



Lebanon

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Lebanon Country Report

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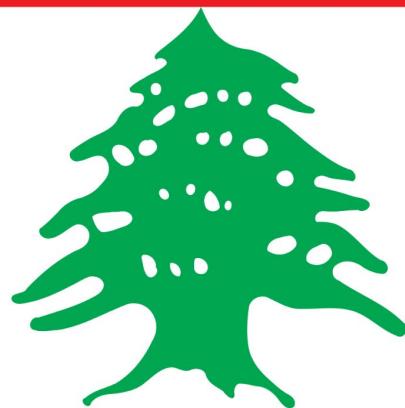


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GENERAL COUNTRY PROFILE

A. Introduction

Despite its small size, Lebanon (officially known as the Republic of Lebanon) is an important commercial and cultural hub of the Middle East. It also tends to carry a fair amount of controversy, resulting from its geographic location bordering both Syria and Israel, as well as its complex mix of religious diversity that includes Christians, Sunni and Shia Muslims, and Druze.¹

B. Geography and Population

Climate, Landscape, Geographic Area, and Population

Lebanon is forty times smaller than the U.S. state of California, measuring just over ten thousand square kilometers. It is bordered to the North and East by Syria, to the South by Israel, and to the West by the Mediterranean Sea.² The Lebanon Mountains run lengthwise (North to South) through the inland portion of the country and contain the highest point in the country, the peak of Qurnat as Sawda' (10,128 ft. (3,087 m)). The Anti-Lebanon mountains run parallel down the Eastern margin and form the major border between Lebanon and Syria. Between the two mountain ranges is the fertile Beeka Valley, which contains soil amenable to farming (in stark contrast to the limestone topsoil of the mountains).^{2,3} Typical to a mountainous region, the landscape of Lebanon is very diverse. Lebanon is also densely packed with people, with an estimated population of 6,685,000 in 2022.³

Similar to its diverse landscape, the mountains of Lebanon contribute to a climate that varies depending on location. In general, it is a sub-tropical climate with hot, dry summers and mild winters during which the majority of the country's

precipitation falls.³ This moisture manifests as snow in the higher mountain elevations.³

Lebanon is famous for its cedar trees, but unfortunately years of tree-cutting for timber has led to destruction of most of the country's forests. While some trees have regrown, it cannot compare to the heavily wooded countryside that now belongs to ancient history.

As forests dwindled, the flora and fauna of Lebanon also suffered. The majority of large wild animals that were once known to roam the landscape are no longer seen, though there are occasional bear sightings in the mountains. With the majority of Lebanese animals being small and medium, there is still an abundance of birds that includes migratory birds from surrounding countries, including flamingos, hawks, snipes, and others.³ A variety of activist and environmental groups focus their efforts on Lebanon, with the hope being that nature can gradually be restored and protected.³

The largest cities and the majority of people dwell along the coastline, with smaller rural agriculture communities found further inland generally where water and soil is amenable to farming. There is a relative socioeconomic gradient that runs vertically through the country, with more prosperous households and modern facilities in the northern region, and more poverty in the southern part adjacent to Israel. As a remnant of the previous civil war, there is also a tangible separation between more Christians in the North, and more Muslims in the South.³ South Lebanon has less fertile soil and has been subjected to damages from conflicts in Israel for years, contributing to its poverty.³



Fig. 1 (Borrowed from worldatlas.com)

Geographic Landmarks and Local Attractions

As seen in the map below (Fig 2), Lebanon is divided into eight governorates:

Aakkar, Baalbek-Hermel, Beyrouth (Beirut), Beqaa (Bekaa), Mont-Liban (Mount Lebanon), Nabatiye, Liban-Nord (North Lebanon) and Liban-Sud (South Lebanon).² The capital of Lebanon is Beirut, which juts out on a small peninsula into the

Mediterranean Sea. It is the nation's largest city and most important commercial hub.²



Fig 2. Map illustrating Governorates of Lebanon (borrowed from worldatlas.com)



Fig 3. Map showing where Lebanon is. (Borrowed from worldatlas.com)

C. History and Culture

Lebanon is home to some of the world's most ancient cultures; in the third century B.C., for example, the Phoenicians used it as an important site of trade. After World War I, it fell under the jurisdiction of France, and stayed that way until 1946 when it established independence. Today, the two countries have good

relations and the French language and culture remain important throughout Lebanon.³

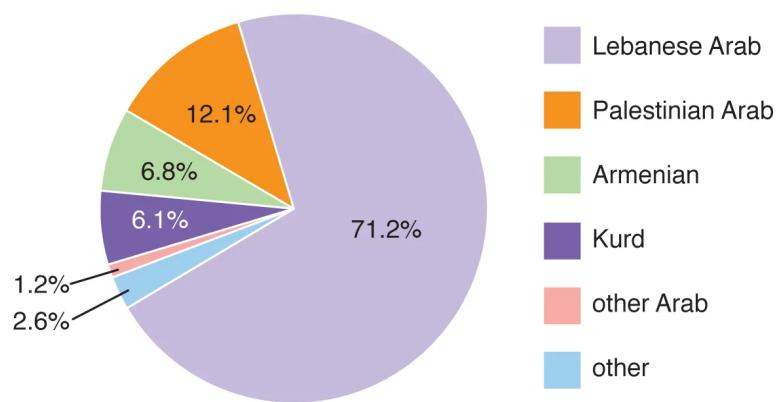
The Port of Beirut experienced a massive explosion on August 4th, 2020.⁴ Hundreds of people were killed, and an estimated 5,000 people were injured in the blast. To compound this, the blast caused structural damage to multiple major hospitals in Beirut, leading to patient evacuations and crippling the healthcare system during a time of need.

Indigenous Groups, Ethnic Groups, and Religion

Lebanon has not conducted an official census since 1932³, which makes obtaining official population statistics a challenge. It is well-established, however, that Lebanon is rich in both ethnic and religious diversity. It has long been used as a refuge for people seeking a safe haven away from persecution, which contributes even more to the mix (a mix that is probably more accurately described as a potpourri than as a melting pot.)

Lebanon's diverse population is illustrated in the pie chart below (data from 2000.)

Ethnic composition (2000)

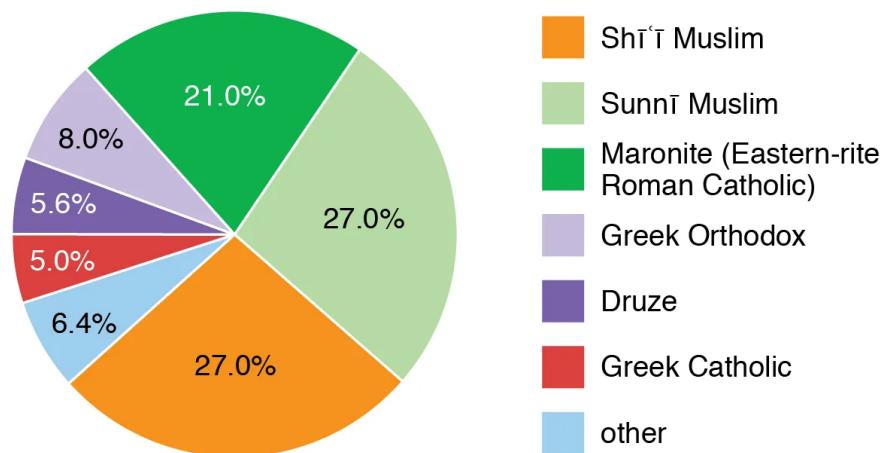


While one of Lebanon's strengths is undoubtedly its diversity, the same characteristic can also be a devastating weakness. One factor contributing to internal (and external) conflicts for Lebanon is its attraction to Palestinian refugees combined with its proximity to Israel.³ In 1975, tensions related to complex relationships such as this escalated to the point of civil war, which lasted from 1975 to 1990.³ Even in times of peace, the delicate balance of ethnic and religious groups is closely intertwined with the government and small changes in the population ratios can result in dramatic shifts in power.

There are multiple major religious groups in the Lebanese population. The most prevalent religions are:

- Sunni Muslim
- Shia Muslim
- Christian (including the Greek Orthodox Church and the Maronites, an Eastern Roman Catholic group)
- Druze¹

Religious affiliation (2012)



Education

Lebanon has a robust educational system and a notably high literacy rate.³ While there are public schools, many children are ultimately educated in private schools with religious ties. Notable universities in Lebanon include: the American University of Beirut (1866), the Université Saint-Joseph (1875), the Lebanese University (1951), and the Beirut Arab University (1960).

Languages

Lebanon's official language is Arabic, but its diverse population makes it not unusual to hear alternate languages like Armenian, Kurdish, English or French.³

Food Staples

Lebanese farming, like the population or the weather, depends on which part of the country you are in. Coastline farmers grow tropical foods like citrus and bananas. Slightly further inland can be found crops such as tobacco, almonds, and olives. The higher elevations are more amenable to fruit trees that thrive at the higher altitudes, such as cherries, apples, and pears. Farmers also tend to livestock such as chickens and goats. Lebanon is one of the world's largest producers of cannabis, and some production (not consumption) was legalized in 2020. Hemp is also harvested to make hashish, which has much higher levels of THC and, unlike cannabis, has not yet been legalized but is distributed widely from Lebanese ports.³ This cannabis/hashish industry has suffered greatly in the past decade, with many people who used to rely on it for their livelihoods having to look elsewhere for sources of income.⁵

Manufacturing/Service Industry

In addition to food growth and processing, manufacturing of textiles, wood products, cement, bricks, tiles, etc. are large parts of Lebanon's economy. Much of this is produced in Beirut's "industrial belt", which was destroyed in the civil war.³

D. Government and Legal System

Lebanon is a republic, governed by a constitution, a president, a premier, a national assembly, and a cabinet.³ Women obtained suffrage in 1953, although this was primarily symbolic. Lebanon has never had a female president, and did not have a female in the cabinet until 2005.³ By convention (not by law), the president is a Maronite Christian, the premier is a Sunni Muslim, and the speaker of the national assembly is a Shi'i Muslim. Parliamentary seats are split evenly between Christians and Muslims, while in the past the majority have been given to Christians. The head of state is the president, who is elected by the National Assembly and serves terms of 6 years, after which consecutive terms are possible. A cabinet is appointed by the president and National Assembly, but ends up having more executive power than the president.³ Individual governorates also have heads of state who work at a more local level, and cities and towns have their own local councils.³

The Lebanese judicial system is fairly robust, with ample amounts of lawyers and a council created to ensure that laws are carried out according to the constitution. Like the legislative portion of the government, there is also substantial religious influence in the judiciary branches. While the judicial system is adequate, many disputes are settled outside of the courts.³

E. Economy and Employment

For years now, Lebanon has been plagued by an economic and financial crisis that some believe may be one of the worst financial crises globally in recent history.³ Both poverty and unemployment are on the rise, and more than half of the population lives below the federal poverty line.⁶ In 2018, Lebanon's GDP was \$55 billion; in 2021 it had more than halved to \$18 billion.²

This extreme economic downturn is a relatively new development. Before the country's extended civil war that started in 1975, the Lebanese economy was fairly stable, and actually managed to maintain some sense of stability for some years into the war. After years of fighting, however, it caved and took a downturn. Extensive recovery efforts after the civil war helped to somewhat restore the country's finances, which sustained the country through the worldwide recession of 2008. Lebanon's current economic woes began in the early 2010s, in part due to the conflict in Syria. Not only was Lebanon dependent on Syria's economy, but it experienced a massive influx of Syrian refugees.³

While every aspect of Lebanese life was impacted negatively by the years of civil war, the service industry was hit the hardest. In pre-war times, Beirut was known for being a lively tourist destination with numerous nightclubs, restaurants, hotels, and cultural attractions. Naturally, the increase in violence both internally and in surrounding nations was a deterrent to those who might choose to spend their vacation there. While tourism has increased in post-war times, Lebanon is not yet safe enough to become the travel destination that it once was. At the time of this report, the U.S. State Department has given travel to Lebanon a Level 3 Warning: "Reconsider travel to Lebanon due to crime, terrorism, armed conflict, civil unrest, kidnapping and Embassy Beirut's limited capacity to provide support to U.S.

citizens.”⁷ One can only imagine the effects of a warning like this on an already struggling tourism industry, especially when combined with the continued global pandemic.

Relatively speaking, Lebanon has a functional labor movement, with multiple trade unions organized into confederations that include the “General Confederation of Lebanese Workers”. The country has a minimum wage that is adjustable based on cost of living.³

The Lebanese currency is the Lira (Lebanese Pound), which has lost significant value secondary to massive inflation in the triple digits. As illustrated in the World Bank graph below (Fig 3), Lebanon’s inflation spiked dramatically in 2018 without signs of slowing and became one of the highest in the world, with inflation rates in 2021 hitting 154%. For comparison, inflation in 2021 was 1.0% in China, 4.7% in the United States, 5.1% in India, and 23.6 in Liberia.⁸



Figure 3. Inflation spike between 2018 and 2020

Accompanying the rising inflation, poverty, and unemployment is the inevitable decline in access to basic services such as healthcare. Without federal reserves to import supplies, medication is both difficult to come by and expensive. Fuel shortages lead to widespread electrical outages and challenge even the shortest commutes.⁶

Recent events have furthered the country's economic downward spiral. Both the explosion of the Port of Beirut and the Covid-19 pandemic went beyond extensive loss of lives and deeply affected the country's finances.⁶ After the Port of Beirut explosion, a Rapid Damage and Needs Assessment (RDNA) was conducted by the World Bank, the European Union, and the United Nations. This assessment concluded that the total value of the damages incurred was between 3.8 to 4.6 billion U.S. dollars. They then used these results to create the Reform, Recovery and Reconstruction Framework (3RF) in 2020, a platform designed to address the immediate short term economic issues in Lebanon. Improving the economic and financial status of the country will require more extensive and overarching reform, however, and repairing the damages and returning to the state of affairs prior to the explosion is only a band-aid. Lebanon will have to bring about social, financial, and government reform in order to coax in more international investments and monetary aid.⁶

F. Physical and Technological Infrastructure

Transportation

Its central location in the Middle East has contributed to Lebanon's network of trans-country highways. There are also railway systems, though like much of the other infrastructure, these were damaged in the Civil War. The Port of Beirut

remains the major hub for ships transporting both passengers and goods. There is one commercial airport in Lebanon, the Beirut–Rafic Hariri International Airport (previously known as the Beirut International Airport). Due to increased use, expansion of this airport began in 2019.³

Housing

Housing is a major issue in Lebanon, where there are many people attempting to inhabit a small piece of land. There is no public housing, and large influxes of Syrian and Palestinian refugees contributed to significant population living in makeshift homes that lack basic facilities.³

NATIONAL HEALTH CARE SECTOR

A. National Health Care Profile

Death/Birth Rates

Interestingly, Lebanon has a death rate that is lower than the world average, as well as lower than the surrounding countries. It also has a slightly lower than average birth rate.³

Public Health and Common Diseases/Illnesses

When compared to neighboring Middle Eastern countries, the Lebanese are relatively healthy people. Their diet is nutritious and the favorable climate spares the population from many of the disease processes that afflict many others in the region. There has historically been a fair amount of doctors and other skilled laborers that keep the hospitals functioning, although this number continues to drop as the economic crisis continues. Though hospitals and other healthcare facilities suffered during the country's civil war, significant efforts were put into reviving them.³ Per

usual, the majority of healthcare services are found in the cities, with rural healthcare harder to come by.

Cancer has been steadily on the rise in Lebanon, with rates of increase surpassing all of its neighbors.⁹ The increase in malignancies such as bladder and lung cancer is clearly linked to the prevalence of smoking among the Lebanese people. Other types of cancer are also on the rise, including breast and prostate.⁹

B. National Health Care Structure

Health System Structure and Policy

While Lebanon traditionally has had an adequate health care system with enough doctors and other healthcare workers to provide for the population, the recent economic downturn is threatening to wreak havoc on the entire system. With more patients shifting to public hospitals and requiring federal aid, both the private and public sectors are struggling with some medical facilities forced to shut their doors. As the future of healthcare begins to appear more dire, more and more healthcare providers are leaving for Europe and other countries, in order to pursue more hopeful prospects. According to a January 2022 Reuters article, 40% of the healthcare workforce (approximately 2,000 nurses and 1,000 doctors) has already left.¹⁰

While more and more patients are requiring financial assistance for healthcare, lack of these funds is unavailable. In his interview with Reuters, Health Minister Firass Abiad discussed that legislation needs to be passed in order to allot funds for assistance, but that gridlock in the government is preventing this from happening in a timely manner and pushing the situation even closer to the brink of disaster.¹⁰

NATIONAL RADIOLOGY PROFILE

Radiology has been a crucial part of Lebanese healthcare since the x-ray was discovered in 1895 and the country's first radiograph machine was installed at what is now the American university of Beirut Medical Center three years later.¹¹

Since this inception, radiology in Lebanon has undoubtedly modernized. Interventional Radiology was introduced to the AUBMC in the 1970s, and continues to play a vital role there.¹¹ In the 1990s, teleradiology and video conferencing was introduced.

Like the other Arab countries in the region, Lebanon has a paucity of radiologists.¹¹ Radiologists have little incentive to stay in Lebanon when they could instead earn more money and live more comfortably in a country like the United States or France. Until the current economic woes are resolved, it is difficult to imagine how this problem can be fully addressed.

The largest radiology program in Lebanon is the Department of Diagnostic Radiology at the American University of Beirut Medical Center in Beirut.¹² It has 16 full-time faculty members and 22 residents and fellows, and on its website prides itself on being "subspecialized and equipped with the most advanced and modern equipment providing a full range of diagnostic and therapeutic radiologic services for adults and children, including conventional radiography, fluoroscopy, ultrasound, CT, MRI, Digital Mammography, interventional radiology, SPECT/CT, scintigraphy, PET/CT and on-site cyclotron."¹² The department has been operating since 1950, and the residency program meets requirements for the Royal College of Radiologists in the UK, allowing graduates to sit for the FRCR exams (Royal College of Radiologist Board exams). The program goes on to state that most of its graduates

go on to desired fellowship programs in the United States and board certification by the American Board of Radiology.¹²

The department is equipped with two multidetector CT scanners, a 1.5 Tesla and a 3.0 Tesla MR scanner. The Mamdouha El Sayed Bobst Breast Unit (MSBBU) is a breast center dedicated to a comprehensive approach to breast health that includes physical exam, imaging, consulting, treatment, and post-treatment follow-up services.¹²

Professional Radiology Societies include the Pan Arab Association of Radiological Societies (PAARS)¹³ and the the Lebanese Society of Radiology (included in PAARS).¹³ The Lebanese Society of Radiology first created a radiology nomenclature in 1961 and officially created regulatory laws in 1963.¹²

CONCLUSION

This report was meant to be a somewhat comprehensive, but by no means exhaustive, overview of the country of Lebanon while touching on the country's healthcare and radiology sectors. As Lebanon changes and evolves each day, so will these characteristics. It is therefore important for people who are interested in working in or with Lebanon to conduct their own research and to ensure that they have a good understanding of the country's needs and resources before a project is started.

It is also useful to attempt to predict the impact that various initiatives will have. For example, as mentioned above, many radiology residents who train in Lebanon eventually go on to fellowship in the United States. While they then have the option to return to their homeland, there are undoubtedly some who chose to stay in the place where they complete their fellowship. And while we in the United

States benefit from these Lebanese-trained radiologists coming here to further their education, Lebanon loses a radiologist each time one of them decides to stay.

Lebanon is a country with a fascinating history but an equally fascinating future, as we wait with bated breath to see what will happen with the economy, the healthcare system, and the country as a whole. What results will impact future partnerships, need for potential aid, and of course, the lives of millions of people living there.

REFERENCES

[1] Lebanon country profile. BBC News.
<https://www.bbc.com/news/world-middle-east-14647308>
 Published September 14th, 2021. Accessed September 10th, 2022.

[2] Maps of Lebanon. WorldAtlas. <https://www.worldatlas.com/maps/lebanon>.
 Updated February 24, 2021. Accessed September 11, 2022.

[3] Ochsenwald, William L. , Maksoud, Clovis F. , Barnett, Richard David , Khalaf, Samir G. , Kingston, Paul and Bugh, Glenn Richard. "Lebanon". *Encyclopedia Britannica*, 23 Aug. 2022, <https://www.britannica.com/place/Lebanon>. Accessed 12 September 2022

[4] Farha L, Abi Jaoude J. Lebanese Healthcare System: How Will the Aftermath Look? Cureus. 2020 Sep 6;12(9):e10270. doi: 10.7759/cureus.10270. PMID: 33042708; PMCID: PMC7538024.

[5] Hubbard, B. "If There Were No Hashish Here, You Wouldn't See a Single House". Updated November 6th, 2020.
<https://www.nytimes.com/2020/10/19/world/middleeast/lebanon-hashish-cannabis.html>. Accessed 9/13/2022.

[6] Lebanon country webpage. World Bank Group.
<https://www.worldbank.org/en/country/lebanon/overview>. Last updated October 2021. Accessed September 11, 2022.

[7] Lebanon travel advisory. U.S. Department of State - Bureau of Consular Affairs. July 11th, 2022.
<https://travel.state.gov/content/travel/en/traveladvisories/traveladvisories/lebanon-travel-advisory.html>

[8] Inflation, consumer prices (annual %) - Lebanon. International Monetary Fund, International Financial Statistics and data files. The World Bank.
<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=LB>. Accessed September 11, 2022.

[9] Al Kattar et. al. Medical Physics Challenges and Status in Lebanon. Medical Physics International Journal, vol.9, No.1, 2021 <http://mpijournal.org/pdf/2021-01/MPI-2021-01-p048.pdf>. Accessed September 15th, 2022.

[10] Azhari, T; Bassam, L; and Saad, M. (2020) Lebanon's healthcare on brink of collapse amid crisis, says minister

<https://www.reuters.com/world/middle-east/lebanons-healthcare-brink-collapse-amid-crisis-says-minister-2022-01-20/>

[11] Haddad MC, Loutfi SI, Tamraz JC, Al-Kutoubi AO. The status of radiology in the Arab world. First world report. J Med Liban 2007 ; 55 (2) : 94-98.

file:///C:/Users/campb/Downloads/The_status_of_radiology_in_the_Arab_world_First_wo.pdf. Accessed 9/14/2022.

[12] The Department of Diagnostic Radiology at AUBMC: the Backbone of Decision-Making in Medicine.

<https://www.aub.edu.lb/fm/DiagnosticRadiology/Pages/default.aspx>. Accessed 9/14/2022.

[13] The Lebanese Society of Radiology. <https://www.lsradio.org/the-lebanese-society-of-radiology.html>. Accessed 9/14/2022