

Executive

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SPECIAL REPORT

FOOD ENTREPRENEURSHIP

- > Building food security entrepreneurially
- > Homegrown startups on the agro-business scene
- > Lebanon's accelerator programs
- > The financial obtrusions for young businesses
- > Niche producers and export expectations

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Building food security entrepreneurially



Food can take a lead role in Lebanon's entrepreneurship ecosystem

An entrepreneurship ecosystem captures the essence of entrepreneurial energy in a cycle of economic life. For these energies to become manifest and productive, ecosystems need a constant supply of fresh and ambitious business-oriented minds which are equipped with unconventional ideas. Those will often be minds emerging from the tertiary education system, although the entrepreneurial spirit can just as well shine in self-taught enterprise builders who have fortified themselves with experiences and practical insights.

In transforming talents into victors and disruptive ideas into success stories, the functioning

of an entrepreneurship ecosystem will combine the benefits of a broad enabling environment with the effectiveness of nurturing units, namely the incubators and accelerators. Today these units are intrinsic to fast entrepreneurial processes of turning – in the culture of capitalism naturally and inevitably occurring – practical breakdowns of new business ideas into chains of development in which these ideas and human energies pivot from failing rapidly into improved iterations.

This is all economic theory until a country starts building its knowledge entrepreneurship ecosystem, a decades-spanning effort which in the

case of the Lebanese one originated in the context of the early commercial internet at the end of the 20th century. This Lebanese tech and knowledge economy ecosystem emergence involved a period of gradual formation from the late 1990s into the early 2010s, not a perfectly balanced growth spurt with a deliberate infusion of funds and intense human capital investments in the 2010s, but lately a pivot to a new and more organic development phase that began with the painful loss of most funding and disappearance of some ecosystem players in 2019-20.

During the growth period of the 2010s – decisively induced by the famed Circular 331 of Banque du Liban, Lebanon's central bank – the entrepreneurship ecosystem was tilted in favor of the “tech” component of technology-driven startups built around computer applications in education, health, advertising, communication, and finance (Health-tech, Adtech, Fintech, etc). With funding and equity deals for these startups hyped all too often beyond reasonable valuations, one would encounter several short-lived tech meteorites, or worse the occasional zombie venture, for each new star team and viable application.

Already during the ecosystem's formation phase, which saw software houses, wedding, auction, and online financial services sites feature prominently among its New Economy ventures, early ecommerce startup founders naturally had food on the top of their minds. Whereas plenty of online ventures of the Lebanese dot-com bubble days have long been forgotten, Karim Saikali's website, buylebanese.com, is today a rare holdout venture from this era. Delivery of Lebanese food products to aficionados in the diaspora was driving Saikali's business when the site went live in November 2000, embarking on an ecommerce journey that included periods where the founder would run the entire operation single handedly from his laptop while sitting at this or that Beirut café.

Furthermore, notable agriculture and food related entrepreneurial brands were created during the 2010s, examples reported by this magazine include the niche consumer brands Taqa, Eshmoun, and The Good Thymes. Executive Magazine's top 20 entrepreneurs list of November 2012, which was the most extensive one the magazine produced in a single year, featured one cooking/foodie site (Shahiya), one purveyor of organic food boxes (O'Box), and one olive-oil venture (Olivetrade/House of Zejd).

In the Lebanese tech entrepreneurship ecosystem of the 2010s, it was the default profile of a successful startup that penetration of markets

other than Lebanon might shape a viable economic narrative out of a startup with a minimum viable product and local or better, regional, adherents. Although local job creation and knowledge economy focuses were deeply embedded into guidance force of Circular 331, the Lebanese entrepreneurship ecosystem by necessity of the small domestic market defied many high-blown expectations for job creation – which were incidentally not focused on rural growth but formulated in relation to the on-line tech services and urban ancillary realm.

EMERGING SUB-TRENDS

Under the pandemic scenario of 2020 and even more so under the purchase power and market constraints of the world after the Lebanese pound's collapse, the trend of outward orientation

of Lebanese tech startups intensified. The ecosystem witnessed the emergence of sub-trends; like the trend of moving to entrepreneurship nurturing environments found in Dubai, Paris, London, or anywhere outside of this

■ In recent years, some household words in the Lebanese food culture have been adopted into US culture

country. Another accelerating shift saw startups keep part or all of their back office and development “kitchens” on virtual islands of connectivity in Beirut while seeking clients outside.

A third sub-trend saw the thriving of platforms which focused on making Lebanon an outsourcing destination from which clients around the world could contract remote knowledge workers. Under a fourth sub-trend, ecosystem stakeholders were treated to a – in part domestically focused – surge in the number of advertising and ecommerce facilitators which delivered e-commerce platforms and market access strategies to local companies. This trend was based on the fact that local niche producers delved into operation of proprietary e-commerce platforms with focus on multiple target markets, among which the Lebanese market could be one – but did not have to be.

It is out of this entrepreneurship diversification and ecosystem change that the acceleration and incubation tech ecosystem has also seen a new successful entrepreneurial economic DNA mixing pool (see story on accelerators and programs on page 86) come up where the gametes and zygotes of Lebanese agricultural entrepreneurship and innovative zest combine into agro-entrepreneurial ventures that seek to interact with markets in search of sustainable profits which contribute to the recov-

Food entrepreneurship

ery of the economy.

In many cases, enterprises that arose out of the tech entrepreneurship ecosystem over the past 20 years did not generate as many jobs as hoped, but they created change impulses for the direction of the Lebanese services economy. By the same logic of fostering positive change, the agro-entrepreneurship generation in our 2022 lineup (see profiles on page 80 for a look into their diverse range) include agriculturally oriented ventures that have startup appeal but also new impulses to offer in the areas of agricultural production and rural livelihoods.

Beacons of an entrepreneurship ecosystem that is inclusive of a strong agro-entrepreneurship component are observations that – partly under the impact of the pandemic and partly under the weight of the economic crisis – increasing numbers of university graduates and seasoned professionals have been rediscovering their village roots and been embarking on agro-entrepreneurial startups. Also of note is the outstanding vibrancy radiating from exhibitors at events focused on small green, innovative, and agrarian enterprises, from the legacy Horeca show in March of this year to the Vinifest and Green Innovation events of October.

Stakeholders interviewed by Executive during our investigation of the food value chain and food security situation of Lebanon emphasized that in an integrated system of agro-entrepreneurship, food exports will play a decisive role for Lebanese food security. They noted further that food exports require access to markets, which in the digital era will include proactive digital channels.

In recent years, proliferating online platforms of Lebanese producers, and the locally based specialized ecommerce platforms or online shopping malls, have important roles to play in this regard. Interestingly, the Lebanese entrepreneurship landscape of ecommerce and marketing also includes online ventures that are focused on Europe, such as Brussels-based Key16/Seven Shelves and the North American market from within the United States. These startups could contribute to the invigoration of Lebanese exports, food sovereignty, and food security. An example whom Executive conversed with is Za'atar Road, which in 2020 embarked on bringing artisanal Lebanese agro-food products to high-end foodies and health-oriented consumers in developed North American markets.



THE CURIOUS CASE OF THE EXPATRIATE ZA'ATARPRENEUR

Founder and chief executive of Za'atar Road Maya Hachem says she conceived of the startup shortly after the August 4 Beirut port explosion in 2020. She soon found an investor who backed her to help young entrepreneurs and artisanal food product makers in Lebanon, while also latching onto trends for healthy food and benefit from the large number of health food stores in the United States.

After her business plan was hatched and presented to one or several US-based investors (in response to an interview question by Executive, Ha-

chem declines to divulge details on her startup capital or investor base), she undertook an exploratory visit to Lebanon for sourcing of suitable products. Her sojourn of scouting rural Lebanon and talking to producers in villages across the country lasted three to four months and yielded

several hundred prospective artisan food producers as prospective partners – a success which set the founder of Za'atar Road onto a track of heading straight into a significant barrier.

"I had to hire a small team in Beirut to bring us all the samples that were then run by the food and drug administration (FDA) for checks and approval. This has been one of the most challenging

■ The tech entrepreneurship ecosystem over the past 20 years did not generate as many jobs as hoped

parts of implementing the whole business model. Of the 452 artisans that I reached out to, I could only get approval for 62,” she tells Executive.

After gaining FDA approvals, three containers with 400 different products were sourced and Hachem embarked further on her push to market. “We are only focusing on small productions and small batches from suppliers who meet the criteria and procedures for FDA approval,” she notes.

Having internalized the insight that it is anything but easy to bring Lebanese products to the North American market, Za’atar Road’s Beirut-based supplies manager focused on securing the flow of small product batches to meet FDA requirements, while satisfying Hachem’s core business concept of not working with big names in Lebanon’s agro-industrial sector.

In the meantime, even after the product range was set to companies that had business registrations in Lebanon and met the food safety, labeling and all other FDA standards, Hachem says she frequently worries about economic and infrastructure barriers in Lebanon which might obstruct her artisan suppliers’ ability to deliver products in the needed quantities.

“Our product range includes spices, olive oil, soaps, jams and honeys; we have a little bit of everything,” Hachem says. In her first round of product sourcing, she focused on artisanal food products, but the scope of Za’atar Road’s supplier search is now being widened to non-food products.

The next business challenge on her path is the unpleasant duty to revise and rationalize

the product range. In doing her trial to see what products work with the US consumer, “we experienced that some products do better than others. [Thus] we will by the end of this year have to decide which products and suppliers to strike from our range. If those suppliers can have a niche in another market, it will make more sense for them to sell their products there,” offering her rationale for what she describes as an upcoming hard decision.

Over the year of 2022, her operation has expanded from an online-only platform with 400 SKUs and usage of an external ecommerce fulfill-

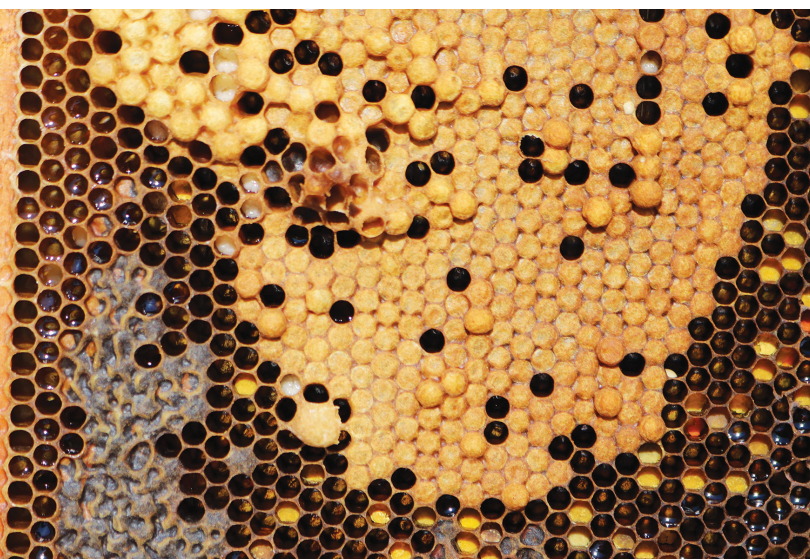
ment center to wholesale relations with several gourmet stores in US urban population centers. “It has to be the right store, though. The idea is not to have our products anywhere and everywhere,” Hachem adds. She does not target the Middle Eastern commu-

nities in the US with Za’atar Road as much as fine-food stores in the upper market reaches.

With regard to questions on financial aspects of Za’atar Road operations to date, she says that her Lebanese suppliers have so far been paid upfront in fresh dollars and her sourcing costs have been stable under this formula. As to figures that she is willing to disclose, Hachem says that Za’atar Road’s headcount has reached seven and names a revenue target of “around \$5 million in the next two years.” Fundraising for more capital is on her agenda for a later stage of development.

As Hachem notes, in recent years some household words in the Lebanese food culture have been adopted into US culture or even become trendy in foodie circles. Many other terms, however, have yet much room to define a Lebanese niche in developed food cultures by which they would adequately represent the contributions and values of the culinary wealth of Lebanese lands. An integrated agro-entrepreneurship ecosystem that brings expatriate and local constituents together in demonstrating the diversity and depth of Lebanon’s culinary tradition, is hopeful on the two counts of helping in the reduction of food insecurity by the indirect path of improving exports, and contributing to real economy sustainability and food sovereignty. ■

■ Hachem says she frequently worries about economic and infrastructure barriers in Lebanon to deliver products



LEBANON'S AGRO STARTUP SCENE

These homegrown businesses are discovering the natural joys of Lebanon's ancient lands



DRY AND RAW

Dry and Raw is a boutique food idea, inspired by nature and with the hope to provide local and international customers with up-market natural and organic food products from Lebanon. Dry and Raw is not only an idea, but a lifestyle lived by brothers Nabil and Dani Khoury. "Being in the West allowed me to go and learn more about food and alcohol," Nabil Khoury tells Executive, alluding to the time he lived abroad. "I got all this knowledge and I have been using it for myself and friends at home for more than 30 years."

After time away, Nabil returned to Lebanon at the start of 2019 with a career change in mind. "I saw that I was really ready to jump into this food and beverage business because I have been practicing for so long, and I have got all the training and trials to master what I do," he says. The brothers then sought to share their "food experience" with the public.

Dry and Raw - the business name touches upon their style of products - is currently producing more than 600 food items in-house, using organic and naturally grown products from its farm in southern Lebanon. They are considered one of the

first food boutiques in Lebanon to produce seeds, nut oils, and foreign-style cheeses. For more than two years, the business has been producing over 36 types of European, British, and American cheese.

Dry and Raw has offered new food trends to Lebanese clientele and provided better quality with affordable prices as a substitute for many costly imported foods. Their products are distributed to more than 25 markets in Beirut, Matn, Jounieh, Batroun, Tripoli, and Chouf, while 30 restaurants and hotels are fond of their European cheese range.

The brothers also organize education sessions and awareness for customers to learn more about the food they are producing. In addition, they hold summer internships for food science students at university, including at the Lebanese University and Saint-Joseph University, to teach how cheese is made and to spotlight the practice of food theory.

Dry and Raw are environmentally conscious. They refrain from using plastic bags and instead use paper bags. They work on recycling all the jars and glass bottles that they use, while their clients also collect the jars and bottles to return them for recycling. "It is in our culture to preserve nature," Nabil says.

The business was not exempt from the economic turmoil of the past few years in Lebanon. In 2020, their first year of trade, they incurred losses resulting from the economic impact of the Covid-19 pandemic, and now power outages are causing new problems. Long power cuts are impacting refrigeration for food, especially during the summer temperatures, increasing the risk of food deterioration, loss of quality, and a reduction of shelf-life. "In summer, we had to stop some production lines, such as ice cream sorbet and dried vegetables and fruits. And we are no longer storing fresh dairy products at our boutique," Nabil says.

Despite Lebanon's declining economy and volatile politics, he is hopeful about their future as entrepreneurs. "The odds are not in our favor, but we're Lebanese, so we'll figure it out. The resilience is what makes us special, the positivity almost looks naïve, but it isn't. It's hunger, it's the will to continue and make a difference."



BALSAM JBALNA

Umeboshi, pickled or fermented Japanese plums, is a rare and expensive delicacy with macrobiotic health benefits which is now being cultivated, produced, and packaged in Lebanon. Since October 2020, one local company has picked the wild plums that grow 1,400 meters above sea level on Mount Lebanon, to create the Japanese snack.

Hanan Bou Najm, a macrobiotic nutritionist and founder of Balsam Jbalna, the company that makes Lebanese umeboshi, started her business as a response to a gap in the local market for umeboshi. The delicacy is an essential part of the macrobiotic dietary lifestyle. In Japanese, “ume” means plum, while “boshi” means fermented.

“Due to the Lebanese economy’s deterioration, I decided to start the first umeboshi project in Lebanon,” Bou Najm says. “During the Covid-19 pandemic we couldn’t find umeboshi from Japan locally,” so we asked around in villages and among the farming community, and found that Lebanon had a very well-kept secret.”

After conducting research, Bou Najm found that Lebanon naturally has a lot of wild plum trees, with the mountainous regions the best source for this particular type of plum, which is part of the prune family. Farmers used to cook and ferment the fruit over 500 years ago, for a paste similar in style to a tomato paste, Bou Najm explains.

At first, Bou Najm tried cooking the plums and pickling them, but found that fermentation worked better. The intense sour and salty notes make Umeboshi a perfect condiment for Lebanese cuisine, she says, adding that the plums and berries can be added

■ Bou Najm found that Lebanon naturally has a lot of wild plum trees, with the mountainous regions the best source for this particular plum

to salads like tabbouleh or fattoush, as well as with cooked beans and vegetables, or rice balls wrapped in seaweed, salad dressings, dips, and spread.

Knowing that pollution is a major problem in Lebanon, particularly among the coastal regions which are hit by traffic and under the smog of power plant fumes, Bou Najm made a point to forage in the highest mountain areas and valleys, in the hope that the produce there would be least impacted by the pollution. “We would park our cars and walk up for two hours. We were ten men and women, and we would collect the plums as well as other wild berries, which we mixed in with our fermented plums.”

In addition to creating a value-added product that is in high demand worldwide, Bou Najm has created a locally affordable alternative of a specialty Japanese product that is within Lebanese consumers’ reach, selling it for a fraction of the price of imported varieties. “This product was imported from Japan through the following companies: Nabat, Clear Spring, and Naturalia [and] were sold for \$15-\$20, while Balsam Jbalna is sold for \$2-\$3,” Bou Najm says.

Exports of plums, paste, and vinegar could help bring in much-needed hard currency to the country during the current tough economic situation, although exporting remains a challenge, Bou Najm says. “Balsam Jbalna product is not exported, although there are large quantities of it. This is mainly due to a legal fact; the product is made at home; I don’t have yet a healthy kitchen that has a certificate of origin registered in the Ministry of Economy.”

Like many residents, she is struggling with the high rent prices and Bou Najm says she is not yet financially stable enough to rent a working kitchen space. And like many other Lebanese entrepreneurs, she is looking for investment to develop her business.

Food entrepreneurship



■ The ability to transfer money or pay internationally is a big hurdle for startups

GUDTOLLI

Gudtoli started in 2020 when three women Leila Khalife, Reine Khalife, and Najwa Youssef met and decided to start a business, after carrying out a study and discovering a lack of fresh pasta in the local market. So, they decided to produce a new Lebanese product to substitute an imported one.

Gudtoli produces fresh pasta, naturally made and colored from vegetables, like beetroot, basil, spinach, carrot, pumpkin, and turmeric. Their mission is to provide healthy, natural, and great-tasting pasta in a variety of traditional Italian shapes like fusilli, macaroni, and conchiglie.

"What makes our pasta special is the combination of Lebanese culture and Italian cuisine that portrays a small festival on your plate. Gudtoli brings the garden to your table along with its natural colors, nutrients, fibers, and vitamins. It is full of benefits with no additives or preservatives," Leila Khalife tells *Executive Magazine*.

In February 2021, the company was legally registered and later in September the products began to be distributed in retail markets in Mount Lebanon, Keserwan, Jbeil, and Beirut. The company and its 20 female employees are located in Safra in the Keserwan district. "We believe that the best way to preserve our culture is to keep it alive. Empowering women and Lebanese farmers and increasing their participation in economic growth are among our utmost goals," Leila says.

As well as selling pasta, Gudtoli holds monthly pasta making workshops, so participants can learn

the art of making pasta and accompanying sauces. The women see it as an opportunity to learn and share knowledge about pasta history and Italian cuisine. The menu includes tagliatelle, spaghetti, ravioli mushroom, tortellini Cheese, pappardelle, farfalle, and farganelli, fully decorated with vegetables and herbs.

Today, Lebanese entrepreneurs and small businesses are operating in a highly volatile environment with almost no state support. "The crisis is affecting our ability to operate and our ability to work," Leila says. She adds that the ability to transfer money or pay internationally is a big hurdle for startups. In addition, the dollar to Lebanese pound exchange rate is increasing every day, which increases the payment of their goods. At the moment a bag of Gudtoli pasta sells for around 80 cents, while the jar version, with its reusable aspect, is one dollar.

Despite all the country's circumstances, Leila and her team are taking responsibility seriously. They are aware of their strengths and weaknesses. As a team, they participate in different competitions and exhibitions. Months ago, they won an award from Bloom, a local non-profit which supports entrepreneurs through various programs, among other awards. They also won a place on Berytech's Basatine Program, a four-year consortium program which supports farmers and related value chain actors in the cereals, legumes, and vegetables in Bekaa and Akkar regions.



■ For Joseph, it was integral to her startup journey to learn more about what it takes to run a business

OLIVE BIO

As the olive harvesting season gets under way, people across the villages of Lebanon are dusting off their jars and bottles to fill up with this year's bounty, following an annual tradition which commemorates the richness of Lebanon's lands. The natural and ancient foods cultivated in Lebanon are important to daily life and the country's heritage and culture. A Lebanese kitchen would not be complete without olives and its oil.

Even though many young and educated Lebanese have emigrated in search of better opportunities since jobs and business dried up during the crisis, there are still young energies to be found who are working hard to reap the rewards of Lebanon's fertile land. This is the case for Sarah Joseph, the co-founder of Olive Bio, who in January 2021 returned from France to her family's land in El Qattine, in the Keserwan district, to become involved in farming and agricultural activities. Since 1515, her family have existed on the land.

"After specializing in food quality, I decided to take an interest in going from farm to fork. My journey started in the hope of giving others a taste of nature," Joseph tells Executive. "It's a long road yet a rewarding one."

Wanting to produce in a traditional way and directly from her farmland, last year, Joseph created a range of products to bring some diversity to Lebanon's existing olive variety. Here is where Olive Bio was born. Along with her parents and some laborers, Joseph works with top quality Italian olives cultivated on their land.

They produce olive oil, olive soap, and five different flavors of olive tapenade: green tapenade with almond or with basil, black tapenade with walnut, chili,

or caper. Their tapenade mixes are adapted for each recipe, so the freshness and natural taste of the ingredients in the recipe remain.

Many entrepreneurs and startups in Lebanon struggle due to their lack of access to finance, lack of human capital and resources, and expertise to help plan growth and expand further. For Joseph, it was integral to her startup journey to learn more about what it takes to run a business; though she holds a degree in food engineering, she felt it was not enough.

Since launching her startup, she has attended training and workshops to improve her skills and capabilities. She says this helped her learn that the following characteristics and skills: confidence, perseverance, patience, communication skills, and risk tolerance, are some of the main tools' entrepreneurs need in order to succeed.

All ingredients and raw materials are manufactured and produced in their production facility in El Qattine, their olives are a mixture of Lebanese and Italian, and each 300g jar sells in a competitive price range from \$6.50 to \$7.50. Olive Bio aims to be environmentally friendly; they happily take back empty jars customers return with a discount on their next purchase. "By doing so people will be helping small businesses and our environment," Joseph says.

In view of Lebanon's long-term structural challenges and the profound effects that subsequent crises are having on its economy, Olive Bio is facing a lack of access to finance with banks no longer providing loans, and a lack of access to funds and grants. "There is no help from the government and the NGOs have high requirements."

Food entrepreneurship



■ Kaaju was created in 2016, and it barely had a few years to grow before being hit by a wave of instability

KAAJU

Kaaju is a family-run enterprise that makes nut snacks, inspired by rich culinary cultures from South East Asia, West Asia, Africa and South America. Their products are 100 percent natural, gluten-free, paleo-friendly, small-batch, and vegan.

The father-daughter duo, Hassan and Alia Fat-touh, were inspired to found Kaaju from the rich and varied meals of their home life. Alia's mother would often cook cuisines ranging from Asian, Middle Eastern, to African or European. Before dinner was served, the family would gather round for drinks and nibbles – always a selection of nuts.

Once, when Alia was on a trip to New York city, she struggled to find nuts which tasted as good as those of her family gatherings. From then on, she set out to begin producing her own roasted nuts, firstly with a mix of cashews and fresh curry leaves – a hark to a previous trip to Sri Lanka. She perfected the recipe and adopted it as a staple in her menus at every brunch, gathering, barbeque, or dinner party she hosted. It was met with success and so the idea was born to launch Kaaju, an environmentally and socially conscious social enterprise.

Kaaju was created in 2016, and it barely had a few years to grow before being hit by a wave of instability as Lebanon's economy began to teeter in 2019. Then, in 2020, the Covid-19 pandemic caused major economic setbacks for businesses everywhere. "We had to stop our business for a period of time, we couldn't distribute due to the blockage of the roads," Hassan says to Executive, referring to the road blocks resulting from anti-government demonstrations, as

well as various pandemic lockdowns. "Also, these compounded crises led to an estimated drop in real GDP which made us stop importing for a while because of the high prices."

At the beginning, the co-founders started to participate in different food events in Lebanon; they presented their business idea and offered people tasters of their cashew mix. While Lebanon grows almonds and walnuts, nuts like pistachios or cashews are not locally grown.

In 2020, they began to develop their mix of flavors. Today they have five to six nut mixes: cashews with fresh curry leaves, wild lime or thyme, and almond or pistachios with rosemary. "Recently we released a new product which is a delicious blend of dry roasted seeds, nuts, and spices. We received great feedback on it," Hassan adds. "Every six months, we try our best to create a new flavor, but we work carefully because we are always keen to create a very special new delicious flavor."

Kaaju makes sure their product is healthy and true to its roots. Cashews are rich in copper, magnesium, protein, minerals, and antioxidants, while curry leaves are believed to support diabetes control and reduce bad cholesterol. Rosemary is believed to hold anti-aging properties, boost memory, and help reduce stress. The relationship between Kaaju and nature is strong, especially in mind when they create their recipes. The pair says they draw inspiration from the natural beauty of the country. Kaaju is now available in around 15 stores in Beirut, Matn, Keserouan, and north Lebanon, and online.



■ Clients are limited on their ability to buy artisanal products, and have a tendency to prioritize commercial items to save money

HABKA

We no longer talk in Lebanon about normal life in all its aspects. The economic and financial crisis has radically changed priorities; as people limit their food choices, putting health at risk as quality levels drop and safety specifications are ignored.

Organic agriculture is a production method that aims to achieve better food safety and security, as well as environmental sustainability. Nowadays, many people are choosing organic food in order to avoid chemicals used in farming, and to feel confident about the source of their food. Eating organically also means helping to create a healthier food system for everyone, from farm to table.

Habka is a homemade basil-based pasta sauce, made by Nisreen Jaafar from her home in southern Lebanon. Under the mantra “Your health is your wealth,” Jaafar created the product in memory of her late mother and touching upon the Arabic meaning of a basil leaf: “habka”. The first half of the word means “love,” and Jaafar says it is with love that the food is made.

Jaafar makes the product with organically grown basil to ensure its 100 percent naturally sourced, and so she can confidently label the product gluten and dairy free, though she admits homemade production is slow and demanding, but worth it. “Next time you’re in the supermarket,” she says, “pick a sauce jar and [look at] its label. You may be surprised by the few ingredients... Habka delivers on its promise of clean eating by skipping the additives, preservatives, and emulsifiers.”

She makes four pasta sauces including a spicy sauce, as well as the classic pesto. In addition to the food

lines, the product is eco-friendly, and Jaafar takes care to reduce her plastic usage. As part of the products sustainability promise, Jaafar designed a deal to offer cotton tote bags and basil seed bags, which helps to reduce single-use plastic, while the basil seeds help encourage people to plant at home. The sauces are contained in glass jars, for its recyclable quality. “Using glass reduces emissions and usage of raw materials – it can be turned into a new recycled glass object at any point. From a health standpoint, glass also wins over many other options as it does not absorb smells or flavors, and it does not leak any toxic substances into foods or drinks.”

Like all startups, Habka is facing difficulties in the current economic climate. She says clients are limited on their ability to buy artisanal products, and have a tendency to prioritize commercial items to save money. “Delivery to points of sale or to individual clients has been very expensive and the business is not yet making much profit from having to spend so much on transportation,” Jaafar says.

Pricing was the most challenging aspect for Jaafar when she began. First, when she started the currency rate was incredibly volatile so she could not properly estimate the value of her supply chain against the value of her product in its finished form. She wanted to position Habka as an artisanal product, yet an affordable one. After much deliberation and many consultations, she priced the items in Lebanese pounds, though the prices are revised periodically. “Eventually, I will want Habka to survive [but] without an acceptable profit margin, no business can survive,” she says.

Food entrepreneurship



■ “The outbreaks we are experiencing recently in Lebanon and the high cost of food has prompted several Lebanese to contact us”

HYDREK

Hydroponic planting is the process of cultivating seeds without using soil, but instead using nutrient rich substances, oxygen, and water to grow herbs, plants, and flowers. It is an increasingly popular way to plant, and in Lebanon, more are turning towards hydroponic systems, as one young company Hydrek, has been discovering.

Hydrek was founded two years ago by Nabil Nehme, and the business provides hydroponic systems for households, farmers, plus customized systems for NGOs, and municipalities. They focus on home-scale hydroponic systems, green foddors, livestock farms, supermarkets, and groceries by providing solutions for individuals, companies, and governments.

“We are the first company leading climate control and hydroponic solution provider for corporates. Our turnkey solutions are unparalleled, from efficient installation to streamlined commissioning processes to superior input supplies and grower management, [we are] bringing the future of sustainable growth within your reach,” Nehme tells Executive.

It was over ten years ago that Nehme first considered the concept. “I’m from a village and I like planting. When we moved to Beirut, I didn’t have enough space or a big investment so we started searching for options for planting on the balcony. While researching, I found that hydroponics is customized on a large scale (including big investment and space).” The discovery led him to found the start-up to offer home-scale hydroponics.

Nehme’s approach also includes consultancy

services, farm design, hydroponic feasibility studies, and agronomy training. The company also hopes that this type of horticulture will help mitigate the impact of climate change, as well as provide better food security, an issue Lebanon is currently battling with.

“The outbreaks we are experiencing recently in Lebanon and the high cost of food has prompted several Lebanese to contact us,” Nehme says. “For example, by buying one unit from Hydrek, anyone can plant hundreds of cups of vegetables with limited water and without the need for electricity. Accordingly, he or she can meet their needs for a longer period at a lower cost.”

Hydrek won a place on the Investmed project, an European Union funded program to support startups in the Mediterranean region, including in Egypt and Tunisia, as well as Lebanon. The businesses targeted should be working on economic and environmental challenges, with sustainability, facilitating access to new markets, and generating increased economic opportunities for men and women.

Nehme says the project will help train and coach Hydrek to become more competitive, and protect intellectual property rights. The team is made up of professionals experienced in working on greenhouse and automation technology projects, with a mixture of women, men and recent graduates, mainly agriculture engineers. Hydrek is located in the village of Kaa, in the Bekaa Valley, with the head office in Mkalles.



■ “Our charcoal is so beneficial to the refugees who live in unfitted tents and suffer from severe cold in winter, especially children”

JAMRA PLUS

In light of soaring black market fuel prices for heating, many Lebanese are no longer hesitating to chop down trees in nearby woods and forests, sometimes including those in nature reserves. With the onset of winter, people in both urban and rural areas are turning to firewood and charcoal to heat their homes. Cutting down logs for firewood is not a new trend in Lebanon, but it has been gaining momentum since the surging price of diesel.

Under the title “It is time to save the earth”, a team of ambitious chemical environmental experts in the Bekaa Valley have created a startup, Jamra Plus, to sustainably innovate through coffee waste. After years of researching, trying and testing, Fatima Kanaan, Safa Ayoub, Houssein Ayoub, and Hosni Abdelghini Ismail, were able to start their business in January 2022 and create Jamra Plus. The company produces briquette charcoal products from coffee waste. Their business is in the Bekaa but they are keen to be present all over Lebanon.

“Thousands of trees are cut yearly in Lebanon for heat and food preparation, so we decided that from people drinking coffee, we could convert it into charcoal in order to protect and save our trees,” says Fatima to Executive. They are currently working on opening a factory and purchasing equipment as well. In addition, they will be manufacturing their own machine in which their product can be used for cooking and preparation.

At the moment, however, they are making do with their hands. First, they collect the coffee grounds and sawdust; next, they add some ingredients and mix them all together. Then they melt the briquettes which makes them ready for use. The charcoal can be used for more than one purpose, like to prepare food, to keep warm, for barbecues or for camping.

“Our charcoal is so beneficial to the refugees who live in unfitted tents and suffer from severe cold in winter, especially children,” Safa mentions. Their charcoal also has environmental benefits, as well as humanitarian. It has 30 percent less carbon monoxide than standard types, and it burns fast with a strong flame. Since it is made of used and organic raw materials, it is price competitive too.

Jamra Plus has participated in different competitions, they ranked second place in the Hult Prize competition, which is a global, year-long competition that crowd-sources ideas from university-level students to challenge them to solve pressing social issues around topics such as food security, water access, energy, and education. They also ranked second place during the Lebanese-MED Researcher’s Night event, which is an event to give researchers the opportunity to showcase science’s impact on daily life, for projects focused around the Water, Food and Energy Nexus. Both Fatima and Safa stressed how a healthy environment was a priority for them, so much so they specify a part of their profit to plant trees in Lebanon. ■

ENTREPRENEURS TO FIGHT FOOD INSECURITY



Accelerators are designing new growth strategies for startups

The future of local food security heavily relies on the arduous efforts of policymakers and decision-takers to develop a nationwide roadmap and save what is left of the agro-food sector at the macro-, meso-, and micro-levels.

It was inevitable that the connected events of the Lebanese pound's devaluation and US dollar shortage were going to have a detrimental impact on the largely dependent-on-imports sector. Agricultural imports account for more than 80 percent of food supply. The country does not only import food products but also a large proportion of agricultural inputs, like seeds, fertilizers, and pesticides. As a result, the agriculture and the food processing sector (agro-food sector) has been heavily impacted. But as the sector calls for help, the government has been failing to sufficiently respond, with the majority of the country's remaining public resources being allocated to the industrial and financial sectors, according to a 2021 paper, Agricultural Sector Review (ASR), by the Food and Agriculture Organization of the United Nations (FAO).

Since 2019, to contain a growing food security problem and in light of government absence, private sector and international NGOs have

stepped up to address farmers' limited access to financing, poor infrastructure, the internationally-disrupted supply chain, and outdated farming practices. Long standing policy making inadequacy, alongside the dysfunctional Circular 331 - introduced in 2013 to encourage Lebanese banks to invest in start-ups, incubators, accelerators and venture capital funds - has pushed local incubators and accelerators to design new strategies to scale up and accelerate growth of micro, small and medium-sized enterprises (MSMEs). This also includes start-ups in the idea or early stages, and particularly those in the agriculture and the food processing sector.

HALF A BILLION DOLLARS IN FUNDING

According to the ASR, a high informal employment rate has always been an obstacle to the growth of the agriculture sector. Only a small share - around 8 percent - of the total agriculture labor force is formally employed, according to a 2019 McKinsey paper. Over the past couple of years, incubators have dedicated a lot of efforts to revive rural and culinary tourism in the countryside and focus on formalizing employment.

One notable ongoing program, funded by the German Federal Ministry for Economic Cooperation and Development, and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit in partnership with Berytech, is the Rural Entrepreneurs in Agri-Food program which aims to support businesses and startups in the sustainable rural economic development field. According to the Lebanon Agri-Food Initiatives Mapping and Gap Identification report developed by the Lebanon Reforestation Initiative, the current support for the sector reached more than \$475 million. This support is channeled through international organizations such as the FAO, United Nations Development Program (UNDP), the World Food Program, the International Labour Organization, or through the World Bank and the European Union (EU). On the other hand, bilateral support to the agriculture sector is also provided by several countries like France, Germany, Italy, Holland, among others.

DISTRIBUTION OF FUNDING BY SUB-SECTOR

SUB-SECTOR	BUDGET (MILLION USD)
Rangeland management	7.80
Banana plantations	0.13
Business development	1.77
Good agricultural practices/ Pest management	251.6
Gender awareness	0.35
Greenhouse production	1.5
Landscape restoration	7.75
Livelihood	24.7
Planning, Quality Control, Research & Development	0.29
Value chain/business development services	175.0
Water sources management and rehabilitation	4.35
Grand Total	475.26

Source: The Lebanon Reforestation Initiative

BERYTECH: TECHNICAL AND BUSINESS SUPPORT IN RETURN FOR INNOVATIVE SOLUTIONS

Berytech designed the Agrytech program in early 2017 to provide financial, technical, and community support to start-ups and small to medium-sized enterprises (SMEs) with engineering and tech solutions across the agro-food value chain. Since then, the program is strengthening linkages among same-sector businesses. In response to the declining economy, in 2019 Berytech launched the Agri-Food and Cleantech (ACT) Smart Innovation Hub which aims to support innovation in the agro-food and energy industry for developing solutions around the increasingly present environmental and food security challenges. Berytech also hopes the program will have a long term impact on the entrepreneurial scene, by proposing policy reforms and establishing a lobbying structure.

Soha Nasser, an agro-food specialist at Berytech and manager of the special edition of the Agrytech Accelerator Program, says that the aim behind the Agrytech program is to help turn the local economy from a service-based economy into a manufacturing-based economy. By organizing outreach activities such as ideathons and hackathons, in partnership with different universities, Berytech helps entrepreneurs from the agro-food sector turn their ideas into viable and investment-ready businesses.

“The applicants for the special edition of the Agrytech Accelerator Program need to have a mini-

mum viable product with a scalability potential beyond the local market and the potential to create sustainable job opportunities in the Lebanese market,” Nasser tells Executive. To grasp the situation of the market and define gaps, Berytech’s specialists team conducts a needs assessment survey.

SECTOR CHALLENGES

However, even though the sector is becoming more appealing to young Lebanese entrepreneurs, Nasser concedes that sometimes they have a hard time finding the right talent, especially due to the emigration of skilled youth since the start of the crisis. Berytech identifies some of the areas facing the most challenges: farming, food-industry packaging and marketing, rangelands and forestry, fishing and aquaculture, and the area of management support. Berytech encourages applicants to consider ideas for these fields as a top priority while conceiving their businesses in all activities including in the Hackathon and Accelerator Program. The main programs under the agriculture and food sector at Berytech are:

- **Agrytech;**
- **Bestmedgrape:** an EU-funded project that aims to help businesses turn their wine-making waste into health products;
- **Transdairy:** an EU-funded project that is enabling technological transfer among research, industry and SMEs applied to the dairy value chain;
- **QOOT:** an agro-food innovation cluster aiming to internationalize the local agro-food sector;
- **The Future Agro Challenge:** a global competition for food and agribusiness startups addressing national, regional, and global challenges.

■ Berytech helps entrepreneurs from the agro-food sector turn their ideas into viable and investment-ready businesses

FAIR TRADE LEBANON: HELPING FOOD PROCESSORS MEET LOCAL AND INTERNATIONAL SALES STANDARDS

Fair Trade Lebanon (FTL) is a local NGO created in 2006 with the aim to equip small producers and food processing cooperatives in rural regions with the needed skills to become export ready, through technical training and the acquisition of necessary certification to enter different markets. The local agro-food sector accounted for 11.7 percent of total exports, according to the last reported statistics in 2019, by the Investment Development Authority of Lebanon.

Food entrepreneurship

■ Accelerators are working closely with universities to source talents and help conceptualize ideas at an early stage



FTL has three projects running consecutively:

- **Support business innovation and enhance export for Lebanon (BIEEL):** a project targeting local agro-food exporting SMEs to enhance exports by improving access to international markets, equipping businesses with the right certifications to meet international market standards, and providing alternative financing solutions or export-enhancing loans. The main financing institutes are Cedar Oxygen Fund, IM Capital, Crowdfarming, and Al Fanar.
- **Shabake:** a program to strengthen the resilience of Lebanese civil society in order to improve crisis prevention and management programs, funded by the Agence Française de Développement and implemented by Expertise France and FTL. One part of the project is supporting women's food processing cooperatives in the Bekaa by providing them with technical and marketing training.
- **MedArtSal:** an EU-funded project focused on the sustainable management of salt harvesting and artisanal salt production along the Mediterranean, including in Italy, Spain, and Tunisia, as well as Lebanon.

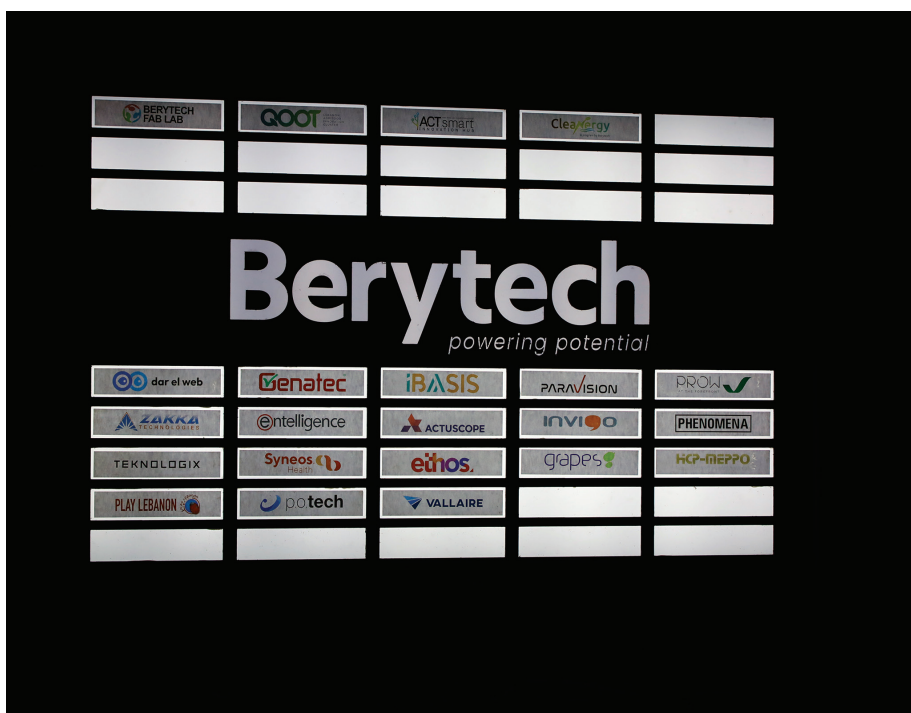
Other accelerators and incubators like Smart ESA, Bloom, and Nucleus Ventures are not providing customized support for agro-food businesses in particular, but are working closely with different partners to tailor support for the increasing number of applicants in all sectors.

BLOOM'S PERSONAL AND PROFESSIONAL BUSINESS ACCELERATOR

"Under the Lebanon Growth Accelerator (LGA) program, Bloom is collaborating with six other accelerators, to support 50 businesses and help create around 250 jobs locally," Dara-Maria Mouracade, programs lead at Bloom, tells Executive. Among the 50 participants who benefited from Bloom's support, Mouracade named nine businesses in the agro-food and agricultural inputs sector: Dooda Solutions, Garbaliser, Agro Cedrus, House of Lilies, Compost Baladi – Cultiva, SunCode, Del Libano, Melqart's Forest, and Aquavita. According to Mouracade, Bloom, in partnership with local and regional accelerators, incubators, and funds, provides mentorship programs for entrepreneurs to help them grow on a personal level all while supporting the growth of their businesses. The main challenges facing agriculture that Bloom wants to address under the LGA program are reducing the cost of imports, increasing access to finance, creating innovative ideas to outdated farming practices, and finding solutions to the disruptions in the agricultural value chain caused by the aftermath of Covid-19 and the current Russian-Ukrainian conflict.

NUCLEUS VENTURE: CONNECTING INNOVATORS TO THE WORLD

"Nucleus Ventures (NV) does not have a specific program addressing the food security challenge.



In partnership with Steve Wozniak, co-founder of Apple Inc., NV offers boot camps in the EMEA region [Europe, Middle East, Africa] and focuses on talent building for the most in-demand tech careers,” Farah Chamas, Beirut’s NV programs director, tells Executive. The crisis impacted the orientation of the support provided by the accelerator. “Before the crisis, NV adopted a sector-agnostic approach, which means that we were working with various businesses to solve the problems of multiple sectors. The crisis helped us become more sector-focused, we work on providing businesses with grants rather than convertible loans or other financial products and we prioritize working with SMEs in the renewable energy sector.”


In the energy sector, NV helps implement the Energy Innovation Hub program, co-funded by the EU and UNDP. Accelerators from Nucleus Ventures help businesses with growth potential and in securing deals with partners around the globe. Besides focusing on acceleration, NV helps upskill local talents through courses and programs. Under the multiple programs that NV is providing, beneficiaries in the agro-food sector include Bubble Kitchen, Aquavita, CaraBio, Suncode, and Partners with Sun.

WHICH PROGRAM TO CHOOSE?

Choosing the right accelerator program to match your business might leave you flummoxed,

but the different outreach activities that accelerators launch online may help entrepreneurs anticipate what to expect. In addition, accelerators are working closely with universities to source talents and help conceptualize ideas at an early stage. ESA’s Business School Accelerator, Smart ESA, customizes solutions for entrepreneurs from all sectors and provides different programs for businesses starting from the seed stage to the expansion stage.

However, despite the growing attractiveness of the agriculture sector among the emerging generation of entrepreneurs and the range of accelerator programs, there is also an issue of mismatch between the offer and the demand; sometimes the offer is not very much aligned with the demand. For instance, apple growers struggle to sell their high-quality fruit every harvesting season and still no concrete solution has been provided, on a governmental level or even from an innovative business approach.

Global and local trends have been driving the need for innovation in the agriculture and food processing sector long before this year’s food security debate kicked off. Without a doubt, at this moment in time, with the increasing number of accelerators, incubators and enthusiastic participants, being a disruptor in the agro-food sector is critical to address the sector’s poor infrastructure, specifically with rising concerns over polluted water, food poisoning, and arbitrary decision making. 

SEEKING EXITS FROM OBTRUSION



Financial access impediments remain a lingering barrier for agro business

What can illustrate the relationship between the farmer and the banker in this country? To modify an old consultant joke to a Lebanese scenario, let us assume – purely for the sake of illustration – that a banking guru with decades of expertise in maintaining monetary immobility at the heart of the financial system, decides to depart from his impoverished neighbors by means of a trusty hot air balloon. His hypothetical rationale: our financial wizard thinks that such a balloon is an inconspicuous means of personal transportation which does not require an airport for takeoff, plus he has lots of skills in producing hot air.

A magical fog surprises the maestro when he tries to cross the hills. The balloon drifts northeast in this dense fog and floats into the upper plains of the Baalbek-Hermel district where it gets entangled in an inactive power pylon. Then the fog breaks and the disoriented guru sees a farmer working in a field 40 feet below his aerial contraption.

“Habibi, can you help me?” cries the guru from above. “Get me down and sell me your car. I will give you a Eurobond that is worth 20 times what you paid for that car!” The farmer shakes his head and continues with his potato harvest. The financier tries again. “Please, can you drive me across the border? I am a

rich banker and can even give you a blank check.” The farmer shrugs. “At least tell me where I am exactly. I will pay you a million lira,” begs the banker.

The farmer looks up and says: “It seems to me that you don’t know much. I am an honest man and we do honest work here in these fields, so I cannot take the risk of driving you. Also, I need my car to take these potatoes to Beirut where they sell today for two million lira per bag.” (Note: The scene plays out in the not-too-distant future.)

“And where you are is in that little basket hanging way above my head. I tell you that for free,” the farmer concludes and continues with his work.

AN OLD CHASM

The distance between Lebanon’s – currently very theoretical – top tiers of finance and – the very real – agricultural sector today does look insurmountable. But the access-to-finance chasm for rural investment needs has already been gaping wide for decades. It was composed in one sense of the conventional rift between those seeking after funding and those providing access to it, in exchange for collateral that they could understand and valorize. However, the gulf between lenders and farmers might have been deepest and widest in terms of mindsets and attitudes where prospective investees and the gatekeepers of lending and investments have for decades failed to find a common language and mutual comprehension.

Illustrative of this mental and material chasm is the share of rural Lebanon in banking sector deposits. According to Banque du Liban figures cited by Bank Audi’s Lebanon Weekly Monitor for week 46 of 2022, the combined share of bank deposits by “region” rather than Mohafazat showed a heavily uneven concentration of two thirds of deposits in Beirut and its suburbs as of June 2022, juxtaposed at the other extreme with 5 percent of deposits in the Bekaa region.

According to numbers in the 2020 Annual Report of the Association of Banks in Lebanon, the regional distribution of deposits shifted down by about 30 basis points in Beirut and its suburbs, and up by a mere 13 basis points in the Bekaa in 2020 when compared with 2019. In terms of bank loans, the values were even more divergent as the capital reported to have been the location of between 73 and 74 percent of all

loans. The Bekaa was seeing the least lending activity in the country, only improving from 3.3 to 3.6 percent of credit that has been extended to borrowers in this region, which is stretched across several administrative Mohafazat, or governorates.

The access-to-finance chasm has never been completely hopeless in the sense that funding and farming could never be paired. One can find 10 percent of loan allocations to agricultural projects in the portfolio of Bank du Liban-subsidized loans in the early phase of its, ultimately ill-fated, economic stimulus packages of the 2010s. Also, data from Kafalat, a local financial company, show that the loan guarantee corporation in its heyday engaged with agriculture sector lending as one of its constituent, but far from dominant activities. For the period between 2001 to 2016, Kafalat data show issuance of loans to agriculture in the billions of Lebanese pounds – when one billion pounds equaled approximately \$667,000. To cite the values in 2016, subsidized interest medium- to long-term loans with Kafalat guarantees in that year comprised LL652 billion (\$432.57 million) of which LL62 billion, or 9.5 percent, had been awarded to agricultural loan applications (versus LL590 billion to industry and tourism).

In the context of access to finance by agriculture, one has to note further that the banking branch density in Lebanon has shown retail network growth as largely bypassing rural areas. One can see as proxy indication for the persistently underwhelming access to finance in the interest of agricultural development. Banking density – albeit on a long-term declining trajectory from 27 in 2004 to 20.3 in 2020 (the latest available data in a World Bank series on this indicator) in terms of branches per 100,000 adults, was in 2020 still nearly twice the global value of 10.8 and higher than reported national branch densities in both the MENA region (13.4) and high-income countries (18.5) – has since the 1990s been considered exorbitant in comparison with peer countries but at the same time notorious for being domestically unequal and tilted heavily in favor of the capital Beirut and its conurbation.

The trends of concentration of deposits, loans, branches (also including ATMs) away from the Bekaa region and rural Lebanon have been consistent throughout the 2000s and 2010s. If historical access to finance and banking density in rural districts are further contextualized with soft infrastructures that facilitate the access to education for agricultural stakeholders, the conventional wisdom approach says that agriculture has an incredible amount of catching up to achieve with regard to both affordable financial capital and highly trained human capital. This need for closing the dual capital gap, which predated the

collapse, has been highlighted in the past three years by the rising emphasis on building up the real economy. But it is also beyond question that commercial banks, which have lost the ability to lend, have since the start of the crisis been even less conduits for investments into agriculture, than before the banking collapse.

IMPORTANCE OF NEW INFRASTRUCTURES

Soft infrastructures for the agricultural value chain in a regulated market environment will be anchored in clear property legislation and a tax regime which entail cooperative and usufruct provisions. In terms of labor law, agriculture has to be covered by state frameworks of labor regulations and social protections.

Besides adequate legal infrastructure, state-supported education is recognized as another pillar in the enabling environment of the agricultural sector. The breadth of the educational choices in a country with a focus on elevating its agricultural sector will necessarily extend from vocational training to technical schools and university-level programs on crop and soil management, and agricultural and environmental sciences. Flanking tertiary education, strong value-adding potential can be unlocked by improving the collaboration between academia and industry in

matters of agriculture and food processing.

■ State-supported education is recognized as another pillar in the enabling environment of the agricultural sector

In any country, educational and human capital infrastructures are in rural areas, almost by definition in perpetual need of updating and upgrading. This development focus is on one hand, directed

toward keeping the sector aligned with new insights and studies in the constantly progressing realm of agriculturally applied life sciences where the human understanding of nature remains forever incomplete.

On the other hand, producer countries seeking to improve their agricultural exports have to constantly adjust to changing standards and requirements for internationally traded food stuffs and best practices. This latter challenge has long been a barrier standing large against Lebanese agricultural and agro-industrial exports to developed markets.

Overcoming this barrier requires investing in technicians and testing labs on the part of institutions, plus nurturing of awareness and compliance on the producer side. Moreover, under the aim of increasing a country's food security, capacity building in the supervisory framework and improving producer standards have to be correlated with efforts to reduce food wastage in the domestic market and increase nutri-

Food entrepreneurship



tional literacy among local consumers.

In this context, spreading awareness on nutritional values of food products and informing future Lebanese consumers about potentially harmful ingredients in popular snacks has this year become the chosen task of the Lebanese Association of Food Scientists and Technicians (LAFS), says Rana Cheaito, a food technician who has been coordinating the activities of LAFS since the mid-2010s, and recently was appointed as the head of this non-profit association.

“We are a bridge between industrialists and scientists,” she explains. “Our objective this year is to do awareness campaigns on how to read labels attached to food products,” Cheaito tells Executive. In parallel to having initiated a reading-the-labels campaign in schools, LAFS continually interacts with very small businesses – micro-enterprises in food processing and people who make food products in their home kitchens – to build their awareness on good manufacturing practices and food safety, Cheaito says.

This public good of food security and the collaboration among stakeholders have been pursued by LAFS on the level of a volunteer-driven NGO since the organization’s establishment in 1999; and this task was primarily tackled through annual conferences. Over the years, there were several highlights in the organization’s interaction with public officials, but the collaboration with public institutions such as the ministries of industry, agriculture, and economy has yet to be solidified beyond statements and expressions of ministerial intent. However, it is notable that since the economic crisis the membership of LAFS has been subjected to brain-drain pressures; nearly half of its 18 members have taken up roles in academia or industry overseas.

Lebanese food security, in Cheaito’s view, can be improved significantly with a roadmap for agriculture

sector strategies and investments, but it is a precondition that more food scientists are employed by both agro-industry and public sector. “We have recommended that food safety quality controls should be mandatory at every food [processing] firm,” she says, commenting that this recommendation, which was adopted by the Ministry of Economy and Trade in a statement at the LAFS annual conference of 2019, has yet to be transformed from an idea to reality. But according to her, this is not for want of trained technicians. “I can tell you that we have enough food scientists and experts, but we don’t have enough who are employed.”

Cheaito also concurs that there is a need to strengthen the pre- and post-harvest agricultural infrastructure of Lebanon with more testing laboratories. “We have the experts, the lands, and the produce, but we don’t have enough labs and testing materials,” she says, adding that private sector investments and operational partnerships between the concerned ministries and academic institutions are the most realistic path.

BACK TO FINANCE

The landscape in terms of soft infrastructures of education and resident expertise is in need of development, and the legislative and regulatory infrastructure for agricultural growth seems hardly sufficient, but today, the most deficient soft infrastructure remains access to finance. At the time of writing towards the end of 2022, when there is no bankable reversal in the Lebanese state’s presidential stupor yet, the state’s disability for enacting reforms and reaching agreements with all the International Monetary Fund (IMF), development finance institutions, Eurobond holders, domestic creditors, and depositors means that restoration of an access-to-finance capability and institutional infrastructure is not a rational near-term expectation for the agriculture or any other sector.

From the start of the financial crisis until today, private sector actors have been diverting their business transactions away from local banks, while households have made the informal economy their habitat, and the direct channeling of foreign financial aid circumvented the state and the banks in favor of dealing with small initiatives led by civil society organizations. The latter shift toward unconventional financing on the basis of micro-economic partnerships between foreign donors and Lebanese civil society organizations and NGOs is especially prominent in agricultural and green development projects.

In terms of developing the agro-food economy,

an orderly return of conventional banking or the occasionally proposed establishment of a state-owned agricultural bank, both presuppose banking reform. Moreover, there is consensus among financial analysts and strategists that recovery of investor's trust and the hope to see the channeling of funds into Lebanon through commercial banks will remain confined to the realm of hopeless dreams until an IMF agreement is in place.

Among few access-to-finance avenues that were not under complete capture by commercial banking, the microfinance sector, after the microcredit tradition of Mohammed Youus and the Grameen Bank initiative, has been rising in Lebanon since the early 2000s, albeit rather slowly by comparison with many developing economies.

The oldest microfinance institution (MFI) in Lebanon which still is operating under an NGO status, is Al Majmoua. Formed in the 1990s with a mandate to serve low-income businesswomen, the organization evolved in the 2000s into a leading MFI providing microcredit to urban and rural women and men who were seeking to secure independent livelihoods. Lately, in the course of the financial and economic crisis of Lebanon, the organization has identified agricultural clients as a new priority target group, Al Majmoua's executive director Youssef Fawaz tells Executive.

"We have for more than 18 months [been] looking again into green financing and we also have been trying to be more involved with agricultural finance," he says. An agreement testifying to the new orientation of Al Majmoua was signed in October with the multi-partner initiative WE4F; and the agreement will see the Lebanese MFI develop a financing product designed to help farmers obtain solar-powered irrigation systems.

Before the crisis, Al Majmoua had expanded its client base to 90,000 borrowers – absent a license that would allow it to accept deposits – whom it served with a staff of nearly 1,000. The vast majority of these borrowers were not agriculturalists. "Our portfolio reflected the economic pie in the country, with a bias to women-led ventures. The bulk of micro-loans was in trade and services sectors, with ten percent or less in the agricultural sector," Fawaz explains.

In the crisis, the MFI's headcount atrophied to about half of its pre-crisis staff of 450. Its deployable financial resources suffered the same fate as those of every funder. A large share of its funds in bank accounts were denominated in dollars and became inaccessible. Also, as the MFI shifted to receiving lira payments from its loan clients after demand for

its credit dropped in the early phase of the crisis, it soon started to have difficulties in even accessing these lira in its accounts. "The funding has completely dried up. We have been in crisis mode for more than three years," Fawaz says.

Without mincing words, he describes the MFI's financial and human capital conundrum, putting the financial capital need at \$5 to \$6 million. "We are in a difficult situation and need to start climbing again. The challenge is that to climb again seriously, we would need new capital to come in, so that we can again lend in dollars. My plea to whoever wants to

listen is to help save the sector of microfinance," Fawaz says, arguing further that Al Majmoua could leverage its proven track record as a financially sustainable microcredit provider with good prospects for delivering returns to investors.

■ "We have the experts, the lands, and the produce, but we don't have enough labs and testing materials"

"Microfinance is a sector that can reach 100,000 clients in the most remote areas of the country from the north to the south and the eastern Bekaa. We have the scales, the track record, and the history and we have the human infrastructure," he enthuses.

On this, the hopeful side of its business Fawaz names two non-financial assets. The first is the observation that the MFI has recently noted a burgeoning recovery in people's desire to borrow, and the second that the level of human capital has been preserved at a level where a rapid restart of the microcredit activity will be possible. The current staff level of "slightly less than 250 is still good and we remain relevant, as we have 32,000 clients," Fawaz says.

He emphasizes that this level needs to be maintained in order to preserve Al Majmoua's ability to re-engage clients in a coming economic recovery period with credit, technical assistance, and financial literacy training activities. "If experienced and skilled MFI workers were to be dismissed because of payroll difficulties, it will really be a missed opportunity for the period after the organized launch of a recovery strategy. I could lay off another 100 people tomorrow. But then, on the day when you decide that you want to reach 100,000 clients, it will again take us 15 years to get there."

The fact that microfinance – when compared with commercial banking and larger-scale investment facilitations – is today a sector with outstanding reach potential for serving rural smallholders and micro-entrepreneurs in the agricultural economy, adds urgency to Al Majmoua's social and economic appeal.



MANY TREES IN THE GARDEN



The role of niche producers

It is much more than a vague, billion-dollar opportunity for growing cannabis. Lebanese agriculture today is a field with many plots whose diversity has already grown when compared with some five years ago. That was the time when political statements – and an expensive report – were drawing people like moths to the light to the idea that legalized cultivation of the cannabis plant would be a recipe for economic growth and could quintuple and formalize the estimated annual \$200 million economic output of illegal hashish farming in the farthest reaches of the Bekaa valley.

Actually, there is no reason to think that further steps in legalization of cannabis cultivation in Lebanon (after the adoption of a law on its medical use in 2021) would not contribute to the economy's recovery. But always advisable investor caution notwithstanding, the economic growth potential of cannabis as cash crop is immense, judging from the experience of the developing weed markets of North America – where estimated legal retail sales of marijuana for medical and recreational use in the US alone quadrupled from a low base of \$3 billion in the five years from 2015 to 2019 – and from the – as usual, biased on the sales side – commercial research projections of a US market that could break \$50 billion in retail sales around 2026.

Moreover, and very important under Lebanese cultivation perspectives, there are the expectations of multi-billion-dollar legal cannabis sales (pending legalization) in Europe in the coming decade.

Considered against such market outlooks especially in Europe, the legal growing and processing industry potential in Lebanon may be quite impossible to quantify today. This means that economically forgetting or politically dismissing the weed option in agricultural development scenarios would be extremely counterproductive to hopes for optimally developing the agricultural sector by building a cannabis value chain and exportable cannabis product portfolios from the medical to the recreational.

A PONDERABLE PONDER

But while local proponents and seekers of an agricultural renaissance might not want to wait for these potent European cannabis markets to come online and certainly would not want to wait for the relevant legislation to move forward in Lebanon, there are two other areas that deserve attention.

The excessive reading of studies and strategy papers on Lebanon's agricultural potentials and policies could raise the specter of a bad déjà vu, with sagely statements such as this: "Support to the agricultural sector should include improving marketing and distribution schemes, intensifying promotion, finding new markets, enhancing research, imposing pest and disease control, improving training and extension services, providing inspection services, and boosting infrastructural services related mainly to electricity and water supply."

This sentence applies today yet it stems from an electronic file saved in 2004: it was written as a draft assessment of the EU-Lebanon Association Agreement of 2002 that was reached under the umbrella of the 1995 European-Mediterranean Partnership (Euro-Med Partnership) declaration and program. "Development of the agricultural sector will not only benefit the rural population but will also promote Lebanon's overall economic status," the Euro-Med assessment said, declaring that the "agricultural sector plays a multiple role in the Lebanese economy."

Pouring over the paper, the first notion to strike are the macro-level and agricultural parallels between the current time and the turn of the millennium. For example, the GDP then stood at \$19.5 billion (a cited IMF estimate for 2004) versus the World Bank's latest forecast of a 6.5 percent contraction in 2022 from last year's \$22 billion estimate, albeit shared by a much larger number of people in Lebanon. What makes the past 20 years feel like a lost generation specifically in agriculture, are statements where the assessment of the early 2000s points out baseline realities – such as the fact that land resources for agricultural use are limited to about a quarter of the small country and encroachment of urban sprawl – and structural factors that appear as true and relevant today as they were then. About the structure of the agricultural sector, the paper noted that 73 percent of Lebanon's 248,000 hectares land under cultivation by 195,000 farms were smaller than one hectare.

In policy assumptions and evaluations of Lebanese agriculture in the 2004 paper and also in papers published in the intervening years up to the 2020 crisis, the analysis and recommendations based on the sector's fragmented structure tended to focus on factors that are commonly associated with specialization, intensification and corporatization of agriculture. A 2018 brief by World Bank experts on agricultural developments in Jordan and Lebanon, for example, in the seeming approval attributed agricultural output growth in both countries to "increasing labor and land productivity as well as use of chemical fertilizers." Similarly, Lebanon's National Agricultural Strategy for 2020 to 2025 advocates as first point among four in the second pillar of its five-pillar approach to "increase agricultural production."

From the perspective of changing priorities, papers advocating Lebanese agricultural development while combining data on the persistence of baseline scenarios that do not change with advice that reminisces of the old agricultural priorities of economies of scale, speak to the need for policy change at all levels of government. It is a reminder of the eternal story that the most detailed studies, exhaustive special reports, and politically correct strategies are nothing but refuse after their shelf life has expired without their insights having been heeded and translated into action.

A LARGE ORGANIC NICHE, PLUS GOAT ECONOMY AND CIDER CULTURE

The second area worth pondering on the future of Lebanese agriculture in conjunction with strategic

changes and new entrepreneurial impulses is hopeful and totally tangible. It concerns viable new niches which are distinct from the hypothetical recreational cannabis niche in being less obvious in growth potential, but positively nutritional and legal.

These unconventional new paths to growth include ones that are based on circular economy wisdom of generating valuable resources out of residues such as olive pulp and grape pomace, producing energy from biomass – organic matter used as fuel – and employing principles of agroecology (see expert contributions in the special report on food security) and have been pioneered by scientists and civil society "pathfinders". But these paths run parallel to commercially discovered trails which have been explored by innovative producers who have been venturing forward along contrarian routes in the agro-food sector.

Perhaps the broadest of these commercially explored trails in Lebanon is that of organic agriculture. It is especially suited for a country where past certainties on the availability of subsidized electricity, fuel, and water, as well as the heavy reliance on imported chemical fertilizer have turned into substantial problems. "Organic farming relies on using fewer external resources, so less electricity and water and less inputs and raw material in the production process. Instead of fertilizers we use our own

■ These unconventional new paths to growth are based on circular economy wisdom of generating valuable resources out of residues

composting and instead of propagation we use our own propagation," Mario Massoud, executive manager of the Lebanese agriculture sector enterprise Biomass, tells Executive.

When the family venture in 2010 transformed into a commercial enterprise seeking to bring organic products to the domestic market, its business mantra was that Lebanon makes for an interesting country to practice organic agriculture in. These reasons, as cited by Massoud, started with the territory's well-known characteristics of 300 days of sun per year, by comparison to regional peers' excellent access to water, and 18 microclimates and crop production windows.

After eight years of building up the business, the production company operated three fully owned farms and worked with 55 partner farms that had dedicated themselves to organic farming standards. This enterprise structure changed during the crisis years whereby the number of owned farms grew to 15, and the number of partner farms dropped to 35 at time of this report. At the same

Food entrepreneurship

time, the impact of the crisis narrowed the cost disadvantage that its branded and packaged produce and processed foodstuffs had versus conventional produce and products.

“Somehow, organic became more competitive [in comparison with] conventional farming, because it uses less imported inputs and raw materials,” Massoud says, though he laments that due to the crisis, the costs of storing fruits, such as apples, from the 2022 harvest would in some cases exceed the prices that these fruits would fetch in the market. Likewise, the cost of the box which Biomass branded fruits and vegetables are sold in has been thrown out of whack in relation to its contents.

In terms of the structural change of the Biomass operation, which was driven in a large part by the fact that many farming partners sold their equipment during the crisis, Massoud reveals that the shift towards owned farms came with a loss of production. “We used to cover about one million square meters, [or] 100 hectares, of organic farming with our farming partners. We took more farms, but we lost farming partners and today we cover 40 hectares. The farms that we took, are smaller in scale,” he explains.

On the positive side, Massoud says that the crisis has emboldened the organic orientation of Biomass and led the company to assess the total market potential of domestic consumption and exports as strong enough to turn more farms into organic operations with full certification and standards. According to him, the target size for production is now 5 million square meters, or 500 hectares.

However, in his view, neither the organic niche nor conventional farming will be able to accomplish a full or large-scale substitution of food imports. But after decades of underinvestment, organic farming is Massoud’s hope for a new start out of the country’s economic crisis. “What we are trying to do as a company, is to modernize the farming approach and to promote sustainable farming techniques in Lebanon because we believe in this concept and also believe in the commercial potential of doing this.”

Besides the promises of wildly fashionable niches that are linked to developed markets’ buzzwords, such as bio and weed, some hitherto neglected native niches of Lebanese agriculture also correlate well with the demand trends and quality requirements of the developed world.

One such specialty sub-sector of the dairy economy is the goat economy of Lebanon, as pro-

moted by Andre and Joelle Hajjar, siblings who invested in their family’s Go Baladi production of goat milk cheeses and yogurts. When the family enterprise was set up in 2015 in a father, daughter, and son collaboration, the rationale was to substitute goat milk for cow milk because of the human health advantages of goat milk. What sets Go Baladi – the brand is a clever play on words – apart in operational terms is its sustainability focus in sourcing milk from smallholder goat herders who graze their herds in rural areas, such as the Chouf mountains and the Bekaa valley.

The company behind Go Baladi – Hajjar Foods – does not own farms and does not rely on imported goat stock, and its cooperation with herders of free grazing and migratory flocks means that the venture is faced with a reduced need for imports such as feeds, CEO Andre Hajjar tells Executive. “I consider goat milk to be part of the traditional wealth of Lebanon,” he enthuses.

As with all things agriculture in Lebanon, needed imports and absent state incentives stand as barriers against improving the goat economy.

However, on the upside, Hajjar points to marketing potentials of high-quality goat milk products in Arab countries where free grazing of herds is not possible. He envisions that up to one million goats could be kept in wandering flocks in rural Lebanon, which would

signify a more than 100 percent growth potential of the goat population, as estimated in studies.

Go Baladi, which halted their formal marketing activities in 2019, faces the usual challenges of consumer purchase power limitations that are juxtaposed with unpredictable inflation pressures. Hajjar declines disclosing initial investment and current financial results of the privately held company, but says that against the environment of a sector where large dairy companies are shrinking, Go Baladi never stopped growing in economic terms. At the start of its operation, the venture received foreign development agencies’ advisory and funding support.

Yet another lifestyle, healthy drink and tart taste trend that has contributed to the niche diversity of Lebanese agriculture is Wata, a pioneering apple cider made from fresh fruits and a rural production. Founder Soha Frem started her cidery not

■ Massoud says the crisis has emboldened the organic orientation of Biomass and led the company to assess the total market potential

as an entrepreneur who ran the gamut of incubator or accelerator, seed funding or angel funding, but as someone who ventured out with her own savings and her husband's operational management support and orchard in the coastal hills of the Keserwan district of Lebanon.

Frem tells Executive that at the time of starting her cidery in 2019 – two months before the civil protests of that October – there was no real sense of a cider product in the Lebanese market, to the point that it was not and still is not quite possible to define the addressable market for these healthier ciders as alternatives to other beverages, because the cider market in Lebanon is new. She says that Wata, due to minimal competition by imported ciders, started out with a quasi-monopoly on the market, and continues holding this advantaged position until today. But what really mattered to her was the fact that Wata worked toward creating a cider culture in Lebanon, and “being able to introduce a new experience to Lebanese daily life.”

As to Wata's organic limits to growth, she explains that cider shares many of the same barriers that inhibit mass production in other agro-food segments. Agricultural producers are able to generate high quality products “but in order to be competitive, we need to produce mass products,” she says, adding that comparative advantages in term of production cost are currently near impossible to realize due to the agricultural sector's lack of infrastructure, the cost of water and energy.

Other restraints against upscaling of production are the need to import nearly all inputs. In the case of Wata, this is yeast, yeast nutrients, caps, bottles, labels, and all packaging materials; only the apples are sourced locally. But essentially it is the quality focus and method of Wata's production that prohibits outputting cider in mass, something that can be easily achieved with ciders produced from concentrate. “Cider produced from fresh apples will never be a mass product, because production is expensive,” she says.

Conceding Wata's admittedly limited experience in exports, Lebanese cider has a very good export potential, she says. “We started exporting to Norway, Switzerland, and Paris, [France]. And what I have seen is that markets that are interested are high-end markets that are looking for quality, looking for craft ciders, and for stories behind the product. They are looking for brands that are really taking care of their fruits and we tick those boxes,” Frem says.

In economic literature, economies of scope in



■ Hajjar points to marketing potentials of high-quality goat milk products in Arab countries

an agricultural enterprise are described as emerging when the farmer or agro-entrepreneur uses the same inputs in two or more products, and thereby lowers the cost of their production. Under this approach, farm diversification has been established as a path to reduce market risk and also to improve resources usage at the farm. The logic of agrarian economies of scale mandates investments in infrastructure and centralized marketing structures as tools in creating competitive advantages. The logic of agrarian economies of scope is to reduce food loss, produce better quality, with more care, price in costs, and invest into more diversity and quality, which raises the value of products.

Applying economies-of-scale strategies, it is beyond obvious that investment in water, electricity, transport, and specialized agriculture sector infrastructures are vital for improving food security and improving the economic performance of rural Lebanon. Shorter food supply chains, making and marketing of high value-added products, and economic and social network building and clustering are global winners that combine organically and optimally with investments in modest economies of scale.

By adding in an equal or larger emphasis on economies-of-scope practices, can the Lebanese agricultural constituency elevate itself into a nationwide integrated economic ecosystem of newly invigorated agro-entrepreneurship, family enterprises with niche expertise, and perhaps even corporate players with a sustainability focus? It may be a very worthwhile direction for a small, intense, and diverse agro-food ecosystem. ■