

## The Algerian Sahara in French Policy - Vital Resources as an Example

**Dr. Ouabel bekhta**

Faculty of literature and languages

Departement of Human and Sosial Sciences

Ahmed ben yahia El Wancharissi Univercity- Tissemsilt

Lecturer class A

Email : [bekhta16alger@yahoo.com](mailto:bekhta16alger@yahoo.com)

Revised : 15.10.2025

Accepted : 24.12.2026

Published : 21.02.2026

### **Abstract:**

Water is an essential element of life. It is the main reason that drives humans to gather and establish civilizations throughout history, contributing to their prosperity and development. In the desert, water is the main source of life and the primary factor determining the nature, form, and economic, social, and cultural characteristics of human settlements.

In this article, we attempt to highlight its importance and locations, especially in the southern region, namely the Sahara, in addition to the various ways of utilizing and benefiting from it in living and agriculture during the French colonial period.

This research relies heavily on the writings of foreign authors and experts in this field, who traveled through the Sahara and recorded important details about its nature and human life, such as the French expert Ville, who produced a detailed report on the Sahara and its most important water sources, which was one of the reports relied upon by the French administration to complete its settlement project in the region.

**Keywords:** Sahara, Ville, Artesian Wells, Groundwater, French Administration.

### **Introduction:**

Allah Almighty says: *“Do the disbelievers not realize that the heavens and earth were (once) one mass then We split them apart? And We created from water every living thing. Will they not then believe?”*

<sup>1</sup> Water is the source of life for any human society, and it is the basis for development and civilization in various fields, especially in the Sahara region, where it is an essential and necessary element for its inhabitants and their social life. It is the basis of all life, as evidenced by the many writings of Arab and foreign travelers who visited the Sahara and recorded daily facts in the form of detailed memoirs about the region and its natural resources. Not only that, but they also went beyond that to describe their relationships with some of the customs, traditions, and lifestyles of the region. Among those who wrote closely about the methods and techniques used to establish the French project in Algerian society in general, based on the potential of its water-rich regions, was the energy and mining engineer Ville.

### **1- Introduction to Ville:**

Ludovic Gabriel Alexandre-Raymond-Joseph Ville, a student at the Polytechnic School (School of Mines) class of 1837, spent most of his life in Algeria, with a particular interest in water research. He was a mining and metallurgical engineer, famous for his multi-disciplinary expeditions in 1855 to southern Algeria<sup>2</sup>, where he studied water sources and artesian wells in the Sahara region and the eastern and western basins of Chlef and Médéa. He was a journalist and researcher, born on February 26, 1820, in France. He began working as a general inspector in Algeria for nearly 30 years<sup>3</sup>, during which time he was able to identify and publicize the natural and mineral resources that Algeria and its three regions are rich in, especially in the southern region. He wrote many books and memoirs, including two volumes, the first on rocks and the second on mineral deposits in Oran and Algiers, which gave a strong impetus to the French colonial administration and authorities to take action and pay attention to the south. He died on May 10, 1877<sup>4</sup>.

### **2- Introduction to the Algerian Sahara:**

The Algerian Sahara extends south of the Saharan Atlas, covering 51% of the total area, estimated at 1,654,411 km<sup>2</sup>, and constituting the largest part of Algerian territory. Most of its formations are ancient volcanic rocks<sup>5</sup>. The eastern Sahara region is bordered by the southern margins of the Saharan Atlas to the north, Tunisia and Libya to the east, and Niger and the Tadmit Plateau to the west. The western Sahara region is defined by clear natural features, namely the mountain slopes of the Atlas range to the north and the Tadmit Plateau to the east, and Morocco, Western Sahara, Mauritania, and Mali to the west and south<sup>6</sup>.

The geographical location of the Algerian Sahara differs greatly from the rest of Algeria due to the harsh climate of the desert, which in turn affects the vegetation cover and livestock that influence human activity. As for the demographic composition, the inhabitants of the Sahara have different origins, but they are united by a single geographical area.

### **3- Discovering the Sahara Region:**

Southern Algeria is part of the African Sahara Desert, which stretches from the Atlantic Ocean in the west to the Red Sea in the east, and from the Atlas Mountains in the north to the Sahel countries in the south. The desert covers 90% of Algeria's territory, and its borders were officially occupied by the Governor-General of Algeria on December 4, 1852<sup>7</sup>.

This was one of the French interests in southern Algeria dating back to the reign of Louis XIV, who aspired to reach the city of Timbuktu at a time when there was a need for the raw materials required by the Industrial Revolution and capital investment<sup>8</sup>, which would restore the French Empire to its former strength and political and military status, in the context of a love of adventure and a desire to discover the treasures of the desert, accompanied by reports on everything related to the riches of the Saharan region.

Their interest increased even more after they extended their influence and domination over the eastern region of Algeria between 1830 and 1850, especially during the period of popular resistance, when the south and the Sahara became the most important strongholds of the resistance, starting with the Za'atisha Oasis in 1849, the uprising in Ouargla led by Mohamed

Abdallah Cherif in 1851, the resistance of Laghouat in 1851<sup>9</sup>, and other revolts that led to a shift in colonial policy towards a phase of surveillance and great interest in the region.

The latter played an important civilizational role by connecting the most important regions of northern Africa with the south, starting with the region of Laghouat, which is considered a strategic center connecting the oasis region with the Ziban tribes, Djelfa, and other regions in various fields.

#### **4- Water Sources in the French Plan:**

As part of the colonial expansion policy to cover all regions of Algeria, the Governor-General of Algeria, General Rondon<sup>10</sup>, worked hard to tighten his grip on the Algerian Sahara, or as it is called (the ship of camels), thanks to his continuous encouragement to write about it.

For this reason, several exploration associations published reports with the aim of introducing the Sahara and its potential, its abundant resources, and its climatic conditions, such as high temperatures, dry climate, difficult living and residing conditions. The colonial authorities were not satisfied with these reports alone, but mobilized a group of military researchers and thinkers to penetrate the heart of the Saharan population and live among them to uncover the potential and riches of this geographical area, which was difficult to reach and aroused the fears of the French authorities due to its remoteness and arid nature.

It became necessary to regulate the issue of water and harness its services for foreign settlers, particularly French ones, given its abundance and wealth of underground resources. It is one of the richest water networks and resources, especially the wadis (valleys), which originate in the Saharan Atlas. General Randon made his famous statement expressing the importance of utilizing this energy and its role in accelerating the French plan in the southern region, saying: "... The most likely crown of success for our efforts is when water flows abundantly and life returns to us with wealth...".<sup>11</sup> This plan was launched in 1855, and through reports from French agents on the colony's wealth, the colonial administration became convinced of the need to devise a plan to exploit Algeria's water resources in various ways.

For this reason, Ville's writings were among those that expressed the richness of the Sahara region in terms of water energy, indirectly pointing to the need to exploit it under the concept of reconstruction and urbanization for the benefit of foreign groups of different races, within the framework of a policy of water extraction and well drilling. This is why an article by Russian journalist Doshi Chiif stated: "There are no fewer than forty artesian wells between Chott Melrhir and the city of Touggourt," which was a call to implement aspects of French settlement policy in Algeria, manifested through French economic policy based on the depletion and exploitation of the Sahara's underground resources.

#### **5 - Types of Water Sources in the Sahara:**

In light of the study of the settlement project and its effectiveness in Algeria, and after determining the rate of settlement centers built in various provinces, it became necessary to organize the issue of water and provide its services to settlers in particular, and to make the most appropriate use of various fields and crops, in addition to caravans and trade, as they are

considered among the richest water networks and resources, especially the wadis(valleys) that originate from the Saharan Atlas. <sup>12</sup> .

The Sahara has many forms of water sources, including wadis, most of which originate in the Saharan Atlas and descend southward through the sand. Therefore, according to these reports, we will focus on a large group of waterways, which vary in name and form, the most important of which are:

**a. Wadis (Valleys)**

The Sahara contains the largest valleys, such as Wadi Touil, Wadi Haggar, and Wadi al-Arab, which irrigate the oases of El Ouldja and Zribat el-Wad, as well as Wadi Labyad, which originates in the Aurès Mountains and irrigates the oases of Seryana, Sidi Khalil, and Sidi Okba<sup>13</sup> , in addition to Wadi Zargoun, Wadi Namous<sup>14</sup> , and others. As well as Wadi Djir, which Ville described as garden-like, as it lies in the middle of a group of wadis, surrounded by trees, with few pastures and stones, but difficult to reach<sup>15</sup>. The latter joins another valley, Wadi Saoura, in the Ighli region, where it is surrounded by a group of villages that benefit from it for agriculture and drinking, due to its abundance of fresh water<sup>16</sup>.

The French government therefore examined the specific legislation governing the use of waterways<sup>17</sup> by referring to the law of June 16, 1851, whereby Emperor Napoleon III, in accordance with Article 538, stipulated that property, including water energy, must be used for the public good<sup>18</sup>; and pursuant to Article 714 of the Napoleonic Code, which states that the use of property commonly used by all must specify “how to enjoy it,”<sup>19</sup>. Then another governing organization established by Dubreuil<sup>20</sup> describing it by saying “rivers unsuitable for agriculture are considered floating water. They should be assigned to the banking system to manage them properly, especially since the population is known for its simple use”<sup>21</sup>. This statement reflects a **colonial discourse** that portrays the local population as incapable of managing their resources, justifying the **removal of control from them and handing it over to institutions that serve the colonial power**. Even if the argument of simple use was used during the colonial period, it is clear that this idea was used as a pretext to strip the local population of their right to manage their water resources, on the grounds that they used them in a traditional and irrational manner. Under the pretext of organizing and regulating these resources, water management was transferred to centralized colonial institutions whose real goal was to **control a strategic resource and direct it to serve colonial interests**, rather than to preserve water or the interests of the region's inhabitants.

During a visit to the region stretching from Boughar to Laghouat in 1855, engineer Ville wrote several articles entitled “Study on the Search for Groundwater” in 1858, which were published in French: *études sur la recherche des eaux souterraines – entre Médéa et Laghouat et dans le Sahara Algérien*. He noted that the region consists of a road suitable for carriages, which is easy to traverse in hot and dry weather, but in winter, with the onset of rain, the soil often becomes very wet, reaching a level of first-class clay. It is therefore a road that follows the plains continuously for about 20 km to the end of the Mokhtar Djerba<sup>22</sup> Valley, making it difficult to walk on. He therefore noted that the area is full of wells with the potential to be developed to serve the French economy in the future .

Ville mentioned that when approaching the entrance to this valley, we come across the famous swamp known as Wadi Kséria, whose protrusions become higher, meaning they slope down towards the swamp. There is also another valley called El-Maleh, located four (04 km) kilometers from the first. However, according to Ville, the search for a pool in the vast and large area at the northern end of the Kséria region offers little chance of success<sup>23</sup>. He described the area as slopes flowing with water in layers, the most important of which are two layers called Al-Zahriz, known for their high water levels.

Djelfa is a strategic military center located in the south of the mountain range famous for its chalk deposits in Mount Senelba, which rises to 1,091 meters above sea level, and another at around 1,500 meters. Due to the extremely harsh dry climate, especially in summer, the valleys are one of the most important sources of water for the inhabitants of the area surrounding the Djelfa River, all the way to Mount Sahari and Mount Djellal. Among these sources, we can mention the following, in order: Wadi Hadjia, Wadi Kourirek, and Wadi Melah, in addition to Oued El-Djir Al-Gharbi, adjacent to Wadi Al-Saoura, which sits on the largest wadi in the southern part, Wadi Messaoud. In the north, there is Wadi M'zi, whose waters reach as far as Laghouat, making it an important source for the region's gardens and farms<sup>24</sup>.

It is clear from my study of Engineer Ville's report that he sought to present the new colonial settlement as different and distinct from the old type of traditional settlement in the southern region. Thus, the purpose of the report was, directly or indirectly, to convince public opinion and make it understand the nature and objectives of French colonial policy, which can be understood as defending and promoting colonial purposes, without declaring some of them.

According to Ville, the Saharan region has many valleys that descend and originate from the Saharan Atlas towards the south, but they disappear under the sand. This is why the region has many ains (wells), including Ain El-Ibel and Ain Sidi Makhoul<sup>25</sup>.

The purpose and goal of French colonial policy was clear, through forms and methods of material and human exploitation, as it rushed to build numerous settlements throughout the country, extend control over the transportation network, and control water policy, and then employ it to serve French authority in the Algerian Sahara.

#### **b. Wells:**

Wells represented the way in which humans have attempted to overcome water scarcity in the desert and adapt to the region, its harshness, and its characteristics. Due to the geological composition of the surface, the spread of sand, and the high temperatures, the ground dries out and water does not settle there, as it evaporates or descends into the underground layers, forming large, deep water pockets.

The Sahara is known for other water sources, namely wells, the most important of which is the El Messerar well, located north of the sand dunes known in the region. The water is drinkable, and due to its high level, several wells with a depth of 10 to 12 meters<sup>26</sup> have been dug. In addition, the area has a few wells with high salinity, but they need to be worked on as sand easily flows into them. These wells are found in abundance on the road connecting Djelfa to Oued Souf, an area known for its salt rocks or salt flats<sup>27</sup>, which extend to the end of Wadi Mila, forming a parallel chain divided into two groups. Ville proposed separating and

filtering them from the layers of gypsum and sandy soil, which he considered to be the most important of these groups, representing the only sources of water for irrigating the land during this phase<sup>28</sup>.

In addition, it was unknown to the French government, so Ville took the opportunity to introduce it and highlight its importance, in order to serve European economic and industrial development in Algeria and later in the Sahara. This shows us the precision of the French plan in the southern region, to the extent of exploiting resources even in the bowels of the earth. This confirms the ugliness of French colonialism and exploitation in Algeria.

A report by engineer Ville on how to search for underground water along the route between Médéa and Laghouat in 1855 confirmed the possibility of digging three types of wells: the first at a depth of 12 meters, the second between 450 and 500 meters, and the third at a depth of 50 to 60 meters, most of which is suitable for daily use. He mentioned that Médéa has water sources starting from Médéa, passing through Miliana to Boughar, and from Médéa to Laghouat. The latter includes many water sources, the most important of which are: Wadi Benalia, western Zahraz basin, Melh El Djelfa - Wadi Djelfa - Mount Sahari - Sidi Makhlouf and others<sup>29</sup>. According to what has been mentioned, it appears that the French administration, in order to complete the implementation of the water extraction policy and to exploit rainwater, worked on the orders of the general government on the need to start researching and building so-called artesian wells to make the best use of water resources, especially since many European groups were flocking to Algeria and the rest of the region, including the southern region<sup>30</sup>. In addition, there are other artesian wells mentioned in French reports called in local dialect *diktelt*, which are defined as long covered trenches fed by a large group of wadis and aquifers<sup>31</sup>.

The Sahara region is endowed with so many vast resources that it has become the dream of the French administration in terms of exploiting and benefiting from its riches. This has made the Sahara a hub for the continuation of the exploitation plan, despite the difficulty of living or even surviving there. However, for France, it is imperative to remain there, whatever the cost.

### **Conclusion:**

The colonial power exploited all of Algeria's potential, both underground and above ground, which was abundant in agricultural land. French policy therefore built its economy and support structures on the basis of the depletion and exploitation of underground resources, for which the country had been known since ancient times. This is evident in the settlement yearbook, which describes Algeria's geography and its most strategic locations, particularly the Sahara region, which was the focus of settlement measures during the reign of General Randon.

Ville's writings were among the studies that served the French colonial project in Algeria for long periods of time, serving as a guide and facilitator for establishing the rules of colonization in various regions of Algeria, especially how to penetrate and access the desert borders, which were considered difficult terrain for France to reach. Therefore, during the Second Empire, Governor-General Randon was keen to focus on the Algerian-African Sahara

with the aim of penetrating deep into it and then extending his influence, as a means of spreading civilization according to the French concept.

## Reference

---

- <sup>1</sup> Holy Quran, Sourat Al-Anbiya, verse 30.
- <sup>2</sup> Hippolyte Peut, Annals of Algerian Colonization, Monthly Bulletin of French and Foreign Colonization, Volume 1, Paris, 1852, p. 98.
- <sup>3</sup> Hippolyte Peut, *ibid.*
- <sup>4</sup> - *ibid.*
- <sup>5</sup> - A-G-P. MARTIN, Saharan Oases, published by Imprimerie Algerienne, 1908, T1, p: 06.
- <sup>6</sup> - *ibid.*
- <sup>7</sup> - pierre Denis, The French Army in Bonaparte's Sahara, Paris, 1992, p : 16.
- <sup>8</sup> - Henry Lhote, The Hoggar Space and Time "Civilization Collection," Paris 1984, p: 191.
- <sup>9</sup> - pierre Denis, *op cit*, p :59.
- <sup>7</sup> - Born in France in 1795, died on 13/01/1871, appointed Governor-General of Algeria from 1851 to 1858, his plans included realizing the dream of a French African kingdom. See: (Paul Azan, The Great Soldiers of Algeria, publication of the National Metropolitan Committee for the Centenary of Algeria, Algiers, 1930, p. 56)
- <sup>11</sup> - Achilles Filais, history of the conquests of the colonization of Algeria, 1830-1860, Paris, 1860, p : 385.
- <sup>12</sup> -Halimi Abdelkader, Geography of Algeria: Physical, Human, and Economic, Ed. 1, Arabic edition, Algeria, 1968, p. 87.
- <sup>13</sup> - International Colonial Institute, Different Irrigation Systems in Algeria and Tunisia, Augustin Challamel, Paris, 1909, Vol.4, p: 268.
- <sup>14</sup> -A.N.O.M, 2x103, water ownership in Algeria.
- <sup>15</sup> - Hippolyte Peut, *op cit*, p : 99.
- <sup>16</sup> - E - F. GAUTIER, Algerian Sahara, Vol. 1, Armand COLIN Bookstore, Paris, 1908, p : 21.
- <sup>17</sup> - A.N.O.M, 2x103, *ibid.*
- <sup>18</sup> - Arthur Girault, Principles of Colonization and Legislation, Paris, 1924, p: 370-372.
- <sup>19</sup> - Arthur Girault, *op cit*, p: 369.
- <sup>20</sup> - A French officer born in France in 1780, he was considered an expert in the field of water, playing a role through his writings that encouraged the occupation authorities to exploit this resource, particularly in draining swamps. See: Hippolyte Peut, Thermal and Mineral Waters of Algeria, Annals of Colonization, vol. 2, 1853, p. 80.
- <sup>21</sup> - Paul, Leroy-Beaulieu, Algeria and Tunisia, 2nd edition, Paris, 1897, p : 89-92.
- <sup>22</sup> - Hippolyte Peut, Thermal and Mineral Waters of Algeria, *op cit*, p : 82.
- <sup>23</sup> - Hippolyte Peut, *op cit*, p: 227.
- <sup>24</sup> - *ibid.*
- <sup>25</sup> - *ibid*, p: 87-89.

<sup>26</sup> - A.N.O.M, 2x103, water ownership in Algeria, and see: Hippolyte Peut, thermal waters, p : 228.

<sup>27</sup> - A.N.O.M, 2x103, water ownership in Algeria, ibid.

<sup>28</sup> - Hippolyte Peut, Thermal and Mineral Waters of Algeria, op cit, p : 227-230.

<sup>29</sup> - Ville, op cit, p : 224-225.

<sup>30</sup> - Ville, op cit, p : 224-225.

<sup>31</sup> - Mission in Southern Algeria, Sahara Issue –Touat – Chaamba – Touareg, 1890, p :152.