



French Nuclear Explosions In Algeria And Their Effects On Humans And The Environment

Dr. Nassira Nouacer Heritage and Memory Laboratory for Research in the Algerian Sahara and the Western Islamic Region. University of Ghardaia (Algeria). nouacer.nassira@univ-ghardaia.edu.dz

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Abstract:

This study aims to shed light on the criminal French policy that was applied against the defenseless Algerian people, as colonial arrogance led it to conduct nuclear tests in the Algerian desert without taking into account any of the effects or consequences arising from them, the effects of which are still being suffered to this day by humans in the desert, animals and all the environment.

Keywords: Algerian Sahara, nuclear tests, the environment, French crimes, environmental disaster.

Introduction:

The lingering shadow of French colonial rule in Algeria casts a long, dark pall, its legacy etched onto the land and its people. A brutal policy of assimilation, bordering on extermination, aimed to crush Algerian identity and quell any resistance. This was a calculated attempt to erase a national identity and forge a cornerstone of Napoleon's vision of a vast French empire. However, France's efforts, like so many hubristic schemes, ultimately fell flat. In its twilight years of colonial dominion, France, in a cynical twist, leveraged scientific and technological advancements for its nefarious purposes. This included, most infamously, the nuclear bomb tests conducted in the Algerian Sahara Desert. These tests, orchestrated by the French government under President de Gaulle – and, according to some accounts, with Israeli planning and support – represent a particularly egregious chapter in this dark history.

The long-term consequences of these nuclear detonations were – and continue to be – devastating. The immediate impact was localized, but the repercussions rippled across the nation and the region, leaving an indelible mark on the environment and its inhabitants.

1 -Why Reggane? A Multifaceted Question:

Analysts cite several reasons for the selection of Reggane as the site for these tests. On the surface, it seemed strategically sound :

- It was already Algerian territory under French control, offering convenient access.
- Its remoteness, shielded from prying eyes and the media spotlight, provided a degree of secrecy.
- It was designated a military zone, further reinforcing its inaccessibility.
- Its proximity to other French colonies, such as Mali and Mauritania, facilitated logistical operations.
- The region boasted thriving desert agriculture, presenting an opportunity to study the impact of radiation on flora and fauna. It also possessed ample water resources.

- The relatively moderate climate, with reduced sandstorms between January and April, provided favorable testing conditions¹.

However, the "real" story, as some historians contend, is far more complex and sinister. Following America's nuclear arsenal development in 1945, France felt immense pressure to join the "nuclear club." Once the bomb was built, the hunt for testing grounds began. Four African locations were initially considered: Colomb-Béchar (near the Moroccan border), the Kouiff region and Djebel el-Ank (partially encroaching on Tunisian territory), Guinea, and Madagascar.

A military base for nuclear and missile testing was established in Béchar on April 24, 1949. However, a secret 1953 agreement between France and Israel shifted the focus to the Touat region, specifically Reggane in present-day Adrar Province .

Some historians allege that Israeli experts, fueled by a historical vendetta against the Imam Ben Abdelkrim el-Maghili (who had expelled them from the region centuries earlier), played a pivotal role in selecting Reggane, seeking a form of retribution against the land, its people, and its environment. The sheer number of Israeli studies on el-Maghili, coupled with ongoing Israeli monitoring of any information relating to the Touat region and Algeria's nuclear legacy, lends credence to this theory, though it remains highly contested².

-2- The Driving Forces Behind the Detonations:

France's nuclear ambitions were multifaceted:

1-The Urgency of Nuclear Prowess:

France's traditional sources of power—its vast colonial empire—were crumbling. The tide was turning, and military might, especially nuclear weaponry, was seen as the new key to global influence. The Algerian War of Independence, with its string of military and political victories for the Algerian rebels, and the recognition of the Provisional Government of the Algerian Republic by numerous nations, only heightened this sense of urgency. The humiliating defeat at Dien Bien Phu further eroded French military morale and fueled internal political instability, pushing de Gaulle to act decisively. He needed to bolster public and military confidence, counter his political adversaries, and deflect international criticism of his handling of the Algerian situation.

2-The Franco-Israeli Partnership:

The Reggane tests represent a significant turning point in Franco-Israeli relations, solidified by secret agreements in 1953. While Israel possessed considerable nuclear expertise, including around 11 professors, 6 doctors, and 400 specialists who had contributed to the American "Oak Ridge" program, they lacked suitable testing sites. France, meanwhile, found itself cut off from its former allies (the US and UK), who refused to share crucial testing data. Furthermore, French access to the financial resources of wealthy Jewish individuals bolstered the nuclear ambitions of Zionist communities in the Middle East. This collaboration began in the 1950s with the development and testing of medium-range missiles in Béchar, targeting Algerian rebels, following the establishment of the French military base there in 1949. These missiles, code-named "Jericho" (a Hebrew term for the Palestinian city of Jericho), were completed in 1957 under strict secrecy.

Eyewitness accounts from local residents mention encounters with foreign civilians who did not speak French, suggesting a significant Israeli presence. Both French and Israeli personnel allegedly used

¹Azawi Al-Sheikh and Kobi Muhammad: Reggane Springs and Their Biological Risks to the Inhabitants of the Algerian Sahara, Graduation Thesis for a Certificate of Applied Studies in Biology, University of Oran, 2002-2003, p. 9.

² Kayna,p38

the local population as unwitting human subjects in these experiments³. Even the official records downplay Israel's substantial role in the planning and execution of the tests.

-3-Reggane: A Military Nuclear Testing Ground:

Even in the final throes of its colonial occupation, France continued its brutal practices. Records indicate that France conducted seventeen nuclear tests in the Algerian Sahara (Reggane and the Hoggar Mountains) in the early 1960s. Despite growing international awareness of the dangers of ionizing radiation, following Hiroshima, Nagasaki, and subsequent British and Soviet tests, France pressed ahead⁴. A 1957 schedule set the first detonation for the first three months of 1960, a date confirmed by de Gaulle on July 22, 1958.

Reggane was chosen in June 1957 after surveys; the 2nd military division arrived, beginning construction in 1958. A year later, the Hamoudia site (65 km from Reggane) was added to prepare the base. Within three years, a veritable city sprung up in the desert, housing 6,500 French personnel and 3,500 Algerians (many of whom were laborers or prisoners). Before the tests, Reggane became a restricted zone. A week before the first detonation, French military families were evacuated to Adrar, while Algerians were left behind, essentially serving as human test subjects. Animals – camels, livestock, cats, dogs, rabbits, over 600 laboratory mice, reptiles, birds, and even plants – were also subjected to the tests. Over 200 km of electrical cables and channels were laid, along with 7,000 cubic meters of reinforced concrete at "ground zero" (Tamenghest in Hamoudia), which remains buried alongside military equipment, including planes, tanks, and other weaponry.

Specialized equipment was used to study the effects of the nuclear blast and resulting radiation on living organisms and plants. Residents received instructions to leave their homes, lie face down, cover their bodies, and leave windows open to mitigate the blast's effects⁵.

-4-The Nuclear Crimes in Algeria:

On February 13, 1960, at 7:30 AM, France detonated its first nuclear bomb in the Reggane desert, with an explosive yield of 70 kilotons of TNT. Dubbed "Gerboise Bleue" ("Blue Jerboa"), its power exceeded that of Hiroshima and Nagasaki combined. Algerian researcher Amar Mansouri, who has extensively documented this event, reveals that the radiation affected Reggane and the Touat region, as well as the Tenzeroft desert, impacting an estimated population of over 140,000, with Reggane alone housing approximately 8,000 inhabitants at the time⁶.

Hamoudia was the site of the first surface tests (1960-1961), with four detonations releasing approximately 130 kilotons of dynamite. This was followed by tests in the Hoggar mountains and further tests in Reggane: "Gerboise Blanche" ("White Jerboa") on April 1, 1960, and "Gerboise Rouge" ("Red Jerboa") on December 7, 1960 (coincidentally the third anniversary of the construction of the Nuclear Studies Institute in Algiers). "Gerboise Verte" ("Green Jerboa"), scheduled for April 5, 1961,

³ Abdullah Fatiha and Qamou Sabah: The French nuclear explosions in Reggane and their effects on the environment and population, graduation thesis for a degree in applied studies in biology, Biology Department, Oran, 2001, p. 25.

⁴ Yana Abdel Hamid and Aabidi Abdel Karim: The Environmental Effects of the French Bombings in Reggane, Graduation Thesis for the Secondary Education Certificate, Higher School of Teachers in Literature and Humanities, Bouzareah, Department of History and Geography, 2013-2014, pp. 30-31.

⁵ Richard Ario-Tuyofa: Recognition and Reform, Proceedings of the Second International Symposium on the Effects of Nuclear Tests in the World - The Algerian Sahara as a Model - February 22-23, 2010, p. 163

⁶ Azawi Al-Sheikh and Kobi Muhammad: Reggane Springs and Their Biological Risks to the Inhabitants of the Algerian Sahara, Graduation Thesis for a Certificate of Applied Studies in Biology, University of Oran, 2002-2003, p. 9.

failed due to technical errors, possibly linked to concerns about an impending coup in Algiers. Underground tests were also conducted, including "Monique" (120 kilotons) at Tan Afalou (In Iker) in the Hoggar Mountains. French presence in Reggane and Hoggar continued until 1967 under the Evian Accords⁷.

According to sources within the French Ministry of Defence, France now possesses 16 missiles and 96 nuclear warheads with a combined power of 14 megatons (14 million tons of dynamite), dwarfing Hiroshima's bomb. While France entered history books for this feat, Hamoudia remains a poignant reminder of the price paid⁸.

-5-The Devastating Aftermath--

The French nuclear tests occurred at a time of heightened global awareness of nuclear weapons' dangers. The widespread contamination from these surface tests spurred the 1963 Moscow Treaty banning atmospheric and underwater nuclear tests. The fallout spread far and wide—reaching southern Portugal, Japan, N'Djamena, and even parts of the United States.

These tests were nothing short of crimes against humanity. France utilized its colonies in Africa and the Pacific, as well as the Algerian Sahara, as testing grounds for its military nuclear program. The resulting environmental damage and health problems continue to affect the populations of these areas. French studies estimate that 42,000 Algerians were used as test subjects. The sheer brutality of the tests, leaving victims frozen like plastic, is chilling. France's actions represent a profound moral failing⁹.

Even today, the dangers persist. High radiation levels in Reggane continue to limit access. France has failed to provide maps of test sites, and the remaining infrastructure is crumbling or obscured by the desert sands. Mohammed Ben Djebbar, a 68-year-old veteran and one of the few surviving Algerian witnesses, recounts the lasting impact of the tests, including the abandoned French military installations and the lingering radioactive contamination. He cites testimony from French military and medical personnel confirming the use of unprotected civilians as human test subjects¹⁰.

The consequences have been catastrophic: increased mortality rates, skin ailments, vision and hearing loss, respiratory problems, blood clotting disorders, and birth defects. The region's flora and fauna have also suffered terribly¹¹.

The scarcity of information on the health effects is due to two factors: the designation of southern Algeria as a military zone during the colonial era and the continued French control of the area until 1968 under the Evian Accords. French medical support remained in place until 1975 due to a shortage of Algerian physicians¹².

⁷ Ammar Mansouri: The epic of nuclear tests in the world, and the tragedy continues..., Proceedings of the Second International Forum, previous reference, pp. 38-39.

⁸ Mustafa Khayati: The Effects of Nuclear Radiation on the Population of Southern Algeria, Proceedings of the Second International Conference, previous reference, p. 100.

⁹ Mustafa Khayati: The Effects of Nuclear Radiation on the Population of Southern Algeria, Proceedings of the Second International Conference, previous reference, p. 100.

¹⁰ Ammar Mansouri: Nuclear Energy between Risks and Peaceful Uses, Al-Ru'ya Magazine, National Center for Studies and Research on the National Movement and the November 1st Revolution, Issue 3, 1997, p. 43.

¹¹ Abdul Kadhim Al-Aboudi and Baba Ahmed Mohamed Bey: The health and environmental situation in the regions of Reggane and Ain Iker before and after 50 years of the French nuclear explosions in the sixties, Proceedings of the Second International Conference on the Effects of Nuclear Tests in the World - the Algerian Sahara as a Model - February 22-23, 2010, p. 71.

¹² Abdelkader Fakir: The French nuclear explosions in Algeria and the national positions on them, Al-Masader Magazine, Issue 15, National Center for Studies and Research on the National Movement and the Revolution of November 1, 1954, 2007, p. 143.

The full extent of what transpired before and after Algerian independence remains largely undisclosed. The long-term threat to the health of those affected continues¹³.

-6-Reactions to the Nuclear Crim

--National Reactions:

-- **The Algerian revolution:** vehemently condemned the tests. The Algerian government declared it a crime against humanity Al-Mujahid newspaper, dated 02/22/1960 AD, included a statement by Mr. Muhammad Yazid, Minister of Information for the Algerian government, in which he condemned the explosion of the atomic bombs in Yergane, which stated: "The French atomic explosion that took place in our desert on 02/13/1960 is yet another crime recorded in the list of French crimes. It is a crime against humanity and a challenge to the global conscience that expressed its feelings in a resolution approved by the United Nations General Assembly. The French government does not give any consideration to the cries of protest and denunciation against its nuclear programs, those loud cries from all peoples, African, Asian and American..."¹⁴.

--**Arab World Reactions:** The Arab League, hampered by political turmoil, responded later, with the Algerian ambassador denouncing the tests and proposing various sanctions against France. Morocco protested, ultimately severing diplomatic ties with France

In February 1959, Morocco opposed the French nuclear tests in the Algerian Sahara, sending several letters to the President of Paris without a response. Following this, Morocco summoned the United Nations to its fourteenth session of the General Assembly. After the bomb was detonated, Morocco cancelled the diplomatic agreement concluded with France on May 28, 1956. . Egypt It was a position of condemnation and denunciation of what France had committed against the Algerians in general and the Sahara in particular, and this is what the Minister of Culture and National Guidance, Dr. Abdelkader Hatem, stated when he said: "Since the French nuclear tests constitute a clear act of aggression against the human race in its aspirations and future, they are therefore considered a direct violation of the rights of the Algerian people." Accordingly, Egypt opposed the operation from its very foundation with the strongest opposition. , Libya The Libyan government sent a memorandum to the French embassy condemning the French government's actions following the detonation of a French nuclear bomb in the Algerian desert, and thus expressing its solidarity with the interim Algerian government., and Iraq also condemned the actions¹⁵.

--**African Reactions:** Guinea threatened to break ties with France, and Ghana froze French assets.

--**International Reactions:** A 26-nation committee aimed to bring the issue before the UN, but their efforts were thwarted by existing loopholes in international law. NATO supported France, while the Soviet Union and other nations condemned the tests¹⁶.

-7-Proposed Solutions--

¹³ Nouman Istambali: A review of the book French Nuclear Tests by Bruno Briot, Nuclear Tests in Algeria, National Center for Studies and Research on the National Movement and the November 1st Revolution, 2000, p. 198.

¹⁴ Ahmed Marboush: Impressions and Position on Issues of Algeria and the Arab World, 1st Edition, Treasures of Wisdom, Algeria, 2013, p. 68.

¹⁵ Ahmed Marboush: Impressions and Position on Issues of Algeria and the Arab World, 1st Edition, Treasures of Wisdom, Algeria, 2013, p. 68.

¹⁶ Ezzedine Zallani: The Law on Compensation for Victims of Nuclear Tests, a Limited Liability Law, Proceedings of the Second International Forum, previous reference, p. 262.

After 53 years, France needs to acknowledge its responsibility and address the environmental and health consequences of its actions. This requires:

- Bilateral negotiations based on international environmental law to assess and compensate for the damage.
- Public acknowledgement of the crimes and compensation for victims.
- Comprehensive data collection on radioactive contamination.
- Development of remediation strategies.
- Transparency and collaboration with all stakeholders.
- International cooperation to address the environmental cleanup.
- Training for local personnel on remediation technologies¹⁷.

Conclusion:

The nuclear tests in the Algerian Sahara were part of a broader colonial strategy, conducted under the guise of national security and scientific advancement. The tests, allegedly aided substantially by Israel, were a stark demonstration of France's disregard for human life and the environment. The lasting effects of these tests continue to haunt the region, serving as a grim reminder of the long-term consequences of such actions. A full accounting of the events, along with appropriate reparations, is long overdue. The world community should demand France take full responsibility for these egregious actions.

The Sahara had entered the scope of the new policy of French Settlement that coincided with the last stages of the Algerian revolution, nuclear tests and barbed wire, or the way of death as the Mujahideen call it, were considered as a declared policy by de Gaulle, who was seeking to get out of the circle of the American encirclement that appeared after the economic and military encirclement that came after the economic superiority that enabled the Americans to political domination over the world, and in the absence of regional and international awareness, France found itself in a safe zone in the Arab world, and the African continent, to conduct its Algeria is its center, where France has implemented its plans Crime without any regard for the environment and man, because French politicians have been infected with the complex of the European man and the superior superstate.

-France's desire to possess the atomic bomb would not have been achieved if it had not been for the Israeli contribution, which is behind 70% of its success, so it was considered the fruit of French-Israeli cooperation, but this fact has become lost historically, and it has been hidden for a long time due to the lack of serious academic scientific studies on the subject.

-The choice of the "TUAT" region and the "raqan" area as the scene of the bombings was made by Jewish experts who wanted to take revenge on the region, soil, people and environment, denouncing the hatred of Imam"bin Abdul Karim Al-mughili", who was credited with the first jihad and completely get them out of the region .

-France committed its nuclear crimes in Raqqa despite its full awareness of the dangers of ionizing radiation to health and the environment, so these tests remain a living physical evidence throughout

¹⁷ Paul Tissonnier: The Legal Aspect and Victims' Care - A Reading of the Law of January 5, 2010 on Recognition and Compensation for Victims of Nuclear Tests - Proceedings of the Second International Forum, op. cit., p. 190.

history of the heinousness of the crimes committed by France during the colonial era against the innocent people of Algeria .

-The impact of the extent of the barbarism of the French bomb is more than the human mind imagines, this impact that affected the environmental system, and did not forget one of its components, man was the most affected, because his life is threatened whenever he approaches the Zero Point, and this danger lasts thousands of years, if he does not find a solution to save future generations from the radiation effects that touched every element of nature.

-The position of the Arab and African countries condemned and denounced what France did in the Algerian desert, even Japan, because it tasted the horrors of this crime, as for the Western countries, some of them condemned and others supported .

-Therefore, all the attempts of persuasion and cover-up pursued by France regarding its nuclear file in the Algerian desert no longer find success, because modern history has recorded events in Gold water, as Germany officially apologized to the Jews for the famous Holocaust, endured and.M.A. all the burdens of the Hiroshima and Nagasaki bombs and ensured all compensation and erased all material and human effects from it .

- The Algerian state must assume full responsibility by resorting to bilateral negotiations based on a set of binding principles of France's responsibility, in order to assess and correct the damage caused to the health and environmental aspects, relying on the new international law of the environment, and efforts based on the introduction of multilateral solutions or international courts can be launched.

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