



Stagnation or Growth? Algeria's development pathway to 2040

Agriculture, climate change and access to water

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Agriculture, climate change and access to water

Owing to the vast expanse of the Sahara Desert, Algeria has only about 8.4 million ha of arable land—less than 4% of the total land area. Just over 50% of arable land is dedicated to the cultivation of crops, mostly cereals and pulses.

In 2016, the sector was estimated to employ nearly 20% of the rural population. Approximately 70% of farming activities are small-scale and families depend on farming for food security, but productivity is low.[1]

The sector contributes a modest 11–12% of GDP, having declined in importance after independence as successive governments favoured industrialisation.[2] Lack of investment, years of government restructuring, limited water resources and dependence on rainwater, and state-controlled land ownership policies have constrained improvements in agricultural production.[3]

Although agriculture's contribution to GDP is projected to decline steadily out to 2040, the sector's absolute contribution (estimated at €40.9 billion in 2020) is forecast to increase to €50.2 billion by 2040.

Through various National Agricultural Development Plans (PNDAs) since 2000, agricultural yields have improved although the sector is generally less productive than that of its income peers. Algeria's average yield of 3 metric tons per hectare is closer to the average for low-income African countries (2.6 tons per hectare) than the rest of lower middle-income Africa (5.2 tons per hectare).

Algeria's heavy reliance on commodity exports (aka the Dutch disease) makes agriculture and manufacturing less competitive.[4]

Moreover, global warming is causing serious drought concerns in the region. The year 2020 has been marked by below-average rainfall, with pockets of drought constraining yields.[5]

Although Algeria's yields are projected to improve to 3.6 metric tons by 2040, they will still be significantly below the average for OLMICs and UMICs. Currently the gap is 3.7 and 4.7 metric tons respectively, which will stay more or less the same until 2040.

Since there is limited scope to increase land under cultivation, intensification is the most viable pathway to improve efficiency in agriculture. This involves increasing land under irrigation, using better seeds and fertilisers, and introducing modern farming practices, including urban, indoor and vertical farming.

Additionally, reductions in loss and waste from production to consumption could help to meet food demand.

Because of poor yields, agricultural demand has outstripped supply since the 1970s, making Algeria heavily dependent on food imports. According to the Algerian Customs' National Centre of Data Processing and Statistics (CNIS), in 2017 the country imported foodstuffs worth about €6.7 billion, reflecting a 3% increase from 2016.[6]

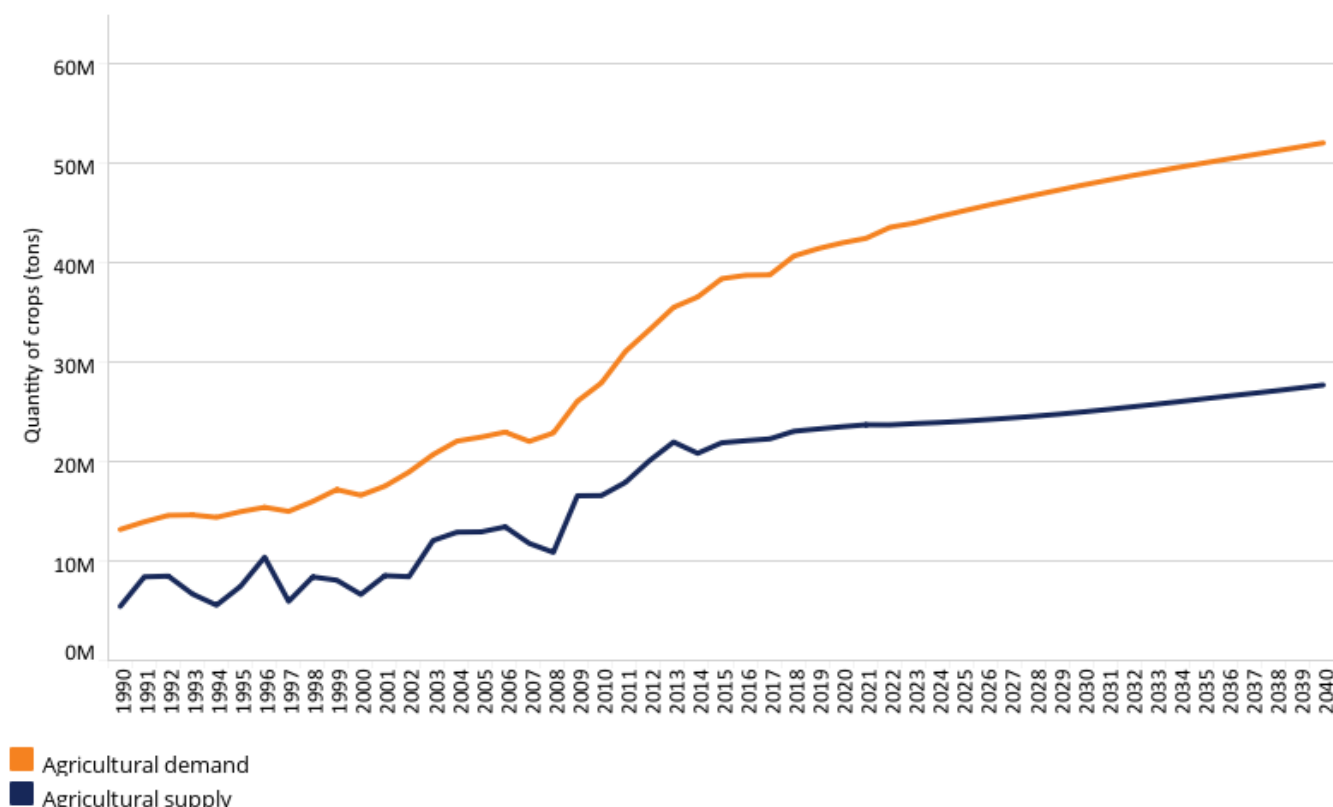
This heavy import dependence exposes the country to disruptions in international supply chains, price shocks and other related risks. This is particularly becoming evident with the COVID-19 crisis amid the depletion of the country's foreign reserves.

Algeria thus faces an interlinked double risk of commodity vulnerability: one from food imports and a second from

hydrocarbons. A slump in oil prices from over US\$100 a barrel in 2014 to roughly US\$20 in 2020 has left it struggling to fund its approximately €46 billion annual import bill, of which food comprises about 20%.

Chart 11 shows the excess demand for crops that is likely met through imports.

Chart 11: Agricultural supply and demand



Source: IFs version 7.53, historical data from Food and Agriculture Organization

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Water is under great stress. It is central to agriculture - the sector that also uses the most water (5.4 km³ of total water demand of 8.3 km³). This is despite the fact that Algeria straddles large non-renewable fossil water reserves that were vigorously exploited in neighbouring Libya before the civil war.

Currently, Algeria withdraws about 1.7 km³ fossil water, while about 11% of its water supply is from expensive desalination plants. It is therefore ironic that it is one of the most wasted resources in the country owing to the subsidy policies. Subsidised electricity (which also stalls the transition to cleaner energy)[7] is used to produce desalinated water, to which a second round of subsidies is then applied.

In turn, any food wastage squanders all the previous energy and water inputs that went into its production, cultivation, processing and packaging. It is very likely that the current water subsidy policy is unsustainable[7] and the Current Path forecast is that water prices will increase through 2040.

Apart from a difficult agricultural ecosystem, North Africa is highly vulnerable to the impact of climate change, which is expected to significantly undermine water supplies and food security, in turn threatening regional stability and creating security concerns.[8]

Chart 12: Impact of climate change

In July 2018 the people of Ourgla, Algeria experienced the hottest temperature ever reliably recorded in Africa, at 51.3 °C.[9] Analysis of climate data from 1931–1990 shows that northern Algeria has already recorded a temperature rise of 0.5 °C and could see an increase of 1 °C by 2020,[10] while rainfall will reduce by 5–13%.^[6] A 2 °C rise is expected by 2050.[11]

Rising temperatures associated with climate change will reduce the area of land available for agriculture, shorten the length of growing seasons, reduce yields, and affect freshwater availability and population growth. The expected drop in annual precipitation will aggravate these effects. Studies show that sea-level rise, droughts and floods are also direct threats. They will potentially affect livelihoods and have devastating socio-economic impacts.

Sea-level rise will likely have a negative impact on livelihoods along the coast, where the main economic and social activities are concentrated. Nearly 69% of Algeria's population lives within 100 km of the coast. Apart from disruption in incomes from activities such as tourism, rising sea levels and the impact of storms will cause considerable population displacement.[12]

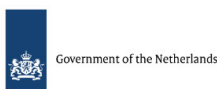
Climate change will have cross-cutting effects beyond agriculture and should be taken into account in development planning in Algeria.

Climate change's possible impacts in North Africa are not fully understood, but what is clear is that many factors interact and amplify other drivers and impacts. Nonetheless, the relationship between climate change, stresses on natural resources and increased risk of internal conflict is well established.[13]

Endnotes

1. Food and Agriculture Organization (FAO), [Family Farming Knowledge Platform: Algeria](#)
2. Tin Hinane El Kadi, Peer reviewer, London School of Economics, 15 June 2020. After independence Algeria's industrial policy was based on an import substitution industrialisation (ISI) strategy and focused on the promotion of unbalanced growth, favouring heavy manufacturing over agriculture and investment over consumption.
3. Encyclopedia of the Nations, [Algeria: Agriculture](#)
4. Tin Hinane El Kadi, Peer reviewer, London School of Economics, 15 June 2020
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6. Global Islamic Economic Gateway, [Algeria's food imports increase](#), January 2018
7. Tin Hinane El Kadi, Peer reviewer, London School of Economics, 15 June 2020; Subsidies in traditional sources of energy stall the transition towards cleaner sources of energy. State subsidies of electricity generated by fossil fuel create a disincentive to move towards solar energy. The government should accelerate its energy transition by decreasing its subsidies of traditional energy sources and supporting renewable energies.
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10. F Sahnoune et al., [Climate Change in Algeria: Vulnerability and Strategy of Mitigation and Adaptation](#), *Energy Procedia*, 36, 2013
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13. CE Werrell and F Femia, [Climate change raises conflict concerns](#), *The UNESCO Courier*, 2018–2

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