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Touristic Potential of Meshkinshahr Geothermal Resources, NW Iran

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ABSTRACT

Meshkinshahr is very fortunate to have ready access to natural mineral springs and geothermal waters. These springs and water reserves present this area with a fantastic opportunity to further develop as an international destination for natural spa tourism. Geothermal water and mineral springs have long been associated with improving mental and physical health through therapeutic bathing, relaxation and drinking enjoyment. We describe the key characteristics of this geothermal water and mineral spring resources, providing an insight into the demand for services and the development potential of new and existing facilities in regional communities. The main aim of this paper is to determine the main tourism potential of natural geothermal resources in Meshkinshahr region, north of Sabalan mount, North-West of Iran.

1. INTRODUCTION

Tourism is one of the world's largest industries, important for economies of many countries that are tourism destinations (Fennell, 2003). Tourism can be studied from various perspectives and disciplines such as geography, ecology, psychology, law, marketing, educational studies etc. (Cooper et al., 1997). Although tourism is widely researched and many papers discuss the topic of tourism in areas affected by disasters, not much of the existing literature talks about the reasons why people choose destinations that include certain types of risks. That is the topic of this research. More specifically, it is concerned with tourism in volcanic areas and it is an attempt to explore the motivations that tourists have while taking certain risks and choose volcanic areas as their holiday destinations. There is a great amount of literature on the topic of tourism in disaster- prone areas and in volcanic and geothermal areas (Erfurt- Cooper, 2011) mainly discussing the preparedness measures to be taken by the managers of the destinations and the results of different disasters on tourism (Perry & Godchaux 2005, Murphy and Bayley. 1989), as well as risk perception and how it is related to tourism (Lepp & Gibson, 2003, Kozak, Crotts & Law, 2007).

With over 1,300 currently classed as active volcanoes worldwide and considerably more areas with dormant volcanic landforms, there is an abundance of volcanic destinations. Even if not all of them can be easily accessed; many areas are already developed for tourists. Volcano and geothermal tourism is an important segment of geotourism, which takes into account the geological heritage of unique lands cape features (Dowling and New some 2006), but particularly the geo diversity of active volcanic and geo-thermal landforms. Growing numbers of tourists look for some form of adventure, and there for, they plan their holidays close to active volcanoes (Erfurt-Cooper 2011).

The volcanic and geothermal activity o f such areas has attracted tourists for several centuries, and visits to active volcanoes are commonplace in Europe. Geyser s and other geothermal features based on volcanic activity have also traditionally been used widely to market destinations and to attract visitors to countries such as New Z ea land, Ital y, Turkey, U SA, Japan and China, which all has a history of promoting their volcanic environments to increase visitor n umbers. Destinations like North America's Yellowstone and Hawaii Volcanoes National Park for example attract millions of visitors every year; in New Zealand , the Tongariro National Park and in Japan, the Fuji-Hakone-Izu National Park represent major tourism destinations based on volcanic landforms and related geothermal features. It is very common for countries with active volcanic areas to use these geological 'power points' as special tourist attractions for marketing purposes.

Finally, volcanic and geo thermal landforms, which occur worldwide, include many unique features and attractions and are commonly linked to ongoing volcanic activity. However, geothermal springs can also be found in non-volcanic and dorm ant volcanic environments and are a tourist attraction in their own right, while including remnant volcanic lands capes for additional recreational activities such as hiking and climbing (Erfurt-Cooper 2011).

The history of geothermal spas and hot spring use has worldwide origins which date back to the earliest civilizations. Individual regions and peoples developed and used their geothermal bathing facilities in a range of ways suitable to their individual needs. In every country that has been investigated natural hot springs have historically been attributed with therapeutically benefits due to their individual mineral compositions. Hot spring tourism (geothermal tourism) involves a visit to a destination, location, attraction or facility that takes advantage of geothermal resources in the form of natural hot and mineral springs' (P. J. ERFURT 2011).

2-NATURAL HOT AND MINERAL SPRINGS IN TOURISM

Hot spring tourism therefore caters for the demand by visitors who rely on the beneficial mineral content of natural hot springs for the purpose of improving their health, but also for tourists with an interest in the visual effects of geothermal phenomena such as extreme hot springs (e.g. geysers and sinter terraces). Hot spring tourism is an important subsector of nature-based tourism, but also includes links to the historical and the cultural heritage related use of natural hot and mineral springs.

Natural hot springs [with or without spa and resort facilities] are often located in close proximity to volcanic activity, and hot spring tourists frequently take the opportunity to explore the unique geological heritage in the vicinity of their destination. The increase of hot spring tourist numbers is partly caused by the growing ease of access to remote destinations and the affordability for budget travelers, and is partly due to a growing interest in the natural environment (Erfurt-Cooper & Cooper, 2009). The main elements of hot spring tourism are (P. J. Erfurt 2011):

- Natural Hot and Mineral Springs (Geothermal Springs);

- Health Resort and Spa Tourism;

- Medical Tourism;

- Health;

- Wellness;

- Health Tourism;

- Health, Wellness and Recreational Tourism.

2-1- Natural Hot and Mineral Springs

The International Union of Tourist Organizations' (IUOTO, 1973:7) for instance interprets health tourism as the provision of health facilities utilizing the natural resources of a country or region, in particular mineral water and climate, which refers directly to the use of natural hot and mineral springs in tourism. It is evident that geothermal springs fall into the category of natural resources, and are commonly known and defined as hot springs, mineral springs, mineral waters or geothermal waters with the only differences between them the varying temperatures and their mineral content. With reference to the healing benefits of natural hot and mineral springs Ross (2001) points out that such springs were used during the middle ages and are today characterised by a firmly established belief in the curative powers of geothermal springs in the countries in which they occur. Health related travel or health tourism based on natural hot and mineral springs includes both medical and wellness components. The use of geothermal springs is an option for both components; therefore separation of health and wellness would not necessarily reflect the traditional use or availability of natural hot and mineral spring facilities wherever health and wellness tourism is found. Also, due to the visual impact of some related phenomena in the form of geysers, boiling lakes and bubbling mud ponds, geothermal activity is a major tourist attraction in several countries (e.g. Chile, Iceland, Japan, Kamchatka (Russia), New Zealand, and USA). Such features draw visitors to the remotest or most distant destinations to view the unique features of geothermal activity.

Natural hot and mineral springs can be defined as water that, while circulating underground, undergoes changes in its composition through heat, pressure and time caused by interaction with the surrounding rock (Erfurt-Cooper & Cooper, 2009). During this process minerals are dissolved out of the parent rock into the water, which then returns to the surface enriched with minerals and metallic trace elements deemed beneficial for balneological treatment. Scientific and legal definitions of geothermal springs vary considerably worldwide (Table 1.1).

Table 1.1 Classification and definition of geothermal springs(Erfurt-Cooper & Cooper, 2009).

Classification Category	Definition
Geothermal Spring	Includes hot springs and extreme hot springs - heated naturally while circulating through underground voids and pore spaces.
Natural Hot Spring	Generic term for geothermal springs of at least body temperature generally identified as pleasant bathing temperature - used for medicinal purposes & bathing. Naturally
Thermal Spring	Includes warm and hot springs - generally above 25^{o}C, may be artificially heated - used for medicinal purposes & bathing.
Mineral Spring	Can be cold, warm, hot, extremely hot or artificially heated - used for medicinal purposes & bathing.
Thermo-Mineral Spring	Geothermal mineral spring water and artesian water - used for medicinal purposes & bathing.
Artesian Spring	Naturally discharging from the subsurface - warm to hot water -25^{o}C to 100^{o}C - used for medicinal purposes.
Saline Spring	Various temperatures - very high mineral salt content – possible sea water used for medicinal purposes & bathing.
Saline Spring	Extremely hot spring - water reaches boiling point and above – used as visual tourist attraction in geotourism.
Submarine Hot Spring	Extremely hot spring - water reaches boiling point and above – used as visual tourist attraction in geotourism.

2-2- Health Resort and Spa Tourism

Hall(2003) suggests a positive prognosis for the future of health resort and spa tourism, confirming that this tourism sector has undergone significant renewal and expansion in recent years, and could well be reclaiming its position after a time of dormancy in the 20th century. Hall further provides some insight into the perception of different countries towards health resort and spa tourism

by differentiating between Europe and Asia, where the idea of health resort and spa tourism at geothermal spring destinations has a long tradition, and Anglo American countries where, in his opinion, this type of spa tourism is not widely recognised. Arguably spa tourism is now a major market sector in Australia, New Zealand, America, Canada and Asia (Altman, 2000; Swarbrick, 2006); possibly more so at developed health resort and spa facilities rather than just at natural hot and mineral springs. It is noted here that this type of spa experience is different from the common hotel spas widely available.

2-3- Medical Tourism

Medical tourism (also called medical travel, health tourism or global healthcare) is a term initially coined by travel agencies and the mass media to describe the rapidly growing practice of travelling across international boundaries to obtain health care (Jones & Keith, 2006; Lagace, 2007). Such services typically include elective procedures as well as complex specialised surgeries such as joint replacement, cardiac surgery, and cosmetic surgery. Virtually every type of health care, including psychiatry, alternative treatments, convalescent and rehabilitation care and even burial services are or can be made available. Over 50 countries have identified medical tourism as a national industry, though accreditation and other measures of quality vary widely across the globe, and there are risks and ethical issues that make this method of accessing medical care controversial (International Medical Travel Journal, 2010). Medical tourism is frequently classed as a large subset of health tourism, with recent studies by Ehrbeck, Guevara and Mango (2008) suggesting a total value of between USD 40 to 100 billion within four years.

2-4- Definition of Health

The most cited definition of health is that by the World Health Organisation (World Health Organization WHO, 2006), found on the first page of this organisation's constitution which came into force on 7 April 1948, with the following definition of health as its preamble: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". This definition has not been changed or updated in over five decades though in recent year's critic's have been calling for its reconsideration (e.g Saracci, R 1997).

2-5- Definition of Wellness

In general terms 'wellness' is defined by a number of sources as:

- The quality or state of being healthy, especially as the result of deliberate effort and also an approach to health care that emphasizes preventing illness and prolonging life, as opposed to emphasizing the treatment of diseases (Dictionary.com, 2009);

-A condition of good physical and mental health, especially when maintained by proper diet, exercise, and habits (The American Heritage (Dictionary, 2009).

- A healthy state of wellbeing free from disease (Examiner.com, 2009).

- The quality or state of being in good health especially as an actively sought goal, e.g. lifestyles that promote wellness (Merriam Webster Medical Dictionary, 2009).

- A state of mind as well as a physical state. Wellness is the physical state of good health as well as the mental ability to enjoy and appreciate being healthy and fit (Quan, 2009).

These definitions contain similar variables and their meaning does not vary widely. According to the Canadian Tourism Commission (CTC) health tourism and wellness tourism are two different sectors (De la Barre, de la Barre & Taggart, 2005), with wellness tourism sometimes regarded as a sub-category of health tourism and proposed to be 'the sum of all the relationships and phenomena resulting from a journey and residence by people whose main motive is to preserve or promote their health'.

2-6- Health Tourism

According to Tabacchi (2003) health tourism includes all travel that makes yourself or a family member healthier. Quite often health tourism and medical tourism can have the same meaning. In India health and/or medical tourism has emerged as a popular sector as a result of excellent medical treatment at low cost (Indiamarks, 2009), and is growing because people from all over the world now visit countries such as India for their medical and relaxation needs. The most common treatments are heart surgery, knee transplants, cosmetic surgery and dental care.

The best definition appears to be from Goodrich (1993, 1994) who identifies health tourism as" the deliberate attempt on the part of a tourist facility or destination to attract tourists by promoting health-care services and facilities in addition to regular tourist amenities. These health-care services may include medical examinations by qualified doctors and nurses at the resort or hotel, special diets, acupuncture, transvital injections, vitamin-complex intakes, special medical treatments for various diseases such as arthritis, and herbal remedies."

2-7- Health, Wellness and Recreational Tourism

Mueller and Lanz Kaufmann (2001) explain health and wellness tourism as the sum of all the relationships and phenomena resulting from travel by people whose main motivation is to preserve or promote their health ranging from holistic to strictly medical approaches. They may seek this outcome in specialised hotels and resorts that provide appropriate professionalknow-how and individual care in relation to health and wellness, or they may individually engage in one of the increasingly popular forms of health-promoting adventure activities such as white water rafting or snowboarding (Buckley, 2007; Mueller & Lanz Kaufmann, 2001). Those based at the treatment end of this continuum generally require a comprehensive and personalised service package comprising elements of medical, physical fitness, beauty care, healthy nutrition/diet, relaxation/meditation and mental activity/education. Recognising this, Smith and Kelly (2006) and Ross (2001) believe that health and wellness tourism is in many ways one of the most ancient forms of tourism, based on the Roman and Greek interest in travel and wellbeing, usually involving some form of thermal bathing. In a review of the use of health tourism, Ross (2001) suggests that there is no single definition for

health and wellness tourism as many kinds of travel contain elements that contribute towards making oneself or family members healthier. This review by Ross refers to the concept of health tourism as being as ancient as pre-history, but also as up-to-date as the future, confirming that in recent years there has been an unprecedented increase of interest in the aspects of tourism relating to the pursuit of health and wellness. However, the wellness element also incorporates the recreational element of hot spring tourism which is therefore accepted as a frequent adjunct without requiring an in-depth analysis for this study. The recreational aspect is a third category integrated included in hot spring tourism. Recreation is defined by the Collins English Dictionary (2011) as the 'refreshment of health or spirits by relaxation and enjoyment' and can refer to a pastime or diversion or even rejuvenation. Consequently the recreational use of natural hot and mineral springs is considered to contribute notably to the wellbeing of visitors of hot spring destinations.

3- BACKGROUND OF STUDY

There are many hot springs in Iran, but the majority of hot springs are found in Azarbaijan region, NW Iran, around of Sabalan and Sahand young volcanic provinces. A considerable number of hot springs have been developed for recreation and tourism environs Sabalan volcano, while others, usually those found in the rural areas, have not been similarly developed. There are three natural geothermal resources field in the Sabalan area(ENEL1983), the MeshkinShahr , Saraein and Borjlu fields located in the northern, western and southern parts of the Sabalan central volcano in Azarbaijan respectively (Figure 1), that the present study focuses on touristic potential of warm and hot springs in the Meshkinshar group.

The main Meshkinshahr thermal springs are located at the Moiel Village, Ghaynarja (Fig.2,a) and Valazir district(Fig.2,c) in the south and also Shabil(Fig.2,b), Gotoursou in the southeast part of Meshkinshahr city, within the north part of Sabalan volcano. There is a long tradition in this area for the use of geothermal baths as entertainment, relaxation and also for rehabilitation and curing of rheumatism and other illnesses. There has been an interest for a long time to build out the tourist industry to include balneotheraphy. So it has been a slow growth rate and normal projects have been launched in the last years in spite of considerable interest of the government and private investors. During the period 2000- 2010,Meshkinshahr group was developed as a recreation and tourism centre by the Ministry of Energy of Iran. The built infrastructure included: conference halls, chalets, the kitchen, sleeping halls and swimming pools.

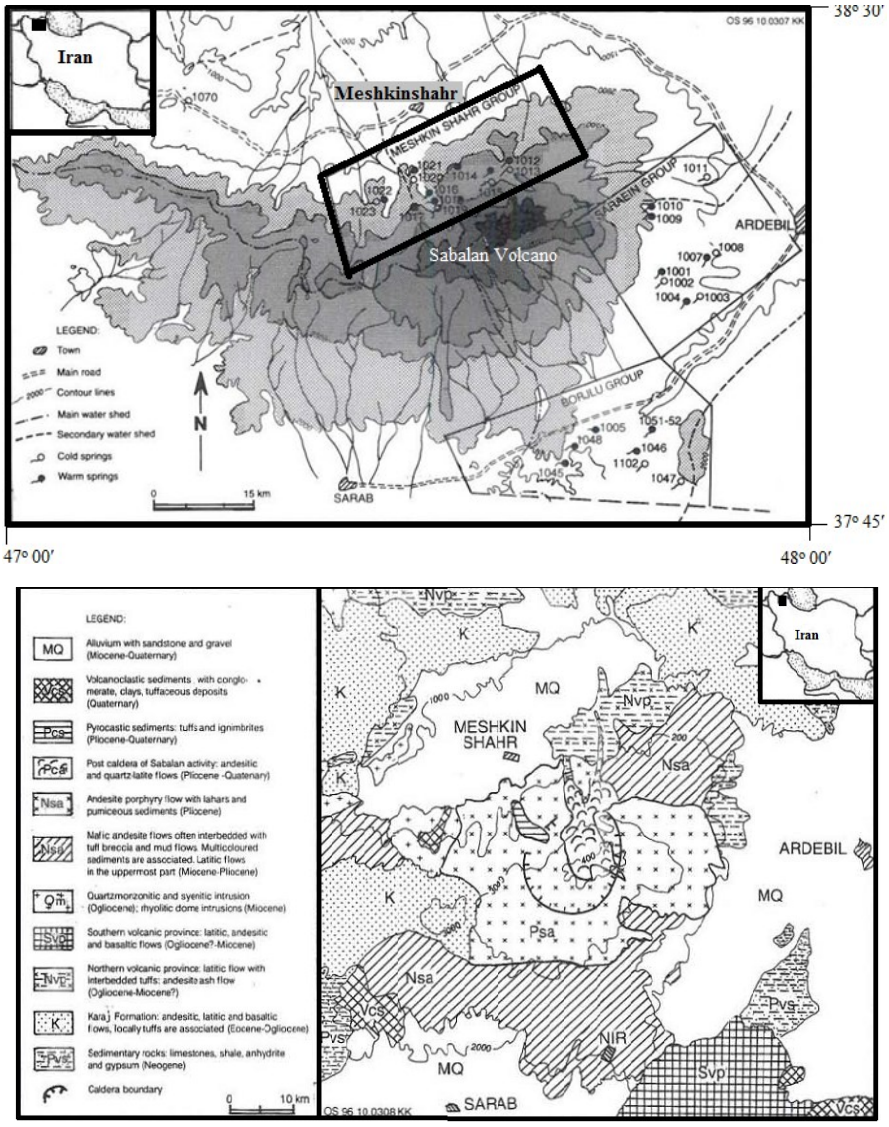

Figure1: The location of natural geothermal resources field and hot springs and Geological map in the Sabalan volcano area, NW Iran (Modified by ENEL1983).

4- GEOLOGY

Geographical descriptions of natural hot and mineral springs and their geological background are further key information sources about their physical aspects as used in health, wellness and recreational tourism (Dowling & Newsome, 2006). The fact that people are attracted to natural geothermal resources for their curative powers and the therapeutic impact of their mineral content is noted by Bernstein (1996) and is supported by Nahrstedt (2004) and Smith and Jenner (2000), who agree that this has always implicitly been one of the main reasons for choosing these destinations over those that do not feature natural hot springs.

The Sabalan is a large stratovolcano , consisting o f an extensive central edifice built on a probable tectonic horst of underlying intrusive and effusive volcanic rocks. The enormous amounts of magma discharged determined the formation of a collapse caldera about 12 km in diameter and a depression of about 400 m . The lava flows in the Sabalan are mostly trachy andesite and dacites with alternating explosive phases . The schematic geological map (Figure 1) shows that volcanic formations from Eocene to Quaternary are present.

Figure2. View of Ghaynarja(a), Shabil(b) and Valazir(c) hot spring complexes in Meshkinshahr natural geothermal resource field.

5- CHEMISTRY OF MESHKINSHAHR GROUP GEOTHERMAL WATERS

Meshkinshahr Geothermal resources are varied both in temperature and chemical properties. The present stud y is base d on a limited number of data obtained in 1977 - 1978 during the ENEL investigation in the Sabalan area, as no more recent data are available for this area. The original chemical analytical results for the spring waters are presented in different concentration units. The ionic balance for most of the samples is poor, the percentage difference between cations and anions exceeds 60 % for some samples. These samples are not included in the interpretation. For this study the concentration of all chemical constituents are re calculated to ppm concentration units. The concentrations of HCO_3^- and CO_3^{-2} are recalculated to CO2 as total carbonate content. The physical properties and chemical composition of cold and thermal spring waters from the Sabalan area are listed in Table1. The data for Meshkin Shahr warm and hot springs plot in several fields. Samples 16 and 17 which are the hottest in the Sabalan area (84°C) are close to mature waters although a little high in sui fate (chloride water with a sulfate component). The other samples from the Meshkin Shahr group are bicarbonate-sulfate waters and fall in the field of steam heated waters. Sample 12 is on the border between steam heated and volcanic waters, i .e. a sulfate water with a chloride component. It is interesting that the chemistry of samples 14 (49 °C) and 15 (IIQC) is the same (bicarbonate waters with a sulfate component). The lower pH of sample 15 would

suggest more steam effects even though its sulfate is a little lower. Sample 18 has all characteristics of steam heated waters. These samples are low in pH, with sample 12 being the lowest in pH of all spring water samples.

Table1: Chemical and composition of hot springs from Meshkinshahr natural geothermal field (ENEL1983).

Sample No.	Flow rate L/S	Temp ºc	PH	TDS	Na^+	K^+	Ca^{2+}	Mg^{2+}	CO_2
1012	**75**	**38**	**2.6**	**295**	**161**	**32.4**	**29.1**	**10.4**	**1080**
1013	**8.4**	**7**	**5.5**	**297**	**19.2**	**3.7**	**31**	**6.1**	**37**
1014	**6.2**	**49**	**6.6**	**1149**	**222**	**9.4**	**82.1**	**51.7**	**671**
1015	**0.4**	**11**	**5.7**	**579**	**26.2**	**2.1**	**67.1**	**46.2**	**1414**
1016	**21**	**37**	**6.2**	**1412**	**299**	**41**	**76.1**	**20.1**	**159**
1017	**9.2**	**84**	**6.6**	**2614**	**690**	**109.5**	**127.2**	**23.1**	**358**
1018	**1.9**	**44**	**5.5**	**595**	**80.5**	**30.1**	**95.2**	**24.9**	**531**
1019	**0.2**	**13**	**6.6**	**233**	**12.1**	**5.5**	**28.1**	**5.3**	**91**
1020	**0.1**	**10**	**7.5**	**251**	**18.2**	**3**	**43.1**	**8.6**	**192**
1021	**62.2**	**16**	**7.5**	**187**	**18.5**	**4.1**	**23.1**	**5.9**	**72**
1022	**3.4**	**23**	**7.6**	**179**	**16**	**4.9**	**14**	**3.2**	**66**
1023	**2.6**	**11**	**7**	**254**	**17**	**2.1**	**48.1**	**8.5**	**66**

Sample No.	So_4^{2-}	F^-	NH_4^+	Cl	SiO_2	B	S^{2-}	Fe^{3+}	Mn^{2+}
1012	**403**	**0.77**	**0.3**	**99.3**	**59**	**0.3**	**55.2**	**0.76**	**0.37**
1013	**139**	**0.47**	**0.5**	**1.6**	**77**	**0.02**	**0**	**0.02**	**0**
1014	**275.7**	**0.21**	**0**	**5.5**	**110**	**0.14**	**0**	**0.14**	**0.66**
1015	**141.7**	**0.44**	**0**	**2.1**	**88**	**0**	**0**	**0**	**0**
1016	**264**	**1.1**	**0**	**626**	**157**	**3.35**	**0**	**0.01**	**0.01**
1017	**437**	**1.6**	**0.3**	**975**	**129**	**8.21**	**0**	**0.92**	**0.62**
1018	**480**	**1.1**	**0**	**1.4**	**27**	**0.07**	**0**	**12.1**	**0.51**
1019	**40**	**0.7**	**0**	**6.3**	**58**	**0.06**	**0**	**0.01**	**0**
1020	**12.5**	**0.34**	**0**	**5.1**	**39**	**0.12**	**0**	**0.02**	**0**
1021	**13.4**	**0.2**	**0**	**13.5**	**59**	**0.09**	**0**	**0**	**0.01**
1022	**10**	**0.15**	**0**	**8.5**	**72**	**0.06**	**0**	**0.06**	**0**
1023	**11.7**	**0.16**	**0**	**18.5**	**36**	**0.01**	**0**	**0.01**	**0**

Sample No.	Ion.Bal. Diff(%)	Ba^{2+}	Sr^{2+}	Cs+	Li^+	Rb^+	Hg^{2+}	δ18 O %	3H (TU)	δD %
1012	**-20.69**	**0**	**0.05**	**0.25**	**0.21**	**0.1**	**0.005**	**-12.1**	**16.3**	**-74.8**
1013	**-1.16**	**0**	**0.07**	**0.03**	**0.007**	**0.01**	**0.006**	**-10.5**	**4.4**	**-65.2**
1014	**14.38**	**0**	**0.83**	**0.23**	**0.45**	**0.1**	**0.004**	**-11.8**	**0.8**	**-74.7**
1015	**1.33**	**0**	**0.16**	**0.02**	**0.7**	**0.02**	**0.0005**	**-11.4**	**3.3**	**-76.2**
1016	**-23.33**	**0**	**0.9**	**0.7**	**1.1**	**0.34**	**0.001**	**-10.2**	**6.3**	**-71.6**
1017	**-2.57**	**0.1**	**1.3**	**1.9**	**2.2**	**1.1**	**0**	**-9.95**	**1.11**	**-72.4**
1018	**-1.49**	**0**	**0.13**	**0.1**	**0.02**	**0.13**	**0.0005**	**-11.3**	**1**	**-73.6**
1019	**9.36**	**0.2**	**0.01**	**0.02**	**0.004**	**0.01**	**0.0007**	**-11.4**	**N**	**-76.2**
1020	**-17.86**	**0**	**0.23**	**0.03**	**0.003**	**0**	**0.0005**	**-10**	**35**	**-77.3**
1021	**15.21**	**0**	**0.1**	**0.03**	**0.02**	**0.01**	**0.0005**	**-11.1**	**6.31**	**-77.3**
1022	**-5.28**	**0**	**0.06**	**0.02**	**0.008**	**0.01**	**0.005**	**-130**	**9.52**	
1023	**67.03**	**0**	**0.23**	**0.02**	**0.012**	**0**	**0.0007**	**-10.9**	**64.7**	**-72.4**

6- POTENTIAL USES FOR MESHKINSHAHR GROUP HOT SPRINGS

The three potential development projects were selected from potential uses for Meshkinshahr group. These are health spa tourism or medicinal use, aquaculture and geothermal education. This was done by comparing the physical and chemical characteristics of Meshkinshahr group waters with the requirements of each use. This section only discusses health spa tourism or medicinal use.

Table 2 below gives the potential use, Meshkinshahr group characteristics, acceptance or rejection and the reasons for rejection or acceptance.

Table 2: Comparison of Meshkinshahr group hot springs with potential uses.

Potential use	Meshkinshahr group characteristics	Acceptance:? Rejection:×	Reasons for selection/ rejection
Balneology and medicinal tourism	Thermal water	?	Curative water
Recreational tourism	Spa resort	×	Avoid competition
Fish farming	Water not toxic	?	High water quality
Spirulina	Thermal water	×	Low flow rate
Mushroom and Organic Citrus fruits greenhouse	Temperature: 84 °C	?	20-90°C needed
Electricity generation	Temperature: 84 °C	×	Temperature: Low
Mineral extraction	Temperature: 84 °C	×	250°C needed
Water bottling	Water quality good except for br which is 72.61 µg/l	?	Local people are drinking the water without adverse effect
Geothermal education	Thermal water	?	Thermal water available

7- DISCUSSION

The purpose of this research was to assess the role of natural hot and mineral springs in health, wellness and recreational tourism. The conceptual model of their role in health, wellness and recreational tourism is supported by the research findings. The results contribute to knowledge about natural hot and mineral springs as a tourism resource and will support and add value to the current discussions about health, wellness and medical tourism as an area of increasing importance in international tourism. Because the role of natural hot and mineral springs in health, wellness and recreational tourism is currently underreported and academic research in this field is still limited, the findings add to the theoretical knowledge base of this particular field of tourism. To collect data for the case studies representative hot spring destinations were visited to observe and to gather information about individual facilities, cultural traditions, infrastructure and other components of hot spring tourism at these destinations.

The International Union of Official Travel Organizations (1973), defined health tourism as “the provision of health facilities utilizing the natural resources of the country, in particular of mineral water and climate”. Kusen(2002:178) gave a broad definition of health tourism which can be paraphrased as follows: health tourism is a complex economic activity that aims to foster the skilled, controlled use of natural health remedies, as well as medicinal practices and physical activities for the purpose of maintaining and improving the physical, psychological and spiritual health of tourists and thereby contributing to quality of their lives. In his conclusion, Vajirakachorn (2004, p.45) defines health tourism as “a form of tourism which attempts to attract tourists who travel for … health purposes by providing health facilities and activities that suit health tourists’ needs”. A spectrum of health tourism includes physical healing, beauty treatments, relaxation and rest, leisure and entertainment, life and work balance, psychological and spiritual activities (Smith & Puczko, 2009, p. 84). Some of these elements of the spectrum will be considered for Meshkinshahr group hot springs.

In order to select the type of health tourism suitable for Meshkinshahr group hot springs, the characteristics of Meshkinshahr group hot springs were compared with the requirements of each type of health tourism. The characteristics of Meshkinshahr group hot springs are: thermal spring, curative water, thermal pools, natural beauty, physical space, cultural art andaccommodation. In this regard, health spa tourism meets all the characteristics of Meshkinshahr group hot springs.The basic requirements of health spa tourism are: water, food or nutrition, exercise or movement, massage or body work, mind/body physical benefits, natural therapeutic agents, an environmentally suitable area, climate, cultural aspects, management and staff, beauty treatments, spa baths, hydrotherapy and relaxation techniques (Kusen, 2002). Treatments found in health spa tourism include: preventive health care, herbal remedy programmes, fitness programmes, balneotheraphy (underwater massage) hydrotherapy, destressing treatments, detoxification programmes, vitamin complex treatments and dietary programmes (Goodrich, 1993). Facilities found in health spa tourism include, accommodation, restaurants, hot and cold swimming pools, thermal spas and hydros, saunas and jacuzzis.

8- CONCLUSION

With considering this characters, Meshkinshahr group hot springs have a near- ideal development for health spa tourism that describes favorable conditions for health spa tourism and indicate the potential for profit and sustainability. From the findings presented it becomes obvious that the role of natural hot and mineral springs in tourism is an important one. But the highest quality of accommodation facilities, the relaxation location and atmosphere, absence pollution activity, protected of environment, healthy food catering, availability of health improvement facilities and treatments include: individual small thermal pools at each chalet,

hydrotherapy baths, indoor rheumatism baths and outdoor pools, jacuzzis and steam rooms, recommends near- ideal condition for , Meshkinshahr group hot springs.

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