas content, and medicinal properties.

Chapter 8: Thermal spring health tourism in the Western Cape - demand-side analysis
In this chapter the results of an empirical survey at six thermal spring resorts in the Western Cape are discussed. Activity-based market segmentation is carried out, a user typology of

thermal spring visitors is produced, and the potential for health tourism development is discussed.

Chapter 9: General discussion, conclusions and recommendations

Key findings, with regard to international trends in health tourism, and the changing role of thermal springs, as well as relevant aspects of domestic supply and demand, are summarised in this chapter, and a framework for health tourism development at thermal springs in the Western Cape is suggested.

CHAPTER 2

HISTORICAL DEVELOPMENT AND SPATIAL DISTRIBUTION OF THERMAL SPRING TOURISM

2.1 Introduction

The use of water for religious and medicinal rites can be traced as far back as the ancient Egyptians, Sumarians, Babylonians and Aztecs, and later the Greeks and Romans (Routh, Bhowmik, Parish & Witkowski, 1996). The Babylonians referred to their physicians as 'a-su', signifying them as water experts. They were responsible for an extensive therapeutic system that included medical baths, the application of hot and cold compresses, and ablution in rivers (Routh *et al*., 1996). The association of thermal springs with local beliefs and myths about their healing powers also goes back far in history (Gilbert & Van De Weert, 1991), and in most cases these springs have not lost their reputation and appeal through the ages. In an almost culture-independent way, many thermal springs have become known for their miraculous healing powers, and often have at least one story or legend covering the original 'healing event', which is sometimes used as 'cultural-historical' back-up for promotional material in tourism (Erfurt-Cooper & Cooper, 2009).

2.2 Early history - ancient Greeks and Romans to the 20th century

In the 5th century BCE the Greek physician Hippocrates (460-370 BCE) treated patients from all over the Mediterranean by using what would today be termed 'thermal balneology' in his famous Asclepian Centre (Cataldi, Hodgson & Lund, 1999, cited in Erfurt-Cooper & Cooper, 2009). Hippocrates included water, along with earth, air and fire, as one of the elements to be used in determining sickness and health. He proposed the hypothesis that the cause of all diseases lay in an imbalance of body fluids, and to regain the balance a change of habits and environment was advised, which included bathing, perspiration, walking and massages, not unlike the health and wellness activities found in modern thermal spa resorts. Hippocrates wrote extensively about the healing power of water, and advocated the use of saline baths. He regularly immersed his patients in seawater to cure a variety of ailments, including aching muscles and arthritis (Harris, 2010), and produced the first classification of thermal waters,

listing their distinctive healing properties and other useful medical/therapeutic criteria (Katsambas & Antoniou, 1996).

The ancient Greek city of Thermae (now called Loutraki), famous for its natural thermal mineral waters, was one of the first health resorts in history. Today Loutraki is known as a centre for health tourism, with its medicinal thermal waters described as 'the waters of life' (Erfurt-Cooper & Cooper, 2009: 212). Greece has introduced subsidies for the development of health spas that use the country's thermal water resources (Stathi & Avgerinos, 2001), and as a result a survey was undertaken to investigate the characteristics of thermal spas in Greece, both in terms of supply and demand, current practices in balneotherapy and thermal water-based healing, as well as existing drawbacks and future opportunities.

The Romans quickly adapted the ideas of the Greeks, and thermal bathing centres were developed all over the Roman Empire (Routh *et al*., 1996). Pliny the Elder (23-79 CE) wrote about several different types of waters and how they should be used, where sulphur springs could be used for treating muscle weakness, alum (aluminium and potassium sulphate) springs for paralysis, bitumen springs for internal defects, and alkaline springs for treating scrofula (a form of tuberculosis). The Romans also used thermal mineral water for the treatment of gout, foot disease, sciatica, fever, psoriasis and wounds, to list just a few conditions (Routh *et al*., 1996). Bathing took place in public baths called *aque*, which later developed into huge edifices, called *thermae*, with the capacity for thousands of people (Van Tubergen & Van der Linden, 2002). For example, the Roman Baths of Caracalla could accommodate 1600 people at a time.

Over the years Roman bathing culture gradually changed and moved towards using the baths as places for relaxation and leisure, rather than for medical treatments, although these were still provided. Many of the historical Roman 'spa towns' and resorts are still in use, or have been restored in the recent past (Erfurt-Cooper & Cooper, 2009). These include Bath (England), Aix-en-Provence and Vichy (France), Aachen and Baden (Germany), Karlovy Vary (Czech Republic), Pamukkale (Turkey), and Tiberius and Hamat Gader (Israel).

While it is believed that the Roman bathing culture formed a basis for the re-emergence of spas in later centuries (Towner, 1996), bathing traditions, in Europe at least, diminished rapidly after the fall of the Roman Empire. Christians reacted strongly against what they believed were "sordid watering habits of their pagan predecessors", and subsequently public

bathing stopped in Europe, and water culture fell into disuse for many centuries (Gilbert & Van De Weert, 1991: 5). By the early 17th century a recovery began to take place, when many of the European thermal springs were developed into sophisticated 'spa' resorts. Since visitors could take only a limited number of therapeutic baths a day, much time was left for other activities, and amenities for tourism leisure activities, including theatres, opera houses, dance halls, libraries and casinos, were developed (Towner, 1996), hence the tourism element attached to health and wellness.

In the 18th century these spas began to attract European aristocracy, and gave rise to well-known leisure centres such as Baden-Baden in Germany, Karlsbad (now Karlovy Vary) and Marienbad (now Mariánské Lázně) in the Czech Republic, and Spa in Belgium. This resulted in a change in emphasis, from health to pleasure, and a symbiotic relationship between health and recreation developed at most European spas. In this way the 'taking the waters' of the elites of 17th century Europe provided one of the foundations for the modern pleasure resort concept (Hall, 1992).

However, by the 20th century scientific advances in water therapy led to the creation of smaller, more specialized spas that concentrated on the perceived curative powers of the waters and the development of health routines, thus reducing the emphasis placed on leisure (Gilbert & Van De Weert, 1991). Spa treatments were incorporated into the national health services of countries such as Germany, France, Italy, Austria, Switzerland, Belgium and Denmark, and activities at most European spas became almost exclusively medical in nature.

After the 1970s most European spas again began to change their focus, from the treatment of illness, to improvement and prolongation of health in a leisure environment. This was deemed necessary to attract younger visitors away from sea, sand and sun holidays. The appearance and development of these new products, referred to as health-care treatments, as opposed to curative health treatments, gave a new dimension to European spas, introducing a generation of tourism products having health as the agent of leisure. Recent years have seen further changes, with the introduction of a range of wellness products into the traditional thermal spa market. In the next section an overview of thermal spring tourism around the world is provided.

2.3 Europe

Most countries in Europe have a tradition of using thermal springs for health benefits and personal wellbeing, including the United Kingdom, Germany, Austria, France, Belgium, Italy, Spain, Portugal, Iceland, the Czech Republic, Hungary, Slovenia, Romania and Russia. There are 142 thermal spa destinations in Germany for instance (Erfurt-Cooper & Cooper, 2009), including the famous Baden Baden, which dates back at least as far as Roman times. German doctors can specialize in 'kurmedizin' (cure medicine), and the German model of the 'kur' (cure) has a reputation for improving the health and wellbeing of patients who have taken the necessary time for their rehabilitation. However, traditional European thermal spa resorts, particularly in Germany, Italy and France, which used to depend almost entirely on clientele taking three-week state-subsidised 'cures', have, due to the considerable reduction of subsidised treatment, been forced to diversify to some extent to ensure their continued commercial success, or in some cases, survival (Cockerell & Trew, 2003).

Thus in recent years many European thermal spa destinations have updated their facilities to accommodate current demand for more wellness facilities, as well as more opportunities for leisure and recreation (Erfurt-Cooper & Cooper, 2009; Smith & Puczkó, 2009). Renewed popularity of spas has encouraged a boom in the construction of new facilities and the upgrading and modernization of older resorts (Cockerell & Trew, 2003). In Spain, for instance, there has been major investment in the renovation and restoration of old Arab baths developed by the Moors some 500 years ago. The two famous spa towns in the Czech Republic, Karlovy Vary (Carlsbad) and Mariánské Lazné (Marienbad), have also undergone major renovations. Italy's different spa regions have developed exciting new programmes offering wellness holidays combined with cookery courses, wine tasting and cultural, archaeological or study tours. Many of Europe's national tourism organizations, as well as leading hotel groups, now have dedicated health and wellness brochures.

There are a number of 'spa towns' in the United Kingdom, such as Droitwich, Buxton, Cheltenham Spa and Tunbridge Wells, but Bath is the only place in the United Kingdom with genuine hot springs (Erfurt-Cooper & Cooper, 2009). Bath has a long tradition of using its natural hot springs as a centre for religion, healing and pilgrimage. Established by the Romans in 70 AD, Bath saw alternating declines and revivals over the years, until the old baths finally closed down in 1978. All bathing was prohibited until 2006, when the Bath Spa Project was launched, and the baths were once again reopened. Today Thermae Bath Spa attracts almost a

million visitors annually, once again offering bathing in its mineral-rich thermal waters, and a range of therapeutic treatments. The restored baths feature a medical treatment centre providing preventative medicines and therapies, such as massage, physiotherapy, hydrotherapy and acupuncture, as well as a research and interpretive centre. Plans are at various stages for the redevelopment of several other spa towns in the United Kingdom, including Droitwich and Buxton, as part of an attempt to revive its traditional spa culture (Cockerell & Trew, 2003).

The Belgian health resort of Spa, founded in the 14th century, and believed by some to be the source of the term 'spa', has now been totally revamped. In its heyday in the 18th century the resort, with its distinctive neoclassical architecture, combined mineral springs with a casino, organized events and other entertainment. However, by the second half of the 20th century the resort had declined considerably (Smith, 2009). In 2004 the new Thermas de Spa opened, offering large-scale thermal pool bathing and hydro entertainment (Erfurt-Cooper & Cooper, 2009). Today Spa focuses on the concept of 'thermomodulism', rather than medical or health tourism, based on a modern, non-medical form of thermalism (therapeutic use of hot springs), which emphasizes relaxation and fun. Facilities include large indoor and outdoor swimming pools, jacuzzis, steam baths, saunas, treatment rooms, fitness facilities and relaxation areas. As a result a greater number of younger people and families are visiting. There are 6-day programmes for mothers and babies, programmes for couples, tobacco detoxification programmes, and special treatments such as peat baths and carbonated copper baths. However, despite these and other attractive offers, there is serious competition from other, purpose-built non-thermal spring-based health and wellness centres all over Europe (Smith, 2009), with little to distinguish the new developments at Spa from similar leisure developments elsewhere.

Iceland's volcanic geological nature makes it very rich in geothermal resources. In recent times thermal swimming pools have been constructed in almost every town for the benefit of the local population, as well as tourists. Most famous is the Blue Lagoon, a thermal lake artificially created using waste water from a power station, found to be remarkably affective for the treatment of psoriasis, now developed as a wellness centre (Erfurt-Cooper & Cooper, 2009).

A number of thermal water-rich countries in Europe are actively promoting thermal tourism-based health and/or wellness as part of their development, positioning and marketing

strategies. Hungary, for instance, is actively promoting health tourism, with an emphasis on wellness tourism. Hungary has some 1300 thermal springs, with spas dating back some 2 000 years. Generally the country's thermal spring centres are thought to be somewhat under-utilized, offering traditional medical services mainly utilized by the elderly, and most now need to be updated (Messerlu & Oyama, 2004). Rebranding the country as a centre for spa and wellness tourism based on thermal spring offerings has become a national priority, and a 10-year tourism development programme, called the 'Szecheni Plan', was adopted in 2002, a sub-section of which deals specifically with the development of thermal spring tourism. Initial results in the first two years of the programme saw a modest increase in foreign visitors, but expenditures more than quadrupled.

Today there are more than 150 thermal spa resorts in Hungary, of which some 36 have been declared 'medicinal spas' because of the proven curative effects of the water (Boekstein, 2007). The thermal lake of Hévíz, situated near Lake Balaton, has a diameter of over 100 metres and a depth of 38 metres. It is fed by a spring that supplies 20 000 litres of water per minute at 40°C, resulting in the water of the lake being completely renewed every three days. An enclosed causeway leads to bathing facilities in the centre of the lake, and visitors can choose to swim indoors or outdoors. Tubes can be hired that enable bathers to bob around in the water for hours, soaking up its healing powers. A wide range of medical and wellness services are offered by the many hotels that surround the lake, including rheumatology, physiotherapy, balneotherapy, electrotherapy, mudpack treatments, thermal baths, saunas, steam baths, massages, beauty treatments and health food, as well as cultural programmes such as art, music and dance.

2.4 North Africa and the Middle East

Tunisia is the only North African country that has a well developed thermal spa tourism industry, although there are thermal springs in both Morocco and Egypt. In the Middle East there are thriving thermal spring tourism industries in Israel and Turkey, and to a lesser extent in Jordan and Iran.

The history of thermal spring use in Tunisia, which has about 80 thermal spring locations attracting 2.5 million visitors a year, also dates back to the Roman Empire. In 1975 the state-sponsored Office of Thermalism was established, under the Ministry of Public Health in

cooperation with the state-run Tourism Organisation, with its main purpose being the development of the thermo-mineral tourism sector (Erfurt-Cooper & Cooper, 2009).

Israel has a number of well-established thermal spring resorts, including those at Tiberius and Hamat Gader, which date back to biblical times. The Dead Sea, shared by Israel and Jordan, with its high mineral content and dry climate, is possibly the oldest water-based health tourism destination in the world, and there are a number of health resorts built along its shores, in both countries. The Dead Sea contains very high concentrations of sodium chloride. Dead Sea spa resorts in Israel, such as Ein Bokek, Hamme Zohar and Ein Gedi, offer a variety of spa treatments, but are especially popular for the treatment of skin diseases, particularly psoriasis and eczema, as well as asthma, respiratory problems and joint disorders, such as osteoarthritis (Altman, 2000; David, Efron, Hodak & Even-Paz, 2000; Sukenik, Flusser, Codish & Abu-Shakra, 1999). While balneotherapy for rheumatic diseases in the Dead Sea area consists mainly of bathing in the salt water of the Dead Sea, as well bathing in immersion baths and in pools of thermal spring water, and mud pack application, it is also the unique climatic conditions, such as high barometric pressure, high temperatures, low humidity and exposure to sunlight, that contribute to the beneficial effects of the area, sometimes referred to as climato-balneotherapy (Sukenik *et al*., 1999).

In Israel tour packages combining medical treatments of various kinds with recreational activities and tours around the country, had already gained popularity by the 1980s (Niv, 1989). This type of package gives the cure-seeking visitor the feeling of a real vacation while he/she attends to his/her health, a combination which often has great psychological value. Recognizing the importance of this sector to the tourism industry, and its inherent potential for the national economy, the Israeli Government has established a Health Spa Authority to commission medical studies on the therapeutic value of Israel's natural thermal resources, to carry out research and coordinate data on thermal spas and other health/cure facilities (Niv, 1989).

Turkey, with some 700 thermal areas and thousands of thermal springs, currently ranks 7th in the world in terms of geothermal resources (Today's Zaman, 2012), is a country with a centuries old healing tradition and spa culture. Today springs such as Pamukkale (Hierapolis in Roman times) attracts vast numbers of visitors who seek the healing properties of its water, and the springs at Kangal are said to have no equal in the world for the treatment of psoriasis,

where small fish inhabiting the hot springs assist by removing dead skin, thus encouraging growth of new healthy skin (Erfurt-Cooper & Cooper, 2009).

Investments in thermal tourism in Turkey increased dramatically after the Turkish Ministry of Culture and Tourism developed a Thermal Tourism Master Plan, and identified a number of geothermal regions in which to focus investment (Akcoban, 2005). Currently Turkey has a bed capacity of 25 000 in thermal hotels. Following the recent government incentives, a number of prestigious projects are underway, ranging in size and level of luxury from simple hostels to 5-star hotels, and capacity is expected to grow to reach 75 000 and more in a short time (Today's Zaman, 2012). One of these is Alila Wellness Park, in the city of Afyon in Central Turkey, a $60 billion thermal centre due for completion in 2013, which will have a bed capacity of 2 000 and a 5 000-seat convention centre, and is expected to be a driving force in rendering Turkey a major international centre for thermal tourism.

2.5 Asia

There are many thermal springs in countries such as India, Indonesia, the Philippines and China. In India the spiritual value of bathing in thermal water has been recognized for centuries. For example, at the temples of Manikaran and Badrinath in north India, thermal water forms the basis of the religious rituals carried out there, as well as the spiritual meaning attached to these places. Conversely, in the Philippines, thermal waters, such as those in the region of Los Baños, south of Manila, are used almost exclusively for leisure and entertainment.

The leading thermal country in Asia is Japan, which has about 270 000 thermal springs, more than 3 000 thermal spring resorts and 6 400 public bathhouses, with over 140 million visits annually to thermal springs (Messerlu & Oyama, 2004). Beppu, with eight different thermal springs spread around the city, receives some 12 million visitors a year (Japan-guide.com). Each spring features public baths and other bathing facilities, with a range of different bathing experiences, including conventional hot water baths, steam baths, hot sand baths and hot mud baths.

Japanese spa culture has developed differently from that of the Western world, and by the 16th century it was commonplace among all levels of the population to unwind after work in thermal pools, socialising with friends and neighbours (Erfurt-Cooper & Cooper, 2009).

Although this custom has not changed much since then, Japan, in recent years, has been experiencing an *onsen buunu* (hot spring boom), a rush to rural or small town thermal spring resorts, many of which have now become popular tourist destinations, with the help of government development grants (Graburn, 1995). Japanese thermal spring culture requires that the baths are filled with constantly flowing, naturally heated spring water. The baths themselves may be enamel, tile or wood, but are often constructed from local rock so as to resemble a natural pool.

By the year 2 000 thermal spring bathing had become the main purpose of domestic travel in Japan, and is viewed as the ultimate in natural relaxation and an opportunity to connect with nature (Messerlu & Oyama, 2004). The growth in numbers has transformed the original *onsen* (hot spring) concept, in that visitors are now more conscious of the original healing value of thermal spring bathing, and are less inclined to regard these resorts as mere sightseeing and amusement destinations. However, the attraction of the *onsen* is about much more than hot water, and the essential components of the modern *onsen* experience now includes nutrition, exercise and relaxation in natural surroundings, as well as sightseeing (Rátz, 2009). Japanese *onsen* therapy is a type of alternative or complementary medicine, not directly curing the cause of disease, but treating the body as a whole, and assisting in recuperation, rehabilitation, and prevention, although in recent years Japanese thermal springs have started to become part of the modern medical system, although the number of places offering long-term therapy is still small, since medical insurance rarely covers *onsen* stays.

2.6 Australasia

New Zealand has traditionally used thermal resources for health and wellness spa tourism. Its many thermal springs have been valued since the beginning of the Maori settlement, and used for cooking, bathing, washing and the treatment of ailments. By 1880 large thermal spas had been built at Rotorua, Te Aroha and Hanmer Springs. The Polynesian Spa at Rotorua, together with the Queen Elisabeth Hospital, where people underwent thermal treatments, are still in operation today (Erfurt-Cooper & Cooper, 2009). Geothermal attractions in different parts of the North Island have been connected by the promotion of the Thermal Explorer Highway, where a variety of geothermal phenomena can be seen and experienced, including hot springs, mud pools and geysers, as well as Maori cultural attractions. At Hot Water Beach, near Coromandel, visitors dig holes in the sand, their own natural spa pools, which fill up with hot water which lies just below the surface.

While it has comparatively few thermal springs, Australia has been able to take advantage of a shift towards more holistic and spiritual practices, with ancient traditions as selling points (Smith & Puczkó, 2009). With the globalization of spa tourism visitors are becoming more attracted by ancient traditions combined with new developments, and are often prepared to travel long distances to experience indigenous healing and location-based natural products (Smith & Puczkó, 2009).

Peninsula Hot Springs, in Victoria, uses indigenous Aboriginal products as well as natural resources from the area to attract international visitors. The resort offers bathing in natural outdoor thermal pools, as well as private hot mineral baths. Many of the treatments on offer have aboriginal names and incorporate indigenous healing techniques, combining indigenous plant knowledge with the principles of herbalism, aromatherapy, sound and colour therapy, to deliver a range of sensory treatments with powerful therapeutic effects (Laing, 2009).

This emphasis on traditional indigenous healing methods and resources mirrors a worldwide trend which has its roots in Asia. For example, spa treatments based on the Indian Ayurvedic healing system, Thai massage utilizing Buddhist influences, and the Japanese Reiki natural healing therapy, are practiced all over the world. Modern spa users appear to seek out places where they can access ancient healing techniques and wellness remedies, albeit in luxurious and hygienic surroundings, although this is likely to be combined with a desire for authenticity, and harmony with nature and natural processes (Laing, 2009).

2.7 North America

There are hundreds of thermal springs in the United States of America, including Hot Springs National Park, in Arkansas, where there are 43 thermal springs that have long been valued for their therapeutic and recreational benefits. There are also many thermal springs, together with a thriving health tourism industry, in Hawaii. Canada has about 110 thermal springs, with well-known resorts at Banff Hot Springs and Radium Hot Springs, and there are some 576 thermal springs in Mexico (Erfurt-Cooper & Cooper, 2009).

The Native American Indian tribes considered hot springs as sacred places, as neutral ground, to which warriors could travel and rest unmolested by other tribes, and they believed in the healing powers of the heat and mineral content of the water (Lund, 2000). Almost every major

hot spring in the United States has some record of use by the Indians, some for over 10 000 years. During the 1700s and 1800s many spas were developed in the United States in the tradition of Europe, such as Saratoga Springs in New York, Warm Springs in Georgia, Hot Springs in Arkanses, Thermopolis in Wyoming and Calistoga in California, all of which are still in use today. However, without national health insurance to support these establishments, development lagged behind Europe, and by the 1940s interest in spas had dropped considerably, and many resorts went into decline and eventually closed.

Loverseed (1998) observes that North Americans are turning away from 'sun, sea and sand' type holidays, and are starting to seek more meaningful experiences, with the linking of health to tourism becoming more and more common. However, the growth in the north American spa market appears to be focused on destination spas, resort spas and day spas, where the emphasis is on health and appearance, getting away from stresses, and revitalizing body and mind. While thermal spas are not yet experiencing the same levels of revival seen in Europe, the recent interest in hot springs soaking and physical fitness, supported by the 'back to nature' movement, has renewed the development of thermal spas in the United States (Lund, 2000).

2.8 South America

Most South American countries, including Argentina, Uruguay, Chile, Brazil, Peru, Bolivia, Ecuador and Colombia, have thermal springs, with a culture of using them for health purposes dating back at least to the Incas. Many thermal springs are found along the spine of the Andes Mountains, where there is continuous volcanic and tectonic activity. In the 1990s the health and wellness spa movement started to gain pace in Argentina through the rediscovery, redevelopment and reopening of older thermal installations in traditional spa towns such as Termas de Rio Hondo, with the creation of new complexes, resulting in new investment in tourism infrastructure, and a considerable boost to general tourism in these areas (Miranda, 2005). By 2002 the national authorities had recognized health tourism, specifically thermal spring tourism, as a very good potential source of economic activity involving high quality services that include a combination of 'specific' medical treatments related to balneology, prevention and rehabilitation, and 'non-specific' treatments related to aesthetics and beauty.

Chile has some 275 hot springs, many of which are still unexplored (GoChile, 2011). Eurochile, an organization focused on strengthening business ties between Chile and the

European Community, has created a thermal spring tourism 'club' to promote thermal spring tourism in Chile, supported by NGOs and Chile's National Tourism Service. A recent development is the Tierra Atacama Hotel and Spa, in San Pedro de Atacama, Chile, which has an 'adventure spa' philosophy. The high Altiplano of the Atacama Desert has rivers, canyons, lakes, salt flats with flamingoes, sand dunes and natural thermal springs, some in the form of geysers. The hotel believes that guests want to experience the outdoors actively and adventurously, but then be welcomed back to the hotel afterwards with a variety of relaxing options, ranging from a simple nap to one of the professional spa services on offer (Smith & Puczkó, 2009).

2.9 Antarctica

As tourism to Antarctica increases, Deception Island, in the South Shetlands group of islands, where hot springs seep out of the ground on the black volcanic beach and mix with the ice cold seawater, is attracting increasing attention. The unique environment of these springs creates so much interest among cruise ship passengers that many are prepared to strip off in freezing air temperatures for a dip in the thermal water (Erfurt-Cooper & Cooper, 2009).

2.10 Sub-Sahara Africa

While local populations have known about and frequented many of the thermal springs in sub-Saharan Africa for centuries, and almost certainly used them for healing purposes, there are few written records of thermal springs south of the Sahara, except for those in South Africa and Namibia. Most countries in sub-Saharan Africa have thermal springs, particularly those situated along the Great Rift Valley, including Ethiopia, Kenya and Tanzania, as well as countries with volcanic activity, such as Cameroon. However, with the exception of South Africa and Namibia, there are very few thermal spring resorts or health facilities. In Kenya, a country with many geothermal springs, some of which are located in the vicinity of popular tourist attractions, a project called 'Developing health spas' has been initiated, which aims at utilizing these springs for thermal spa development, aiming to stimulate economic growth in regions where the springs are located, as well as to develop the natural and cultural resources of the local people (Trade and Investment in Africa, 2010). A pre-feasibility study has revealed that the waters are well-suited for the development of health spas of international standards, but further studies are still needed to establish more accurately the economic viability and required investment.

Namibia has three well equipped thermal spring family leisure resorts, namely Gross Barmen, Reho Spa and Ai-Ais, as well as a number of undeveloped springs (Boekstein, 1998). The hot spring at Warmbad, a small village in the south of Namibia, has stood unutilized for many years, with the remains of a German-built facility on the site. There is considerable potential for the spring to be incorporated into community-based tourism development in the area. Swaziland has one thermal spring with health spa facilities, with others situated within local communities, as yet undeveloped. There is one thermal spring leisure resort in each of Zimbabwe and Zambia, with many undeveloped thermal spring resources in both of these countries.

2.11 South Africa

By the early 17th century 'taking the waters' had become popular among the upper classes of Europe, and many of the European springs had developed into sophisticated spa resorts, offering medical treatments in leisure environments. The Dutch settlers thus arrived in South Africa with a well-developed thermal spa culture, and it was not long before they discovered thermal springs in the vicinity of what is today the city of Cape Town, in the Western Cape (Booyens, 1981). The earliest holiday resorts in South Africa, including Caledon and Montagu in the Western Cape, Aliwal North in the Eastern Cape, Warmbaths (Bela-Bela) in Limpopo, and Badplaas in Mpumalanga, were developed around thermal springs discovered by the Dutch settlers. Today there are about 30 thermal spring resorts spread around South Africa (Table 2.1 and Figure 2.1), with at least one in each of the nine provinces, except for Gauteng. These resorts vary quite considerably in size, as well as in the range of facilities and services offered.

The hot springs at Caledon, in the Western Cape, were being visited regularly by the early 1700s (Booyens, 1981). These springs became known as *die bruin bronne*, 'the brown springs', because of the reddish-brown colour of the water, which has a high iron content. The water was found to be highly effective for treating skin diseases and rheumatism. At first the spring was utilized only by those seeking some form of medical treatment, but when a new bathhouse, with furnished rooms and excellent food, was completed in 1821, the baths became popular with people from all walks of life, for pure relaxation as well as for medicinal purposes. In 1893 a sample of Caledon's spring water was submitted at the Chicago World Fair,

where it was awarded first prize among the world's leading mineral waters, for its medicinal and curative properties (Booyens, 1981).

Table 2.1: Distribution of thermal spring resorts among the provinces of South Africa

Western Cape	Caledon Spa, Goudini Spa, Avalon Springs, Baden Klub, Warmwaterberg Spa, Calitzdorp Spa, Uhuru Guest Farm, The Baths
Eastern Cape	Aliwal Spa, Cradock Spa, Fish Eagle Spa, Badfontein Guest Farm
Northern Cape	Riemvasmaak Hot Springs
North-West	Nkolo Spa
Free State	Florisbad
Kwazulu-Natal	Natal Spa, Thangami Safari Spa, Shu-Shu Hot Springs, Lilani hot Springs
Mpumalanga	Badplaas
Limpopo	Warmbaths, Tshipise, Zimthabi Resort, Die Oog Hot Spring Resort, Rhemardo Holiday Resort, Eiland Spa, Makutsi Spa, Mphephu Hot Spring Resort, Sagole Spa

When the railway from Cape Town reached Caledon in 1902, and the travelling time from Cape Town was considerably shortened, the palatial three-storey 'Caledon Baths and Sanatorium' was built, and Caledon became known as the 'Baden-Baden of South Africa' (Booyens, 1981). In the words of an anonymous writer (Anon, 1940: 443), "The bathing establishment: This is an entirely separate and specially fitted up department, which possesses its own bath, massage, dressing and resting rooms, and provides for all types of modern electrical and hydrotherapeutic treatment. Diathermy and D'Arsonval high-frequency treatment, ultra-violet radiation, radiational and hot air baths, ionization, electric baths, Nauheim carbonic acid baths, massage douches, Plombíeres treatment, and indeed, all varieties of hydrotherapeutics are provided for". Unfortunately the building was destroyed by fire in 1946 and all that remains today is a single hot pool known as the 'Victorian Spa Bath', now fully restored as part of the Caledon Casino Hotel and Spa.

In the early years of the Cape Colony other spa resorts were developed around the natural thermal springs in the Western Cape. The Baths, near Citrusdal, began in 1739 as a military outpost when the Dutch East India Company erected a stone building and a few bathing huts (Booyens, 1981).

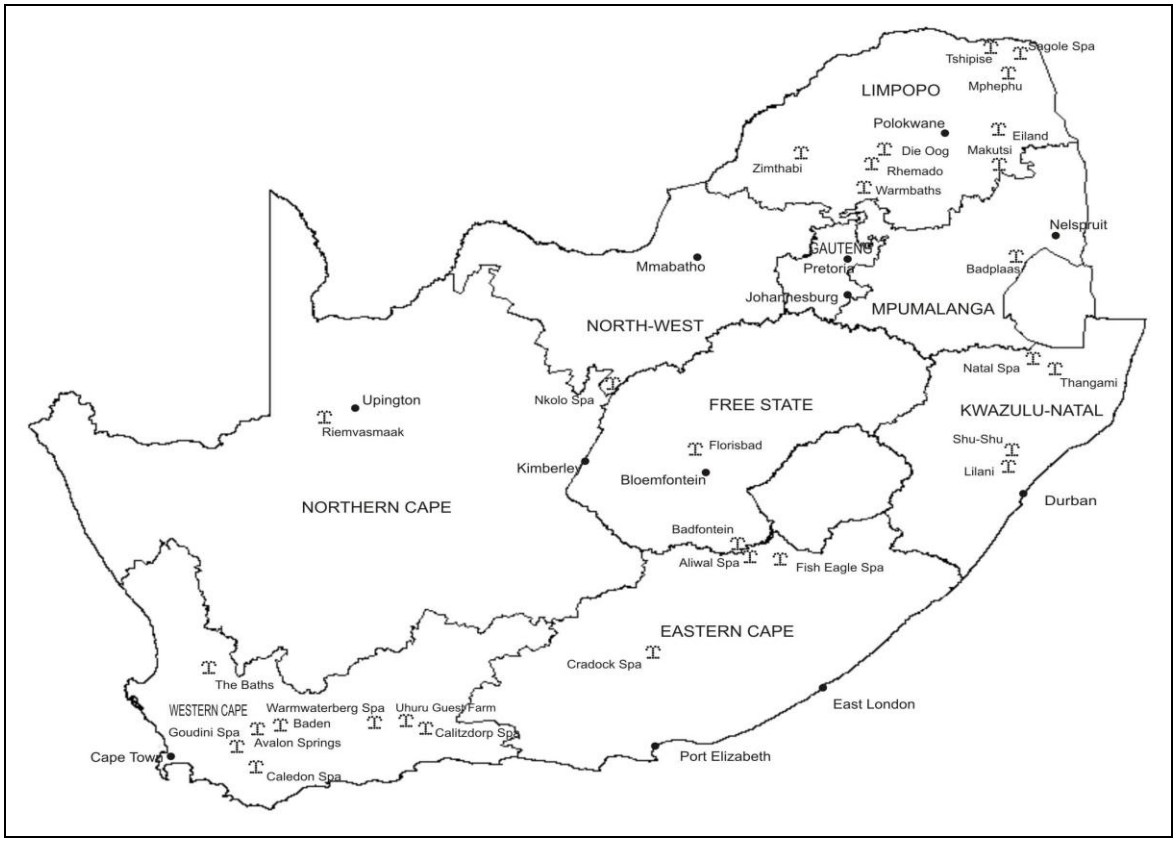

Figure 2.1: Provinces of South Africa, with locations of thermal spring resorts
(Source: Compiled by the researcher)

Today the resort is characterized by its well-preserved Victorian buildings which give it an old-world feel (Boekstein, 1998). Warmwaterberg Spa, between Barrydale and Ladismith, was being visited as early as 1778. The guesthouse and 'sanatorium', built in 1908, remain part of the resort to this day. Both Goudini Spa, near Worcester, and Avalon Springs, outside Montagu, date back to the mid-nineteenth century.

A number of hot springs in the Western Cape that at one time had facilities for bathing and accommodation are unfortunately no longer open to the public, or at least have no facilities. The spring at Brandvlei, near Rawsonville, is the hottest and strongest in South Africa, providing 126 litres of water per second, at 64°C. A bathhouse was built in the early 1800s, but it closed down in the 1940s. Brandvlei is now located on private land, and although the spring can be visited with permission, there are unfortunately no longer any facilities for bathing (Boekstein, 1998). The mineral spring in the town centre of Malmesbury, established in the 1700s, which had a reputation for curing all kinds of rheumatic and skin diseases, was also closed down in the 1940s.

At De Kelders, near Hermanus, a mineral-rich underground river that emerges deep inside a sea-cliff cave, was visited and written about by Lady Ann Barnard in 1798, and by many later visitors, with stories of miraculous cures for numerous diseases, including rheumatism, arthritis and gout.. De Kelders is described in a 1948 newspaper article (Proctor, 1948: n.p.) as "the Cape's Medicine River", where "people come from far with bottles and buckets to take water for their medicine cupboards back home to treat various aches and pains". Its reputation led it to be referred to as the Cape's 'Medicine River', and stories have been told of hobbling cripples finding their limbs freed from pain (Proctor, 1948). While there are still pools filled with the tepid mineral water in the cave near the mouth of the river, they are unfortunately no longer open to the public.

During the 19th century doctors placed considerable value on the use of the thermal springs of the Cape Colony (now the Western Cape) for medical purposes (Booyens, 1981). In 1866 the Colonial Medical Committee requested that the Governor of the Cape Colony compile a memorandum on existing thermal springs in the Cape Colony, together with their medicinal uses. This was carried out by Dr Philip Landsberg and published the same year in The Cape of Good Hope Government Gazette, where it was stated that the thermal waters of the Cape Colony had been found to be effective for treating a range of diseases, particularly chronic rheumatic diseases, but also, amongst others, wounds, skin diseases, hepatitis, indigestion and goitre.

The largest thermal spa resorts in South Africa today, and in fact the only ones with sophisticated wellness facilities, apart from Caledon, are at Warmbaths (Bela-Bela) in Limpopo, and Badplaas, in Mpumalanga. Members of a Voortrekker party discovered the hot springs at Warmbaths in 1837. The springs had long been known to the indigenous population as 'Bela Bela' (that which boils on its own). People with ailments soon began to arrive, camping and digging their own baths in the mud, which they encircled with screening shelters of reeds and blankets (Bulpin, 1986). Badplaas was known by the indigenous Swazis as 'Emanzana' (where the waters heal). After being found by a local farmer in 1876, the springs attracted thousands of people who would camp there during the icy Highveld winters (Booyens, 1981).

In the years following the South African War of 1899-1902 many people visited the saline spring at Florisbad, near Bloemfontein, to bathe and for the highly sought-after mud-pack treatments administered by owner Floris Venter, who had a reputation as a 'healer' (Booyens,

1981). In 1912 an earthquake opened up a new spring eye, and fossil bones and stone artifacts were brought to the surface with the water. Further research led to the discovery, in 1932, of the Florisbad Skull, which dates back more than 40 000 years. The resort was closed for many years while archaeological research was being conducted, but it has recently reopened.

Lilani Hot Spring, in Kwazulu-Natal, which stood abandoned for a number of years, has also recently been re-developed and reopened, as a community-owned and managed project. The only other community-based thermal spring development in South Africa is at Riemvasmaak, in the Northern Cape Province. Shu-Shu, situated on an island in the Tugela River in Kwazulu-Natal, in a heavily-populated tribal area, also has potential for community-based development, but it is currently only being used by a camping club during the July school holidays. There are no permanent facilities at Shu-Shu due to periodic flooding of the river. There are also a number of thermal springs situated in rural parts of Limpopo Province, which are thought to hold considerable tourism potential, but they have not yet been developed for tourism purposes (Olivier, Venter & Van Niekerk, 2010).

2.12 Thermal spring resorts and the product life-cycle concept

There is a theory, originally formulated for marketing, but linked to tourism by Butler in 1980, which suggests that tourism products/areas/destinations pass through various stages during their lifetimes (Horner & Swarbrooke, 2005). This hypothetical cycle, known as the product life cycle, also referred to as the tourist area life cycle, resort life cycle or destination life cycle, roughly follows an S-shape. It begins with the introduction of a new product, a stage characterized by slow growth and low profits. If the product is successful, it enters the growth stage, which is characterized by rapid sales growth and increasing profits. The product then enters the maturity stage, where sales growth peaks and profits stabilize. At this stage the tourism organization may seek to renew sales growth, typically re-launching or repositioning the product one or more times. Finally the product may enter the decline stage, in which both sales and profits decrease, and where the organization then has to decide whether or not to continue the product.

Most thermal spa resorts in Europe have experienced a similar life cycle, at least since the 16th century, when spas were developed as places of leisure, with prestigious hotels and casinos, and where the European elite gathered for ‘taking the waters’, but more importantly, ‘to see and be seen’ (Hotel Mule, 2010). The early 20th century saw a move from thermal spring

tourism with a leisure focus to thermal spring tourism with a medical focus, with a downgrading of infrastructure and a decrease in the tourism function. Since the beginning of 21st century, however, many historical spa towns have gradually been getting back onto the tourist map by investing in rejuvenation strategies for traditional medical thermal spa tourism, as well as a new focus on recreation and wellness. The actual thermal springs have, however, still remained the core products of these destinations. Eurothermen Resorts (2011) note that, as with many recreational facilities, swimming pools, including thermal pools used mainly for recreation, are subject to a relatively short life cycle which is becoming increasingly shorter, and recommend that any types of recreational swimming pools need to position themselves very quickly in the market, and renew their range of services within increasingly shorter periods of time. Regular customers need to be kept interested and motivated by continuous new developments and innovative products.

Kapczyński & Szromek (2008) applied the life-cycle model to thermal spa products in Poland, maintaining that, from 1949 to 1984, one can follow complete life cycles of so-called traditional spa products (spa treatment based singularly on balneology). However, after 1984, a new life cycle has originated, based on 'new' spa products, a combination of traditional spa treatments (balneological procedures) and modern forms of cosmetic treatments, or other cures, such as de-stress and other wellness progammes, and tourist attractions. The authors point out that the Polish experience requires researchers to consider *ceteris paribus*, the influence of 'outside factors', on demand, referring in the case of Poland to the significant political events that occurred in that country during the period of analysis. An interesting parallel can be drawn between thermal spa resort development in South Africa and the *ceteris paribus* theory of Kapczyński & Szromek (2008). The abolishment of apartheid in 1994 resulted in resorts that had hitherto been open only to whites being opened up to all races. This has led to a vastly different racial make-up among visitors to some resorts, and may also have led to demand for different services and facilities.

Towner (1996) points out that while aspects of these generalizations can be found in the historical growth of thermal spas in Europe, there are numerous difficulties involved in trying to fit the life cycle model to reality, including a lack of reliable visitor figures, and no agreement on the length of time needed to adequately encapsulate cycles. Bath, for instance, in its period of rapid growth in the eighteenth century, actually followed a number of cycles of growth and stagnation during this time. Fixing points of growth and decline is seen as being quite arbitrary, and may be geared more to the availability of statistical sources.

2.13 Moving towards the future

Since the 1980s there have been significant changes in the international thermal spring tourism product, with a decline in demand for the medically-oriented services offered by traditional mineral spas, and an increase in demand for facilities and experiences focusing on a healthy lifestyle, fitness and relaxation, essentially a change in emphasis from 'medical health' to 'wellness', increasingly in a recreational setting. However, at the same time a growing recognition of the benefits of preventative medicine seem to include a revival of the tradition of 'taking the waters' as an antidote to the stresses of urban living. Erfurt-Cooper & Cooper (2009) emphasise that bathing in thermal springs and drinking mineral water is part of the emerging holistic approach to health, and a new kind of thermal spring travel has emerged worldwide in recent years, where the curative properties of thermal waters are successfully combined with wellness treatments and therapies, and enjoyable holidays. In Chapter 3 the use of thermal water for health purposes is discussed.

CHAPTER 3

USING THERMAL WATER FOR HEALTH PURPOSES

3.1 Introduction

Thermal waters with a high mineral content are often termed ‘medicinal waters’, or ‘healing waters’, and are used in therapies in order to prevent illness and restore health (Erfurt-Cooper & Cooper, 2009; Kent, 1952; Rindl, 1936). In order for water to be classified as medicinal water or healing water, the healing effects generally have to be proven through evidence-based research (Smith & Puczkó, 2009), but there is no universal agreement on this. There is also no universally accepted definition or classification of medicinal/healing thermal water, nor is there any general agreement on the respective curative powers of the various waters (Skapare, 2001). It is often recommended that the water source must be natural (from springs or wells), and that it should contain a minimum of 1 000 mg/l of dissolved solids (total dissolved solids/TDS). These values have been specified for medical convalescence by the Deutcher Baderverband in Germany, as well as by other countries in Europe (Skapare, 2001). However, many mineral waters used for medicinal purposes have far lower mineral content. Ghersetich *et al*. (2001) classify mineral waters used for medicinal purposes into three categories according to mineral content, namely oligomineral waters (less than 200 mg/l TDS), medium mineral waters (200 – 1 000 mg/l TDS), and mineral waters (more than 1 000 mg/l TDS).

Bathing in hot mineral springs and drinking mineral water sourced from hot springs is a critical part of a holistic approach to the multi-dimensional health and wellness concept (Erfurt-Cooper & Cooper, 2009), and the therapeutic use of thermal waters is often referred to in general terms as ‘thermalism’, or as ‘balneotherapy’ when applied in a scientific medical context. The essential benefits of thermal springs (Erfurt-Cooper & Cooper, 2009), include the following:

- A curative value - depending on the condition or illness, hot springs and their associated minerals have generally been found to be important for the treatment of a variety of ailments, most commonly skin conditions like psoriasis, and diseases like rheumatism and arthritis.
- An associative value – thermal springs are mentally uplifting due to the increased

feeling of wellbeing of body, mind and spirit, when associated with modern wellness/fitness therapies, and medical procedures.

- A therapeutic value - bathing in hot mineral water is relaxing and mentally uplifting, leading to increased feelings of wellbeing of body, mind and spirit.

While scientific evidence is still sparse, many medical conditions are thought to benefit from treatment with thermal water, some of which are outlined in Table 3.1.

Table 3.1 Medical conditions that may benefit from treatment with thermal water

Arthritis (rheumatoid arthritis and osteoarthritis)	Hypertension	Renal disorders
Cardiovascular diseases	Metabolic disorders	Respiratory disorders
Diseases of the central nervous system	Muscular problems	Rheumatism (various types)
Degenerative bone disease	Neuralgia	Sciatica
Exhaustion/fatigue	Orthopaedic problems	Skin problems, such as acne, eczema, dermatitis
Gastric and intestinal problems	Post-injury/post operative problems	Stress
Gynaecological problems	Psychological problems, such as depression	Urologic disorders

Source: Adapted from Erfurt-Cooper & Cooper (2009: 299)

3.2 Balneotherapy

Over the past four centuries, the science of balneology, or balneotherapy when used as a treatment, has evolved into a medical speciality, particularly in Europe and Japan (Altman, 2000; Lund, 2000). The word 'balneo' is derived from 'balneum' in Latin, meaning 'bath'. It is often used in combination with other natural or complimentary remedies, and is sometimes referred to as 'health resort medicine' or 'spa therapy' (Agishi & Ohtsuka, 1998). Balneotherapy can be simply defined as "the therapeutic use of mineral and thermal waters" (Karagülle, 2009: 1), as "a natural therapy which attempts to make the best use of natural elements such as hot springs and climate" (Agishi & Ohtsuka, 1998). Altman (2000: 18) provides a more detailed definition, describing balneotherapy as "a natural approach to health and healing that uses hot spring water, gases, mud and climatic factors, such as heat, as therapeutic elements…in addition to bathing, modalities such as hydrotherapy, mud therapy, physical therapy, massage, steam baths, physical exercises, inhalation of water vapour and drinking mineral water are often used as part of a complex therapy for both health

preservation and treating disease". Nasermoaddeli & Kagamimori (2005) reviewed literature on the use of balneotherapy in dermatologic, musculoskeletal, metabolic and psychological conditions that included clinical trials, and write that many medical specialists such as rheumatologists and dermatologists now acknowledge the medical significance of balneotherapy.

Balneotherapy is the main intervention of any thermal spa treatment (Karagülle, 2009). A range of adjunct therapies complement the use of balneotherapy (Bender, Karagülle, Bálint, Gutenbrunner, Bálint & Sukenik, 2004; Altman, 2000), and include aromatherapy, body scrubs, colonic irrigation, pelotherapy (mud pack therapy), fasting, herbal wraps, hydrotherapy, the Kneipp kur (hydrotherapy combined with medicinal herbs), massage, oxygen therapy, ozone therapy, sauna, steam baths and thalassotherapy, amongst others. Spa treatments often include hydrotherapy, which should be distinguished from balneotherapy. Hydrotherapy refers to the use of ordinary tap water in any form or temperature for healing purposes, which includes aquatic exercise, the use of water jets, and body wraps (Karagülle, 2009).

Balneotherapy has three types of effects on the human body:

3.2.1 Chemical effects

Thermal waters, particularly those containing high amounts of sulphur, can have a therapeutic effect on the skin, relieving psoriasis, dermatitis and fungal infections (Ghersetich *et al*., 2001; Altman, 2000). Sulphur is known to promote keratolysis, the loosening and shedding of the outer layer of the skin, and can be effective in treating certain skin conditions, such as acne. Sulphur also possesses anti-bacterial and anti-fungal properties, believed to result from sulphur interacting with oxygen molecules in the epidermis, to produce an acidic environment that prevents microbe growth (Harris, 2010). Sulphur can also be absorbed through the skin and have an analgesic (pain relieving) effect (Bender *et al*., 2004). Silicate-rich water (silicate is a mixture of silicon, oxygen and other trace minerals) has been successfully used for treating atopic dermatitis, allergic rhinitis and conjunctivitis (Ghersetich *et al*., 2001), and when trace amounts of minerals such as calcium, magnesium, potassium, lithium and selenium are absorbed by the body, it provides healing effects to various body organs and systems, including stimulation of the immune system, leading to enhanced immunity, as well as physical and mental relaxation. It is thought that radon, which can be absorbed through the

skin, or inhaled, has anti-inflammatory as well as analgesic effects (Bender *et al*., 2004). High amounts of negative ions found in mineral springs help to promote feelings of physical and psychological wellbeing (Altman, 2000).

3.2.2 Thermal effects

Thermal water gradually increases the body temperature, killing harmful germs and viruses in the process (Altman, 2000). Heat increases the secretion of beta-endorphin, a natural painkiller. Beta-endorphin also boosts the immune system and increases relaxation. Heat also prevents inflammation by increasing secretion of cortisol and catechloramines, two hormones produced by the adrenal glands. For this reason doctors often prescribe hot water baths to treat inflammatory conditions, such as arthritis or dermatitis, as well as auto-immune diseases (Harris, 2010).

3.2.3 Mechanical effects

An immersed body experiences a force applied by the water on all sides, called hydrostatic pressure, which can have many benefits (Harris, 2010). It reduces swelling in the lower legs and feet, decreases blood pooling and helps return venous blood to the heart. Another important mechanical effect is that of buoyancy, the upward vertical force of water, which counteracts the effects of gravity, and reduces the compression of joints (Harris, 2010). Many people who cannot exercise on land bearing their full weight can exercise vigorously and comfortably in water. Increased hydrostatic pressure on the body due to immersion increases blood circulation and cell oxygenation, and also helps to dissolve and eliminate toxins from the body (Altman, 2000). The increased flow of oxygen-rich blood throughout the body brings improved nourishment to vital organs and tissues. Immersion in thermal water also increases body metabolism, stimulates the secretions of the intestinal tract and liver, and aids in digestion. It helps to normalise the functions of the endocrine glands, as well as the functioning of the body's autonomic nervous system.

Common indications for balneotherapy (Ghersetich *et al*., 2001; Altman, 2000; Agishi & Ohtsuka, 1998) include:

- Chronic diseases, including rheumatic diseases such as rheumatism and arthritis, metabolic diseases such as diabetes, obesity and gout, gastrointestinal diseases, mild respiratory diseases, circulatory diseases, especially mild hypertension, peripheral

circulatory diseases affecting the hands and feet, skin diseases such as atopic dermatitis, contact dermatitis and psoriasis, as well as psychosomatic and stress-related diseases.

- Rehabilitation after surgical procedures, especially hip replacements, knee surgery and other orthopaedic surgery, sports-related injuries and spinal paralysis.
- Preventive medicine, such as building up physical strength and general immunity.

Thermal spring water can be used for health in three ways, namely bathing, drinking and inhalation (Altman, 2000). Bathing, or immersing oneself in thermal mineral water, is the most popular form of balneotherapy. According to Altman (2000), therapeutic bathing may involve immersing oneself up to neck level for approximately 15 to 20 minutes, two or three times a day, although the optimal time one should stay in water varies according to temperature. In some European spas the mineral water is also applied as concentrated jets, which stimulates the skin and massages muscles and joints.

The 'drinking cure' is especially popular in Europe, where many types of mineral water are bottled for commercial use, or made available for drinking at or close to their sources. Minerals from the water are absorbed through the mucosa of the digestive tract, where they affect gastrointestinal, kidney and other body functions (Altman, 2000). Not all waters are recommended for drinking, however. Those containing high amounts of arsenic, for example, may be good for treating fungal infections, but could be poisonous when swallowed in large amounts.

Inhaling mineral water as water vapour has been effective in treating people with asthma, sinus problems, allergies and other respiratory problems. In some spas the water is released as a fine spray from a fountain similar to a drinking fountain, or else through an oxygen mask, sometimes with the addition of eucalyptus oil or other herbal essences to help decongest the respiratory system (Altman, 2000). Therapeutic stream rooms are found at many European spas.

3.3 Balneological (medicinal/healing) classification of thermal waters

Thermal waters used for balneotherapy are generally classified according to the presence of a combination of cations, anions, trace elements and gases which have been found to have medicinal or healing properties. Such cations commonly include sodium, magnesium,

potassium and calcium, while anions include fluoride, chloride, sulphate and bicarbonate, and trace elements include arsenic, boron, iron, lithium, manganese, rubidium, selenium, silicon, strontium and zinc. Gases include carbon dioxide, hydrogen sulphide and radon. Mineral-rich muds, known as peloids, are often found in conjunction with mineral-rich thermal waters.

Traditionally medicinal/healing thermal waters have been categorized in European literature into the following groups (Varga, 2010), illustrated in Table 3.2:

a) Simple thermal waters, with temperatures equal to or more than 25°C.
b) Simple acidic (carbonized) waters, with 1 000 mg/l or more free carbon dioxide.
c) Alkaline (sodium-potassium-bicarbonated) waters, with 1 000 mg/l or more total dissolved solids (TDS), the dominant cations being calcium or magnesium, the dominant anion being bicarbonate.
d) Alkaline (calcium-magnesium-bicarbonated) waters, with the dominant cations being calcium and magnesium, and the dominant anion being bicarbonate.
e) Chloridated (saline) waters, with 1 000 mg/l or more total TDS, the dominant cation being sodium, and the dominant anion being chloride.
f) Ironic (ferrous) waters, with 10mg/l or more iron content.
g) Sulphuric waters, with total sulphur content being 1mg/l or more (hydrogen sulphide, sulphur trioxide, or hydrogen sulphide).
h) Sulphated waters, with 1 000 mg/l TDS or more, the dominant anion being sulphate.
i) Iodated-bromidated waters, with 1mg/l or more iodide, and/or 5 mg/l or more bromide.
j) Radioactive waters – with measurable radon content.

Classifications do, however, differ from country to country. For instance, for water to be classified as iron-rich in Iceland requires at least 20 mg/l iron content (Kristmannsdóttir & Björnsson, 2003), but it is 10 mg/l in most European countries (Varga, 2010), and only 1 mg/l in Italy (Petraccia *et al*., 2006). In Iceland, where there is a long tradition of using geothermal baths for rehabilitation and curing of rheumatism and other illnesses, as well as for relaxation and entertainment, thermal waters are classified (Table 3.2) according to chemical composition as well as balneological properties, using a classification based on a combination of German and Japanese classifications for health resort water, but slightly adapted for Icelandic conditions (Kristmannsdóttir & Björnsson, 2003). Thus balneological thermal water in Iceland includes the following water types:

a) Carbonate waters, containing total carbonate (calculated as carbon dioxide) in excess of 300 mg/l.
b) Sulphide waters, containing hydrogen sulphide in excess of 1mg/l and temperature > 40°C.
c) Highly mineralized warm waters (>40°C), with TDS exceeding 1 000 mg/l.
d) Iron-rich waters, containing iron in excess of 20mg/l, and temperature > 40°C.
e) Flouride waters, containing fluoride in excess of 2 mg/l, and temperature > 40°C.
f) Iodide waters, containing iodide in excess of 1mg/l.
g) Radioactive waters, containing radon in excess of 666 Bq/l.

3.4 Balneological classification of South African thermal waters

The first balneological classification of some thermal springs in South Africa was done by Rindl (1936), and was later again classified by Kent (1952) into the following water types: indifferent waters, chalybeatic waters, alkaline waters, sulphate waters, salt waters, triple waters, silicious waters, lithium waters and sulphur waters (Table 3.2 and Table 3.3). Both Rindl (1936) and Kent (1952) refer to their classifications as being based on the 'medicinal' properties of the water, although neither author gives any evidence that the medicinal properties of the water were proven through any type of evidence-based research. In fact Kent's 1952 classification contains only limited information on the apparent healing properties of the various water types.

Altman (2000) provides a generic summary of the healing qualities of the most common minerals found in thermal waters, which is used to provide further insight into the possible medicinal properties of South Africa's thermal waters than that provided by Kent (1952). It should be noted that Altman's information is based on a combination of academic and medical publications, as well as personal interviews with a number of medical practitioners specialising in balneotherapy, and he emphasises that the material is presented in the spirit of historical, philosophical and scientific enquiry, and not as medical advice.

Kent's (1952) classification is discussed in more detail below, with added insights gained by referring to Altman (2000), as well as other authors and sources. Thermal waters found in South Africa are thus classified into the following groups:

3.4.1 Indifferent waters

Indifferent waters, also known as simple thermal waters, contain small amounts of dissolved solids, without any dominant mineral. Kent (1952) suggests that water should be regarded as indifferent if it contains less than 200 mg/l of dissolved solids, although there seems to be no set upper limit, and may be as much as 1 000 mg/l. This classification corresponds to what Ghersetich *et al*. (2001) and Altman (2000) refer to as 'lightly mineralised', or 'oligomineral' waters, and its therapeutic action is mainly attributed to its thermal properties, especially if higher than 35°C. Drinking this water is often beneficial to purify the system and for the elimination of toxins (Altman, 2000), and has been found to be remarkably effective for treating gout (Kent, 1952). It helps to reduce stress, increase body temperature and general circulation, relieve muscle and joint pain, and aid in the relief of rheumatic and other locomotive disorders (Altman, 2000). Since these waters are particularly good for drinking, many are bottled and sold commercially. Most of the indifferent thermal waters in South Africa occur in the Western Cape, namely The Baths (near Citrusdal), Goudini Spa and Brandvlei (near Worcester), and Avalon Springs and Baden (Montagu) (Kent, 1952). Indifferent waters are also found at Cradock Spa, in the Eastern Cape.

3.4.2 Chalybeatic waters

Chalybeatic waters contain significant amounts of iron in solution, often accompanied by manganese (Kent, 1952). Iron-rich water, sometimes also referred to as ferruginous or ferrous water, is often slightly brownish in colour, and is good for both drinking and bathing. Drinking water rich in iron helps to prevent and treat iron-deficiency anaemia, and ingesting iron-rich water is also believed to help alleviate mental fatigue and calm the nerves. Bathing in iron-rich water is also helpful for people suffering from iron-deficiency anaemia or excessive mental fatigue and stress-related conditions. Treatment with iron-rich water is indicated in cases of hyperthyroidism (Petraccia *et al*., 2006). Iron-rich water also helps to nourish the blood with oxygen and promotes the formation of red blood cells, thus helping to maintain the body's metabolism and better enabling the body to resist disease (Altman, 2000). Manganese, often found together with iron in chalybeate waters, is essential for proper coordination between brain and body, and is thought to be useful for treating both male and female sterility, impotence in men, digestive disorders, convulsions and seizures (Online Vitamins Guide, 2012e). In South Africa chalybeatic waters are found at Caledon Spa,

Warmwaterberg Spa (near Barrydale), Calitzdorp Spa and Toorwater (near Uniondale), all in the Western Cape (Kent, 1952).

Table 3.2: A comparison of medicinal/healing thermal water classifications

South Africa (Compiled from Kent, 1952)	**Traditional classification in Europe (Varga, 2010: 1261)**	**Iceland – based on German & Japanese classifications (Kristmannsdóttir & Björnsson, 2003: 20)**
Indifferent (simple thermal) waters - small amounts of dissolved solids, no dominant mineral, total TDS less than 200 mg/l	Simple thermal waters/oligomineral waters, with temperatures equal to or more than 25°C	
Chalybeatic waters - significant amounts of iron in solution, often accompanied by manganese	Ironic (ferrous/ferruginous) waters, 10mg/l or more iron content	Iron-rich waters – containing iron in excess of 20mg/l and temperature > 40°C
Alkaline waters - significant amounts of sodium carbonate and/or bicarbonate, pH always in the vicinity of 9	Alkaline (Na-K-bicarbonated) waters, with 1 000mg/l or more TDS, the dominant cations being Ca or Mg, the dominant anion being HCO_3 Alkaline (Ca-Mg-bicarbonated) waters, with the dominant cations being calcium and magnesium, and the dominant anion being HCO_3	
Sulphate waters - significant amounts (more than 1 mg/l) of sodium or magnesium sulphate	Sulphated waters, with 1 000 mg/l TDS or more, the dominant anion being SO_4	
Salt waters – contain significant amounts (more than 1mg/l) of sodium chloride	Chloridated (saline) waters, with 1 000 mg/l or more total TDS, the dominant cation being Na^+, the dominant anion being Cl^-	
Triple waters - contain carbonates or bicarbonates, chlorides, as well as sulphate, all in significant amounts		
Siliceous waters - silica is the dominant constituent		
Lithium waters - high lithium content		
Sulphur waters - sulphur is present as dissolved hydrogen sulphide	Sulphuric waters, with total sulphur content 1mg/l or more (HS, or S_2O_3, or H_2S)	Sulphide waters – containing H_2S in excess of 1mg/l and temperature > 40°C
	Simple acidic (carbonized) waters, with 1 000 mg/l or more free CO_2	Carbonate waters – containing total carbonate (calculated as CO_2) in excess of 300 mg/l
	Iodated-bromidated waters, with 1mg/l or more I^-, and/or 5mg/l or more Br^-	Iodide waters – containing iodide in excess of 1mg/l
	Radioactive waters – contain measurable radon	Radioactive waters – containing radon in excess of 666 Bq/l
		Highly mineralized warm waters (>40°C) with TDS exceeding 1 000 mg/l
		Flouride waters – containing fluoride in excess of 2mg/l and temperature > 40°C

3.4.3 Alkaline waters

Alkaline waters contain significant amounts of sodium carbonate and/or bicarbonate, with a pH in the vicinity of 9 (Kent, 1952). Altman (2000) distinguishes between two kinds of bicarbonate waters, those rich in sodium bicarbonate and those rich in calcium bicarbonate. With drinking, alkaline waters act as antacids. They also have a diuretic action, and since they dissolve mucous they are useful to facilitate expectoration in cases of bronchial catarrh (Kent,

1952). Drinking water rich in bicarbonates also stimulates the appetite, and increases secretion of gastric juices necessary for proper digestion. At many European spas, drinking water rich in bicarbonates is one of the primary methods for treating patients with gastric disorders such as chronic dyspepsia, gastric ulcers, problems following stomach and duodenal operations, intestinal conditions (especially constipation and spastic colon), and it also has positive effects on patients with diabetes, chronic recurring pancreatitis, and bile duct conditions caused by hepatitis and other diseases (Altman, 2000). Bathing in alkaline waters helps to open the peripheral blood vessels of the body, improving circulation, especially to the extremities, and is recommended for people with hypertension and moderate atherosclerosis/hardening of the arteries (Altman, 2000). Alkaline waters occur in the northern parts on South Africa, at Warmbaths (Bela Bela), Die Oog (near Naboomspruit) and Tshipise (near Musina), in Limpopo, and Badplaas in Mpumalanga (Kent, 1952).

3.4.4 Sulphate waters

Sulphate waters contain significant amounts (more than 1 mg/l) of sodium or magnesium sulphate (Kent, 1952). Altman (2000) also refers to calcium sulphate. In general drinking water rich in sulphate is likely to be mildly aperient (laxative) as well as diuretic, and taken as baths they will act as skin stimulants (Kent, 1952). Conditions that can be treated with sulphate waters include chronic infections of the respiratory tract, such as laryngitis, rhino-pharyngitis, bronchial catarrh and bronchial asthma, skin diseases such as chronic eczema, as well as rheumatism, and postoperative conditions relating to the locomotive system. The value of sulphate waters depends on the presence of one or more of the following chemical compounds (Altman, 2000):

i) Sodium sulphate, which stimulates bile secretion when ingested, and which has a positive effect on problems related to the liver and bile ducts.

ii) Magnesium sulphate (commonly known as Epsom Salt), has similar actions to the sodium sulphate when ingested orally, and with bathing soothes and tightens the skin, while at the same time allowing the skin to retain moisture.

iii) Calcium sulphate, which when ingested stimulates the secretion of bile, aids digestion, and has been used clinically in treating kidney disorders and certain metabolic diseases.

In South Africa sulphate waters only occur at Shu-Shu, in Kwazulu-Natal (Kent, 1952).

3.4.5 Salt (sodium chloride) waters

Salt (sodium chloride), or saline, waters contain significant amounts (more than 1 mg/l) of sodium chloride (Kent, 1952). While salt waters are typically rich in sodium chloride, they may also contain other chlorides. Sodium is an essential component of many body fluids, such as blood, tears and perspiration, and chloride helps regulate fluids both in and out of body cells, facilitates the digestion of food and the body's absorption of nutrients, and helps transmit nerve impulses to and from the brain (Altman, 2000). Sodium chloride waters are particularly recommended for bathing, and are indicated for treating skin diseases, rheumatic disorders, arthritis, central nervous system and peripheral nerve diseases, and posttraumatic, orthopaedic and postoperative disorders, as well as certain gynaecological diseases, while mild chloride waters are popular for drinking, and are believed to increase the appetite, improve digestion and relieve constipation (Altman, 2000). South African springs with a high sodium chloride content include De Kelders and Malmesbury (Western Cape), and Florisbad (Free State) (Kent, 1952).

3.4.6 Triple waters

Triple waters contain carbonate/bicarbonate, chloride, as well as sulphate, all in significant amounts (Kent, 1952). The medicinal uses of these minerals are explained in sections 3.4.3, 3.4.4 and 3.4.5 above. In South Africa this water type is found only at Natal Spa, near Paulpietersburg in Kwazulu-Natal (Kent, 1952).

3.4.7 Siliceous waters

Silicious waters have silica, usually present as silicon dioxide, as the dominant constituent (Kent, 1952), although at least some silica is found in almost all thermal waters. Silica is found in bones, skin and other body organs. It is important for the promotion of cardiovascular health, plays a key role in bone formation and bone re-mineralization, and works synergistically with minerals such as calcium, magnesium and potassium (Altman, 2000). Silicon is a major constituent of collagen, the substance that joins cells together, and is important for proper elasticity of the skin, and for healthy hair and nails (Online Vitamins Guide, 2012j). Silicious waters are found at Lilani in Kwazulu-Natal (Kent, 1952).

Table 3.3: Classification of medicinal thermal spring waters in South Africa

Classification	Description	Locations
Indifferent (simple thermal) waters	Small amounts of dissolved solids, no dominant mineral	The Baths Goudini Spa Avalon Springs Baden Brandvlei Hot Spring† Cradock spa
Chalybeatic waters	Contain significant amounts of iron in solution, often accompanied by manganese	Caledon Spa Warmwaterberg Spa Calitzdorp Spa Toorwater†
Alkaline waters	Significant amounts of sodium carbonate and/or bicarbonate, pH always in the vicinity of 9	Warmbaths Badplaas Tshipise Die Oog
Sulphate waters	Significant amounts of sodium or magnesium sulphate	Shu-Shu
Salt waters	Significant amounts of sodium chloride	De Kelders† Malmesbury Hot spring† Florisbad Thangami Safari Spa
Triple waters	Contain carbonates/bicarbonates, chlorides, as well as sulphate, all in significant amounts	Natal Spa
Siliceous waters	Silica is the dominant constituent	Lilani
Lithium waters	High lithium content	Nkolo Spa Aliwal Spa
Sulphur waters*	Sulphur is present as dissolved hydrogen sulphide, gives the water its 'sulphur' smell which disappears soon after exposure to air	Cradock Spa Aliwal spa Tshipise Nkolo Spa Malmesbury Hot Spring†

* Not a true classification. Only a tiny amount of dissolved hydrogen sulphide is necessary for the characteristic sulphur smell. Sometimes springs are described as sulphur springs, when in actual fact other minerals are dominant. The springs listed above under this category all have relatively high hydrogen sulphide contents, but are classified in other categories.

† Currently not open to the public

Source: Compiled from Kent (1952: 5-7)

3.4.8 Lithium waters

Lithium waters have high lithium content. While little is known about the effects of trace amounts of lithium in thermal waters, many find that it helps to relax the mind and the emotions (Altman, 2000). In modern medicine lithium is mainly used to treat bipolar disorder (manic-depressive illness). It acts on the central nervous system to stabilise a person's mood, helping people to have more control over their emotions, and to cope better with the problems

of living (Mayo Clinic, 2012). In South Africa lithium waters are found at Nkolo Spa in North-West Province and Aliwal Spa in the Eastern Cape (Kent, 1952), while trace amounts are found in a number of other thermal waters in the country, including some in the Western Cape.

3.4.9 Sulphur waters

Sulphur is present in thermal water as dissolved hydrogen sulphide, which gives the water its characteristic sulphur smell. Kent (1952) maintains that this is not a true classification, since only a tiny amount of hydrogen sulphide is necessary for the characteristic sulphur smell. Sometimes springs are described as sulphur springs, when in actual fact other minerals are dominant. Sulphur waters are commonly, but not exclusively, found in areas where there is volcanic activity. The hydrogen sulphide gas itself is strongly antibacterial, and stimulates mucous membranes, promoting expectoration. Breathing vapours of waters rich in sulphur can help relieve problems of the nasal and respiratory passages, including chronic bronchial catarrh (Altman, 2000). Sulphur has antifungal and antibacterial properties (Ghersetich *et al*., 2001), and bathing in sulphur-rich water is believed to relieve a wide variety of health problems, including liver, digestive and urinary conditions and chronic skin diseases. It is believed that the warmer the water, the greater the therapeutic effect (Altman, 2000). In view of the importance attached by balneotherapists to the presence of dissolved hydrogen sulphide, Kent (1949) suggests an additional classification, 'sulphuretted' waters, for waters with more than 10 mg/l of dissolved hydrogen sulphide (uncommon in South Africa), moderately sulphuretted for 5-10 mg/l, and slightly sulphuretted for 1-5 mg/l. Thermal springs in South Africa with a high hydrogen sulphide content include Cradock Spa and Aliwal Spa in the Eastern Cape, Nkolo Spa in North-West Province, Tshipise in Limpopo and Malmesbury in the Western Cape (Kent, 1952).

3.5 Medicinal properties of minerals found in thermal waters

The medicinal properties of certain minerals or combinations of minerals found in thermal waters were discussed as part of the balneological classification of South African thermal waters above. The medicinal properties of the main cations and anions found in thermal waters are summarized in Table 3.4 and Table 3.5 respectively, while the medicinal values of important trace elements found in thermal waters are summarized in Table 3.6. Since there is little academic literature, or research, in a thermal spring context, on the balneological

uses/medicinal properties of some of these minerals, particularly the less common trace elements, internet-based literature on the medicinal values of these minerals as nutritional supplements has been utilised, but only for informational purposes, to give an indication of its potential for medicinal use. Recommendations for actual use would require further evidence-based research.

3.6 Medicinal properties of gases found in thermal waters

3.6.1 Hydrogen sulphide

The medicinal properties of hydrogen sulphide were discussed in Section 3.4.9.

3.6.2 Carbon dioxide

The presence of carbon dioxide gas in small quantities stimulates breathing and has the ability to help dilate arteries, helping to increase peripheral blood circulation, and is useful for treating circulatory disorders, arthritis and other joint diseases, and also helps people with cardiovascular problems and hypertension (Altman, 2000).

3.6.3 Radon

Many thermal waters, including some in South Africa, are said to be 'radioactive', due to the presence of trace elements of radon, a radioactive inert gas. Thermal and highly mineralised waters, especially those rising from igneous rocks, are generally much more radioactive than normal surface and underground waters (Kent, 1952). Radon is easily absorbed by the body, especially by the respiratory passages, skin and digestive system, and although the subject is often controversial, bathing in water containing small amounts of radon gas can be used to treat a range of problems, including rheumatic disorders, arthritis, central nervous system and peripheral nerve diseases, post-traumatic, orthopaedic, postoperative disorders, gynaecological disorders, skin diseases and cardiovascular disorders (Altman, 2000). According to Zdrojewicz & Strzelczyk (2006), water containing radon appears to have analgesic (pain relief) effects and anti-inflammatory properties, but also provides neuro-vegetative balance, in other words it has a calming effect, helping to ease anxiety and maintain or re-establish emotional balance. While the exact mechanism of radon's effect on the human body is not completely understood, radon therapy appears to aid in the recovery of

the immune system, and among the conditions that have been treated at radioactive spas with the greatest success are rheumatoid arthritis, bronchial asthma, and psoriasis (Zdrojewicz & Strzelczyk, 2006).

Radon treatment is considered to be a viable alternative to conventional medical treatment, particularly for the relief of pain and other symptoms of arthritis and other inflammatory diseases (Erickson, 2007). Most literature on the subject agrees that the analgesic (pain relief) activity of radon will be preserved for months after the treatment has taken place (Altman, 2000). Since its effects are long lasting, it allows many arthritis patients to discontinue using their conventional medications for months at a time. Franke, Reiner & Resch (2007) add that evidence from several newer randomized controlled trials, clinical observational studies and empirical experience over decades, confirm the sustained analgesic effects of radon, and that apart from pain relief, anti-inflammatory and immune modulating effects have been reported. There does not appear to be any universally-accepted minimum radon concentration required for water or to be classified as radon mineral water, or for it to be used for radon treatments. Radon is measured in becquerel per litre (Bq/l), and in Iceland, for instance, at least 666 Bq/l is deemed necessary for classification as radon medicinal/healing water (Kristmannsdóttir & Björnsson, 2003), while in Poland, to be classified as radon mineral water, there should be a minimum radon concentration of 74 Bq/l (Zdrojewicz & Strzelczyk, 2006). Most traditional classifications in Europe specify only that the water should contain radon (Varga, 2010). Radon content of water used for radon treatments may range from concentrations of about 80 Bq/l, to several thousand Bq/l. At Bad Gastein, a popular radon treatment spa in Austria, the radon concentration in the water used for treatments is in the range of 740 Bq/l (Zdrojewicz & Strzelczyk, 2006). The therapeutic use of radon involves the intake of radon gas dissolved in water or steam, either through inhalation, or by absorption via the skin. It is then distributed throughout the body via blood circulation (Erickson, 2007; Franke *et al*. (2007). Retention time in the body is short, and most of the radon is soon discharged through exhalation. Two hours after bathing, only about 10% of the original radon still remains in the body (Hussein *et al*., 2008).

In Europe radon treatment is an established therapy that builds on centuries-old spa therapies, but radon baths are prescribed only after a thorough examination has indicated its application for a particular health problem (Erickson, 2007). Radon therapy is a commonly prescribed natural cure in countries such as Germany, Austria, Hungary, the Czech Republic, Poland and Russia. In Hungary radon therapy is often supplemented with drug treatment (Nagy, Kávási,

Kovács & Somlai, 2008). At Hungarian medicinal spas radon treatments are indicated for inflammatory joint and spine diseases (e.g. rheumatoid arthritis, psoriasis and psoriatic arthritis and ankylosing spondylitis), neuritis, neuralgia, and degenerative spine and joint diseases (Nagy *et al*., 2008).

Today many spas, for instance the German spas of Schlema and Sibyllenbad, function as combined 'relaxation' and 'curative' spas, offering radon baths, together with other treatments, such as massage, sauna, hot sand beds, warm mud packs, and various types of mineral baths (Erickson, 2007). Other thermal spa destinations with radon treatment centres include Bad Brambach and Bad Kreuznach in Germany, Bad Hofgastein in Austria, Plombieres in France, Ischia in Italy, Pyatigorsk in Russia and Misasa in Japan (Hussein, Ibrahim & Zakaria, 2008). These authors point out that a major advantage of radon therapy is that it could be relatively cheaply available in poorer parts of the world, where there may not be affordable access to commercial pharmaceuticals. In 2007 some 18 radon spas in Germany, Austria and the Czech Republic formed an association called EURADON (www.euradon.de), with the objective of promoting scientific research into radon, and to educate the public, as well as medical practitioners, about the advantages of using radon to treat medical conditions, with information based on reliable research results.

Radon therapy is often used in conjunction with speleotherapy, the utilization of the specific climate of caves for healing. Caves are particularly suited to this type of therapy, because of constant temperature, high humidity, high carbon dioxide levels, lack of air pollution, microorganisms and allergens, and high salt content of the air. Speleotherapy is used for the treatment of obstructive respiratory diseases (bronchitis and asthma), and today there are five 'medicinal caves' in Hungary, all with measurable radon content (Nagy *et al*., 2008). However, it is pointed out by Nagy *et al*. (2008) that only limited randomized controlled studies have been published on speleotherapy, with contradictory results. There appears to be no up-to-date data available on radon content of thermal springs in South Africa. Kent (1949) describes the radioactivity of some South African thermal springs, acknowledging Rindl (various publications between 1916 and 1931) as being the source of his information. According to Kent (1949), South African thermal waters known to be radioactive include those at: Badplaas - 87 Bq/l (6.5 maché units), Machadodorp – 165-172 Bq/l (12.3-12.8 maché units), Malmesbury - 986 Bq/l (73.3 maché units), and Brandvlei - 673-713 Bq/l (50-53 maché units). Avalon Springs (Montagu) is in possession of an undated report by J. Muller, giving the radon content of the water as 256 Bq/l (19 maché units) at the main spring,

and 161 Bq/l (12 maché units) in the pool nearest to the spring. Kent (1949) refers to the work of Mr J. Muller on measuring the radon content of the water at Brandvlei during 1946, so it can be assumed that the Montagu data also dates back to that time.

Table 3.4: Medicinal values of the main cations found in thermal waters

Cations	Medicinal value
Sodium	Sodium, together with other electrolytes, especially potassium, plays a role in regulating osmotic pressure and the water balance of the body, and helps to maintain the pH balance. It also helps in the transmission of nerve impulses, and in the relaxing of muscles (Online Vitamins Guide, 2012k).
Magnesium	Magnesium is a mineral that is important to many enzymes that regulate the body's functions, including protein production, energy production, the proper functioning of nerves and muscles, including the heart, and is also essential for the formation of bones and teeth (Altman, 2000). Petraccia *et al*. (2006) point out that it has been found that waters rich in magnesium help to prevent atherosclerosis (hardening of the arteries).
Potassium	Potassium helps to transmit nerve impulses, to regulate the fluid and mineral balance in the body, and maintain normal blood pressure (Altman, 2000).
Calcium	Calcium is an essential mineral for the building of bone and teeth, it regulates permeability of cell membranes, plays a role in liver function, and helps muscles contract to our heartbeat (Altman, 2000). Waters rich in calcium are also indicated when calcium requirements are increased, for instance for growing children, pregnant women, old age and osteoporosis, and recent studies suggest that calcium may help to prevent hypertension (Petraccia *et al*., 2006). Calcium, along with magnesium, takes part in the production of neurotransmitters, and thus can be used to treat depression (Botanical-online, 2012).

Table 3.5: Medicinal values of the main anions found in thermal waters

Anions	Medicinal value
Chloride	Chloride helps regulate fluids both in and out of body cells, facilitates the digestion of food and the body's absorption of nutrients, and helps transmit nerve impulses to and from the brain (Altman, 2000).
Flouride	Flourine is found in thermal waters as fluoride. Flouride acts as a catalyst for the mineralization of developing tooth enamel, and for the re-mineralisation of surface enamel. Small amounts of fluoride help to reduce tooth decay, and also help in the maintenance of bone structure (Online Vitamins Guide, 2012d).
Sulphate	With drinking, water rich in sulphate is likely to be mildly aperient (laxative) as well as diuretic, and taken as baths they will act as skin stimulants (Kent, 1952). The value of sulphate waters depends on the presence of one or more of the following chemical compounds (Altman, 2000): i) Sodium sulphate, which stimulates bile secretion, and has a positive effect on problems related to the liver and bile ducts. ii) Magnesium sulphate (Epsom Salt), has similar actions to the sodium sulphate when taken orally, and with bathing soothes and tightens the skin, and allows the skin to retain moisture. iii) Calcium sulphate, which when ingested stimulates the secretion of bile, aids digestion, and has been used clinically in treating kidney disorders and certain metabolic diseases.
Bicarbonate	With drinking, waters containing sodium bicarbonate (alkaline waters) act as antacids and have a diuretic action, and since they dissolve mucous they are useful to facilitate expectoration in cases of bronchial catarrh (Kent, 1952). Drinking water rich in bicarbonate stimulates the appetite, and increases secretion of gastric juices necessary for proper digestion. Bathing in alkaline waters helps to open the peripheral blood vessels of the body, improving circulation, especially to the extremities, and is recommended for people with hypertension and moderate atherosclerosis/hardening of the arteries (Altman, 2000).

Table 3.6: Medicinal value of trace elements found in thermal waters

Mineral	Medicinal value
Arsenic	Used to treat fungal infections, but can be poisonous when ingested over a long period of time. Springs that contain arsenic often have facilities set aside for the soaking of hands and feet (Altman, 2000).
Boron	Boron helps to regulate the body's use of calcium, phosphorous and magnesium (Online Vitamins Guide, 2012a). Boron has been found to be an effective treatment option for rheumatoid arthritis as well as osteoporosis by bringing about effective calcium integration into cartilage and bone, and also improves brain function and cognitive performance, including hand-eye coordination, short-term memory and concentration (Organic Facts, 2012).
Chromium	Plays a role in the maintenance of glucose balance in body, and is thought to help to reduce blood cholesterol levels, as well as to assist in the healing of wounds (Online Vitamins Guide, 2012b).
Cobalt	Cobalt is required in the manufacture of red blood cells, and assists in the prevention of anaemia (Online Vitamins Guide, 2012c).
Iodine	Iodine usually occurs together with bromine, and iodine-bromine waters are widely recognized for the treatment of hypertension, due to their positive impact on cardiovascular system (Košić *et al*., 2010).
Iron	Iron is an essential mineral that is required to maintain a healthy immune system, and for energy production. It is involved in the formation of red blood cells, and in the transport of oxygen to every cell. Iron assists the memory and ability to concentrate, and helps build resistance to infection and stress (Online Vitamins Guide, 2012e).
Lithium	Lithium acts on the central nervous system to stabalise a person's mood, helping people to have more control over their emotions, and to cope better with the problems of living (Mayo Clinic, 2012).
Manganese	Manganese is essential for proper coordination between brain and body, and is thought to be useful for treating both male and female sterility, impotence in men, digestive disorders, convulsions and seizures Online Vitamins Guide (2012f).
Molybdenum	Molybdenum, while only required in small amounts by the body, has a range of uses. It assists in the metabolism of nitrogen, aids in the conversion of purines to uric acid, helps to regulate the pH balance in the body, helps to promote normal growth and development, and is thought to play a part in preventing anemia, tooth decay and impotency (Online Vitamins Guide, 2012g).
Nickel	Helps optimal growth, healthy skin, strengthens bone structure, enhances absorption of zinc (Ojaván Products, n.d.).
Phosphorous	Phosphorous is an important constituent of bone tissue, works along with calcium to maintain the strength and rigidity of bones, and is useful for healthy muscles and nerves, and for mental and physical activity. It may assist in the treatment of nervous disorders, reduced sexual vigour and general weakness (Online Vitamins Guide, 2012h).
Rubidium	Rubidium, a rare trace mineral, essential for the proper absorption of glucose in the body, thus assisting in the prevention of diabetes. It helps the body to maintain a balance in hormone production, and aids in the regulation and absorption of iron. It is also thought to boost the production and synthesis of serotonin, thus helping in the prevention, and treatment, of depression (Junttilla, 2012).
Selenium	Selenium is an essential micronutrient which has antioxidant properties and contributes to the efficiency of the immune system. It reduces the risk of arterial deposits, thus ensuring smooth flow of blood and a healthy cardiovascular system, and is reported to lead to improvements in depression, mental fatigue and anxiety (Online Vitamins Guide, 2012i). Selenium-rich waters have also been found to be effective in treating dermatological disorders, such as eczema, psoriasis, acne and burns, and has been demonstrated to be protective against photo-aging (aging of the skin as a result of long-term exposure to ultraviolet radiation), because of its antioxidant properties (Ghersetich *et al*., 2001).
Silicon	Silicon is usually present as silica (silicon dioxide). Silicon is a major constituent of collagen, the substance that joins cells together, and is important for proper elasticity of the skin, and for healthy hair and nails (Online Vitamins Guide, 2012j).
Strontium	Strontium has important medicinal functions, particularly for osteoporosis, where it assists in the fusing of calcium in bone, hence serving as a catalyst to increase bone density and reduce the risk of fractures, and osteoarthritis, where strontium can help to build cartilage in joints (Johnson, n.d.), can also prevent tooth decay by strengthening the bone structure of teeth. In fact strontium acetate is the active ingredient in Sensodyne toothpaste, a type of toothpaste developed to reduce tooth sensitivity (Algester Dental, 2011).
Sulphur	Sulphur has antifungal and antibacterial properties (Ghersetich *et al*., 2001), and bathing in sulphur-rich water is believed to relieve a wide variety of health problems, including liver, digestive and urinary conditions and chronic skin diseases (Altman, 2000).
Zinc	Zinc aids in the production of insulin, thus helping to control blood sugar level. It also strengthens the immune system, protecting the body against coughs and colds, and assists in the healing of burns and wounds, and the reduction of inflammation (Online Vitamins Guide, 2012l).

3.7 Medicinal properties of peloids (muds) found in thermal waters

The word ‘peloid’ refers to mineral-rich mud that is often found at thermal water sources. The use of thermal mud for medicinal purposes, known as pelotherapy, or fangotherapy, helps to firm and soften the skin, removes toxins from the body, and aids in the absorption of minerals and other therapeutic elements by the skin. Mud therapy is used for a wide range of health complaints, including rheumatic disorders, skin diseases and digestive complaints (Altman, 2000). Thermal mud is generally made up of one-third solids and two-thirds water, it may be plain mud, or could contain a variety of minerals, such as sulphur, as well as decomposed vegetable matter containing mineral and medicinal elements. Peat balneology is used extensively at the spa town of Héviz in Hungary. Peat is collected from the bottom of a thermally heated sulphurous lake, and applied in the form of mud baths or mud packs to treat a wide range of health problems, including degenerative spine and joint illnesses, dermatological diseases, gout and gynaecological infections (Altman, 2000). The only thermal spring resort in South Africa that currently has a source of mineral-rich mud is Thangami Safari Spa, in Kwazulu-Natal.

3.8 Positioning balneotherapy in modern medicine

Despite the popularity of thermal spa therapy, reported scientific evidence for its efficacy still remains relatively sparse (Van Tubergen & Van der Linden, 2002). It has been found to be difficult to establish an exact correlation between chemical or mineral composition of thermal water, and its balneological properties (Björnsson, 2000, cited in Kristmannsdóttir, 2010), and in many cases medicinal properties seem more based on tradition than on scientifically proven facts. In fact throughout the ages interest in the use of thermal water in medicine has fluctuated from century to century, and from country to country. The medical world has viewed it with differing opinions, from very enthusiastic to extremely critical, and from beneficial to harmful (Van Tubergen & Van der Linden, 2002). In spite of extensive research there is still uncertainty on the exact mode of action of the different thermal waters (Varga, 2010). While the healing effects of balneotherapy in a wide range of diseases are well described, the exact mechanism of the healing spa cure is still almost completely unknown. As Dr W. Darley-Hartley remarked in a paper read at the East London Medical Congress in 1908, “There is much in nature’s chemistry which we, even nowadays, do not clearly understand….we all know it to be a fact that quantities of certain constituents too minute to

have in a galenical mixture any perceptible effect, will have a very distinct action when taken in mineral waters." (Darley-Hartley, 1940: 439).

Balneotherapy is also still not fully recognized as an independent medical speciality at a global level (Gutenbrunner, Bender, Cantista & Karagülle, 2010). Barriers to more universal acceptance include lack of scientific evidence, the fact that balneotherapy is not used in all countries, lack of internationally accepted terms in the field, restriction of the practice of balneotherapy to specific settings (the traditional definition of balneotherapy claims that it covers only the use of natural remedies, and only at their place of origin), and the growing trend to use balneotherapy mainly for wellness purposes (Gutenbrunner *et al*., 2010). In Europe, however, the 'Kur', corresponding with 'taking the waters', as well as balneotherapy, are taken very seriously as therapies in modern medicine. 'Spa medicine' (a combination of balneotherapy, hydrotherapy and other treatments) is seen to play an important part in the treatment of a variety of disorders, not least because the environment of spa resorts aims to enhance both the physical and psychological wellbeing of the individual by promoting healthy activity (Low, 1989, as cited in Cooper *et al*., 1995).

While thermal spa therapy employs a number of different modalities, including balneotherapy and hydrotherapy, the secret of its influence could be in the 'wholeness' of the therapy, the combination of heat, mineral content, radioactivity and the effect of a vacation that provides mental and physical relaxation (Wolf, 1996). Time spent at a thermal spa often has a special 'therapeutic atmosphere' of its own, and this may be due in no small part to a change in environment and lifestyle (Karagülle, 2009; Bender *et al*., 2004). Thus, while the contribution of the 'tourism' aspect of the thermal spa experience to health and wellbeing is certainly acknowledged, it may be that its actual value is largely underestimated. Despite the fact that the value of thermal water for the treatment of various diseases has been the subject of much controversy and criticism, it has not reduced demand for this therapy (Wolf, 1996). However, a number of countries, including Germany and Hungary, are now moving away from the traditional medical cure, based only on the curative properties of thermal water, and are starting to offer flexible programmes which are also oriented towards wellness, including general health, illness prevention, fitness and beauty (Cooper *et al*., 1995). In response the tourism industry has created thermal spring resorts that offer a combination of relaxation, health and beauty treatments, and activities. In the next chapter the links between the various types of health tourism, and thermal spring tourism, will be discussed.

CHAPTER 4

CONCEPTUALISING THE LINKS BETWEEN HEALTH AND THERMAL SPRING TOURISM

4.1 Introduction

As shown in previous chapters, travelling for one's health is one of the oldest motivations in tourism (Swarbrooke & Horner, 1999). Health tourism is referred to by Ross (2001: 1) as being "as ancient as pre-history and as up-to-date as tomorrow". Some of the earliest forms of tourism were directly aimed at increased levels of health and wellbeing, such as visiting spas in Europe in the 18th and 19th centuries, and the emergence of 'hill stations' in countries such as India, Sri Lanka and Malaysia further emphasized the apparent curative properties of tourism and recreation in appropriate, often distant, therapeutic places (Connell, 2006). Sports, such as golf, cycling, walking and mountaineering became part of the tourism experience, and were seen as pleasurable ways of combining tourism and wellbeing. More recently tourists are travelling in search of location-based spiritual healing activities, such as yoga and meditation. One of the major motivations for tourism is that of escape from an everyday personal or physical environment, to one perceived to be likely to give the traveller all the elements of the life he or she feels is missing from those everyday experiences (Erfurt-Cooper & Cooper, 2009). This growing desire for the combination of escape with the satisfaction of the need to maintain or recapture personal wellbeing has been recognized by the tourism industry through the promotion of health tourism. "Travel can contribute to all aspects of health if we consider the physical and mental benefits of rest and relaxation, the social aspects of mixing with other tourists and local people, and the intellectual stimulation that can come from learning about new places" (Smith & Puczkó, 2009: 40). The emphasis now lies in the prevention of disease and maintenance of good health, instead of cures, with high expectations regarding health improvements even if there are no specific health problems (Erfurt-Cooper & Cooper, 2009).

4.2 The links between health and tourism

Links between health and tourism are numerous and varied, and include trips taken to other countries for cosmetic or other surgery, trips taken to other countries for medical treatment to

cure illness and disease, trips to mountain or seaside sanitoria to improve the health of patients suffering from illness, trips designed to tackle stress and thus improve the mental and psychological health of the traveller, and general health and beauty trips (Horner & Swarbrooke, 2005).

Keyser (2002) distinguishes between three principal forms of health tourism:

- Medical care - travelling to a facility or specialist to obtain special treatment that is not available in the home area.
- Fitness and wellness - travelling to a destination or facility, such as a spa**,** to take part in preventive health measures, such as dieting, weight-loss, relaxation and exercise.
- Rehabilitation and recuperation - travelling to a destination or facility that offers special care, or is located in an area considered particularly beneficial to one's health, in order to recover from illness or an operation.

The concept of health includes mental as well as physical health, and in the increasingly stressful world of work, it seems likely that in future health tourism will continue to grow. Lowenthal (1962: 124) asks the question, "What better purpose is there for travel than to restore one's health, physical or mental"? Self-improvement is often considered its own reward, and one of the most ancient links between travel and health is the 'taking of waters' at mineral and hot springs, where locations with hot springs first became health, then pleasure resorts (Lowenthal, 1962).

Health travel has become a global phenomenon, to the extent that a trend has emerged which gives new meaning to the idea of going on holiday and returning a 'new person' (Yeoman, 2008). More and more people are choosing alternative medicine as a means of augmenting conventional medicine, or even as an alternative to mainstream healthcare, and for today's consumers the concept of 'wellbeing' has become a key factor contributing to their satisfaction with life (Yeoman, 2008). Modern approaches to health are reflected in the WHO's definition of health, which maintains that "health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (Anderson, 1987, cited in Nahrstedt, 2004: 193).

The International Union of Official Travel Organisations (IOUTO) defines 'health tourism' as "the provision of health facilities utilizing the natural resources of the country, in particular mineral water and climate" (1973, as cited in Hall, 1992: 151). While both mineral water and

climate have historically been key ingredients of health tourism, these concepts are no longer included in most contemporary definitions. Health tourism has been more generally defined as "the attempt on the part of a tourist facility or destination to attract tourists by deliberately promoting its health-care services and facilities, in addition to its regular tourist amenities" (Goodrich, 1994: 228), or simply as "any kind of travel to make yourself or a member of your family healthier" (Mary Tabacchi, a well-known authority on spa management, quoted in Ross, 2001: 1).

There appears to be some confusion surrounding the definition of health tourism and its sub-categories (Global Spa Summit, 2011), with no consistent definitions, and some being used synonymously and interchangeably with others. According to Cockerell & Trew (2003), the term 'health tourism' is in many ways paradoxical, with no clear indication of where the medical side ends and where the tourism side begins, which explains in part why it is such a difficult market to evaluate and quantify. Many promotional documents refer to 'health and wellness tourism', when they may actually mean 'medical and wellness tourism'. Sometimes the term 'health tourism' is used as a substitute for medical tourism, or for wellness tourism. Industry analysts and researchers tend to use the term 'health tourism' as a concept that includes both medical tourism and wellness tourism, and from a research/analysis perspective, the term is probably best used as an umbrella phrase to capture both medical tourism and wellness tourism markets (Global Spa Summit, 2011).

According to Hall (1992), there is a continuum along which the health-motivated tourist moves (Table 4.1). Younger travellers may satisfy their health-related needs by seeking out adventure and sports tourism destinations, but as they grow older they will look for less demanding ways to meet these needs. By making choices that involve travel to particular locations where participation in certain activities will contribute to at least one of the following areas, a person can be said to be participating in health tourism: improved fitness and/or physical skills, loss of weight, willpower to quit smoking, better digestion and circulation, physical flexibility, mental and physical relaxation, better social interaction, a more positive outlook on life, body reshaping and/or cosmetic surgery and stress management. Hall's framework does not, however, make allowance for the purely medical aspects of health tourism, and is more in line with what would be termed 'wellness tourism' today. In the following sections, the terms medical tourism, wellness tourism and spa tourism will be explained in more detail.

Table 4.1: Conceptual framework of the motivations and activities of participants in adventure, health and sports tourism

Motivations	**Activities**		
	Less active		**More active**
Non-competitive	Health tourism (e.g. spa tourism, health travel	Health tourism (e.g. fitness retreats)	Adventure travel (e.g. hiking)
	Adventure travel (e.g. yacht chartering)	Touristic activities which contain elements of health, sport and adventure tourism (e.g. cycling)	Adventure travel (e.g. climbing)
Competitive	Sport tourism (e.g. spectator sports)	Sport tourism (e.g. lawn bowls)	Sport tourism (e.g. ocean racing)

Source: Hall (1992: 142)

4.3 Medical tourism

The attempt to achieve better health while on holiday through relaxation, exercise or visits to spas has been taken to a new level with the emergence of a new and distinct niche in the tourist industry, that of medical tourism (Connell, 2006). Medical tourism is defined as "an industry where people travel often long distances to overseas countries to obtain medical, dental and surgical care while simultaneously being holidaymakers" (Connell, 2006: 1094), or as "tourism that involves people who travel to a place to undergo treatment for a disease, ailment or condition, and who are seeking lower cost of care, better access to care, or different care from what they could receive at home" (Global Spa Summit, 2011: 20). Hall (2011: 7) distinguishes between 'medical travel' as "travelling to access healthcare services that are otherwise not available due to high costs, long waiting lists or limited capacity in the country of origin" and 'medical tourism' as "the increasing tendency among people from developed countries to undertake medical travel in combination with visiting tourist attractions".

Medical tourism has grown phenomenally in a number of countries, including South Africa, Argentina, Hungary, Turkey, Dubai, Saudi Arabia, Iran, India, Thailand, Singapore, the Philippines and Mauritius. Medical tourism has traditionally focused on cosmetic and plastic surgery, but also includes eye surgery, cardiac surgery, organ transplants, as well as dentistry (Connell, 2006). South Africa's medical tourism industry began to show real growth by the late 1990s (George, 2004), and in 2008 South Africa received 410 000 medical tourists, or 4.3% of all international inbound tourists to the country (Global Spa Summit, 2011). South Africa's strength in medical tourism is considered to be the packaging of its tours, rather than

low costs or good doctors/hospitals. Medical tourism in South Africa is often packaged with safaris/wildlife viewing, recovery in a spa resort, or other tourism activities.

The growing popularity of alternative medicine and natural location-based remedies has considerably narrowed the gap between medical tourism and other forms of health tourism (Global Spa Summit, 2011), and there would seem to be a definite role for thermal spa resorts in the medical tourism market. Medical tourists are usually accompanied by one or more family members, and often need time to recover after surgery in a relaxing environment. Thermal spa resorts, with natural hot mineral water and a reputation for healing, are ideally placed to form constructive and lucrative links with the medical tourism market.

4.4 Wellness tourism

Wellness represents a new global approach to health, and simulates a more leisure-based health concept, as well as the development of a new health-oriented leisure system (Nahrstedt, 2004). The term 'wellness' is derived by combining the first part of 'wellbeing' and the last part of 'fitness' (Erfurt-Cooper & Cooper, 2009). Wellbeing includes feeling satisfied and happy, developing as a person, being fulfilled, and being able to make a contribution to the community (Smith & Puczkó, 2009), while fitness is dominated more by sporting activities. Fitness is seen as one element for physical wellbeing on the way toward a high level of wellness, while other elements such as good nutrition, beauty, relaxation, mental activity, social harmony, and environmental sensitivity must be added (Nahrstedt, 2004).

Table 4.2: Medical tourism and wellness tourism

Medical tourism		**Medical-wellness**	**Wellness tourism**	
Medical (therapeutic)	Medical (surgical)	Medical wellness	Holistic	Leisure & recreation
Rehabilitation (illness related)	Cosmetic surgery	Therapeutic recreation	Spiritual	Beauty treatments
Healing & recuperation	Dentistry	Rehabilitation (lifestyle related)	Yoga & meditation	Sport & fitness
	Operations	Occupational wellness	New Age	Pampering

Source: Adapted from Smith & Puczkó (2009: 7)

The relationship between medical tourism and wellness tourism is illustrated in Table 4.2. The second and fourth columns represent pure medical tourism and pure wellness tourism respectively. The first and fifth columns depict what are in reality the essential elements of

thermal spring health tourism, illustrating that it contains elements of both medical tourism and wellness tourism. The middle column depicts the growing tendency to combine elements of medical and wellness tourism (medical-wellness).

Wellness, in its purest form, involves helping healthy people prevent problems so that they stay healthy, both physically and mentally (Messerlu & Oyama, 2004). Wellness is a complex concept, incorporating elements of lifestyle, physical, mental and spiritual wellbeing, and one's relationship to oneself, others and the environment (Smith & Puczkó, 2009). The wellness industry provides products and services to healthy people, and people become wellness tourists to feel healthier, look better and prevent illnesses from developing. Thus the primary aim of wellness is illness prevention. Loverseed (1998: 48) defines wellness as "an emphasis on preventive health, the importance of a balanced lifestyle, adequate rest and relaxation, as well as physical, mental and emotional wellbeing".

Expanding on a number of other interpretations, Mueller & Lanz-Kauffmann (2001), in their 'expanded wellness model' (Figure 4.1), depict wellness as a state of health featuring the harmony of body, mind and spirit, with self-responsibility, physical fitness/beauty care, healthy nutrition/diet, relaxation/rest/meditation, mental activity/education, environmental sensitivity and social contacts as fundamental elements.

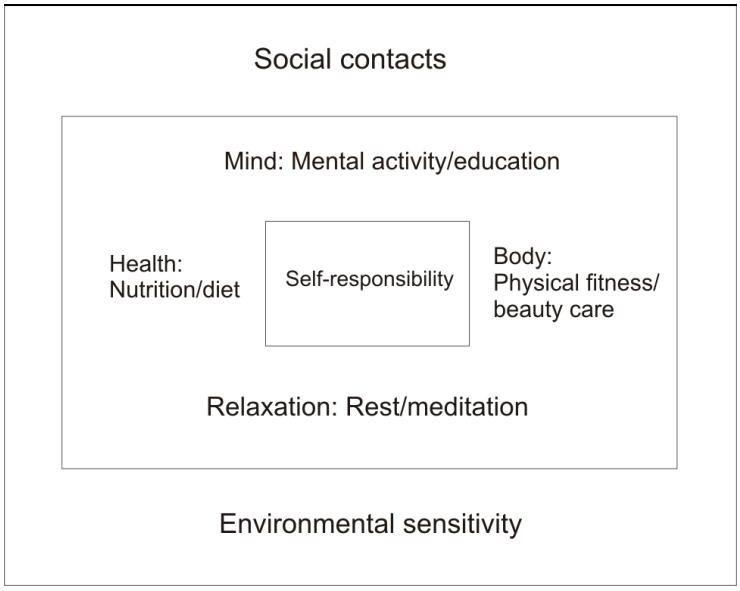

Figure 4.1: The expanded wellness model

Source: Adapted from Mueller & Lanz-Kaufmann (2001: 6)

Wellness involves helping healthy people to stay healthy, both physically and mentally (Ross, 2001), revolving around individuals taking charge of their own health. "It means much more than freedom from disease……wellness may be demonstrated by physical development, positive use of the mind, acceptance of the importance of daily activity, constructive management of stress energy and emotions, environmental sensitivity, the ability to have productive relations with other people and a developing sense of inner peace and security" (White, 1993: 83). After noting the current lack of clarity and consistency among existing definitions, the Global Spa Summit (2011: 114) suggests the following definition: "Wellness tourism involves people who travel to a different place to proactively pursue activities that maintain or enhance their personal health and wellbeing, and who are seeking unique, authentic, or location-based experiences that are not available at home".

The proliferation of wellness centres, holistic retreats, spas, spiritual pilgrimages, complementary and alternative therapies is unprecedented (Smith & Kelly, 2006), and theories abound as to reasons for this exponential growth. A number of factors have contributed to the current 'wellness boom' (Messerlu & Oyama, 2004), including:

- Ageing – an increasing percentage of the developed world's population is living longer, is retiring wealthier, and the retention of fitness and good health in retirement is a priority.
- The changing value of health - more people are realising that a healthy lifestyle contributes directly to disease prevention and wellbeing.
- A shift from passive to active health – people increasingly take personal responsibility to make decisions that improve the quality of their lives.
- Stress in a 24/7 world – this is one of the greatest health hazards facing developed countries, and ongoing daily pressures fuel the need to recover one's wellbeing in a relaxing atmosphere.
- The spread of health-consciousness - fostered by globalization, interest is being generated in healing therapies from diverse cultures and ancient traditions.
- Traveller sophistication and individualisation - today's travellers are more experienced, more quality conscious and more independent, and are looking for something new, different and meaningful in their travel experiences. Wellness tourism supports this trend, because it helps consumers pursue self-discovery, and provides a spectrum of opportunities to improve mental, emotional and physical wellbeing.

Wellness tourism has a number of unique advantages over other forms of tourism (Messerlu & Oyama, 2004). There is no off-season, average length of stay is usually longer, expenditure per day is usually more than that of the average traveller, and wellness tourism lends itself to the provision of more comprehensive service packages. White (1993) explores possible contributions of tourism to help travellers to promote personal wellness. Five areas of personal wellness are considered:

- Physical wellness – becoming physically fit, as people realize that physical activity can play preventive, therapeutic and recreational roles. A person practicing physical wellness knows about nutrition, exercise and personal hygiene, and applies this to his everyday life. Resort health spas offer a variety of fitness programmes, with a combination of exercise, relaxation, education and dining/nutrition.
- Intellectual wellness – the pursuit lifelong learning, planning and developing strategies to stay stimulated by new ideas, and applying skills and knowledge to develop personal goals. Intellectual wellness includes experiencing local culture, music, cuisine, etc, as well as educational aspects of travel, such as language, art, wine and cuisine.
- Environmental wellness – working towards conserving natural resources, and being sensitive to the environment and responsive to global environmental concerns.
- Social wellness – enjoying being with and interacting well with other people of different sexes, backgrounds, lifestyles, cultures and ages.
- Emotional and spiritual wellness – endeavouring to meet emotional needs constructively, by adopting positive attitudes and appropriate dealings with stress, while maintaining a realistic outlook on life.

The wellness industry has grown at a phenomenal rate in developed countries around the world (Messerlu & Oyama, 2004), with increasing numbers of people seeking answers that are not currently available using conventional medicine. This emerging trend profoundly affects all aspects of the tourism industry. According to the European Travel monitor (cited in Messerlu & Oyama, 2004), health-oriented holidays account for over 15% of the total European international holiday market. Many National Tourism Organisations, as well as leading hotel groups around the world, have started to use wellness as a theme for their destination marketing, such as the German National Tourist Board's 'Wellness in Germany' theme, and have developed specific wellness tourism brochures (Cockerell & Trew, 2003). In 2004 the Monaco Government Tourist Bureau adopted 'wellbeing' as a theme for its

promotion, emphasizing programmes related to the healing of mind and body (Messerlu & Oyama, 2004).

The term 'medical wellness', which implies a combination of healthcare and wellness, is increasingly being used, particularly in Germany, although the concept is still new, and there is no standard definition of what it should include. Medical wellness is seen as a bridge between conventional medicine and the wellness movement, as something which "could help to bring about a paradigm shift in our understanding of what it means to be healthy..... it could encourage more people to look after their health in a more active, more conscious, more enjoyable way, and to find real pleasure in the process" (German National Tourism Board, 2012). If medical wellness continues to develop it may be able to act as an important link between traditional thermal spa medicine (balneotherapy), and wellness treatments, and has the potential to form the core of thermal spa health tourism.

4.5 Spa tourism

Spa tourism has been defined as "tourism which focuses on the relaxation or healing of the body, using mainly water-based treatments, such as mineral or thermal pools, steam rooms and saunas, with an emphasis focused on curing, rehabilitating, or resting the body" (Smith & Puczkó, 2009: 85). However, today almost any service provider with some kind of health-related services can call itself a spa. There are now also numerous sub-sectors within spa tourism, incorporating aspects of medical tourism, wellness tourism and leisure tourism, and it is no longer enough to use the label 'spa' and assume tourists will know what to expect. Perceptions differ greatly and spas differ widely in terms of what they offer, although they do have one thing in common, the aspiration to improve health and wellbeing.

The word 'spa' is traditionally ascribed to thermal spring resorts, although the origin of the word is uncertain (Van Tubergen & Van der Linden, 2002), and its meaning is changing. It may be an acronym of the Latin phrase 'sanitas per aqua' (health through water), or it may be derived from the Walloon word 'espa', meaning 'fountain', associated with the Belgian town of Spa, where in the 14th century a curative thermal spring was discovered. The European Spa Association (ESPA) defines a spa as "a mineral spring or place or resort where such a spring is found" (Smith & Jenner, 2000: 42). This definition has been broadened by the American-based International Spa Association (ISPA), where a spa is essentially defined as "a place where active and sustained use of natural therapeutic agents and health-giving elements are

applied within a hospitable environment over a period of time" (Smith & Jenner, 2000: 42). However, the International Spa Association (n.d.) distinguishes between seven specific spa types:

- Club spas, which have fitness as their primary purpose, with spa services on a day-use basis.
- Cruise ship spas, with fitness and wellness treatments, as well as spa cuisine menus and other spa services, aboard a cruise ship.
- Day spas, where spa services are offered on a day-use basis.
- Destination spas, with on-site accommodation, spa cuisine, spa services, educational programming and physical fitness facilities, offered to improve the lifestyle and health enhancement of guests.
- Medical spas, where comprehensive medical and wellness care is provided in an environment that integrates spa services as well as traditional, complimentary and/or alternative therapies and treatments, under the supervision of a full-time health-care professional.
- Resort/hotel spas, which offer fitness and wellness treatments, spa cuisine menus and other spa services, located within a resort or hotel. Many resort/hotel spas also act as day spas.
- Mineral spring spas, which offer on-site sources of natural mineral, thermal or sea water, for use in treatments.

Since the mid-1970s many of the successful European thermal spring spas have repositioned themselves by moving their focus from the treatment of diseases to improvement and prolongation of health, but in a leisure environment (Gilbert & Van De Weert, 1991). This was found to be necessary to attract younger visitors who favoured sea, sand and sun holidays. The appearance and development of these new products are referred to as health-care treatments, as opposed to curative health treatments, and, according to Gilbert & Van De Weert (1991: 6), "give a new dimension to European spas, entailing a new generation of tourism products having health as the agent of leisure". The traditional notion of spa tourism again changed substantially in the 1980s, with rapid expansion of what Becheri (1989: 17) describes as "thermal spring tourism of wellbeing", to include massage, fitness, marine therapies, diet therapies, physiotherapies, beauty treatments, detoxification treatments, sports and exercise, steam baths, hydrotherapies, health education and relaxation techniques.

More specialised spas are also emerging, such as golf spas and ski spas (Douglas, 2001), as well as corporate spas, adventure spas, eco-spas and cultural spas. However, despite developments elsewhere in the world, the European notion of a spa is still much as it has always been, that is, based on natural healing assets, especially healing thermal and mineral waters. The European Spa Association (ESPA) states that their objective is to "promote spas and balneology in Europe and to take care that natural remedies based on mineral water, landscape and climate will be available to as great a number of visitors and citizens as possible" (ESPA, 2007, cited in Smith & Puczkó, 2009: 87). Surprisingly, considering the varying uses and meanings of the term 'spa', there appears to be no debate in the academic literature on the branding of thermal spring resorts.

4.6 Thermal spring health tourism

Thermal spring health tourism is considered to be "a component of health tourism that usually incorporates the provision of mineral waters designed to assist in overcoming various medical conditions, as well as an increasing range of fitness and cosmetic (body image) add-ons, resulting from a significant psychographic shift towards healthy lifestyles" (Erfurt-Cooper & Cooper, 2009: 222). Thus thermal spring health tourism contains elements of medical tourism, wellness tourism and spa tourism. The thermal, mechanical and chemical effects of hot springs can be used in combination with natural therapies designed to invigorate and relax. There are also the effects of good climate and pleasant natural surroundings, of healthy activities such as walking, hiking and swimming, the social effects of interacting with others in a low-stress environment, and increased opportunities for sleep and relaxation. So many benefits available in one setting make thermal springs a powerful form of preventive medicine that definitely merits further study (Altman, 2000).

With the traditional concept of 'taking the waters', which also contained social and recreational elements, having developed into a modern form of spa and health tourism, the use of water cures is being brought into line with tourists' holiday requirements (Erfurt-Cooper & Cooper, 2009), and a new kind of spa travel has emerged worldwide in recent years, where curative properties of mineral waters are successfully combined with wellness treatments and therapies, together with enjoyable holidays.

"If something is therapeutic, it has healing powers" (Smith & Puczkó, 2009: 63). Most wellness activities can be described as 'therapeutic', whether they include relaxing massages,

water-based treatments, physical exercise or any one of a number of other treatments or activities. Health, wellbeing and quality of life can also be improved through recreational activities such as social interaction, creativity, cooking, fitness and sport.

Treatments range from the more traditional 'thermalism', medical treatment based purely on natural mineral or thermal springs, to what is now also known in France as 'aquatherapy', where the treatment is more for wellness than medical reasons (Cockerell & Trew, 2003). This change of focus has led historic thermal spas to update their facilities. The basic offerings of such resorts are wide-ranging and varied, and together with thermal baths usually include an array of techniques and elements such as balneotherapy and hydrotherapy, face and body beauty treatments, massages, alternative therapies for relaxation, and specific cures, including slimming cures, aromatherapy and other new age treatments (Messerlu & Oyama, 2004). There may also be a range of sporting and recreational facilities. Thermal water-based leisure parks, like fun waters or aqua parks, are increasingly forming an important part of the supply side of thermal spa tourism, and consequently health tourism, in that they provide attractions and services for the whole family, with water slides and other fun elements that target children, and separate silent rest areas and pools, as well as treatment areas, that target parents (Smith & Puczkó, 2009).

The role of thermal springs in the further development of the health spa tourism industry is now being recognised as being critically important in providing not just physical wellbeing, but also psychological, emotional and social wellbeing inputs to human health (Erfurt-Cooper & Cooper, 2009). Water-based therapies have long been understood to be among the most effective treatments for the maintenance of health and wellbeing, and current developments are reinforcing this image. From a supply side perspective, marketing differentiation strategies for tourism products particularly supports wellness tourism development, and as competition continues to intensify, wellness tourism is often used as a means to differentiate a destination (Messerlu & Oyama, 2004).

4.7 Thermal spring health tourism – niche, special interest or mass tourism?

Hall (1992) remarks that the diversification and redevelopment of traditional thermal spa resorts in Europe and North America would appear to indicate that health tourism will remain a significant component of special interest tourism for many years to come. However, there are a number of conceptual issues concerning not only the concept of health tourism itself, but

also where it fits into the broader field of tourism, which may have a bearing on approaches to product development and marketing. Is health tourism a form of special interest tourism, or a type of niche tourism, or does it conform to conventional mass tourism?

The concept of niche tourism has emerged in recent years to counter what is commonly referred to as mass tourism (Novelli, 2005), with a more sophisticated set of practices that distinguish and differentiate tourists. For managers and planners, niche tourism appears to offer greater opportunities than mass tourism, tourism that is more sustainable, less damaging and more capable of delivering high-spending tourists. For tourists, niche tourism offers a more meaningful set of experiences in the knowledge that their needs and wants are being met.

The idea that the market extends beyond the concept of mass tourists is not new. Cohen (1972, cited in Novelli, 2005) pointed to a basic two-fold typology, institutionalised tourists and non-institutionalised tourists. Cohen highlighted that tourists have needs that extend, in marketing terms, beyond mass markets, that there is a place in the market for a product, and there is an audience for that product. This can be extended further to refer to a specific product tailored to meet the needs of a particular market segment. Thus a 'niche market' can be defined as a group in which individuals in the group are identifiable by the same specialized needs or interests, and are defined as having a strong desire for the products on offer (Novelli, 2005). The size of niche markets can vary considerably. For instance 'cultural tourism' is a niche (macro-niche), but can be sub-divided into ethnic tourism, art tourism and gastronomy tourism, amongst others (micro-niches). The differences between mass tourism and niche tourism are illustrated in Figure 4.2.

A special interest tourism experience is always motivated by a particular interest or activity (Weiler & Hall, 1992). Sometimes that activity may serve more than one purpose, such as being both educational and outdoor activity-based. Although there are significant differences between various types of special interest tourism, there seems to be a common thread in that much of it is novelty-seeking, and all of it is quality-seeking (Weiler & Hall, 1992). Either the special interest activity itself may be novel, or the special interest is a familiar one, but the tourist seeks a novel location, environment or destination in which to pursue the activity. The novelty may also lie in the social environment, e.g. the company of tourists with similar interests. Quality in special interest tourism is achieved through the participatory, experiential dimension. While it is not necessarily physically demanding, special interest tourism has an

active component that demands the commitment of the traveller either mentally (e.g. educational travel), physically (e.g. sport tourism), emotionally (e.g. ethnic tourism), or some combination of these. Pursuit of quality may be closely related to the concept of authenticity.

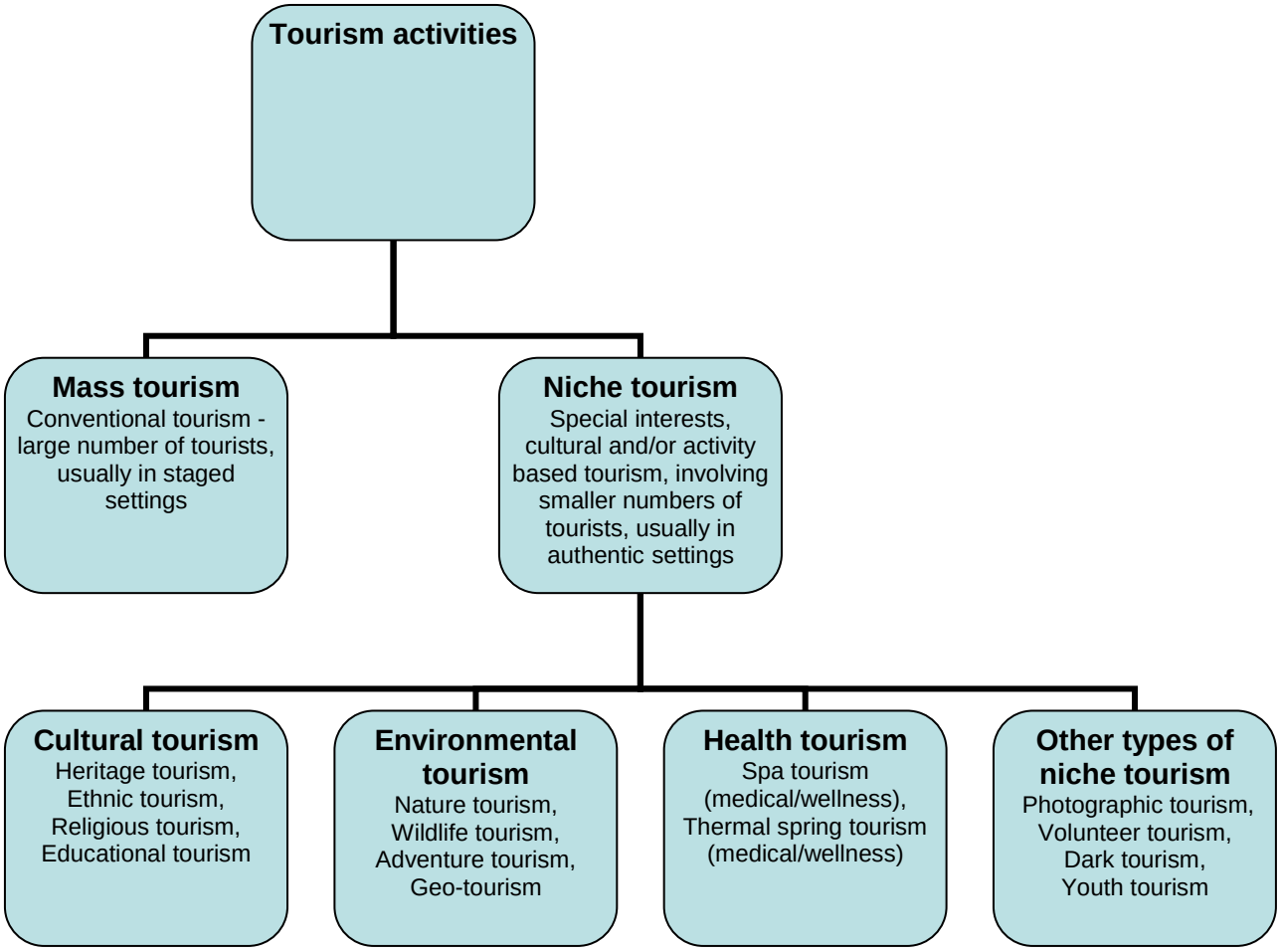

Figure 4.2: Mass tourism and niche tourism – outlining the differences

Source: Adapted from Novelli (2005: 9)

Special interest tourism could in fact be considered to be a more specialized form of niche tourism. Health tourism could be seen as a macro-niche, and medical tourism and wellness tourism as micro-niches. However, medical tourism could certainly be classified as special interest tourism. Within health and wellness thermal spring tourism there would also seem to be an element of special interest tourism if the intention is to use the experience to improve one's health, either physically or mentally. Thus thermal spring health tourism has elements of niche tourism and special interest tourism, but also conventional mass tourism. While many thermal spring resorts function as family leisure resorts, and thus are hardly different from other mass tourism resorts, such as beach resorts, some of the smaller resorts do display the

novelty component of special interest tourism, either in the location of the resort (e.g. a mountain area), and/or the types of location-based treatments available (e.g. mud treatments at the Dead Sea, or treatments using local herbs and other remedies), as well as in the reputation of the water for the healing of certain ailments, and possibly also in the social environment of the resort. The quality component, the participatory, experiential dimension and the search for authenticity, will be harder to provide in the case of larger resorts, but may well be present in smaller resorts.

Based on the above definitions, visits to large thermal spring resorts in South Africa, such as Warmbaths in Limpopo and Badplaas in Mpumalanga, both of which have a focus on family leisure, should be considered a form of mass tourism. However, the sophisticated health facilities at these resorts could certainly also attract niche markets, those who travel specifically for health purposes. Belief in the powers of the water to heal certain ailments could well be classified as a form of special interest tourism. Thus, within a single family unit, there may be more than one type of tourism being practiced.

4.8 Summary

In this chapter the links between health and tourism are explained and analysed. Varying viewpoints concerning the concepts of health tourism, medical tourism, wellness tourism and spa tourism are discussed, and thermal spring health tourism is defined in terms of these concepts. The chapter concludes with a discussion on whether thermal spring health tourism should be considered a form of niche tourism, special interest tourism or mass tourism, or a combination of these tourism types. International trends in health tourism are discussed in the next chapter, with an emphasis on the changing role of thermal springs.

CHAPTER 5

INTERNATIONAL TRENDS IN HEALTH TOURISM - THE CHANGING ROLE OF THERMAL SPRINGS

5.1 Introduction

The health and wellness spa industry is estimated to be worth more than US$1 trillion per year, and attracts over 100 million visitors worldwide (International Spa Association, 2007, cited by Erfurt-Cooper & Cooper, 2009). By 2002 the International Spa Association (ISPA) was starting to see major changes in spa (both thermal spas and other types of spas) demand trends (International Spa Association, 2002, cited in Verschuren, 2004), with consumers starting to regard the spa experience as a way to stay healthy and look good, and a move towards simplicity and getting back to basics, with far less emphasis on pampering. Strong growth was predicted in the medical spa product line, with traditional spas adding non-traditional medical treatments, particularly Eastern/Asian wellness programmes such as yoga, pilates and reiki, and conversely, with medical clinics adding spa services. Spas are expected to become a major vacation activity, in the same league as ski and golf vacations, with 'international spa tourism' replacing 'international spa treatments', that is, international travellers seeking to sample a variety of spa and other experiences, but within the same tourist destination. Verschuren (2004) remarks that while in previous years the fastest growing segment of the hospitality industry was 'hotels with spas', the indications were that 'spas with hotels' would become an even bigger factor in consumer travel decisions.

The major markets for wellness in Europe, namely Germany, Italy and France, as well as Austria, Switzerland, and the Nordic and Baltic countries to a lesser extent, are also those where 'taking the waters' at thermal spa resorts is a national tradition (Cockerell & Trew, 2003). The growth of the wellness industry in these countries, and the linking of health and wellness to tourism, rather than just day use on a local basis, has also been due to the acceptance of the value of spa treatments by the medical profession. The real benefits of spa treatment, particularly treatment based on natural mineral springs, can only be felt after some days, and in most parts of Europe day use of spas has been secondary to the desire for a once or twice a year 'cure', with short breaks for top-up treatment in order to continue enjoying the benefits (Cockerell & Trew, 2003).

The highest level of thermal spa usage for health and wellness in the world is among the Japanese (Table 5.1), with some 150 million visits annually (visits lasting more than 24 hours). This translates into 1.2 visits/capita/year. The highest usage level in Europe is Germany (16 million visits, or 0.2 visits/capita/year). The corresponding figure for the United States is 3.5 million, or 0.01 visits/capita/year.

Table 5.1: Estimated numbers of thermal spa visits in different markets

Market	Population (millions)	Thermal spa visits	Penetration (%)
Japan	123.6	150 000 000	121.5
Germany	79.8	16 000 000	20.1
Italy	57.1	3 000 000	5.2
Switzerland	7.1	250 000	3.5
France	57.5	1 300 000	2.3
USA	250.0	3 500 000	1.4
Spain	39.9	400 000	1.0

Source: Cockerell & Trew (2003)

Thermalia, an international travel agency specializing in spa tourism, sees its clients moving away from manmade spas, to understanding more about the curative properties of natural spas (including thermal water spas), and wanting to experience these benefits (Cockerell & Trew, 2003). However, as part of the Global Spa Summit (2011), the medical and wellness spa tourism markets of 12 countries were studied, including South Africa, and it was found that, in spite of an immense wealth of indigenous, traditional and natural asset-based wellness and healing traditions in virtually all of the countries assessed in this study, none of them has effectively developed a national brand image for medical or wellness tourism that is based on unique, location-based offerings.

The supply side of the medical and wellness tourism markets is illustrated in Figure 5.1 (adapted from Global Spa Summit, 201: 34). While there is some movement towards natural spas in countries such as Morocco, Indonesia, Philippines, Austria and Hungary, as well as South Africa, it is pointed out by the Global Spa Summit (2011) that most countries' offerings and brand images are fairly well developed on the left-hand side of the spectrum (standardized generic experiences), but are weak or only emerging on the right-hand side (authentic location-based experiences), the side where thermal spas are placed.

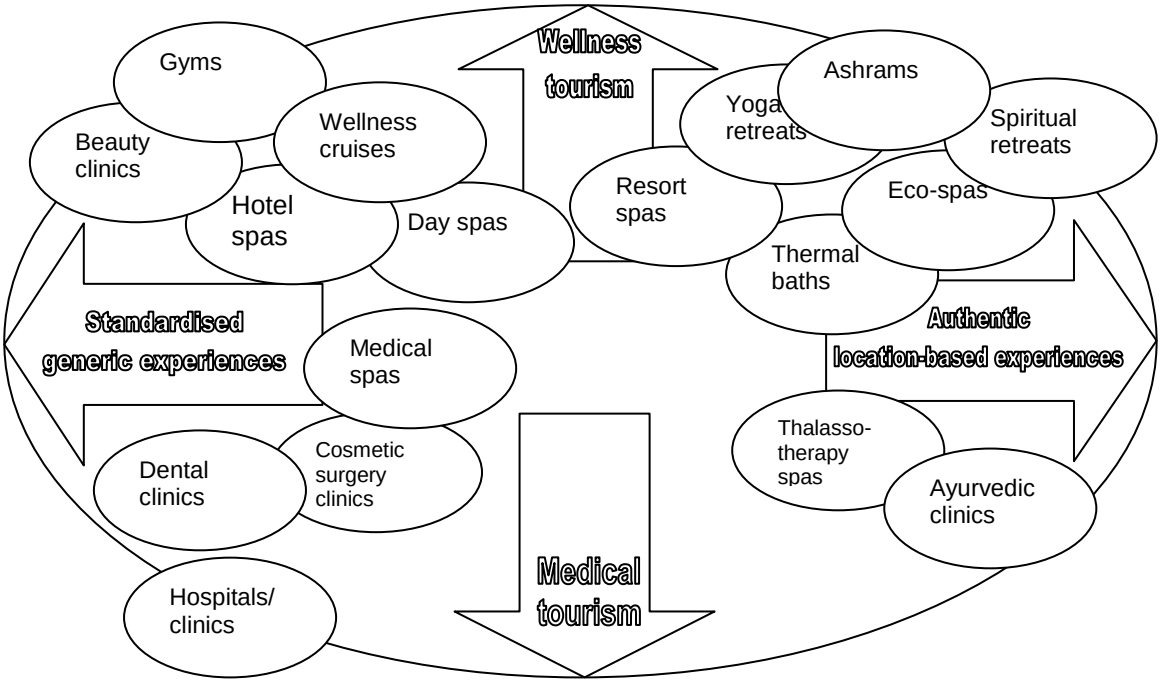

Figure 5.1: The wellness tourism and medical tourism market spectrum

Source: Adapted from Global Spa Summit (2011: 34)

5.2 Developing differentiated thermal spa offerings

The spa industry (including thermal and other types of spas) sees wellness tourism as a much greater business opportunity than medical tourism, with 85% of respondents stating that they plan to make investments to pursue wellness tourism opportunities (Global Spa Summit, 2011). However, as medical and wellness tourism markets become more crowded and competitive, it will become increasingly important for countries to differentiate themselves based on factors other than cost or quality, and stakeholders in both medical and wellness tourism markets should seek to develop and expand those offerings that on the right-hand side of the spectrum (Figure 5.1). In order to offer a truly differentiated product, offerings will need to be increasingly location-specific, focusing on local natural assets and the environment, as well as being authentic and drawing on local traditions, skills and ingredients (Global Spa Summit, 2011).

In a report that attempts to predict wellness tourism trends up to the year 2020 (Wellness Tourism Worldwide, 2011), it is pointed out that there is very high risk that the supply of wellness tourism products and services will become too standardized. Several common wellness services, such as saunas and massage, may lose their differentiating power and

become entry-level services offered by all wellness providers. Thus tourism regions need to identify health and wellness assets which will help to create unique selling propositions, distinctive brands and consequently more competitive destinations. Natural healing resources, including healing waters, are predicted to increase in popularity, as evidenced by the growing interest in other non-invasive approaches to healing and wellness, and planners need to consider the significance of alternative and complementary medical treatments (Wellness Tourism Worldwide, 2011).

A number of recommendations were made at the Global Spa Summit (2011) for wellness and medical tourism development, but which should be equally relevant for thermal spa tourism development. The recommendations are summarized below:

- Establish clear and consistent definitions and typologies that can be applied worldwide, to reduce confusion among consumers, industry and governments.
- Encourage cooperation between wellness tourism and medical tourism, and build collaborative relationships with key players in both sectors. There are opportunities for the spa industry in medical tourism, and both pre-operation and post-operation packages, and rehabilitation and therapeutic services for different profiles of medical tourists, should be designed.
- Develop a strong and unique brand for offerings, by emphasizing authentic, location-based services, treatments and experiences that draw directly from unique local traditions (e.g. sauna, hammam and onsen), and natural assets (e.g. jungle, seashore and mountains).
- Cater for borderline wellness tourists who may partake in one or two spa/wellness offerings as part of a leisure or business trip, but who can be attracted by packaging spa/wellness offerings with other kinds of tourism experiences, such as culture, nature, sports, adventure, business and conferences.
- Consider providing more eco-friendly, organic, natural and locally-sourced products, services, treatments and facilities, to give travellers a sense of place.
- Take note of the growing interest in holistic and lifestyle-oriented approaches to wellness, and create integrated packages that cater to tourists who want to ‘change their lives’ on holiday, including new-age offerings, such as body-mind-spirit, detoxification, stress management and work-life balance.
- Support the development of a scientific evidence base for spa and wellness methods, with a database that is accessible to industry, consumers and governments. This information could be used for promotional purposes, and also to build acceptance of

spa and wellness methods within the conventional medical community.

The Global Spa Summit (2011) lists the top ten spa offerings that the spa industry believes medical and wellness tourists are interested in, based on research conducted around the world (Table 5.2). Five of the top ten of each, namely massage, body treatments, facial treatments, exercise facilities and programmes, and health assessments, are among the top ten offerings for both. This indicates a clear overlap between the two types of health tourism, and depending on individual priorities, as well as the amount of emphasis needed to be placed on leisure and entertainment, this is an indication that thermal spring health resorts could be developed to provide for the needs of both medical and wellness tourists simultaneously.

Table 5.2: Top spa offerings

Medical tourists	**Wellness tourists**
1. Massage	1. Massage
2. Health assessments and consultations	2. Body treatments
3. Recovery from surgery	3. Meditation/spiritual/mind-body programmes
4. Medical testing	4. Facial treatments
5. Body treatments	5. Exercise facilities/programmes
6. Preparation for surgery	6. Water-based treatments
7. Dermatology services	7. Nutrition programmes
8. Facial treatments	8. Health assessments
9. Meditation/spiritual/mind-body programmes	9. Manicures/pedicures
10. Exercise facilities/programmes	10. Healthy foods

Source: Global Spa Summit (2011: 102)

In considering spa resorts around the world, not necessarily thermal spring resorts, Horner & Swarbrooke (2005) note that some resorts focus wholly on health as the core of the product, while for other resorts health is an important addition to leisure and entertainment-based services. Some spas stress the idea of taking guests 'back to nature', but at the same time offer all the modern luxuries and services expected by the affluent tourist. Many spas promote holistic approaches to health, some of which are mystical, almost religious, often trying to tempt western tourists with the suggestion that they will discover secrets from ancient, predominantly Asian cultures. This also reflects aspects of the growing globalisation of the leisure and tourism markets in two main ways, firstly, the use of health and beauty by Asian destinations to attract European and American tourists, and secondly, the emphasizing of

treatments originating in foreign countries, for example, Swedish and Thai massages, as if these are better than domestic treatments (Horner & Swarbrooke, 2005).

5.3 Comparison of selected thermal spa products around the world

In this section the product offerings of five well-known thermal spa resorts in different parts of the world, namely Thermae Bath Spa (United Kingdom), Hanmer Springs (New Zealand), Peninsula Hot springs (Australia), Bad Wildbad (Germany) and Blue Lagoon (Iceland) are described, compared and discussed (Table 5.3).

5.3.1 Thermae Bath Spa (United Kingdom)

The springs at Bath (www.thermaebathspa.com), located in and around a cluster of five historic buildings, have been enjoyed by visitors for more than two thousand years, and are seen as a 'constant thread' throughout the history of Great Britain. Thermae Bath spa has four baths filled with natural thermal water, with an average temperature of 34°C. The resort has two main bathing areas, New Royal Bath and Cross Bath. New Royal Bath consists of two thermal pools. Minerva Bath, the largest of the pools, has massage jets, a whirlpool and a 'lazy river', all of which operate on a timed cycle. There is also an open-air rooftop pool with superb views of the city of Bath and its surroundings, with air seats and neck massage jets, and aroma steam rooms fused with essential oils such as eucalyptus and frankincense. Cross Bath is a smaller, more intimate open-air pool, known for its Georgian architecture.

Over 50 spa and beauty treatments are offered, including hot stone therapy using volcanic basalt stones, hydro massage and a range of other massage choices, body wraps, skin care treatments, facials, manicures, pedicures and reflexology, as well as 'mums-to-be' treatments, and the new 'Rainforest Shower', where a 'cascade of sound, light and water' is designed to cleanse, stimulate and soothe the soft tissues of the body. The Thermae Bath Spa Shop invites visitors to "take a piece of Thermae home with you", with its own selection of health and beauty products, some of it enriched with Bath's natural spring water, while the Spa Visitor Centre has displays which outline the role that the Spa has played in the social and cultural history of Bath.

5.3.2 Hanmer Springs (New Zealand)

Hanmer Springs (www.hanmersprings.co.nz), situated on South Island, New Zealand, is described in its website as offering "a wide range of experiences, from soothing indulgence to exciting family fun". Accommodation is not offered at the resort, but rather in Hanmer Springs town, "New Zealand's alpine spa village, with clear mountain air, towering forests, dramatic snow-capped peaks, and soothing thermal water, with scenic walks and mountain biking." The Thermal Pools & Spa section of the resort offers a range of 12 open-air thermal pools, three 'sulphur' pools, six private indoor thermal pools, a sauna and steam room, and a family activity area with water slides and water toys. Water temperatures range from 28°C to 42°C.

A variety of massage and beauty treatments is offered, including a range of facials (for women and men) and massages, detoxifying body wraps, full body exfoliation, manicures and pedicures. Signature treatments include the 'Essence of the Orient' Balinese hot stone massage, and the 'Tribal Body Wrap', described as "an exotic blend of African, Mexican and Polynesian culture". Hanmer Springs therapists have developed, and use, their own 'Alpine Aqua' range of skin products, which incorporate its thermal waters and other natural ingredients, and which allow visitors to "continue their spa experience at home".

5.3.3 Peninsula Hot Springs (Australia)

Peninsula Hot Springs (www.peninsulahotsprings.com), near Melbourne, in Victoria, Australia, has recently been redeveloped, and is described in its website as a place "where time is forgotten, and entering the bathing area is like stepping into another world, a sanctuary where the mind and body are calmed by the steam, the sound of running water and the casual banter of bathers".

The 'Bath House' offers over 20 bathing experiences, including the Hill Top Pool with 360 degree views, a reflexology walk, a Turkish steam room, saunas, a cave pool, a family bathing area and a hydrotherapy pool. The 'Spa Dreaming Centre' also has indoor and outdoor thermal pools, and a cold plunge pool, with massaging showers and saunas. It offers bathing and spa treatments for guests 16 years old and older, where the emphasis is on tranquility, relaxation and the 'spa experience'. Private indoor and outdoor baths can be reserved, and

indoor baths can include an aromatherapy experience using a blend of essential oils, or alternatively lavender milk or mud. Water temperatures in the pools range from 37°C to 40°C.

A range of beauty treatments is also offered at Peninsula Hot Springs, including massage, facials, foot and hand treatments, mud, salt, hot stone and steam treatments, and reflexology, as well as a number of packaged experiences, with bathing packages, treatment packages, pregnancy packages, golf packages, 'For Him' packages, and breathing workshops, which include exercise in the pools.

The website includes details of the water and its healing properties. The spring is classified as a 'sodium chloride bicarbonate spring', and contains significant amounts of bicarbonate, sodium, chloride, calcium, magnesium, potassium, ammonia and sulphate, with a very high TDS (total dissolved solids) count of 3770 mg/l. The therapeutic effects of the water are described, and include "the alleviation of neuralgia, bruising, articular rheumatism, stiffness of the shoulders, recovery from fatigue and muscular complaints". The water is also said to enhance fertility.

5.3.4 Bad Wildbad (Germany)

Bad Wildbad (www.bad-wildbad.eu) is situated in the Black Forest, a popular tourism region in the south of Germany. Slogans on its website invite visitors to "Spa town flair and rural bliss", and to "Enjoy nature, hike, be pampered".

The Palais Thermal, where visitors can "be royalty in the lovingly restored wellness and sauna world", has 12 thermal pools, whirlpools, massage pools, spring pools, exercise pools, cold pools, numerous solaria, drinking fountains, hydro-ionised fountains, massage showers, Finnish saunas, a Roman steam bath, a tepidarium, sun room, quiet rooms, Kneipp foot baths and soap brush massages. The Palais Thermal also includes the Moorish Hall, described as "a feast for the senses….after relaxing your entire body, something soothing for the eyes…drink coffee, eat cake amid Arabic-Moorish decorations….fairy-tale transfigured luxury".

In the Vital Thermal Spa guests are invited to enjoy the healing, healthy and relaxing thermal waters, where they can bathe in indoor and outdoor thermal pools with water temperatures ranging from 30°C to 34°C. There is a spa treatment and wellness area, with a Roman steam bath and oil and cream baths. The "classical decades-old Bad Wildbad therapy" offered in the

spa and wellness area is aimed at people with back problems, as well as diseases of the musculoskeletal system, recovery after operations and accidents, sports injuries, osteoporosis, rheumatism, paralysis, changes due to aging, and circulatory problems. There are mud pack treatments, indicated for muscle pain and degenerative joint and vertebra conditions, medical baths, inhalation, underwater massage, hydro-electrical therapy, and exercise baths with the goal of increasing general fitness and improving mobility. A variety of massages are also available. A number of 1 to 6 night packages are offered, which include accommodation and a variety of treatments, some in combination with skiing, walking, hiking and mountain-biking.

5.3.5 Blue Lagoon (Iceland)

Blue Lagoon (www.bluelagoon.com), near Reykjavik, in Iceland, is described in its website as a place where "guests renew their relationship with nature, soak up the scenic beauty and enjoy breathing the clean, fresh air while relaxing in the warm geothermal water". The lagoon is fed by water output from a nearby geothermal power plant, where superheated water is sourced from 2 000 metres underground. The water is first used to run electricity-generating turbines and to provide heat for a municipal hot water system, after which it is fed into the lagoon for recreational and medicinal use. The lagoon holds some 6 million litres of geothermal water with a temperature of 37°C to 39°C, and which is renewed every 40 hours. The water has particularly high levels of silica and sodium chloride, with a salinity level of 2.5% (one-third of the ocean's level).

At the on-site Research & Development Centre, minerals and algae found in the Blue Lagoon water are used to produce a range of unique Blue Lagoon skincare products. A unique treatment for psoriasis has been developed, based on bathing in the mineral-rich Blue Lagoon geothermal water, the application of Blue Lagoon skincare products, and ultraviolet light therapy. Exercise and outdoor activities are seen as an important part of the treatment, and there is a fitness room, walking routes and bicycles for hire. A range of massage types, body cleansing treatments, facials, manicures, pedicures, and other skin and beauty treatments is available, some of which take place in the lagoon itself, and for which a combination of Blue Lagoon skincare products and essential oils is used.

Table 5.3: Facilities and services at selected international thermal spa resorts

	Facilities and services		
	Water-based	**Treatment-based**	**Recreation-based**
Thermae Bath Spa (United Kingdom)	New Royal Bath – two thermal pools (34°C), one with massage jets, whirlpool and a 'lazy river', and an open-air rooftop pool with air seats and neck massage jets, and an aroma steam room. Cross Bath - smaller, more intimate open-air pool (34°C), known for its Georgian architecture.	Over 50 health, spa and beauty treatments, including hot stone therapy, hydro massage, range of other massage types, body wraps, skin care treatments, facials, manicures, pedicures, reflexology, and 'mums-to-be' treatments.	No recreation facilities – emphasis is on the culture, history and architecture of the area – the Spa Visitor Centre has displays which outline the role that the Spa has played in the social and cultural history of Bath. Café and restaurant.
Hanmer Springs (New Zealand)	Some 12 open-air thermal pools, three 'sulphur' pools, six private indoor thermal pools (28°C-42°C), a sauna and steam room.	Variety of massage and beauty treatments - range of facials, massages, detoxifying body wraps, body exfoliation, manicures, pedicures, with signature treatments incorporating a blend of different cultures from different continents.	Family activity area, with water slides and water toys, scenic walks and mountain biking in the area. Café and restaurant.
Peninsula Hot Springs (Australia)	Bath House - over 20 bathing experiences (37°C-40°C), including the Hill Top Pool with 360 degree views, reflexology walk, Turkish steam room, saunas, cave pool, family bathing area, hydrotherapy pool. Spa Dreaming Centre - for guests over 16 – indoor and outdoor thermal pools, cold plunge pool, massaging showers, saunas, breathing .workshops.	Range of beauty treatments - massage, facials, foot and hand treatments, mud, salt, hot stone and steam treatments, and reflexology, as well as a range of packaged experiences - bathing packages, treatment packages, pregnancy packages, golf packages, 'For Him' packages.	Restaurant with numerous 'dine and bathe' deals available.
Bad Wildbad (Germany)	Palais Thermal - 12 thermal pools (30°C-34°C), whirlpools, massage pools, spring pools, exercise pools, cold pools, solaria, drinking fountains, hydro-ionised fountains, massage showers, Finnish saunas, Roman steam bath, tepidarium, sun room, quiet rooms, Kneipp foot baths, soap brush massages. Vital Thermal Spa - indoor and outdoor thermal pools.	Vital Thermal Spa -the 'Bad Wildbad therapy' offered in the spa and wellness area is aimed more at musculoskeletal and other medical problems than wellness and beauty, and includes oil, cream baths, mud pack treatments, medical baths, inhalation, underwater massage, hydro-electrical therapy, exercise baths, and a variety of massages.	A number of 1-6 night packages are offered, which include off-site hotel accommodation and a variety of treatments, some in combination with skiing, walking, hiking and mountain-biking.
Blue Lagoon (Iceland)	Guests bathe in the Blue Lagoon, a highly mineralized thermal water lake (37°C-39°C), fed by output from a nearby geothermal power plant.	Psoriasis treatment, based on bathing in mineral-rich Blue Lagoon geothermal water, application of own Blue Lagoon skincare products, and ultraviolet light therapy. A range of massage types, body cleansing treatments, facials, manicures, pedicures, and other skin and beauty treatments is available, some of which take place in the lagoon itself, and for which a combination of Blue Lagoon skincare products and essential oils is used.	Exercise and outdoor activities are seen as an important part of the treatment, and there is a fitness room, walking routes and bicycles for hire. Restaurant with variety of menus.

Source: www.thermaebathspa.com; www.hanmersprings.co.nz; www.peninsulahotsprings.com; www.bad-wildbad.eu; http://www.bluelagoon.com (Accessed 28 April 2012)

5.4 Summary

This chapter contains an overview of the international thermal spa tourism market, with guidelines for the development of differentiated offerings. A comparison is made of the

product offerings of a number of thermal spa resorts around the world. The most significant aspect of the product offerings of these resorts is that practically all of the recreation activities are water-based, and while some are aimed at family entertainment (water slides, water toys), most have a wellness focus (thermal pools, saunas, steam rooms, massaging pools), together with an exercise/fitness focus (hiking, walking, mountain-biking). Additionally, all of these resorts offer wellness/beauty treatments (massage, body cleansing, manicures, pedicures, reflexology). Two of the resorts, Bad Wildbad and Blue Lagoon, offer medical treatments in addition to wellness/beauty treatments, and both appear to give more precedence to the medical aspects of their offerings over the wellness aspects. Bath Spa, Hanmer Springs and Blue Lagoon have all developed a range of health, beauty and skin-care products which incorporate their mineral water. These products are used in on-site treatments, and are available for visitors to buy and take home.

Table 5.4: Facilities and services at Warmbaths and Badplaas thermal spring resorts

	Facilities and services		
	Water-based	**Treatment-based**	**Recreation-based**
Warmbaths	Indoor and outdoor thermal and cold pools, super-tube water slide, 'speed' slide, 'river-ride', baby pool, wave pool, and Jacuzzis.	The Warmbaths Hydro has an indoor thermal pool, a cold plunge pool, a 'rheumatism bath', private mineral tubs and a sauna. A range of beauty and wellness treatments is offered, including vapour inhalation, a variety of body wraps and body scrubs, facials, manicures and pedicures. A number of one to three day packages are available.	Sporting facilities include tennis and squash courts, volleyball courts. Go-carts, mini-quads, pedal boats, target shooting, web climbing, putt-putt, outdoor chess, and a play park for children. The resort has its own 1400 hectare game reserve, with variety of game, where guests can do game drives.
Badplaas	Variety of warm and cold outdoor mineral pools, a super-tube water slide, a 'speed' slide, and the rinkhals (tube rapids).	The Badplaas Hydro has three heated indoor pools, a cold pool, and private hydro jets. Herbal baths, detox therapy & thermal wraps, Dead Sea salt and mud baths, lavender baths, a variety of Thalassotherapy treatments, and a steam room. A range of beauty and wellness treatments - variety of facials, manicures, pedicures, and massage therapy which includes hot stone massage, aromatherapy massage, and reflexology.	Sporting facilities include tennis, volleyball and bowls. Quad bikes, mini golf, paintball, an arcade centre, and horse trails Game drives can be done in the resort's 1200 hectare game reserve.

Source: www.foreverwarmbaths.co.za; www.foreverbadplaas.co.za (Accessed 28 April 2012)

In contrast, the two largest thermal spring resorts in South Africa, Warmbaths (Bela Bela) in Limpopo, and Badplaas in Mpumalanga, offer water-based and treatment-based activities, as well as exercise/fitness activities (Table 5.4), but place far more emphasis on family entertainment than on wellness in their water-based activities. In addition these resorts offer a range of non-water-based recreational activities (such as quad bikes, mini-golf/putt-putt, game drives), which form as important a part of their total offering as water-based products.

It is apparent, from the variety of activity combinations offered at the thermal spring resorts discussed above, that there is no standard product. While all the resorts have thermal water as their principal attraction, and all offer both health and recreation activities, the core offering may differ from resort to resort, and may have a focus on medical activities (e.g. Bad Wildbad and Blue Lagoon), or wellness activities (e.g. Thermae Bath Spa, Hanmer Springs, and Peninsula Hot Springs), or recreational activities (e.g. Warmbaths and Badplaas).

While medical activities still retain some importance in Europe, the focus is shifting towards wellness activities, as has already happened in countries such as Australia and New Zealand, and may even shift further, in the direction of recreation, which took place many years ago in South Africa. For thermal spring resorts to continue to develop as tourist attractions and simultaneously retain their positions as places of healing, product offerings will need to contain elements of all three activity types, but with the main focus shifted towards the activity preferences of their current markets.

CHAPTER 6

THEORETICAL PERSPECTIVES ON MARKETING AND PRODUCT DEVELOPMENT FOR THERMAL SPRING TOURISM

6.1 Introduction

The demand side of tourism consists of groups of actual or potential customers with similar needs and motivations, while the supply side, the tourism industry, includes the products and services designed to satisfy specific needs and wants. The tourism marketing and product-development process usually starts with the identification of needs/motivations of actual or potential customers, and ends with the delivery of need-satisfying products. In this chapter the needs/motivations of tourists are discussed in general terms, as well as in relation to health tourism, and more specifically thermal spring tourism. Market segmentation and the creation of tourist typologies is discussed as a means of identifying groups of people who have similar needs/motivations, and interests in specific activities and/or products. The chapter ends with a discussion on the theory of product development, with an emphasis on thermal spring resorts.

6.2 Tourist motivation

Tourist motivation, according to Holloway (1994), refers to the needs and wants of travellers, and how they are satisfied. Motivation is an important determinant of tourist behaviour and the subsequent satisfaction derived from the travel experience (Ryan, 1995). Motivation is seen as "the driving force behind all actions, and is therefore a starting point for studying tourist behaviour, and beyond that, for understanding systems of tourism" (Pearce & Lee, 2005: 226). There are many theories of tourist motivation. Witt & Wright (1992) note that central to most theories of motivation is the concept of 'needs'. Needs are seen as the forces which arouse motivated behaviour, with the assumption that in order to understand human motivation, it is necessary to discover what needs people have, and how they can be fulfilled.

Probably the best known of all motivation theories is Maslow's Hierarchy of Needs, formulated by Abraham Maslow in 1943 (Witt & Wright, 1992). Maslow identified five classes of needs, namely:

- Physiological needs - the need to eat, drink and sleep.

- Safety needs - the need for freedom from threat or danger, and for a secure, orderly and predictable environment.
- Social needs - the need for a feeling of belonging, for affectionate relationships, friendship and group membership.
- Esteem needs - the need for self-respect, achievement, self-confidence, recognition by others and prestige.
- Self-actualization needs - the need to realize one's potential.

Maslow (cited in Witt & Wright, 1992) suggested that these needs form a hierarchy, with physiological needs at the lowest level, and the need for self-actualization at the highest, and reasoned that if no needs are satisfied, then the lowest-level needs, the physiological ones, dominate behaviour. However, if these are satisfied, the individual is motivated by the next level in the hierarchy, safety needs. Once these are satisfied, the individual can move up to the next level, continuing to work up the hierarchy as the needs at each level are met. Holloway (2004) points out that although Maslow's hierarchy of needs provides insight into ways in which travel may satisfy a range of different needs, there is some overlap of motives between these categories.

Maslow's hierarchy of needs emphasizes that people have a range of motives for seeking out holiday experiences, and destinations are seen as settings where vastly different holiday experiences are possible. Travellers go to a destination where they select activities and holiday experiences from those on offer to suit their personal psychological and motivational profile (Goeldner & Ritchie, 2006). Thermal springs have the potential to satisfy most of the needs identified by Maslow. A safe and secure environment, particularly for children, satisfies safety needs. Interacting with old friends, meeting new people, and the generally sociable environment of thermal spring resorts satisfies social needs. Visiting thermal springs for purely medical purposes, to cure sickness or disease, satisfies lower order physiological needs, the need to maintain one's health, but visiting thermal spa resorts for wellness purposes, where healthy people hope to improve their health and wellbeing, satisfies higher order esteem and self-actualization needs.

Pearce (1988, 1991, 1993, cited in Pearce & Lee, 2005) takes Maslow's theory a step further in developing the 'travel career ladder' theory, suggesting that travel motivation consists of five different needs, namely relaxation needs, safety and security needs, relationship needs, self-esteem and development needs, and self-actualisation and fulfillment needs. The core of

this theory is that people's motivation changes as they become more experienced travellers, and that while accumulating travel experiences, they progress upward through different levels of motivation (Pearce & Lee, 2005).

6.2.1 Types of motivators

There is no widely recognized way of categorizing the many motivating factors in tourism (Swarbrooke & Horner, 1999; Holloway, 2004). Some of the major ones are outlined below:

- Physical motivators - relaxation, sun-tanning, exercise and health.
- Cultural motivators - sightseeing, experiencing new cultures.
- Emotional motivators - romance, adventure, escapism, spiritual fulfillment.
- Personal motivators - visiting friends and relatives, making new friends, searching for economy if on a limited income.
- Personal development motivators - increased knowledge, learning a new skill.
- Status motivators - exclusivity, fashionability, obtaining a good deal, ostentatious spending opportunities.

Numerous authors in tourism literature refer to Beard & Ragheb's 1983 'Leisure Motivation Scale', where four components of leisure motivation are identified (Williams, 2009; Ryan & Glendon, 1998):

- A social component, through which social networks are maintained or extended, satisfying the need for friendships and interpersonal relationships.
- A stimulus-avoidance component, which reflects the desire for escape and release from pressured situations, such as work, and to attain rest or relaxation.
- An intellectual component, in which tourists seek to acquire knowledge.
- A competence component, in which skills are developed, and in which individuals seek to achieve and master challenges.

The dominant motivations for overseas holidays of tourists from Australia, the United Kingdom and other Western countries, according to research carried out by Pearce & Lee (2005), are novelty, self-development, including cultural experience, relationships, and escape. Ryan (1997) identified what he calls 'aspects of a holiday that are enjoyed the most', the top ten of which are depicted in Table 6.1 and which can be closely associated with Maslow's model and the satisfaction of needs. Pearce (1982, cited in Ryan, 1997) suggests that most of the enjoyable activities of holidays relate to the higher needs of Maslow's

hierarchy of needs, while dislikes are the result of perceived threats to basic needs which threaten physiological comfort or safety. Other sources of dissatisfaction listed by Ryan (1997) are poor weather, a long journey to the destination and back, high prices, insects, intrusive noise, overcrowding and lack of facilities for children.

Table 6.1: Aspects of a holiday that are enjoyed the most, related to need satisfaction

Aspect of holiday	**Need satisfied**
Relaxing/peaceful	Self-actualization
A good climate	Physiological
Scenery	Self-actualization
Exploring/discovering new places	Self-actualization
Food	Physiological
Being with family/friends	Social
Good walking	Self-actualization
A sense of freedom/independence	Self-actualization
Friendly people	Social
Good accommodation	Physiological

Source: Adapted from Ryan (1997: 61)

6.2.2 Motivations for visiting thermal spring resorts

Certain types of holiday have become popular because they best meet common, basic needs (Holloway, 1994). For instance, the 'sun, sea, sand' type of package holiday, which caters to the mass market, is essentially a passive form of leisure that entails nothing more than a relaxing time on the beach, enjoyment of the perceived healthy benefits of sunshine and seawater bathing, and good food. Those travelling on their own might also seek opportunities to meet other people (belonging and social needs), and families can simultaneously satisfy parents' own needs while also providing a healthy and enjoyable time for their children. What is provided is therefore a 'bundle of benefits', and the more a particular destination can be shown to provide the range of benefits sought, the more attractive will that holiday appear compared to other holidays on offer.

Thus the motivation to visit thermal spring resorts may result from a combination of physical motivators (relaxation, sun-tanning, exercise and health), cultural motivators (sightseeing), emotional motivators (escapism) and personal motivators (making new friends, searching for

economy if on a limited income). All ten of Ryan's aspects of holidays that are enjoyed the most (Table 6.1), together with the related need satisfaction, can be achieved with the types of activities, facilities and experiences available at many thermal spring resorts.

Laesser (2011) discusses a research survey that took place in Switzerland in 2004, where the motivations and activity preferences of mature travellers who had travelled for health reasons were identified. The following health travel motivations were found: do something for my beauty; enjoyment of comfort and pampering; rest and relaxation; challenge and stimulate oneself; termination of life phase; time for oneself; sports (active); and regeneration from daily home routine and job. In contrast, the following motivations were found to act against the concept of health travel: to see and experience something new; make contact with new people; visit/experience sights, culture, expand horizons; time for the family; experience of the exotic; and prestigious character of trip.

The following health travel activities were identified by Laesser (2011): regimens or wellness of any kind; mountain biking; mini golf; gymnastics; golf; tennis; swimming; sauna; and spend time sleeping/relaxing/hanging out. A number of activities significantly lower the chances of a trip being classified as health travel: Downhill skiing; take pictures/videos; excursions by car; spend time on the beach; visit museums; tobogganing/sledging; and excursion by boat/ship.

It would seem that the health traveller is motivated to seek rest and relaxation, but at the same time wants challenging and stimulating activities (Laesser, 2011), a potentially conflicting situation. Laesser (2011) suggests that the core of a health trip might be relaxation, but to provide some sort of contrast, people pursue a number of challenging complementary physical activities. Consequently, health travel triggers a mix of passive and active activities, and health tourism providers and destinations need to provide their customers with relaxation and indulgence, but should complement these offerings with stimulating and challenging sporting activities, such as hiking and biking.

Referring to wellness tourism, Kelly & Smith (2008, cited in Smith & Puczkó, 2009) suggest that it is unlikely that the majority of visitors would be attracted by all domains of wellness simultaneously. Thus it is important to recognise which aspects of the self need attention at different stages of one's life (Smith & Puczkó, 2009). There are times when the physical body

may need more attention, such as during illness or recuperation, but at other times, such as in times of occupational stress, the mind may need more attention.

In actual fact motivations for health travel and visiting spas (not necessarily thermal spas) vary greatly. In the United Kingdom the concern is less with serious medical health matters than with the softer question of 'health and beauty', and the market is generally seen as being predominantly female, but there is a belief that demand from men will grow in future (Horner & Swarbrooke, 2005). In Australia, relaxation is the primary reason for visiting a spa for 43% of day spa-goers and 61% of resort/destination spa-goers (Tourism Queensland, 2002, cited in Erfurt-Cooper & Cooper, 2009). Pampering and stress reduction follow, with exercise and fitness at the bottom of the list. A high proportion of visitors just want to forget about the real world for a while. On the other hand, in Europe it is the health treatments available, and the atmosphere and surroundings of the resort that are most important (Hank-Haase, 2006, cited in Erfurt-Cooper & Cooper, 2009). In the Asia-Pacific region keeping a healthy body and mind (the holistic approach), while using natural and organic materials, are the focus of new product and service technologies in spas (Erfurt-Cooper & Cooper, 2009).

The management and marketing of health tourism requires data on demand, motivations and demographic profiles of typical visitors, as well as the types of products they prefer, and typical activities they engage in. Almost every spa visitor has different expectations of the likely experience and/or outcome that they are seeking and/or will tolerate. Relatively little research has been undertaken about profiles and motivations of so-called health visitors (Voigt *et al*., 2011; Laesser, 2011; Smith & Puczkó, 2009; Swarbrooke & Horner, 1999). There is clearly a need for research at national and regional level in most countries which want to develop health tourism, in order to identify clusters or segments with specific interests (Smith & Puczkó, 2009). These authors believe, however, that it is not enough to focus just on general consumer behaviour or lifestyle trends, but that the research should also include travel and tourism patterns.

The needs and motivations of a particular tourism market can be better understood, and incorporated into tourism development and marketing plans, if the market is sub-divided into smaller groups with known characteristics, using a technique known as market segmentation.

6.3 Market segmentation

"Tourists are not one homogeneous group of people who seek the same benefits from a destination, have the same expectations, undertake the same vacation activities, and perceive the same vacation components as attractive" (Dolcinar & Grün, 2008: 63). "The more we understand about travellers and why they behave the way they do, the better able we will be to serve their needs and expectations ….. there is a growing recognition that such a level of understanding must go beyond traditional descriptors such as origins and destinations, socio-demographics, trip types and other travel characteristics" (Morrison, Hsieh & O'Leary, 1996: 39). Market segmentation is a popular marketing research technique, both in the tourism industry and among tourism researchers (Dolcinar & Grün, 2011). The tourism industry uses it to identify homogeneous subsets of tourists, and to select the most suitable of them to target over the medium and long term, while tourism researchers use it to gain a deeper understanding of the heterogeneity of consumer behaviour among tourists. Destinations should be aware of the needs and wants of potential tourists in order to optimally manage the destination's resources, and attract the right customer groups (Pesonen, Laukkanen & Komppula, 2011). This is usually achieved with the use of market segmentation.

Market segmentation, in its broadest sense, is defined by Fitzgibbon (1987: 490) as "a method of analysis that involves disaggregation of data, followed by reassembly and synthesis". Essentially market segmentation is the classification of heterogeneous customers with different needs, characteristics and behaviour patterns, into homogeneous groups, or segments. The grouping of individuals dates back to Hippocrates' typology of people on the basis of physical attributes in the 5th century BC (Dolcinar, 2002). The logic of market segmentation resembles, in some ways, the logic of regionalization (Smith, 1989: 39), where "the analyst's task is to define groups of people that are relatively similar with respect to some internal criteria, and yet are relatively different from other groups". The aim of market segmentation is thus to provide maximum homogeneity within segments, and maximum heterogeneity between segments (Saayman, 1997). Market segmentation can thus also be described as "the division of a market into distinct subsets of consumers who require specific products or services" (Morrison, 1989, cited in Ahmed, Barber & D'Astous, 1998: 40). Each subset may be chosen as a target market to be reached with a distinct marketing strategy. A tourism marketer will adjust a destination or resort's product and services mix, price, promotion and selling tactics to meet the needs and wants of specific target markets.

Market segmentation is based on certain assumptions (Bennett, 2000):

- The market for a tourism product or service is made up of particular segments, in which members have distinctive needs and preferences.
- A single tourism offering, such as a holiday resort, appeals more to some segments of the market than others.
- Organizations can make their marketing efforts more effective by developing specific offerings for specific segments.

Market segmentation, which is closely related to tourist motivation and need satisfaction (Saayman, 1997), is often applied in order to define consumer needs more precisely (Bennett & Strydom, 2001), and assists marketers to create a basis for developing products to meet consumer needs, through discovering attributes that are of value to consumers. The more an organization knows about the needs, desires, attitudes and behaviour of its customers, the better it will be able to design and implement the products required to satisfy them. Once segments have been distinguished, specially designed marketing mixes can be offered, according to identified needs and preferences. While market segmentation can improve the efficiency of advertising aimed at different groups of potential consumers, it can also be used for other analytical purposes, such as the development of forecasting models for different social groups or for the study of the motivations and behaviours of different types of individuals (Smith, 1989).

6.3.1 Segmentation bases

Many variables have been suggested as bases for segmenting tourists, including choice of destinations, demographic characteristics, purpose of trip, benefits sought in a product and benefits realized from a destination (Ahmed *et al*., 1998). Certain travellers may prefer sightseeing or visiting cultural attractions, while others may focus on activities such as swimming, water sports or sunbathing. Some travellers may be concerned about the cost of the trip, while others may focus on the types of restaurants and accommodation available. There are five classic ways of segmenting markets (Swarbrooke & Horner, 1999), all of which are commonly used in tourism:

- Geographical segmentation, where, for instance, distinctions are made between people from hot climates versus people from cold climates, or urban dwellers versus rural dwellers. This assists with the identification of geographical catchment areas for different tourism products.

- Socio-economic segmentation, where segmentation is based on socio-economic levels, the main variables being occupation and income.
- Demographic segmentation, with variables such as age, sex, religion, family life stage and language.
- Psychographic segmentation, based on the idea that the lifestyles, attitudes, opinions and personalities of people determine their behaviour as consumers. For example, health spas might target their marketing at consumers who aspire to lead a healthy lifestyle, conservation holidays are targeted at people who are environmentally aware, and people seeking thrills are targeted for adventure holidays.
- Behavioural segmentation, which groups consumers according to their long-term relationships with a particular product. This is widely used in tourism, and seeks to identify benefits sought in a product, frequency of purchase and product loyalty.

There has been much debate over which bases should be used to segment tourism markets (Moscardo, Morrison, Pearce, Lang, C. & O'Leary, 2001). According to Mill & Morrison (1998), forward, or *a priori*, segmentation methods have traditionally been the most frequently used in tourism, primarily because they are easy to use. With *a priori* segmentation, the analyst selects the segmentation base for defining segments, e.g. purpose of trip, mode of transport, distance travelled and type of accommodation used, geographic variables or demographic variables.

Fitzgibbon (1998) stresses the necessity for what she refers to as 'attitudinal segmentation', the need to probe beyond geographic and demographic information and attempt to understand the needs, wants, values and desires of consumers in the purchasing decision-making process. According to Fitzgibbon (1998: 487), consideration of attitudinal segmentation as a route into the dynamics of consumer attitudes "will direct the travel industry's attention to the 'marketing', as opposed to the 'sale' of travel, and it will focus the industry's market development efforts on the consumer, not just in terms of how old or how rich he/she is, or how often he/she has travelled in the past, but in terms of his/her travel needs and wants".

6.3.2 Data-driven methods of segmentation

In recent years, backward, or *a posteriori*, or data-driven methods of segmentation, have increasingly been used by tourism researchers, where a set of variables is used as the segmentation base, and a mathematical algorithm is then used to determine groups of

respondents who have responded similarly to variables included in the segmentation base (Dolcinar & Grün, 2011). The most commonly used data-driven method is factor-cluster segmentation (Smith, 1989), which produces segments analytically using a combination of factor analysis and cluster analysis. Factor-cluster segmentation involves the definition of important characteristics inherent in a data set through factor analysis of a large number of variables, after which these characteristics are used to group individuals into statistically homogeneous segments, using cluster analysis (e.g. Lee, Lee & Wicks, 2004). These segments are then profiled according to socio-economic, demographic and behavioural variables. Goodrich (cited in Frochot & Morrison, 2000: 37) suggests that "standard variables such as age, income, occupation and education, may be more useful as supplementary rather than as primary bases for defining tourist market segments".

A form of factor-cluster segmentation increasingly used in tourism research is often referred to as 'benefit segmentation', which is behavioural segmentation of a market based on benefits sought in a product, with segments produced analytically (e.g. Cheng-Te & O'Leary, 1997; Ahmed *et al*., 1998; Yannopoulos & Rotenberg, 1999; Kastenholz, 2000). One reason for the great interest in benefit segmentation in travel and tourism is its focus on travellers' motivations, which have always been portrayed as a critical variable in the decision-making process (Frochot & Morrison, 2000). Benefit segmentation is seen as having a much wider range of applications than traditional segmentation methods, since it provides marketers with a more complete picture of customers, from their motivational profiles to behavioural and socio-economic characteristics, which may be useful in a positioning or promotional strategy. Loker & Perdue (1992: 35) add that "benefit segmentation has the advantage of being based upon predictive, causal factors, and when combined with key descriptive variables, provides clear insight into marketing and communication strategy formulation".

However, as Frochot & Morrison (2000) point out, there has never been a precise definition of what should be included as 'benefits', which has led to mixed interpretation. The fact that tourism mixes both the consumption of tangible services and the fulfilment of emotional expectations has led to two different streams of research, one in which tangibles, or attributes, such as activity preferences, are considered as benefits, and one in which emotional expectations are considered as benefits, or a mixture of both. Sometimes it can be difficult to separate push and pull factors from each other, since benefits can be a means to reach a desired end, but they can also be the end state the customer seeks (Kemperman & Timmermans, 2006, cited in Pesonen *et al*., 2011).

The use of factor analysis to reduce the number of variables before clustering has been questioned by some researchers (Dolcinar & Grün, 2011; Dolcinar & Grün, 2008; Weaver & Lawton, 2005), who believe that pre-processing of data should be avoided, since this can lead to a substantial loss of information. Dolcinar & Grün (2008) conducted an experiment to assess the comparative performance of factor-cluster segmentation, versus direct clustering of raw data, for the purpose of market segmentation, and conclude that the factor-cluster segmentation approach significantly reduces the success of segment recovery. Dolcinar (2002) and Dolcinar & Grün (2011) maintain that, in general, preprocessing should be avoided, and if either standardisation or dimension reduction is conducted, the motivation for doing so should be very strong, as both kinds of preprocessing either transform the data space, or lead to substantial loss of information.

Thus in recent years there has been increased use of cluster analysis on its own for tourism market segmentation. For example, cluster analysis was used to segment Australian ecotourists (Weaver & Lawton, 2005), and to do a benefit segmentation study of 'wellbeing' tourists in the Savonlinna region of Finland (Pesonen *et al*., 2011). Wellbeing tourism includes some aspects of wellness tourism, but differs in that it focuses primarily on emotional motivations, such as the connection to community and nature.

6.3.3 Activity-based market segmentation

A growing number of researchers are using 'activities' as a segmentation base for single-step factor analysis (e.g. Sung, Morrison & O'Leary, 2000), cluster analysis (e.g. Beritelli & Boksberger, 2005; Morrison *et al*., 1996), factor-cluster analysis (e.g. Mehmetoglu, 2007; Moscardo *et al*., 1996), and cross-tabulation (e.g. McKercher, Ho, Du Cros & So-Ming, 2002). Goeldner & Ritchie (2006) consider the analysis of the activities offered by the destination, and the activities that fulfil the travellers' motives, as the keys to linking travel motivation studies to other tourism studies, such as destination choice.

Analyzing travel markets according to holiday activity participation and preference represents a potentially powerful means of providing a more in-depth understanding of travel behaviour (Morrison *et al*., 1996), and it offers considerable potential for product development and marketing, particularly in the packaging and programming of products. Morrison *et al*. (1996) believe that activities, as a destination attribute, may exert considerable influence on

destination choice, visitor satisfaction and repeat visitation. The work of various researchers in the area of destination choice modelling suggests that activities are critical attributes of destinations, which are evaluated by travellers according to their ability to satisfy needs (Moscardo *et al*., 1996).

Activity-based segmentation defines groups of tourists according to their behaviour or visitation patterns, as manifested in their activity preferences. It has been suggested that activity-based segmentation is a form of benefit segmentation that assumes a destination's attributes equate with the benefits sought by tourists, although this idea is not universally accepted (Frochot & Morrison, 2000). Beritelli & Boksberger (2005) use activities as a segmentation base for cluster analysis, after which the resultant segments are cross-tabulated with motivations, the researchers maintaining that tourist activities at the destination can be used to explain a part of latent travel motivations, and vice versa. Moscardo *et al*. (1996) maintain that the critical link between motivations and destinations may be found in the understanding of activities.

Vacation activities seem to offer considerable potential as a behavioural segmentation variable, and tourists who pursue certain 'activity sets' tend to have distinct demographic, socio-economic and psychographic characteristics (Morrison *et al*., 1996). Sung *et al*. (2000) suggest that activities should be one of the primary bases used to analyse traveller segments, particularly where a variety of activities satisfy a range of interests. Vacation activities are not only a viable segmentation base, but should also provide a certain degree of precision in the targeting of potential travellers (Moscardo *et al*., 1996).

6.4 Tourist typologies and typologies of health tourists

The segments that result from market segmentation based on tourist motivation, tourist behaviour, activity preferences, or a combination of these, are referred to as tourist typologies. "There are as many types of tourists as there are motives for travel" (Murphy, 1985, cited in Williams, 2009: 13). Academics have, over the past few decades, attempted to produce meaningful typologies of tourists and their behaviour (Swarbrooke & Horner, 1999), although Smith & Puczkó (2009) believe that many traditional tourist typologies fail to reflect current lifestyle trends and values. Most typologies attempt to group tourists together on the basis of their preference for particular vacation experiences in terms of different destinations and destination characteristics, activities while on holiday, and preference for independent travel

versus organized or package holidays.

While they do have their limitations, tourist typology models are useful for three main reasons (Shaw & Williams, 2002), they highlight the broad diversity of tourists, together with their demands and consumption, they provide an insight into the motivations of tourists, and most importantly, they provide a platform from which to explore the relationships between tourist consumption and the socio-cultural fabric of destination areas. Although not developed with marketing in mind, typologies clearly have a potential role to play in tourism marketing, and knowledge of typologies could contribute to decisions on product development, price and distribution, although their main role could be in promotion, particularly in the design of messages attached to products.

Numerous typologies of health/wellness/spa tourists have been produced. The International Spa Association (ISPA) ran a joint USA-Canada spa visitor and non-spa visitor consumer study in 2006 (Smith & Puczkó, 2009). The findings correspond closely with Plog's 1974 model, with people open to new experiences (allocentrics) at the one extreme, those who like safe journeys (psychocentrics) at the other, and the majority wanting a little bit of both extremes (midcentrics). Thus at one extreme is a relatively small segment of 'core' spa-goers, to whom spa therapies are important (demand for therapies), at the other extreme are the 'periphery' spa-goers, who enjoy spas, but otherwise show little interest in them (demand for indulgence and cosmetics), and in-between are the 'middle' spa-goers, who try to achieve a balance between pure pampering, and transformative body, mind and spirit experiences.

There is a strong link between peoples' lifestyles and their propensity to engage in wellness tourism (Smith & Puczkó, 2009). The National Tourism Authority of Ireland (2007, cited in Smith & Puczkó, 2009) produced a health and wellness strategy in which it is pointed out that there is an increased need for consumers to feel better, a desire driven by a hectic consumer culture, stress-related health problems and a tiring pace of life. Their main reasons for visiting spas are to be pampered and indulged, and to escape. Six segments for health and wellness are identified, namely:

- Fun seekers, who enjoy going away with friends and having fun.
- Occasional pamperers, who take time out from a stressful schedule, and to whom spas are a rare treat.
- Relaxers, who seek rest and time out, and see spas as escapism.
- Serenity seekers, who are looking for peace, understanding and self-acceptance.

- Beauty queens, with an interest in looking good and being glamorous.
- Help seekers, who are looking for change in their lives.

Mueller & Lanz-Kaufmann (2001) use cluster analysis to create a 'supply typology' of some 400 guests at wellness hotels in Switzerland offering comprehensive wellness services. Guest clustering is based on the importance of wellness components during their stay in the hotel. The cluster analysis results in four guest segments:

- Demanding health guests (40%), the largest group, who attach great importance to wellness facilities, and whose main reason for staying at these hotels is for promoting their health.
- Independent infrastructure users (25%), who appreciate wellness facilities such as whirlpool, stream bath, sauna, swimming pool, but more at a social level.
- Care-intensive-cure guests (20%), who cite healing, therapy, or convalescence as their main reason for staying at the hotels, and attach great importance to medical competence, as well as to individual care and advice.
- Understanding recreation guests (14%), who give recreation and relaxation as main reason for stay. To them health promotion and convalescence is not relevant, and their main objective is to enjoy themselves and let themselves be pampered.

It is concluded by Mueller & Lanz-Kaufmann (2001) that there is a need for a clear demarcation of the 'wellness' concept from the 'cure' concept, and that for marketing strategies it is essential that these two guest segments are handled separately, although both can be simultaneously hosted in the same hotel or resort.

Voigt *et al*. (2011) note that there seems to be little understanding of how wellness tourists can be categorised, and what benefits they expect to obtain from their experiences. While certain benefits, such as being with friends and family, relaxation and escape consistently recur, and can be seen as generic motives for most tourism activities, there also appear to be motives or benefits which are unique to particular tourism contexts, such as altruism for volunteer tourism, or risk-taking for adventure tourism (Voigt *et al*., 2011). In the same way there may be benefits that are unique to wellness tourism. Voigt *et al*. (2011) focus their wellness tourist typology study on benefits sought by three pre-determined wellness tourism groups, namely beauty spa visitors, lifestyle resort visitors and spiritual retreat visitors, and found significant differences between the three groups. Six principal benefits sought by wellness tourists, some of which are unique to the wellness tourism context, are identified:

- Transcendence – to learn more about themselves, think about what life means.
- Physical health and appearance – to improve physical fitness, health, lose weight.
- Escape and relaxation – to relax, escape, get away from everything, forget worries and problems, reduce stress levels.
- Important others and novelty – to share experiences, spend time with family members, be with friends, experience something new.
- Re-establish self-esteem – to gain more confidence, increase self-esteem
- Indulgence – to spoil themselves, be pampered.

While typologies of wellness tourists have been developed, the existing typologies do not appear to include any focus on thermal spring tourists.

6.5 Product development

Product development is a prerequisite for satisfying tourists' changing demands and ensuring the long-term profitability of the tourism industry (Smith, 1994). Ideally tourism products should meet marketplace demands, be produced cost-effectively and be based on wise use of the cultural and natural resources of the destination. It has been suggested that planners approach the tourism product from three levels (Kotler, 1994, cited in Swarbrooke, 2002), starting with the 'core' product, and followed by the tangible product and augmented product. The core product consists of the main benefits the purchaser identifies that will be met by the product, including intangible and subjective attributes, such as atmosphere, experience, relaxation or convenience. The 'tangible' product is the physical part of the product that customers can purchase to satisfy their needs, and the 'augmented' product includes all additional services and benefits the customer receives, both tangible and intangible.

According to Horner & Swarbrooke (2005), consumers do not just purchase a product, they actually purchase 'benefits', and the task of marketers of leisure products and services is to try to understand benefits which customers seek. Different consumer groups who purchase the same product may be seeking different benefits. The particular benefits that consumers look for depends on a number of factors, such as the nature of the visitors themselves (age, lifestyle, stage in the family life cycle, past experiences and personality). For example, elderly people may look for economy, passive activities and easy access, while families with young children may look for entertainment for their children. Benefits sought also reflect the interrelationship of the numerous characteristics of a particular consumer, for example,

someone may be elderly and healthy, or not, wealthy, or not, adventurous, or not, or may like to be alone, or not. In addition, benefits that consumers seek depend on the type of attraction. Certain types of attractions are commonly associated with particular types of benefits, such as a beach for sun tanning, sea bathing, economy and socialising (Swarbrooke, 2002). The key to success in the development of leisure products depends on the ability to match the product which is offered with the benefits sought by customers.

Smith (1994) stresses the importance of 'involvement' in the tourism product. A feature of many service products is that consumers participate, to some degree, in the delivery of services. Involvement includes a combination of physical, intellectual and emotional elements. For example, involvement for pleasure travellers means travelling or relaxing in a way that is personally satisfying, and feeling sufficiently safe and secure so that one can doze, stroll, strike up conversations with other tourists and locals, as well as have access to activities that capture the imagination, interest and enthusiasm of the participant. Involvement, combined with freedom of choice, warm hospitality, competent service, good physical plant (which includes accessibility, acceptable environmental quality, good weather and appropriate numbers of other people) virtually guarantees a quality and satisfying tourism product.

6.6 Policy environment for tourism development and marketing in the Western Cape

Each province in South Africa takes responsibility for all aspects of its own tourism industry, including development, regulation, protection of cultural and environmental heritage, and marketing. In the Western Cape, the provincial Department of Economic Development and Tourism is responsible for tourism development and regulation, and until April 2012, Cape Town Routes Unlimited was the Destination Marketing Organisation, responsible for marketing the province both domestically and internationally (Western Cape Provincial Government, 2010). In April 2012 Cape Town Routes Unlimited was merged with WESGRO (Western Cape Destination Marketing, Investment and Trade Promotion Agency). Thus WESGRO is now the official destination marketing, investment and trade promotion agency for the province.

Tourism development in the Western Cape is guided by the *White Paper on Sustainable Tourism Development and Promotion in the Western Cape* (Western Cape Provincial Government, 2001), and the *Integrated Tourism Development Framework* (Western Cape Provincial Government, 2002), a 10-year vision and strategy for tourism in the province which was updated and renamed the *Western Cape Tourism Development Plan (WCTDP)* in 2011 (Western Cape Provincial Government, 2011).

In the 2002 *Framework*, tourism development areas (TDAs) were identified on the basis of existing products, future potential, infrastructure, and an understanding of current and future market trends. One of these, Route 62 (Worcester to Uniondale), holds considerable potential for route development that could incorporate at least four to five thermal springs. The *White Paper on Sustainable Tourism Development and Promotion in the Western Cape* (Western Cape, 2001: 42), advocates the development of 'crosscutting' tourism themes, which could include "general scenic beauty, food and wine tasting, arts and culture, adventure, eco-experiences, backpacking, heritage experiences, and a large variety of special interest activities". While not mentioned specifically, thermal spring resort-based tourism, if packaged correctly, could make a significant contribution towards linking a number of tourism sectors, such as eco-tourism, backpacking, cycling and water-based activities, as well as the health and wellness sector. This, in turn, would link regions in the province. This type of tourism also has the potential for fostering local community involvement, particularly if medicinal plants, traditional remedies and indigenous knowledge, as well as locally produced foodstuffs, especially health food, as well as arts and crafts, are incorporated into the thermal spring tourism product.

Growth in the tourism sector is now focused on "playing an aggressive and proactive role in the development of tourism sites, attractions, facilities, routes, wealth-unlocking infrastructure and the environment in general, as well as the expansion of the tourism product" (Western Cape Provincial Government, 2010: 17). The WCTDP strategy (2011) thus focuses on improving sites, attractions and facilities in order to enhance the visitor experience, and developing key routes which must be jointly marketed at local level and provincial level. It is also aimed at conducting further research into existing sub-sectors and niches, such as green tourism, responsible tourism, events tourism and cultural/heritage tourism, as well as maximizing co-operative marketing opportunities with other sectors, like the arts and crafts, the food/cuisine and wine industries (Western Cape Provincial Government, 2011). There

would thus seem to be considerable potential to develop thermal spring tourism in the Western Cape as part of these strategies.

As early as 2002 the Western Cape's *Integrated Tourism Development Framework* (Western Cape Provincial Government, 2002) emphasized the importance of niche tourism markets and niche marketing. Niche tourism markets are defined in the report as, "matching the special interest needs of a particular segment of the population with specific product strengths, and providing information and promotional material in a way which is relevant to them" (Western Cape Provincial Government, 2002: 5). The report maintains that "hinterland regions should look beyond their own boundaries, and link products across frontiers, in order to build collective strength and a sustainable product". Such cooperation would enable these areas to capitalize on the growing trend for tourists to travel into hinterland regions seeking more diverse and unique experiences.

In the WCTDP (Western Cape Provincial Government, 2011), some 26 niche markets are identified, namely adventure tourism, agri-tourism, backpacking and youth tourism, beach tourism, bird watching, MICE (meetings, incentives, conferences, events) business tourism, cruise liner tourism, cultural tourism, desert tourism, educational tourism, flower tourism, gambling tourism, gay tourism, palaeontological tourism, religious tourism, scenic route tourism, sport tourism, star gazing tourism, *traditional medical tourism*, *western medical tourism*, volunteer tourism, whale watching tourism, wine tourism and yachting. Each niche market is evaluated according to whether, and to what extent, it addresses issues of geographic distribution, seasonality and transformation, its repeat visit possibilities, its potential for job creation and to impact positively on other sectors, as well as location, access and the availability of supporting infrastructure. Several of these niche markets are highlighted as areas on which to focus development, including backpacking and youth tourism, cultural tourism, MICE business tourism, wine tourism and scenic route tourism (Western Cape Provincial Government, 2011). Unfortunately neither traditional nor western medical tourism is included in the short list, with thermal spring tourism, and indeed spa tourism in general, not even included in the original list. Thermal spring resorts could, however, be developed and marketed to appeal to most of these markets. While thermal spring tourism is currently not being seen by national and provincial tourism authorities as a market on which to focus development and marketing efforts, there does seem to be considerable potential for the thermal spring resort industry to plan their products and

marketing so that they are able to link up to, and benefit from, other tourism sectors, particularly as far as the international market is concerned.

6.7 Summary

In this chapter theoretical perspectives on aspects of tourism product development and marketing are considered, with an emphasis on thermal spring tourism. These include tourist motivation and motivations for visiting thermal spring resorts, market segmentation, including activity-based segmentation, tourist typologies and typologies of health tourists. The policy environment for tourism development and marketing in the Western Cape is discussed, and it is concluded that while thermal spring tourism is currently not being seen as a market on which to focus development, there is considerable potential for linking thermal spring tourism products to other tourism sectors. In Chapter 7 the supply-side of the thermal spring tourism industry in the Western Cape is described and analysed.

CHAPTER 7

THERMAL SPRING HEALTH TOURISM IN THE WESTERN CAPE – SUPPLY-SIDE ANALYSIS

"More people in South Africa would be willing to try a course of water treatment if they could obtain competent advice as to the particular spring which would be most likely to be beneficial to them" (Rindl, 1936: 7).

7.1 Thermal springs in the Western Cape

The Western Cape has been divided into five tourism regions (www.capetownroutesunlimited.org) for the purposes of tourism marketing and information, namely:

- Region One: Greater Cape Town
- Region Two: Cape Winelands
- Region Three: Cape Garden Route & Klein Karoo
- Region Four: Cape Overberg
- Region Five: Cape West Coast
- Region Six: Cape Karoo

There are thermal spring resorts and undeveloped thermal springs in four of the above regions, namely Cape Winelands (4), Cape Garden Route & Klein Karoo (4), Cape Overberg (2), Cape West Coast (2) (Figure 7.1). A number of demarcated 'Western Cape Travel Routes' traverse these six regions, and thermal springs can be visited, and indeed marketed as overnight stops, along the Cape Route 62 (Cape Winelands and the Klein Karoo region of the Cape Garden Route & Klein Karoo), the Cape Whale Coast Route (Cape Overberg), and the Cape Namibia Route (Cape West Coast). Health-related facilities and services at the resorts are summarized in Table 7.1.

7.1.1 Cape Winelands

The Cape Winelands region has four thermal springs, two of which have been developed into large family leisure resorts (Goudini Spa and Avalon Springs), but which do offer a limited range of wellness and beauty treatments. The third (Baden Klub) operates as a private club, and the fourth (Brandvlei Hot Spring) is currently not developed.

7.1.1.1 Goudini Spa

Goudini Spa (www.goudinispa.co.za) is situated in the Breede River Valley, near Worcester, in a spectacular setting against the mountainside, overlooking orchards and vineyards. Goudini gets its name from a San word meaning 'place of bitter honey'. The springs were declared a public resort as early as 1841 by Sir George Napier, Governor of the Cape. Traditionally farmers from the area would spend time there after the annual harvest, for rest and recuperation. Goudini Spa is the largest thermal spring resort in the Western Cape, with 183 accommodation units, each sleeping 4 to 6 people, as well as 54 caravan/camping sites. There is also a restaurant offering both sit-down and take-away meals, and a small supermarket.

The thermal water at Goudini has a temperature of 39°C (Diamond & Harris, 2000). The original spring, classified as 'indifferent', with no dominant mineral/s (Kent, 1952), stopped flowing after the area was damaged by an earthquake in 1969. Subsequently three boreholes were drilled close to the source of the original spring, which today produce a constant flow of thermal water. Currently all water used at the resort comes from these boreholes. Every bath and shower in every accommodation unit uses naturally heated water. Thermal water facilities include a large indoor thermal pool, as well as a warm outdoor pool, and five thermal jacuzzis. A privately run day spa at the resort offers a small range of beauty and wellness treatments, including African body wraps, massage, skin treatments, body exfoliation, manicures, pedicures and waxing.

Apart from the warm swimming pools, the largest of which has a water slide, there is a cold swimming pool, tennis courts, mini-golf, trampolines, table tennis, pool tables and electronic games. A daily family entertainment programme, for both children and adults, is offered during school holidays, with a wide variety of activities, including tractor rides, treasure hunts, mini-golf competitions, video shows and talent shows.

Goudini Spa is ideally situated to be used as a base for exploring the Breede River Valley, with its many wine routes and scenic drives. The towns of Worcester, Robertson, Montagu, Bonnievale, Ceres and Tulbagh, as well as Paarl, Stellenbosch and Franschhoek, are all within less than an hour's drive from Goudini. A variety of off-site activities are also arranged by the resort, including four-wheel-drive routes, canoe trips, hiking trails and trout fishing.

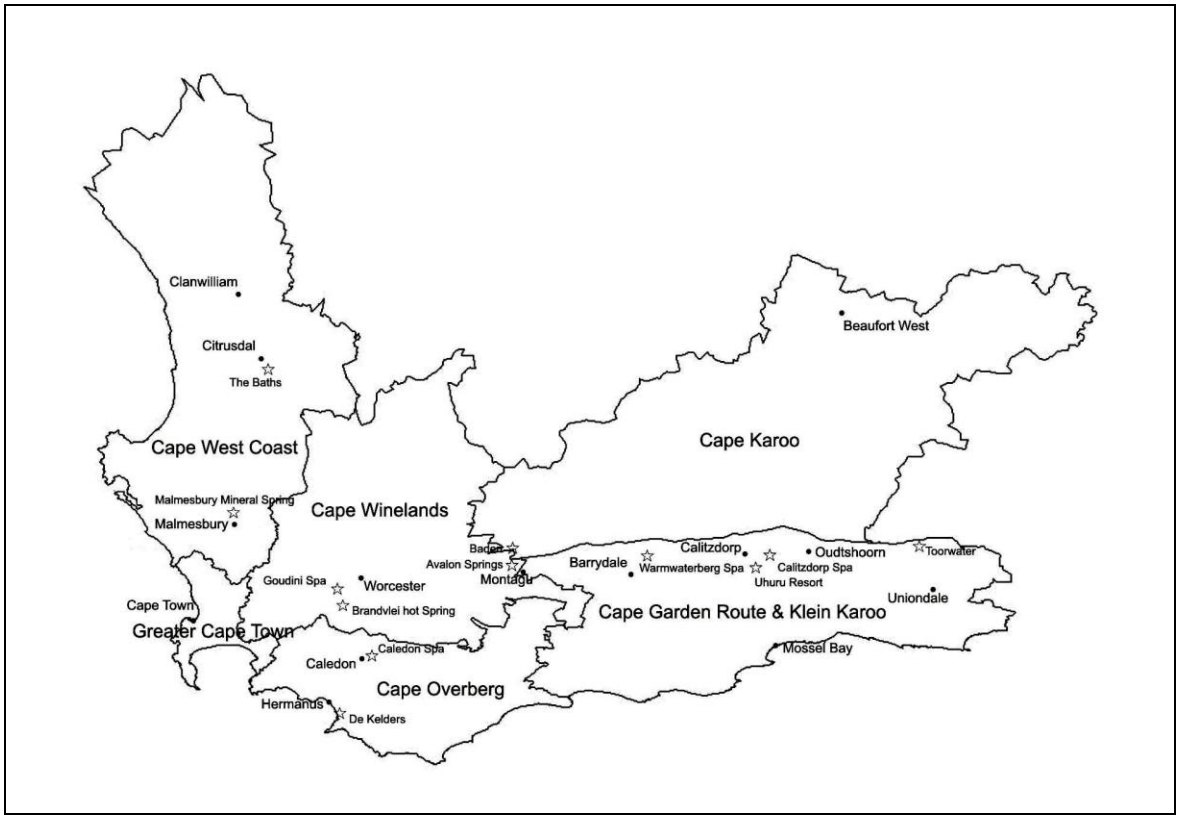

Figure 7.1: Thermal springs and tourism regions in the Western Cape
(Source: Compiled by the researcher)

7.1.1.2 Brandvlei Hot Spring

Brandvlei Hot Spring is located a few kilometers from Rawsonville, in the Breede River Valley, within the grounds of the Brandvlei Prison. Brandvlei is the strongest and hottest thermal spring in South Africa, with a flow rate of 126 litres of water per second, at a temperature of 64°C (Diamond & Harris, 2000). The water is classified as 'indifferent' (Kent, 1952).

Currently some of the water is being piped to the Brandvlei prison buildings, where it is used for showers and other hot water needs of the prisoners and staff, but there are no bathing facilities at the springs themselves. There is no access for the public without special

permission, and thus the springs are not being used for any recreation or health/wellness purposes.

7.1.1.3 Avalon Springs

Avalon Springs (www.avalonsprings.co.za) is situated on the outskirts of the town of Montagu. While Montagu is considered to be part of the Winelands, and indeed is a well-known muscadel wine producing area, its climate is somewhat drier than other parts of the Winelands, similar to that of the Klein Karoo. The water, 45°C at its source (Diamond & Harris, 2000), is classified as 'indifferent' (Kent, 1952). The resort has a number of thermal swimming pools, ranging in temperature from 43°C down to 35°C, together with outdoor spa baths. A privately run health spa is situated on the premises, which offers a range of wellness and beauty treatments, including massage, facials, hand and foot treatments.

Accommodation ranges from luxury hotel rooms, to self-catering apartments and mountainside chalets, and there are a number of on-site shops and restaurants. There are cold pools, with a water slide, a putt-putt course, bicycle hire, tennis courts, an indoor games room, an aviary, as well as walks and hikes in the area.

Montagu is a picturesque town with a village atmosphere, with many well-preserved historic buildings. It is situated in a fertile valley known for its exquisite scenery, and is also well located for visiting the attractions of the neighbouring Breede River Valley. There are a number of wine cellars in and around Montagu, and both the Robertson and Worcester Wine Routes are within easy reach.

7.1.1.4 Baden Klub

Baden Klub (www.badenklub.co.za) is situated 10 km outside Montagu. It operates as a private club for members only. However, non-members can make reservations during the off-season, which includes the June/July school holidays. The resort has a range of self-catering accommodation, as well as caravan and camping sites. The water is classified as indifferent (Kent, 1952), with a source temperature of 38°C (Diamond & Harris, 2000). There is an outdoor warm pool, as well as a number of private indoor baths where one can sit and relax in the warm water. There are no health/wellness facilities or services. Outdoor activities include

swimming, hiking, fishing and bird watching, and for children there is a cable slide over a dam. Indoor activities include pool tables, table tennis and darts.

7.1.2 Cape Garden Route & Klein Karoo

There are four thermal springs in this region, three of which function as family leisure resorts (Warmwaterberg Spa, Calitzdorp Spa and Uhuru Guest Farm), while the fourth, Toorwater, has no facilities and is currently not open to the public. All of these springs are located along Route 62, a 'tourism route' between Cape Town and Port Elisabeth, currently being promoted by tourism marketing authorities as an alternative to the often congested N2 route.

7.1.2.1 Warmwaterberg Spa

Warmwaterberg Spa (www.warmwaterbergspa.co.za) is located four kilometres off the R62, between Barrydale and Ladysmith. The water, 44°C at its source (Diamond & Harris, 2000), is classified as 'chalybeatic', and is known to be rich in iron (Kent, 1952). The resort has three swimming pools, all filled with mineral water, a hot pool (40°C), a not-so-hot pool (about 30°C), and a cooler pool. All water used at Warmwaterberg, whether for swimming, showering, bathing, drinking or watering the lawns, is naturally heated mineral water. There are currently no health/ wellness facilities or services, although limited privately administered beauty treatments have been offered periodically in the past, depending on demand and availability of a therapist.

The 'Old Sanatorium', built in 1908, has been converted into six 4-person self-catering accommodation units, including the original walk-in Roman Baths. The 'Old Bath House', situated nearest to the spring, has been converted into two 2-bedroom units, each unit also having its own Roman bath. In addition there is a range of other self-catering accommodation units, as well as caravan and camping sites. An attractive feature of the public ablution facilities at the caravan/camping area is that they also have Roman baths that can be filled with hot mineral water.

Two hiking trails, one of three kilometres and the other six kilometres, start and end at the resort. There are also good opportunities for mountain biking along farm roads surrounding the resort. For day drives, Barrydale has a number of quaint coffee shops and restaurants, and Swellendam and the Bontebok National Park can be reached in under an hour, over the picturesque Tradouw Pass. Other areas accessible for day drives from Warmwaterberg include Seweweekspoort, the

majestic gorge that connects the Klein Karoo with the Great Karoo, as well as the Cango Caves and ostrich farms near Oudtshoorn (about 150 km).

7.1.2.2 Calitzdorp Spa

Calitzdorp Spa (www.calitzdorpspa.co.za) is situated 18 kilometres from Calitzdorp, along the 'old' road to Outdshoorn. Its water reaches the surface at a temperature of 52°C (Diamond & Harris, 2000), and is classified as 'chalybeatic', because of its high iron content (Kent, 1952). There is a hot outdoor pool (38°C), an indoor Roman Bath (38°C) and four private baths (soap & shampoo type). There are no health/wellness facilities or services.

Calitzdorp Spa has 42 chalets and 20 camping/caravan sites, most with sweeping views of the Swartberg Mountains. Apart from the hot mineral pools, there are also two cold outdoor pools, tennis courts and a squash court. The two-kilometre Springbok Walking Trail, with a resident herd of springbok, has good views of the surrounding areas, and there are many other mountain walks in the vicinity of the resort. Calitzdorp Spa is an excellent base from which to visit the Cango Caves, ostrich farms and other attractions of Oudtshoorn. Mossel Bay, George, Wilderness, Knysna and Plettenberg Bay are also all near enough for day visits. Some of the most spectacular mountain passes in South Africa, including the Swartberg Pass, with access to Gamkaskloof (Die Hel), Seweweekspoort and the Rooiberg Pass, can all be done in day drives from Calitzdorp Spa.

A survey was carried out in 2004, part of a masters thesis, the aim of which was to develop suitable turnaround strategies for Calitzdorp Spa, as it was felt that the resort was not functioning optimally and not reaching its true potential (Holtzhausen, 2004). Strategies were proposed for cost-reduction, asset reduction and revenue generation. These included pricing structures, product differentiation, market segmentation, the introduction of new product offerings, as well as effective marketing and promotional strategies. The survey refers to 'new tourism', recent trends in tourism product development, where there is a demand for experiences in which visitors can interact with the community, as well as learn about the destination. It is recommended that 'new tourism' offerings be developed at Calitzdorp Spa, which should include ecotourism, cultural tourism and adventure tourism. The addition of a 'spa' component with a health and beauty focus is also recommended, as it could provide the resort with valuable opportunities for market growth, increased revenue generation and the gaining of competitive advantage.

7.1.2.3 Uhuru Guest Farm

Uhuru Guest Farm (www.openafrica.org/participant/Uhuru-Guest-Farm) is situated between Calitzdorp and Outdshoorn, just a few hundred metres from Calitzdorp Spa. It has access to the same water source as Calitzdorp Spa, and therefore water analyses done for Calitzdorp Spa apply equally to Uhuru Guest Farm. Uhuru has a warm indoor pool, but there are no health/wellness facilities or services. The resort offers a range of accommodation, with a restaurant and bar, much of its business being functions and events. Being a family guest farm, there is a bird aviary and a monkey enclosure, as well as sheep, goats and cows, as well as a cold water outdoor pool with a water slide.

7.1.2.4 Toorwater

Toorwater is situated 73 km from De Rust. While the name translates as 'enchanted water', it is not certain where this name originates, but according to Bulpin (1986), methane gas would often rise to the surface with the water, and the gas would sometimes ignite spontaneously, leading to the name 'enchanted water'. The piping of the water largely ended this occurrence. The water is classified as 'chalybeatic' (Kent, 1952), has high iron content, and reaches the surface at a temperature of 49°C (Diamond & Harris, 2000). Bulpin (1986: 265) describes Toorwater as "a place with a few rooms and a pleasant camping ground, with beneficial water and a restful setting". Today the original building remains, but it is not in good condition, and although the water still flows as strongly as ever from a pipe, there are no longer any facilities for swimming or bathing. It is still possible to camp at the site, with permission from the farm manager, but currently there are no plans to redevelop Toorwater.

The potential of Toorwater is highlighted in a spatial development report for the region (Eden District Municipality, 2004: 30), where it is stated that the area around Toorwater "has immense potential to establish itself as a future node, offering features such as Karoo vistas and indigenous aloe forests and unspoilt nature". A development is proposed in this report, which includes "an extensive spa-type health and recuperation resort linked directly to the hot spring, offering a luxury nature experience aimed at international tourists and executive level travellers", but unfortunately this development never materialised.

7.1.3 Cape Overberg

There are two thermal springs in the Cape Overberg, namely Caledon Spa, and the tepid spring in the cave at De Kelders, near Gansbaai.

7.1.3.1 Caledon Spa

Caledon Spa, sometimes referred to as the Caledon Casino, Hotel and Spa (www.thecaledoncasino.co.za) is located on the outskirts of the town of Caledon. The water reaches the surface at a temperature of 53°C (Diamond & Harris, 2000). It is classified as 'chalybeatic', due to its high iron content (Kent, 1952).

A water-based wellness centre, known as the 'Caledon Aqua Spa' has been built, and has as its focal point the restored Victorian Bath House, at 38°C the hottest of the swimming pools, and all that is left of the magnificent sanatorium built in 1902. The Aqua Spa also has a lap pool, a fridgidarium pool and a floatation pool. A range of warm pools, for recreation and relaxation, have been built on the hillside, with water cascading down the hill from pool to pool, the hottest being the highest. Fresh water is continuously circulated through the pools. No filtration takes place, and no chemicals are added.

The adjoining 'Health and Beauty Centre' offers a range of treatments, including massage, body treatments, facial treatments, manicures and pedicures. There is also a steam room, a sauna, a Swiss shower with water jets, an outdoor jacuzzi, a gym, and a tranquil and serene Zen garden. Signature treatments include the Bath Ceremony (body cleansing and massage), the Mud Ceremony (full body exfoliation, a mineral bath soak and mud wrap), the Nourishing Ceremony (body cleansing and application of healing oils and butters), the African Wood Ceremony (massage and light stretching, using a range of wooden implements), and the Herbal Ceremony (full body exfoliation and massage using aroma-infused Shea butter).

The hotel offers a range of accommodation and restaurant choices, and for those with an inclination to gamble, the Caledon Casino is attached to the hotel. Nearby is the Caledon Wild Flower Garden, where most species of Cape fynbos can be seen. A 10 km hiking trail in the reserve offers panoramic views of the surrounding areas. The Caledon Museum depicts Caledon as it was in the Victorian era, during the heyday of the Spa. Walking tours of the town are

popular, since there are many houses and other buildings dating back to the last century and earlier.

Caledon is situated in the Overberg, a region with an enormous variety of tourist attractions, including sandy beaches, spectacular coastal and mountain scenery, and quaint villages with interesting architecture. Destinations that can be reached within one hour's drive from Caledon include: Hermanus, one of best land-based whale watching sites in the world (May to October), which also has good beaches and restaurants; the Hemel and Aarde Valley, with the most southerly Wine Route in Africa; Genadendal, the first Moravian mission station in South Africa, with fine old buildings dating back to 1797 and a fascinating museum; Greyton, with well preserved old buildings, art studios, nature walks and hiking trails, as well as a number of restaurants; and Cape Agulhas, the most southerly point in Africa.

7.1.3.2 De Kelders

De Kelders is located a few kilometers from Gansbaai. Two tepid (21°C) bathing pools, which contain water with high salt (sodium chloride) content, have been constructed at the end of an underground river, deep inside a sea-cliff cave. The entrance can be reached by descending a steep flight of stairs to the beach. The source of the water is believed to be about 10 kilometres inland, from where it flows underground at a rate of about one million litres a day. Currently there are no facilities, not even lighting. Although the caves and pools are not officially open to the public, arrangements to visit can be made with the owner.

7.1.4 Cape West Coast

There are two thermal springs in the Cape West Coast region, The Baths (near Citrusdal), and Malmesbury Hot Spring. The former is a thriving family leisure resort, while the latter is currently undeveloped and unutilized.

7.1.4.1 The Baths

The Baths (www.thebaths.co.za) has been functioning as a resort since the 1700s, and is characterised by its Victorian-style buildings, which give it an old-world feel, set in a narrow valley surrounded by groves of orange trees. The historic Victorian buildings have been

converted into a number of accommodation units of varying sizes, and in addition there are a number of free-standing chalets. There are also caravan/camping sites, a restaurant and a shop.

The water, 43°C at its source (Diamond & Harris, 2000), is classified as 'indifferent', and has a particularly low mineral content (Kent, 1952). The resort has a large outdoor thermal pool (38°C), and a small rock pool, with the water being continually circulated and no chemicals added. In addition there are five private spa baths, the hottest being 43°C, and two whirlpools. Currently there are no health/wellness facilities and services, but the area offers good opportunities for outdoor exercise. Two hiking trails start and end at the resort, one taking about an hour, and the other four hours. For jogging and mountain biking, a gravel farm road continues for 15 kilometres beyond The Baths, with water approximately every four kilometres. Longer, circular routes are also possible. The resort also has tennis courts.

A wide variety of tourist attractions are located within easy reach of The Baths. These include the Olifants River Wine Route, which has seven wine cellars offering cellar tours and wine sales, and the Cedarberg Wilderness Area, known for unique rock formations and San rock art. Much of the area accessible for day trips from The Baths falls within the Spring Wild Flower Region, and during August, September and October the region is carpeted with wild flowers. An annual Wild Flower Festival and exhibition takes place in Clanwilliam every year in August, and lasts ten days.

Clanwilliam (72 km) is also the centre of the rooibos tea industry. Rooibos is a herbal tea known for its medicinal properties. Watersport lovers and anglers flock to Clanwilliam Dam, regarded by some as the best surface for waterskiing in South Africa. A particularly scenic drive, especially during the wild flower season, is from Clanwillliam over the Pakhuis Pass to the Bidouw Valley and Wupperthal, an old Moravian Mission Station with a well-known shoe factory, where hand-made 'Veldskoene' can be bought, and visitors can watch the craftsmen at work.

7.1.4.2 Malmesbury Mineral Spring

Malmesbury Mineral Spring, a salt (sodium chloride) spring (Kent, 1952), 34°C at its source (Diamond & Harris, 2000), is located in the centre of the town of Malmesbury. Unfortunately the spring water is no longer accessible to the public, nor is it being utilized for bathing or any other purposes. From the time of earliest European settlement in the Cape, the mineral spring

in Malmesbury acquired a reputation for curing rheumatism, neuralgia, gout, lumbago, and all kinds of skin diseases (Booyens, 1981), and the first bathhouse was erected in 1742, leading to the establishment of the town of Malmesbury a few years later.

Table 7.1: Health-related facilities and services at thermal spring resorts

	Health-related facilities and services		
	Water-based	**Treatment-based**	**Recreation-based**
Goudini Spa	Indoor and outdoor thermal pools (39°C), five jacuzzis	Day spa - range of treatments, including African body wraps, massage, skin treatments, body exfoliation, manicures, pedicures and waxing	Cold swimming pools, tennis courts, canoe trips and hiking trails can be arranged by resort
Avalon Springs	A number of thermal, ranging in temperature from about 43°C down to 35°C, together with outdoor spa baths	A comprehensive range of body and beauty treatments is available, including massage, facials, hand and foot treatments	Cold swimming pools, bicycle hire, tennis courts, walks and hikes, golf and bowls available nearby
Baden Klub	Outdoor thermal pool (about 36°C), as well as a number of private indoor thermal baths for relaxing	None	Cold swimming pool
Warmwaterberg Spa	Two thermal mineral water pools – one hot (40°C), one warm (30°C)	None	Two hiking trails (3 km and 6 km), good opportunities for mountain biking in surrounding area
Calitzdorp Spa	Outdoor thermal pool (38°C), indoor Roman Bath (38°C) and four private mineral baths (soap & shampoo type)	None	Two cold swimming pools, tennis courts, squash court, 2km walking trail, many mountain walks, area ideal for mountain biking
Uhuru Guest Farm	Indoor thermal pool (about 38°C)	None	Cold swimming pool, good possibilities for mountain walks and mountain biking
Caledon Spa	Caledon Aqua Spa – thermal pool (38°C), range of cascading thermal pools of various temperatures for relaxation, lap pool, fridgidarium pool, floatation pool, steam room, sauna, Swiss shower with water jets, outdoor jacuzzi	Health & Beauty Centre – massage, body treatments, facial treatments, manicures, pedicures, range of signature treatments featuring body exfoliation, mud wraps, herbal and healing oil massage	Cold swimming pools, gym, Zen garden, nearby Wild Flower Garden with 10km hiking trail
The Baths	An outdoor thermal pool (38°C), and a small rock pool filled with hot water, five private spa baths (up to 43°C, two whirlpools	None	Cold swimming pool, two hiking trails (1-4 hours), tennis courts, the area is ideal for jogging and mountain biking along 15 km gravel road, longer circular routes possible

Over the years a number of attempts have been made to develop the spring, but none was entirely successful. The spring was finally abandoned in the mid-1940s, leaving nothing more than a well-type feature in the centre of the town. In the year 2000 even this was demolished, and a shopping centre, somewhat ironically named *Die Bron* (The Spring), was built on the site. The water can still be accessed through a manhole, but it is not being used for recreational, wellness, medicinal or any other purposes.

7.2 Mineral content of the thermal waters

7.2.1 Data collection

While data does exist on the mineral content of most of the Western Cape's thermal springs, the measurements have been carried out by different people, at different times, some dating back to the 1940s and earlier. The only published material that focuses on the medicinal uses of these waters is that of Kent (1952), and Rindl (1936). There is little consistency in the measurements, with not all the analyses measuring the presence of the same minerals. These analyses also focus on the main cations and anions, without including most trace elements, except for iron. It was therefore decided that the researcher would collect water samples at all the thermal springs covered in this research, and have them analysed by the Department of Chemistry, at the University of the Western Cape (Appendix B).

The thermal waters were tested for the following 34 cations/trace elements (all are in actual fact cations, but they are referred to as trace elements when they occur in small quantities): Aluminium, uranium, arsenic, boron, barium, beryllium, calcium, cadmium, caesium, cobalt, chromium, copper, iron, mercury, potassium, lithium, magnesium, manganese, molybdenum, sodium, niobium, nickel, phosphorous, lead, rubidium, selenium, silicon, strontium, thorium, titanium, vanadium, yttrium, zinc and zirconium, and for the following five anions: Flouride, bromide, chloride, nitrate and sulphate. The waters were also tested for the presence of radon gas by the Department of Physics, University of the Western Cape (Appendix C). It was not possible to test for bicarbonates or hydrogen sulphide. Where available, these figures are taken from Kent (1952). The analyses of the indifferent, chalybeatic and salt waters are illustrated in Tables 7.2, 7.3 and 7.4, respectively.

While an attempt was made to collect the water samples from a point as near as possible to the water source, this was only possible at Avalon Springs and The Baths. At Goudini Spa,

Baden Klub, Warmwaterberg Spa, Caledon Spa, Toorwater and Malmesbury the water sources have been capped, with the water piped, and samples were collected at the nearest points from where the water could be accessed. At Brandvlei the main source was not accessible, and the sample was taken from a secondary source. At Calitzdorp Spa the sample was taken from a cooling pond, and at De Kelders the sample had to be taken from an open pool. Samples were analysed as soon as possible after collection, always within three days.

The temperature and pH of the water were measured on-site by the researcher at the time of collecting the samples. Measured temperatures range from 21°C (De Kelders) to 57°C (Brandvlei). Some of the temperatures differed slightly from those reflected in the literature, but this may have been due to the samples not being taken from the actual sources, as well as seasonal fluctuations in temperature. All of the thermal springs have a pH relatively close to neutral, ranging from 5.9 (Brandvlei), to 7.4 (Malmesbury).

Only one of the Western Cape's water sources (Malmesbury) has a TDS (total dissolved solids) count of more than 1 000 mg/l, the figure that is often recommended for water to be considered as medicinal/healing thermal water (Fresnius *et al*., 1995, cited in Skapare, 2001). Apart from De Kelders (650 mg/l), the thermal springs in the Western Cape all have very low TDS counts, ranging from 125 mg/l (Warmwaterberg), down to 46 mg/l (Goudini Spa). There is, however, no universally accepted definition or classification of medicinal/healing thermal water or mineral water, nor is there any general agreement on the respective curative powers of the various waters, and many thermal waters used for medicinal purposes have a low mineral content.

All the thermal springs in the Western Cape were tested for radon (radioactivity). Kent (1949) refers to only two thermal springs in the Western Cape as containing radon, Malmesbury and Brandvlei, while radon content has also been reported for Avalon Springs (Montagu) (see Chapter 3). No radon has previously been reported in the literature for any of the other springs, although Bulpin (1986: 269) refers to Warmwaterberg as being 'slightly radioactive'. In this research, radon in measurable quantities was found in all the samples, as high as 274 Bq/l at Warmwaterberg and 258 Bq/l at The Baths. If it had been possible to measure radon on-site, it is likely that the readings could have been considerably higher, since there is always a chance of the gas escaping into the air during the process of sample collection, and the transferring of water between containers during the analysis. While radon content is unlikely to be high enough for the water to meet to requirements for it to be classified as 'radon water'

(666 Bq/l in Europe), and used directly for radon treatments, there is definitely a measurable quantity of radon in all of these waters, which may well play a part in the medicinal/healing properties of the waters.

7.2.2 Mineral contents and related medicinal properties

The medicinal properties of thermal waters are the result of a combination of chemical, thermal and mechanical effects (discussed in Chapter 3). Chemical effects, in turn, are dependent on the presence of minerals (cations, anions and trace elements), and gases (hydrogen sulphide and radon). The medicinal/healing qualities of minerals and gases found in thermal springs are also outlined in Chapter 3. Not all of the minerals found in the thermal waters of the Western Cape have medicinal properties, but the presence of those that are thought to have medicinal properties are illustrated using ticks in Table 7.5, and discussed below.

7.2.2.1 Indifferent waters

The five 'indifferent' water sources all have characteristically low TDS counts, ranging from 46 mg/l (Goudini Spa) to 85 mg/l (Avalon Springs). Temperatures measured on-site range from 39°C (Baden) to 57°C (Brandvlei), and pH values range from 5.9 at Brandvlei (slightly acid) to 7.1 at Avalon Springs (neutral). While overall mineral content of these waters is relatively low, all have measurable quantities of the main cations, namely sodium, magnesium, potassium and calcium, as well as silicon. All five waters contain chloride and sulphate, and Goudini and Brandvlei also contain fluoride. Avalon Springs contains a relatively small amount of bicarbonate (Kent, 1952). Data on bicarbonate content is not available for the other indifferent water sources.

The five indifferent water sources are relatively similar in terms of the main cations and anions, but they differ considerably in terms of trace elements:

- Goudini Spa contains lithium, nickel, phosphorous, strontium and zinc.
- Brandvlei Hot Spring contains lithium, nickel, phosphorous and strontium.
- Avalon Springs contains arsenic, cobalt, lithium, nickel, phosphorous, rubidium, selenium strontium and zinc.
- Baden Klub contains cobalt, lithium, nickel, phosphorous, rubidium, selenium, strontium and zinc.
- The Baths contains cobalt, lithium, manganese phosphorous, rubidium and strontium.

All five indifferent water sources contain measurable amounts of radon, with radon content being relatively high at The Baths (258 Bq/l).

7.2.2.2 Chalybeatic waters

The four ‘chalybeatic’ water sources all contain significant amounts of iron as well as manganese, with TDS counts slightly higher than the indifferent waters, from 100 mg/l (Toorwater) to 125 mg/l (Warmwaterberg). Temperatures measured on-site range from 38°C (Toorwater) to 49°C (Caledon Spa), and pH values range from 6.2 at Caledon Spa (slightly acid) to 7.1 at Toorwater (neutral).

All four springs contain measurable quantities of the main cations, namely sodium, magnesium, potassium and calcium, as well as silicon. All four springs contain chloride and sulphate, but only Caledon contains flouride. Caledon, Warmwaterberg and Calitzdorp/Uhuru Guest Farm all contain bicarbonate (Kent, 1952). Data on bicarbonate content is not available for Toorwater.

Similarly to the indifferent springs, the four chalybeatic springs contain a range of trace elements in measurable quantities:

- Caledon Spa contains boron, iron, lithium, manganese, nickel, phosphorous, rubidium, selenium and strontium.
- Warmwaterberg Spa contains iron, lithium, manganese, nickel, rubidium and strontium.
- Calitzdorp Spa/Uhuru Guest Farm contains arsenic, iron, lithium, manganese, nickel, rubidium and strontium.
- Toorwater contains iron, lithium, manganese, nickel, phosphorous, rubidium and strontium.

All four chalybeatic water sources contain measurable amounts of radon, with radon content being relatively high at Warmwaterberg Spa (274 Bq/l) and The Baths (258 Bq/l). The comparatively low radon count for Calitzdorp Spa may be because of the fact that the sample was taken from an open cooling pond.

Table 7.2: Mineral contents of indifferent thermal waters in the Western Cape

	Goudini Spa	Brandvlei Hot spring	Avalon Springs	Baden Klub	The Baths
Temperature - measured (°C)	43	57	41	39	41
Temperature – literature (°C)	39[1]	64[1]; 64[3]	45[1]; 45[2]	38[1]	43[1]; 43[3]
pH	6.2	5.9	7.1	6.2	6.4
Total dissolved solids (mg/l)	46	47	85	65	70
Main cations (mg/l)					
Sodium	6.4	9.0	10.6	9.3	5.5
Magnesium	2.3	2.6	2.3	2.4	1.0
Potassium	1.1	2.3	4.5	3.1	1.5
Calcium	5.5	2.4	11.1	3.1	1.1
Silicon	14.1	19.4	16.2	15.2	6.8
Anions (mg/l)					
Flouride	0.1	0.2	0	0	0
Chloride	12.1	14.5	13.7	14.5	16.8
Nitrate	0.8	0.7	0	0.4	1.4
Sulphate	1.8	1.6	2.4	2.1	1.1
Bicarbonate (Kent, 1952)	n.d.	n.d.	34.0	n.d.	n.d.
Trace elements (mg/l)					
Aluminium	0	0	0	0	0
Arsenic	0	0	Trace	0	0
Boron	0	0	0	0	0
Barium	0	Trace	Trace	Trace	0
Cesium	0	0	Trace	Trace	Trace
Chromium	0	0	0	0	0
Cobalt	0	0	Trace	Trace	Trace
Iron	0	0	0	0	0
Lead	0	0	0	0	Trace
Lithium	Trace	Trace	Trace	Trace	Trace
Manganese	0	0	0	0	Trace
Mercury	0	0	Trace	Trace	0
Molybdenum	0	0	0	0	0
Nickel	Trace	Trace	Trace	Trace	0
Niobium	0	0	Trace	Trace	0
Phosphorous	Trace	Trace	Trace	Trace	0.2
Rubidium	0	0	Trace	Trace	Trace
Selenium	0	0	Trace	Trace	0
Strontium	Trace	Trace	0.1	Trace	Trace
Thorium	0	0	Trace	Trace	0
Vanadium	0	0	Trace	Trace	Trace
Zinc	Trace	0	Trace	Trace	0
Zirconium	0	0	0	0	Trace
Date of analysis	Mar. 2012	Mar. 2012	Mar. 2012	Mar. 2012	Apr. 2012
Gases					
Radon (Bq/l)	80	75	98	49	258
Date of analysis (Radon)	Mar. 2012	Jun. 2012	Mar. 2012	Mar. 2012	Apr. 2012

References to literature: [1] = Diamond & Harris, 2001; [2] = Kent, 1952; [3] = Kent, 1949

Cations/Anions/TDS: Analysis by O. Fatoba & I. Wells, Department of Chemistry, University of the Western Cape.

Radon: Analysis by Prof. R. Lindsay, Department of Physics, University of the Western Cape.

Measurable quantities of trace elements lower than 0.1 mg/l entered as 'Trace'.

n.d. = Not determined

Table 7.3: Mineral contents of chalybeatic thermal waters in the Western Cape

	Caledon Spa	Warmwater -berg Spa	Calitzdorp Spa	Toorwater
Temperature - measured (°C)	49	41	44	38
Temperature – literature (°C)	53[1]; 49[2]	44[1]; 46[2]	52[1], 51[2]	49[1]
pH	6.2	6.3	6.8	7.1
Total dissolved solids (mg/l)	115	125	115	100
Main cations (mg/l)				
Sodium	22.9	23.1	17.5	13.5
Magnesium	3.0	2.8	4.7	3.5
Potassium	5.6	9.6	9.2	7.3
Calcium	7.5	14.6	9.1	9.7
Silicon	35.1	25.7	41.2	53.2
Anions (mg/l)				
Flouride	0.2	0	0	0
Chloride	33.5	47.0	40.6	35.4
Nitrate	0	0	0	0
Sulphate	4.5	5.4	5.5	3.7
Bicarbonate (Kent, 1952)	49.0	85.4	61.0	n.d.
Trace elements (mg/l)				
Aluminium	0	0	0	0
Arsenic	0	0	Trace	0
Boron	0.6	0	0	0
Barium	Trace	0.2	0	0.2
Cesium	Trace	Trace	Trace	Trace
Chromium	0	0	0	0
Cobalt	0	0	0	0
Iron	1.9	0.2	0.8	3.8
Lead	0	0	0	0
Lithium	Trace	Trace	Trace	0.1
Manganese	5.2	1.2	5.5	3.3
Mercury	Trace	0	0	0
Molybdenum	0	0	0	0
Nickel	Trace	Trace	Trace	Trace
Niobium	Trace	0	0	0
Phosphorous	Trace	0	0	0.2
Rubidium	Trace	Trace	Trace	Trace
Selenium	Trace	0	0	0
Strontium	Trace	0.2	0.1	0.1
Thorium	Trace	Trace	Trace	Trace
Vanadium	0	0	0	0
Zinc	0	0	0	0
Zirconium	0	0	0	0
Date of analysis	Mar. 2012	Jul. 2012	Jul. 2012	Jul. 2012
Gases				
Radon (Bq/l)	49	274	12	86
Date of analysis (Radon)	Mar. 2012	Mar. 2012	Jul. 2012	Jul. 2012

References to literature: [1] = Diamond & Harris, 2001; [2] = Kent, 1952; [3] = Kent, 1949

Cations/Anions/TDS: Analysis by O. Fatoba & I. Wells, Department of Chemistry, University of the Western Cape.

Radon: Analysis by R. Lindsay, Department of Physics, University of the Western Cape.

Measurable quantities of trace elements lower than 0.1 mg/l entered as 'Trace'.

n.d. = Not determined

Table 7.4: Mineral contents of salt thermal waters in the Western Cape

	Malmesbury	De Kelders
Temperature - measured (°C)	33	21
Temperature – literature (°C)	34[1]; 33[2]	21[1]
pH	7.4	6.7
Total dissolved solids (mg/l)	1005	650
Main cations (mg/l)		
Sodium	48.5	170.5
Magnesium	0.2	34.8
Potassium	2.2	6.1
Calcium	1.1	99.5
Silicon	1.0	4.3
Anions (mg/l)		
Flouride	0	0
Chloride	688.9	362.9
Nitrate	0	16.5
Sulphate	37.2	47.5
Bicarbonate (Kent, 1952)	n.d.	120.7
Trace elements (mg/l)		
Aluminium	Trace	Trace
Arsenic	0	Trace
Boron	0	Trace
Barium	0	Trace
Cesium	0	Trace
Chromium	Trace	0
Cobalt	Trace	0
Iron	0	0
Lead	0	0
Lithium	0.1	Trace
Manganese	Trace	0
Mercury	0	Trace
Molybdenum	0	Trace
Nickel	0	0
Niobium	0	Trace
Phosphorous	Trace	0
Rubidium	Trace	0
Selenium	0	0
Strontium	Trace	0.9
Thorium	0	Trace
Vanadium	Trace	0
Zinc	0	0
Zirconium	Trace	0
Date of analysis	Apr. 2012	Mar. 2012
Gases		
Radon (Bq/l)	75	30
Date of analysis (Radon)	Apr. 2012	Mar. 2012
Classification (Kent, 1952)	Salt	Salt

References to literature: [1] = Diamond & Harris, 2001; [2] = Kent, 1952; [3] = Kent, 1949
Cations/Anions/TDS: Analysis by O. Fatoba & I. Wells, Department of Chemistry, University of the Western Cape.
Radon: Analysis by R. Lindsay, Department of Physics, University of the Western Cape.
Measurable quantities of trace elements lower than 0.1 mg/l entered as 'Trace'.
n.d. = Not determined

Table 7.5: Minerals and gases with known medicinal/healing properties

	Goudini Spa	Brandvlei	Avalon Springs	Baden Klub	The Baths	Warmwaterberg Spa	Calitzdorp Spa	Caledon Spa	Toorwater	De Kelders	Malmesbury
Main cations											
Sodium	√	√	√	√	√	√	√	√	√	√	√
Magnesium	√	√	√	√	√	√	√	√	√	√	√
Potassium	√	√	√	√	√	√	√	√	√	√	√
Calcium	√	√	√	√	√	√	√	√	√	√	√
Silicon	√	√	√	√	√	√	√	√	√	√	√
Anions											
Chloride	√	√	√	√	√	√	√	√	√	√	√
Flouride	√	√						√			
Sulphate	√	√	√	√	√	√	√	√	√	√	√
Bicarbonate (Kent, 1952)	n.d.	n.d.	√	n.d.	n.d	√	√	√	n.d.	√	n.d.
Trace elements											
Arsenic			√				√			√	
Boron								√		√	
Chromium											√
Cobalt			√	√	√						√
Iron						√	√	√	√		
Lithium	√	√	√	√	√	√	√	√	√	√	√
Manganese					√	√	√	√	√		√
Molybdenum										√	
Nickel	√	√	√	√		√	√	√	√		
Phosphorous	√	√	√	√	√			√	√		√
Rubidium			√	√	√	√	√	√	√		√
Selenium			√	√				√			
Strontium	√	√	√	√	√	√	√	√	√	√	√
Zinc	√		√	√							
Gases											
Hydrogen sulphide (Kent, 1952)	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	√
Radon	√	√	√	√	√	√	√	√	√	√	√

n.d. = Not determined

7.2.2.3 Salt waters

The two ‘salt’ water sources have far higher mineral contents than the other two water types, with Malmesbury having a TDS count of 1005 mg/l and De Kelders 650 mg/l. Both contain significant amounts of sodium as well as chloride. Temperatures measured on-site range from 21°C (De Kelders) to 33°C (Malmesbury), and pH values are close to neutral for both water sources, that is, 6.7 at De Kelders and 7.4 at Malmesbury.

Both water sources have measurable quantities of the main cations, namely sodium, magnesium, potassium and calcium, with comparatively low quantities of silicon. De Kelders has particularly high sodium and calcium contents. Both contain chloride and sulphate, with Malmesbury having very high chloride content. De Kelders contains a considerable amount of bicarbonate (Kent, 1952). Data on bicarbonate content is not available for Malmesbury. The Malmesbury spring is also known to contain hydrogen sulphide gas (Kent, 1952).

The two salt springs also contain a range of trace elements in measurable quantities:

- Malmesbury contains chromium, cobalt, lithium, manganese, phosphorous, rubidium and strontium.
- De Kelders contains arsenic, boron, lithium, molybdenum, phosphorous and strontium.

Both salt water sources contain measurable amounts of radon.

7.3 Summary

Eight thermal spring resorts have been described, together with four springs that are currently not open to the public, and have no facilities. None of the resorts offer balneaotherapy or any other medical services. Caledon Spa has a relatively sophisticated range of treatment-based wellness products, while Goudini Spa and Avalon Springs offer only a limited range of beauty treatments. The other resorts offer no treatment-based wellness services at all, but do offer opportunities for recreation-based wellness activities. While all of the resorts have thermal pools, and two (Goudini Spa and The Baths) have jacuzzis, there are no quiet hot pools in which to relax, and no water-based exercise programmes are offered. Goudini Spa, Avalon springs, Calitzdorp Spa and The Baths have tennis courts, and Calitzdorp Spa has tennis and squash courts. All of the resorts emphasise opportunities for hiking, jogging and mountain biking, but only three, Warmwaterberg Spa, Calitzdorp Spa and The Baths, have short marked walking trails. The resorts are all located in areas known for scenic drives and tourist attractions, with access to the wine routes of the Breede River Valley (Goudini Spa, Avalon Springs, Baden Klub), the Cango Caves, ostrich farms, and mountain passes of the Klein Karoo (Warmwaterberg Spa, Calitzdorp Spa, Uhuru Guest Farm), and the Cederberg Mountains and West Coast wild flower area (The Baths).

The undeveloped resorts vary considerably. Malmesbury Hot Spring is situated in the town centre of Malmesbury, where there is very little, if any, open space available for development. Brandvlei is situated on property belonging to the Department of Correctional Services, and any development would probably have to take place on adjacent land. Toorwater has considerable development potential, despite its relative distance from the major urban centres, but it is privately owned, and any decision to develop it would depend on the owner. De Kelders, situated in a cave, is unique in many ways, something which could be exploited, but it is also privately owned, and any decision to develop it, or even just to re-open it to the public, also rests with the owner.

The mineral contents of the thermal springs in the Western Cape present some interesting opportunities for the development of balneotherapy/medicinal products. All of the springs contain radon gas, which has well known medicinal properties, and while the springs contain various combinations of minerals with known medicinal/healing properties (e.g. sodium, magnesium, potassium, calcium, chloride, fluoride, sulphate and silicon, iron, lithium and arsenic), and the presence of relatively rare trace elements, such as nickel, rubidium, selenium, strontium and zinc, which are thought to have medicinal properties, but about which very little if any research in a thermal spring context exists, could also present opportunities for further research and product development.

While the mineral and gas contents of thermal waters in the Western Cape are an indication of considerable potential for the development of water-based medical and wellness products, the actual viability of such products would depend, to a large extent, on the motivations and activity preferences of visitors. A visitor survey was thus carried out at six thermal spring resorts in the Western Cape, the results of which are discussed in the next chapter.

CHAPTER 8

THERMAL SPRING HEALTH TOURISM IN THE WESTERN CAPE – DEMAND-SIDE ANALYSIS

8.1 Demand for health tourism in the Western Cape

In 2010 more than 8 million international tourists visited South Africa, staying some 70 million bed nights and spending a total of almost R74 billion in the country (Cape Town Routes Unlimited, 2011). The Western Cape managed to capture almost 19% of all international arrivals to South Africa in that year (only Gauteng received more international tourists), and these tourists stayed some 20 million bed-nights in the province (30% of all bed-nights in South Africa), and spent more than R21 billion (30% of total spend in South Africa). International visitors to the Western Cape tend to stay longer and spend more than in other provinces. The Western Cape attracts tourists from most parts of the world, but its three main overseas source markets are the United Kingdom, Germany and the United States of America. Some 30 million domestic trips were undertaken in South Africa during 2010, almost 3 million of these to the Western Cape (9%). Of a total direct domestic spend of R22 billion in 2009, some R3 billion (16%) was spent in the Western Cape.

During comprehensive summer and winter tourist surveys undertaken by Cape Town Routes Unlimited (CTRU) in 2009, the most recent year for which this information is available (Cape Town Routes Unlimited, 2009a; Cape Town Routes Unlimited, 2009b), among summer and winter international and domestic tourists, including Western Cape residents, respondents were presented with a list of 17 conventional tourist activities, and asked to indicate which activities they had participated in or would participate in, during their visits. In Table 8.1 these 17 activities are grouped according to CTRU's six tourism marketing activity themes, namely Eco and Nature, Cosmopolitan Vibe, Gourmet Delight, Culture and Heritage, Outdoor Active, and Body, Mind & Spirit. The most popular activities for all visitors were found to be Scenic Drives (71%), Visiting Beaches (68%), Visiting Nature Attractions (58%), Gourmet Restaurants (55%) and Walking or Hiking in a Natural Area (44%). It is apparent that Body, Mind & Spirit (Visiting a Spa - Beauty and Health Treatments) is considerably less popular an activity as the aforementioned activities, with some 15% indicating this as an activity they had

participated in or would participate in, slightly more for international tourists (17%) than for domestic tourists (12%).

Table 8.1: Activities participated in/will participate in (Summer/Winter 2009)

	Int. (%)	Dom. %)	All (%)
1. Eco and Nature			
Scenic drives	66	76	71
Visiting beaches	67	69	68
Visiting nature attractions	60	56	58
Gourmet restaurants	53	57	55
Walking or hiking in a natural area	47	40	44
Whale watching	21	15	18
Average	52	52	52
2. Cosmopolitan Vibe			
Nightlife	29	22	26
Attending live shows (theatre, concerts, comedy)	14	15	15
Visiting a casino, gambling	6	9	8
Average	16	15	16
3. Gourmet Delights			
Gourmet restaurants	53	57	55
Wine tasting	51	29	41
Average	52	48	48
4. Culture and Heritage			
Visiting cultural facilities, e.g. museums	52	26	41
Flea markets/Craft markets	37	37	37
Festivals	11	24	17
Township tour	21	8	12
Average	30	24	27
5. Outdoor Active			
Adventure sport	23	27	25
Golfing	7	11	9
Average	15	19	17
6. Body, Mind & Spirit			
Visiting a spa (beauty and health treatments)	17	12	15
Average	17	12	15

Source: Adapted from Cape Town Routes Unlimited (2009a; 2009b)

In addition to thermal springs, there are many spas, wellness centres and other health and wellness tourism facilities in the Western Cape, yet it would seem that health and wellness tourism activities are currently not anywhere near as popular as other activities, neither among international tourists, nor domestic tourists. A considerable product development and marketing effort would be needed for thermal spring tourism, and more particularly thermal spring health tourism, to be raised to the level of popularity of general outdoor and nature tourism in the Western Cape. There may also be some potential for creating, packaging and

marketing thermal spring health tourism products in combination with one or more of the other activity categories. It is generally accepted that it is easier and cheaper to create new products for existing markets than for new markets, and the viability of developing new thermal spring health tourism products would thus depend to some degree on the extent to which they would be welcomed by current visitors. A survey was therefore carried out among current visitors to thermal spring resorts in the Western Cape, to ascertain whether and to what extent they would be interested in health tourism products.

8.2 Survey of visitors to thermal spring resorts in the Western Cape

Between December 2011 and July 2012, a questionnaire-based empirical survey was carried out at the following thermal spring resorts in the Western Cape (Table 8.2): Goudini Spa, Avalon Springs (Montagu), Warmwaterberg Spa (Barrydale), Calitzdorp Spa, Caledon Spa and The Baths (Citrusdal). Baden Klub and Uhuru Guest Farm were not included in the survey, since they were deemed to be too small. The main purpose of the survey was to gather data on the activity preferences of visitors to these resorts.

8.2.1 The questionnaire - planning and administration

The questionnaire consisted of a section comprising 32 activities, together with questions designed to elicit trip-related data, respondents' opinions on the health and healing aspects of the water, and limited demographic data. A combination of closed-ended and open-ended questions was included, with the final question inviting respondents to add any comments they wished to make. Questionnaires (Appendix A) were distributed at the six resorts between December 2011 and July 2012, so as to include the summer school holiday period, the Easter holiday period, the winter school holiday period, as well as weekend and mid-week visitors. The researcher visited each of the resorts on three occasions during this time to administer the completion of questionnaires, while questionnaires were also handed to visitors by resort check-in staff.

It was not possible to calculate the population size accurately, since the survey took place over a period of six months, at six locations spaced far apart, with the number of visitors constantly changing, and therefore maximum population size (40 000) was assumed. A sample size of 381 was targeted, to give a confidence level of 95%, and a confidence interval of 5% (www.surveysystem.com/sscalc.htm). Some 390 questionnaires were completed, but seven were discarded due to being incomplete, leaving 383 useable questionnaires, thus

meeting the set target number. No target number was set for any specific resort, due to the constantly changing population, the only criteria being that all respondents were visitors to thermal spring resorts in the Western Cape, and only one questionnaire was completed per couple, family or accommodation unit. Where necessary it was emphasized in the questionnaire that the answers were to be for the group as a whole, and not for the individual completing the questionnaire. Thus the 383 useable questionnaires in actual fact represent a far greater number of visitors.

Table 8.2: Locations where questionnaires were completed

	Freq.	**%**
Caledon Spa	43	11
Goudini Spa	78	20
Avalon Springs	27	7
Warmwaterberg Spa	87	23
Calitzdorp Spa	45	12
The Baths	103	27
Total	383	100

The first section, the 32 activities, was designed to be used as the segmentation base for activities-based market segmentation. Respondents were required to indicate how important each activity was to themselves/their families during their visit/s to a hot spring resort, to be answered on a Likert scale, ranging from 'Not at all important', to 'Slightly important', 'Fairly important', 'Important', and 'Very important'. The set of activities included, firstly, activities currently available at one or more of the respective resorts, secondly, activities that may not be available at any of these resorts, but which, according to the literature, form part of the offerings of successful thermal spring resorts in other parts of the world. The list of activities includes health and wellness activities that, for the most part, are not available at thermal spring resorts in the Western Cape. These activities are categorized into 10 groups (Table 8.5) to simplify analysis, although they were not grouped in the questionnaire. An open-ended question was included in case there were any activities not included in the list provided, that respondents would have liked to have had available.

To gather trip-related data, respondents are asked where they came from, how often they visited or stayed at hot spring resorts, whether they had visited or stayed before at the resort where they completed the questionnaire, how long they were staying, what type of accommodation they were using, and their main reason/s for that particular visit (an open-ended question). Demographic data was gathered with questions on group size, respondents' age and gender, and province or country of origin. Questions were included to ascertain

respondents' awareness of the fact that swimming/bathing in natural hot water is reputed to be healthy, whether they felt it was good for their own/their family's health, and if so, exactly how/with what it helped. Finally, questions were included to ascertain to what extent thermal spring resorts are used as bases for visiting surrounding attractions or places of interest.

The results of the activities section were used as input data for cluster analysis, and visitors were segmented into groups with similar activity preferences (market segmentation). This provides insight into visitors' general tourism motivations, and their attitudes towards health-related and other activities. The resulting segments are profiled by cross-tabulating them with the activity variables to give further insight into the level of support each variable receives in each segment, as well as with trip-related and demographic variables. A typology of current thermal spring visitors is then compiled.

8.2.2: Demographic and trip-related information

Demographic and trip-related information regarding the survey respondents is summarized in Table 8.3.

Origin of respondents: Almost all of the respondents (97%) were domestic tourists, with only 3% from outside South Africa. Of the South African respondents, the vast majority (89%) were from the Western Cape, with 5% from Gauteng, 3% from the Eastern Cape, and less then one percent each from the Northern Cape, Free State, Kwazulu-Natal, North-West and Mpumalanga. It is clear that these resorts are visited mainly by intra-provincial travellers, residents on the Western Cape travelling within the Western Cape, with very few international visitors.

Gender and age of respondents: Respondents were fairly equally divided between male (47%) and female (53), and also fairly equally spread in age, with about half (51%) between 31 and 50 years old, almost one-third (30%) over 50, and 19% being 30 years old or younger.

Group size: Nearly half of the respondents (41%) were travelling as a group of 3-5, a good indication of their being family units. Almost one-third (29%) were travelling in groups of six or more. A similar number (28%) were travelling as couples, with 23% of these aged 61 or older.

Table 8.3: Demographic and trip-related information (n = 383)

		%
Origin (Respondents)	South Africa	97
	International	3
Province (if from South Africa)	Western Cape	89
	Eastern Cape	3
	Northern Cape	0.5
	Free State	0.5
	Kwazulu-Natal	0.5
	Gauteng	5
	North-West	0.5
	Mpumalanga	1
	Limpopo	0
Gender (Respondents)	Male	47
	Female	53
Age group (Respondents)	Up to 19 years old	3
	20-30 years old	16
	31-40 years old	23
	41-50 years old	28
	51-60 years old	17
	61 or years old or older	13
Group size	One	2
	Two	28
	3-5	41
	6-10	25
	11 or more	4
Frequency of visits to thermal spring resorts	More than once a year	46
	Once a year	34
	Once in two years	10
	Less than once in two years	10
Previous visits to the resort where the questionnaire was completed	Yes	74
	No	26
Number of nights spent at the resort	1-3 nights	58
	4-6 nights	28
	More than 6 nights	14
Type of accommodation used	Chalet/Rondavel/Flat	49
	Hotel room	12
	Timeshare	3
	Caravan	17
	Tent	17
	Other	2

Frequency of visits to thermal spring resorts: Almost half of the respondents (46%) indicated that they visited a thermal spring resort more than once a year, with one-third (34%) visiting once a year. These resorts are thus frequented by regular visitors. Some three-quarters (74%) of respondents had previously visited the resort where the questionnaire was completed.

Number of nights spent at the resort: More than half (58%) of respondents were staying from 1-3 nights, with a further 28% staying 4-6 nights, and the remaining 14% staying longer

than 6 nights. Thermal spring resorts receive many weekend visitors throughout the year, with longer stays occurring mainly during school holiday periods.

Type of accommodation used: some 99% of respondents were overnight visitors. Approximately half (49%) of the respondents were using self-catering accommodation (chalets/rondavels/flats). Of the 34% who were utilizing the camping facilities, 17% were staying in their own caravans and 17% in tents.

8.2.3 Activity preferences

The critical link between motivations and destinations may be found in the understanding of activities (Moscardo *et al*., 1996). Tourist activities at the destination can be used to explain a part of latent travel motivations, and vice versa (Beritelli & Boksberger, 2005). Respondents were presented with a list of 32 activities commonly found at thermal spring resorts, both in South Africa and overseas, and asked to indicate on a scale of 1 (Not at all important) to 5 (Very important) the relative importance of these activities to themselves/their families during their visits to thermal spring resorts (Table 8.4).

The ratings given were quite varied for all 32 activities, with all receiving ratings from the lowest (1) to the highest (5), with standard deviations that indicate a broad range of interests. The means of even the lowest ranked activities do, however, appear to be high enough to indicate at least some support for these activities. In Table 8.5 the 32 activities are categorized under the following headings: Water-based leisure activities, Wellness activities, Conservation activities, Tourism activities, Passive activities, General leisure activities (not water-based), Medical treatment activities, On-site shopping activities, Sport/exercise activities, Cultural activities and Creative activities. The percentage of respondents regarding these activities as ‘Important’ or ‘Very important’ is categorized under the heading ‘Strong interest’, the percentage regarding them as ‘Fairly important’ or ‘Slightly important’ under the heading ‘Some interest’, and the percentage regarding them as ‘Not at all important’ under the heading ‘No interest’. The average for ‘Strong interest’ in each category of activities is given. This illustrates the relative importance of specific activities within the respective categories, and the relative importance of the categories in relation to each other.

There are only three activity groups with an average of more than 50% ‘Strong interest’, namely ‘Water-based leisure activities’, ‘Wellness activities’ and ‘Conservation activities’. In

the first group, almost all the respondents (91%) attach importance to being able to swim in a hot pool. The availability of hot water for swimming is, of course, the *raison d'etre* of thermal spring resorts. However, the majority of respondents (65%) also attach importance to having a cold swimming pool available. These would seem to be essential components of any thermal spring resort that wants to attract both summer and winter markets.

The second group, 'Wellness activities', has four activities with more than 50% 'Strong interest'. Having a quiet pool available for relaxing is important to most respondents (77%), as is swimming in mineral water (72%). While both of these activities are essentially passive wellness activities, support for them does indicate a general desire for respondents to use their visits to thermal spring resorts to improve their health in some way. Many (60%) would prefer to cook and/or eat healthy food, and more than half (53%) would enjoy sitting in a jacuzzi/sauna/steam room, with another 35% showing some interest. Wellness treatments and activities, such as massage and yoga, would be welcomed by 39% of all respondents, with slightly more (42%) showing some interest. While only 28% have strong interest in beauty treatments, such as skin care, manicures and pedicures, a further 35% have at least some interest. While the last two figures seem comparatively low, it still indicates that at least one-third to half of the respondents would be interested in these types of treatments and activities if they were available. It is, however, interesting to note that as many as 43% of respondents express an interest in water-based medical treatments for diseases such as rheumatism, arthritis and psoriasis, with another 37% showing some interest.

The third group, 'Conservation activities', includes two activities with more than 50% strong interest. Some 65% of respondents support the idea of living a more 'green' lifestyle while at the resort, while 52% are interested in wildlife and bird-watching, and some 40% want to be able to learn more about the flora and fauna of the area around the resort.

While less than half of the respondents (47%) are in favour of 'Passive activities', some 63% show a strong interest in being able to socialize with old friends, and 61% in sitting around and reading a book. Only 50% strongly support the idea of eating in an on-site restaurant, with a further 39% having some interest in this. One-third (33%) would want to watch sport and/or family entertainment on TV, and one-quarter (26%) would be interested in sitting in a bar serving alcoholic drinks.

While 'General leisure activities' has less than 50% strong interest (47%), some 57% of respondents want organized entertainment for children to be available, 45% would take part in

outdoor leisure activities (mini-golf, horse riding, etc) were they available, and 39% would be interested in taking part in indoor leisure activities (snooker, table tennis, etc).

Almost half of the respondents (45%) show a strong interest in 'Tourism activities', such as visiting nearby tourist attractions and places of interest, with slightly more (47%) showing some interest.

Table 8.4: Importance ratings of activities commonly found at thermal spring resorts

1 = Not at all important; 2 = Slightly important; 3 = Fairly important; 4 = Important; 5 = Very important

Activities	Min.	Max.	Mean	Std. Dev.
To swim in a warm/hot water swimming pool	1	5	4.53	0.85
To have a quiet hot pool available (just relaxing in the water, no jumping or splashing)	1	5	4.20	1.08
To swim in mineral water	1	5	4.02	1.15
To cook and/or eat healthy food	1	5	3.92	1.11
To live a more 'green' lifestyle at the resort (recycling, saving electricity, etc)	1	5	3.78	1.27
To go for easy walks in the area (1-2 hours)	1	5	3.74	1.06
To swim in a cold water swimming pool	1	5	3.72	1.23
To do very little/sit around/read a book	1	5	3.72	1.23
To be able to socialise with old friends	1	5	3.66	1.28
To have organized entertainment for children available	1	5	3.48	1.48
To sit in a jacuzzi/sauna/steam room	1	5	3.40	1.36
To look at wildlife/go bird-watching	1	5	3.40	1.21
To eat in a restaurant at the resort	1	5	3.34	1.26
To visit nearby tourist attractions and places of interest, go sightseeing	1	5	3.25	1.67
To take part in outdoor leisure activities (mini-golf, horse riding, etc)	1	5	3.19	1.35
To be able to learn about the flora and fauna (plants and animals) of the area	1	5	3.12	1.26
To buy locally produced foodstuffs (jam, pickles, dried fruit, etc)	1	5	3.11	1.24
To go jogging/cycling in the area	1	5	3.08	1.33
To have water-based medical treatments available (for rheumatism, arthritis, psoriasis, etc)	1	5	3.08	1.42
To take part in indoor leisure activities (snooker, table tennis, etc)	1	5	3.03	1.34
To go hiking along a marked hiking trail (up to 1 day)	1	5	3.00	1.30
To have wellness treatments and activities available (massage, aromatherapy, yoga, etc)	1	5	2.93	1.36
To take part in sporting activities (tennis, squash, etc)	1	5	2.80	1.35
To take part in adventure/adrenaline activities (mountain biking, rock climbing, etc)	1	5	2.28	1.37
To watch sport and/or family entertainment on TV	1	5	2.66	1.47
To buy souvenirs, such as locally-produced arts and crafts, to take home	1	5	2.56	1.30
To have beauty treatments available (skin care, manicure, pedicure, etc)	1	5	2.51	1.42
To attend organized cultural activities, like music and dancing	1	5	2.42	1.33
To sit in a bar/lounge serving alcoholic drinks	1	5	2.42	1.44
To take part in water-based exercise, like aquarobics	1	5	2.28	1.24
To take part in artistically creative activities (painting, sculpture, pottery, etc)	1	5	2.20	1.26
To be able to exercise in a gym, do aerobics	1	5	2.08	1.32

Table 8.5: Activities grouped into categories

	Activities	No interest (%)	Some interest (%)	Strong interest (%)	Average (Strong interest) (%)
Water-based leisure activities	To swim in a warm/hot water swimming pool	1	8	91	78
	To swim in a cold water swimming pool	8	27	65	
Wellness activities	To have a quiet hot pool available (just relaxing in the water, no jumping or splashing)	3	20	77	55
	To swim in mineral water	4	23	72	
	To cook and/or eat healthy food	4	26	60	
	To sit in a jacuzzi/sauna/steam room	13	35	53	
	To have wellness treatments and activities available (massage, aromatherapy, yoga, etc)	19	42	39	
	To have beauty treatments available (skin care, manicure, pedicure, etc)	35	37	28	
Conservation activities	To live a more 'green' lifestyle at the resort (recycling, saving electricity, etc)	8	28	65	52
	To look at wildlife/go bird-watching	8	40	52	
	To be able to learn about the flora and fauna (plants and animals) of the area	13	46	40	
Passive activities	To be able to socialise with old friends	9	28	63	47
	To do very little/sit around/read a book	7	32	61	
	To eat in a restaurant at the resort	11	39	50	
	To watch sport and/or family entertainment on TV	22	35	33	
	To sit in a bar/lounge serving alcoholic drinks	40	33	26	
General leisure activities (not water-based)	To have organized entertainment for children available	17	26	57	47
	To take part in outdoor leisure activities (mini-golf, horse riding, etc)	15	40	45	
	To take part in indoor leisure activities (snooker, table tennis, etc)	17	44	39	
Tourism activities	To visit nearby tourist attractions and places of interest, go sightseeing	8	47	45	45
Medical treatment activities	To have water-based medical treatments available (for rheumatism, arthritis, psoriasis, etc)	20	37	43	43
On-site shopping activities	To buy locally produced foodstuffs (jam, pickles, dried fruit, etc)	12	49	39	33
	To buy souvenirs, such as locally-produced arts and crafts, to take home	25	49	26	
Sport/exercise activities	To go for easy walks in the area (1-2 hours)	3	32	65	35
	To go hiking along a marked hiking trail (up to 1 day)	18	41	41	
	To take part in adventure/adrenaline activities (mountain biking, rock climbing, etc)	25	39	36	
	To go jogging/cycling in the area	18	38	34	
	To take part in sporting activities (tennis, squash, etc)	24	43	33	
	To take part in water-based exercise, like aquarobics	36	45	19	
	To be able to exercise in a gym, do aerobics	51	30	19	
Cultural activities	To attend organized cultural activities, like music and dancing	35	37	24	24
Creative activities	To take part in artistically creative activities (painting, pottery, etc)	40	43	17	17

About one-third (33%) express an interest in 'On-site shopping activities', such as buying locally-produced foodstuffs (39%), and buying souvenirs/arts and crafts (26%), with a further 49% respectively showing some interest in each. There appears to be relatively little strong interest in sport/exercise activities (35%), although the majority (65%) would definitely be interested in easy walks in the area, with another 35% showing some interest. More specialized activities have a smaller strong interest following, such as full-day hikes (41%), adventure/adrenaline activities (36%), jogging/cycling (34%), sporting activities such as tennis or squash (33%), water-based exercise like aquarobics (19%), and exercising in a gym or doing aerobics (19%). 'Cultural activities', like music and dancing, are of particular interest to only one-quarter (24%) of the respondents, and creative activities, such as painting or pottery, would be of interest to just 17% of respondents.

The figures discussed above indicate that there is at least some interest in all of the listed activities, with strong interest ranging from 91% down to 17%. While those indicating a strong interest for a particular activity could be considered a definite market for that activity, those showing some interest could be considered a potential market. Interest in health-related activities is somewhat varied. There would seem to be considerable interest in non-treatment based wellness activities, but there is considerably less interest in sporting/exercise activities, except for going on short walks.

Performing activity-based cluster analysis will enable the respondents to be divided into groups, or segments, with similar combinations of activity interests. Further analysis and cross-tabulation will reveal to what extent there are variations in activity interests, both within resorts, and between resorts. Cluster analysis will also reveal if there are identifiable groups of visitors who are specifically interested in health tourism products, and will thus give an indication of the size and geographic distribution of the potential market for thermal spring health tourism.

8.2.4 Reasons for visiting

Respondents were asked their most important reasons for visiting the thermal spring resort where they completed the questionnaire. The 383 respondents gave a total of 476 reasons. Thus many respondents gave more than one reason. Some 52 different reasons were given altogether, with the top 3 reasons accounting for 54% of all reasons given, and the top 10 accounting for 77% of all reasons.

The most common reasons for visiting (Table 8.6) are for relaxation (29%), and for the hot swimming pools (27%), followed by the peaceful, tranquil atmosphere (11%), the scenery and natural environment (8%), to rest and do nothing (6%), a holiday, vacation or break (5%) and to have family time/be together as a family (4%). Other reasons included the resort being close to home, seeing or socializing with old friends, the safety aspect for children, value for money, as an overnight stopover en route elsewhere, to explore surrounding areas, to get away from home/the city, good climate/weather, lack of over-development and commercialization, good service and friendly staff. Some reasons are personal (push factors), and others are related to resort attributes (pull factors). It is interesting to note that at Caledon Spa, the only resort which has a sophisticated wellness and treatment centre, only one respondent gave 'the spa' as the main reason for visiting, the others giving reasons similar to visitors to the other resorts, that is, relax/relaxation of body and mind (24%), the warm water/hot pools (21%) and family time/go away with the family (18%).

Table 8.6: Most important reasons for visiting the thermal spring resort (n = 383, but some respondents provided multiple answers)

Reasons for visiting	**%**
To relax, relaxation of body and mind	29
Warm water, hot pools, hot springs	27
Quiet, peaceful, tranquil, rural atmosphere	11
Scenery, natural environment, nature, outdoor life, open space	8
Rest, do nothing	6
Holiday, vacation, break, travelling	5
Family time, go away with family, family holiday, reconnect, bond with family	4
Close to home	3
Seeing old friends, time with friends, socialize with friends	3
Safe for children	3

The reasons given for visiting these resorts, together with the activities visitors show the most interest in, give an indication of the motivations of the visitors (Swarbrooke & Horner, 1999; Holloway, 2004). It would seem that physical motivators (relaxation) and personal motivators (interacting, socialising with family or friends) dominate, with cultural, emotional, personal development, and status motivators playing a lesser role, or no role at all.

Only the first two of the four components of Beard & Ragheb's 1983 'Leisure Motivation Scale' (Williams, 2009; Ryan & Glendon, 1998) seem to be relevant here, the social component, through which social networks are maintained or extended, satisfying the need for friendships and interpersonal relationships, and the stimulus-avoidance component, which reflects the desire for escape and release from pressured situations, such as work, and to attain

rest or relaxation. While there is some interest (40%) in learning about the flora and fauna of the area, and in creative activities (17%), and some interest in adventure/adrenalin activities (36%), both the intellectual component, in which tourists seek to acquire knowledge, and the competence component, in which skills are developed and in which individuals seek to achieve and master challenges, are not apparent amongst the majority of thermal spring visitors.

A number of the reasons cited, and popular activities, correspond well with Ryan's list of aspects of a holiday that are enjoyed most (Ryan, 1997), a combination of Maslow's self-actualisation, social and physiological needs, including the relaxing/peaceful aspects of the destination, good climate, scenery, being with family or friends, good walking and friendly people (Table 6.1). Exploring/discovering new places, and a sense of freedom/independence, are notably absent. Despite the fact that some 45% of respondents claim to have a strong interest in visiting nearby tourist attractions, only one mentioned the proximity of places with attractions as a reason for visiting. This may be due to the fact that about three-quarters of the respondents are repeat visitors, and almost half visit a thermal spring resort more than once a year.

Respondents visiting mainly for relaxation are, indirectly at least, motivated by the desire to gain health benefits from their visits, although only four respondents cited 'health/recuperate/de-stress' as one of their reasons for visiting, two cited the 'healthy water', and one cited 'the spa'. Visitors to thermal spring resorts in the Western Cape share just one of the 'six principal benefits' sought by wellness tourists, identified by Voigt *et al*. (2011), discussed in Chapter 6, that of 'Escape and relaxation'. According to Laesser (2011), health tourism triggers a mix of passive and active activities, and the health traveller is motivated to seek rest and relaxation, but at the same time wants challenging and stimulating activities. This is at least partly true for the majority of visitors to thermal springs in the Western Cape. Their most important reasons for visiting are passive (to relax the body and mind), with many quite happy to do very little/sit around and read a book, or to socialize with old friends. While they are interested in a range of activities, these tend to be on the less active side, such as going on short walks, rather than sporting activities, exercising in a gym, or adrenaline activities.

Despite the fact that visitors to the Western Cape's thermal resorts are primarily leisure tourists, their motivations are similar, in many ways, to those of health tourists in other parts

of the world, particularly concerning the concepts of rest and relaxation. In Australia, for example, relaxation is the primary reason for visiting a spa (Tourism Queensland, 2002, cited in Erfurt-Cooper & Cooper, 2009), the same as in the Western Cape, with physical exercise and fitness low on the list of priorities. It is the beauty and pampering aspects of health tourism that are absent from the motivations of most visitors to thermal spring resorts in the Western Cape. However, their expressed desire to live a more 'green' lifestyle, and to cook and eat healthy food is in line with the focus of new product and service technologies in spas in the Asia-Pacific region, where the focus is on keeping a healthy body and mind (the holistic approach), while using natural and organic materials (Erfurt-Cooper & Cooper, 2009).

8.2.5 Visitor perceptions regarding the health benefits of the thermal mineral water

Almost all respondents (95%) were aware that bathing in thermal mineral water is reputed to be healthy, and 80% feel that it was good for their own health, or that of members of their family or group. Some 5% felt that the water did not help in any way, and 15% were not sure. Those respondents who did feel that the water was good for their health were asked if there was anything specific that the water helped with (Table 8.7). Out of 268 answers, some 34 different ways in which the water was found to be good for respondents' health were given, with the top 3 accounting for 48% of all the ways given, and the top 10 for accounting 78% of the total.

Table 8.7: Ways in which the water contributes to respondents' health (n = 383, but some respondents provided multiple answers)

Ways in which the water contributes to respondents' health	%
Relaxation, unwinding	20
Muscles and joints – soothing, relaxing, healing, stiffness	14
Back pain, backache, lower back pain relief	8
Arthritis, rheumatism	6
Stress relief, de-stress, relieves tension	6
Skin – moisturizes, softens, helps for eczema, psoriasis	6
Aches and pains, general ailments, general health	5
Tiredness, feel rested, refreshed, invigorated	4
Better sleep	2
Legs – reduces pain in legs and hips, good for tired legs	2
Detoxifies, cleanses the system	2
Good for the mind, makes one feel clear-minded	1
Improves blood circulation	1
Good for overall wellbeing	1

Respondents found that the water helps them to relax and unwind (20%), that it soothes, relaxes, heals or reduces stiffness in muscles and joints (14%), it alleviates back pain (8%), it helps with arthritis and rheumatism (6%), it reduces stress and relieves tension (6%), it

moisturizes and softens the skin, and is good for the eczema and psoriasis (6%), it relieves general aches and pains (5%), it relieves tiredness and leaves one feeling rested, refreshed, or invigorated (4%), it helps one to sleep better (2%), it helps to relieve painful legs and hips (2%), it detoxifies and cleanses the system (2%), it is good for the mind and makes one feel clear-minded (1%), it improves blood circulation (1%) and is good for overall wellbeing (1%). Smaller numbers of respondents also feel that the water helps to improve the memory, improve balance, relieve heartburn, relieve headaches, that it is good for their acne, good for the hair, good for sinus problems, and that it warms the body, stimulates body temperature and opens the sweat pores. The types of health benefits cited by the respondents can be linked to the medicinal properties of minerals found in these waters, as discussed in Chapter 3. However, it is beyond the scope of this thesis to recommend specific medical treatments, which should be done by a qualified medical practitioner.

There would seem to be a direct correlation between the need to relax and the perceived health benefits of the water. Some 29% of respondents state that their main reason for visiting the thermal spring resort is to relax/for relaxation of body and mind (Table 8.6), and almost as many (20%) state that the water helps them to relax and unwind. The water clearly provides a multitude of health benefits for visitors, and thus is bound to play an important role in the motivation to visit, and re-visit, these resorts. Three-quarters (74%) of respondents had previously visited the resort where they completed the questionnaire (Table 8.7), and almost half of the respondents (46%) indicate that they visit a thermal spring resort more than once a year, with one-third (34%) visiting at least once a year. These resorts are thus frequented by regular visitors who return again and again. Furthermore, while these resorts function primarily as family leisure resorts, it would seem that health is still a strong motivation to visit.

8.2.6 Visiting nearby tourist attractions or places of interest while staying at a thermal spring resort

The question often arises as to what extent thermal spring resorts are, or can be, used as bases for visiting nearby attractions. This has important implications for the spread of the economic benefits of tourism beyond the resort itself to other parts of the region, and to create links between tourism sectors and regions. This will facilitate the development of ‘crosscutting tourism themes’, as advocated by the Western Cape’s tourism development authority (Western Cape Provincial Government, 2001: 42).

Slightly more than half of the respondents (53%) indicate that they had visited, or intended to visit nearby attractions while staying at the resort, with 47% stating that they had not visited, and did not intend to visit, nearby attractions. Only one respondent gave 'To explore surrounding areas' and one gave 'Close to places with attractions', as the main reason for visiting. However, in Table 8.5 it can be seen that some 45% of respondents show a strong interest in visiting nearby attractions and places of interest and another 45% show some interest, with only 8% expressing no interest. This therefore appears to be a market with the potential for further development.

Table 8.8: Attractions and places of interest which respondents had visited/intended to visit while staying at the resort (n = 383, but some respondents provided multiple answers)

Attractions	**%**
Nearby towns, small towns, local towns	27
Wine farms, wine tasting	13
Drives, scenic drives, sightseeing, natural beauty of area	9
Museum, living museum	5
Nearby restaurant, bar	4
Scenic pass, mountain pass	4
Game farm, game reserve, nature reserve	4
Another resort	3
Hiking in nearby mountain area	3
Shopping mall	3

Of those that do visit nearby attractions and places of interest (Table 8.8), the largest proportion (27%) enjoys driving to nearby small towns. A few respondents specifically mentioned visiting markets and farm stalls in nearby towns. Since almost all thermal spring visitors use self-catering accommodation, being able to source good fresh produce close to the resort is important to them. Some 13% of respondents visit wine farms/go wine tasting. A number of respondents mention taking scenic drives (9%), some specifically singling out mountain passes (4%). Some show an interest in visiting museums (5%), nearby restaurants/bars (4%), game farms/nature reserves (4%), other resorts (4%), hiking in a nearby mountain area (3%), and visiting a shopping mall (3%). Other attractions and places of interest visited or activities engaged in include shark cage diving, golf, antique shops, rock climbing, canoeing, rock art sites, botanical gardens, a rooibos tea farm, a citrus farm, ostrich farms, lighthouses and a casino. The range of interests of those who do undertake tourism activities while at thermal spring resorts is thus quite diverse, and includes both passive and active activities. This is also a reflection of the broad range of attractions, facilities and services available within the regions surrounding these resorts.

8.3 Market segmentation of the thermal spring visitors

Market segmentation (k-means cluster analysis) was carried out in order to determine if there is an identifiable group among visitors who might be seriously interested in health (medical and/or wellness) facilities and services, as well as to create a typology of Western Cape thermal spring visitors.

8.3.1 Cluster analysis as a segmentation technique

Smith & Puczkó (2009) indicate that there is a need for research at national and regional level in most countries which want to develop health tourism, in order to identify clusters or segments with specific interests. In marketing research, cluster analysis commonly entails the use of survey data to group respondents into distinct market segments (Weaver & Lawton, 2005). The segments that result from market segmentation based on tourist motivation, tourist behaviour, activity preferences, or a combination of these, are referred to as tourist typologies, as discussed in Chapter 6. The object of cluster analysis (Frochot & Morrison, 2000: 33) is "to identify homogeneous groups of respondents, known as clusters, or segments, that are different from all other groups". A good cluster should exhibit high within-cluster homogeneity and high between-cluster heterogeneity. Cluster analysis, when compared to factor analysis, has the advantage of not only identifying clusters, but also allocating respondents to these clusters.

Target marketing and product development can be greatly facilitated if, for example, a thousand tourists can be reduced into four or five distinct groups, whose members share important attitudinal and/or behavioural characteristics (Weaver & Lawton, 2005). Cluster analysis has been successfully used in travel and tourism research to define market segments, to develop tourist typologies, and to understand and explain visitor activities, but according to Jurowski & Reich (2000), its real value lies in its ability to identify previously unknown customer groups, and then describe their similarities, information which is useful for both product development and marketing decision-making.

Two clustering methods are commonly used in travel and tourism, namely hierarchical and non-hierarchical clustering. The main difference between the two lies in the format of the cluster solutions provided. Hierarchical methods, such as Ward's method, produce a range of cluster solutions, and the researcher has to select the most suitable solution from this range.

Non-hierarchical methods, such as k-means clustering, place each case (respondent) into only one cluster, the number of clusters being specified by the researcher before running the analysis. The most difficult issue for researchers is how to determine the optimum number of clusters. Frochot & Morrison (2000: 35) believe that the best way to test validity is "to run several cluster analyses, each with different numbers of clusters, and then determine which solution provides the most meaningful and practical definition of segments".

Following the suggestions of Sung *et al*. (2000), and Moscardo *et al*. (1996), discussed in Chapter 6, activities are used as the main segmentation base for market segmentation, and the data has not been pre-processed or standardized in any way, as recommended by Dolcinar (2002) and Dolcinar & Grün (2011). The 383 respondents are divided into four activity-based clusters, or segments, using k-means clustering. A range of k-means cluster analyses was initially carried out, with the number of clusters being specified from two to ten. The first division (two) results in two clusters almost equal in size, one interested in mostly passive activities, the other in more active activities. The next division (three) breaks the passive cluster up into two, with one more family-oriented than the other. The next division results in four clusters, two passive and two active, while further division results in clusters that appear to be too small to be viable for differentiated product development and marketing. The four-cluster solution (Table 8.9) would seem to best represent the data, as well as the purpose of the market segmentation. The clusters are named for the types of variables that dominate each cluster, distinguishing them from each other, namely Passive Families (Cluster 1), Passive Relaxers (Cluster 2), Active Outdoors (Cluster 3), and Active Families (Cluster 4).

Table 8.9: The four clusters (n = 383)

Number	Name	Size	%
Cluster 1	Passive Families	107	28
Cluster 2	Passive Relaxers	88	23
Cluster 3	Active Outdoors	85	22
Cluster 4	Active Families	103	27

8.3.2 Description of the clusters

Cluster 1 (28%) - Passive Families

This group is family-oriented, and would make some use of facilities and organized entertainment, more specifically for their children. They live a healthy lifestyle and are mainly interested in the hot and cold swimming pools, having a quiet pool in which to relax,

bathing/swimming in mineral water, sitting in a jacuzzi, sauna or steam room, outdoor leisure activities, cooking/eating healthy food, and socialising with old friends.

Cluster 2 (23%) – Passive Relaxers

Passive Relaxers are not family-oriented, and make minimal use of facilities and organized entertainment. Their main interest is simply relaxation. A hot water pool is very important to them, as is a quiet hot pool in which to relax, and being able to swim in mineral water. They would be quite happy doing very little, just sitting around reading a book.

Cluster 3 (22%) – Active Outdoors

The Active Outdoors group is interested in exercising, keeping fit and living a healthy lifestyle, but tend to make use of nature and the outdoors instead of facilities and organized entertainment. These visitors are not family-oriented, are particularly interested in having hot and cold pools available, as well a quiet pool in which to relax, and to swim in mineral water. While they would be happy doing very little, they are also interested in socializing, hiking (easy walks and longer hikes), jogging or cycling in the area, looking at wildlife/bird watching and learning about the flora and fauna around the resort, as well as cooking/eating healthy food and living a more green lifestyle. Their activities are centred on nature and the outdoors, and require very little in the way of facilities or organized entertainment.

Cluster 4 (27%) - Active Families

Active families make maximum use of facilities and organized entertainment. This group consists of mainly younger family visitors. They are very enthusiastic, and there are seemingly few activities that they would not support. They are mainly interested in the hot and cold water pools, all the wellness activities, as well as water-based medical treatments, all the conservation activities, some of the passive activities (socializing, eating in a restaurant, watching television), all the general leisure activities, visiting nearby attractions and places of interest, buying locally produced foodstuffs, and most sport/exercise activities (easy walks as well as longer hikes, adrenaline activities, jogging/cycling, sporting activities like tennis or squash).

In Table 8.10 the four clusters are cross-tabulated with a number of demographic and trip-related variables. There is little difference across the four clusters in terms of previous visits, with about three-quarters of each cluster having previously visited the resort where they completed the questionnaire. There are also no significant differences in terms of length of

stay (number of nights). There are, however, statistically significant differences between the clusters in terms of accommodation used, group size and age group. Younger visitors tend to be found in Clusters 1 and 4, and older visitors in Clusters 2 and 3. In Table 8.11, the four clusters are cross-tabulated against the 32 activity variables, to ascertain the relative interest that exists for each variable within each cluster, and to give a visual representation of the combinations of activity interests that exist within the clusters.

Table 8.10: Cross-tabulation of the four clusters with demographic and trip-related variables

	Cluster 1 (%) Passive Families	Cluster 2 (%) Passive Relaxers	Cluster 3 (%) Active Outdoors	Cluster 4 (%) Active Families	Chi-square probability
Previous visits	73	72	74	77	
Number of nights					
None (day visitor)	5	1	0	2	
1-3 nights	54	69	53	52	
4-6 nights	24	19	33	31	
More than 6 nights	17	10	14	15	
Accommodation					0.003
Chalet/rondavel/flat	44	60	47	45	
Hotel room	20	7	1	16	
Timeshare	1	2	2	3	
Caravan	17	14	24	16	
Tent	11	15	22	18	
Other	0	2	4	2	
None (day visitor)	4	0	0	1	
Group size					0.030
1	1	3	1	1	
2	21	39	22	22	
3 – 5	47	39	35	36	
6 – 10	28	16	37	37	
10 +	3	3	5	5	
Age group					0.002
Up to 19	5	0	3	6	
20 – 30	20	13	8	20	
31- 40	23	18	19	28	
41 – 50	28	29	32	25	
51 – 60	14	14	25	16	
61+	10	27	14	6	

There are two main divisions between visitors, firstly, between ‘active’ visitors who generally desire and use facilities and organised entertainment (Clusters 1 and 4), and ‘passive’ visitors, who generally make little to no use of facilities and organised entertainment (Clusters 2 and 3), and secondly, between visitors who seek activities mainly for themselves (Clusters 2 and 3), and those who seek activities for themselves and their children (Clusters 1 and 4). It

appears that there is no identifiable group that is specifically interested in medical or wellness health tourism activities.

Table 8.11: Activities, with the numbers of respondents showing a 'strong interest'

	Activities	Cluster 1(%) Passive Families	Cluster 2 (%) Passive Relaxers	Cluster 3 (%) Active Outdoors	Cluster 4 (%) Active Families
Water-based leisure activities	To swim in a warm/hot water swimming pool	79	89	98	97
	To swim in a cold water swimming pool	64	43	80	76
Wellness activities	To have a quiet hot pool available (just relaxing in the water, no jumping or splashing)	66	80	88	80
	To swim in mineral water	57	64	93	79
	To cook and/or eat healthy food	59	49	83	91
	To sit in a jacuzzi/sauna/steam room	56	30	46	76
	To have wellness treatments and activities available (massage, aromatherapy, yoga, etc)	46	9	14	77
	To have beauty treatments available (skin care, manicure, pedicure, etc)	31	6	5	64
Conservation activities	To live a more 'green' lifestyle at the resort (recycling, saving electricity, etc)	47	49	80	85
	To look at wildlife/go bird-watching	34	23	76	77
	To be able to learn about the flora and fauna (plants and animals) of the area	20	16	60	66
Passive activities	To be able to socialise with old friends	63	31	74	82
	To do very little/sit around/read a book	55	68	82	44
	To eat in a restaurant at the resort	53	24	51	68
	To watch sport and/or family entertainment on TV	40	12	20	55
	To sit in a bar/lounge serving alcoholic drinks	34	6	23	39
General leisure activities (not water-based)	To have organized entertainment for children available	75	17	41	86
	To take part in outdoor leisure activities (mini-golf, horse riding, etc)	53	7	32	82
	To take part in indoor leisure activities (snooker, table tennis, etc)	43	3	32	68
Tourism activities	To visit nearby tourist attractions and places of interest, go sightseeing	45	21	45	67
Medical treatment activities	To have water-based medical treatments available (for rheumatism, arthritis, psoriasis, etc)	32	13	45	78
On-site shopping activities	To buy locally produced foodstuffs (jam, pickles, dried fruit, etc)	29	16	43	67
	To buy souvenirs, such as locally-produced arts and crafts, to take home	21	8	23	52
Sport/exercise activities	To go for easy walks in the area (1-2 hours)	51	45	87	78
	To go hiking along a marked hiking trail (up to 1 day)	27	18	57	61
	To take part in adventure/adrenaline activities (mountain biking, rock climbing, etc)	35	0	37	67
	To go jogging/cycling in the area	34	10	62	69
	To take part in sporting activities (tennis, squash, etc)	31	7	23	68
	To take part in water-based exercise, like aquarobics	8	0	4	56
	To be able to exercise in a gym, do aerobics	18	2	5	47
Cultural activities	To attend organized cultural activities, like music and dancing	38	3	5	42
Creative activities	To take part in artistically creative activities (painting, pottery, etc)	12	2	7	43

It is apparent that there is a small core set of activities that visitors belonging to all four clusters are interested in, such as a hot water pool, a quiet hot pool in which to relax, and swimming in mineral water. There is also a set of activities for which there is little interest across all four clusters, including exercising in a gym, cultural activities like music and dancing, sitting in a bar that serves alcoholic drinks, and artistically creative activities like painting and pottery. All the other activities are important to at least one, two or three clusters.

Cross-tabulating cluster membership with the thermal spring resorts reveals an interesting pattern (Table 8.12). Goudini Spa and Caledon Spa appear to attract similar visitor types, but the other resorts differ completely from these two resorts, and from each other, in relation to the types of visitors they attract. At Goudini Spa and Caledon Spa one can expect to find mostly visitors from Clusters 1 and 4, while at Warmwaterberg Spa it is Clusters 2 and 3. Visitors to Avalon Springs are fairly evenly spread among Clusters 1, 2 and 4, while at Calitzdorp Spa visitors are predominantly from Cluster 3, and visitors to The Baths are fairly evenly spread among all four clusters. This implies that, at any particular resort, at any particular time, there may simultaneously be visitors enjoying the same facilities, but who have completely different sets of interests. It should however be noted that the sample was not representative of the relative sizes of the resorts.

Table 8.12: Cluster membership cross-tabulated with the thermal spring resorts where the questionnaires were completed

	Cluster 1(%) Passive Families	Cluster 2 (%) Passive Relaxers	Cluster 3 (%) Active Outdoors	Cluster 4 (%) Active Families
Goudini spa	37	12	9	42
Avalon Springs	33	26	11	30
Warmwaterberg Spa	18	31	37	14
Calitzdorp Spa	22	18	42	18
Caledon Spa	51	9	0	40
The Baths	20	32	23	24

There do not appear to be any typologies for specifically thermal spring tourists in the literature on health tourism, with existing typologies (e.g. Voigt *et al.*, 2011; National Tourism Authority of Ireland, 2007, cited in Smith & Puczkó, 2009; Mueller & Lanz-Kaufmann, 2001) focusing on wellness tourists without any reference to thermal springs (discussed in Chapter 6). While most visitors to thermal spring resorts in the Western Cape

are not health tourists in the true sense of the definition, they do share some of the characteristics of existing typologies of health/wellness/spa tourists, corresponding with 'Fun seekers' (Cluster 4), 'Relaxers' (Cluster 2), and possibly 'Serenity seekers' (Cluster 2), identified by the National Tourism Authority of Ireland, but they do not correspond at all with 'Occasional pamperers', 'Beauty queens' or 'Help seekers'. Voigt *et al*. (2011) point out that certain benefits, such as being with friends and family, and relaxation and escape, which are important to visitors to thermal spring resorts in the Western Cape, consistently recur and can be seen as generic motives for most tourism activities.

8.4 Summary

While thermal spring resorts in the Western Cape resorts function primarily as family leisure resorts, it would seem that health, albeit indirectly, is still a strong motivation to visit. Many visitors to these resorts state that their main reason for visiting is to relax, and almost as many feel that it is the water that facilitates this. Thus there would seem to be a direct correlation between the need to relax and the perceived health benefits of the water. It is clear that the water provides a multitude of health benefits for visitors, affecting different visitors in different ways, and thus is bound to play an important role in the motivation to visit, and re-visit, these resorts.

Almost all visitors show a strong interest in swimming in the thermal pools, as well as swimming in mineral water, and there is also strong demand for a quiet thermal pool in which to relax. There seems to be reasonably strong demand for certain other wellness activities, such as cooking/eating healthy food, and sitting in a jacuzzi/sauna/steam room. While there is considerably less general interest in treatment-based wellness (wellness and beauty treatments), as well as water-based medical treatments, there does appear to be strong interest from a small segment of visitors. Most visitors show an interest in easy walks in the area of the resorts, with some interested in full-day hikes. There is relatively little general interest in adventure/adrenaline activities, sporting activities, water-based exercise and exercising in a gym, although, once again, there is specific interest for these activities amongst a small group of visitors. There is considerable interest in conservation activities, with the majority of respondents expressing a desire to live a more 'green' lifestyle, with some interest in wildlife and bird watching, and to be able to learn more about the flora and fauna of the area around the resorts.

The market segmentation provides insights into smaller sub-groups with specific interests, referred to above. Cluster 4 (27% of the respondents) exhibits a strong interest in all the wellness activities, as well as water-based medical treatments, and most of the sporting/exercise activities. The other clusters, while still striving to keep fit and maintain a healthy lifestyle, as well as to gain health benefits from their visits, exhibit far less dependence on organized health activities or facilities. Cluster 1 (28% of the respondents) would make limited use of health services, other than a quiet pool in which to relax, and possibly a jacuzzi/sauna/steam room. Cluster 2 would also appreciate a quiet pool in which to relax, but would make almost no use of health facilities. Cluster 3, while appreciating a quiet hot pool in which to relax, prefers to base its activities on nature and the outdoors, and also requires little in the way of facilities. Thus most visitors, through their choice of activities, are able to gain considerable health benefits from their stays at thermal spring resorts, but they do so in different ways, and this is reflected in various combinations of active and passive activities.

CHAPTER 9

GENERAL DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

The overriding objective of this research was to assess the potential for health (medical and wellness) tourism development and marketing of thermal springs in the Western Cape, for the purpose of revitalising the healing tradition that once existed. Specific objectives are set out in Section 1.10 of Chapter 1. Objective 'a' is addressed in Chapter 2, objective 'b' in Chapter 3, objective 'c' in Chapters 4 and 5, objectives 'd' and 'f' in Chapter 7, objective 'e' in Chapter 8, and objective 'g' in Chapter 9. Key findings, with regard to international trends in health tourism, and the changing role of thermal springs, as well as relevant aspects of domestic supply and demand, are summarised below:

9.1 Key findings

Key findings with regard to international trends in health tourism, and the changing role of thermal springs:

- There is an apparent move away from manmade spas to understanding more about the curative properties of natural spas, including thermal water spas, and wanting to experience these benefits (Cockerell & Trew, 2003).
- Natural healing resources, including healing waters, are predicted to increase in popularity, as evidenced by the growing interest in other non-invasive approaches to healing and wellness, and planners need to consider the significance of alternative and complementary medical treatments (Wellness Tourism Worldwide, 2011).
- While there is some movement towards natural spas in countries such as Morocco, Indonesia, Philippines, Austria and Hungary, as well as South Africa, most countries' offerings and brand images are fairly well developed around standardized generic experiences, e.g. day spas, hotel spas, gyms and beauty clinics, but are weak or only emerging around authentic location-based experiences, e.g. resort spas, spiritual retreats, thalassotherapy spas and thermal baths (Global Spa Summit, 2011).
- The international spa industry (thermal as well as other types of spas) sees wellness tourism as a much greater business opportunity than medical tourism (Global Spa Summit, 2011).

- There is an overlap between the types of offerings that medical tourists and wellness tourists are interested in (Table 5.2), and depending on individual priorities, as well as the emphasis needed to be placed on leisure and entertainment, this is an indication that thermal spring health resorts could be developed to provide for the needs of both medical and wellness tourists simultaneously.
- As medical and wellness tourism markets become more competitive, it will become increasingly important for countries to differentiate themselves based on factors other than cost or quality, and in order to offer truly differentiated products, offerings will need to be increasingly location-specific, focusing on local natural assets and the environment, as well as being authentic and drawing on local traditions, skills and ingredients (Global Spa Summit, 2011).
- Increasing globalisation of the leisure and tourism markets is reflected in health tourism in two main ways, firstly, the use of health and beauty by Asian destinations to attract, for example, European and American tourists, and secondly, the emphasizing of treatments originating in foreign countries, for example, Swedish and Thai massages, as if these are better than domestic treatments (Horner & Swarbrooke, 2005).
- It is apparent, from the variety of activity combinations offered at the thermal spring resorts discussed in Chapter 5, that there is no standard product. While all the resorts have thermal water as their principal attraction, and all offer both health and recreation activities in various combinations, the core offering may differ from resort to resort, and may have a specific focus, either on medical activities, or wellness activities or recreational activities.
- While medical activities at thermal spring resorts still retain some importance in parts of Europe, the focus is shifting towards wellness activities, as has already happened in countries such as Australia and New Zealand, and may even shift further in the direction of recreation, as happened many years ago in South Africa.

Key findings with regard to the supply of health-related facilities and services at thermal springs in the Western Cape, and the potential for utilisation of the water for medical and wellness purposes:

- Thermal springs in the Western Cape are mainly used for recreational purposes, with relatively little emphasis on health tourism.
- None of the thermal spring resorts in the Western Cape offer balneotherapy or any other medical services. Caledon Spa has a relatively sophisticated range of wellness

and beauty products, while Goudini Spa and Avalon Springs offer only a limited range of beauty treatments.

- All the resorts have thermal pools, and two (Goudini Spa and The Baths) have jacuzzis, but there are no quiet hot pools in which to relax, and no water-based exercise programmes are offered.
- The only sporting facilities are tennis courts at Goudini Spa, Avalon Springs, Calitzdorp Spa and The Baths, and both tennis and squash courts at Calitzdorp Spa.
- All the resorts emphasise opportunities for hiking, jogging and mountain biking, but only three, Warmwaterberg Spa, Calitzdorp Spa and The Baths, have short marked walking trails.
- There are three different types of thermal mineral water classifications amongst the Western Cape's thermal springs, namely indifferent springs (Goudini Spa, Brandvlei Hot Spring, Avalon Springs, Baden Klub and The Baths), chalybeatic springs (Caledon Spa, Warmwaterberg Spa, Calitzdorp Spa/Uhuru Guest Farm and Toorwater) and salt springs (Malmesbury Hot Spring and De Kelders). Each water type has well-documented medicinal uses.
- The springs all contain various combinations of minerals with known medicinal/healing properties, such as sodium, magnesium, potassium, calcium, chloride, fluoride, sulphate, silicon, iron, lithium and arsenic, as well as relatively rare trace elements, such as nickel, rubidium, selenium, strontium and zinc, which are thought to have medicinal properties, but about which very little research in a thermal spring context exists.
- All the springs contain radon gas, the highest being at Warmwaterberg Spa and The Baths. Radon has well known medicinal properties, but has never been used for healing or wellness purposes at any of the springs.
- The undeveloped thermal springs have considerable development potential, but each also has its own development challenges:
    - Malmesbury Hot Spring, which has the highest mineral content of all the thermal springs in the Western Cape, is situated in the town centre of Malmesbury, where there is very little, if any, open space available for development.
    - Brandvlei Hot Spring, the hottest and strongest-flowing thermal spring in South Africa, is situated on property belonging to the Department of Correctional Services, and because of security concerns, any development

would probably have to take place on adjacent land a few kilometres from the source of the water.

- Toorwater is privately owned, and any decision to redevelop it would depend on the owner.
- De Kelders, situated in a sea-cliff cave, is unique in many ways, and could be utilised for both speleotherapy and thalassotherapy, but it is also privately owned, and any decision to develop it, or even just to re-open it to the public, also rests with the owner.

Key findings with regard to visitor motivations, health benefits and activity preferences:

- While thermal spring resorts in the Western Cape now function primarily as family leisure resorts, it would appear that health, albeit indirectly, is still a motivation to visit these resorts, with the main reason for visiting being to relax.
- The water provides a multitude of health benefits for visitors, affecting different visitors in different ways.
- Almost all visitors show a strong interest in swimming in the thermal pools, as well as swimming in mineral water, and there is strong demand at all the resorts for a quiet thermal pool in which to relax.
- There seems to be reasonably strong demand for certain wellness activities, such as cooking/eating healthy food, sitting in a jacuzzi/sauna/steam room, and easy walks in the area of the resorts, but there is considerably less demand for treatment-based wellness (e.g. massage and aromatherapy), and beauty treatments (e.g. skin care and manicures), with strong interest only coming from a small segment of visitors. Similarly, interest in water-based medical treatments for diseases such as rheumatism, arthritis and psoriasis, is concentrated in a small segment of visitors.
- There appears to be relatively little general interest in adventure/adrenaline activities, jogging and cycling, sporting activities, water-based exercise and exercising in a gym, again with interest confined to a small segment of visitors.
- There is very little interest in cultural activities, such as music and dancing, or creative activities, such as painting and pottery.
- There is considerable interest in conservation, with a majority of respondents expressing a desire to live a more ‘green’ lifestyle.
- Market segmentation provides insights into smaller sub-groups with specific interests, and four clusters, two active and two passive, are identified (Table 9.1):

- Cluster 1 (Passive Families, 28% of respondents), who would appreciate organised entertainment for their children, but would make limited use of health facilities and services, other than a quiet pool in which to relax, and possibly a jacuzzi/sauna/steam room.
- Cluster 2 (Passive Relaxers, 23% of respondents), who would like a quiet pool in which to relax, but would make almost no use of other health facilities.
- Cluster 3 (Active Outdoors, 22% of respondents), who would also value a quiet hot pool in which to relax, but prefer to base their activities on nature and the outdoors, and also require little in the way of facilities.
- Cluster 4 (Active Families, 27% of respondents), who would make extensive use of most facilities and services, including organised entertainment, leisure facilities, wellness and beauty treatments, water-based medical treatments, and some sporting/exercise activities.

Table 9.1: A typology of visitors to thermal spring resorts in the Western Cape

	Passive	**Active**
Make less use of facilities and services	Cluster 2 (23%): Passive relaxers	Cluster 3 (22%): Active outdoors
Make more use of facilities and services	Cluster 1 (28%): Passive families	Cluster 4 (27%): Active families

9.2 A framework to guide the development of thermal springs in the Western Cape for health tourism

Thermal spring resorts in the Western Cape differ considerably from each other in terms of a number of factors, including, water types and mineral content, range of facilities and services offered, number of visitors that can be accommodated, distance from Cape Town (the principal tourist-generating city), and location in relation to tourist attractions and scenic drives. Furthermore, each resort receives different types of visitors with different combinations of interests. It is doubtful, given the diversity outlined above, if any single framework could be designed to facilitate optimal health tourism development for all the resorts and undeveloped springs. The framework suggested (Figure 9.1) attempts to integrate relevant aspects of international demand for thermal spring health tourism with the perceived medicinal properties of the different thermal waters, and visitor activity preferences. In an attempt to attract international health tourism markets, but without losing current domestic

leisure markets, the focus of the recommendations is not only to create new products, but also, where possible, to add value to existing products.

The first-level sub-division in the framework is between medical tourism activities, wellness tourism activities, and conservation/sustainability, after which medical tourism is sub-divided into balneotherapy and recovery/rehabilitation, and wellness tourism is sub-divided into recreation-based wellness, water-based wellness, treatment-based wellness and nutrition-based wellness. The framework should go some way towards eliminating existing confusion between the terms health tourism, wellness tourism and medical tourism. It is hoped that it can be used both to describe and evaluate the structure of thermal spring health tourism in the Western Cape, and to guide its development and marketing for both domestic and international markets.

Erfurt-Cooper & Cooper (2009) suggest that, based on general market demand, facilities that should be provided in comprehensive health/wellness thermal spa resorts should include hydrotherapy facilities, thermal pool facilities, facilities for healthy nutrition, facilities for physical fitness, provision for relaxation, cultural activity and mental activity, qualified staff, information on health topics, nature trails for recreation activities such as walking, cycling and jogging, as well as facilities for the aged and disabled. Some of these facilities are already available at the Western Cape's thermal spring resorts, and while it is theoretically possible to provide all of them, these resorts currently cater almost entirely to the domestic leisure market, and facilities and services offered would need to be aligned to their needs. Of the medical aspects of thermal spring health tourism, Erfurt-Cooper & Cooper (2009) only include hydrotherapy, omitting balneotherapy, which should surely be central to any thermal spring health tourism product. The framework is discussed in more detail below, and recommendations for product development, marketing and further research are made in the context of the framework.

9.2.1 Medical tourism

9.2.1.1 Balneotherapy

Thermal springs in the Western Cape include three medicinal water types (indifferent waters, chalybeatic waters and salt waters), and within each a range of mineral contents (cations, anions and trace elements), as well as radon gas. The medicinal properties of minerals and

radon found in thermal spring waters are discussed in Chapter 3, and the actual contents of each of the springs are presented and discussed in Chapter 7. In terms of mineral content alone, there would seem to be considerable potential for the development of balneological treatments at all of the thermal springs, especially due to the presence of relatively rare trace elements, together with measurable quantities of radon gas. However, there are spatial variations in demand which need to be taken into consideration.

A considerable number of current visitors (43% of all respondents, but 78% of Cluster 4) (Tables 8.5 and 8.11) show an interest in having water-based medical treatments available. Goudini Spa and Caledon Spa, resorts where Cluster 4 is the dominant visitor type, would be well placed to develop balneotherapy in addition to their current offerings. Both are also close enough to Cape Town for medical day-trips. This may be an opportunity to develop 'medical wellness' products at these resorts to attract the European market. Medical wellness, discussed in Chapter 4, is a relatively new but rapidly growing concept in Europe, seen as a bridge between conventional medicine and the wellness movement.

All of the resorts should consider packaging their own health tourism products, aimed at the international market, and retired people, for example four-night midweek, low-season packages, consisting of accommodation, possible nutrition, and specialized daily programmes. Currently the Arthritis Foundation, based in Cape Town, makes its own arrangements for annual group visits to Goudini Spa.

Malmesbury Hot Spring, a salt spring which also contains a range of trace elements, and has the highest TDS (total dissolved solids) content of all thermal springs in the Western Cape (1005 mg/l), is currently completely unutilized. It is also close enough to Cape Town for day-trips, and given the water content, could be investigated for the treatment of particularly dermatological diseases, due to the high sodium chloride content of the water and dissolved hydrogen sulphide gas. A dermatological clinic, offering both outpatient and multi-day services, could be set up in the vicinity of the spring. Such a development would no doubt also act as a catalyst for the establishment of guest houses and restaurants in the vicinity, and for general tourism to Malmesbury.

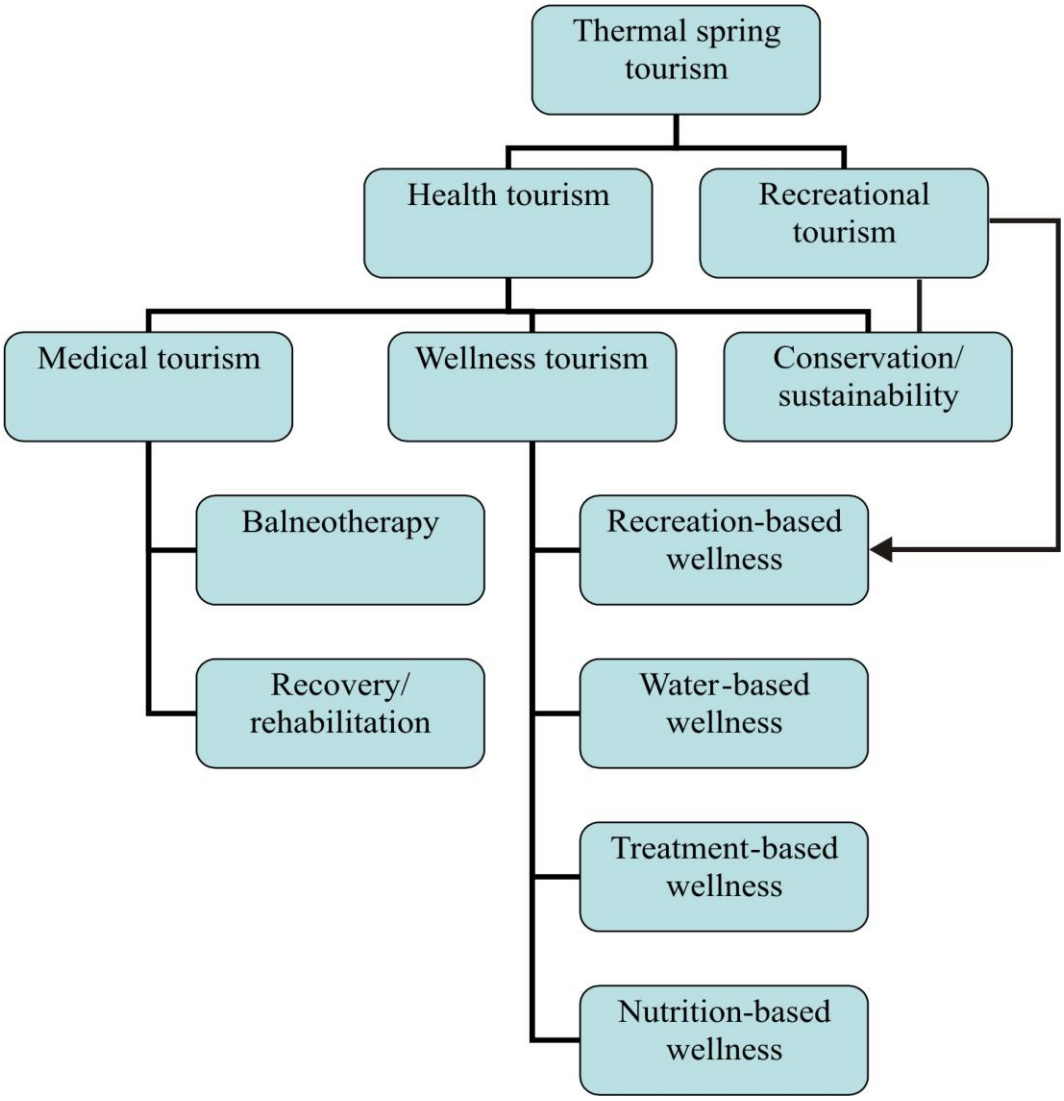

Figure 9.1: A framework for thermal spring health tourism development

De Kelders, also undeveloped, where the water has the second highest TDS content in the Western Cape (650 mg/l), with high sodium, chloride and sulphate, as well as a wide range of trace elements, could also be investigated for the treatment of dermatological diseases, possibly in combination with thalassotherapy (sea-water treatments). An added attraction is the unique cave environment of De Kelders, and the potential for using the cave for speleotherapy and the treatment of respiratory diseases.

It has been pointed out in Chapter 3 that the medicinal effects of radon are broad-ranging, and includes aiding in the recovery of the immune system (Franke *et al*., 2007; Zdrojewicz &

Strzelczyk, 2006). As far as can be ascertained no research has been undertaken anywhere on the effects of thermal water radon treatment, or any other thermal water-based treatment, for that matter, on HIV/AIDS, an auto-immune disease that is prevalent in South Africa and many other African countries, some of which have abundant thermal water resources. While all of the thermal springs in the Western Cape contain radon, Warmwaterberg Spa and The Baths have considerably higher radon content than the other springs, and may be suitable for the development of radon therapies.

While it has been suggested that there is considerable potential for the development of balneotherapy products at all of the thermal springs in the Western Cape, it is beyond the scope of this thesis to recommend specific medical treatments, which should be done by a qualified medical practitioner. There is definitely a need for medically-based research into the medicinal properties of the various waters, particularly on the medicinal role of trace elements. The Global Spa Summit (2011) encourages the development of a scientific database for spa and wellness methods that is accessible to industry, consumers and governments, suggesting that this information could be used for promotional purposes, as well as to build acceptance of spa and wellness methods within the conventional medical community.

9.2.1.2 Recovery and rehabilitation

Recovery after surgery, and rehabilitation from illness, are important components of the medical tourism industry. In 2008 South Africa received 410 000 medical tourists, or 4.3% of all international inbound tourists to the country (Global Spa Summit, 2011). Medical tourism in South Africa is often packaged with safaris/wildlife viewing, recovery in a (non-thermal) spa resort, or other tourism activities. Thermal spring resorts are well suited to promote themselves as recovery destinations for medical tourists who have undergone cosmetic or other surgery. Not only would the general environment be relaxing and conducive to healing, but the effect of the medicinal waters would aid in building up strength, reducing inflammation and pain, assist in the healing of wounds, strengthen the immune system and speed up recovery in general.

According to the Global Spa Summit (2011: 115), “it should be recognized that there are opportunities for the spa industry in medical tourism, and packages for pre-operation, post-operation, rehabilitation and therapeutic services for different profiles of medical tourists should be designed”. Opportunities identified for the ‘spa’ industry apply equally to the

thermal spring resort industry, and cooperation between the medical tourism industry and the thermal spring resort industry should thus be encouraged.

9.2.2 Wellness tourism

The framework includes four categories of wellness, namely recreation-based wellness (which includes sport and exercise), water-based wellness (water-based exercise), treatment-based wellness and nutrition-based wellness. While the international spa industry sees wellness tourism as a much greater business opportunity than medical tourism (Global Spa Summit, 2011), it has been pointed out (Wellness Tourism Worldwide, 2011) that there is a high risk that the supply of wellness tourism products and services will become too standardized, and that several common wellness services, such as saunas and massage, may lose their differentiating power and become entry level services offered by all wellness providers. Tourism regions thus need to identify wellness assets which will help to create unique selling propositions, distinctive brands and thus more competitive destinations (Wellness Tourism Worldwide, 2011).

While more than half of thermal spring visitors in the Western Cape show a relatively strong overall interest in wellness activities, most of this interest lies in 'passive', recreation-based activities, such as having a quiet hot pool in which to relax, being able to swim in mineral water, sitting in a jacuzzi, sauna or steam room, and going on easy walks in the area. Resorts should consider developing a range of marked walking routes of varying distances and difficulty, with route maps available.

While most recreational activities are not directly related to the health tourism product, they have an important function as part of the complete 'holistic' thermal spring experience, and contribute to general feelings of relaxation and wellbeing experienced by visitors to thermal spring resorts. Even though there is a clear distinction between active and passive visitors, certain passive recreation activities are important to most visitors. Being with family and friends is one of the aspects of a holiday that is enjoyed the most (Ryan 1997), and this is reflected in the survey responses, where seeing and spending time with friends, as well as being together as a family, are among the more important reasons given for visiting thermal spring resorts.

There is little general demand among current visitors for water-based wellness (water-based exercise), or for wellness treatments (e.g. massage, aromatherapy) and beauty treatments (e.g. skin care, manicures, pedicures), with such interest that there is concentrated in Cluster 4. Despite the fact that these activities and services form an important part of most international thermal spa offerings, it would seem that, due to lack of demand, it would not be viable to develop them further at most of the Western Cape's thermal spring resorts, with the possible exceptions of Goudini Spa and Caledon Spa.

Somewhat surprisingly, a large proportion of respondents show a strong interest in cooking/eating healthy food. This need may be catered for by offering a selection of healthy foods, or salads in summer, in the restaurant, if the resort has one, and/or by encouraging local fruit and vegetable producers to make fresh produce available for sale at the resorts. This would also contribute to linking the resorts with their surrounding communities, thus spreading the benefits of tourism. A number of visitors commented that they travel to nearby farm stalls and food markets in order to buy fresh fruit and vegetables.

Thus there appears to be no major interest in many of the types of wellness facilities, services and activities common at international thermal spa resorts, with only limited interest in the 'top ten wellness activities' identified internationally by the Global Spa Summit (2011), illustrated in Table 5.2. However, as Verschuren (2004) remarks, international consumers are starting to see the spa experience as a way to stay healthy and look good, with a move towards simplicity and getting back to basics, with far less emphasis on pampering. Thermal spring resorts in the Western Cape are well placed to capitalize on this trend. Resorts such as Warmwaterberg Spa, Calitzdorp Spa and The Baths are particularly suited to encourage passive wellness activities, where the quiet, rural, rustic atmosphere is seen as part of their attractiveness, and these resorts could certainly appeal to this sector of the international health tourism market.

Each thermal spring resort in the Western Cape needs to research the availability of natural resources found in its immediate area that could be incorporated into location-based medical or wellness tourism offerings. Resorts/springs that are located in wine producing areas (Goudini Spa, Brandvlei Hot Spring, Avalon Springs and Baden Klub, as well as Calitzdorp Spa and Uhuru Guest Farm), could, for instance, investigate developing vinotherapy, a treatment already being offered in these areas by non-thermal spas (South African Tourism, 2011). Vinotherapy utilizes the antioxidant properties of grapes, and incorporates the skins,

stalks and seeds (this is in fact a recycling of the residues of wine-making) into various detoxifying, re-energising and anti-aging treatments, including facials, massages and body scrubs. Similarly, The Baths is located in the West Coast region, in the Cederberg Mountains, the area known for rooibos tea and the buchu (agathosma) plant. Rooibos tea is known for its antioxidant, anti-inflammatory and anti-allergic properties, and has a range of medicinal uses, while buchu has diuretic and antiseptic properties, and is also useful for the relief of rheumatism.

All of the springs are located within the Cape fynbos region, the floral biome unique to the Western Cape. Already a number of non-thermal spas are offering 'fynbos therapy', spa treatments using the antioxidant properties of certain types of fynbos in skin creams and essential aromatherapy oils (South African Tourism, 2011). Fynbos products could be incorporated into medical and wellness thermal spring tourism products, particularly in therapeutic steam rooms and saunas, a popular activity among most visitors despite their apparent lack of interest in other wellness treatments.

Health products, such as skin creams, developed from local herbal plants, and used as part of thermal spa treatments, should also be made available for clients to purchase and take home, similar to what is being done at Bath (United Kingdom), and Hanmer Springs (New Zealand). This will also create opportunities for local communities, both in the harvesting of the raw materials, and in the manufacture and sale of health products.

9.2.3 Conservation and sustainability

Erfurt-Cooper & Cooper (2009) remark that with the increase globally in environmental awareness, the wellness concept is related to ensuring personal environmental sustainability in our daily lives at an individual level. This is apparent among current visitors, where almost two-thirds of respondents display a desire to live a more 'green' lifestyle while at the resort (80% of Cluster 3, and 85% of Cluster 4). The last-mentioned two clusters also show strong interest in observing wildlife and bird-watching, and in learning about the flora and fauna of the area. Resorts should prepare information brochures on the typical flora and fauna that visitors may encounter during their visits, and make this information available to visitors. If walking routes are to be set up, information boards could be constructed at various points.

A number of respondents mentioned that they were concerned about the lack of facilities for recycling at the resorts where they were interviewed. To be seen as contributing to personal and environmental sustainability, and indeed to add to overall feelings of wellbeing, resorts need to maximize their 'greening' programmes, with visible signs of recycling and sustainable use of the environment. In the longer term environmentally sustainable building materials and building styles should be used, in keeping with the natural surroundings. The possibility of using the naturally heated mineral water, which all of these resorts have in abundance, for baths and showers in the chalets and public ablutions, as is already the case at two of the resorts, should be investigated.

9.2.4 Development of backward linkages with local communities

The extent to which thermal spring resorts are used as bases for visiting surrounding tourist attractions and places of interest has important implications for spreading the economic benefits of tourism beyond the resorts themselves. This will facilitate the development of 'crosscutting tourism themes', as advocated more than a decade ago by the Western Cape's tourism development authority (Western Cape Provincial Government, 2001: 42). Unfortunately only about half of the respondents showed specific interest in combining their stays at thermal spring resorts with tourism activities in the area (Table 8.5). On the other hand the fact that almost all of the respondents are from the Western Cape, with about three-quarters being repeat visitors, may explain the apparent lack of enthusiasm for tourism activities. To help spread the benefits of tourism, visitors to thermal spring resorts should be encouraged to visit nearby tourist attractions. This can only be done with the involvement and cooperation of local tourism marketing authorities and organizations, possibly by setting up manned tourism desks at the bigger resorts during school holidays and other busy periods, and by making incentives available to encourage thermal spring visitors to extend the boundaries of their experiences.

While there is a perceived need for fresh fruit and vegetables to be made available for sale at the resorts, there appears to be little general interest in buying locally produced preserves (e.g. jam or pickles), or arts and crafts. Development and growth of this market should be encouraged for a number of reasons. Buying locally produced products is an important part of the overall tourism experience, particularly for international tourists, and also has an important function in creating backward linkages between resorts and their surrounding communities, particularly if they are sold by community members themselves.

9.3 Key recommendations

Key recommendations contained in the development framework are summarised below:

- Consider the development of balneological treatments at all the thermal spring resorts, but particularly Goudini Spa and Caledon Spa.
- All the resorts should consider packaging their own mid-week and off-season health tourism products, aimed at the international market, and retired people.
- A dermatology clinic should be set up to utilise the water from Malmesbury Hot Spring.
- The unique sea-cliff cave environment of De Kelders should be investigated for dermatology treatments, possibly in combination with thalassotherapy, as well as speleotherapy for the treatment of respiratory diseases.
- The development of radon therapies should be investigated, especially at Warmwaterberg Spa and The Baths, with a particular emphasis on the treatment of auto-immune diseases, among them HIV/AIDS.
- The medicinal value of a range of relatively rare trace elements present in all the thermal waters should be further investigated.
- The thermal spring resort industry should investigate the possibility of linking up with the medical tourism industry, and packages should be designed for post-operation recovery and rehabilitation.
- All the resorts should construct additional thermal pools in quiet areas for the specific purpose of relaxation.
- All the resorts should consider developing a range of marked walking routes of varying distances and difficulty.
- All the resorts should make information available on the typical flora and fauna that visitors may encounter during their visits.
- The availability of local natural resources that could be incorporated into medical or wellness tourism products should be investigated.
- Health products, such as skin creams developed from locally available natural resources and used as part of thermal spa treatments, should be made available for purchase to take home.
- Resorts need to maximize their ‘greening’ programmes, with visible signs of recycling and sustainable use of the environment.

- Backward linkages with local communities should be developed, with visitors to thermal spring resorts encouraged to visit nearby tourist attractions during their stays, and with opportunities created for the sale at the resorts of locally produced fruit and vegetables, other foodstuffs, and arts and crafts.

9.4 Concluding remarks

There appears to be considerable potential for the development of thermal spring health (medical and wellness) tourism products in the Western Cape, based on available resources. It would, however, be unrealistic to expect thermal spring resorts in the province to produce the types of facilities and services that are offered by large international thermal spring resorts. The results of the survey suggest that the types of products that may appeal to international health tourism markets, particularly the wellness and beauty treatment markets, might only appeal to a small segment of current visitors.

The Global Spa Summit (2011) stresses that, in order to offer a truly differentiated product, offerings need to be location-specific, focusing on local natural assets and the environment, as well as being authentic and drawing on local traditions, skills and ingredients. Recommendations have been made for medical and wellness tourism product development that goes some way towards meeting these requirements, which will not only add value to current product offerings, but also help to spread the benefits of tourism beyond the resorts themselves into surrounding communities. While some visitors would welcome additional medical and wellness facilities and services, ultimately it is the clean air, attractive scenery, good climate, friendly people and the mineral-rich thermal water that provide the basic ingredients for a satisfying, and healthy, holiday.

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APPENDIX A: The questionnaire used in the empirical survey

Cape Peninsula University of Technology
Hot Spring Visitor Opinion Survey

A survey is being conducted to ascertain the views and opinions of visitors to hot springs in the Western Cape. Your input in answering the questions below would be greatly appreciated. All responses will be treated as confidential. If there is any question you do not wish to answer, you may leave it out.

Q1. How important do you rate the following activities during your/your family's visit/s to a hot spring or hot spring resort?

➔**TICK (✓) THE APPROPRIATE BOXES, FROM 'NOT AT ALL IMPORTANT' TO 'VERY IMPORTANT'**

ACTIVITY	Not at all important	Slightly important	Fairly important	Important	Very important
To be able to exercise in a gym, do aerobics					
To visit nearby tourist attractions and places of interest, go sightseeing					
To attend organized cultural activities, like music and dancing					
To go for easy walks in the area (1-2 hours)					
To swim in a warm/hot water swimming pool					
To have a quiet hot pool available (just relaxing in the water, no jumping or splashing)					
To buy souvenirs, such as locally-produced arts and crafts, to take home					
To have organized entertainment for children available					
To have wellness treatments and activities available (massage, aromatherapy, yoga, etc)					
To have beauty treatments available (skin care, manicure, pedicure, etc)					
To take part in outdoor leisure activities (mini-golf, horse riding, etc)					
To swim in a cold water swimming pool					
To take part in indoor leisure activities (snooker, table tennis, etc)					
To take part in sporting activities (tennis, squash, etc)					

ACTIVITY	Not at all important	Slightly important	Fairly important	Important	Very important
To go hiking along a marked hiking trail (up to 1 day)					
To take part in water-based exercise, like aquarobics					
To do very little/sit around/read a book					
To buy locally produced foodstuffs (jam, pickles, dried fruit, etc)					
To watch sport and/or family entertainment on TV					
To swim in mineral water					
To sit in a jacuzzi/sauna/steam room					
To be able to socialise with old friends					
To sit in a bar/lounge serving alcoholic drinks					
To live a more 'green' lifestyle at the resort (recycling, saving electricity, etc)					
To go jogging/cycling in the area					
To take part in artistically creative activities (painting, pottery, etc)					
To be able to learn about the flora and fauna (plants and animals) of the area					
To have water-based medical treatments available (for rheumatism, arthritis, psoriasis, etc)					
To eat in a restaurant at the resort					
To cook and/or eat healthy food					
To take part in adventure/adrenaline activities (mountain biking, rock climbing, etc)					
To look at wildlife/go bird-watching					

Q2. Is there any activity or service not mentioned above that you would like to have available at this resort? ➔ IF MORE THAN ONE, MOST IMPORTANT FIRST

Q3. How often do you visit/stay at a hot spring resort? ➔TICK (✓)

More than once a year		Once in two years	
Once a year		Less than once in two years	

Q4. Have you visited or stayed at this resort before? ➔ TICK (✓)

Yes	
No	

Q5. How many nights are you staying at this resort? ➔ TICK (✓)

None (Day visitor)	
1 – 3 nights	
4 – 6 nights	
More than six nights	

Q6. What type of accommodation are you using? ➔TICK (✓)

Chalet/rondavel/flat (Self-catering)		Tent	
Hotel room		Other	
Timeshare		None (Day visitor)	
Caravan			

Q7. What is/are your main reason/s for visiting/staying at this resort?
➔ IF MORE THAN ONE, MOST IMPORTANT FIRST

Q8. Are you aware that swimming/bathing in natural hot water is supposed to be healthy? ➔TICK (✓)

Yes	
No	

Q9. Do you feel that swimming in the hot water at this resort is good for your own health, or that of one or more members of your family/group? ➔TICK (✓)

Yes	
No	
Not sure	

Q10. If your answer to the previous question was Yes, is there anything specific that the water helps with? Please provide details below:
➔ IF MORE THAN ONE, MOST IMPORTANT FIRST

Q11. While staying at this resort, have you visited, or do you intend to visit, any nearby tourist attractions or places of interest? ➔ TICK (✓)

Yes	
No	

Q12. If Yes, please specify the most important (to you/your family/group) tourist attraction/s or places of interest you have visited, or intend to visit?
➔ **IF MORE THAN ONE, MOST IMPORTANT FIRST**

Q13. How many people are in your party/group? _____

Q14. What is your gender? ➔ TICK (✓)

Male	
Female	

Q15. Into which age group do you fit? ➔ TICK (✓)

Up to 19 years		41 to 50 years	
20 to 30 years		51 to 60 years	
31 to 40 years		61 years +	

Q16. Where are you from?
➔Which province (if from South Africa) _____

➔Which country (if from outside South Africa) _____

Q17. Are there any other comments you would like to make?

_____

_____

_____

*****THANK YOU VERY MUCH FOR YOUR INPUT*****

APPENDIX B: Methodology for analysis of water samples for cations and anions

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TAX INVOICE

28 August 2012

The following water samples were analysed for cation using a Varian 710-ES optical emission spectrometer with reference standards SS9415S, SS1206S, SS1256S, SS2048S, SS1242S and SS2047S, and for anion using a Dionex ICS-1600 with a 7 anion column and Dionex 7 anion standard as a reference.

The samples were labelled as; Goudini, Brandvlei, Avalon Springs, Baden, Warmwaterberg, Calitzdorp, Toorwater, Caledon, The Baths, Malmesbury and De Kelders.

The pH, EC and TDS were measured using a Hanna HI 991301 pH meter with portable pH/EC/TDS/Temperature probe and the alkalinity was determined using Metrohm auto titrator.

Ilse Wells
Lab Manager

APPENDIX C (Following page): Analysis of water samples for radon content

Report on radon concentrations in water from hot springs in the Western Cape

	T-sampled		T-measured		Radon conc. measured (Bq/litre)		Original radon (Bq/litre)	Radon concentration (average) (Bq/litre)
					value	unc.		
Brandvlei	20 March 2012	#######			errror			
Baden	20 March 2012	#######	22 March 2012	########	42	6	60	49
			26 March 2012	########	12	3	38	
Warmwaterberge	20 March 2012	#######	23 March 2012	########	159	11	274	274
Caledon	21 March 2012	#######	22 March 2012	########	37	5	46	49
			30 March 2012	########	10	4	52	
De Kelders	21 March 2012	#######	23 March 2012	########	21	2	30	30
			30 March 2012	########	6	2	29	
Avalon springs	20 March 2012	#######	23 March 2012	########	77	10	135	98
			29 March 2012	########	12	3	62	
Goudini	20 March 2012	#######	22 March 2012	########	38	5	57.2	80
			29 March 2012	########	20	5	104	
The Baths (Citrusdal)	02 May 2012	#######	04 May 2012	########	174	8	258	258
Malmesbury	02 May 2012	#######	04 May 2012	########	53	6	75	75

Comments

1. **These measurements were performed with a RAD7 radon detector using the WAT40 protocol**
2. **The measurements were corrected for the time between sampling and the measurement**
3. **Measurements are likely to be underestimates due to sampling and other losses. Uncertainties are estimated at 10%.**
4. **Three samples were measured more than once as a check.**
5. **These values are very high compared to radon from boreholes, but not as high as some of the literature values for spas in Europe.**

Prepared by: R Lindsay 10/5/2012