

The General Algeria's History in Energy Resources Production

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Received: 29/05/2021

Accepted: 13/06/2021

Published: 27/06/2021

Abstract:

All previous studies used to deal with the topic of Algerian energy resources starting from hydrocarbons discovery, while this period is a small part of Algeria's rich history in producing energy resources. We have discovered that since his first settlement in Algeria, man has made of the energy production a profession, and for a long part of his history, he has dominated the international trade of some of these energies. So, the matter is more related to the blessed Algerian land, which whenever a new type of energies appeared, turned out to be one of its largest producers. As Algeria gradually moved from agricultural energies to fossil, to later appear to be possibly one of the largest producers of renewable energies. Our study will help to understand the reasons of major powers succession in occupying Algeria, whose energy resources have always driven the armies and brought prosperity to the greatest empires.

Keywords: Algeria; Energy Resources; Agricultural Energy Resources; Fossil Energies; Renewable Energies.

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1. INTRODUCTION

Energy resources are ranked among the most important commodities in global trading since the dawn of time, as they were and still are considered as the main support of countries and societies advancement. In fact, the use of those resources has evolved and has always known constant mutation; it consequently became inevitable to look for more effective or more abundant resources each time the population progresses or grows in number, in order to light up cities and streets as well as motivating army and economy.

Algeria was and continues to be one of the most preeminent and skilled countries in production and exports of energy resources over the ages, as a consequence of the long human history in Algeria that has been dated to be 2.4 million years old, and besides its strategic location and its variety climate. Algeria constituted the cornerstone of energy resources production and trading through ages. With this in mind, its population never occurred to immigrate or taking possession of other lands as long as their own lands are meeting both their needs and those of the ancient world. It was for this reason that great empires have always been battling to take possession of these blessed lands.

Through our research, we have been concluded why the Algerians never occupied any land of a State or kingdom, as they did not need any resource to look for, because their land was rich with everything the nations need to live in enviable prosperity.

2. Prehistoric era

It is assumed that the Earth geography that we currently know is almost the same that our ancestors knew thousands of years ago; this is based on the fact that the latter changes only after millions of years and that human beings have not witnessed any fundamental changes in it. Given that, the early phases of humankind settlement in a specific area only go back to six thousand years, when man discovered agriculture.

On the other hand, the history of humankind in its longest part, which likely started 2.6 million years ago in the area of the Awash National Park in Ethiopia, was characterized by nomadic migrations from one area to

another in search of hunting, water and food. Yet, science has not proved till today that any remains of an ancient humans was found in any other region than East Africa before this period. But a recent study submitted by the Algerian researcher Mohamed SAHNOUNI in association with a multinational team and published in the American magazine “Science” in December 2018. (Sahnouni, et al., 2018) Proves by modern means that man has settled in the land of Algeria 2.4 Million years ago, which strengths the hypothesis that the first migration known by humanity was from East Africa (the cradle of humanity) to Algeria.

Before SAHNOUNI and his team study, research showed that the oldest human being found in North Africa and the Mediterranean Basin dates back to 1.8 million years, as cutting stone tools were found in “Ain Lahnach” area on the outskirts of “Eulma” city. However, this study proved that human presence in North Africa is much older than that. In fact, the evidence found by that Algerian researcher and his team prove by using the latest technology of geology measurement that human settlement in North Africa, specifically in the “Ain Boucherit” near Eulma City in Algeria dates back to about 2.4 million years. Based on that, it is likely that future studies will establish that Algeria is the cradle of humanity instead of Ethiopia.

The study of SAHNOUNI and his team shows the importance of the distinguished geographical location of Algeria since prehistoric times; as it indicates that the first human migration was from East Africa (Ethiopia) to its north (Algeria), which is an evidence of Algeria land fertility. Characterized on one hand by an abundance of natural resources and water that man needed, and on the other hand by a diversity of animals that were fed from these resources and were hunted by the ancient man. Thereby, these natural and animal resources tempted the ancient men to come and settle in Algeria, either because of their first land resources shortage (Ethiopia), or because of rivalry between human groups in the past that urged one or more groups to think about finding an alternative region. In the future, if science proves that the first human has actually settled in Algeria, this means that the importance of the region for humankind will increase. As well as it will prove the availability of basic resources of food

and water that were necessary for the ancient man to provide his body with needed energy for living and hunting in this region. This emphasizes the importance of Algeria in both cases.

Till this very day where we are writing this paper, it has not been proven, that any of the scientists or researchers has found a sign indicating that prehistoric man was familiar with agriculture, which leads us to believe with certainty that humans in that era did not settle in one region for a long time. The only evidence we have about that period are migration and its routes and humanity evolution in the use of hunting tools. Their first use of polished stones was either to animal hunting or to deter predators, and this is why this period was called the Stone Age, after that they began to discover minerals that replaced their broken stones, mainly brass and iron which they used in two different eras, respectively named Chalcolithic and Iron Age.

3. Before Christ era

3.1 Berbers during the Carthaginian System (813 to 146 BCE)

Carthage was called in Phoenician language (Qart Hadasht), meaning the new capital or the new city. (Josephine & Nicholas, 2014, p. 145) It was founded by “Elissa (Elisshat) Dedon”, whose name means in Phoenician “the Fugitive”. Elissa was a Phoenician woman who fled from the Levant taking with her the fortune of her husband who has been killed by her brother for fear that the latter would take it over.

Elissa and her fellow refugees were well treated by the local Libyan people, for their king, Hiabus, freely let them enter his territory (Richard, 2010, p. 32) and founded Carthage city between 813-814 BCE, according to different accounts. (El Mili, 1989, p. 133) and (Crawley Quinn & C. Vella, 2014, p. 145)

When Carthage was established, the Phoenicians carved out a land from the Berbers were they settled, and its people entered under their obedience with their full consent. Thus, this region was known as “Libya Phenicia” and its people were known as the Punic. The most famous Phoenicians' cities on the Algerian coast were: HIPONE (Annaba),

RUSICADA (Skikda), CHULLU (Collo), IGELGELI (Jijel), SALDAE (Bejaia), RUSUCCURU (Dellys), RUSGUNIAE (Tamenfoust), ICOSIUM (Algiers), TIPASA (Tipaza), IOL (Cherchell), SIYA (Archkoul, Tlemcen). (El Djilali Ben Mohamed, 1965, p. 68) and (El Mili, 1989, p. 134)

These coastal cities, with their ports, were the gateway to the energy resources foreign trade, developed by the Punic people, as we will address further.

The Phoenicians were known to be a trading nation that has always been away from wars or military conquest of lands. Their policy was purely commercial. The Carthaginian army would not have been formed without the State's need to expand its trade that linked ancient civilizations, and also to deter the occasional skirmishes of Greeks and Romans and their opposition to Phoenician commercial expansion and their envy of the bright civilization that the Phoenicians established and the wealth they acquired. The Carthaginian army did not exceed fifty thousand, most of them from Berbers and Spanish. (El Mili, 1989, pp. 140-141)

Berbers history in cultivation of energy resources in Algeria began before the arrival of Phoenicians and their founding of Carthage, but we believe that the development of this agriculture and its global marketing was thanks to the Carthaginians. The division of Cartagena State system into two separate families (one dedicated to war and the other to work) had a great merit in developing the global market for energy resources.

The credit goes to MAGO's family involved in the work part. MAGO, the expert who lived between 550-500 BCE, he was the reason behind the Carthaginian agricultural revolution. He wrote a well-known book on trees, fruits and viticulture, as well as animal husbandry, and the importance of this book, after its translation into both Greek and Romans (Miles, 2010, p. 39) into Latin language, went beyond his time and Phoenicians era to later ages.

After the Punic discovered the importance of energy resources in global commercial markets. Moreover, after they discovered the fertility of Algerian soil and the energy crops it produces as barley and wheat, which were cultivated by Berbers on a small scale, They developed its production

methods, spread its cultivation and used a machine to threshing it, (El Mili, 1989, p. 145) in order to accelerate its harvest and increase their production to reach optimal produced quantities that could be traded abroad.

In addition, being not satisfied with grain as a single energy resource. The Punic people importated olive trees, (El Mili, 1989, p. 145) to use them as a new energy resource and started developing its agriculture. Mainly that the Algerian soil and climate were favorable for an abundant production, sufficient to cover the old world's need of olive oil, which was used at that time to illuminate streets, houses, and places of worship.

In fact, although olive trees used to grow naturally in the Berbers soil, they couldn't get any benefit from it until after the Phoenicians guided them to the method of squeezing its grains, (El Mili, 1989, p. 164) to extract its oil which was used as a source of light energy that illuminates their homes and streets. In addition, they trade it for other commodities or sell it to take advantage of its price.

Consequently, the Phoenicians had great merit in developing the energy resources sector in Algeria's agriculture. They were also credited with introducing these products to the ancient world and marketing them globally, thanks to their large merchant fleet that controlled the global supply routes of energy resources, through the various coastal cities that they established for this purpose. Algeria became, in their time and after, the largest producer of agricultural energy resources, and Carthage, for its marketing of this products, monopolized their global supply channels.

3.2 The Numidia Kingdom Era (203 to 46 BCE)

The kingdom of Numidia that extended to the most of present-day northern Algeria and parts of western Tunisia and Libya, was ruled by the indigenous peoples (Berbers) from their capital, Cirta (Constantine). It emerged from the period extending from 203 to 46 BCE, where the Berbers preserved the Phoenicians legacy of agriculture and energy resources trade. Even some kings of Cirta, such as: MASTANESOSUS, BOCCHUS JR., JUBA II and PTOLEMY, minted coins bearing the drawings of wheat heads, (Gsell, 1927, p. 190) which were the source and the symbol of the Numidian Kingdom prosperity and wealth.

Cirta was a cosmopolitan city during the reign of the founder Masinissa, who ruled the Numidian Kingdom for fifty years (201-149 BCE), dotted with distinguished trade relations with the major commercial cities at that time, such as: Athens, Rhodes and Marseille. The energy agricultural products were the most important commodities that Numidia exported in that period, as the Masinissa promotion to their cultivation had a positive impact on his Kingdom, given that he owned more than fifty thousand hectares of the best agricultural lands and that he gave to his people the right to acquire similar lands. (Bouhouche, 1997, p. 12)

His vision for his people was to arise their interest for investing in land servicing and then exporting its resources to other countries. Masinissa was so shrewd that he was well aware that the kingdom's well-being begins with the well-being of his people and that was the case for richness. So he exploited the high quality of kingdom's lands to make the region specialized in the production of energy resources such as barley, wheat, and olive oil. All these products were Punic legacy, as they specific products were the States fulcrum and the engine of armies at that time.

Masinissa supplied Rome and its armies with wheat and barley several times, while hundreds of millions of energy resources bushels¹ were exported to them. (Gsell, 1927, p. 190) Whether during their wars in the East, Spain, or Sardinia (El Mili, 1989, p. 170) were the Algerian energy resources were the engine of armies and the light source for cities and houses. But then, this abundance of production became a curse on Numidia, which was targeted by major powers such as the Kingdom of Mauritania and the Roman Empire, that were tempted by Algerian lands fertility and its production, thus becoming throughout history constantly subjected to control attempts. Romans were the first to occupy Algerian lands.

¹ A bushel is a unit of grains, similar to the currently oil barrel, usually made of copper or iron, wood and others. Grain size: 1 bushel = 27.22 kg, barley: 1 bushel = 21.77 kg, and the same was applied for the other grains. Further information: <https://www.rayglan.com/>.

3.3 The Roman Occupation (46 BCE to 431 CE)

Rome was able to overthrow the Kingdom of Numidia in year 46 BCE, and immediately started by imposing heavy taxes on Berbers farmers to supply the capital Rome with food. (Shillington, 1995, p. 66) The huge exportation of barley and olive oil to Rome led to designate North Africa as “Romæ Graniarum” (Abderrahmane, 1965, p. 103) i.e. the Roman exchequer/silo. (Kevin, 2005, p. 146)

Given the large productivity in North Africa in general and namely in Algeria. The energy resources of grains and olive oil were distributed for free to some specific locals of Rome. (Shillington, 1995, p. 66) Even the Roman themselves have expressed the fertility of Algerian lands by a drawn symbol on their minted money, showing the image of a woman holding a spike; (Abderrahmane, 1965, p. 103) As woman since the rise of agriculture has symbolized land fertility and giving, while the spike symbolized the huge and famous grains productivity growth in this area.

Thanks to the agricultural development policy in North Africa, the government of Rome exploited the Algerian wheat, which is known for its strength and quality, to insure the prosperity of its people and to provide energy for its army. The Roman financiers took advantage of this policy as they competed to spend their money on producing the most famous energy crop at that time, namely the wheat for its growing market and guaranteed profits; hence, this policy thwarted every attempt made by native to bring back their lands and their political influence. (Bouhouche, 1997, p. 18)

The agricultural energy resources produced within the Algerian farmland, the fertility of the land, the diversity and the suitability of climate to agriculture have made the area essential to the Roman Empire. Romans needed different energy resources that were produced in Algeria, thus they used the wood as thermal energy to warm famous Roman baths, and used barley as fodder for horses, (Laroui, 1977, p. 33) and wheat to feed the inhabitants and the empire army. However, olive oil was used as energy to light up towns, homes and temples. The oil lamps industry in IOL Caesarea (Cherchell) was widespread and its trade was highly profitable, (Abderrahmane, 1965, p. 105) this clearly indicates how olive oil was massively used as a powerful substance, as this latter competed against

grains in its importance and the exported quantities during the second century C.E. (Metz, 1994, p. 8)

During the Roman occupation, the natives have been able to identify a new type of energy that their farmland was rich in since the dawn of history, without knowing how to exploit it. They kept using Roman baths that were resourced from thermal energy coming out of the Algerian lands (natural hot water sources), for therapeutic reasons and recreational purposes. Dozens of baths are still used till nowadays, the most famous of them being: Hammam Essalihine in Khenchela, Hammam Rabi¹ in Saida city, There are also about 14 baths in Batna, and many others all over the country.

4 Anno Domini Era

4.1 The Vandal Occupation (431 to 534 CE)

The Vandal occupation started after 477 years of Roman occupation in Algeria, that began in year 46 B.C.E, until the fall of Annaba to the Vandal in year 431. Since this latter was more merciful than its predecessor, it did not interfere in the political, social and cultural life of the natives, nevertheless they kept the lands of the Roman State and ordered to reduce the taxes previously imposed by the Romans on the Berbers.

The Vandal maintained the production of the same energy crops including wheat, barley and olive oil. Their army took advantage of it in the battles against the Byzantine State until the defeat of their last leader Gelimer in year 534, in the outskirts of the capital Tunis. The Vandal colonization in Algeria ended up after 103 years of rule, by the hands of the Byzantine occupation which succeeded to it.

4.2 The Byzantine Occupation (534 to 647 CE)

The Byzantines occupied Algeria in 534 CE., and initially claimed to free the inhabitants from vandal oppression. They first appointed civilian rulers over the African provinces, in contrast to Roman rule. Shortly

¹ Named during the French colonial era, where the French called it litteraly “HAMAM ERABIE” meaning “Spring bath” , but the second word has the particularity of ending with a sound of guttural Arabic letter “Ain”, that French were unable to pronounce correctly, so they uttered it “RABI” which means God in Arabic, and thus, Algerians have given the bath the same label they heard from the colonists “HAMAM RABI : God bath”

afterwards, the true face of the Byzantines was revealed, beginning in 578 CE., when they appointed military rulers in Algeria, which was divided into three provinces as follows: (Abderrahmane, 1965, p. 105)

Numedia with Constantine as a base;

East region of Cesarean Mauritania with Setif as a center;

West Cesarean or Cesarean Mauritania with Cesarean as a center/
Cherchell nowadays.

After that, the Byzantines begun to impose their colonial policy by military force and imposing high taxes, which pushed Berbers leaders to wage wars against them. One of the most famous leaders was the Aures Mountain leader “YABADES” who with the help of forty thousand knights managed to attack the city of Certa (Constantine), and expelled the Byzantines from it. The same leader succeeded to conquer Timgad and to destroy it. (Bouhouche, 1997, p. 23) The destruction of this city was only the sign of hatred and resentment felt by Berbers towards the oppressed colonial policy, sabotage, severe injustice, plundering of goods, and the high taxes imposed by the Byzantine occupation. The wars lasted between Berbers and Byzantines since then, until they were expelled by the Arab conquerors.

During the Byzantine occupation, there was a recession and decline, if not a lack of energy agriculture production beside a suspension of Algerian energy resources exports. According to the French historian Jean Ernest Mercier, and quoting the historian of the Byzantine leader “Flavius Belisarius” who accompanied him on his fleet to Africa, when he arrived in 533 CE., “He was surprised by its urbanism and active trade and the happiness of its farmers, however after twenty years nothing of all that remained, Africa was entirely devastated”. (El Mili, 1989, p. 375) The havoc continued till the end of the Byzantine rule in Algeria, as the well-known Islamic historian and chronologist Al-Biruni said: “At the beginning of the seventh century there was neither administration nor social body left, and the political chaos was at its worst cases” (El Mili, 1989, p. 373), adding: “Farming lands have been disrupted; scientific methods have been forgotten..., trade has been interrupted and people were frighten of starvation”. (El Mili, 1989, p. 373)

To sum things up, since the devastation caused by the Byzantine, the farmers abandoned their lands, and the practical scientific methods of producing energy resources that they inherited from Phoenicians and preserved for hundred years, despite the successive previous occupation of Algeria. The situation persisted 113 years, until the Muslim conquerors reached the North Africa in year 647 CE.

4.3 The Islamic Conquest (647 to 1519 CE)

After the arrival of the Arab Muslim conquerors to Algeria during the era of Caliph Uthman Ibn Affan in 647 CE., the Muslim Army soldiers found themselves walking through a large forest of olive trees extending westward from Tripolitania (Tripoli in Libya) to Chott El Hodna (M'sila province in Algeria), (Fage & Oliver, 1978, p. 411) They also reported that North Africa was one shade from eastern Tripoli to the west of Tangier in the west, along 2,000 miles. (Abderrahmane, 1965, p. 182) This indicates that Algeria was still preserving its olive trees despite the ending of its own oil trade in that period.

However, the subsequent battles between Muslims and the Berber Queen El Kahina “695-700” led to the burning of the forests bordering the Aures mountains and which have been used as a barricade to make them inaccessible to Muslims. What led to enrage the Berber population, who gave great importance to their energy resources. They so decided to cooperate with Muslims against their queen to finally eliminate her in year 701 CE. (Bouhouche, 1997, pp. 28-29)

It is noteworthy that after the voluntary conversion of Berbers to Islam, and law enforcement in the North of Africa in general and especially in Algeria; they revived interest on planting energy resources, resulting in local self-sufficiency as well as the entire Islamic Caliphate which extended after the conquest of Al-Andalus in year 911 CE. Along three continents from India in the east to westward of Al-Andalus, through the North of Africa. The Caliph Umar Ibn Abd El-Aziz himself could not find under his Caliphate a way to manage this surplus of production, so, he made a historic resolution when he famously stated that:

“Spread wheat on the tops of mountains so it cannot be said that a bird went hungry in the land of the Muslims.”

According to this decision, the only way to insure the surplus disposal of grain production in North Africa and mainly in Algeria was to feed wild birds in the entire Islamic Caliphate territory.

4.4 The Ottoman Rule (1519 to 1830 CE)

After the fall of Al-Andalus with the fall of Granada in 1492, Algerian coastal cities have endured countless attacks and occupation from

the Spanish navy at the beginning of the sixteenth century; they occupied every city that sheltered the Muslims fleeing Al-Andalus and imposed high taxes on its inhabitants. This prompted locals to implore the Turkish pirates Barbarossa (Baba Aruj and his brother Kheireddin) for aid, after they saw the aid that they brought to the Andalusian who were fleeing the Spanish barbarism.

During the Ottoman rule, Algeria maintained large quantities of energy resources production. The wheat was the most important energy production in that period, supported by taxation imposed by the city of Algiers on other cities in the Mediterranean basin and beyond. The control reached the German port city of Homburg where a currency has been established in 1751 to celebrate its peace agreement with the city of Algiers, allowing the Algerian farmers to market various energy resources thrived by an ensured protection of the strong Algerian Navy.

The period starting from “1680-1790” was known as “The century of wheat”, (Kaplan, 2012) where Algeria managed to provide the French army with their needs in wheat, after the success of the French Revolution in 1779 and the imposition of blockade on it by the European countries. (Bouhouche, 1997, p. 78)

In 1796, the Dey of Algiers Baba Hassan had recourse to a major financial and economical movement that reflected the Algerian economical intelligence. (Saâdallah, 1982, p. 14) Algeria was capable to preserve the French market (The biggest importer of Algeria's energy resources) by granting a loan of 1 Million Franc without interest to the French Revolutionary Government. This grant was provide to buy the wheat from Algeria, thus preserving its interests. It also obviated the stagnation of energy resources (higher demand) and protected its prices from falling by avoiding the cessation of French imports.

In 1798, although Algeria was a province of the Ottoman Empire, it had a large decision-making autonomy, and owing to the surplus in energy resources production; the same Dey of Algiers Baba Hassan supplied the French army during the Napoleonic occupation of Egypt. (Shillington, 1995, p. 275) Despite the fact that the latter was under the Ottoman rule, the

grains were used as energy resources, including wheat to feed the soldiers, while barley was used as fodder to horses, this transaction was consequently one of the reason to the French occupation in Algeria. (McDougall, 2017, p. 50) As we will explain later.

This debt have never been completely paid, (Sessions J. E., 2011, p. 25) to become later a heavy burden to the French Government which considered the occupation of Algeria as an opportunity to get rid of the major debt. The idea of occupying Algeria and sending the European settlers to exploit the fertile lands was an opportunity to the French Colonial to import various Algerian energy resources without paying customs duties. (Fage & Olivier, 1976, p. 114)

Before the French invasion, similarly to the situation of oil prices nowadays, the grain production sector recorded a price increase at the beginning of the ninetieth century. Therefore, between “1803-1805”, the farmers failed to produce the usual quantities to meet the needs of the global grain market; hence, the price of wheat in the city of Algiers has doubled ten times. (McDougall, 2017, p. 46) This indicates a normal situation since the production of wheat was affected by natural factors unfavorable to those years, where there was poor rainfall, which caused drought.

After those lean years, the production went back to what it used to be, so the exported energy resources prices from Algeria to Europe increased simultaneously with the increase of imported overseas processed materials prices. (Bouhouche, 1997, p. 79) This was the reason why the city of Algiers was financially distressed which enable the last Dey of Algiers (Hussein) to pay his navy soldiers salaries that finally collapsed. It led to request grain funds from France in order to improve the dire conditions of Algeria, but the French government used the weakness of Algiers and its destroyed navy to start a planned invasion to the city, making of the diplomatic incident that known as the “Fan Affair” (Fly Whisk Incident) a pretext to execute its plan.

4.4 The French Occupation (1830 to 1962 CE)

The French desire to control the Algerian market for energy resources began in 1577 when they succeeded in appointing a French

consul in the city of Algiers. They prima facie intended to seek the coral in the east of the Algerian coast and were thus authorized by the governor of Algiers Pasha Hassan III within a year to do so. This included exemption from taxes on the one hand and the non-building of fortifications on the other. Nevertheless, the real face of France was revealed after the fortification of their commercial center “Bastion” in the city of Annaba. In 1604, France started to buy wheat from the inhabitants to sell it after on the European market.

The Turks were therefore disappointed by this action and demolished the center on two different occasions “1604 and 1637”, however the Pasha Yusuf II was forced to rebuild it in 1640 under the pressure of Annaba inhabitants, who took advantage from trading with the French. (Bouhouche, 1997, pp. 77-78) Thus, France was able to interfere in Algerian politics from the inside, by using the energy resources market.

The France conquest of Algeria started in 1830 in order to clear out the accumulated Algerian debts owing to its long term provision in energy resources, and also to use these resources in the future with free taxation. When General Clauzel was appointed a second time as the Governor of Algeria¹ “8 July 1835 to 12 February 1837” he promulgated a law requiring lands delivery to European settlers in Algeria. Therefore, Europeans managed in few years to procure most of the fertile and gigantic land of the Mitidja, (Bouhouche, 1997, p. 85). Clauzel was in fact the biggest proponent of the European settlement in Algeria. He also attempted to imitate the policy of settlement and extermination adopted by his European ancestors while they occupied the native lands of the Americas. This was mentioned in one of his speeches when he referred to the Algerian settlement as to be the American dream and addressed the European settlers saying:

“You can establish as many farms as you wish, and you can make them your property wherever you want in our colonies; you must be certain that we will protect you fervently..... With patience and perseverance a population

¹ His first reign was not long, as it lasted only 6 months and 9 days (12 August 1830-21 February 1831), After De Bourmont and before Pierre Berthezène.

will live here and grow and increase faster than the people that crossed the Atlantic Ocean and settled in America few centuries ago” (Lacheraf, 2007, p. 80).

Clauzel's policy was criminal and was later supported by the writings of “Alexi De Tocqueville” whose his reports on Algeria were purely colonial, and meticulously executed by French generals in Algerian territories. By more than one manner, his crimes against the Algerians were more atrocious than those committed by the generals. During a visit to Algeria and within the framework of a parliamentary mission, he suggested in reports the means and methods that should be used to consolidate colonization, which consists of pressuring Algerians, subjugating, stealing their land, and depriving them from their rights, as Ziki explained after translating the latter's writings on Algeria. (Ziki, 2016)

Numerous native tribes were forced to leave their lands and seek refuge on isolated places owing to De Tocqueville’s writings and Clauzel’s decisions, as was the case for the tribe of Hadjout in the west of Mitidja and the tribes of Beni Amer in the plains between Oran and Sidi Belabbes. Clauzel ,his soldiers and the European settlers systematically occupied those lands by using tyrannical laws, as this latter established there his own peasant company that he called “Ferme expérimentale d'Afrique” (the African experimental farm), “*to introduce into the territory of Algiers colonial and exotic crops for which France pays tribute to foreigners*” (Sessions E. J., 2011, p. 178), and encouraging the army to subscribe to it, after he seized various properties near the region of Baba Ali and the farm of Hawch Hassan Bacha nearby Oued El Harrach with an area of 1,000 hectares. (Al Jouaani & Al Mashhadani, 2013, p. 288) By doing so, the Governor of Algeria, Clauzel tried to encourage the Europeans to follow suit and not be frightened on picking and stealing the best lands, since the French government and its servants (French governors in Algeria) would ensure their protection by the force of law (a tyrannical one) and the military force.

During the first decade of the French colonization “1831-1940”, 81 percent of the Algerian arable lands were cultivated with energy resources (wheat and barley), (Tinthin R. , 1946, p. 134) the reason that makes

General Thomas Robert Bugeaud for his part to adopting a resolution in 31 June 1842 to confiscate greenfield lands. Thus, most of the Berber lands have been confiscated, so they could no longer cultivate any energy resources and the bulk of those abundant properties have been transferred to the French government.

Thereafter, the occupied Algeria witnessed a rise in the global demand for its energy resources, especially during and after the Crimean war “1854-1856” where demand for Algerian grain have increased the wheat prices to an unprecedented level in Europe, By the time the world market needed Algerian energy resources, the quantity contained in Algerian grain silos was consumed, as Muslim farmers that were encouraged by attractive prices decided to sell remaining grain that they used as a food reserve (including seeds) to private individuals who would later sell it to the Europeans. (Helen, 1994, p. 31)

After the Crimean war the world became aware of how lucrative was the energy resources market, given the price of the Algerian grain which increased to remarkable levels. Thus, the United States of America and some Asian countries started to exploit their vast lands to produce large quantities of hard wheat and soft wheat, to the point that the global market has been drowning, so the Algerian farmers were no longer capable to compete with those products neither in the global market nor the local one. Therefore, the colonial government in Algeria imposed taxes on the imported grain, in order to achieve price stability in the internal market and provide assistance to local producers on selling their crops. (Ageron, 1979, pp. 107-108)

The entry of the United States and other Asian countries into the global grain market pushed the French government to take the decision to switch to the use of new energy resources which led to the end of a long period of Algerian agriculture energy production. This decision was mainly driven by the low income of the French colonial government and the loss of European colonial farmers since the fall in grain prices on the international market. This was the major threat to settlement policies which were

predicated on luring Europeans to move to Algeria and invest in profitable agriculture.

The French colonial decision was to support the farmers in Algeria to convert the agriculture production of grain into large scale viticulture, and export final products abroad to overcome the falling grain prices crisis, on the international markets. (Saidi, 2017, p. 24)

This decision beside property laws that were implemented during years: 1851, 1863 and 1865, aiming to expropriate the lands of indigenous peoples to transfer them to European settlers in the framework of a colonization policy has unfortunately caused the abandonment of natural energy resources production, leading to the incidence of recurrent poverty and famine among the natives, “1849-1851” and “1867/68 and “1920/21”. (Tinthoin R. , 1946, p. 135)

The famine of the terrible winter of “1867/68” alone has actually caused the death of half a million Algerian, yet, the settlers' warehouses and silos were full and offered no assistance to the inhabitants. (Lacheraf, 2007, pp. 15-16) They were apparently enthusiastic to the possible extinction of indigenous peoples in this spontaneous manner, underlying the fact that this was the result of their colonization policies.

Due to the endless greed of the European settlers and their purely economic calculations, they later carried out the government's plans to convert wheat and barley farms into vineyards, which were used to produce huge quantities of wine in order to collect even more money than it was possible to collect from energy products. Several reasons were behind this decision, mainly the higher price of wine compared to wheat, along with the Algerian favorable climate to vineyard.

Despite an appalling mortality rate among the natives due to the confiscation of their lands and their conversion to viticulture. Ironically, the same decisions that attempted to exterminate the natives, their numbers increased considerably compared to the settler's numbers. According to statistics, the natives exceeded seven million in 1940, after having been a little over two million in 1875, (Tinthoin R. ., 1946, p. 134) where it is estimated that the cultivation of vines required six times the permanent

labor compared to the energy resource plantation (wheat, barley and olive oil).

Indeed, the vineyard industry was the new source of income for Algerians, since it contributed to improve the lives of hundreds of thousands of workers and craftsmen. (Tinthoin R. ., 1946, p. 136) It further enabled the native to compensate the loss of their lands and incomes by working as permanent professionals on the settlers farms who needed permanent professional labor, thereby enhancing the native's living quality leading to a significant increase in their numbers compared to the settlers'.

However, the agricultural transformation led to the abandonment of an energy sector that was one of the most important sectors throughout all previous eras in the history of Algeria. While the use of wood charcoal extracted from the forests of Algeria remained as a thermal energy resource, but its use by the indigenous population and the French colonists led to the occurrence of desertification and soil erosion, due to forests logging near residential areas. This led colonial governments, and then the governments of independent Algeria, as we will mention later, to take measures for stopping this natural imbalance.

In 1894, oil was discovered for the first time in Algeria, and its production began in small and limited quantities. (CIA, 1970, p. 2) In the 1920s, a group of geological researchers, after studying the Algerian Sahara, presented a research indicating the possible existence of huge oil quantities in the region, (Andrew & Jeppesen, 2017, p. 67) what prompted the Bureau de Recherches Pétrolières (BRP) to organize an extensive exploration of the Algerian Sahara immediately after World War II. (Malti, 2014, p. 751)

In 1947, four years after the massive exploration campaign in the region, the Bureau de Recherches Pétrolières efforts paid off, as a group of institutions contracting with the latter reached the following: In January 1956, the Compagnie de Recherches et d'Exploitation de Pétrole au Sahara (CREPS) discovered reserves estimated at one hundred million tons of oil in the south-east of Algeria, in the Libyan border area called "Edjeleh" (Ain Amenas). In June of the same year, the Société Nationale de Recherches et

d'Exploitation de Pétrole en Algérie (SN REPAL) announced that it had discovered a proven oil reserve estimated at six hundred million tons in Hassi Messaoud region. The same company announced in December that one of the largest gas reserves in the world was discovered in Hassi Rmel region. (Smith & Jeppesen, 2017, p. 68)

The discoveries of that year pleased both the French governmental departments and the French public opinion, as they believed that the fuel of Algeria would turn the occupying France from an importer of energy resources into the most important and largest exporter of energy in the world. (Malti, 2014, p. 748) Two years after 1956 discoveries, in the beginning of 1958, Algerian oil began to flow from The Sahara (McDougall, 2017, p. 227) where the discovered wells began to produce limited quantities, (OPEC, Algeria Facts and figures, 2019) while large quantities production began in 1961, (CIA, 1970, p. 2) i.e., in the penultimate year of the French occupation in Algeria.

4.5 The Independent Algeria (After 1962)

During 1962/63, even after Algeria's political, legal and geographical independence from the French occupation. France continued to exploit Algerian oil and gas just as it did before. Nothing changed regarding the energy relations for both sides until the end of 1963, (Brogini, 1973, p. 36) when the Algerian State established through Decree No. 63-491 dated on 31 December 1963, the Société Nationale pour la Recherche, la Production, le Transport, la Transformation, et la Commercialisation des Hydrocarbures (Sonatrach); which was the first national company specialized in the production and the export of hydrocarbons in Africa. Thanks to this company, Algeria was in principle able to influence the French hegemony on the production and the export of Algerian oil and natural gas.

To protect its production among the major producers of energy resources in the world; Algeria joined in 1969 the OPEC organization (OPEC, 2019) and started exporting its production within this important organization basket. Which was able to control the prices of energy resources for many years, as it includes the most important oil producers in the world, especially the founding countries of this organization: Iran, Iraq,

Kuwait, Saudi Arabia and Venezuela. After two years of membership in the organization, the former president Houari Boumediene announced on 24 February 1971 his famous decision to nationalize hydrocarbons in his historic address at Dar Al-Shaab, the headquarters of the General Union of Algerian Workers. After this decision, Algeria was able to control production levels in its fields.

Two years later, it participated in the OAPEC¹ oil embargo on the United States of America after its support for the Israeli occupation entity during the war launched on 6 October 1973 by the Egyptian-Syrian forces, with financial and military support from the Arab countries. After that, Algeria, Iraq and Kuwait expanded the embargo circle to include the Netherlands, (CIA, 1973) Portugal and South Africa, then, the United Kingdom, Canada, Japan and all the countries that intervened to rescue the Israeli occupation entity in October War “6 to 25 October 1973” (Mouraviev & Koulouri, 2019, pp. 10-11).

After this war, a radical change took place in the global energy resource market, as western countries importing energy resources decided to take measures whose impacts are still evident till this very day on the countries that export them (especially Algeria, which is almost completely dependent on hydrocarbon revenues in its economy). These oil and gas importing countries have taken this three following main steps: (Mouraviev & Koulouri, 2019, p. 11)

A) The establishment of the International Energy Agency aiming to coordinate the members of the Organization for Economic Co-operation and Development (OECD), to respond to any future disruptions in the energy market.

B) Encouraging the internationalization of energy resource market, by supporting all countries that discover new reserves in order to eliminate the market monopolization of some countries, thus avoiding the repetition of the October crisis scenario in the future.

¹ The members of the Organization of Arab Petroleum Exporting Countries that time were: Abu Dhabi, Algeria, Bahrain, Egypt, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia and Syria.

C) Enhancing the political influence of the USA and supporting its military bases establishment in the Persian Gulf and the various areas of oil production in the world, as stipulated in the Carter Doctrine (Carter, 1980) (Carter, 1980), with the aim of putting pressure on the producing countries.

After these measures that had been taken by oil-consuming countries, oil-exporting countries could no longer control the supplies and prices of energy resources. Oil fluctuated between high and low prices, which caused major internal crises for producing countries whenever oil prices dropped in international markets. Whereas, after the collapse of oil prices in 1986 and after the Algerian oil reached the threshold of \$ 24.57 a barrel in March, Algeria experienced a severe economic crisis that had repercussions until 1988, when the Algerian people demonstrated on 5 October against the squalid conditions the country witnessed at that time. The collapse of the oil price in 1997, which coincided with the Asian financial crisis and the Iraqi “Oil for Food” program, also contributed to the end of the presidency of Mr. El Yameen Zeroual by 27 April 1999.

The recurring oil crises made the officials of Algeria think about exploiting renewable energies as a future alternative to fossil energies. In fact, Algeria can become a pivotal international player in the exploitation of solar energy, as the Mediterranean basin countries are at the forefront in terms of sunlight exposure, thanks to its size that is seated within the best regions exposed to the sun in the world (the Middle East and North Africa). Accordingly, Algeria established in 2007 the first hybrid energy plant in the world in Hassi Rmel (gas-sun), with a capacity of 150 megawatts (116 megawatts of gas and 34 megawatts of solar energy), Algeria was aiming, through hybridization, to solve solar energy storage problem and its high cost.

Two years later, in 2009 the German Foundation, Desertec proposed an ambitious project to exploit solar and wind energy, the largest of its kind in the world, with a cost of about €400 billion. The project aims to produce about 20 percent of the European market energy needs; as it will increase the production of energy of nearly 50 percent in Europe, Middle East and North Africa by year 2025. The Desertec project was not implemented due

to a range of impediments put in place by the Algerian side, according to a group of experts and economic analysts.

In an attempt to replace the Desertec project, Algeria launched in 2011, the National Renewable Energies Program “2011-2030” at a cost of \$120 billion, this scheme aimed to produce 22,000 megawatts of renewable energies, equivalent to 27% of the annual national consumption of electricity. Where a production of 13,575 megawatts of solar energy is expected, while the rest is produced using wind energy (5,010 megawatts), thermal energy (2,000 megawatts), biomass (1,000 megawatts), cogeneration (400 megawatts), geothermal energy (15 megawatts). (NAID, 2017)

Algeria announced on 20 May 2020, the launch of “TAFaweK 1” project, which will be implemented between: 2020-2024; Algeria aims through this project to establish solar photovoltaic power stations with a total capacity of 4,000 megawatts, at a total cost ranging between \$3.2 and \$3.6 billions.

Despite the relentless attempts to increase the country's capacities in exploiting renewable energies, Algeria could not get out of hydrocarbons dependency. Thus, it had to deal with an international market facing a sharp decline in oil prices at the end of 2014. This decline continued to reach the threshold of \$36.41 a barrel, confusing the successive governments who were trying in vain to find a solution to this crisis.

This conjuncture caused a great popular tension that led to the emergence of peaceful, spontaneous popular demonstrations unprecedented in the history of independent Algeria on 22 February 2019. Indeed, peaceful popular demonstrations have put pressure on the existing regime, forcing former President Abdelaziz BOUTEFLIKA, who ruled the country for twenty years, to submit his resignation from the government on 2 April 2019.

5. CONCLUSION

In the end, we can say that since the emergence of humankind on earth, Algeria occupied an important position in his history, as it was man's first migration destination due to its natural resources abundance. Then, after his settlement on its land and thanks to the Phoenicians cleverness, it continued its contribution to the history of humanity when its energy agricultural resources reached most of the homes of the cities of the ancient world through the trade routes established by the Carthaginians from the Algerian coastal cities.

After the fall of Carthage, Berbers preserved the production of energy resources and international trade relations, which made Algeria a country coveted by colonial powers. Therefore, the Romans, the Vandals, the Byzantines, occupied it and exploited the Algerian energy resources that were their armies' engine and that they used to illuminate the cities and homes of the ancient world.

The first colonial succession on Algeria lasted 693 years, until the Arab Muslims came as conquerors and freed its people from the scourge of colonialism, the land-owners regained control over the production of energy resources and their products became sufficient to feed the entire Islamic world across three continents, from India in the east to Andalucía in the west. Nevertheless, after the fall of the latter and the weakness of the Islamic world, of which Algeria was a part, the colonial countries and most notably Spain, returned to try to control Algeria. Thus, Algerian people had to seek help from those who share the same belief and religion, so the Ottomans answered the call, and expelled the Spanish from the Algerian lands, then from its islands.

After the Ottomans intervention, Algerian people regained their power, making of the city of Algiers becoming the most important city on the Mediterranean shores, from which the Algerians were able to market their energy agricultural products to the countries of the ancient world, putting its energy agricultural resources once again in the position of a target to conquest. It occupied by the French, whom had long been helped by the Algerians, either by lending them money or supplying their armies with energy resources.

The French took advantage of Algeria's wealth in an unfair ways, and oppressed its people to the point of leaving them starving to death. After the prices of agricultural energy resources declined as a result of market flooding with Asian and American grains, and the world's lack of need for olive oil that did not meet the needs of the industrial revolution, the French convert the production of Algerian energy farms to produce wine vines.

The Algerian era in the production of agricultural energy resources was hardly over when the world discovered the fossil energy resources. The Algerian oil and natural gas reserves during the French occupation were among the largest of their kind in the world, so colonialism tried to exploit them as it did with agricultural energy resources, but this only lasted for a few years as Algerians regained their independence and continued to produce energy resources in their fossil form.

Even after the world decided to switch from using fossil energy resources to using renewable energies, Algeria once again found a pivotal place in this type of energies, underscoring that its production of energy resources will continue for centuries, and confirming that Algeria is a blessed land.

So, the transition to renewable energies as an alternative to fossil energies be the solution though keeping Algerian economy the hostage of energy sector? On the other hand, will radical solutions be found to reduce dependence on the incomes of energy resources by developing the national economy, and diversifying it outside energy production?.

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