



TRANSDAIRY OUTPUT 5.6

MULTIPLIER EFFECT, SCALABILITY AND SUSTAINABILITY ANALYSIS AND NEW PRODUCTS AND KETS PLAN

ELCIM @IRI



Executive summary

This plan outlines strategies for leveraging spin-offs' new products and Key Enabling Technologies (KETs) within the dairy value chain. The analysis encompasses a comprehensive examination of social, environmental, and economic factors, along with potential market opportunities within partner regions and beyond.

Introduction

The Dairy Value Chain (DVC) across Mediterranean nations like Lebanon, Tunisia, Greece, and Italy confronts shared hurdles due to heightened demands for top-notch, secure products, and the globalized, industrialized landscape of agriculture.

Collaborative efforts across borders become essential to harness research achievements and foster innovation throughout the DVC. The TRANSDAIRY initiative aims to facilitate technology transfer among research entities, industries, and small to medium enterprises (SMEs), concentrating on Key Enabling Technologies (KETs) applied to the dairy sector.

Through establishing eight cross-border Living Labs, delivering specialized training, and conducting market analysis, TRANSDAIRY strives to equip stakeholders with tools and techniques for a more efficient, sustainable DVC. For example, the Nano-Biotech Living Lab explores integrating modern technologies and scientific knowledge into dairy farming processes to enhance management practices, farm profitability, and animal welfare. Over the past five decades, global consumption trends indicate a marked rise per capita milk and dairy product consumption (excluding butter) in the Mediterranean Basin, notably in Tunisia, Egypt, and Lebanon.

While liquid milk and butter consumption have decreased, cheese consumption remains resilient, reflecting shifting consumption patterns influenced by urbanization and Westernized food habits.

Description of the innovative technology/product/process/service

The increasing population, evolving dietary preferences, and growing acceptance of cheese as a staple in South Mediterranean cuisine have spurred consumption within the region. Major players in this market are focusing on diversifying their product offerings, producing cheeses like labneh and halloumi alongside more traditional varieties such as mozzarella and cheddar. Manufacturers are innovating to meet consumer demands for new options and flavors in the cheese market. The two primary future developments anticipated in the cheese industry are the rising demand for specialty cheeses and a focus on sustainability.



Lebanon's dairy sector plays a crucial role in the country's economy, contributing 38% to industrial sector output and approximately 2.9% to the national GDP in 2018. With increasing demand for dairy products in the Middle East and North Africa (MENA) region, Lebanon is positioned for market expansion, poised to capture a significant share within MENA's dairy production sector.

Lebanese consumers demonstrate a strong appetite for dairy products, consuming an average of 189 liters of milk equivalent per capita annually. The preference for small ruminant dairy products is on the rise, perceived as healthier alternatives and offering innovative and diverse options, including high-value hard cheeses.

Lebanon is home to around 100 dairy factories, predominantly located in Bekaa (45%) and Mount Lebanon (31%). Key players include industry leaders such as Taanayel Les Fermes, LibanLait, and Khoury Dairy, varying in size, with some vertically integrated and owning farms and distribution networks.

In 2019, Lebanon's dairy exports reached approximately USD 3.9 million, with Iraq (28%) and Qatar (11%) emerging as primary export markets. Despite promising export potential, challenges persist in maintaining a consistent supply due to seasonal variations and production constraints.

The TRANSDAIRY project primarily benefits researchers, farmers, and innovators in the dairy and ICT sectors. Supported by the project, innovative technology is being developed and integrated into the dairy value chain, including precision farming techniques utilizing IoT sensors and data analytics. This technology aids Lebanese dairy farmers in enhancing productivity while minimizing resource wastage.

In Tunisia, an innovative product in the dairy value chain involves the development of fortified dairy products enriched with essential nutrients, addressing prevalent nutritional deficiencies in the population and adding value to dairy products in the market.

In Greece, a novel process in the dairy value chain focuses on adopting sustainable packaging solutions to reduce environmental impact, aligning with consumer preferences for eco-friendly products and promoting sustainability in the dairy industry. Additionally, precision agriculture, enabled by sensor technologies, is being implemented to optimize farming management actions.

In Italy, an innovative service in the dairy value chain is the introduction of blockchain technology for transparent supply chain management, allowing consumers to trace the journey of dairy products from farm to table, ensuring authenticity and quality assurance while building trust in the Italian dairy sector.

The dairy sector is experiencing shifts as consumers seek new taste experiences and prioritize health concerns, amidst high competition. Adapting to these evolving dynamics and exploring new opportunities can help dairy manufacturers capitalize on market growth worldwide.

Overall, the dairy sector presents significant opportunities for expansion, urging manufacturers to explore new horizons and embrace global innovation.

The main Unique Selling Points of our contrivance are:

The focus is on a niche area, where competitors are still limited, primarily in academia. But the technology used to improve the Dairy Value Chain:



- Live monitoring of storage conditions to prevent product waste.
- Automation of the sales process for quick order fulfillment.
- Route optimization for same-day delivery and reduced delivery costs.
- Integration of SYNC's UI/UX improvements for a seamless user experience.
- Hyper-Spectral Imaging (HSI) which offers a fast, non-invasive, and high-throughput technique for food control and analysis.
- Tested in a Food Pilot Plant environment, surpassing the limitations of common lab setups, ensuring real-world applicability and reliability.

Externalities analysis

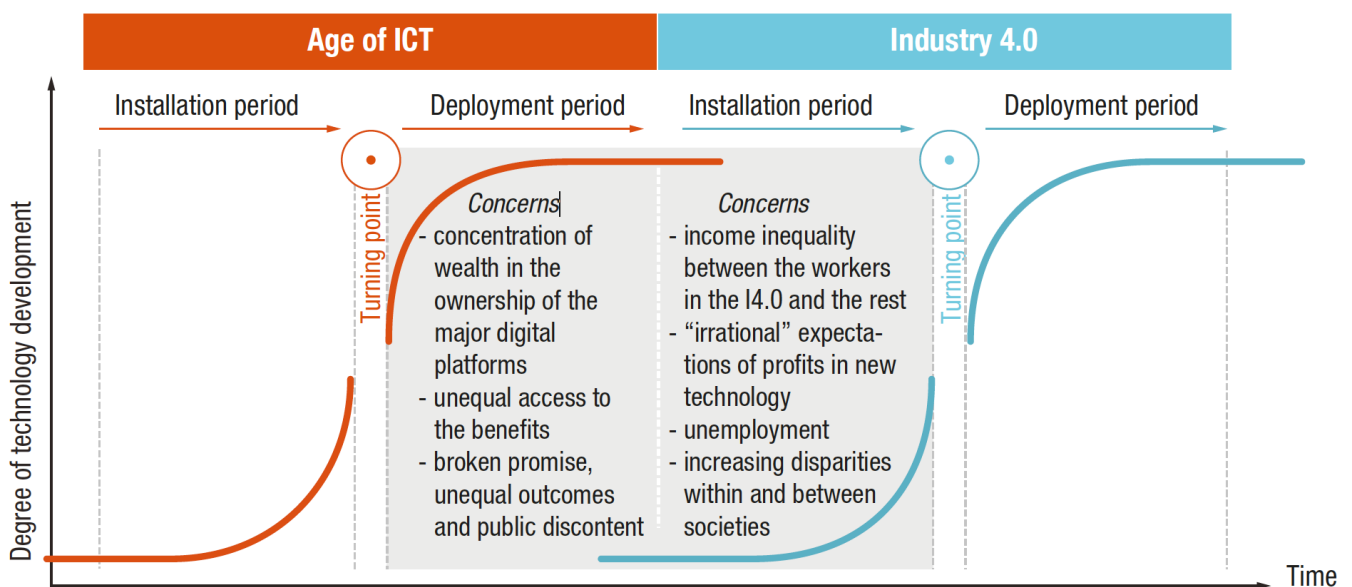
Analysis and evaluation of social factors in the region and nation of the LL

General socio-cultural aspects

In assessing the externalities of the technology/product/process, it's crucial to consider the socio-cultural aspects of the region and nation. This report includes understanding of the cultural values, norms, traditions, and beliefs prevalent in the South Med communities.

Moreover, factors such as education levels, access to resources, and social structures are studied since they play a significant role in shaping the adoption and acceptance of new technologies.

At present, the world is reaching the end of the deployment phase of the “Age of ICT” and starting the installation phase of a new paradigm, involving frontier technologies and sometimes called Industry 4.0 (Figure 4). The deployment of ICT resulted in an enormous concentration of wealth in the ownership of the major digital platforms.



Source: UNCTAD based on Perez (2002).

Technological change affects inequalities within the dairy sector through its impact on jobs, wages, and profits. These inequalities may manifest between different occupations within the sector, among dairy firms, and across sectors.

The technological advancements in the dairy sector mitigate inequality from Lebanon to Greece, Italy, or Tunisia. Therefore, although the channels and mechanisms of inequality may be similar, the impact of technological change on inequality within the dairy sector evolves over time, reflecting new challenges and opportunities presented by advancing technologies.

For instance, Lebanon suffers from a serious deficit in its domestic production of essential food supplies, so it currently strongly depends on imports, particularly of animal products and cereal crops (75 to 80 percent). Production capacities worsened after the economic crisis that hit the country.

In particular, the dairy sector - mainly goat and sheep milk - has been exposed to several constraints over the last decade, with producers experiencing reduced income and losses due to a combination of factors: several years of conflict, meagre resources, unhygienic practices, lack of experience and low level of skills.

The findings show *the General socio-cultural aspects* as follows in:

Lebanon:

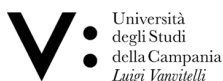
- **Education:** Varies across rural and urban areas. Farmers in rural regions participating in the living lab activities have lower education levels, impacting farm management practices and technology adoption.
- **Access to Resources:** Land ownership is concentrated, limiting opportunities for smaller farmers. Water scarcity and insufficient infrastructure pose challenges.
- **Social Structures:** Traditional family-based farms prevail, impacting gender roles and decision-making processes.

Greece:

- **Education:** Generally the beneficiaries have higher level of education than Lebanon.
- **Access to Resources:** Similar land concentration issues exist, leading to concerns about sustainability and fair competition.
- **Social Structures:** The dairy sector is undergoing modernization with larger commercial farms emerging.

Italy:

- **Education:** The beneficiaries tend to be well-informed and adopt new technologies effectively.



- **Access to Resources:** The landholdings are generally smaller than Greece, but having the support of the EU they have efficient access to resources like water and credit.
- **Social Structures:** Diverse structures, with family farms alongside cooperatives and larger commercial operations.

Tunisia:

- **Education:** Focus on improving agricultural education, but challenges remain.
- **Access to Resources:** Land reforms have aimed to improve access for smallholders, but water scarcity and limited infrastructure persist. Access to finance is also an issue.
- **Social Structures:** Mixed picture, with traditional family farms coexisting with modern operations. Women play a significant role in dairy production, facing both challenges and opportunities.

Key Differences:

- Education levels: Italy exhibits the highest average, while Lebanon faces more challenges.
- Access to Resources: Italy and Greece benefit from EU support, while Lebanon and Tunisia struggle with land concentration and water scarcity.
- Social Structures: Family farms are common across all countries, but Italy shows more diversity with larger commercial operations.

Adopters' characteristics

The main target adopters of the technology/product/process within the dairy sector includes individual farmers, dairy companies, engineering teams, researchers and managers of dairy-related enterprises.

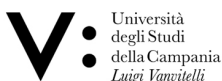
These adopters vary in their level of education, experience, and expertise within the dairy industry.

The educated and experienced farmers from Lebanon, Greece, Tunisia, and Italy are often the adopters of new dairy technologies, primarily driven by profit motives.

These individuals recognize the potential for increased efficiency, productivity, and profitability that technological advancements can offer to their operations.

On the other hand, younger farmers under 35 who benefitted from the TRANSDAIRY Living Lab activities looked for the environmental benefits when considering the adoption of new technologies.

They are looking for to promote eco-friendly farming methods.



The adopters positive attitudes towards innovation drive them to embrace new technologies and adapt their practices accordingly but exhibit reluctance towards change due to concerns about the cost, complexity, or perceived risks associated with adopting new technologies.

The adopters of dairy technologies felt the urge to respond to recent changes and major innovations in the field to remain competitive and sustainable. This includes staying informed about advancements in dairy technology, adapting their practices to incorporate new techniques or tools, and continuously improving their operations to meet evolving industry standards, economic challenges and shift in consumer behaviors.

Analysis and evaluation of environmental factors in the region and nation of the LL

Typically, in Lebanon there are two primary small ruminant dairy production systems: A semi-extensive system, which constitutes approximately 90% of small ruminant dairy production. In this system, minimal to no supplemental feed is given to livestock during the grazing season from April to October. Bedouin herders traditionally migrate along the plains of the Bekaa during this period, establishing temporary settlements for grazing at higher altitudes, while local herders return to their villages each night after grazing. Once the grazing period ends, both Bedouin and local herders winter their animals in lower altitudes along the Bekaa plain, providing feed purchased from input suppliers.

The second system is semi-intensive, involving daily feed supplements during the grazing period, along with limited grazing. Typically utilized by larger small ruminant dairy producers, this system incorporates advanced production methods such as improved breeds, regular health checkups, and the use of appropriate milk collection containers such as stainless steel. These producers maintain strong relationships with collectors and/or processors, with daily milk deliveries.

The proportion of semi-extensive to semi-intensive production in the rural regions, currently at 90:10, is rapidly changing due to the Syrian crisis and decreasing winter precipitation. Lack of greenery for foraging and restricted access to traditional grazing areas are compelling many semi-extensive herders to transition to a semi-intensive production system. This shift reportedly leads to a 30% decrease in milk production due to inadequate nutrition and increased mortality among young animals from water scarcity and diseases like Mastitis and Malta fever. The higher production costs associated with semi-intensive production significantly strain income and livelihoods, prompting producers to cull animals as they struggle to provide adequate feed.

Goat farming in Lebanon is an ancestral heritage that may disappear by the overflowing of new technologies; its protection is necessary for the preservation of patrimonial traditions that support Lebanon.

There is a growing interest in the consumption of the aforementioned typical goat products, which is partly due to the uniqueness of such foods. Their market is expanding; therefore, there is an increasing interest in maintaining the authenticity of these typical products.

Although goat milk is very nutritious and is considered as an acceptable food in several parts of the country, its production and handling remain a major problem limiting its consumption. In the Mediterranean region, and particularly in Lebanon, goat's milk is becoming increasingly important especially because of the popularity of its products (Darfiyeh, Aricheh, Serdale, Shankleesh, Labneh and Kishk).

Analysis and evaluation of regional/national economic background and factors

Lebanon:

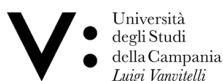
- **Economic Background:** Struggling with economic crisis, high inflation, and currency devaluation. This impacts input costs (feed, equipment) and consumer purchasing power.
- **Factors:**
 - **Land Concentration:** Limited access to land hinders growth for small-scale farmers.
 - **Water Scarcity:** A major challenge affecting production and sustainability.
 - **Infrastructure Weaknesses:** Lack of efficient storage, transportation, and processing facilities limit value addition.
 - **Subsidies:** Government subsidies on imported dairy products can distort the market and disadvantage local producers.
 - **Political Instability:** Uncertain political situation creates challenges for long-term investments and planning.

Greece:

- **Economic Background:** Emerging from a debt crisis, with moderate economic growth but high unemployment.
- **Factors:**
 - **EU Subsidies:** Play a significant role in supporting farmers and infrastructure development, but distribution can be uneven.
 - **Land Concentration:** Similar to Lebanon, large landowners dominate, impacting opportunities for smaller producers.
 - **Debt Burden:** Many farmers struggle with debt, limiting investments and modernization.
 - **Competition:** Increased imports from EU member states create competition for local producers.
 - **Aging Population:** Declining rural population and lack of young farmers entering the sector raise concerns about sustainability.

Italy:

- **Economic Background:** Relatively stable economy with a strong agricultural sector.
- **Factors:**
 - **EU Support:** Benefits from efficient infrastructure, access to credit, and market access within the EU.



- **Diverse Farm Structures:** Mix of family farms, cooperatives, and commercial operations ensures flexibility and competitiveness.
- **Focus on Quality and Branding:** Strong emphasis on high-quality products and effective marketing strategies enhance profitability.
- **Environmental Concerns:** Growing pressure to adopt sustainable practices and reduce environmental impact.
- **Labor Shortages:** Challenges in attracting and retaining skilled labor in rural areas.

Tunisia:

- **Economic Background:** Developing economy with ongoing challenges related to unemployment and poverty.
- **Factors:**
 - **Land Reforms:** Efforts to improve land access for smallholders have yielded mixed results.
 - **Water Scarcity:** A major constraint on production, requiring efficient water management practices.
 - **Limited Processing Capacity:** Lack of advanced processing facilities limits value addition and export potential.
 - **Price Fluctuations:** Volatile dairy prices impact farmer income and market stability.
 - **Informal Market:** Significant portion of dairy production and consumption occurs outside formal channels, posing challenges for regulations and quality control.

Comparative Analysis:

- **Economic Stability:** Italy exhibits the most stable economic environment, while Lebanon faces the most significant challenges.
- **EU Support:** Greece and Italy benefit significantly from EU subsidies, impacting resource access and competitiveness.
- **Farm Structures:** Italy boasts a diverse and adaptable sector, while Lebanon and Tunisia rely more heavily on small-scale family farms.
- **Water Scarcity:** A common challenge for all countries, requiring innovative solutions and efficient water management.

Evaluation:

The dairy sector in each country faces unique challenges and opportunities shaped by the regional/national economic background and various factors. While Italy shows relative strength due to its economic stability and diverse farm structures, other countries require interventions to address limitations in resource access, infrastructure, and processing capacity.



Analysis and evaluation of external technological factors

External technological factors significantly impact the dairy sector and value chain across these countries.

Lebanon:

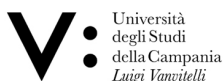
- **Limited Adoption:** Access to and knowledge of advanced technologies like precision farming, automated milking systems, and advanced processing equipment is often limited due to financial constraints.
- **Infrastructure Gaps:** Lack of reliable internet connectivity and cold chain infrastructure hampers effective deployment of digital solutions and quality control throughout the value chain.
- **Policy Framework:** Insufficient policy support and incentives hinder investment in research and development (R&D) and technology adoption by small-scale farmers.
- **Opportunities:** Potential for blockchain technology to improve transparency and traceability, address food safety concerns, and connect farmers directly to consumers.
- **Development Needs:** Capacity building programs such as the TRANSDAIRY entrepreneurial trainings are crucial to bridge the technology gap and support innovation in the sector.

Greece:

- **EU Funding:** Access to EU funding facilitates investment in R&D, precision farming technologies, and smart irrigation systems.
- **Digitalization Efforts:** Initiatives promoting digital platforms, farm management software, and e-commerce opportunities for dairy products exist.
- **Focus on Sustainability:** Adoption of technologies like renewable energy sources and precision agriculture tools to support environmentally friendly practices.
- **Challenges:** Connectivity issues persist in rural areas, and some farmers lack the digital literacy needed to fully utilize new technologies.
- **Future Landscape:** Continued focus on integrating digital solutions and precision agriculture, coupled with improved skills development, is crucial for competitiveness.

Italy:

- **Advanced Technology Use:** Widespread adoption of robotics, automation, and advanced processing equipment ensures efficiency and high-quality production.
- **Research & Development:** Strong focus on R&D, with universities and private companies collaborating on innovative solutions for dairy production and processing.
- **Smart Farming Integration:** Precision agriculture tools and data-driven solutions are actively implemented to optimize resource management and production yields.



- **Challenges:** Addressing sustainability concerns by integrating more environmentally friendly technologies and reducing energy consumption.
- **Innovation Focus:** Ongoing investments in the living lab activities such as the R&D and smart farming solutions are key to maintaining Italy's leadership in the dairy sector.

Tunisia:

- **Limited Resources:** Budgetary constraints restrict access to advanced technologies, and many farmers rely on traditional methods.
- **Initiatives like TRANSDAIRY:** the TRANSDAIRY project helped in promoting technology adoption through vouchers and trainings, but challenges remain in implementation.
- **Challenges:** Bridging the digital divide in rural areas and ensuring technology adoption aligns with specific needs and context of small-scale farmers.
- **Strategic Approach:** Focusing on affordable and accessible technologies like mobile solutions and capacity building can accelerate development in the sector.

Comparative Analysis:

- **Technology Adoption:** Italy leads in advanced technology adoption and R&D investments, while Lebanon faces the most significant limitations.
- **EU Support:** Greece and Italy benefit from EU funding for technology adoption and modernization, impacting competitiveness.
- **Digitalization:** All countries recognize the potential of digital solutions, but varying infrastructure and resources create disparities.
- **Focus on Sustainability:** Italy and Greece show progress in integrating sustainable technologies, while Lebanon and Tunisia require further development in this area.

Evaluation:

External technological factors significantly impact the competitiveness and sustainability of the dairy sector in these countries. While Italy showcases advanced technology adoption, other countries require targeted interventions to address resource limitations, infrastructure gaps, and capacity building needs.

Analysis and evaluation of Legal, regulatory, standards, ethical, gender, issues

Legal and Regulatory Issues:



- **Lebanon:** Inconsistent enforcement of food safety regulations, lack of clear labeling standards, and challenges in traceability mechanisms create concerns about product quality and consumer protection.
- **Greece:** EU regulations and standards generally ensure high-quality products, but challenges persist in enforcing regulations across small-scale producers and informal markets.
- **Italy:** Robust legal framework and strict quality controls contribute to high standards, but concerns exist regarding competition regulations and potential dominance of large processors.
- **Tunisia:** Evolving legal framework aims to improve food safety and standards, but enforcement capacity and infrastructure limitations pose challenges.

Standardization:

- **Lebanon:** Limited adoption of international quality standards creates market access barriers and challenges in competing with imports.
- **Greece:** EU standards ensure product consistency and consumer trust, but potential exists for harmonization with national standards to better reflect local production methods.
- **Italy:** Stringent national standards alongside EU regulations contribute to high product quality, but navigating the complex system can be challenging for small producers.
- **Tunisia:** Efforts are underway to adopt international standards, but capacity building and infrastructure development are crucial for effective implementation.

Gender Issues:

- **Limited female participation:** Women are often underrepresented in decision-making roles and face challenges in accessing resources and training.
- **Land ownership and inheritance:** Unequal access to land and resources can disadvantage women in the dairy sector.
- **Labor rights and protections:** Ensuring fair wages, working conditions, and access to social security for all workers, including women in informal markets.

Comparative Analysis:

- **Legal Frameworks:** Italy and Greece have the most robust legal frameworks and standards, while Lebanon and Tunisia face ongoing challenges in enforcement and infrastructure.
- **Standardization:** EU membership benefits Greece and Italy in terms of product consistency and market access, while Lebanon and Tunisia need further development in this area.
- **Gender Issues:** Empowering women and addressing gender inequalities is crucial for inclusive and sustainable development in the dairy sector across all countries.

Summary of the business plans provided by the partnership

Each partner has submitted a business plan to describe the sustainability of the projects and how they can make an impact in the future. Due to the high variability of the information sent, we have attached the original documents in the appendix. We will provide an overview of the major points in the following paragraphs for each partner.

AUA (Greece)

AUA has provided an overview of the implementation of the living lab findings to develop a sustainable model for the dairy industry. The Nano-Biotech Living Lab is investigating a methodology to integrate a modern technology and scientific knowledge at critical stages of the dairy farming process, to develop an effective protocol for improvements in management, farm profitability and animal welfare.

Precision dairy monitoring involves the use of technologies to measure physiological, behavioral, and production indicators on individual animals to detect events of interest. Estrus, disease, and calving detection are common applications, although estrus detection is the most tested and used. Many precision dairy monitoring technologies (PDMT) are commercially available and are being used in research and on farms.

The dairy industry is experiencing substantial changes in how information is collected and utilized. Although there are much research-validated and well-implemented PDMT on the market currently, more enter the market all the time and producers are left with difficult decisions on whether to invest, when to invest, and what to invest in. Researchers often focus on the economics and usefulness of information of these PDMT, but often the intangibles are what matter to producers and should be considered when making and receiving recommendations. What one producer perceives as important may not be the same as another. From my own experience and research, the top PDMT are those that improve (1) farm efficiency, (2) farm economics, (3) decision making, (4) animal welfare, and (5) producer happiness.

All details are available in the Appendix.

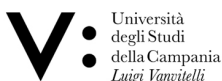
APII (Tunisia)

APII has only provided an excel sheet with financial projections. The source of revenue will come from precision dairy farming consulting and training services, with projected revenues to grow from €224,355 in Year 1 to €2,393,764 in Year 5. The cost structure is the classic structure of a service-oriented business.

All details are available in the Appendix.

UCLV (Italy)

The UCLV Living Lab proposes a highly innovative idea in the sector sensor solutions. The idea focuses on addressing the global issue of spreading pollutants and pathogens in the environment and dairy supply chain. The products include real-time sensors, treatment processes for concentration/filtration, and monitoring services. The target market initially is B2B, with estimated product manufacturing times of 12/24 months. The market analysis indicates a potential annual turnover of \$3.35 billion USD, with a focus on the water treatment sector and dairy supply chain. The company aims to leverage growth factors such as increased pollutants, IoT, and industry 4.0 for market entry.



Competitive analysis reveals a highly competitive market with integrated operators dominating. The company's competitive advantage lies in its innovative and flexible proposal, offering diversified development potential based on customer needs.

The marketing plan highlights strengths such as recognized technological quality, a consolidated professional network, and an innovative technological proposal. Weaknesses include no production capacity and a newly established organization. Opportunities involve a local to global market approach, synergy with the EU plan, and flexibility in technological solutions. Threats include significant investment requirements and a competitive industry.

The product, promotion, distribution, and price policy involve outsourcing the commercial structure, offering core products at reduced prices, and encouraging cross-selling. The sales plan focuses on B2B initially, with a shift to the general market later.

Operational plans outline choices for production and services, including outsourcing large-scale sensor manufacturing. The economic and financial plan projects revenue, costs, and contributions over the next six years. The investment plan highlights the need for €4,775,000, with sources including EU grants, capital increase, and raising financing.

All details are available in the Appendix.

Fertaiké – Berytech (Lebanon)

Berytech focused on one company in terms of sustainability development Fertaiké.

The business plan for Fertaiké serves a triple purpose: it acts as a reference for internal reflections and planning, aids in external funding initiatives, particularly as part of the Transdairy project by Berytech, and outlines specific goals and benchmarks for success. The basic market analysis emphasizes Lebanon's pivotal role in the dairy industry, contributing significantly to the economy and showing potential for expansion in the MENA region. With a particular focus on goat based Labne, Fertaiké aims to modernize everyday food, offering a range of premium and versatile dairy products to cater to diverse consumer preferences.

Lebanon's dairy industry, contributing 38% to the industrial sector output and 2.9% to the national GDP in 2018, is poised for market expansion, given the growing demand for dairy products in the MENA region. Fertaiké's strategic vision revolves around transforming Labne into a premium, versatile product, leveraging its unique attributes and addressing market gaps. The business plan emphasizes the need for continuous innovation and expansion into other dairy product lines in the future.

Fertaiké's journey started in January 2020, facing challenges during the energy crisis in August 2021 but adapting and refocusing on unique selling points like Labne and complementary products. The mission to recreate everyday food using modern techniques and innovative combinations guides Fertaiké's product offerings, including various Labne products and specialty jams. Success factors identified include management expertise, quality products, good packaging, and brand building.

The SWOT analysis highlights Fertaiké's strengths in brand loyalty and clear product offerings, weaknesses in accessibility challenges and scalability costs, opportunities in online marketing and potential export, and threats from competition and external factors. The business model



emphasizes scalability and a financial viability plan, focusing on replicating successful dairy industry practices, expanding equipment distribution, and establishing a National Union of Milk Producers.

In conclusion, Fertaike aims to position itself as a leader in transforming Labne and other dairy products through innovation, quality, and brand building. The business plan outlines a strategic approach to overcome challenges and capitalize on market opportunities in the evolving Lebanese dairy industry.

All details are available in the Appendix.

Maliattec – IRI (Lebanon)

IRI focused on one company in terms of sustainability development: Maliattec.

MaliaTec, a leading MENA enterprise solutions provider, in collaboration with SYNC, has developed a Dairy Route Optimization Solution targeting dairy production challenges. Objectives include an 88% reduction in waste, a 19% increase in profitability, and offering end-to-end delivery solutions. The target market includes companies seeking transportation optimization and modular, scalable solutions. Revenue will be generated through software licensing, implementation, and maintenance contracts.

The solution addresses storage monitoring, sales automation, and route optimization, integrating SYNC's UI/UX enhancements. Marketing strategies involve case studies, partnerships, and targeted campaigns. The operational plan includes improving the mobile app, continuous collaboration with SYNC, and client support. Financial projections anticipate \$320,000 in 2024, with growth through customer acquisition. Challenges, like technical issues, have been addressed, emphasizing ongoing improvements and collaboration with SYNC.

In conclusion, MaliaTec's Dairy Route Optimization Solution, with SYNC's enhancements, has proven successful with key customers. The plan is to build on this success, address challenges, and expand the solution's market presence for sustained growth and customer satisfaction.

All details are available in the Appendix.



APPENDIX

[AUA \(Greece\) Business Pan](#)

[Fertaiké – Berytech \(Lebanon\)](#)

[Maliatéc – IRI \(Lebanon\)](#)

[UCLV \(Italy\)](#)

[APII \(Tunisia\)](#)

[ESIM](#)

