

## Thermal Tourism in Algeria: Between Exploitation and Therapeutic Benefits

**Dalila Mesdoui** <sup>1/</sup> University of M'hamed Bougara, Boumerdes, Algeria, [d.mesdoui@univ-boumerdes.dz](mailto:d.mesdoui@univ-boumerdes.dz)

**Gasbe Hocine** / University of M'hamed Bougara, Boumerdes, Algeria, [h.gaceb@univ-boumerdes.dz](mailto:h.gaceb@univ-boumerdes.dz)

Received: 08./02 /2026

Accepted: 21-05-2026

Published 08-06-2026

### **Abstract:**

*This study aims to shed light on the reality of thermal tourism in Algeria by identifying the various indicators adopted for classifying thermal springs, as well as highlighting the most important therapeutic properties of their spring waters, which have made them a destination for thermal tourists. It was concluded that thermal tourism in Algeria has not yet reached the required level, as evidenced by the fact that most thermal springs remain under-exploited.*

**Keywords:** Tourism; Thermal Tourism; Thermal Springs; Medical Tourism.

**Jel Classification Codes :** L83 ; Z32 ; M31

### **Résumé :**

*Cette étude vise à éclairer la réalité du thermalisme en Algérie en identifiant les divers indicateurs retenus pour la classification des sources thermales, tout en mettant en relief les principales propriétés thérapeutiques de leurs eaux, qui en ont fait une destination prisée des curistes. Il en ressort que le thermalisme algérien n'a pas encore atteint le niveau requis, comme en témoigne la sous-exploitation de la plupart des sources thermales.*

**Mots clés :** Tourisme ; Thermalisme ; Sources thermales ; Tourisme médical.

**Jel Classification Codes :** L83 ; Z32 ; M31

---

<sup>1/</sup> Corresponding author: Dalila Mesdoui, e-mail address: [d.mesdoui@univ-boumerdes.dz](mailto:d.mesdoui@univ-boumerdes.dz)

## **I. Introduction**

Thermal tourism is one of the most promising service sectors, providing both recreation and therapeutic services. It can also be adopted as a leading economic development strategy, being a sustainable reservoir with enduring therapeutic potential. Thus, it offers a refuge for visitors from across the country and abroad to relax and seek medical treatment. Algeria is rich in many of these thermal springs, distributed throughout its territory. Some of these springs have been granted concession rights for exploitation by private investors, but these represent a small percentage compared to the total number of springs inventoried after a 2015 survey, which was estimated at 282 thermal springs. Each spring is distinguished by distinct physical and chemical properties that make it suitable for treating various diseases. Their effective exploitation could position them as prime destinations for alternative medicine.

### **Problem Statement:**

To what extent are Algeria's thermal springs exploited, and what health benefits result from their use?

Related subquestions include: What conditions and requirements are necessary for successful thermal tourism? Which indicators has the Ministry of Tourism adopted to classify thermal springs? What physiological properties of thermal waters make them suitable for treatment and therapy?

### **Study Objectives**

This study mainly aims to achieve a set of objectives:

- Identify local thermal resources and determine their therapeutic properties.
- Describe the principal health benefits that thermal visitors may obtain from using spring waters, given their physicochemical composition.
- Identify selected indicators used by the Ministry of Tourism to classify thermal springs.
- Offer recommendations that, if considered by policymakers, could contribute to the development of Algeria's thermal tourism sector.

### **Study Methodology:**

To address the study objectives, we adopted a descriptive-analytical approach. The research focuses on describing the study variables within a conceptual and theoretical framework for thermal tourism and applies this

framework to the Algerian context by examining several indicators used to classify thermal springs.

### ***Previous Studies:***

- Rezka Raouf (2024), An Analytical Study of Thermal Tourism in the Wilaya of Guelma, *Journal of Economic and Administrative Research*, Vol. 18, No. 2, highlights thermal tourism as a key sector for local economic development; the study reports 15 hot mineral springs in Guelma but notes that they remain underexploited.
- Massoud Zakaria and Zahouani Abdel-Razzaq (2022), Analysis of the Reality of Thermal Tourism in Algeria 2015–2020, *Journal of Finance and Business Economics*, Vol. 7, No. 2, documents limited progress in improving the national thermal inventory, with the last major update in 2015.
- Ben Sedira Ammar (2022), Thermal Tourism in Algeria in Light of the Master Plan for Tourism Development 2030 (SDAT), *Euro-Mediterranean Journal of Tourism and Hospitality Economics*, Vol. 4, No. 4, identifies infrastructure weaknesses that constrain the sector despite its potential.

This study emphasizes the therapeutic properties that distinguish many Algerian springs, owing to the distinct physicochemical composition of each source and their potential to support treatment for various conditions. The research therefore foregrounds social and health dimensions of thermal tourism alongside its economic implications.

### ***Study Structure:***

The study is organized in two parts. The first part presents the theoretical framework of thermal tourism and outlines key requirements for its success. The second part traces the history and development of thermal tourism in Algeria and examines the current situation using statistical indicators relevant to the classification and exploitation of thermal springs.

## ***II. Theoretical Framework of Thermal Tourism***

Thermal tourism is one of the most important types of tourism, where tourists seek it for the purpose of treatment and entertainment in exchange for the money they spend on various services at these thermal stations.

### ***II.1 Concepts Related to Thermal Tourism***

There are several concepts related to thermal tourism, among which we find:

#### ***Definition of Thermal Tourism***

Thermal spring (*la source thermale*): Hot water emerging from the earth's interior (from Greek *thermos*, meaning hot). Thermal springs are used for therapeutic purposes within thermal stations and typically have temperatures above the regional average. (Belkacem, 1992, p. 85)

**Thermal station (*la station thermale*):** A site where thermal springs are concentrated and where specialized facilities are established to provide treatment with thermal water; a thermal station includes treatment centers and recreational amenities.

**Thermal cure (*la cure thermale*):** A physician-prescribed natural treatment program, typically lasting 15–20 days, combining therapeutic procedures with a change of environment. Common therapeutic modalities include:

**Shower:** The patient receives targeted or whole-body sprays in a treatment room.

**Bath:** The patient soaks in thermal water and benefits from its thermal emanations.

Steam and thermal gases (*la vapeur et les gaz thermaux*): Applied by inhalation or topical exposure to affected areas.

Other methods include electrotherapy, exposure to natural water emanations, and therapeutic mud treatments. In general, thermal therapy techniques are grouped as: external therapy (for rheumatic and musculoskeletal conditions), injection-type therapies where appropriate and medically indicated, and internal therapy (oral consumption of thermal water for certain digestive or metabolic conditions).

### ***Types of Thermal Tourism***

There are several types of thermal tourism, including:

- Mineral or Sulphurous Baths: Natural springs whose hot waters contain mineral elements that can assist in treating various conditions. In recent years these sites have increasingly attracted tourists for recreational as well as therapeutic purposes (Al-Sisi, 2002, p. 186). Mineral baths include
- Cold Water Baths: Induce vasoconstriction, which stimulates and refreshes the body; they may also support immune function, reduce body temperature, and activate skin pores. Cold baths are used to relieve rheumatic pain.
- Warm Water Baths: Promote relaxation and sleep, relieve mild pain, and dilate blood vessels, thereby increasing local blood flow. They are used to alleviate joint pain, symptoms of herniated discs, and bronchial inflammation.
- Alternating Cold and Warm Water Baths: Performed by taking a warm bath followed immediately by a cold one. This sequence acts as a circulatory “massage”: the warm phase dilates vessels and the cold phase constricts them,

which can stimulate systemic circulation and aid in the removal of metabolic waste.

- Sand Baths: A traditional therapy involving burial in warm sand; used to treat rheumatic, joint, and back pain. This practice is common in desert oases such as Siwa (Egypt), Biskra, and Oued Souf (Algeria).
- Mud Baths: Refers to baths that use mud from stagnant lakes, or what is called volcanic mud. The treatment method involves burying the patient's affected limbs in it.

Therapeutic muds can be divided into four main categories based on their chemical and physical properties: (Maala & Tawfiq, 2005, p113)

- Peat Muds: Sediments from swamps, they are elastic and have an anti-inflammatory effect.
- Freshwater Bottom Sediments: More fluid muds containing organic and mineral deposits. They do not contain hydrogen sulfide (swamp gas). The therapeutic value of these bottom sediments lies in their moisture retention and fine mechanical composition (smooth texture without lumps).
- Volcanic Muds: Differ from other types of mud due to their specific organic matter (of petroleum origin) and the presence of active therapeutic elements such as iodine and bromine. They are used in specific quantities as an important or supplementary therapeutic agent for many diseases, especially neurological ones.
- Sulfide-Silt Muds: Bottom sediments of saltwater bodies. They are poor in mineral content but rich in iron sulfides and dissolved salts, more so than peat and volcanic muds.

### ***III. Requirements for Thermal Tourism***

The success of thermal tourism requires a set of conditions and circumstances that suit thermal tourists and encourage them to practice all types of thermal tourism. Among these requirements are: (Chakour, r & eter, 2003, p75)

#### ***First: Mineral Baths***

These baths use water that springs from nature, whether from springs or fountains. The latter are characterized by their rich composition of minerals with therapeutic properties, which attract many visitors for the treatment of various diseases, especially skin conditions, rheumatism, and others.

#### ***Second: Health Resorts (Spas)***

These are centers specializing in physical and mental health care, serving as a haven for individuals seeking psychological comfort and tranquility away

from life's problems and pressures. They provide a range of services that improve the physical, mental, and spiritual state of their visitors.

### ***Third: Tourist Accommodation***

The establishment and promotion of thermal tourism depend on the availability of tourist accommodation, which facilitates its use. Tourist accommodation includes resorts, tourist villages, and hotels.

### ***Fourth: Security***

The promotion of thermal tourism is contingent on the level of security provided. Therefore, managers and operators must be responsible for the security and safety of tourist facilities by providing a sufficient set of guarantees to the tourist that protect them and their property from any physical or moral danger, inside or outside the tourist facility, to foster the growth and prosperity of thermal tourism at the local and global levels.

### ***Fifth: Travel and Tourism Agencies***

These are commercial enterprises that act as intermediaries between the tourist and the tourism establishment in exchange for a commission. They perform a wide range of functions such as organizing domestic and international tourist trips, selling tickets, booking hotels, and more.

### ***Sixth: Tourist Guidance***

Tourist guidance is an important factor in encouraging and promoting tourism. It involves accompanying visitors to tourist destinations by specialized individuals called tourist guides. These guides provide visitors with diverse information in an interesting and enjoyable way. Guides must have good morals, be adaptable to different circumstances, and be proficient in several languages

## ***IV. Thermal Tourism in Algeria***

Thermal tourism is one of the most ancient and inherited activities, passed down from generation to generation. Its emergence is linked to the appearance of thermal springs and the therapeutic benefits they hold for many diseases.

### ***IV.1 History of the Emergence of Thermal Tourism in Algeria***

The emergence of thermal tourism is, in one way or another, linked to the history of the appearance of mineral baths and the beginning of their use for therapeutic purposes.

Thermal springs appeared in Algeria since ancient times, during the Roman era (VI century), where they were known as a means of treatment and were in great demand. They were characterized by their ritualistic concept

(related to religious rites). The modern situation is characterized by the ease of convincing people of the necessity of treatment with this type of hot water. These thermal springs became famous during the Roman period for carrying out several works such as (digging, building cisterns, swimming pools) to satisfy their therapeutic needs, especially as they suffered from the spread of several diseases, including skin diseases. All this is evidence of their extensive knowledge of the importance of these springs and the need to exploit them. However, these works faced several obstacles due to acts of destruction and the closing of some excavations.

At the beginning of the 19th century, some geological and hydrological studies, in addition to some research, led to the discovery of several very important thermal springs, which were later used by the French occupation to treat their soldiers. In return, this research gave value to the natural resources that Algeria possesses and their therapeutic importance, with the appearance of the first book by Daluni (Dalloni) in 1939 titled *Applied Geology of Algeria*.

Mineral baths date back to the distant Middle Ages and have the same mythological origins as the Greek and Latin ones. Our ancestors considered treatment with mineral water flowing from the earth's core as something sacred because its waters were their inheritance. It is the supernatural force that generously distributes itself to humanity against diseases, which is why some temples were built next to mineral springs, which began to receive visitors and patients, especially because they believed these waters were sacred due to their proximity to the temples.

According to some accounts, it appears that the Persians and Egyptians were the first to build public structures dedicated to bathing. With the beginning of the 19th century and the development of means of communication and transport, this sector gained more strength and importance. Finally, with the issuance of social laws in 1947, which gave this a dynamic character, the most famous thermal springs in Algeria were established." (Fadhila, 2004, p76)

Algeria boasts dozens of basins and mineral baths, which have many therapeutic features and properties. They constitute a real wealth and a strategic natural resource for the sector. Their earliest roots go back to the Roman era, the oldest being Hammam Essalihine in Khenchela, built 20 centuries ago during the reign of Emperor Vespasian, who made thermal water treatment a tradition, later followed by the West and the Turks. Most of the thermal springs that make up this stock are still in their natural state, so the state has worked to protect them through official documentation and registration. The Algerian legislator addressed mineral baths and thermal waters in Executive Decree No. 94-41 of 29/01/1994, which defines mineral bath waters and regulates their protection,

exploitation, and use (Democracy, 1994), and Executive Decree No. 07-69 of 19/02/2007, which sets out the conditions and modalities for granting concessions for the use and exploitation of thermal waters in (54) articles covering the definition of thermal waters and the institutions using them for treatment, their classification, monitoring, and protection, as well as the conditions and modalities for granting concessions in several general provisions. The decree also dealt with technical committees for thermal waters and the penalties that may be issued as a result of mismanagement or breach of obligations. (Al-Sha'biyya, 2007).

#### ***IV.2 The Reality of Thermal Tourism in Algeria***

Algeria is rich in significant thermal tourism capabilities and resources distributed throughout the national territory. Among these thermal resources are springs, mineral baths, and thalassotherapy centers, whose waters are characterized by many properties and features. Several indicators have been used to classify these thermal springs, including:

##### ***First: Classification of Thermal Springs by Flow Rate***

Thermal springs have been classified based on the flow rate indicator into three main categories as shown in the following table:

**Table (01): Algerian Thermal Springs According to Their Water Flow Rate**

| Category                          | Number of Thermal Springs | Percentage % |
|-----------------------------------|---------------------------|--------------|
| High flow (exceeds 10 L/s)        | 98                        | 35%          |
| Medium flow (between 5 to 10 L/s) | 48                        | 17%          |
| Low flow (less than 5 L/s)        | 136                       | 48%          |
| Total                             | 282                       | 100%         |

**Source:** Prepared by the researcher based on data from the Ministry of Tourism and Handicrafts, 2019.

From the table above, it is clear that the largest percentage, 48% of Algerian thermal springs, are characterized by a low flow rate (less than 5 liters/second), equivalent to 136 thermal springs. Meanwhile, 35% have a high flow rate (exceeding 10 liters/second), equivalent to 98 thermal springs, and 17% have a medium flow rate (between 5 and 10 liters/second), equivalent to 48 springs.

##### ***Second: Classification of Thermal Springs According to Temperature***

Thermal springs have been classified based on the temperature indicator into four main categories as shown in the following table:

**Table (02): Algerian Thermal Springs According to Their Water Temperature**

| Category                            | Number of Thermal Springs | Percentage % |
|-------------------------------------|---------------------------|--------------|
| Hot water (exceeds 50°C)            | 80                        | 28%          |
| Medium temperature water (35°-50°C) | 81                        | 29%          |
| Warm water (20°-35°C)               | 102                       | 36%          |
| Cold water (less than 20°C)         | 19                        | 7%           |
| Total                               | 282                       | 100%         |

**Source:** Prepared by the researcher based on data from the Ministry of Tourism and Handicrafts, 2019.

From the table above, it is clear that 36% of the thermal springs have warm water (20°-35°C), equivalent to 102 springs. 29% have medium temperature water (35°-50°C), equivalent to 81 springs. 28% have hot water, exceeding 50°C, equivalent to 80 springs. Finally, 7% are characterized by cold water, with a temperature below 20°C, equivalent to 19 springs.

### ***Third: Classification of Thermal Springs According to Chemical Properties***

Algerian thermal springs have been classified according to their therapeutic properties.

### ***Fourth: Classification of Thermal Springs Based on the Therapeutic Properties of Water***

The water of thermal springs has several physical properties that make it a therapeutic source sought by thermal tourists for the treatment of various diseases. The following table highlights some Algerian mineral baths in terms of their physical properties and therapeutic indicators:

**Table (03): Therapeutic Properties of Algerian Thermal Springs**

| Mineral Bath      | Location       | Physical Properties                                              | Therapeutic Indications                                          |
|-------------------|----------------|------------------------------------------------------------------|------------------------------------------------------------------|
| Hammam Ouled Ali  | Guelma         | Magnesium, sulfates, sodium salts, potassium, bicarbonates, 57°C | Joint and nerve diseases, pulmonary and respiratory diseases.    |
| Hammam Righa      | Ain Defla      | Calcium sulfate, iron                                            | Skin diseases, bone diseases.                                    |
| Hammam Bouhanifia | Mascara        | Calcium bicarbonate, bicarbonates, magnesium                     | Rheumatism, paralysis, ENT, arteriosclerosis, chronic pneumonia. |
| Hammam Bouhadjar  | Ain Temouchent | Sodium chloride, 57°C and 72°C                                   | Rheumatism, bone diseases, obesity, kidney stones.               |

|                  |         |                                    |                                                                                          |
|------------------|---------|------------------------------------|------------------------------------------------------------------------------------------|
| Hamam Boughrara  | Tlemcen | Chlorine, sodium bicarbonate, 45°C | Rheumatism, skin diseases, pulmonary and respiratory diseases.                           |
| Hamam Essalihine | Biskra  | Sodium sulfate, 45°C and 60°C      | Rheumatism, skin diseases, pulmonary and respiratory diseases.                           |
| Hamam Guergour   | Setif   | Sodium sulfate, 45°C               | Rheumatism, skin diseases, pulmonary and respiratory diseases, gynecology, eye diseases. |
| Hamam Rabbi      | Saida   | Chlorine and sodium, 49°C          | Rheumatism, skin diseases, pulmonary and respiratory diseases.                           |

**Source: Nawa Aicha, Natural Therapeutic Tourism in Algeria, Journal of Entrepreneurship and Sustainable Development, Vol. 02, No. 02, 2022, p195.**

The table shows that thermal springs are distributed throughout the country; we can hardly find a wilaya (province) without a thermal spring, whether exploited by modern or traditional methods. Thermal tourists visit them for the health benefits found in their waters, which are rich in various minerals (magnesium, sulfates, sodium salts, potassium sulfate, bicarbonates, calcium sulfate, sodium...). They are sought for treating many diseases, including: joint diseases, pulmonary and respiratory diseases, nerve disorders, skin conditions, bone diseases, rheumatism, paralysis, ENT (Ear, Nose, and Throat) issues, arteriosclerosis, obesity, kidney stones, eye diseases, and gynecological disorders. Many thermal tourists use it as an alternative medicine, as it has proven effective in either completely eliminating the disease or alleviating it.

#### ***Fifth: Classification of Thermal Springs by Concession Contracts***

The study and update of the inventory of thermal tourism resources for the year 2023 across the national territory showed the existence of 282 thermal springs in the form of natural springs or tunnels. The following table shows the exploitation status of these springs by the private and public sectors during the years (2022/2023).

**Table (04): Granting of Concession Rights for the Exploitation of Thermal Waters for the Years (2022/2023)**

| Year | Total Springs | Concession Contracts | Operational Thermal Establishments | Projects Under Construction | Projects Halted | Projects Not Started |
|------|---------------|----------------------|------------------------------------|-----------------------------|-----------------|----------------------|
| 2022 | 282           | 92                   | Public: 8                          | Public: 1                   | 22              | 13                   |
|      |               |                      | Private: 21                        | Private: 25                 |                 |                      |

|      |    |  |                       |             |    |    |
|------|----|--|-----------------------|-------------|----|----|
|      |    |  | Thalassotherapy:<br>2 |             |    |    |
| 2023 | 93 |  | Public: 8             | Public: 1   | 18 | 15 |
|      |    |  | Private: 24           | Private: 25 |    |    |
|      |    |  | Thalassotherapy:<br>2 |             |    |    |

**Source: General Directorate of Tourism, Granting of Concession Rights for the Exploitation of Thermal Waters, 2023.**

From the above, it is clear that there are 282 thermal springs spread across the national territory, but only 93 were exploited in 2023 through concession contracts, either by private entities in the form of thermal complexes (24 thermal stations) or the public sector (8 thermal stations). The other springs are either projects under construction, not yet started, or halted. There are also two thalassotherapy centers, which is a very small number, especially since seawater therapy is a suitable solution for many cases of fatigue, as well as for maintaining health and beauty, and weight loss. Some people visit them to treat chronic and infectious diseases. The following table shows the concession rights for the exploitation of thermal waters by wilaya (province).

**Table (05): Granting of Concession Rights for the Exploitation of Thermal Waters by Wilaya for the Year 2023**

| Wilaya      | Thermal Springs | Concession Contracts | Operational Establishments | Projects Under Construction | Projects Not Started | Projects Halted |
|-------------|-----------------|----------------------|----------------------------|-----------------------------|----------------------|-----------------|
| Adrar       | 1               | 0                    | 0                          | 0                           | 0                    | 0               |
| Chlef       | 7               | 1                    | 0                          | 1                           | 0                    | 0               |
| Batna       | 5               | 2                    | 0                          | 0                           | 0                    | 2               |
| Bejaia      | 3               | 3                    | 0                          | 1                           | 2                    | 0               |
| Biskra      | 4               | 7                    | Public: 1,<br>Private: 3   | 2                           | 0                    | 1               |
| Blida       | 6               | 1                    | Private: 1                 | 0                           | 0                    | 0               |
| Bouira      | 4               | 1                    | Private: 1                 | 0                           | 0                    | 0               |
| Tamanrasset | 3               | 0                    | 0                          | 0                           | 0                    | 0               |
| Tebessa     | 2               | 0                    | 0                          | 0                           | 0                    | 0               |
| Tlemcen     | 8               | 2                    | Public: 1                  | 1                           | 0                    | 0               |
| Tiaret      | 2               | 0                    | 0                          | 0                           | 0                    | 0               |
| Algiers     | 0               | 2                    | Thalasso: 1                | 1                           | 0                    | 0               |
| Djelfa      | 3               | 7                    | Private: 3                 | 3                           | 1                    | 0               |

|                       |    |    |                                          |   |   |   |
|-----------------------|----|----|------------------------------------------|---|---|---|
| Setif                 | 8  | 11 | Public: 1,<br>Private: 8                 | 1 | 1 | 0 |
| Saida                 | 6  | 1  | Public: 1                                | 0 | 0 | 0 |
| Skikda                | 6  | 1  | 0                                        | 0 | 1 | 0 |
| Annaba                | 0  | 2  | 0                                        | 0 | 2 | 0 |
| Guelma                | 14 | 13 | Public: 1,<br>Private: 5                 | 4 | 1 | 3 |
| Constantine           | 1  | 0  | 0                                        | 0 | 0 | 0 |
| Medea                 | 24 | 0  | 0                                        | 0 | 0 | 0 |
| Mostaganem            | 1  | 0  | 0                                        | 0 | 0 | 0 |
| M'sila                | 4  | 2  | 0                                        | 0 | 0 | 2 |
| Mascara               | 10 | 3  | Public: 1,<br>Private: 1                 | 1 | 0 | 0 |
| Ouargla               | 27 | 3  | 0                                        | 0 | 1 | 1 |
| Oran                  | 4  | 4  | Public: 1,<br>Thalasso: 1,<br>Private: 1 | 1 | 0 | 0 |
| El Bayadh             | 1  | 0  | 0                                        | 0 | 0 | 0 |
| Illizi                | 6  | 0  | 0                                        | 0 | 0 | 0 |
| Bordj Bou<br>Arreridj | 10 | 0  | 0                                        | 0 | 0 | 0 |
| Boumerdes             | 1  | 0  | 0                                        | 0 | 0 | 0 |
| El Tarf               | 9  | 4  | 0                                        | 2 | 2 | 0 |
| Tissemsilt            | 4  | 1  | 0                                        | 0 | 0 | 1 |
| El Oued               | 2  | 1  | 0                                        | 0 | 1 | 0 |
| Khenchela             | 7  | 1  | Private: 1                               | 0 | 0 | 0 |
| Souk Ahras            | 8  | 3  | 0                                        | 1 | 2 | 0 |
| Mila                  | 23 | 12 | 0                                        | 3 | 0 | 7 |
| Ain Defla             | 8  | 2  | Public: 1                                | 0 | 0 | 1 |
| Naama                 | 1  | 0  | 0                                        | 0 | 0 | 0 |
| Ain<br>Temouchent     | 2  | 2  | Public: 1                                | 1 | 0 | 0 |
| Ghardaia              | 2  | 0  | 0                                        | 0 | 0 | 0 |
| Relizane              | 21 | 1  | 0                                        | 2 | 0 | 0 |
| Ouled<br>Djellal      | 8  | 0  | 0                                        | 0 | 0 | 0 |

|           |     |    |                                           |    |    |    |
|-----------|-----|----|-------------------------------------------|----|----|----|
| In Salah  | 2   | 0  | 0                                         | 0  | 0  | 0  |
| Touggourt | 12  | 0  | 0                                         | 0  | 0  | 0  |
| Djanet    | 2   | 0  | 0                                         | 0  | 0  | 0  |
| Total     | 282 | 93 | Public: 8,<br>Private: 24,<br>Thalasso: 2 | 25 | 15 | 18 |

**Source: General Directorate of Tourism, Granting of Concession Rights for the Exploitation of Thermal Waters, 2023.**

"There are 93 concession rights for the exploitation of thermal waters that have been granted. Taking into account the physicochemical properties and therapeutic value of these thermal waters, there are more than 100 thermal springs that can accommodate new thermal projects, among which 34 mineral baths are exploited in a traditional way." (Mta.gov.dz, 2024). Furthermore, "2015 statistics recorded the existence of 282 thermal springs, of which approximately 79 were exploited through exploitation contracts according to 2018 statistics, while the rest have not yet obtained a legal exploitation license."

#### ***Sixth: Distribution of Spa-goers by Payment Method***

There are several types of thermal visitors. Some visit thermal stations as visitors (a visitor can be a day-tripper if their visit does not exceed 24 hours, or a thermal tourist if their trip exceeds 24 hours, meaning they are obliged to stay overnight outside their original place of residence). Another type visits thermal complexes after completing the required procedures with social security funds (the thermal tourist bears a specific percentage of the trip's costs, and the social security fund bears the remaining percentage). Another type consists of thermal tourists who visit thermal stations under contract (the beneficiary bears a percentage of the costs and the contracting body bears the remaining percentage as stipulated in the agreement). The last type is foreign thermal tourists, who come to the thermal stations with their own funds for treatment and recreation.

**Table (06): Thermal Tourism Statistics for the Years (2022/2023)**

| Period | Type of Spa-Goer | Overnight Visitors | Social Security | Under Agreements | Foreigners | Total Spa-Goers (Overnight) | Total Same-Day Visitors | Grand Total |
|--------|------------------|--------------------|-----------------|------------------|------------|-----------------------------|-------------------------|-------------|
| 2022   | Number           | 169,076            | 53,425          | 63,162           | 431        | 286,094                     | 2,618,371               | 2,904,465   |
|        | Frequency %      | 59.10%             | 18.67%          | 22.08%           | 0.15%      | 9.85%                       | 90.15%                  |             |
| 2023   | Number           | 168,759            | 46,540          | 58,958           | 934        | 275,191                     | 2,968,518               | 3,243,709   |

|             |             |        |         |        |          |         |          |          |
|-------------|-------------|--------|---------|--------|----------|---------|----------|----------|
|             | Frequency % | 61.32% | 16.91%  | 21.42% | 0.34%    | 8.48%   | 91.52%   |          |
| Growth Rate | Number      | -317   | -6,885  | -4,204 | +503     | -10,903 | +350,147 | +339,244 |
|             | Frequency % | -0.19% | -12.89% | -6.66% | +116.71% | -3.81%  | +13.37%  |          |

**Source: General Directorate of Tourism, Distribution of Spa-Goers by Payment Method, 2023.**

The table above shows that the number of visitors to thermal springs of all types varied between the two years. The total number of spa-goers in 2022 was 2,904,465, while in 2023 it exceeded 3,243,709, with a growth rate of 12%, equivalent to 339,244 thermal tourists. This is due to several reasons, especially the spread of the culture of thermal water therapy.

### ***IV.3 Therapeutic Benefits and Obstacles***

#### ***First: Overview of Algeria's Thermal Resources***

"Algeria has more than 111 geothermal springs, most of which are exploitable as modern thermal stations, in addition to investment opportunities available on its coastline that exceeds 2,111 km. Physical, chemical, and hydrogeological analyses have identified more than eight types of water. There are four types of sources at the mineral level: low-temperature thermal sources, medium-temperature thermal sources, thermal sources of therapeutic benefit, and high-temperature thermal sources. Algeria also has established mineral water stations, 211 springs of local importance, in addition to 11 sources of regional importance and 11 springs of national importance." (Ammar, 2022)

#### ***Second: Therapeutic Benefits of Thermal Spring Waters***

Several recent scientific studies have proven that hot thermal waters have medical and health benefits due to their mineral content. Among these benefits are: (Based on numerous references)

- Maintains bone and tooth structure due to its calcium content and helps protect teeth from decay due to its fluoride content.
- The magnesium in mineral water strengthens the body's immune system, controls blood pressure, and regulates sugars.
- The iron contained in these waters helps prevent anemia.
- Hot mineral water is beneficial for the digestive system due to its bicarbonate content, which helps neutralize acids in the stomach and intestines and maintain balance, in addition to chloride, which regulates acids.
- Mineral baths provide an important treatment for detoxification.

- Hot mineral water is useful in treating many diseases, including: skin infections, chronic and acute arthritis, joint swelling (joint effusion), rheumatoid arthritis, neurasthenia (nervous exhaustion), hemiplegia, and high blood pressure in sterile women.
- Hot mineral water has properties for acquiring fresh, healthy skin, which has made them important tourist resorts.
- Sulphurous thermal baths are perfectly suited for treating musculoskeletal diseases in patients with degenerative joint and spinal diseases, including herniated disc problems, Bekhterev's disease (ankylosing spondylitis), rheumatic inflammatory diseases, and muscle pain.
- Sulphurous thermal baths are successfully used in the treatment of eczema and atopic dermatitis, and are generally recommended as part of a spa visit.

Mud treats many diseases, including: spinal cord injuries and paralysis, complications of spinal cord injuries, spondylitis and chronic back pain, diseases and complications of the nervous system and peripheral nervous system, rheumatism and central joint diseases in their final stages, as well as male and female infertility, vascular diseases and thrombosis in particular, treatment of vascular occlusion, male genital diseases such as prostatitis, skin diseases such as psoriasis, vitiligo, eczema and acne (with caution in the presence of ulcers), superficial red impetigo, and exfoliative dermatitis, as well as post-burn boils and post-surgical wounds, diseases of the genital organs such as salpingitis, ovarian dysfunction and uterine deviations, diseases of the ear, nose and throat, and dental system diseases. These are some of the diseases medically confirmed through scientific research, and there are many others such as epilepsy and cerebral palsy.

### ***Third: Obstacles to Thermal Tourism in Algeria***

Obstacles related to the management of the tourism sector, including thermal tourism: The lack of a development strategy at the level of regional tourism directorates, and their failure to distribute tourist maps and informational materials, has hampered the exploitation of the thermal heritage.

The high price of tourist real estate is one of the main problems facing thermal tourism, in addition to the multiple ownership between the public and private sectors, which has further hindered investment in this field.

The near-total absence of specialized financial and banking institutions for financing tourism investments is a major obstacle facing investors on the administrative and legal side.

The weak position of tourism development in thermal tourism plans in general. This lack of interest may be due to the local communities' lack of necessary means to cover the basic tourism requirements of that area.

Low tourism awareness and lack of public education about the importance of thermal tourism, which has deprived it of its basic advantages, especially the benefit of exploiting its potential.

## **V. Conclusion**

- Algeria is rich in numerous thermal springs, with the Ministry of Tourism having inventoried more than 282. However, a large percentage of them have not yet been granted concession rights for exploitation to private investors in the form of tourist stations and complexes that would allow for the provision of numerous services to thermal tourists, most importantly treatment and therapy in addition to other recreational services. Through the research paper presented, a number of results were reached, the most important of which are:
- The advantage of thermal tourism lies in its combination of treatment and entertainment, especially since Algeria possesses vast thermal resources spread throughout the national territory.
- There are three main techniques for thermal therapy: external therapy (e.g., for rheumatism), internal therapy (e.g., drinking thermal water for stomach ailments), and injection therapy (e.g., treating muscles by injecting thermal gas).
- There are three types of thermal tourism: mineral or sulphurous baths, sand baths, and mud baths, each with its own therapeutic properties according to its physicochemical composition.
- For thermal tourism to succeed, a set of requirements must be met, the most important of which are: mineral baths, health resorts, transportation, accommodation, and tourist guidance, often provided by travel agencies.
- The history of thermal tourism dates back to the Roman era, where our ancestors considered it sacred. In 1994, the Algerian legislator issued an executive decree defining and regulating mineral bath waters, their protection, and exploitation, followed by several decrees managing and organizing thermal springs in Algeria.
- Several indicators are used to classify thermal springs, including the spring's flow rate, water temperature, the therapeutic properties of the water, concession contracts, and the payment method for using the thermal springs.
- **Suggestions**
- Facilitate the procedures for obtaining concession rights for the exploitation of thermal springs by private investors to increase the exploitation capacity, as the currently exploited rate does not exceed 34%.
- Organize scientific seminars and awareness days to introduce the physiological properties and therapeutic benefits of thermal waters, to motivate all groups, especially youth, to use them for treatment and therapy.

- Provide material and moral support to owners of start-up projects to make the thermal tourism sector a fertile ground for tourism investment.
- Establish agreements between hospitals and thermal stations to make them complementary sectors for treatment.
- Work on improving the macroeconomic balances in the tourism sector, including thermal tourism: employment, trade and financial balance, and tourism investment.
- Enhance the contribution of the thermal tourism sector to trade and open up at the national and international levels.
- The effects of the thermal tourism sector must be extended to other sectors: agriculture, industry, transport, services, employment, etc.
- It is necessary to establish and implement specific laws for thermal stations.

## **VI. References:**

*Al-Sisi, M. A. (2002). Principles of tourism. Al-Wala' Modern Printing Press.*

*Bouras, B. (1992). Thermalism: A scientific concept and harmonious function of differences in a station. Tourism Training Center, Algiers.*

*Chakour, R. (2003). The contribution of promotion via social networks in activating thermal tourism in Algeria—A case study of a sample of travel agencies. Al-Muntada Journal for Economic Studies and Research, 7(1), 173.*

*General Directorate of Tourism. (2023). Distribution of bathers by payment method.*

*General Directorate of Tourism. (2023). Granting concession rights and exploitation of thermal waters [Report No. 07/69].*

*Khelakhi, F. (2004). The role of mineral baths in promoting tourism in Algeria: A case study of the Sidi Fredj seawater treatment center [Licentiate thesis, National Higher School of Aurassi Tourism].*

*Ministry of Tourism and Handicrafts. (2024, November 7). Official website. <http://mta.gov.dz>*

*Noui, A. (2022). Natural therapeutic tourism in Algeria. Journal of Entrepreneurship and Sustainable Development, 2(2), 157.*

*People's Democratic Republic of Algeria. (1994). Executive Decree No. 94/41 defining mineral bath waters and regulating their protection and exploitation (Official Gazette).*



*People's Democratic Republic of Algeria. (2007). Executive Decree No. 07/69 on conditions and procedures for granting and exploiting thermal waters (Official Gazette, No. 3).*

*Najjar, M., & Tawfiq, R. (2005). Fundamentals of marketing: An analytical introduction (3rd ed.). Wael Publishing House.*