POLICY PAPER

PLUMMET OR PROSPER:

NOV 2021

THE RISKS AND POTENTIAL OF LEBANON'S PRODUCTIVE ECONOMY

SHAYA LAUGHLIN DAVID WOOD

HOW FARMS AND FACTORIES CAN MAKE OR BREAK LEBANON'S FUTURE







EXECUTIVE SUMMARY

In September 2021, the newly appointed Mikati government's ministerial plan committed to shifting Lebanon towards a more productive economy. Two years ago, it seemed far-fetched that a Lebanese billionaire like Najib Mikati, as the country's prime minister, would advocate for investment in sectors like agriculture and industry. Since the civil war, Lebanese authorities have presided over a flimsy unproductive economic model permitting elites to indulge in rent-seeking activities. Oriented around a service-led economy, crony capitalism flourished at the expense of ordinary Lebanese, who did not share in profits generated from uncompetitive markets.

Instead of promoting agricultural and industrial production, Lebanon relied overwhelmingly on importing products from overseas – an affordable, easy option made possible by the wildly overvalued Lebanese Lira. This reckless economic strategy imploded spectacularly in October 2019, when Lebanon entered one of the most severe financial crises in recorded history. The Lebanese Lira, which has lost up to 90 percent of its value, can no longer purchase the same imports that once papered over the lack of Lebanese-made goods.

Managed correctly, Lebanon can reap huge rewards from shifting to a more productive economy. Key productive sectors – ranging from high-value crops to pharmaceuticals and creative consumer-facing products – can drastically improve Lebanon's outlook from at least three key perspectives. Workers stand to benefit from more plentiful, sustainable jobs; aspiring entrepreneurs can be rewarded for innovation and willingness to take commercial risks; and the environment will find reprieve

from sustainable agriculture and manufacturing leading the country's long overdue green transition.

Unfortunately, however, the potential for exploitation already lurks within Lebanon's productive sectors. The agriculture industry relies overwhelmingly on cheap Syrian labour, cartels control markets for essential inputs, and farmers lack social protections for their increasingly precarious livelihoods. Uncompetitive behaviour similarly bedevils the manufacturing sector, as new entrants struggle to compete with politically connected firms that enjoy well-established, protected market shares. As ever in Lebanon, elites stand ready to bend any significant economic developments to their own selfish ends.

Lebanon's productive shift will not happen overnight. Accordingly, this economic reorientation demands careful, long-term planning by state and non-state actors alike. The bankrupt government, which cannot provide direct investment for the transition, should focus on regulatory reforms and enforcement mechanisms for laws covering labour, fair market competition, and environmental protection. Separately, non-governmental stakeholders can take immediate action by providing technical assistance for adopting green technology, empowering workers and vulnerable groups, and competitive business practices.

Lebanon's financial crisis presents an opportunity for revolutionary, productive change. Yet, without a determined fightback, the country's rapacious elites will merely switch their bankers' suits for farmers' overalls and continue to hold the economy hostage. Today farms and factories can make or break Lebanon's future, depending on the turns they take along the perilous path to a productive economy.



Box: What is a productive economy shift?

A switch to a productive economy occurs when a country concentrates resources in sectors like agriculture and industry, which produce goods locally. If managed effectively, a productive switch can tackle socio-economic problems like import dependence and high unemployment rates. Such a change requires long-term structural reforms.

Without state intervention, the economic crisis has already forced many Lebanese people to accept the pressing need for a productive shift. In a functioning country, such a transition would require government funding and tax incentives for farms and factories, as well as better training opportunities and improved infrastructure. In Lebanon, a lack of available investment remains the biggest obstacle to growing the agriculture and industry sectors.

THE RISKS OF FALLING

LEVEL 1: THE WORKERS

Theoretically Lebanese workers would benefit greatly from the country moving away from a service-based economy. Productive sectors should be creating more jobs than they do at present. Many Lebanese industries have lain dormant for decades, performing far below their potential rate of job creation. For example, pharmaceutical Lebanese manufacturers have sufficient technical capacity to satisfy local demand for generic medications; nevertheless, due to consumer preferences for foreign-made drugs, the sector only claims a 21% share of the domestic generics market.1 For its part, a more productive recycling industry could supply raw materials to Lebanese manufacturers and even export recyclables to foreign markets. Estimates indicate that recycling businesses could create 5,000 new jobs by 2025 if Lebanon participated in a

comprehensive regional programme for recycling.² Importantly, it would often be unskilled workers who benefit from such new livelihood opportunities, ameliorating the worst impacts of the current crisis.

The Lebanese Lira's devaluation means that many agricultural and industrial enterprises have more competitive export offerings—and therefore could receive payments in foreign currency—than previously. As one example, Lebanese wines have already become affordable in Western European markets, even after import duties are applied. With proper wage and work condition regulations, workers stand to benefit from their employer's increased prosperity. Already, a considerable number of Lebanese food companies provide their direct employees with fair wages and social protection coverage. Such equitable employment structures are essential to arrest Lebanon's alarming spike in poverty rates and promote sustainable, inclusive development.

At present, however, both agriculture and industry need drastic reforms and regulation of employers for workers to realise these potential benefits. Lebanon's productive sectors currently rely on providing poor working conditions—with scant legal guarantees and social protections—and exploiting vulnerable communities to maximise profits. These practices risk spoiling the chance for everyday workers getting a fair deal in Lebanon's productive sectors.

Pitfall 1: Poor working conditions

Most workers in Lebanon's productive sectors do not receive a decent living wage. Even before the economic crisis, the minimum wage (around LL 675,000) was inadequate and could not keep a family of four above the poverty line.³ To make matters



"At present, captains of productive industry face precious little resistance to maintaining poor working conditions for most employees."

worse, there is poor enforcement of the minimum wage which is has not been updated to reflect rising costs of living. Today, the market value of the minimum wage hovers at around \$US32 per month—barely enough to fill a medium-sized car with fuel.⁴ In reality, most agricultural workers do not even receive this paltry salary, given that they work informally and accept payment below the minimum wage. A person working in manufacturing in Lebanon earns around LL 1,560,000 per month but salaries vary greatly across the sector depending on the position.⁵

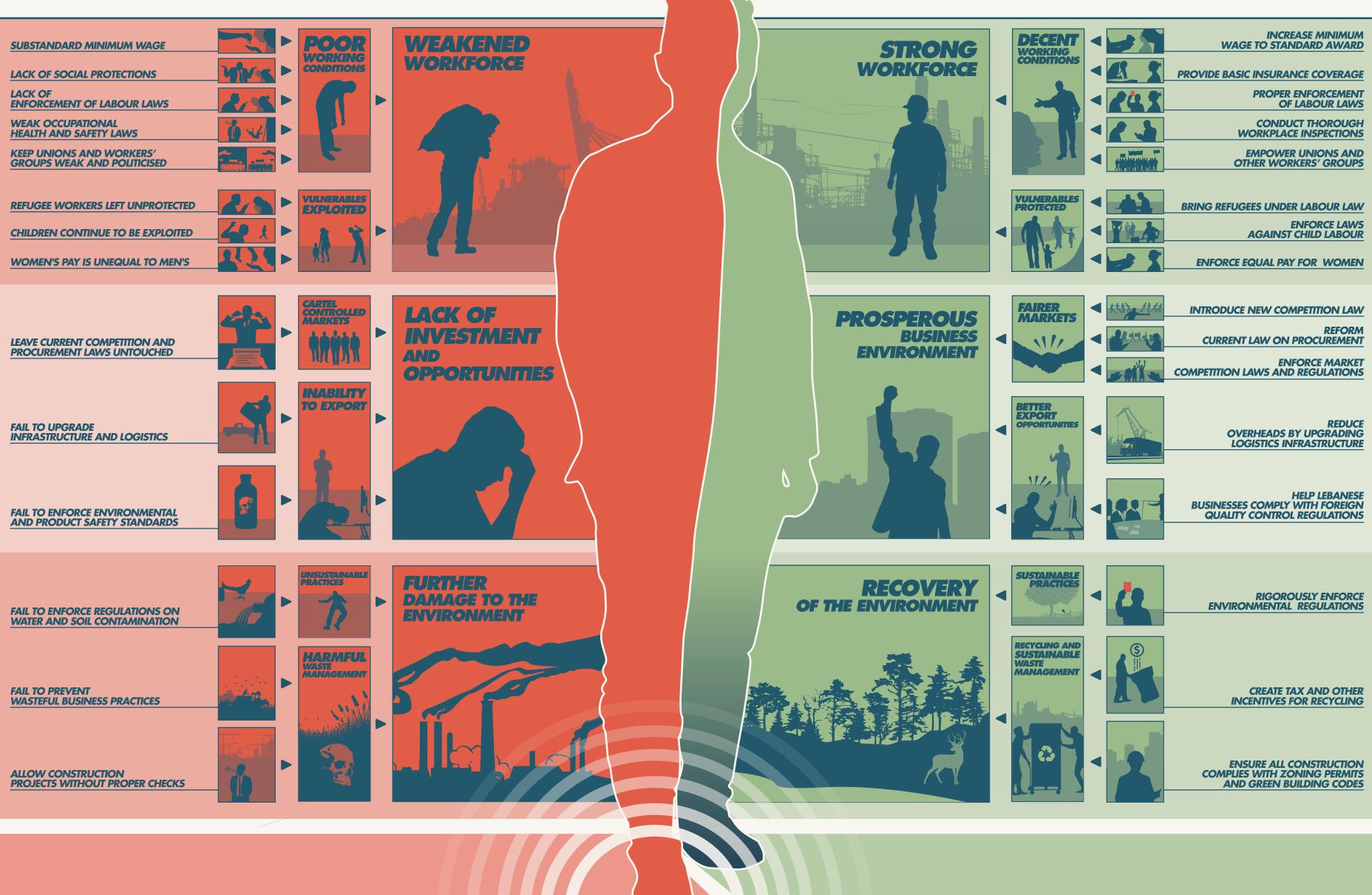
With most workers not having social protection, the situation entrenches cycles of poverty. In agriculture, more than 75 percent of farmers and farm workers do not benefit from social security, which usually covers retirement, as well as life and disability insurance protection.^{6,7} This means that most farmers are left to fend for themselves when they reach old age or get sick, injured, or pregnant. Similarly non-existent social protections afflict some industrial sectors, including the largely informal recycling industry. Before the crisis, estimates indicated that the recycling industry provided jobs for thousands of formal employees, who mostly relied on their employers for private insurance. The official labour force in recycling is supplemented by thousands of informal scavengers, with pre-crisis studies finding that 1,000 and 4,000 informal scavengers operated in Beirut and Mount Lebanon governorates alone.8 The number of unprotected garbage collectors has increased under the economic crisis, as more and more vulnerable people resort to scouring trash for recyclable materials.

At present, captains of productive industry face precious little resistance to maintaining poor working conditions for most employees. The Ministry of Labour has weak enforcement mechanisms for the country's inadequate employment standards, allowing many enterprises to force staff members to accept unacceptable job circumstances. Workers lack access to effective labour organisation mechanisms—the agricultural cooperatives and trade unions that exist are weak and politicised, leaving vulnerable employees without health care or guaranteed income security.9 Without reforms to labour laws, workers will continue struggling to stay above the poverty line, especially with the soaring cost of living. This pitfall could deepen in the next two to three years, especially if Lebanon's macroeconomic situation degrades and workers are forced to accept worse and worse conditions to put food on the table. Without fundamental reforms, these structural weaknesses will also continue to create high barriers to social mobility for Lebanon's workers.

Pitfall 2: Exploitation of vulnerable communities

Mishandling the productive economy shift will expose vulnerable groups such as refugees, women, and children to increased exploitation. Already, the agriculture sector in Lebanon relies overwhelmingly on cheap Syrian labour, with 24 percent of Syrian refugees in Lebanon working as farmhands. Lebanese employers find that Syrian workers are more willing to work for low wages; for their part, needy Syrians flock to agricultural jobs as one of their few permitted options, along with construction and cleaning work.

WATCH YOUR STEP!





"In various ways, a shift to a productive economy potentially offers a new era of opportunities for Lebanese companies and new market entrants."

Although Lebanon relies on these refugee workers, they are excluded from the benefits of the Lebanese labour law because they mostly work in agriculture and domestic work—sectors excluded from the law. 10 Exploitation undergirds this dynamic. Refugee agricultural workers in Lebanon are often trapped in jobs with minimal wages, no social security coverage, and long working hours and are daily exposed to hazardous working conditions. 11 Switching to a productive economy, low-income Lebanese may be forced to join Syrians, Palestinians, and other migrant worker communities in unacceptable conditions.

Without proper regulation, productive economic sectors can continue to exploit child labour as a cost-effective—if immoral—source of workers. Sectors like agriculture often use children in unskilled, physically demanding roles. A report by the Bureau of International Labor Affairs found some Syrian refugee children and their families in the Bekaa Valley were "kept in bonded labour in agriculture to pay for makeshift dwellings provided by landowners". 12 The report estimated 75 percent of Syrian refugee children working in the Bekaa Valley were laborers in the agriculture sector, mostly in potatoes and tobacco. 13 Child labour also reduces the long-term prospects of children to find

meaningful work, as they miss out on education and essential stages of personal development, and often face trauma.

Without addressing gender inequality in the Lebanese labour force, female participation will largely remain unrecognised and undervalued. Lebanon currently ranks a dismal 145th out of 153 countries in the 2020 World Economic Forum Gender Gap Report. 14 In the agriculture sector, female workers make up nearly half of the labour force (43 per cent) and mainly help with tasks such as food processing, harvesting, and weeding. Despite their notable contribution to agriculture, women receive only two-thirds of the wages paid to men for the same amount of work.¹⁵ Female agricultural workers also face additional challenges including unpaid labour and a lack of social protection.¹⁶ They also have severely limited access to productive agriculture resources and services, land ownership, technical training, and technology compared with men. Similar challenges apply to Lebanon's industrial sector, despite some specific sub-sectors—for example, the cosmetics field —tending to elevate a higher proportion of women to management positions.

LEVEL 2: THE BUSINESSES

In various ways, a shift to a productive economy potentially offers a new era of opportunities for Lebanese companies and new market entrants. Since before the civil war, Lebanon's rentier service-based economy has served the interests of a small class of politically connected elites, who have presided over sweeping monopolies and oligopolies. Due to a lack of proper market competition, powerful groups have been able to make huge profits for themselves, while excluding new companies from entering certain sectors. 17 State-sanctioned cartels dominate the fuel



import and real estate sectors, which produce little and provide woeful levels of employment. And, of course, a well-heeled elite dominates Lebanon's failed financial sector—18 out of 20 major Lebanese banks have key shareholders with connections to politically exposed persons, according to a 2016 report.¹⁸

Managed correctly, expanding Lebanon's productive sectors could provide a platform on which new market entrants can thrive. Entrepreneurs can begin making products locally that were previously imported, meaning that cartels do not control the market for local production. Greater levels of market competition would also benefit Lebanese consumers, given that different businesses would vie to provide lower costs services to attract and retain customers.

Pitfall 1: Cartel-control of markets

Despite being neglected in economic and development policies, Lebanon's productive sectors are not immune to elite co-optation. While many Lebanese elites have focused their attention on rent-seeking fields like banking and real estate, some still dominate areas of agricultural and industrial production. In the agriculture sector, this phenomenon is evident in Akkar's potato market. ¹⁹ To exert control, oligopolies use uncompetitive market tactics such as controlling supply and demand through the cynical storage of crops. Powerful traders dominate the

value chain at the expense of smallholder farmers and farm hands.

Political affiliations and conflicts of interests are also propitious for corruption and the misappropriation of funds. In some industrial sectors, such as recycling, there are also established players—often well connected politically—which make the market hard to crack. Some municipalities manage their own recycling programs through favoured companies, making it hard for up-and-coming entrepreneurs to enter the market, even if they have promising new ideas. Similarly, three companies have long dominated the Lebanese cement market. The cement cartel charges extortionate rates, in part because arcane permit requirements prevent market competition arising from new Lebanese producers.²⁰

If Lebanon shifts towards a more productive economy, political and business elites will almost certainly attempt to profit from expanding sectors – especially if they are successful. This much is evident in the Lebanese government's recent efforts to legalise cannabis, a highly profitable cash crop for Lebanese primary producers. In what should have been a positive development for Lebanon's agriculture sector, the legalisation decision quickly found itself prisoner to conflicting politics.²¹ To avoid similar scenarios in the agricultural and industry sectors, reforms are



"If Lebanon shifts towards a more productive economy,
political and business elites will almost certainly attempt to profit from
expanding sectors – especially if they are successful."





needed to ensure that entrepreneurs and new entrants to business markets get a fair go.

The problem, both in the agriculture and industrial sectors, comes back to the lack of market competition laws and regulation. Since it was first considered in 2007, the Parliament has failed to pass a comprehensive legislative framework to ensure that businesses can compete more fairly. The draft competition law prohibits anti-competitive practices such as manipulating supply and demand, price fixing, and dividing client bases arbitrarily between companies—all behaviours in which Lebanese cartels routinely engage. In 2019, Lebanese politicians again declined to enact the draft competition law-most likely because it would potentially undermine exclusive agency agreements, which allow privileged businesses to be the sole importers of specified products, shielding them from any market competition.²²

While the draft competition law represents an important start, Lebanese legislation still lacks other key provisions to stamp out unfair business practices. The draft law does not provide for a well-equipped statutory authority capable of enforcing competition regulations and stamping out cartel practices.

"The problem, both in the agriculture and industrial sectors, comes back to the lack of market competition laws and regulation."

Moreover, the current legal framework facilitates opaque procurement processes, meaning that the government can (and does) hand out state-backed contracts to favoured companies. The process is weakly controlled, making it impossible to implement rules and procedures; complaints are not handled by an independent regulatory body and independent mechanism; and related data or information is missing from the public domain.²³ These issues make Lebanon's business climate unattractive to investors and, instead, offers a well-trodden path for political patronage.

Pitfall 2: Unfavourable conditions for exporting

To date, local farmers and industrialists have failed to capitalise on the increased affordability of Lebanese-made products in foreign markets. In theory, the Lebanese Lira's collapse should have facilitated a transition to an export-led economy, with more Lebanese-produced goods being sold overseas. However, statistics from the Ministry of Industry show that the opposite has occurred.²⁴

Some of the challenges facing local production include lack of access to funding or government-backed financial incentives. High overhead costs also deter new market entrants, and cause problems for established players. Industry experts estimate that manufacturers in Lebanon are now paying about five times more for power than before the crisis due to the collapse of the national currency.²⁵ On top of soaring energy costs, manufacturers and farmers need to import large amounts of raw materials unavailable locally.

Lebanon needs short-term solutions to address high electricity costs and access to water so that industries can stay afloat. However, a full shift towards a productive economy requires even longer term



thinking. Even before the economic crisis, the country ranked 130th out of 137 countries in quality of infrastructure in the World Economic Forum's Global Competitiveness Report in 2017. Lebanon's poor infrastructure results in higher overhead costs, and therefore higher export costs. For example, in 2018, exporting a container in the country's land supply chain cost \$3,000 USD, much higher than for regional neighbours where the average cost was \$1886 USD. Some industrialists have pushed for more industrial zones to allow businesses to overcome the high electricity costs and Lebanon's poor infrastructure.

The agriculture sector also needs to improve quality control standards to tap into its export potential, which could boost current export levels by around US\$600 million annually. Much of this potential is limited by a lack of capital investment in technological and value-chain efficiency gains in items such as solar-powered cold storage, water management technology, and sustainable non-oil-based fertilisers and other locally sourced replacements for imported inputs. The prevalent use of dangerous pesticides and chemicals is also preventing Lebanese farmers from reaching lucrative foreign markets with high health and safety standards.

Lebanese agricultural producers are generally smaller than their regional counterparts and are not compliant with international standards on chemical usage, making them less competitive exporters. Between 2015 and 2017, the Lebanese government tested basic food items in an unprecedented food campaign to address public health concerns. The analysis of the data found that more than one in four samples were contaminated.³¹ These alarming results do not only

raise public health concerns for the Lebanese people; they directly harm the country's exporting potential. In the latest example, in October 2021, Qatar banned certain Lebanese herbs and vegetables, citing chemical contamination concerns.³²

Crucially, Lebanon's small landmass, need for major environmental sustainability improvements, and regional agricultural export linkages—over 70 per cent is exported to Arab countries—means it is a key area where highly sophisticated research and innovation should be fostered. The Gulf countries face huge challenges in meeting their food security needs sustainably and are investing heavily into research and development of water-efficient, low land-intensity

"Lebanese agricultural producers are generally smaller than their regional counterparts and are not compliant with international standards on chemical usage, making them less competitive exporters."

agriculture. Their needs are increasingly being met by the far more developed Israeli agricultural sector.³³ This is an opportunity for Lebanon to meet this demand by creating the highly skilled jobs and profit opportunities required to counter the now-accelerated brain drain.³⁴ Plans for large-scale job creation in land care also already exist but have never been implemented. The National Reforestation Plan promised to create 15,000 jobs by protecting 20 per cent of Lebanon's soils.³⁵



"The ecosystems which the agricultural sector relies upon suffer from heavy water pollution and soil contamination, stemming from years of government mismanagement. Left unchecked, pollution may continue damaging Lebanon's environment to a disastrous point of no return."

LEVEL 3: THE ENVIRONMENT

If Lebanon is to retain food security any meaningful level, as well as improve economic outcomes, it needs a radical turnaround in environmental policy. Climate change is already biting into Lebanon's once-famed agricultural potential. Since 2007, Lebanon's primary agricultural regions in the Bequa Valley have seen year-on-year declines in rainfall, shorter more intense rain fall that washes away topsoil, and increases in pest and disease outbreaks with weaker natural ecosystem resilience to combat them—among a host of other fundamental pollution challenges.^{36,37}

Yet, the transition to a productive economy presents a great opportunity for the agriculture and industry sectors to become green leaders. In a positive move, Lebanon's resource and capital scarce economic context is already pushing industry toward sustainability measures such as renewable energy and locally recycled products. Lebanese industry is the largest investor in renewable energy, given renewables' superiority for business productivity and reliability compared to Électricité Du Liban (EDL). Currently, 20 per cent of all rooftop photo-voltaic systems are installed within the commercial sector. 38 By adopting new sustainable technologies and following environmental regulations, they can help reverse the "eco-cide" occurring from the current unchecked industrial, residential, and agricultural pollution.

An example of green potential is the recycling sector which, at present, has a net detrimental impact on Lebanon's environment. Reforming the sector and increasing its productivity would positively contribute to Lebanon's environmental outlook, matching economic growth potential with the nation's green transition. Finding solutions to reuse plastic waste has already seen the rise of Lebanon's 'Eco-Boards'—panels made from recycled plastic which can replace wooden and steel panels in construction.³⁹ These boards reflect how businesses who use sustainable economic models can help drag the country to a positive economic switch.

Pitfall 1: Destruction of essential natural resources

The ecosystems which the agricultural sector relies upon suffer from heavy water pollution and soil contamination, stemming from years of government mismanagement. Left unchecked, pollution may continue damaging Lebanon's environment to a disastrous point of no return. Water pollution is one of the major concerns for Lebanon, affecting both human health and environmental health, as well as the agriculture sector. Water use, treatment and disposal is nearly completely unregulated and despite research repeatedly showing the situation deteriorating, nothing has been done to address the health of life's most essential resource. Nearly 80 percent of bottled water is chemically or biologically contaminated and most of the country's main irrigation aquifers and water sources



are heavily contaminated with chemical and biological pollutants. ^{41, 42} From both a resource security and quality perspective, Lebanon cannot afford to keep neglecting its water resources at the current rates.

The pollution of the Litani river is exemplary of Lebanon's overall disastrous water management. The largest river in Lebanon faces devastating environmental problems due to decades of neglect and mismanagement, as well as industrial pollution, untreated sewage, chemical runoffs from farms and municipal waste.43 While farmers rely on the Litani river to irrigate their crops, they also heavily pollute it with chemicals. At the frontline of this environmental battle, agricultural workers are not equipped for it. Most farmers started working after they inherited the land from predecessors, without having any prior agriculture skills.44 Many therefore lack training on how to institute more sustainable agricultural practices. Already facing economic hardship due to the Lebanese Lira's devaluation, primary producers also lack access to finance with which to adopt ecofriendly innovations.⁴⁵ However, without addressing industrial and agricultural pollution, the sectors are doomed to remaining stuck in a vicious cycle of relying on resources which they pollute themselves.

While farmers rely on the Litani river to irrigate their crops, they also heavily pollute it with chemicals. At the frontline of this environmental battle, agricultural workers are not equipped for it.

Pitfall 2: Waste management

As a small country with limited land space and atrocious waste consumption and management practices, Lebanon needs whole life-cycle solutions to consumption and waste in the agriculture and manufacturing sectors. Emissions from waste and wastewater contribute to 10.7 percent of Lebanon's total greenhouse gas emissions—largely derived from the decomposition of the organic component of waste in dumped at the 504 municipal waste dumpsites spread around the country, as well as uncontrolled burning nationwide, and the discharge of wastewater without prior treatment in the Mediterranean Sea, riverbeds and septic tanks.46 Only 10-20 percent of Lebanon's waste cannot be composted or recycled, this means that 80-90 percent percent of waste should be dealt with, without relying on landfills.⁴⁷

Waste management solutions in Lebanon's context require interventions at the generation, recovery, and processing stages—with parallel efforts to change cultural attitudes across the board. Discouragingly, Lebanon's Third National Communication to the United Nations Framework on Climate Change did not lay out any major solutions for the business-asusual scenario other than the largely discredited use of 'waste-to-energy' technologies—which would at best deal with 74 percent of waste by 2040. 48

RECOMMENDATIONS

A country like Lebanon cannot simply wish a more productive economy into existence. Ideally, the government would lead investment in the agriculture and industry sectors, ensuring that companies have sufficient access to capital to expand their business operations. The call for funding recognises that



boosting production levels—not to mention switching to renewable energy and energy-efficient technology—requires significant capital outlay. Of course, agricultural and industrial businesses have virtually no hope of securing funding from the heavily indebted state or the country's insolvent financial sector. Accordingly, a shift towards a productive economy forms an essential component of Lebanon's financial recovery, but it cannot precede that recovery.

Rather, a deliberate shift away from rentier, lowproductivity sectors should encompass a range of macroeconomic, trade, and fiscal policies—all of which encourage Lebanese businesses to produce more domestically and employ more locals.⁴⁹ Without public funds to invest, the government should introduce tax incentives for businesses that shift to energyefficient technology, create green jobs, and expand current labour-intensive projects. Parliament should enact legislation that finally provides transparent rules and proper enforcement mechanisms for ensuring fair market competition, while also bringing all workers in Lebanon-irrespective of their nationality-under domestic labour laws. Upon completing necessary planning processes, the state should also authorise and support responsible industrial parks, where businesses can pool resources and reduce their utilities and transport costs.

Independent of Lebanon's sclerotic government, interested non-state parties can begin driving forward the economy's productive shift. Technical assistance stands out as an especially useful entry point for a range of actors, including development agencies, private sector incubators, and universities. To promote workers' rights, qualified stakeholders can offer advice and capacity-building sessions for unions and cooperatives,

which can help agricultural and industrial employees to mobilise more effectively. Economic productivity will benefit from offering training and education courses that emphasise vocational skills, requiring a slight shift from the Lebanese education system's current focus on white collar, professional careers. And, of course, capacity building will need to help Lebanese enterprises to adapt to the country's green transition, not least through mastering sustainable techniques for agricultural and industrial production.

Importantly, non-state actors can help to stave off the worst potential pitfalls of switching to a productive economy. Civil society organisations and development agencies should scrutinise the enforcement of current labour regulations in productive sectors, especially as they relate to vulnerable groups like women and children. These stakeholders can also hold Lebanon's public and private sectors accountable for environmental degradation stemming from agricultural or industrial waste and / or business practices.

EDITOR'S NOTE:

Triangle would like to express its gratitude to all anonymous informants who contributed to this paper, with special thanks to Alex Ray for his invaluable research support.

This paper was compiled with the support of the Friedrich-Ebert-Stiftung (FES) in Lebanon.





REFERENCES AND ENDNOTES

- IDAL (2018) Pharmaceutical Sector in Lebanon, online at: http://www.databank.com.lb/docs/Pharmaceutical%20Sector%20in%20Lebanon%20Fact%20Book%20 2018%20IDAL.pdf
- UNDP "Green Jobs Assessment in Lebanon", online at https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_168091.pdf
- Leaders for Sustainable Livelihoods, "Dignity at Stake: Challenges to Accessing Decent Work in Lebanon", online at: https://reliefweb.int/sites/reliefweb.int/files, resources/69774.pdf
- Al Monitor (2021) "Lebanon Raises Fuel Prices Again", online at: https://www.al-monitor.com/originals/2021/09/lebanon-raises-fuel-prices-again
- Salary Explorer, online at: http://www.salaryexplorer.com/salary-survey.php?loc=119&loctype=1&job=33&jobtype=1
- FAO. Lebanon at a Glance. Online at: http://www.fao.org/lebanon/fao-in-lebanon/lebanon-at-a-glance/en/
- Chlouk Ghinwa & FAO, Economic Opportunities and Job Creation; Agricultural Sector, Online at: http://www.databank.com.lb/docs/Economic%20Opportunities%20 and%20Job%20Creation%20-%20Agriculture%20Section%202016%20FAO.pdf
- KTH Study, online at: https://kth.diva-portal.org/smash/get/diva2:1139992/FULLTEXT01.pdf
- FAO, Lebanon at a Glance. Available at: http://www.fao.org/lebanon/fao-in-lebanon/lebanon-at-a-glance/en/
- Turkmani, Nur & Hamade, Kanj (2020) "Dynamics of Syrian refugees in Lebanon's agriculture sector", AUB, online at: https://www.aub.edu.lb/ifi/Documents/publications/research_reports/2019-2020/20200215_dynamics_of_syrian_refugees_in_lebanon_agriculture_sector.pdf lbid. https://www.aub.edu.lb/ifi/Documents/publications/research_reports/2019-2020/20200215_dynamics_of_syrian_refugees_in_lebanon_agriculture_sector.pdf 10
- Bureau of International Labor Affairs (2020) Child Labor in Lebanon, online at : https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/tda2020/Lebanon.pdf
- Ibid. https://www.dol.gov/sites/dolgov/files/ILAB/child labor reports/tda2020/Lebanon.pdf
- Global Gender Gap Řeport (2020), online at: https://www.weforum.org/reports/gender-gap-2020-report-100-years-pay-equality
- FAO (2021) "Country Gender Assessment of the Agriculture and Rural Sectors, online at: https://www.fao.org/3/cb3025en/cb3025en.pdf
- Ibid https://www.fao.org/3/cb3025en/cb3025en.pdf
- See "Unfair Game: How Lebanon's Rigged Markets Kill Competition", Triangle, online at: https://www.thinktriangle.net/unfair-game-how-lebanons-rigged-mar-17 kets-kill-competition/
- Chaaban, J. (2016) "I've Got the Power: Mapping Connections Between Lebanon's Banking Sector and the Ruling Class," The Economic Research Forum.
- See "Unfair Game: How Lebanon's Rigged Markets Kill Competition", Triangle, online at: https://www.thinktriangle.net/unfair-game-how-lebanons-rigged-markets-kill-competition/
- 20 See "Mountain to Mortar: Lebanon's Concrete Conflicts of Interests", Triangle, online at https://www.thinktriangle.net/mountain-to-mortar-lebanons-concrete-conflicts-of-interests/
- OLJ (2019) "Medical Marijuana For Lebanon More Complicated Than It Sounds", online at: https://www.lecommercedulevant.com/article/28807-medical-marijua-21 na-for-lebanon-more-complicated-than-it-sounds
- See "Unfair Game: How Lebanon's Rigged Markets Kill Competition", Triangle, online at: https://www.thinktriangle.net/unfair-game-how-lebanons-rigged-markets-kill-competition/
- 23 Association of Lebanese Industrialists (2021) "The Road to Recovery".
- Salame R. (2021) "Why Currency Depreciation Has Proved No Boon for Lebanese Manufacturers", L'Orient Today, online at: https://www.lorientlejour.com/arti-24
- cle/1277704/pourquoi-la-depreciation-de-la-monnaie-est-loin-detre-une-aubaine-pour-les-fabricants-libanais.html
 lbid https://today.lorientlejour.com/article/1277325/why-currency-depreciation-has-proved-no-boon-for-lebanese-manufacturers.html
- Association of Lebanese Industrialists (2021) "The Road to Recovery".

 World Economic Forum, "The Global Competitiveness Report 2017–2018", online at https://www.weforum.org/reports/the-global-competitiveness-report-2017-2018 27
- Association of Lebanese Industrialists (2021) "Enabling Industry Through Adequate Infrastructure"
- 29 Ibid
- World Bank (2018) "The role of food and agriculture for job creation and poverty reduction in Jordan and Lebanon" World Bank, online at https://documents.world-bank.org/curated/en/325551536597194695/pdf/Agricultural-Sector-Note-Jordan-and-Lebanon.pdf
 Faour-Klingbeil, D. (2016) "The Microbiological Safety of Fresh Produce in Lebanon", online at: https://core.ac.uk/download/pdf/80690128.pdf 30
- 31
- OLJ (2021) "Le Qatar interdit les importations de certaines épices et plantes du Liban pour des raisons sanitaires", online at: https://www.lorientlejour.com/article/1279423/le-qatar-interdit-les-importations-de-certaines-epices-et-plantes-du-liban-pour-des-raisons-sanitaires.html
- 33 Zaken, D. (2021) "Emirati investors highly interested in Israeli high-tech, agro-tech" Al-Monitor, online at https://www.al-monitor.com/originals/2021/01/israel-united-arab-emirates-abraham-accords-investments.html
- McKelvey (2021) "Revolutionising Lebanon's agriculture sector as food runs out", AlJazeera, 6 July 2021, https://www.aljazeera.com/news/2021/7/6/leba-34 nese-ngo-helping-the-uplift-agriculture-sector
- ILO (2011) "Green Jobs Assessment in Lebanon: Synthesis Report", International Labour Organisation, online at: https://www.ilo.org/wcmsp5/groups/public/--ed_emp/---emp_ent/documents/publication/wcms_168091.pdf
- Interview with Abdo Tannouri Agricultural Engineer for Lebanese Agriculture Research Institute (LARI), 29 October 2021.
- Moussa Z., Tannouri A., (2018). First report of the principle vector of Dutch Elm Disease Scolytus multistriatus (Marsham, 1802) on elm and poplar trees in Lebanon
- (Coleoptera: Curculionidae, Scolytinae), online at https://www.researchgate.net/profile/Abdo-Tannouri
 Farhat, W. (2019). The 2018 Solar PV Status Report for Lebanon, LCEC, https://beirutenergyforum.com/files2019/The%202018%20Solar%20PV%20Status%20
 Report%20for%20Lebanon.pdf 38
- 39 Tawke S. (2018) "Green Engineering in Lebanon" Wall Street International Magazine, online at https://wsimag.com/science-and-technology/40416-green-engineering-in-lebanon
- The Ministry of Environment has consistently received less than 0.5% of the government's annual budget. It is underfunded to the degree that staff do not have the transport necessary to do their jobs. See Eid-Sabbagh, K & Ray, A. (2021) "Breaking Point: The Collapse of Lebanon's Water Sector", Triangle, online at https:// www.thinktriangle.net/breaking-point-the-collapse-of-lebanons-water-sector/
- Massena F. (2017) "Water pollution in Lebanon reaching dangerous levels" https://www.al-monitor.com/originals/2017/07/lebanon-water-pollution-garbage-crisis.html Shaaban, A. (2020) "Rivers of Lebanon: Significant Water Resources under Threats", Intechopen, Online at https://www.intechopen.com/chapters/73655
- Awwad, N. (2020) "Litani River: A Sorry State of the Affairs", online at: https://www.ecomena.org/litani-river/#:~:text=Due%20to%20decades%20of%20neglect,and%20disposal%20of%20municipal%20waste.
- AO (2021) "Lebanon's Agricultural Sector: Challenges and Opportunities", online at: https://www.fao.org/3/cb5074en/cb5074en.pdf
- McKelvey, R. (2021) "Revolutionising Lebanon's Agriculture Sector as Food Runs Out", Al Jazeera, online at" https://www.aljazeera.com/news/2021/7/6/lebanese-ngo-helping-the-uplift-agriculture-sector
- 46 MoEW (2016) "Lebanon's Third National Communication to the UN Framework Convention on Climate Change", Lebanon Ministry of Energy and Water, online at https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjQsOKk6tjzAhXj4IUKHRtLDisQFnoECAoQA-Q&url=https%3A%2F%2Funfccc.int%2Fsites%2Fdefault%2Ffiles%2Fresource%2Flbnnc3.pdf&usg=AOvVaw3Úd2bxrFc73Cl-37BZB368
- HRW (2020) "Lebanon: Huge Cost of Inaction in Trash Crisis", Human Rights Watch, online at https://www.hrw.org/news/2020/06/09/lebanon-huge-cost-inaction-tràsh-crisis
- El-Hougeiri (2020) "Waste to Energy in Lebanon: Technical, Environmental, and Social Viewpoints", The Magazine for Environmental Managers, online at https:// pubs.awma.org/flip/EM-Jan-2020/hougeiri.pdf
 International Labour Organisation (2020) "Rapid Diagnostic Assessment of Employment Impacts under COVID-19 in Lebanon" online at: https://www.ilo.org/wcm-
- sp5/groups/public/---ed_emp/documents/publication/wcms_754666.pdf