

Winter 2018

SwitchMed Magazine

Lebanon



Photo credit: @MichaelMajor/Crop Trust



SwitchMed programme is funded by the European Union



switchmed

**We are
SwitchMed**

**SwitchMed is
an initiative
that supports
and connects
stakeholders
to scale up
eco and social
innovations.**

SwitchMed is an initiative that supports and scale-ups eco and social innovations

The SwitchMed Programme was launched in 2013 by the European Union to speed up the shift to sustainable consumption and production patterns in the Southern Mediterranean, notably through the promotion of circular economy approaches. The Programme aims at achieving productive, circular and sharing economies in the Mediterranean by changing the way goods and services are consumed and produced so that human development is decoupled from environmental degradation.

Its activities benefit 8 countries in the Southern Mediterranean: Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine and Tunisia. Through policy development, demonstration activities and networking opportunities, SwitchMed supports and connects stakeholders to scale-ups eco and social and eco innovations. The Programme supports policy makers, eco-innovative small and medium sized enterprises, industries, start-ups and entrepreneurs in the Southern Mediterranean countries, which have identified job creation and natural resource protection as priority issues that also contribute to their economic stability.

SwitchMed, which works with a wide range of stakeholders, is committed to catalyse the market of sustainable products and services in the Mediterranean via:

- Capacity building in industry service providers targeting small and medium sized enterprises for resource efficiency improvements;
- Trainings for start-ups and entrepreneurs to build skills in design, business plan, marketing and financing of sustainable products and services;
- Engagement with policy makers to establish a regulatory and policy framework to boost the market for sustainable products and services;
- Empowerment of citizens and civil society organisations to lead socially innovative solutions addressing environmental challenges;
- An Action Network of stakeholders to link with similar initiatives and networks, exchange information and to scale-up current activities.

SwitchMed is implemented by the United Nations Industrial Development Organisation (UNIDO), the United Nations Environment Programme Mediterranean Action Plan (UN Environment/MAP), the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC) and the UN Environment's Economy Division. Each of the implementing organisations brings its specialised experience and tools to partner with the eight countries on activities that span policy development, capacity building, business support services, demonstration activities and networking.

The United Nations Industrial Development Organisation (UNIDO) supports the development of green industry and sustainable production in the southern Mediterranean. It does so through a comprehensive approach that both presents the business case of resource efficiency to industries, and helps service providers increase their capacity to deliver sustainable production services matching the industry needs. In addition, UNIDO is cooperating with a number of national institutions addressing policies on sustainable production.

At the start of the project, the UNIDO designed TEST methodology is delivered to the service providers and local professionals. In collaboration with the UNIDO TEST expert team, the service providers identify and select companies to take part in the TEST project, based on the companies potential for improvements and top management commitment. Crucially, the company staff also receive the TEST training, enabling them to implement the technical measures and management solutions identified by the service provider. Their active participation in the training and in the implementation of the project ensures the sustainability of all identified actions at company level.

The TEST implementation approach has to date successfully demonstrated the profitability and effectiveness of introducing best practices and integrated management systems in terms of cost reduction, productivity increase and environmental performance, extending the experience gained to other industries in the region. UNIDO, together with local partners, also promotes business partnerships between local businesses and EU Eco-Innovative companies, creating an area of shared prosperity on the principles of a sustainable and inclusive socio-economic development.

United Nations Environment Programme Mediterranean Action Plan (UN Environment/MAP) is a Regional Seas Programme under UNEP's umbrella that brings together the 21 Mediterranean neighbouring countries. MAP provides support to those countries in the implementation of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, the so-called Barcelona Convention.

The Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC) is one of the centres belonging to UN/MAP. It is appointed with the mandate from the Contracting Parties of the Convention to promote Sustainable Consumption and Production in the Mediterranean region. In order to accomplish that mission the center provides knowledge, training, advice and networking opportunities to businesses, entrepreneurs, financial agents, civil society organisations and governments that work to provide Mediterranean's society with innovative services and products that are good for the people and for the planet.

The center provides technical assistance to the Contracting Parties to the Barcelona Convention to adopt SCP as integrated approach to decouple development from pollution and environmental and implements pilot projects in four countries: Algeria, Lebanon, Morocco and Tunisia. Likewise SCP/RAC supports green entrepreneurs and change makers driving eco and social innovations in the Mediterranean by providing training, technical and financial advice, jointly with a network of strategic local partners and local trainers. Moreover, SCP/RAC works closely with financial agents to establish mechanism that enable entrepreneurs and small companies that provide SCP solutions access to funding. SCP/RAC also hosts the Networking Facility that contributes to the visibility, effectiveness and scaling up of the SwitchMed activities.

UN Environment's Economy Division supports the development of SCP National Action Plans and provides advisory services and follows up closely the implementation of the demonstration pilot projects of four countries: Egypt, Israel, Jordan and Palestine.

UN Environment's Economy Division works closely with the National Focal Points (NFP), who are key actors in the SwitchMed and play a specific role in implementing the policy activities at national and disseminating the results in their respective countries. Focal points have been appointed by the national governments. In most countries a duo of Focal points – one from Ministry of Environment and one from Ministry of Industry.

SwitchMed Programme is funded by the European Union.

Lebanon's facts and numbers

Population

- Capital and largest city: Beirut.
- Population: 6.1 million.
- Life expectancy at birth: 79.5 years.
- Population growth 2.6% annual.
- Official languages: Arabic, French.
- Major Religions: Islam, Christianity, Druze.

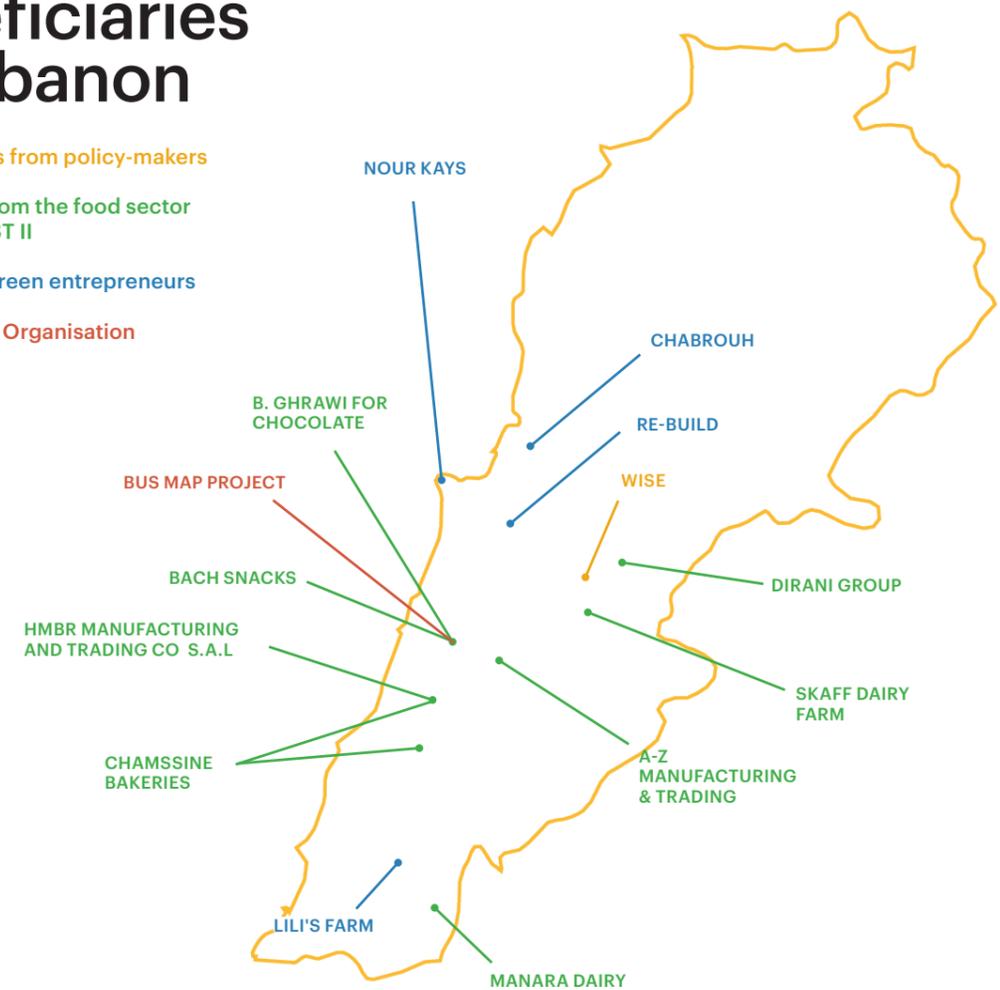
Geography & Economy

- Terrestrial and marine protected areas 1% of total territorial area.
- Urban population growth 2.8% annual.
- CO₂ emissions: 4.30 m tons per capita.
- Land boundaries: Syria, Palestine.
- Coastline: Mediterranean Sea, 225 km.
- 123rd world most populated country.
- Tourism growth: 60% since 2008.
- 1.5 million of Syrian Refugees.

Sources: Economy and Demography in Lebanon, Wikipedia, United Nations, The World Bank, Ministerio de Asuntos Exteriores y Cooperación & Atlasinfo.fr

SwitchMed beneficiaries in Lebanon

- 1 Pilot projects from policy-makers
- 8 Industries from the food sector joined MED TEST II
- 4 Incubated green entrepreneurs
- 1 Civil Society Organisation



The lines and arrows drawn might not point to the exact locations, as it is only an estimation.

Table of contents

1

2

3

4

5

6

7

8 – 15

Support to
policy-makers

16 – 29

Enabling a green
growth for
industries

30 – 51

Green
Entrepreneurship

52 – 59

Civil Society
Organisations
empowerment

60 – 71

Enabling access
to finance

72 – 79

Business Networks
& Intermediaries

80 – 85

Networking
Facility

1

Engagement with policy makers to establish a regulatory and policy framework to boost the market for sustainable products and services.



Implementing circular economy measures in the Mediterranean

The Mediterranean policy-makers developed within the SwitchMed programme a Regional Sustainable Consumption and Production Action Plan, including a Roadmap towards circular economy for its implementation in the Mediterranean as well as eight Sustainable Consumption and Production National Action Plans (SCP-NAPs).

The SCP Regional Action Plan was adopted in February 2016 by the 22 Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (known as Barcelona Convention), during their 19th Ordinary Meeting of the Contracting Parties. The SCP Regional Action Plan is a substantive contribution to the implementation of the 2030 Agenda for Sustainable Development. It is a strategic document that gives clear guidelines on the actions that should be developed in the region to shift towards sustainable consumption and production patterns, long-term sustainability, circular economy and new paradigms in the use of resources. It is also responding constructively to the climate change challenges. The document is structured around 4 key areas which are essential for the socio-economic development and for the job market in the region but are at the same time highly contributing to the pollution loads and to the environmental degradation of the Mediterranean. Those 4 areas are: food, fisheries and agriculture sector, tourism, goods manufacturing and housing and construction sector.

At national level SwitchMed, under the coordination of UN Environment's Economy Division, provided advisory services to the governments of the eight programme countries in the Mediterranean on mainstreaming SCP into national development planning. Eight multi-stakeholder nationally owned and nationally driven policy processes were undertaken to best respond to the national priorities on SCP. Given the difficulty to implement the full range of SCP policies and instruments at once, project countries select a limited number of priority areas to be addressed in their SCP National Action Plans, which contribute to poverty alleviation, environmental sustainability and the development of a green economy.

The SCP-NAP processes were tailored to the needs and specific country situations and allowed the synergies and integration with national development plans and national sustainable development strategies. During these national processes a total of over 40 national workshops, roundtables and nationally-tailored training sessions were organised to reinforce national capacity on SCP. The processes were inclusive and saw the participation of a large and diverse group of national stakeholders, representing different relevant government institutions, private sector, civil society, academia and media representatives. In total, 1,500 national stakeholders actively participated. As a result, eight SCP National Action Plans were developed, which are a first step in a country's response to the 2015 adopted Sustainable Development Goals (SDGs) and in particular Goal 12: Sustainable Consumption and Production.

Moreover, there are national demonstration pilot projects implemented on the ground to promote implementation of policies and actions, which effectively change patterns of consumption and production and implement circular economy measures in the priority sectors previously selected by the target countries. In total, 20 pilot projects were implemented by the end of 2018: 2 in Algeria, 2 in Egypt, 3 in Israel, 2 in Jordan, 1 in Lebanon, 3 in Morocco, 2 in Palestine and 4 in Tunisia.

Meet our focal points in Lebanon

The National Focal Points (NFP) are key actors in SwitchMed and play a specific role in implementing policy activities and disseminating results at national level in their respective countries. A national coordination mechanism has been established in each country, coordinated and guided by the focal points appointed by their respective national governments. In most of the participating countries, two focal points—one from the Ministry of the Environment and one from the Ministry of Industry—work in tandem to lead the implementation of SwitchMed at national level.



Ministry of Industry (Mol)

It has the mission of elaborating, with all the actors, a policy to assure the industrial sector development. The Ministry is responsible for:

- Creating the industrial legislative bases and frames.
- Protecting the national industrial production in case from dumping.
- Searching and supporting the creation opportunities and the industrial production development to respond to the evolutions of the national needs and the international orientations.
- Searching opportunities allowing the industrial production development to meet the evolutions of the national needs and the international orientations.
- Assuring Lebanon as an industrial country at the national and international level.
- Promoting the small and medium enterprises and small and medium industries (SMEs, SMIs).
- Collecting, analyzing and publishing industrial statistics in order to provide the different industrial stakeholders by studies and indicators, aiming to help them to make decisions. - Creating a database of the industrial factories serving as reference for the exporters.



Ministry of Environment (MoE)

It is the national authority in Lebanon in charge of the protection of the environment. MoE was established in 1993 and faces a variety of challenges in undertaking its functions starting from the size and nature of environmental situation and its challenges in the country to the lack of human and financial resources as well as the challenge of mainstreaming environmental conservation within national planning. More so the ability of government agencies to perceive that sustainable development is the basis sound economic development.

The Industrial Sector in Lebanon is at the heart of the Sustainable Consumption and Production Action Plan

The Ministry of Environment in Lebanon was entrusted with the development of the Sustainable Consumption and Production National Action Plan in close collaboration with the Ministry of Industry and other key partners. Both Ministries agreed from the start that the plan would focus on the Industrial Sector in Lebanon and that process to develop and implement the plan provides Lebanon with a participatory and consultative approach for mainstreaming Sustainable Consumption and Production in the industrial sector's policies and plans.

Between January and November 2015, the Ministry of Environment and Ministry of Industry in Lebanon have embarked on the development of the Action Plan for Sustainable Consumption and Production for the Industrial sector in Lebanon. The process was based on the 'Planning for Change' methodology of UN Environment and the three key phases:

- (i) **Planning:** including a Scoping Review covering a stakeholder mapping and a scoping of policies and actions in the industrial sector related to Sustainable Consumption and Production;
- (ii) **Development:** leading to the Action Plan for the industrial sector in Lebanon, with special focus on the Litani River and Qaraoun Lake;
- (iii) **Implementation** and Monitoring of the Action Plan based on the outputs and activities identified.

Stakeholder Consultation Process:

Throughout the development phase the Sustainable Consumption and Production National Action Plan preparation followed an inclusive consultation process with all concerned stakeholder groups by calling upon the following consultative mechanisms:

- An **SCP Working Group** was established ensuring overall coordination and technical guidance for the SCP action plan development process and composed of the following institutions: Ministry of Environment, Ministry of Industry, Ministry of Finance/Institute des Finances Basil Fuleihan, Ministry of Economy and Trade, Association of Lebanese Industrialists, Federation of Chambers of Commerce and Industry and Agriculture.
- **SCP roundtable meetings** were organized to present and discuss, with all concerned national stakeholder groups, the SCP Scoping Review and SCP Action Plan, in order to confirm the status and priority issues related to Sustainable Consumption and Production in the industrial sector in Lebanon among concerned national stakeholders.
- **The validation by the National Council for the Environment** was granted in November 2015. The National Council for the Environment was established by Decree 8157/2012 and mandated with advising on national environmental policies and plans as well as mainstreaming sustainable development in sectoral development policies. It represents all concerned stakeholders in environmental management and sustainable development in Lebanon.

Scoping review

An in-depth scoping review was conducted as a basis for the development of the SCP Action Plan and confirmed that Lebanon has a significant potential for adopting SCP principles in the industrial sector given the dynamic for export available at the level of the sector and the challenges facing the sector in optimizing its production processes. The scoping review further confirmed the availability of several key actors already engaged in promoting SCP related policies and actions in the industrial sector in Lebanon.

The review consisted of a description of the industrial sector and of the impact of the industrial sector on the environment, the mapping of stakeholders involved in SCP in the industrial sector, an analysis of policies and plans related to SCP in the industrial sector and other specific aspects related to SCP in the industrial sector.

The industrial sector shows limited diversification and most of the manufacturing activities are concentrated around few industrial sectors and which is taken into account in the context of the SCP action plan. The scoping review also described the main environmental pressure of the industrial sector which can be identified at the level of the ecosystem through potential air emissions, water consumption as well as wastewater and solid waste discharge. The scoping review provided some key indicators with regards to priority aspects where environmental pressure can be identified and thus where priority interventions are needed.

Lebanon has developed an array of policies and plans covering sustainable development issues at national and sectoral levels and providing Lebanon with an important understanding of sustainable development challenges to be addressed in the wake of socio-economic and environmental challenges facing Lebanon, which include:

- National Land Use Master Plan (NLUMP) of the Lebanese Territory (CDR, 2004);
- State of the Environment Report in Lebanon (MoE/UNDP/ECODIT, 2010);
- Strategy for the Reform and Development of Public Administration in Lebanon (OMSAR, 2011);
- Economic & Social Reform Action Plan (PCM, 2012);
- National Report to Rio+20 (MoE/ECODIT/UNDP, 2012);
- Lebanon's SME's Strategy (MoET, 2014);
- Lebanon Millennium Development Goals Report 2013-2014 (CDR/UNDP, 2014);

Building upon the above achievements, the Presidency of the Council of Ministers in cooperation with the Ministry of Environment, launched in March 2015 the "Roadmap towards the National Sustainable Development Strategy (NSDS) of Lebanon". The NSDS provide Lebanon with a comprehensive National Strategy including an exhaustive economic vision as well as a strategic outlook to be used as a platform for specific policy measures. The Ministry of Environment has taken needed action to ensure that Sustainable Consumption and Production is integrated in the NSDS at the development stage in order to adopt Sustainable Consumption and Production principles as an integral part of its national planning process. The SCP Action Plan for the Industrial Sector builds upon "Lebanon Industry 2025: The integrated vision of the Industrial Sector in Lebanon" as Lebanon's strategy for the industrial sector which was issued by the Ministry of Industry in 2015.

This scoping review further provided a detailed analysis of Sustainable Consumption and Production policy instruments which are important in promoting a shift towards more Sustainable Consumption and Production practices and at the level of Regulatory, Economic, Communicative, Voluntary or procedural Instruments.

Operational objectives of the Sustainable Consumption and Production Action Plan

The Sustainable Consumption and Production Action Plan was endorsed by the National Council for the Environment in November 2015 and is hence considered as a nationally validated framework which can be used by the different stakeholders for the implementation of specific activities or sets of activities identified under the action plan.

The Sustainable Consumption and Production Action Plan for the Industrial Sector in Lebanon has identified three operational objectives:

- 1. Adopt Best Available Techniques to promote Sustainable Consumption and Production in the industrial sector;
- 2. Introduce Sustainable Consumption and Production approaches related to the industrial sector in the policy and institutional frameworks;



- 3. Educate and raise awareness of consumers on Sustainable Consumption and Production in the industrial sector.

At the level of each operational objective, the Sustainable Consumption and Production Action Plan has provided a set of Outputs and Activities and identified the lead stakeholders as well as the key stakeholders of each activity. The proposed Sustainable Consumption and Production Action Plan has been formulated with a projected duration of 10 years (2016-2025). The proposed Action Plan was also used as a basis for the development of the Short-Term Action Plan for 3 years (2016-2018) with more specific interventions with an estimation of the minimum budget requirements for these activities.

Objective 1 "Adopt Best Available Techniques to promote Sustainable Consumption and Production in the industrial sector" aims at promoting sustainability-driven innovation and knowledge and the integration of Best Available Techniques (BATs) which include both best available technologies and best practices through the entire value chain of goods production, and to extend it to the upstream and downstream flows of resources and waste, paying particular attention to the life-cycle of manufactured goods.

This also builds upon the various on-going programmes and projects in place in Lebanon supporting the adoption of resources efficiency and Sustainable Consumption and Production as a whole and which are providing technical assistance for the industries. These include: (i) Lebanese Center for Energy Conservation (LCEC), (ii) Lebanese Cleaner Production Centre (LCPC), (iii) Green Production Help Desk (GPHD), (iv) Lebanon Environment Pollution Abatement Project (LEPAP) and (v) SwitchMed/MEDTEST II Project.

The major expected outputs include:

- Continue the transfer of Sustainable Consumption and Production technologies to industries through demonstration activities.
- Upscale transfer of Sustainable Consumption and Production technologies within industries.
- Identify value chains and green jobs based on the local market's supply and demand of Sustainable Consumption and Production services in the industrial sector.
- Initiate a Local Authority Programme (LAP) on Sustainable Consumption and Production.

Objective 2 "Introduce Sustainable Consumption and Production approaches related to the industrial sector in the policy and institutional frameworks" supports the developing of integrated policy and legal framework to promote Sustainable Consumption and Production and recovery in the industrial sector with the aim to move towards a circular economy.

Under this operational objective, many initiatives are already in place in Lebanon specifically with regards to availability of an enabling financial policy for Sustainable Consumption and Production triggered by Banque du Liban and supported by various national and international agencies such as Kafalat. This operational objective is also building upon on-going support for providing financial

mechanisms to the industrial sector to promote Sustainable Consumption and Production through the Investment Development Authority of Lebanon and the Ministry of Environment. The major outputs include:

- Establish an institutional mechanism for implementing Sustainable Consumption and Production at the national level.
- Develop priority regulations for industry in line with the national and international regulations specifically the Environment Law 444/2002 and the IPPC (EC/2008).
- Harmonize and promote certification schemes and eco-labels for the providers and consumers of industrial sector in line with Sustainable Consumption and Production approach.
- Implement recommendations of Sustainable Public Procurement Action Plan.
- Create additional industrial zones and improve management of existing ones as per the National Land Use Master Plan (NLUMP).

Objective 3 "Educate and raise awareness of consumers on Sustainable Consumption and Production in the industrial sector" targets at educating and raising awareness of consumers and other stakeholders and supporting the development of market structures, increasing the visibility and market share of sustainably manufactured, used and disposed-of goods and alternative services.

Several governmental institutions in Lebanon play an important role at this level. The Consumer Protection Directorate of the Ministry of Economy and Trade for example which launched communication campaigns, a hotline, an electronic application as well as conferences at the level of schools and universities. Moreover, Lebanon has diverse and dynamic NGOs and civil society which is heavily involved in the environmental field and it can greatly support efforts to engage the Lebanese consumer in Sustainable Consumption and Production practices and initiatives, especially with regards to Sustainable Consumption and Production in the industrial sector. Many advocacy and awareness campaigns have been launched in Lebanon confirming the potential for the industrial sector to market its green products at the level of the consumer. The major outputs include:

- Develop the appropriate educational and awareness tools for promoting Sustainable Consumption and Production approaches in the industrial sector at the level of the consumers.
- Strengthen the linkages between research and industry in the field of Sustainable Consumption and Production.

The Sustainable Consumption and Production action plan for the Industrial sector was officially launched by H.E. Minister Mohamad Al Mashnouk, Minister of Environment and H.E. Minister Houssein Haj Hassan, Minister of Industry during a press conference on March, 21 2016.

Demonstrating the viability of circular economy in the wine sector of Lebanon

The winemaking industry of Lebanon is growing at an unprecedented rate. Only a few years ago, there were but a handful of well-known wineries in the country. The sector has recently witnessed an impressive leap forward, so much so that more than 40 wineries compared with only a few in the 1990s are now competing in national and international markets. Wine Innovation for Sustainable Economies, also referred to as “WISE,” is a project led by SCP/RAC as implementing partner in SwitchMed, in cooperation with the American University of Beirut Nature Conservation Centre (AUB-NCC). It was designed in order to advocate for circular economy practices in the wine making business. Specifically, the goal of the partners, in conjunction with Lebanon’s Ministries of Environment and Industry, has been to pilot a trial to transform organic winemaking waste into compost which could be used by the industry in order to enrich its terroir.

Circular economy is not a new concept in Lebanon. Its people have been applying sustainable principles in their systems of production since ancient times. For better or for worse, as is also the case with its Mediterranean neighbours, Lebanese society is highly adaptive and has proven to be capable of identifying creative solutions inspired by tradition in order to increase output throughout the whole production cycle. Nevertheless, since 2015, the country has been experiencing a growing waste crisis, which has affected the collection of household and industrial residues alike. Citizens, industry, and policymakers therefore all have a stake in incorporating sound waste management measures in order to lift the country out of an extremely challenging environmental and economic situation. The entrepreneurial mindset, coupled with the urgency of the crisis, has generated interest in the implementation of the WISE initiative in the country, and has strengthened the commitment and collaboration of all the participants engaged in the project.

WISE aimed to demonstrate the technical and economic viability of composting to treat organic waste from Lebanese wineries. The project was implemented with a view to supporting the Lebanese Sustainable Consumption and Production (SCP) National Action Plan developed under the SwitchMed framework, and therefore offered an opportunity for close engagement between SCP/RAC, its local partner AUB-NCC, the project beneficiaries from the private sector, and policy makers from the Ministries of Environment and Industry.

The choice of industry was not an arbitrary one. Lebanese wine has earned itself an international reputation for its exquisite balance of dry fruitiness, delicacy, freshness and vigour. It is also enjoyed by oenophiles abroad, primarily

in the United Kingdom, France and the United States. The flipside of such growth, however, is the consequent generation of organic waste, namely grape pomace, lees, stalk and sludge, that requires the industry to come up with an effective management plan.

Composting was therefore proposed for the recovery of waste in order to produce organic fertiliser for its direct application within vineyards, closing the organic matter cycle. Composting consists of biological treatment in which aerobic microorganisms use organic matter as a substrate, with fully-mineralised materials generated as the main products of this process. During composting, carbonaceous and nitrogenous compounds are transformed through the activities of microbial populations into more stable and complex organic forms. The final product generated is a stabilised material that can be used as an amendment, which includes all inorganic and organic substances mixed into the soil for achieving a better soil constitution for agricultural purposes. The objective is thus two-fold: the sound management of organic waste in order to avoid its incineration or landfilling and, as an important added benefit, its transformation into high quality natural fertiliser to be reintroduced into vineyard soils, thereby enhancing the organic content.

The Beqaa valley was identified as the ideal location for conducting the composting trial. At an altitude of around 1000 meters and located 30 km to the east of Beirut, the valley represents the epicentre of Lebanon’s agricultural production and the central agroindustrial and logistics hub. It is also home to one of Lebanon’s largest vineyards, Château Kefraya. As the main beneficiary, Kefraya agreed to host the trial on its premises.

Château Kefraya is the second largest producer of the alcoholic beverage in Lebanon which makes it a key ally in terms of outreach, advocacy, and awareness-raising in terms of the importance of greening the wine industry. Mr Rani Azzi, Château Kefraya’s Vineyard Manager, aims to inspire other wineries thanks to the leadership of the company he represents in relation to sustainability. “Lebanon has all the conditions to produce sustainable wine of excellent quality, mainly thanks to its climate, terroir, and variety,” he said, adding that, “Sustainability is now a criterion that could be used for differentiation, but soon enough it will be a matter of compliance and a condition to compete on the international market.”

An analysis of a representative sample of the sector was an element included in the WISE project from the outset. A needs assessment study of eleven wineries, namely Château Kefraya, Château Ksara, Cave Kouroum, Reserve Ammiq, Atibaia, Aurora, Château Marsyas, Domaine des

Tourelles, Massaya, Muse and Oumsiyat, was undertaken at the start of the project. It also included Union Viticole du Liban, an association that promotes the image and interests of Lebanese wineries abroad, representing those responsible for around 95% of the overall national production.

The main output of WISE was the transformation of over 30 m³ of grape pomace into compost. For this purpose, two composting piles were prepared, tested and monitored by Château Ksara jointly with the AUB-NCC experts. One of the piles included cow manure to boost the nitrogen content. Through appropriate turning and monitoring, neither of the two piles exhibited any specific problems in terms of odour emission or attracted an above average number of flies, and both benefited from a simple water discharge system.

The needs assessment and consultations with the wineries led to the conclusion that they lack the equipment to enable them to compost. As a result, an additional goal was introduced to the WISE programme which involved forging an agreement between AUB-NCC and the Lebanese Agricultural Research Institute (LARI), a public body affiliated with the Ministry of Agriculture, for project funds to be allocated to purchase a compost spreader and turner. The spreader and turner would be put at the disposal of wineries for them to share their use and undertake their own composting activities.

Aside from the practical achievements, capacity-building, technical assistance and knowledge dissemination were also integral goals of the project. To that end, representatives from AUB-NCC, the Ministry of Industry and Château Kefraya benefited from the organisation of a mission to Spain during which they had the opportunity to visit eight destinations to learn about sustainability in the wine industry and enhance their knowledge in relation to the improvement and diversification of their product lines. The specific topics included smart irrigation, viticulture, composting, grapeseed oil production, the production of spirits through the distillation of grape by-products, enotourism and wastewater management.

Furthermore, a three-day workshop held in the Beqaa Valley was attended by 26 representatives from 11 wineries and a variety of policy and academic actors, which dealt with a wide range of topics including circular economy, composting techniques adapted to the wine sector, remote sensing in agriculture and wastewater treatment.

An oeno-composting manual was also developed and included key findings and best practices, existing legislation and financial instruments related to waste management and the wine sector. It also included a procedural

approach to constructing and integrating the composting process at different scales. The manual took a multidisciplinary approach in an effort to create a ripple effect among wineries and key stakeholders and to facilitate its use as a basis for replication in other countries of the Mediterranean.

In this regard, as stated by Mr Bassam Sabbagh, head of Urban Environment Service at the Lebanese Ministry of Environment and SwitchMed focal point, “during the course of the pilot project, several smaller wineries demonstrated their readiness to follow in the footsteps of Château Kefraya and adopt a series of circular economy measures.” For instance, in addition to Château Kefraya, wineries such as Coteaux du Liban, Domaine Wardy, and Ixsir are seriously considering developing by-products such as seed oil and grappa. Domaine Wardy also appreciates the need to maximise the use of all the vines’ resources, including commercialising leaves (widely used in Lebanese cuisine), making grapeseed oil, composting and potentially exploring cosmetic by-products from the organic residue.

At the final stage of the project, Yara Saab, Coordinator of Operations at SCP/RAC and manager of the WISE project, led a mission to Lebanon and held meetings with institutions of interest and a variety of policy actors in the country. In this regard, a final capitalisation seminar organised jointly with AUB-NCC was attended by representatives from Château Kefraya, Domaine Wardy, Ixsir, Couvent Rouge, and Reserve Ammiq, the Ministry of Industry and UNIDO in order to draw relevant conclusions.

According to Saab, “the genuine commitment of wineries to make the switch and their engagement during the course of the project was truly overwhelming. Sustainable consumption and production in the local industry is essential in a country like Lebanon, as it has the potential to generate dignified employment while decoupling economic development from environmental degradation.” For this to happen, she added, “a real partnership needs to be established in the long term between private business and relevant policy actors in order to push the SCP agenda forward. In light of the urgent ongoing waste crisis, the time to act is now.”

Building on the momentum created by the SwitchMed project, SCP/RAC will be seeking opportunities to continue assisting stakeholders in order to scale up the results achieved from the WISE project and contribute to promoting collective efforts for the greening of the Lebanese wine sector.

Main achievements benefitting WISE in 2018

- 15 Tonnes of high-quality compost production defined as target
- 1 Oeno-composting manual produced containing key findings, best practices, existing legislation and financial instruments related to waste management and the wine sector
- 1 Acquisition and custodianship of equipment available for interested wineries to undertake composting activities
- 46 Stakeholders involved: 2 universities, 5 ministries and 39 wineries
- 1 Stakeholder mapping in the Lebanese market
- 8 Sites visited in Spain by 3 stakeholder representatives to learn about sustainability in the wine industry and gain inspiration to improve and diversify their product lines
- 6 Subjects discussed in the final capitalisation workshop: circular economy, remote sensing, oeno-composting, IoT, wastewater treatment

2

Demonstrating the business case of a resource efficient and cleaner production (RECP) in Lebanon's food industry.



Photo credit: @M.Barla / UNIDO

Working towards a resource efficient and greener production

At SwitchMed we support the adoption of sustainable production in the southern Mediterranean that enables industries to increase their ability to produce with lower cost, while reducing their environmental footprint. We do so through the MED TEST II project, a comprehensive approach that demonstrates the business case of a resource efficient production in 125 industries in 5 key production sectors of the southern Mediterranean, by using capacities of local service providers. This approach promotes the business case of a resource efficient production to industries in the southern Mediterranean, while advancing the supply of national capacities on sustainable production services.

Transforming industries to meet the needs of changing market conditions and a rising resource scarcity calls for a change in knowledge, attitudes and practices that can lead to a production that requires less resources and reduces pollution. The MED TEST II project, presided by the United Nations Industrial Development Organisation (UNIDO), applies the methodology named the Transfer of Environmentally Sound Technologies (TEST), a concept that addresses the challenges and barriers industries are facing in becoming more resource saving, energy efficient, and less-polluting.

The TEST concept approaches all management levels of a business, involving people with different professional backgrounds and operational responsibilities, in order to enhance and sustain the efficient use of production inputs and environmental performance. Connecting the resource efficient and cleaner production (RECP) assessments with present-day standards in environmental and energy management systems, helps building cross-cutting understanding and capacities within various management areas of a company and enables a holistic understanding and support for RECP within the business. This encourages a business culture where eco-innovative business solutions can thrive and a systematic assessment of the production can be set-up to monitor resource use and support a continuous improvement on the business performance. Furthermore, this approach encourages the production of goods that are responsibly managed throughout their life cycle, and increases the ability of companies to access international markets with good quality products and to reach compliance with environmental standards.

The MED TEST II project has displayed that the potential for improvements in resource savings within the production of the southern Mediterranean industry is significant. In the eight SwitchMed countries, the MED TEST II project identified 1,830 improvement measures within the 125 demonstration companies. The identified measures have stimulated a total investment of 87.6 million euros out of which 43% of the measures had a payback period below 6 months. A short payback period combined with an annual saving potential worth 41.7 million euros, has contributed to a high implementation rate of the identified measures (75%), showing that investments in RECP is a feasible and a profitable business decision. Through the identified RECP measure in the MED TEST II project, industries in the Southern Mediterranean region now can annually save 3,512,660 m³ of water, 707 GWh of energy, reducing the solid waste generation with 19,602 tons and CO₂ emissions with 197,525 tons per year. In addition, 682 professionals from industries, service providers, government institutions and academia received training on the TEST methodology during the demonstration phase of MED TEST II in the SwitchMed target countries.

Resource efficiency is key in switching towards circular economy models. The MED TEST II project has revealed how additional economic and environmental benefits can be gained from the RECP approach using an integrated methodology of TEST that gives businesses an opportunity to invest in their future while reducing their environmental footprint.

Partners for green growth in industries

Strengthening national capacities and competencies related to RECP is not only one of the main objectives of the MED TEST II project, but also an effective ways to ensure a sustainable impact that goes beyond the duration of the project. For this reason, UNIDO is closely collaborating with government institutions and stakeholders from the industry and civil society to raise the significance of RECP to policy makers and knowledge networks, and to strengthen the national capacities in providing expertise on RECP.

Under the patronage of the Ministry of Industry (MoI) and the Ministry of Environment (MoE), the MED TEST II Project in Lebanon has been led by the Industrial Research Institute (IRI), in collaboration with the Association of the Lebanese Industrialists (ALI), the Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon (CCIA-BML), and Banque du Liban (BDL) to mobilize funding and support for a sustained application and scaling-up of RECP in Lebanon.

Trainings, combined with onsite technical assistance, were provided by local service providers with the support of international sector/thematic experts. The idea behind this approach was to demonstrate the business case of RECP in one of the largest industry sectors of Lebanon, and to establish reference cases for national service providers willing to offer the TEST concept to interested industries through Lebanon. Together with the Lebanese partners, UNIDO demonstrated through capacity building activities and industry demonstrations more sustainable manufacturing techniques and new green business models within 8 companies from the food industry sector thus stimulating a national demand and supply in transforming the Lebanese industry in becoming more resource efficient.



Industrial Research Institute (IRI)

Established in 1953, it is a Lebanese nonprofit institution, linked to the Ministry of Industry, with administrative and financial autonomy for studies, industrial research and scientific testing, calibration, inspection and certification (system, product and personnel).

The mission of IRI is to ensure an adequate service regarding technical and scientific support to the Lebanese industrialists and the national economy, especially in the framework of the partnership's agreements with the European Community and Lebanon's integration in the World Trade Organisation (WTO). The main objectives of the IRI are to facilitate:

- To conduct studies and research relevant to the establishment of new industries.
- To investigate and disseminate information about available raw materials with a view to defining their use and establishing the best means for their exploitation.
- To provide, on an international scientific level, reliable services in testing and analysis and to grant certificates of quality or conformity with standards and purchase specifications.
- To provide specialized technological, management and economic consulting services to existing industries and industrial development schemes.
- To maintain close co-operation with official institutions, industrial organisations, and development boards both on the national and international levels in matters relating to the industrial development of the country.

Resource efficiency is a major opportunity for industries, the economy and the environment in Lebanon

Lebanon, a diverse nation in the Middle East has due to its geographic location often been affected by conflicts, both from within the country as well as from the neighboring region. The economic and social impact of the Syrian crisis, continue to strain the public finances, the environment, and the economic potential of the country. For Lebanese industries, the situation has caused a drop of export opportunities due to closure of borders with the neighbouring countries, an increased pressure on infrastructures, and an increased informal competition. This is a setback for Lebanon's own development and continues to constrain the competitiveness of Lebanese businesses.

Reforms and investments that could resolve the issue of a sound distribution of valuable resources such as energy and water within the country, have failed to come and has led to a situation where production costs for industries are distressingly getting higher. For instance, the ongoing power supply interruptions and a rising dependency on expensive and carbon-intensive fossil fuels for energy have made savings in the energy consumption a top priority for Lebanese industries. In common with the energy situation, water also continues to face distribution problems in Lebanon. Although water is considered an almost free resource for most businesses, many companies must drill their own wells or purchase water to meet their water consumption needs. Moreover, national businesses must now also cope with rising transportation costs for delivering their goods to regional export markets, which, coupled with increasing prices for raw materials, puts the abilities of Lebanese businesses to export at risk.

With 21% of Lebanon's GDP, industries play a key role in the diversifying the economic development, not only as a resource consumer, but also as a driver of economic growth and job creation. But the way industries deal with waste, energy and water needs to change fundamentally, especially in the Lebanese food industry. Therefore, industries require tools and investments that will help the businesses to become more resource and energy efficient, non-polluting, and safe – and to maintain their competitiveness.

Turning challenges into opportunities is at core to the UNIDO TEST methodology as it supports industries with a toolset to address the rising energy and raw material costs by integrating saving measures into ongoing business operations. The TEST concept was introduced in Lebanon in the MED TEST II project, a unique and innovative part of the SwitchMed programme that addressed the challenges and obstacles Lebanese industries are facing in order to become more resource and energy efficient, and non-polluting. The MED TEST II project, implemented in Lebanon from 2015 to 2017, enabled 8 Lebanese companies to identify 111 RECP measures. During the project, local expert teams recommended each company to set up a set of meters to monitor energy and water use at key consumers. As a result, a total of 475 meters were installed in the 8 companies with an investment of 120,108 euros, showing the high commitment of top management and a raised awareness on the importance of resource efficiency. The installation of this resource monitoring system, together with the formulation of an RECP policy, and the recommendation to improve accounting systems (MFCA) for material losses, will facilitate companies' adoption of environmental and energy management standards and also enable them to have continuous improvements in resource efficiency as a routine practice in the future. Through the identified saving opportunities in the MED TEST II project, the participating 8 industries will be able to reduce their annual water consumption with 53,412 m³ and the energy consumption with 14.3 GWh per year. These measures require investments worth 1.4 million euros, with an average payback period of 0.9 years, and will accumulate annual savings worth 1.6 million euros. This clearly shows the huge potential and profitability for the RECP concept in Lebanon.

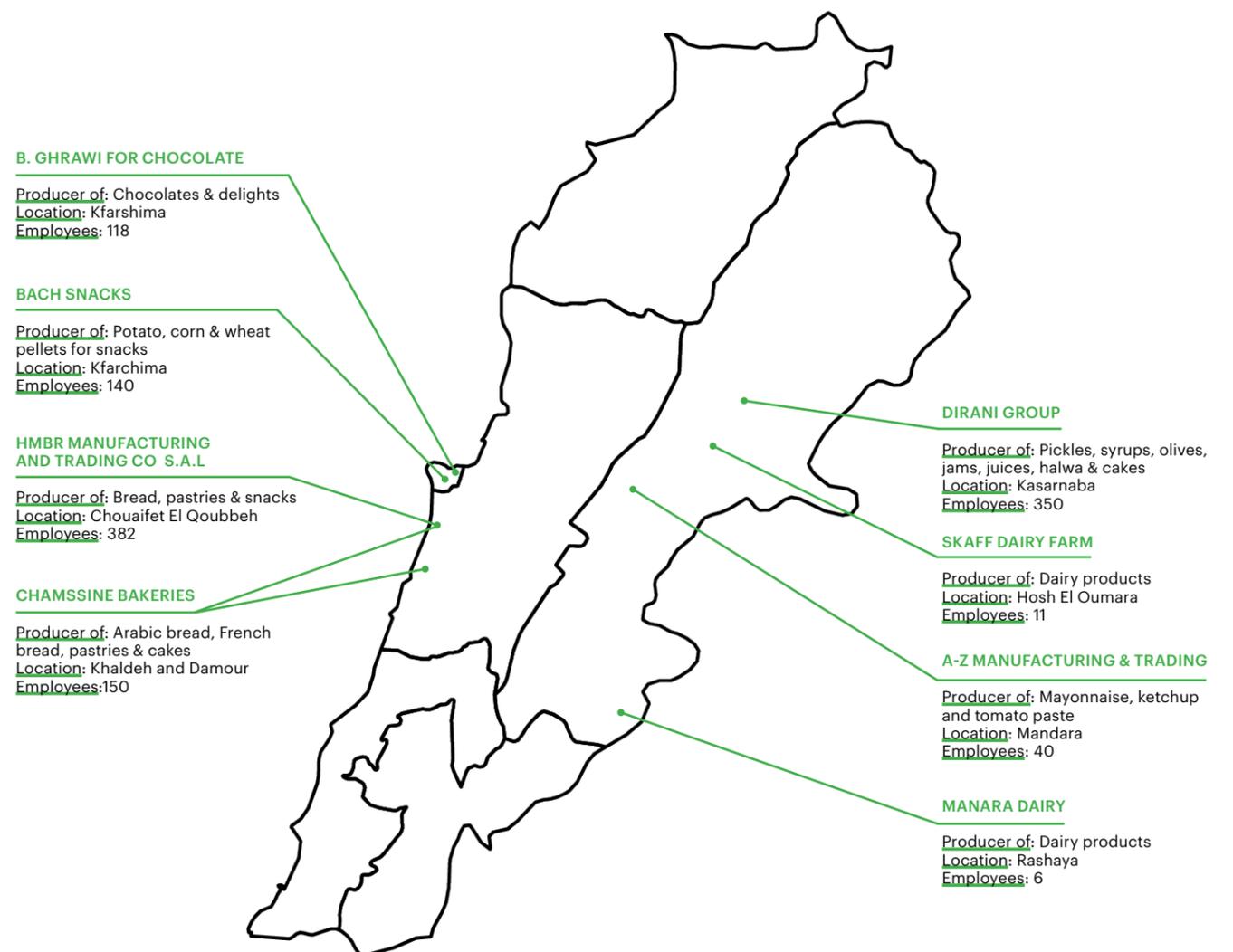
If other businesses decide to take on the approach of a resource efficient production in the industry of Lebanon, the RECP concept could become a core element of assisting the economic development of the country and contribute to a more equal resource distribution. A more resource efficient production will also help businesses to generate responsibly managed products, throughout their life cycle, while increasing productivity and maintaining access to international markets with good quality products that meet international standards. Therefore, if Lebanon's industry is about to change and tap into the full extent of their potential, it is fundamental that other businesses and sectors pick up and follow the business case of RECP as it was demonstrated in the MED TEST II project. UNIDO, together with stakeholders from the civil society, government and the industry have developed a scaling-up roadmap on how to expand the RECP concept throughout the industry in Lebanon with an action plan that will support the facilitation and reinforcement of national competencies around the topic of RECP and green growth.

Download the scaling up roadmap for RECP in Lebanon [here](#), or download it over the QR code:



Partners for a green growth

In Lebanon 8 industries from the food sector joined MED TEST II:



Talking heads section with Nada Sabra

Nada Sabra's profile:

Nada Sabra is an environmental expert and has been working with UNIDO in developing the Lebanese industry for 14 years. She has a background in environmental biotechnology and is a university lecturer and researcher in the environmental field. She has 18 years of experience in the management, coordination and monitoring of environmental projects in Lebanon and in the Arab region. Nada shares with us how UNIDO managed to attract SMEs into the MED TEST II project and where the biggest challenges lie ahead for Lebanon's growing industry.

More often than not, companies are not aware on the losses that occur in their production. How does UNIDO and projects like the MED TEST II, help SMEs in managing inefficiencies and become more cost efficient?

UNIDO worked in the regional MED TEST II project with local expertise to demonstrate best RECP practices throughout the eight countries of the SwitchMed programme. In Lebanon, the MED TEST II project was implemented locally by the Industrial Research Institute, in partnership with the ministries of Industry and Environment and in collaboration with the Association of the Lebanese Industrialists, the Chamber of Commerce, Industry and Agriculture of Beirut and Mount-Lebanon and Banque du Liban. At the beginning of the project in Lebanon, the MED TEST II team encouraged the companies to install measuring devices to collect data on their consumption. Within the MED TEST II project we say that "you cannot manage what you cannot measure" and this has often changed the mind-sets of business managements on how to approach topics related to raw material, waste, energy, and water consumption. Businesses now have been enabled to identify the value of their losses in their production and take the right countermeasures to prevent these inefficiencies. Resource efficiency simply helps industries in doing better business and that is something every business eventually wants.

Changing the way industries use raw materials, energy, and water in their production, sometimes require a change of an often ingrained company culture. Where did you see the biggest challenge in convincing SME's to adopt more resource efficient production practices and what could eventually convince them?

Every company has its one culture in production procedures and sometimes even relation to certain machines, so it is important that we integrate the several levels of a company management to the process of finding efficiency measures. One of the core strengths of the UNIDO TEST methodology is that it incorporates the various department of a company into this process. For example, the accountants and production managers work together in company teams to assign costs to flows of material, energy and water. This price tagging process measures the economic and environmental impacts of the company's production and helps determine losses as it sheds light on the saving potentials with a monetary value. Latest at this stage, managers begin to realize that resource efficiency is about doing good business and is a valuable approach to be thought of even when companies encounter difficult economic conditions. We simply guide them to find the best measures for their business.

What can be done to make investments in resource efficiency for SMEs more attractive and what could the long term effects of such measures be for industries in Lebanon mean?

For many businesses the connection between improving their resource efficiency and making a positive difference to their bottom line is still not sufficiently evident. The MED TEST II project already managed to identify over 1.6 million Euros worth of savings in eight Lebanese industries, and we know there are still industries out there that could surely benefit from simple improvements to prevent waste and save themselves money. Therefore, it is important to keep in mind that resource efficient production means competitiveness. For businesses, competitiveness is a key aspect to invest in resource efficient technologies. Still, the ability to invest also varies depending on the access to finance. In Lebanon, 60% of the identified investment measures in the MED TEST II project had a payback period of less than 6 months, a circumstance that highlights that sometimes also simple actions can take small businesses a long way. Eventually, a resource efficient production leads to lower operation costs, which again will allow the company to make new investments into the business, to upgrade technologies, expand the production and create new jobs. So, eventually switching to more resource efficient operations is also the beginning of a virtuous circle for the business.

Where do you see the challenges regarding the implementation of resource efficiency at different scales in Lebanon and what impact could this have for the future development of the economy?

Before we can make other industries and sectors ready to invest in resource efficiency, we must first create an understanding on the barriers for RECP for businesses. At UNIDO we have, in consultations with the national partner, the government, and key stakeholders developed a roadmap for scaling up resource efficient production in Lebanon. This roadmap is based on the experience gained from the project and gives suggestions on how to overcome barriers. For instance, one of the main barriers for RECP is the perception among businesses, institutions on the topic. The roadmap has therefore set up actions that will help to raise the awareness on the potential and capacities for RECP in Lebanon. Likewise, the roadmap also addresses the importance of providing finance mechanisms for RECP, integrating RECP concept in relevant legislations, developing sector guidelines, and how to raise the national capacities for RECP in Lebanon by introducing a certification scheme and including it into the curricula of academia. Eventually, it is expected that with a country wide adoption of RECP in Lebanon both environmental and economic goals can be reached, at the same time national expertise on this topic will be encouraged.



Photo credit: @M.Barla / UNIDO

Case studies from Lebanon

Skaff Dairy Farm is a small sized company with 11 employees, producing 840 t of various dairy products for the local market. Before the company joined the MED TEST I project the company faced problems related to energy and finished products losses. As recommended by the MED TEST II project team, an information system to monitor water and energy use was installed at the project start and has together with other measures, such as the adoption of a marketing policy that reduces the product returns, helped the company to make annual savings worth 38,846 euros.

“The Project is one of the best we have ever implemented. It has improved the financial and managerial situation of the company and introduced good practices at operational and maintenance levels.”
Camille Skaff, Owner, Skaff Dairy Farm

The Dirani Group, established in 1979 in Qsarnaba in the Beeka region, joined the MED TEST II project to reduce resource consumption. As a producer of various food products the company had over the recent years expanded and was already looking for improvements that could save energy in the production. Thanks to the project the Dirani group could make improvements in their production line and reduce the energy bill by 13 %, saving the company more the 65,310 euros in energy costs.

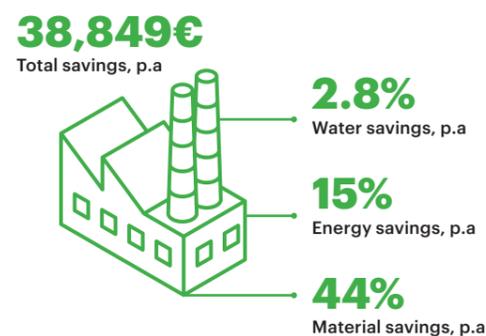
“Thanks to the project, we achieved energy efficiency improvements in two years that otherwise would have taken us a decade to accomplish without this support.”
Ahmad Dirani, General Manager, Dirani Group

HMBR Manufacturing and Trading CO S.A.L was founded in 1993 and is organized into two separate factories named FANTASIA and PAIN D’OR located in the same production area in Choueifat, Lebanon. FANTASIA produces different types of potato chips with a total production of 5,236 t/year, while PAIN D’OR produces numerous types of bread, baked goods, ice cream, and chocolate with a total production of 9,369 t/year. The company was motivated to join MED TEST II to identify opportunities for increasing resource efficiency and reduce operational costs of production. In total, thanks to the MED TEST II project, the business managed identify saving opportunities: worth 1,211,561 euros a year. By applying the TEST methodology it became evident that the product returns was a significant cost for the company. By using a software that will improve the production planning, scheduling, the forecasts of the market demand, the company could reduce product returns by 492 t annually and save 856,000 euros a year.

“Thanks to MED TEST II project, we can say that there has been a quantum leap in awareness among the staff concerning resource use and efficiency. The information system, installed at the start of the project, played a major role in this transformation because it has translated vague concepts and statements into real world numbers.”
Marwan El Koussa, Chairman of the Board of Directors and Owner

Total savings by the selected companies

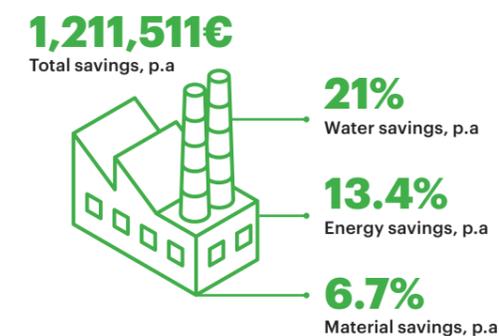
Skaff Dairy Farm



The Dirani Group



HMBR



Annual environmental impact savings identified in the 8 Lebanese food industries

78

professionals

from academia, business associations, government institutions and industries received training on the TEST tools during the demonstration phase of MED TEST II in Lebanon

3,567

tonnes of annual CO₂ savings

= 1,519,362

litres of gasoline consumed

53,412

m³ per year of annual water savings

=

750

Lebanese households annual water consumption

523

tonnes per year of solid waste avoided

=

178

years' worth of solid waste produced by a person in Lebanon

14.3

GWh per year of annual energy consumption savings

=

4,950

Lebanese households annual energy consumption

8

companies

=

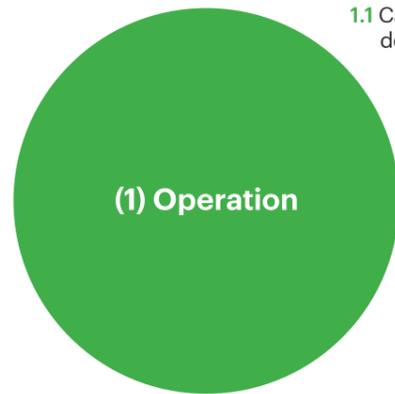
1,600,000

euros saved annually

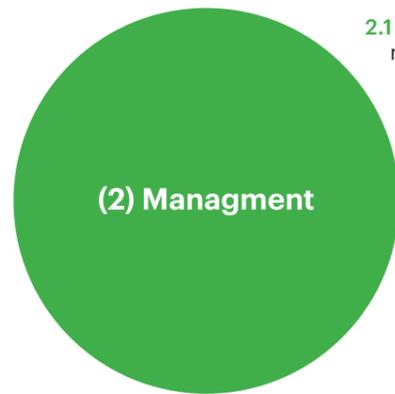
Scaling up a resource efficient and cleaner production throughout the Lebanese industry

By adhering to the Sustainable Development Goals (SDGs), initiated by the United Nations in September 2015, Lebanon is committed to include the dimension of sustainable development in all of its public policies. Consequently, Lebanon has put in place a national plan for sustainable consumption and production methods (SCP NAPs) whose implementation in the industry sector is reflected in the concept of RECP. In this sense, the achieved results from the MED TEST II project are conclusive as they confirm the relevance and effectiveness of the TEST methodology as an instrument for industries that wish to overcome challenges related to a sustainable consumption and production. The cost effective measures, with a brief payback period, allows businesses to integrate RECP solutions in their current production without jeopardizing the business operations.

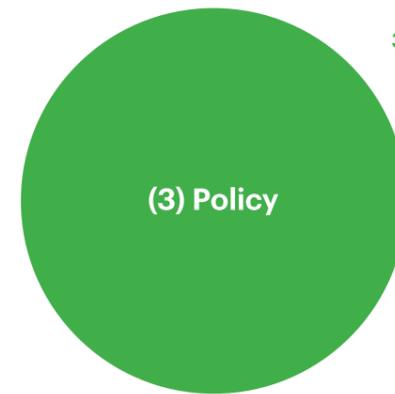
Making the transition from demonstration activities in the Lebanese food industry to a sector wide mainstreamed adoption of RECP in the industry of Lebanon, would be pivotal in helping achieving the SDGs in Lebanon. In this regard, UNIDO together with the Government, the IRI, and stakeholders from the industry and civil society, have developed a roadmap with propositions on how to guide a sector wide adoption of RECP in the Lebanese industries and what actions are required to do so. The goal of this action plan, which is based on the concept of leverage points and experience gained from the MED TEST II project in Lebanon, is to eventually create a system change around the topic of RECP for industries in Lebanon that will encourage an adoption and change towards RECP. The table below lists the priorities that were identified in the development of the roadmap for RECP in Lebanon and the required action, needed to accomplish the roadmap.



- 1.1 Capacity-building initiatives that target national service providers and industries through demonstration activities at companies, including a financing instrument to incentivize RECP investments. Capacity-building actions will also target public administrations (e.g., MoI, MoE).
- 1.2 Promote the adoption of information systems on resource use and resource efficiency by companies: support for industries to install resource metering equipment and upgrade their accounting systems to include the determination of the cost of lost resources.
- 1.3 Establish a qualification scheme for service providers (consulting firms: target 10 SPs), including theoretical and on-the-job training, eventually combined with demonstration initiatives (i.e. 1.1 Capacity building). This would constitute a first step towards establishing a national certification scheme for service providers.

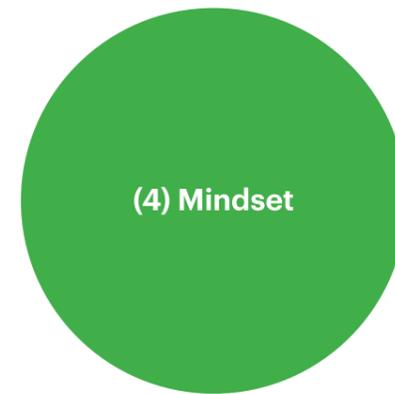


- 2.1 Develop resource efficiency guidelines and benchmarks, and incorporate them into ministerial decisions (10 sectors). For example, MoE decisions on various sectors to strengthen permitting procedures and auditing systems of industries, or MoI decisions regarding the licensing requirements of companies.
- 2.2 Support RECP investments in the industrial sector: creation of an RECP soft loan for industrial companies in coordination with relevant stakeholders. A cash payback mechanism for companies after they successfully comply with RECP loan requirements would be also developed.
- 2.3. Incorporate RECP courses into the academic curricula of universities and vocational schools. Courses will be designed in different versions not only for engineering and environmental faculties/programs but also for accounting/business programs. They would have both a theoretical and a practical component.



- 3.1 Draft an amended version of MoE decision 189-1/2016 relating to environmental compliance so that it incorporates RECP elements.*
- 3.2 Training for the MoE and for environmental consulting firms on reviewing RECP aspects in audits related to the amended version of MoE decision 189/1-2016.
- 3.3 Issue a ministerial decision to enact MoE decree 167/2017 such that it favours tax reductions for industries that adopt resource efficient and cleaner production technologies and practices.**

* In-kind contribution from the MED TEST II project and MoE.
 ** In-kind contribution from the MoE.



- 4.1 Organise a yearly event (e.g., forum) on sustainable industry or the circular economy with a focus on RECP.
- 4.2 Awareness-raising activities that highlight RECP benefits and success stories (TV spots, billboards, documentaries, awareness seminars, etc.).

3

Building technical capacity and supporting green businesses in order to build a green entrepreneurship ecosystem in the Mediterranean.

Photo credit: @Bernat_Mestres (White Horse)



Capacity building for green and circular economy business models

At SwitchMed we are building a green entrepreneurship ecosystem in the Mediterranean by supporting green entrepreneurs from southern Mediterranean countries. 10 local partners were selected to follow-up closely the programme on the ground. In parallel, an innovative training methodology was developed to support the creation of green business and adapted to the context of the Southern Mediterranean. The methodology – comprised of a handbook and workbook on green business model development and green business plan development & incubation – guides green entrepreneurs through the entire process of growing their green business idea into a full-fledged enterprise. The methodology also provides tools and test the green entrepreneur's business models, by explaining step by step how to validate the business model's hypothesis with targeted customers and stakeholders.

Many of these individuals have a sound business idea but may lack the knowledge needed to transform their idea into a viable business. For this reason, the Green Entrepreneurship programme also includes a comprehensive training and incubation programme for individuals on how to launch a green business, led by the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC). The training programme – a five-day module delivered over three months in each of the SwitchMed beneficiary countries – requires green entrepreneurs to reflect on and articulate how their business idea will bring value to the economy, the environment and the community. Through the practical exercises, entrepreneurs must clearly identify the underlying problems and needs they are addressing, map their stakeholders, interview potential customers, document their mission and their environmental and social value proposition, evaluate the resources and energy needed to create their product or service and think about how they will generate revenue streams, amongst other activities. A key component of the training programme is the module dedicated to eco-design, which requires entrepreneurs to take an in-depth look at the entire life cycle of their products and services to evaluate and improve their environmental performance and to challenge them to incorporate innovative solutions in their business models. Circular economy principles form the

cornerstone of this module, which gets entrepreneurs thinking about the many dimensions of environmental sustainability that can be incorporated in their product or services. Materials, for example, can be chosen to maximise recycled content, renewability and recyclability to preserve natural resources and give value to other waste streams in the community. The incubation programme includes 55 hours individual follow-up advisory service by a local mentor, a tailor-made external technical assistance and support to develop a crowdfunding campaign, if applied, as well as support to access to finance throughout a period of 8 months.

In total, 123 local trainers were trained on-site, and finally, 84 were selected for the implementation of the training programme. Out of the 6,000 applicants who submitted an application to join the training programme, +2,300 green entrepreneurs were selected and trained. In the aftermath of the trainings, 166 entrepreneurs were selected and received a 10 hours individual coaching to improve their green business models. Out of the 157 entrepreneurs who submitted an application for the incubation phase, 49 were selected by an International High Level Jury that operated pro bono and included a group of independent experts from business, technical, institutional and academic sectors.

A national synergy workshop in each SwitchMed country was held to identify challenges and opportunities to promote green entrepreneurship and social eco-innovation initiatives, to identify specific measures and tools to strengthen the regulatory framework as well as to stimulate the market for sustainable products and services. In the end, a white paper was published, to highlight the strengths and weaknesses of the country green entrepreneurship ecosystem, in order to reveal the areas and axes where the needs for action are greatest and a whole collection of interviews.

Meet our local partners

Our local partner, as selected by SCP/RAC, is an organisation with extensive knowledge of the current situation in Algeria concerning civil society organisations, social movements and empowered communities aligned with sustainable consumption and production and ecological and social innovation as well as experience of organising/managing workshops. The main task is to assist SCP/RAC in identifying and selecting local trainers and potential grassroots initiatives to join our training programme.



Viridis Investment Fund (VIF) / Fondation Diane

It provides financial & operational support exclusive to green startups and SMEs in Lebanon, as well as a Green Support Platform for technical and business training and development programmes, coaching activities, and workshops to green entrepreneurs.



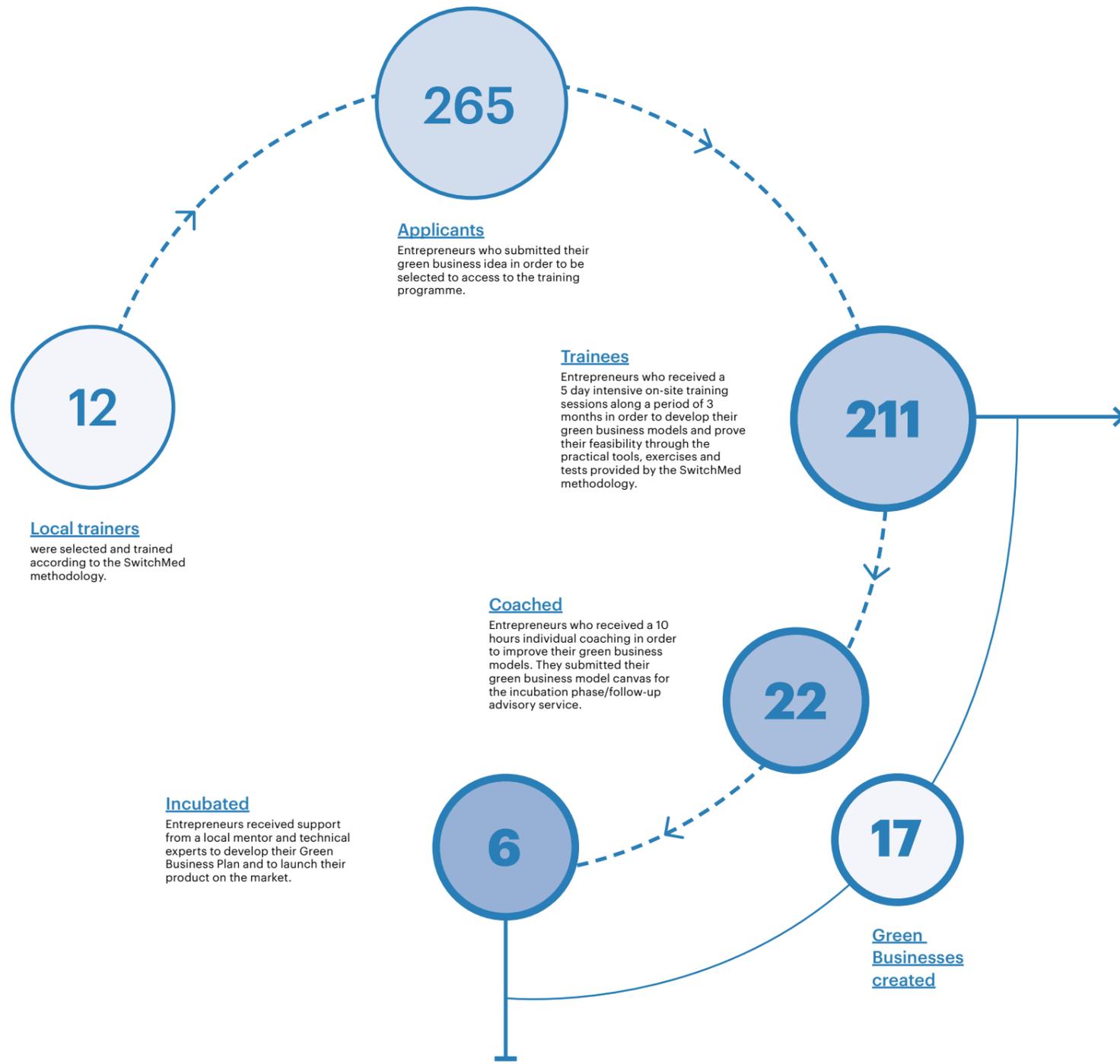
American University of Beirut, Nature Conservation Center (AUB-NCC)

It is an interdisciplinary academic research center which strives to provide an open and collaborative platform on research, education, community outreach, and knowledge dissemination. As the only academic center in the region that collects, identifies, and catalogues species, creates databases, and researches the nutritional, medicinal, and traditional applications of endemic species, NCC hopes to continue its work and fulfill its vision of establishing the center as a recognized reference.

Our local trainers, carefully selected by SCP/RAC as well, have extensive experience in initiating, implementing and evaluating environmentally and socially innovative projects and also have a deep understanding and knowledge of training methodologies based on empowerment, collective learning and a participative approach. At SwitchMed, they are responsible for actively participating in the regional co-creation workshop, together with other local trainers from the participating countries. Local trainers also support their local partner organisation and SCP/RAC in identifying grassroots initiatives and guaranteeing the participation of at least 20 social eco-innovative actors/initiatives in the national workshop. This task also includes the provision of support in disseminating the workshop call through the available channels in order to attract potential actors and initiatives for the national workshop. The trainers are also in charge of facilitating a four-day national workshop with the support and guidance of SwitchMed's Civil Society Empowerment team.

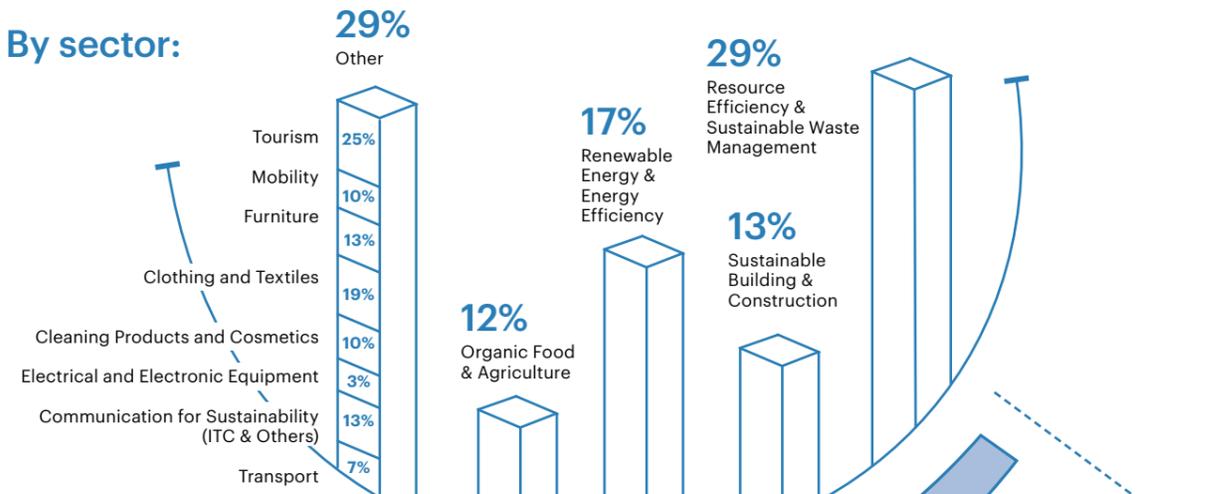
The local trainers participate in the multi-stakeholder process to select the best two initiatives arising in the workshop to receive further technical support. They also provide 50 hours of individual coaching support over 6-12 months, aimed at the development of a support plan to identify technical needs for the proper development and implementation of the project.

How is the green entrepreneurship programme contributing to the environmental, social and economic impact?

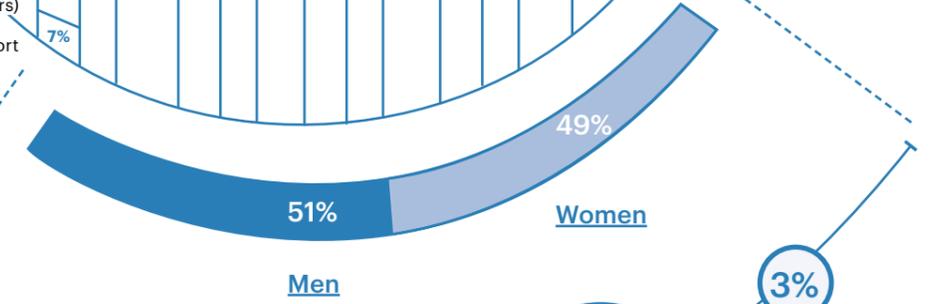


Analysing our Lebanese 211 trainees

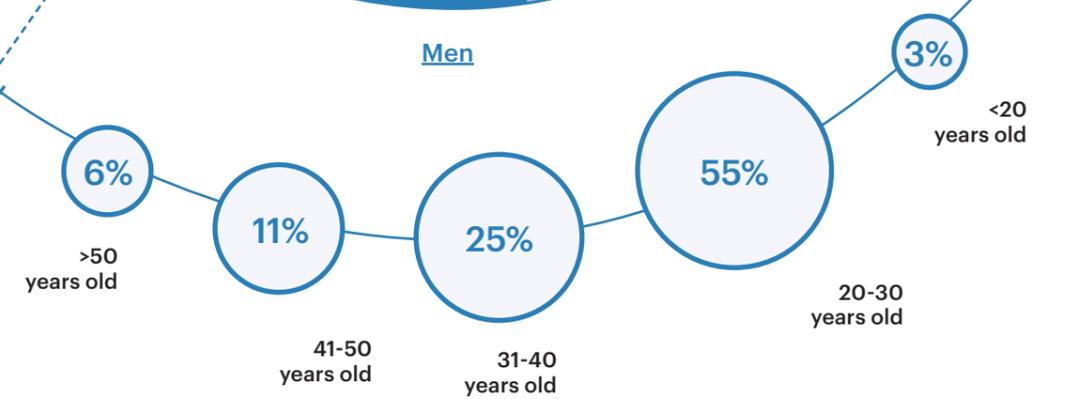
By sector:



By gender:



By age:



Meet our Lebanese incubated green entrepreneurs

NK by Nour Kays

Turning plastic waste into durable fashion accessories

NK collects and repurposes used plastic bags into a new material that she uses to create handmade, fashionable and eco-friendly bags, pouches and accessories. NK's team of independent professionals are specialists in their fields, working together to provide the market with alternative, uniquely designed and environmentally friendly products.

Tell us about yourself and how the idea for your business was born

As kids, my twin sister and I spent a lot of time outdoors, surrounded by trees, eating our grandpa's homegrown veg and playing with animals and insects. That contact with nature shaped the person I am today and I reckon it's why I have such a profound respect for the environment. While studying a master's in Communication Design at London's Kingston University, I noticed I had a lot of plastic bags piled under my sink, and my concern about this problem started to grow. I realised that plastic bags take centuries to decompose, and the petrochemicals they are derived from pollute and degrade the environment. Some countries like Lebanon still haven't taken action to tax or ban them, and only a marginal number of them are recycled. So, I wanted to find a solution and, since they are not yet fully recyclable, one alternative is to repurpose the plastic bags into new usable materials, giving them a new life and diverting them from nature for as long as possible. NK started as a final project for my master's degree at Kingston University in London, and when I moved back to Lebanon, my family and friends encouraged me to continue it. In 2015, I found about SwitchMed's call for green entrepreneurs, and so I applied. What a great programme! I did different experiments to see how many layers of plastic I would need to create a flexible material that was water-resistant and could also be printed. After many attempts, I finally succeeded in transforming these shopping plastic bags into something solid. Then I went to Cairo for a week and visited the factory of two fashion designers. There, I cut and reassembled the plastic in different ways to give it shape and made it softer like fabric, and I made the prototype for a coat, as well as other pouches and experiments that could be revisited later on to create new items.

What is the environmental and social impact of your project?

We are contributing to the circular economy by giving plastic bags a second life. An estimated five trillion plastic bags are consumed yearly worldwide, and less than 1% ends up being recycled. Each square meter of our product is made with 30 used plastic bags and each piece is as unique as the mix of those that are used for it. So far, NK has diverted almost 4,000 discarded plastic bags from ending up in landfills and nature. We recently introduced 5 new items to our product line, which helped us increase the number of bags repurposed, and we hope to reach 9000 bags in 2020.

The process begins by collecting unwanted plastic bags, which are washed, cut and sorted. The designer then assembles an assortment of bags, making different colour combinations, and sends them to the technician, who presses them into flat sheets. Once pressed, the designer cuts them into various simple shapes, adds all the additional material that will be used, and sends them to the artisan, who sews them into the different products of our collection. I even reintroduce the leftovers to make smaller items and minimise our production risk. We end up with stylish handmade accessories that are water resistant, light and durable. The products are directly sold to customers on request or displayed in three boutiques country-wide.

We also want to raise awareness about waste by involving the community in our process, inspiring people to upcycle, promoting pollution reduction as an eco-friendly, conscious-lifestyle brand, and educating

people about the environmental consequences of plastic. NK is not only about the end product, it is also an ongoing campaign; through workshops, lectures and social media, we try to raise awareness about consumption and pollution. At NK we do not make waste, all our trims and cuts are reintroduced in our production process. We follow circular economy principles by constantly rethinking the ecodesign and the whole lifecycle of our products to find acceptable solutions to the after-life of each product we put on the market.

From a social perspective, when our sales doubled, we increased salaries by 76% in just one year, from 2016 to 2017. As each piece is handmade, NK works with local artisans and technicians to produce the bags and pouches, creating job opportunities, employing full-time workers and providing ad hoc work to local artisans, designers, and technicians, preferably from less fortunate backgrounds. For example, women in need of a part-time job or from rural areas or refugee camps. Our aim is to provide a caring working environment which nurtures our employees and their health as well as inspires them. This year I invited interns to start a summer internship with NK, and this helped with the production process, so instead of having one person working on products, we now have two and production is doubled. By 2020 we hope to be able to invite two new members, local members, to join our team.

How have you benefited from the SwitchMed programme?

Before the incubation, I didn't have any background in business or environment. Thanks to the support of SwitchMed, I became more conscious of how to run my business in a more efficient and environmentally friendly way.

I received coaching from local experts to develop my product and enhance the material until I found a way to make it more wearable, and so attract more customers. A lot of times, when you are developing a project, you're not sure whether to pursue it or not, but when you have completed an incubation phase in a programme and you have goals, you are supported by a kind of system and community.

I didn't have any background in financial planning and thanks to SwitchMed I have built a sustainable start-up. I had the help of a strategist and a fashion designer to develop the brand and see how far we can take the plastic material and what can we do with it. Thanks to the technical assistance, we have designed and prototyped different fashion items and found out that handbags and tote bags are easier to produce and more marketable. It also helped us to produce a material that is uniform in texture, colour, shape and weight.

SwitchMed helped me in different ways, because the support was ongoing through the different phases. I had the opportunity of a mentorship, a one-on-one session with two mentors. Then I got lucky and I was able to choose 3 technical experts to help me grow my business, so I chose a website developer and now my website is up and running. I also worked with a strategist to place NK in the market, regionally and worldwide. We saw how to position ourselves and what kind of product to grow, who to target and where to place our items. Then I worked with a fashion designer.

For me, SwitchMed is a community. I am from the first generation in Lebanon, and it has helped to make a small community of green entrepreneurs in the country. I was also invited to SwitchMed Connect 2016 and 2018, where I had the opportunity to pitch my idea in front of a huge crowd and the chance to meet potential investors.



Photo credit: @Bernat Mestres (White Horse)

Lili's Farm Scaling up organic mushroom production while counteracting land scarcity

Lili's Farm is an indoor farming initiative, based on fungi-based technology and a vision of circular production and consumption leading to healthier eating. The goal is to remediate the natural environment by upcycling agri-industrial by-products into specialty mushrooms that decontaminate the environment.

Tell us about yourself and how the idea for your business was born

My name is Wissam Mansour and I am an architect, researcher and green entrepreneur. Around 50% of Arab millennials and MENA youth share concerns regarding healthier food consumption and the need for more sustainable environments. Lili's Farm was created to address these concerns, through careful investment in human, natural, spatial and technological resources. We wanted to create a farming system that provides healthy local food to environmentally conscious consumers, that satisfies new textured taste requirements, alternative vegan food demands and prescription nutrition needs.

It is not new that specialty mushrooms are considered a superfood, nor that they have been used to treat, heal and protect against many different diseases by Eastern medicine. But these mushrooms also decontaminate the environment and break down agricultural by-products as they grow, setting organic life in motion. By creating a new branch of social business market focused on specialty organic mushrooms, we are harnessing essential skills for converting existing rural and urban spaces into incubation and fruiting environments. Our unique approach is centred on using locally sourced agriculture by-products as a growing substrate. We use custom-made climate control and automation systems to grow a range of highly nutritious affordable organic mushrooms for our Lebanese customers. Using environmentally aware operations and processes, we emphasise the green and social aspects of the business and the benefits for the local community.

What is the environmental and social impact of your project?

Mushrooms production has a low environmental impact as it involves a low level of CO₂ emissions. The CO₂ footprint of mushroom production is significantly lower than the footprint of beef production, at 1.54 kg CO₂ versus 27 kg of CO₂/kg. We worry about greenhouse emissions on the planet while forests are the biggest depositories of CO₂ on earth. Lili's Farm is a sustainable consumption alternative, as it uses upcycling techniques and spent mushroom compost as organic fertilisers instead of mineral fertilisers. Also, since we use hydroelectric energy from the Abdel Al Power Station for three months per year, we reduce our negative environmental impact by approaching zero emissions. Our energy/electricity consumption is 1,485 kWh, and we use 15 L of water to produce 1 kg of mushrooms, whereas 800 L is needed to produce 1 kg of apples.

Besides that, rather than import raw materials for growing plants, on our farm we upcycle agricultural by-products and recycle waste into mushroom growing substrates. We have successfully upcycled locally available agri-by-products for the production of oyster mushroom varieties. Also, rather than import indoor growing technologies, we have developed our own system of micro-controls and sensors to fully automate climate control.

The project is scalable regarding larger growing chambers to increase production and yield, and is also scalable regarding product varieties. While our production cycles are fully automated to control environmental factors and maintain optimal growing conditions, other phases, such as planting, harvesting, packaging and delivery, have the potential to create jobs locally. We foresee hiring full-time staff in the future to add to the single part-time farmer employed currently.

How have you benefited from the SwitchMed programme?

SwitchMed greatly supported turning my idea into a real business. The business model development training I took part in helped me fine-tune my green business canvas in 2017. After having successfully taken part in the SwitchMed green entrepreneurship support programme, I started the incubation period in April 2018. During incubation, Maya Karkour from Eco-Consulting and Antoine Karam from Proquale mentored me in developing a comprehensive business plan aimed at improving my managerial and operational techniques and the circularity of my business. One of my goals is to highlight how our activities benefit the

environment and how nature-based solutions can contribute to enhancing the resilience of local ecosystems.

SwitchMed external technical assistance is providing me with tailored services to help me scale up my business activity. SwitchMed technical experts Zeina Ajami and Ahmad Khattab are helping me to upgrade the production infrastructure by using technology to develop new sustainable production lines. As scarce farmland is a main factor influencing agriculture in Lebanon, our project aims to scale up by building earth-sheltered growing rooms, and, in this sense, SwitchMed incubation has contributed to improving our knowledge about designing and financing a prototype.

“Mushrooms production has a low environmental impact as it involves a low level of CO₂ emissions. An example is its footprint of 1.54 kg CO₂ against 27 CO₂/kg for beef production.”

Wissam Mansour, Lili's Farm

In our market, the Lebanese customer is familiar with common mushroom types, but an effective marketing and advertising campaign is necessary to raise awareness about the specialty mushrooms. So, Valeria Nseir, another SwitchMed technical expert, is helping us develop our brand and identify the best communication strategies for establishing our presence in the local market, increasing our visibility and showing the nutritional value of our different products.

I also benefited from SwitchMed access to finance activities when I took part in a specific training programme. I was able to connect to some investors and donors in Beirut, to whom I could pitch my business idea and receive feedback.



Photos credit: @Bernat Mestres (White Horse)

Chabrouh, Eco-Farm

Changing social patterns through environmental education

Chabrouh Eco Farm is an organic farm that promotes sustainable practices and runs hands-on educational programmes for students. Ghana Bteich's goal is to increase awareness on the importance of protecting the environment and preserving soil, biodiversity, animal welfare, sustainable and healthy food production, and organic agriculture in Lebanon.

Tell us about yourself and how the idea for your business was born
I am 34 years old and Committee Chair for Digital Mindset and Behaviour in the Smart Cities Association. The idea for this project arose from my desire to foster a new generation of responsible citizens in Lebanon, promoting an eco-friendly mindset and an awareness of the solutions and alternatives available to fight pollution. I think there is a need to integrate civic and environmental awareness in education, which is an effective tool for changing social patterns and traditional behaviours. Through the workshops and activities we offer we can help to mainstream sustainable consumption habits. In Lebanon, many people still have terrible habits, like throwing waste from car windows or littering in the street. There is a lack of awareness regarding recycling and the environment, and unfortunately, the country's major challenges still include dealing with pollution, the garbage crisis and littering. On our farm we teach people about reforestation, air pollution, biodiversity, the bee's lifecycle, recycling and water efficiency. Our project provides a unique learning environment and experience based on sustainable practices. I believe that by educating youth we can shape a better future for our country.

What is the environmental and social impact of your project?
We want to increase awareness on the importance of protecting nature. Students that come to our farm not only learn how to respect each other, but also the environment. They learn about how sustainable practices in agriculture and respect for biodiversity can help to preserve soil. The farm's primary beneficiaries are children, and our in-depth workshops, activities and games are designed to be fun and interactive. They improve children's knowledge about organic food production, and our farm's own crops offer them the opportunity to put this knowledge into practice and even sell produce to visitors afterwards. Through hands-on participation, they discover how ecosystems function and how we are linked to them, and they also perceive the ecological consequences of our actions.

Another field of teaching refers to organic and healthy food consumption, not only for the obvious benefits of eating well, but also because, by promoting organic agriculture, people, and especially young people and women, will discover new job and entrepreneurship opportunities. There are also volunteering opportunities, in particular for those who live in mountain and rural areas.

How have you benefited from the SwitchMed programme?
SwitchMed has supported me from the very beginning of my business idea. The incubation phase helped me to develop a comprehensive business plan for pedagogical activities based on contact with nature. As part of the business strategy, three main products were designed and developed so as to highlight the importance of circular economy practices and sustainable consumption: a hands-on environmental programme of activities for children called "One day at a farm", another activity on the production of organic products from the farm, and thematic workshops tailored to the farm facilities. I also received technical assistance from two experts in developing a communication and branding strategy to enhance the visibility of my company. The marketing strategy included a well-defined communication plan as well as social media planning and content. The support provided was also very useful in improving the eco-design of the farm experience. SwitchMed's experts also mentored me in the right way to access financing programmes.

"As part of the business strategy, three main products were designed and developed so as to highlight the importance of circular economy practices and sustainable consumption."
Ghana Bteich, founder of Chabrouh Eco Farm



Photo credit: @Annie Spratt on Unsplash



Photo credit: @Bernat Mestres (White Horse)

Re-build

Replacing concrete with solid waste in construction blocks

Re-build produces construction blocks made of unsorted solid waste. The blocks have the same physical and chemical properties of the traditional concrete ones, but do not use chemicals, limit the use of raw materials and are less expensive. Coraline Rasset developed her business idea for tackling the waste crisis in Lebanon after being awarded 1,000 USD by Fondation Diane. The current most common solution for waste management in Lebanon is open-air burning in uncontrolled dumps. As a healthier alternative solution, Re-build's unique value proposition is up-cycling all kinds of solid waste without first having to sort it. Re-build not only reduces landfill volumes but also contributes to the shift to more sustainable practices in the construction sector.



Photo credit: @Bernat Mestres (White Horse)

H2GO!

Plastic not-so-fantastic start-up confronts Lebanon's waste with reusable water bottles

In Lebanon the fact that tap water is not potable means that plastic bottled water is the first alternative for drinking water, which is contributing to a dramatic Lebanese environmental crisis. H2go! aims to reduce mass consumption of single-use plastic by encouraging Lebanese citizens to drink from reusable water bottles. The start-up has created a system of accessible sanitised water stations in partnership with the water company whose distribution network it uses. People on-the-go can easily locate the nearest water points to buy water and fill up their bottles thanks to a mobile app developed by the company. H2go! has created trendy reusable bottles for their clients, which adds an element of coolness to sustainable water drinking habits, not to mention the plus of knowing how much plastic is being saved.



Photo credit: @Bernat Mestres (White Horse)

TIREVOLUTION

Tired of tyres, an industrial manufacturer helps recycle Lebanon's rubber waste

TIREVOLUTION has made industrial products in Lebanon for decades and now wants to give a second life to tyres that are usually dumped on roads, in landfills and in the sea. George Kassab explains his company's commitment to reduce the accumulation of single-use rubber by collecting and recycling scrap rubber to turn it into useful products, such as car and doorsteps mats. They can customise the end products in a trendy way to make unique, smell-free, durable products. The company also contributes to reducing air pollution by avoiding the incineration of tyres, frequently burned to recover steel. A core innovation of the TIREVOLUTION recycling process is that energy consumption and emissions are reduced by more than 50% as compared to traditional recycling processes. A closed-loop system that follows eco-design principles is also used to cool water. Finally, both the end product and its packaging are easily recyclable.



Photo credit: @Bernat Mestres (White Horse)

Photo credit: @Nour Kays



“So far, NK has diverted almost 4,000 discarded plastic bags from ending up in landfills and nature. Each square meter of our material is made with 30 used plastic bags and each piece is as unique as the mix of those that are used for it.”

Nour Kays, founder of NK by Nour Kays

“We have established a sustainable and circular system for the production of organic mushroom. Comparing to regular producers we use 0.49 kWh less energy per Kg. of mushroom produced. We also up-cycle 55 tonnes of agricultural waste per year.”

Wissam mansour, Lili’s Farm manager

“Most environmental education programs for kids in Lebanon are about outings to plant trees, cleaning campaigns, or learning how to recycle. Our project provides a unique learning environment and experience in an ecological farm that will be itself built according to sustainable practices and act as a demonstration area. It will inspire kids to learn in a new setting, in a participatory way, while practically seeing the results in front of them. They will learn about animal husbandry, about where food comes from, how we grow it, transport it, consume it, and its ecological and health impact on us.”

Ghana Bteich, Founder of Chabrooh Eco Farm

“The value proposition of our construction blocks is unique as we up-cycle all kind of solid waste without first having to sort it.”

Coraline Rasset, Re-build co-founder

“Our vision is to make Lebanon a country where citizens carry reusable water bottles that they can conveniently and safely refill at an affordable cost, as way to drastically reduce the use of disposable single-use bottles.”

Elyssa Skaff, H2go! co-founder

“We want to help limit as much as possible the environmental damage of tyres that are burned, dumped in the sea and thrown on roads or in deserted nature areas by optimising and accelerating our tyre recycling process to increase capacity.”

George Kassab, TIREVOLUTION founder

The Switchers: Discover inspiring changemakers who are switching towards a cleaner Mediterranean

Photo credit: @Green Hand

There are 340 Switchers showcased in the Switchers platform. They are all shining examples of how circular economy approaches can lead to business opportunities and also drive innovation that benefits people and the environment. In Lebanon, there are 53 Switchers at the moment in the platform.

The Switchers is a community of inspiring green entrepreneurs and changemakers in the Mediterranean region hosted by SwitchMed and SCP/RAC. Switchers are individuals, enterprises or civil society organisations implementing innovative ecological and social solutions that contribute to a switch to sustainable and fair consumption and production. They are active in a variety of fields, including organic farming, sustainable tourism, waste management, organic textile, recycling of electronic waste, sustainable building, organic cosmetics production, among others. Most importantly, the Switchers is a community with a voice and a meeting place for people in the region who are passionate about shaping their environment towards a more sustainable future.

For the Switchers, circular economy solutions are at the heart of their business models and also inspire them to seek ways to innovate and achieve even higher levels of environmental sustainability in the design of products and services they provide. Together, these important economic actors are making significant progress towards the goal of the SwitchMed programme and one of the region's key sustainable development objectives: to accelerate the shift to more sustainable modes of consumption and production. In doing so, they are setting a positive example of how economic growth can also lead to protection of the Mediterranean and its precious, limited natural resources.

To read more on the stories of change makers at our new online Switchers platform at www.theswitchers.eu



Meet our Switchers in Lebanon

FREE S.A.L

This Lebanese test company develops branded energy solutions in a world of conformity

FREE S.A.L. offers solutions in terms of green and environmentally friendly solutions to SME's in Lebanon. Skayem combines his engineering experience with his long-standing passion for sustainability to develop branded energy solutions.

FREE S.A.L. has introduced several techniques and technologies to provide the best available solutions in energy and resource management, being also eager to customise those solutions to the client's demands, allowing to shift from supplier-client to friends and trusted partners quickly. FREE S.A.L. used to take huge land lots that are not making money in agriculture, to investigate their potential to offer solutions for energy, food, and water. This multi-awarded company believe that they have the right team and resources to scale-up and are already in the process of expanding abroad.

BASSATIN BAANOUB

Can ancient farms be the key to a healthy future?

Bassatin Baanoub is a self sufficient organic farm on a hill of once abandoned and uncultivable 1,500,000 square meters, transformed by Yasmina and Jean-Pierre Zahar into a lush green farm that now produces extra virgin olive oil, wild thyme, sumac, honey, wild foraged veggies in winter and most of the basic vegetables & fruits in summer honey.

Bassatin Baanoub, surrounded by ancient olive trees, aims to raise awareness of the importance of protecting historic lands and biodiversity, influencing the nearby landowners to do to the same, and also hopes to collaborate with Lebanese universities in terms of agricultural research and studies in geology. In addition to growing fruits and vegetables, keeping bees, goats and sheep and maintaining the olive grove, the couple wants to create a touristic infrastructure based around the river, including an on-site restaurant, establishing a renewable energy powered infrastructure, and construct guestrooms to host tourists for the day or the night.

CEDAR ENVIRONMENTAL

"The garbage king of Beirut" swaps torrents of trash with items of value

Cedar Environmental believes in the concept of zero waste meaning that everything we throw away is valuable and can be used. By its dozen of small recycling plants has created a system that makes a circular loop where waste comes in, and none goes back out. For Abichaker that has not been easy and took 10 years of innovation.

Cedar Environmental employs 51 people in the battle to reuse trash. Some of its solutions include glass bottles crafted into multi-coloured glasses, lamps, and other housewares. They also reuse expired pharmaceutical pills by a technology that neutralises the medical components to make new items, and transform bags into eco-boards ideal for small-scale rooftop gardens construction. Now the challenge is to use discarded textiles and clothing, so can be proved again that with a little creativity and if you change your perspective, you can use the waste as the raw material to build something new and useful.

TAQA

A Lebanese initiative is stirring up competition in the healthy food market

TAQA, which means "energy" in Arabic, brings healthy snacking to Lebanon by producing 100% natural snacks with an added local touch of traditional Lebanese flavours that may harken memories of grandmother's kitchen. Merhi and her team of five aim to become leaders of natural, healthy energy on-the-go in the Middle East.

TAQA wants to shift the focus from the words 'light and diet' to healthy. A light product could still use chemicals or preservatives, while TAQA's snacks use natural ingredients like raw brown cane sugar and dates, some of which are purchased from local small-scale farmers. TAQA is well on its way to becoming the most successful on-the-go snack supplier in the region with already 120 points of sale across Lebanon, and is about to sign with a distributor that will boost POS locations to more than 500, including major Lebanese supermarkets.

SUNRAY ENERGY

A solar solution for Lebanon's heavy power cuts

SunRay Energy is a social enterprise that runs a solar energy program to tackle Lebanon's heavy power cuts caused by damages of the country's civil war. For Romanos and Bou Absi photovoltaics are a cheap source of electricity in a country with ample sun.

Sunray Energy created a green energy alternative for rural households and communities which commonly experience up to 12 to 18 hours of blackouts each day, to supplement their grid power with solar electricity. The system guarantees the same capacity and power for less money, plus the CO₂ reductions are equal to each household taking one car off the road for a year. SunRay is trying to replace the current model, which is inefficient, bad for the environment, and costly by providing flexible payments and ownership of solar panels and microgrids, so households can reduce their energy bills and use eco-friendly solutions in the short and mid-term.

GREEN HAND

An NGO dedicated to the protection of biodiversity in Lebanon

Green Hand is an NGO dedicated to the conservation of biodiversity in Lebanon encouraging the cultivation of organic plants. Through the line of gourmet products Casa Verde, Redwan wants to promote the economic development of the rural areas of Lebanon.

Green Hand works with small farmers and local institutions to preserve the country's huge variety of medicinal, aromatic and edible plants, involving the community to produce high end natural ecological products while taking into consideration all social aspects and respecting fair trade concepts. The Casa Verde brand, for instance, is the result of an important collection from growing the plants to the final sale, and its gourmet products are made from organic farming grown without pesticides or chemical fertilisers. In the "ecological workshop" of Green Hand, plant flavoured sea salt, jams and sauces are manufactured using traditional methods to be sold at food markets.

VAMOS TODOS

A shared nature experience in Lebanon

Vamos Todos is an ecotourism NGO that promotes shared experiences for both tourists and locals, organising activities to raise awareness about environmental protection while having an exciting time in nature. By creating Vamos Todos, Mark wants to show a better face of Lebanon as giving the country a brighter future.

Vamos Todos offers a variety of outdoor activities such as hiking, biking, rafting and wine tasting tours, carried out respecting the environment and aimed to strengthen the local economy while making the community proud of its natural heritage. In order to have a more significant impact, Vamos Todos cooperates with local communities and promotes ecotourism in their villages by creating new hiking trails, hiring local guides, having lunches during the hikes prepared by local village people and organising fundraising with certain schools for the rehabilitation of rural restaurants. These joint efforts are crucial to achieve a real change and inspire people to participate in the development of his country.

BASMA AGRICULTURAL PRODUCTS

How an agroecological approach is helping save this Lebanese family farm

Basma Agricultural Products is an eco-friendly apple farm that married traditional knowledge with modern research. Basma, which means 'a smile' in Arabic, isn't just about growing crops, Nahas and her family found strategies to save their orchard while discovering how to improve processes, reduce costs and focus on quality and sustainability to compete in a global market.

Basma is transitioning from monocropping to multicropping, adding complementary crops to apples, to create a diversity of income streams and help to low the money spent on fertilisers while improving the soil and yield. The farm has applied agroecology methods like introducing animals for pest management and natural fertilising production while generating money from egg and meat production. In addition to agricultural and environmental efforts, they are actively working to make positive contributions to their community, hiring 40-50 refugees per year to work on the farm, collaborating with women's cooperatives that prepare agro-food for sale, and organising agrotourism experiences that benefit visitors and local farmers alike.

VANINA

Lebanese social enterprise creates beautiful, upcycled jewellery and accessories

Vanina is a social enterprise that creates beautiful jewellery and accessories from upcycled materials such as matchsticks, tin cans or devalued coins. Hayek and Fayad think that with every purchase you get a fashion piece of jewellery while contributing to help the environment.

Vanina collaborates with a series of skilled artisans based across the country, mastered in traditional crafting techniques that have been passed from generation to generation and able to source their supplies through these underprivileged, rural communities. In 2008, Vanina created a foundation called Les Petits Princes de Vanina which aims to finance the education of children in need. It does this through a specific product that is developed and sold during the holiday months.

OLIDOR

A rural food revolution is growing in Lebanon's olive groves

Olidor is a locally grown family business where olive groves are the precursor to natural olive oil and soup. El Dheiby sees the company as an opportunity to modernise olive oil production in a way that will benefit his family and farmers in the community as well as preserve the agricultural identity of the area.

Olidor is a business that produces, packages and sells all natural extra virgin olive oil from olives purchased from local farmers, creating employment opportunities in rural and neglected areas and helping women who did not have the chance to have formal jobs or schooling. Olidor's branding was created by a Lebanese nonprofit association that helps local businesses to improve their packaging, adding Olisoap, another brand for a natural handmade soap made with the olive oil that falls below extra virgin standards and infused with lavender, pine and chamomile. In a mid-term future, the company plans to employ women in the region to produce jams using their own fruits and traditional family recipes.

ECOCONSULTING

A consulting firm takes on sustainable construction in Lebanon

EcoConsulting provides sustainable solutions for the construction industry, in the fields of bioclimatic, design and energy efficiency. Maya's idea is to preserve the architectural heritage and reduce the environmental impact through innovative and cost-effective solutions.

EcoConsulting helps to optimise house's energy efficiency through window placement, shading devices, the recovery of rainwater, green rooftops with native plants, and natural insulation solutions using a clay-based and sand-based coating. Besides, Maya's environmental commitment goes beyond her consulting work through an educational program which aims to aware young people on environmental issues to help them to understand the impact of their actions on the planet and the importance of protecting the environment.

BKERZAY

At this Lebanese ecolodge, sustainability is a family affair

Bkerzay is the largest Lebanon's eco-lodge, where each of its 34 guesthouses possesses a unique layout designed and built respecting the natural shapes of the 200,000 square meters of land. The existing trees dictated Ramzi's entire architectural project and not a single one of them was taken out to build it.

Bkerzay is a family-run ecotourism business in a gorgeous untouched place which 85% is a forested area, developed maintaining the authenticity of the site and which interiors are a throwback to traditional Lebanese handicraft. Its masterplan was to establish buildable areas that allow people to preserve nature for future generations, switching the way people see and appreciate nature and reconciling the Lebanese people with their country. Bkerzay is also mindful of its role as a community provider and employs approximately 50 people in its restaurant, as well as in crafts, services, and agricultural roles. It also provides indirect work to a few hundred people working in the Chouf areas.

BIOMASS

The brand that became a reference to organic farming in Lebanon

Biomass is a reference to organic farming in Lebanon. Massoud's pioneering family brand connects small farmers and consumers by offering quality organic products and runs a network of over 40 producers throughout the country.

Biomass produces and distributes fruits and vegetables, olive oil, jams, spices, and fresh or dried herbs. The brand has quickly become a reference in the organic sector in Lebanon, thanks to the success of its egg production. It then branched into yoghurt and cheese with the creation in 2011 of the first 100% organic dairy factory in the Middle East. Its production model is based on partnerships with around 40 farms, and small producers spread throughout the country, which Biomass guides in their ecological farming practices. This method can offer a greater variety of products to consumers but also encourages farmers to continue the transition to sustainable practices.

VEA

Creating handmade bags and accessories from recycled rubber tires

VEA designs and creates a full line of handmade bags and accessories using upcycled rubber tires from bicycles, motorcycles and cars. Patrick thinks that fashion moving towards sustainability is a social challenge that involves local and individual lifestyles and ethical consumerism.

VEA considers the environmental impact of car emissions but also the adverse effects caused by its components such as old rubber tires. Nearly one billion of tires are generated per year, joining the four billion currently sitting in landfills worldwide. VEA addresses this tire waste, reusing old rubber as an effective way to deal with the end-of-life tires instead of burning them and producing highly toxic gases that pollute the environment. The result is a surprisingly elegant full range of purses, wallets, and accessories, created in collaboration with Lebanese designers and marketed online to reduce the need for paper-based advertising. Finally, purchased VEA items are shipped across the country and around the world using recycled carton packaging.

LEBANESE DEVELOPERS

Giving a second life to shore-polluting fishing nets.

Lebanese Developers is an NGO that gives a second life to shore-polluting fishing nets and aware fishers about the damages caused by discarded nets at shore and sea. Dr Roy Abijaoude and his team had expanded its scope to train also women in Northern Lebanon to produce and repair fishing nets.

Lebanese Developers had been operating a series of awareness sessions with local fishers to show them how the fish that get caught in the abandoned nets can eat the net and plastics and finally end up on their family tables. The NGO has also partnered with a cooperative to set up space where fishers can dispose of their old nets knowing they will be collected for recycling rather than end up as marine litter. These collection points can play a key role in frontline prevention since the main reason nets are often discarded is because it is a simpler solution. The task of Lebanese Developers is to make it easier to recycle than to pollute.

THE CHAIN EFFECT

Cycling advocacy and street art go hand in hand in encouraging Beirut's residents to cycle their city

The Chain Effect is an NGO that uses street art as a way to spread their message of cycling mobility in Lebanon, urging people to get out of traffic and get on a bike. For Hawa, cycling is a way to rediscover new neighbourhoods and break the stereotypes people have about certain areas of the city.

The Chain Effect's mission is to increase cycling mobility in Beirut by shifting public perception to see biking not just as a fun activity, but as a viable and effective way to travel around the city. With exterior walls as their canvas, the NGO aims to inspire social change by the Street Art and has already created more than 30 murals around Beirut, other cities in Lebanon, and one piece Portugal. The Chain Effect wants to reach a large audience normalising the activity among people from all socioeconomic backgrounds: migrant workers, students, hipsters, and foreigners who bike. The Chain Effect would also like to create an outdoor exhibit and invite others to share their photographs of cycling culture.

TADBIR

A Lebanese company is making energy management mainstream

Tadbir offers renewable energy consulting services to small and medium-sized businesses to ensure their properties are energy efficient. Tadbir means "to manage" in Arabic, a fitting name considering it is exactly what Omar Rafeii and his team do.

Tadbir has a platform to link projects with qualified engineers to create energy-efficient buildings in Lebanon and make the properties more energy efficient, involving both passive and active sustainable practices such as insulating windows, updating heating, ventilation, and air conditioning (HVAC) systems and installing light sensors in corridors. Tadbir keeps its services affordable by working closely with the staff and at the facilities of the clients that contract them. Those clients are typically owners of schools, restaurants, and residences that want to decrease its consumption of energy and be better for the environment, but one of Tadbir's goals is to make this service accessible and affordable for business of all sizes.

GREEN ESSENCE

Transforming Lebanon through solar energy

Green Essence help business to transform their lives by switching to innovative renewable energy solutions. Aware of the environmental and social benefits of solar energy, Maakaron, Zaatari and Farage set out to prove the business potential of solar power in Lebanon.

Green Essence offers holistic, customised renewable energy systems, including solar water heaters, solar panels, and solar water pumps, and has worked with diverse businesses to switch from diesel fuel to renewable energy, reducing their electricity bills and lowering their environmental impact. Saad, Tony, and Francois saw a potential market for solar energy in Lebanon after the damages caused by the civil war traduced in blackouts, fuel shortages and the subsequent high electricity costs. Green Essence Lebanon estimates that its projects have saved close to 1,000 tons of CO₂ emissions in 2016, equivalent to planting 26,000 trees.

WASTE

When vinyl banners become fashion statements

Waste creates innovative and sustainable fashion specialised in handcrafting quality bags, accessories, and furniture, from non-biodegradable advertising banners which would, otherwise, end up in landfills. By reusing banners material, Marc and Waleed are increasing its life cycle by several years.

Waste's main goals are to reduce the amount of waste in landfill and the overuse of plastic bags. Using the knowledge of one of their team members about vinyl banners and its negative environmental impact, they chose this material as their primary fabric medium, but they also use inner tube plastic from bicycles, old car seat belts and other materials to create 100% unique pieces, all with a signature burst of colour and style. Waste also collaborates with companies with active corporate social responsibility missions to design their own products using banners and employs several tailors, many of whom are refugees, immigrants, and Lebanese who have lost their jobs.

NATURE

When vinyl banners become fashion statements

Nature is a green concept store that creates and provides a variety of ecological home goods and services. Marc believes that sustainable living is about making everyday choices, using green and upcycled products and eco-friendly home solutions.

Nature is a sustainable brand committed to inspiring people about the healthy and conscious lifestyle that offers its assortment of eco-friendly products and home solutions, which are made with recycled, natural or organic materials, and with the highest respect for the planet and its people. Nature's product range includes indoor and aromatic plants, flowers, pots, fertilisers, seeds, garden utensils, tea and tea accessories, herbs and spices, and more than 60 products from the Lebanese food heritage like honey, dried fruits or syrups. In addition, Nature provides a space for local artists to turn recycled trash into decorative objects, and serves as a platform to showcase "Mouneh" products made by local women.

INNOVATIVE HYBRID BIKE

The air-assisted bicycle: a cheap solution to ecological transport

The Innovative hybrid bike is an air powered bicycle, with a very low environmental impact, that can be pedalled without difficulty even in areas where the terrain is hilly. Emilio and Elie think this initiative offers a cheap solution for air pollution and traffic in Lebanon.

The Innovative hybrid bike offers a high-performance, economical and ecological solution for the topographic conditions of Lebanese cities, due to its pneumatic system with a compressed air tank, which allows pedalling without great effort. The Innovative hybrid bike is more ecological than the electric ones and accessible to all. It is rechargeable commercially in 2-3 minutes or 30 minutes with a home compressor, which is a big advantage over the electric bike, with a charging time of usually 3 to 6 hours. It is also estimated that lithium batteries electric bikes have a lifespan of 3 years of daily use and must be appropriately recycled because they contain chemicals and pollutants, while air-assisted bicycles have a very long lifespan of up to 20 years. Furthermore, the pneumatic motor and tank require no maintenance.

ECO-STOUFF

This Lebanese initiative is bringing stoves back in an eco-friendly design

Eco-Stouff is an eco-friendly stove, designed to help the environment heal in Lebanon as a replacement for the old chimneys. Samaha and her team wanted to design a stove that not only serves as a focal point for a room but one that's environmentally friendly as well.

Eco-Stouff is has a sleek and modern design, with a small compartment for cooking as a reminiscent of the stoves of bygone days, but more energy-efficient and less toxic than chimneys that are kept alive by using wood and diesel, producing CO₂ and other noxious gases. Eco-Stouff will play a small role in helping the environment heal in Lebanon, a country that is plagued with high pollution levels from transportation, and emissions from diesel generators used to power homes. Eco-Stouff may not have a low enough price for people in rural environments but aims to be an appliance for wealthy second homes in the mountains or resorts, hoping to contribute to the slow-growing trend of environmental awareness.

Photo credit: @UnSplash



Photo credit: @Rima Dates

Photo credit: @UnSplash



Photo credit: @UnSplash

Photo credit: @EcoSahara



Photo credit: @Rima Dates

Photo credit: @Dar Terrehut



Photo credit: @Jafiliet

(1) Beit al Batroun, tourism (2) Kitchen Confidential, organic food & agriculture (3) Eco-Consulting, housing & construction (4) TAQA, organic food & agriculture

(5) The Lebanon Mountain Trail Association, tourism (6) Waste, textiles & clothing (7) Vanina, textiles & clothing (8) Bassatin Baanoub, organic food & agriculture

Photo credit: @Mario Mirad



Stakeholders in Lebanon call for increased awareness, business support services, networking opportunities and better access to affordable financing, amongst other actions, to support the country's growing ecosystem of green entrepreneurs and individuals and community-based groups that are promoting ecological and social innovations. These stakeholders – representing green entrepreneurs, grassroots initiatives, public institutions, supporting organisations and financial actors amongst others – came together for a Synergy Workshop organised in the context of the SwitchMed on 17th November 2015 to discuss challenges, opportunities and solutions surrounding green entrepreneurship and eco-innovative grassroots initiatives in Lebanon. The key messages from these stakeholders are captured in the White Paper on "Promotion of Green Entrepreneurship and Grassroots Ecological and Social Innovations in Lebanon."



4

**Empowerment
of civil society
organisations and
citizens to lead
innovative solutions
addressing
environmental and
social challenges.**

Photo credit: @Annie Spratt on Unsplash



Supporting eco and social grassroots innovations

At SwitchMed we support community-based social eco-innovation initiatives to maximise their influence and impact, thereby contributing to the emergence of more sustainable models of consumption and production. A training methodology is developed to support eco and social innovations and grassroots initiatives on sustainable consumption and production which included a Handbook that provides basic knowledge and understanding on the fields of SCP and eco and social innovations. Furthermore, this Handbook presents challenges and opportunities for civil society organisations and grassroots initiatives aiming to work within these fields. It also helps to inspire and build a practical way of looking at collective projects or initiatives.

An intensive 4-day national workshop is organised in each of the SwitchMed target countries in coordination with our local partners. The attendees are gathered in an inspiring framework in order to develop different spheres of their projects, get inspired by other initiatives and help one another during the particularly participatory sessions. Specifically, the training aims to provide practical expertise in what concerns community initiatives while giving them the opportunity to take important steps in the development of their projects. A key component of the training is the module dedicated to analyse in depth the issues to tackle to start an initiative. Through the practical exercises, the leaders of the initiatives must prototype their projects, develop a canvas model particularly addressing the social eco-innovation within grassroots initiatives and develop a SWOT analysis. On average, 20 community initiatives were shortlisted in each country, making a total of 180 initiatives across the programme as a whole that received the training.

Afterwards, all the trainees have the opportunity to apply for the supporting phase of the programme to receive further coaching and technical support for the development and implementation of their initiatives. Two civil society ecological innovation initiatives are selected in each country. The assessment of the applications is done by a jury composed by the local partners, the local trainers, SCP/RAC and the external experts involved in the development of the training methodology.

The initiatives selected in each country for the support phase benefit from 50 hours of training that includes the development of a “support plan” for their initiative and regular coaching sessions for six months to support the implementation of the initiative. Also external technical or expert support based on the needs identified in the “support plan” is provided and when possible, support for the development of a crowdfunding campaign as well.

In total, 260 change agents and civil society organisations were mapped and, 16 local trainers selected and 8 local partners were selected and trained on-site for the implementation of the training programme. Out of the 570 candidates who submitted an application to take part in the national workshops to train civil society initiatives, 160 people were selected and trained belonging to 80 different initiatives. In the end, 14 initiatives received further support, as explained earlier. Civil society organisations also participated in the Synergy Workshops organised together with the Green Entrepreneurship programme.

Meet our local partners

Our local partner, as selected by SCP/RAC, is an organisation with extensive knowledge of the current situation in Algeria concerning civil society organisations, social movements and empowered communities aligned with sustainable consumption and production and ecological and social innovation as well as experience of organising/managing workshops. The main task is to assist SCP/RAC in identifying and selecting local trainers and potential grassroots initiatives to join our training programme.



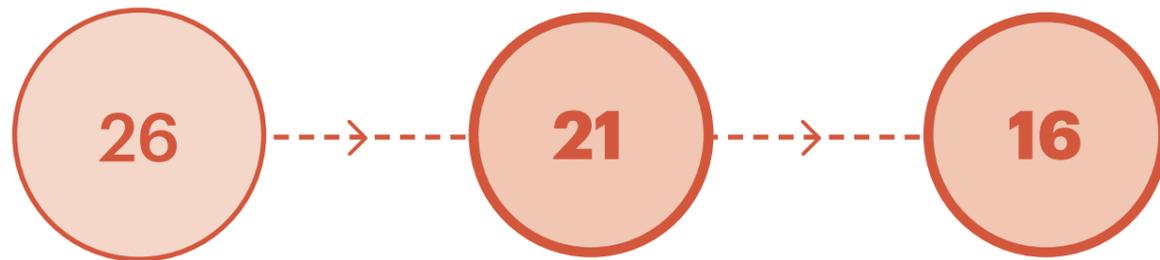
GREEN LINE

It is a non-governmental association independent of any government, group, or individual. Was founded in 1991 when a group of professionals from the American University of Beirut (AUB) and their friends decided to translate their concern about the post-war devastated cultural, human and natural environment into an organised action. Green Line embrace the principle of environmentally sound development in the developing world and brings together all those who are concerned with: preserving the past, conserving the present, and giving the future a better chance.

Our local trainers, carefully selected by SCP/RAC as well, have extensive experience in initiating, implementing and evaluating environmentally and socially innovative projects and also have a deep understanding and knowledge of training methodologies based on empowerment, collective learning and a participative approach. At SwitchMed, they are responsible for actively participating in the regional co-creation workshop, together with other local trainers from the participating countries. Local trainers also support their local partner organisation and SCP/RAC in identifying grassroots initiatives and guaranteeing the participation of at least 20 social eco-innovative actors/initiatives in the national workshop. This task also includes the provision of support in disseminating the workshop call through the available channels in order to attract potential actors and initiatives for the national workshop. The trainers are also in charge of facilitating a four-day national workshop with the support and guidance of SwitchMed's Civil Society Empowerment team.

The local trainers participate in the multi-stakeholder process to select the best two initiatives arising in the workshop to receive further technical support. They also provide 50 hours of individual coaching support over 6-12 months, aimed at the development of a support plan to identify technical needs for the proper development and implementation of the project.

Civil society organisations are empowered to act as agents of change and to start community innovations



Applicants

Grassroots initiatives' representatives submitted an application to receive further coaching and technical support to develop and implement the proposed initiatives.

Trainees

Grassroots initiatives received training at a national workshop. Some of the topics included how to develop an idea for social eco-innovation, obtaining strategy advice, finding out what the grassroots initiatives entail, how to overcome challenges, using the ideas of other participants to identify innovative solutions, identifying solutions for improving governance of the organisation, and exchanging views with other pioneers in social eco-innovation in highly participative discussion sessions.

Initiatives

Represented by these trainees.



Selected

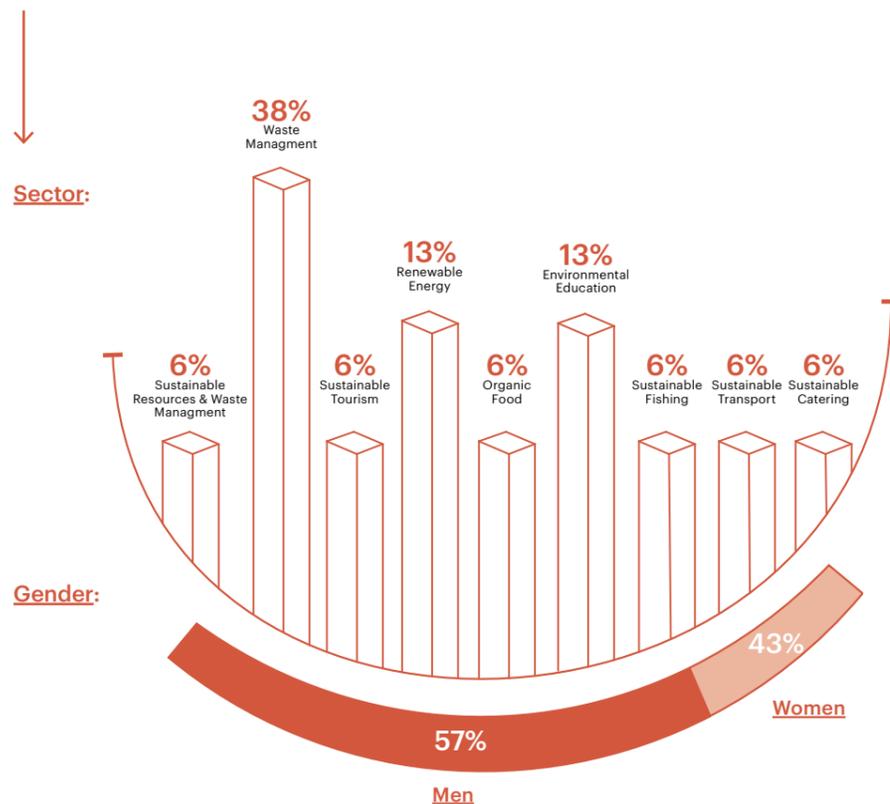
The grassroots initiatives selected were enrolled in a supporting phase. They received 50 hours of personalised coaching, external technical support tailored to their needs and support to develop a crowdfunding campaign.



(1) Smart public transport: Bus Map Project Sustainable transport

The mission is to tackle traffic problems and the impact of traffic on the environment by encouraging people to use public transport services.

The project aims to create a platform that will raise awareness of public transport services in Lebanon. The platform consists of an Android app providing information about bus services, important points and landmarks supplied by users of the app.



Urine-powered generator Renewable energy

The mission is to use urine to create a renewable energy source. The project aims to generate electricity from urine by using electrolysis to produce hydrogen for hydrogen-fuelled generators.

Smart and sustainable tourism: The untravelled Lebanon Sustainable tourism

The mission is to promote sustainable tourism to combat rural depopulation and boost the local economy. The project aims to promote rural tourism using websites and phone applications.

Sustainable catering: Women to Women Success Sustainable catering

The mission is to help unemployed women secure a decent income providing catering services. The project aims to tackle unemployment among middle-aged women by offering them training and job opportunities.

Social catering: Mommy Made Waste management

The mission is to introduce women to the catering services, helping them to secure a decent income and provide healthy and balanced food for children. The project aims to support, train and employ young women in the catering services sector, using recyclable plastic dishes in collaboration with recycling companies. It also aims to promote products made by cooperatives.

Cycling to make electricity: Nahnoo Renewable energy

The mission is to engage the young people of Beirut in innovative activities that help to build their sense of citizenship and collective ownership. The project aims to install energy-generating bicycles in Ramlet El Bayda beach (Beirut).

Tripoli recycles: Yours association Waste management

The mission is to initiate the practice of new techniques for the recycling and reuse of rubbish. The project aims to collect rubbish and encourage Dam w Farez inhabitants to reuse it.

Promoting eco-design: KED Sustainable resources and waste management

The mission is to promote eco-design and raise public awareness about sustainable resource management. The project aims to use eco-design to develop innovative materials and systems.

Protecting southern Lebanon gardens Waste management

The mission is to raise the environmental awareness of the local population by involving them in green conservation activities. The project aims to develop an Environment Improvement Plan against land degradation and loss of forest cover, and help ensure that the needs of local communities are met.

Healthy jams: Women's cooperative association Organic food

The mission is to promote healthy eating through the Women's Cooperative Association. The project aims to produce jams and sauces from natural materials without the use of preservatives.

Educating about our environment Environmental education

The mission is to promote the concept of sustainable environmental education. The project aims to develop the all-round abilities of disabled people through rehabilitation and environmental education.

Marine eco-tourism Sustainable fishing

The mission is to promote the sustainable use of resources and conservation of biodiversity in marine protected areas. The project aims to engage boat owners, fishermen, students and local people in sustainable resource management through sustainable fishing and marine tourism activities.

Upcycle and make money Waste management

The mission is to promote the concept of upcycling among young people. The project aims to involve young people of Baalbek, from different backgrounds, in waste collecting, upcycling and selling what they produce to generate income.

Schools go green Waste management

The mission is to raise awareness in schools and households to improve waste sorting at source, in coordination with local government services. The project aims to establish awareness-raising sessions for young people in schools and members of civil society from Lklim Kharoub on waste sorting and reduction.

Eco-innovation and social inclusion: Chreek Waste management

The mission is to create economic activities for socially disadvantaged communities. The project aims to create upcycling activities for former drug users and former ex-prisoners, as well as disadvantaged women and young people in Beirut and Mount Lebanon.

Exhibitions for upcyclers: Junk Fiesta Environmental education

The mission is to tackle a social and behavioural problem in the Lebanese community, the overconsumption of products which in turn generates excessive use of packaging. The project aims to create an exhibition platform, workshops and a competition for upcyclers (artists and fine art students), and trigger interest among the general public and in particular the younger generation of Beirut.

Meet our Lebanese civil society organisations supported

User-friendly public transport as a gateway to reducing pollution in Beirut

Rush hour is a nightmare in every big city but it is especially troublesome in Beirut because of the overwhelming use of private cars. According to a study led by urban planner Petra Samaha during her studies at the American University of Beirut, around 80% of daily trips in the Beirut and Greater Beirut areas are currently made using private cars, with bus transport accounting for less than two per cent. This is mainly due to the immense complexity of the public transport system and its lack of regulation.

The Bus Map Project is an initiative born from the need to render Beirut's complex public transport system more accessible and so encourage more users to opt for bus transport rather than private cars. To that end, the initiative is taking on the challenge of helping Beirut residents to understand the public transport system in order to encourage them to use it more often. The founders of the initiative, Jad Baaklini and Chadi Faraj, with the support of a group of volunteers, are specifically working to map the city's bus routes to achieve two objectives: to help non-users understand the transport system and to establish an informed bus passengers' association that is committed to fighting for passenger rights.

This is being achieved through an online portal, providing access to transit data and detailed information for passengers, usually based on government sources or service providers. "More passengers means greater investment, catalysing improvements that in turn attract more public transport users," explains Baaklini. "In the long term, we would like to fight for the rights of bus passengers and further promote the numerous benefits of choosing public transport," he adds.

SwitchMed provided the founders with technical and organisational support to develop the project. "The technical assistance was specifically tailored to our project, which we really loved. We received support in relation to data gathering and website development for the new online portal," Baaklini explains. Thus, the team were able to develop

their concept for the online platform to a much more sophisticated level, based on numerous conversations and interactions with experts around the world, such as Where Is My Transport in South Africa, Ma'an Nasel in Jordan, Transport For Cairo in Egypt. These interactions also led to the founders participating in several conferences and events, such as the FES conference in Cairo and the Advancing Public Transport (UITP) conference in Dubai. This participation in the regional and global discussion on transit also helped the founders to refine their image and ambitions.

"Thanks to SwitchMed, we were able to transform an idea into an impact story," adds Baaklini. As evidence of the major impact grassroots initiatives have on their communities, the Bus Map Project was presented to an international audience during SwitchMed Connect 2016. The excellent work done by the Bus Map Project team was also recently recognised when, as part of Team #BeirutDetox, their innovative public transport tracking system won First Prize in the Urb-Hackathon.

As a whole, the Bus Map Project is determined to promote the idea of collective mapping while developing prototypes that capture the imagination and attract more interest in public transport. Examples include collaboration with design students at the Lebanese International University, a Collective Photo Action coordinated by the social media platform and photography tool, FRAME Beirut, and an accompanying print map of major bus and van routes in Beirut. With an extensive network of supporters and followers, the team has also taken part in conferences involving a wide variety of subject areas, such as local governance, grassroots design, rural tourism and mobile technology, to help connect their initiative and the ideas behind it with other important debates going on in and around the city towards helping Beirut become a smarter city.

"This online portal will give access to transit data usually provided by governments or service providers to encourage general public to use public transport. In turn, more riders mean more investment, catalyzing improvements that in turn attract more users of public transport."
Jad Baaklini, Bus Map Project

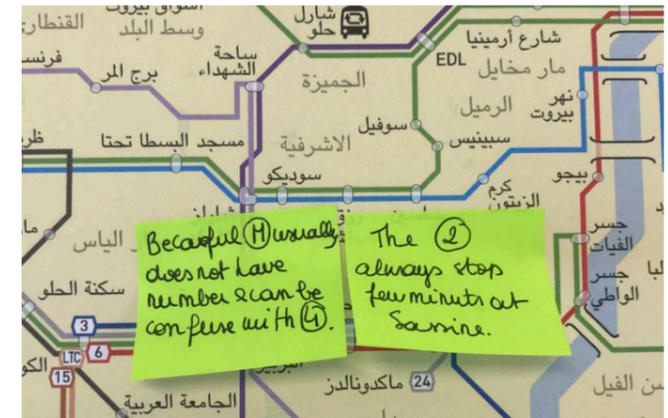


Photo credit @ The Bus Map Project Blog



Photo credit @BusMapProject

5

Enabling access to finance for green start-ups and entrepreneurs by mobilising impact investment: The Switchers Fund

Photo credit: @SwitchMed



Financial instruments for innovative green businesses

At SwitchMed we are supporting the region's green entrepreneurs by enabling access to finance, providing direct finance to new and established green entrepreneurs and mobilising local investors and enterprise support programmes as well as European resources through the newly created SwitchersFund.

The Switchers Fund's mission is to support innovative green entrepreneurs in the development of their projects, first through grants to test new ideas and attract new funders, and as these projects grow by introducing adapted financial products such as concessional loans and ultimately through equity participations.

In the current situation where private and public financial institutions have difficulties to channel their investments to Medium and Small enterprises in our partner countries in Africa and the EU Neighbourhood region, the SwitchersFund core business lays at facilitating international capital flows from investors to entrepreneurs to facilitate, thus contributing to achieve the Sustainable Development Goals. As the first activity of the Switchers Fund, the Call for OSCE GEMS Award, granted a total of 90,000 euros in six South Mediterranean countries, 15,000 euros in each country to the best business idea. The OSCE GEMS Award was the result of the partnership between the Organisation for Security and Cooperation in Europe (OSCE) and the SwitchersFund, and was established thanks to the support of the Italian Government.

In addition to this, the Business Support Services Facility complements the SwitchersFund's financial instruments by supporting innovative entrepreneurs via capacity building initiatives, and, in general, enhancement of their access to finance, which focuses on the following actions: green business model and plan development, mentoring and technical expertise, crowdfunding campaign support a "Green Start-ups Meet Investors". The latter, that connects start-ups with the right investors

during matchmaking events, is a national event held in each beneficiary country. By covering the major issues that an experienced investor will look for (and expect) before they invest and getting to know the upcoming start-ups to the international investors' community, SwitchMed aims at mobilising investment capital to help with the growth of green business in the Southern Mediterranean. Prior to the pitch, the green entrepreneurs that are selected receive 30 hours of capacity building session to improve their communication skills and to prepare their business to be evaluated by the financial players. The stages of the investment process are also taught during that session. In the aftermath of the events, an individual feedback on the strengths and weaknesses of the project submitted with a monitoring of the contacts made with the investors during the meeting is offered to the green entrepreneurs with the aim of improving their capacity to meet the appropriate financial players. In total, 245 applicants submitted an application to join the Green Start-ups Meet Investor, 67 green entrepreneurs were selected and coached to give their pitch in front of investors. A total of 79 investors attended the events. A total 2,150,000 euros potential investment raised by the entrepreneurs is expected by the end of the programme.

An on-line financial toolkit for the green entrepreneurs, whether they are in ideation phase or already fully operational companies, was also developed to help them to better access to finance in the MENA region. The practical tool allows discovering their finance opportunities and all the necessary instruments and knowledge to approach potential investors, and determining, in 4 easy steps, the right funding strategy for their green business.

These activities, carried out by SCP/RAC, are jointly done with the European Federation of Ethical and Alternative Banks (FEBEA) and the Union for the Secretariat of the Mediterranean (UfM).

Meet our service providers

Our local service providers, carefully selected by the SCP/RAC, are organisations with extensive experience in supporting green entrepreneurs in business development and positive impact assessment, as well as providing them with the necessary support in access to finance. These organisations are selected on the basis of their capacity to empower the green entrepreneurs and their knowledge of financial opportunities in each country.

The main task of these organisations is to develop and implement capacity-building sessions on access to finance and improvement of the entrepreneurs' communications skills. Subsequent to training, the green entrepreneurs have the opportunity to pitch and showcase their innovative solutions to potential investors during a specific national event.

Local providers also supported SwitchMed in the development of the first green regional portfolio. The green portfolio lists the profiles of each entrepreneur and has been disseminated among potential investors.



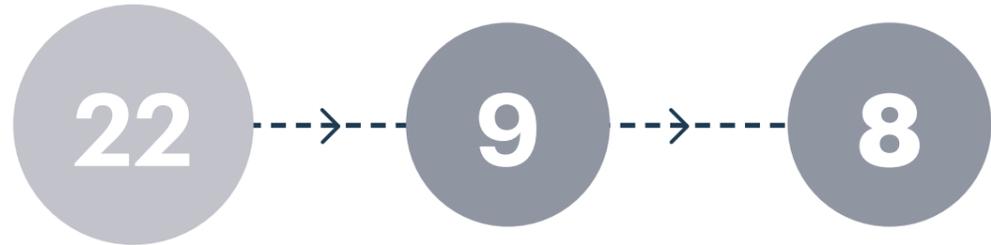
Diane Foundation

Diane Foundation it is a unique Lebanese Foundation that identifies the best green initiatives, encourage them and provide them with the necessary support to grow and achieve their goals.

Thanks to its wide national network and experience in access to finance, the Diane Foundation is able to reach out a large number of green entrepreneurs, potential investors and business support organisations and to provide services on benefit of the green economy sector in Lebanon.

Access to finance capacity building programme for green entrepreneurs

2017



Applicants applied to join the local capacity building sessions.

Coached green entrepreneurs.

Green entrepreneur pitches during the 'Green Startups Meet Investors, Elevator pitch.'

2018



Applicants applied to join the local capacity building sessions.

Coached green entrepreneurs.

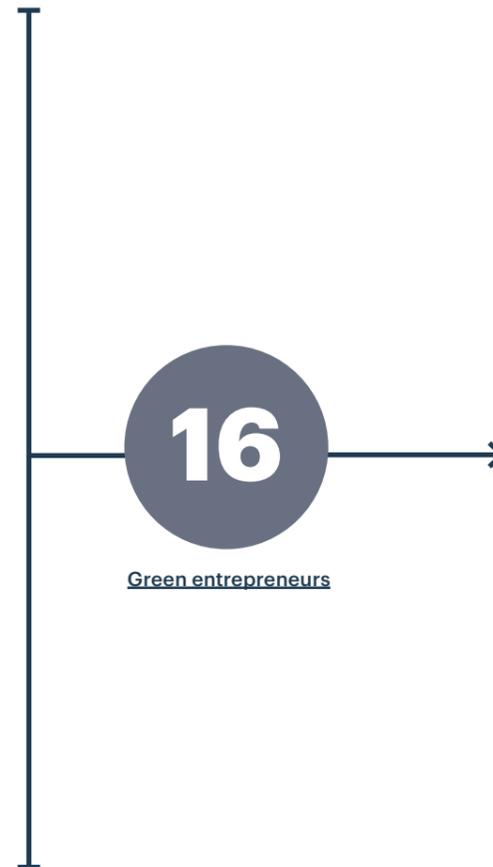
Green entrepreneur pitches during the 'Green Startups Meet Investors, Elevator pitch.'



Financial investors identified in Lebanon.

Potential investors participated at the events.

Of the entrepreneurs declared having been approached by investors after the Green Pitch.



Discover our 16 green entrepreneurs who pitch during the "Green start-ups meet Investors" event

Name of the company Business stage

Ta Group Green Grey			●	
Basma			●	
Easy Wall		●		
Fabric Aid			●	
Smart Bus Stop		●		
Pro-Shield		●		
Inoxhellas		●		
Lebanon Buses	●			
Cubex		●		
Lili's Farm		●		
Benergy			●	
Little Reed		●		
Plastic Beach		●		
Savvy Element		●		
Unclog		●		
Vertigreau			●	

Ideation

Early stage

Growth

Scale

402,500€

Total amount raised funds thanks to the A2F activity. According to Alfano, the first Arab venture philanthropy organisation, green entrepreneurs have a great potential for growth and for attracting venture philanthropy and impact investment support in Lebanon.

What financial opportunities are available to Lebanese green entrepreneurs?

The funding scene for start-ups and new entrepreneurs in Lebanon is well developed and two important factors are worth highlighting: the country has no shortage of entrepreneurs, and high-growth potential businesses, particularly technological ones, have a bright future in terms of access and investor interest.

Lebanon has a very sophisticated and well-developed financial ecosystem, especially compared to other countries in the region, but it remains very much focused on a small but successful and growing ICT sector. The country has a large number of banks, and its banking sector shows an excess of liquidity that should permit the private sector easy access to capital. However, access to finance for early stage SMEs and start-ups, including green start-ups, seems to be a problem for several reasons, mainly because of business models that are difficult to assess and a lack of harmonised assessment criteria.

Green entrepreneurship is still a new concept in Lebanon. Nevertheless, the number of entrepreneurs is growing, and will likely continue to grow in the future. In November 2016, SwitchMed led a mission to Lebanon to improve understanding of the market and assess the interest of financing institutions in investing in eco-innovation businesses and initiatives proposed by green entrepreneurs. The mission concluded that the financing scene for start-ups and new entrepreneurs in Lebanon is well developed and the potential for growth is high, particularly with technological projects, which attract great investor interest. The situation is drastically different for green entrepreneurs, however. Most of the support infrastructure for entrepreneurs, such as incubation, acceleration programmes and existing funds, is exclusively dedicated to tech companies, and mostly to apps. In addition, green entrepreneurs all seem to be focused only on foreign markets, as if there were no potential customers in Lebanon. This could be because the Lebanese market is perceived as too small, but this ambition can also prove a limitation, since any kind of business is unlikely to grow by ignoring the home market and focusing on less understood foreign markets with more potential obstacles.

During the mission, SwitchMed met representatives from different financial and governmental institutions such as the Banque du Liban, Fondation Diane, Speed Lebanon, the EU Delegation, and the Ministries of Environment and Industry, as well as many green entrepreneurs, all of them part of the Switchers community.

“When providing green loans, banks don’t have the technical expertise to evaluate the projects and their potential risk and returns.”

Pascale Khairallah Nassif, Corporate Division of Intercontinental Bank of Lebanon

At the meetings, Pascale Khairallah Nassif, from the Corporate Division of the Intercontinental Bank of Lebanon, the first bank in the country to provide green loans to finance projects from ten thousand to 20 million dollars, explained that “when providing green loans, banks don’t have the technical expertise to evaluate projects and their potential risk and returns.” According to the American University of Beirut (AUB), which offers a number of awards and programmes for sustainable entrepreneurship, the problem for innovation projects is at seed level, and young Lebanese need to learn how to innovate, but because of the country’s political situation, they prefer to leave. To address this problem, the Lebanese Canadian Tech Hub, an NGO established initially to integrate Lebanese migrants in Canada, is opening an office in Beirut with the goal of developing the entrepreneurial ecosystem in Lebanon and opening branches in America so that the Lebanese can sell their products in the US instead of emigrating there.

Mr Rollinde, entrepreneur-in-residence at Fondation Diane, explained that “we are arguably the only organisation in Lebanon investing exclusively in green business, with four investments finalised and more than ten in the pipeline.” For its part, Speed Lebanon, with a six million dollar fund, has mapped the investment and fundraising ecosystem in Lebanon and concluded that there are no funding opportunities for start-ups requiring more than 20 million dollars, and that capital therefore has to come from abroad. The Banque du Liban mentioned the Lebanese Centre for Energy Conservation, which provides incentives for financing projects with all green components. To date they have made available 500 million dollars in green loans, and they have a total portfolio of 15 billion dollars. The Kafalat programme, offering 75% guarantees on bank loans, could also be of interest for the purposes of SwitchMed.

Lebanon was the first Arab country to develop a National Energy Efficiency Action Plan, paving the way for companies working in the sustainability sector to rise from 34 to more than 270 in 2015. Most of these business have been expanding, generating job opportunities within this booming market, and helping create a thriving private business sector. Taking this into account, the overall goal is to change the mentality of the financial sector and encourage more and more investment in green projects. There are currently a lot of incentives for power efficiency, solar panels and greenhouse building, but most of these are in the form of loans and not investments. For an entrepreneur to obtain funding, financial institutions require the legal establishment of the enterprise in Lebanon, experience in entrepreneurship and a collateral guarantee. Sometimes, partial or no guarantees are required; other times, a feasibility study is conducted to ensure the soundness of the investment. However, especially

with new products, financial institutions have trust issues with the entrepreneurs, some projects having failed to respect their agreements with the banks. As a result, banks are unwilling to trust entrepreneurs if they have no credit history. In such instances, a SwitchMed ‘label’ for the entrepreneur could be helpful.

There is no doubt that the major challenge for green companies is financing, and one of the problems is that banks are not suitable for long-term and complex projects, so it is common for entrepreneurs to fund their projects with their own money. Lebanon also has a lot of commercial banks, so investment is low and, in addition, investment banks are owned by commercial banks. Another problem is that there are no laws to enforce environmental standards. Foreign direct investment tends to be wary of the Lebanese ecosystem because it is unfamiliar with it. The process is easier if a Lebanese expat invests in their country of origin. The Investment Development Authority of Lebanon offers investment incentives in eight sectors, as long as entrepreneurs establish their enterprise in Lebanon (the further away from Beirut, the better), but the requirements are very high.

Banks may sometimes be open to green projects, but they are not very interested in physical products, which take more time. However, they can be open to projects that have developed a prototype and are already at a more advanced stage. There are also a small number of active angel investors still available for start-ups. Research on mature ecosystems such as that of New York show that the loop of successful start-up founders becoming mentors and angel investors for new ones is critical to achieving sustainability, and that quality training and support for those initial start-ups is essential.

Even though the gap between banks and green entrepreneurs still exists, the Lebanese economy has a number of strengths that can help to boost green business opportunities: a highly developed financial system, a widespread entrepreneurial spirit, and institutional support for entrepreneurship.

CubeX: A recovery waste project based on aquaponics wins the Elevator Pitch competition and USD 2,500 to kick-start its green business.



Photo credit: @Diane Foundation

Marc Aoun's profile:

Marc Aoun, an environmental science graduate and CubeX's business developer, has won the Green Start-Ups Meet Investors competition organised by SwitchMed and Fondation Diane.

CubeX is a domestic-scale wastewater and solid waste treatment system that allows households to process all their organic waste effortlessly at home. The fully automated CubeX unit is connected to the sewage network and eliminates the need for septic tank servicing. What makes CubeX unique is that it allows users to process water and recycle waste as energy or fertiliser. This modular system, with a small footprint, can service households of four or more people.

How did you hear about SwitchMed and the Green Start-Ups Meet Investors initiative?

I heard about SwitchMed through an email flyer sent by Fondation Diane, the primary funding institution for green entrepreneurs in Lebanon.

You received training before your pitch, right?

Yes, before the interviews with potential investors I received help to improve my communication skills, so I could explain my project in the most comprehensive way possible.

Do you think that it is difficult to attract attention from investors?

If you have the right idea, I believe that there are people who will want to invest in you.

What would you say that was the most important thing that you learnt during that phase?

The training helped me understand all the stages involved in investment processes. The pitch trainer was very helpful and supportive, so I would say that the most effective component was doing the mock pitch and receiving feedback from other participants.

What lessons did you learn from the feedback from the investors?

It really helped me focus on unforeseen obstacles, such as permitting constraints and the current status of finance for renewable energies.

As the Elevator Pitch winner, you received 2,500 dollars: how do you plan to spend this grant?

Thanks to this grant we can now cover some basic needs of our project. We have budgeted 400 dollars for branding, including our logo and brochure; 1,000 dollars will buy the materials to build a prototype; 300 dollars is earmarked to buy data logging and climatic sensor monitoring equipment; and finally, the remaining 800 dollars will pay the salaries of the monitoring personnel.

Can you tell us where you got the idea for CubeX?

We were hearing a lot about municipalities facing wastewater treatment issues when the network is inaccessible, so we did some research of our own and found that while there are some decentralised wastewater systems in Lebanon, they are not being used. We ran a survey that revealed that rural households are willing to pay for a wastewater treatment system provided they can recover the costs through usage. We also developed the system so that it can be modified to allow resources to be recovered from the waste.

What is the main use for this system?

CubeX allows users to recover resources from their waste, such as energy, fertiliser and treated water.

Could you explain the basic phases?

All organic waste is disposed of in the sewage network and food waste is crushed using an in-sink garbage disposal unit. All these materials enter the bio-digester for anaerobic digestion, which generates methane. This methane is stored in a safe compartment to be used afterwards for cooking and heating as needed. The waste is sent to a separation container, where solid and liquids are treated separately using a biological reaction.

“We have calculated that each household will annually generate around eight tanks of propane as an alternative natural gas, recover and reuse 365 cubic metres of water and produce 15 bags of compost. Overall, this means that around one tonne of organic waste will be diverted from landfills and water systems.”

Marc Aoun, CubeX's business developer

It seems to be a system with a great positive footprint regarding environmental impact.

Yes, we have calculated that each household will annually generate around eight tanks of propane as an alternative natural gas, recover and reuse 365 cubic metres of water and produce 15 bags of compost. Overall, this means that around one tonne of organic waste will be diverted from landfills and water systems.

I suppose that your project still needs tweaking...

Sure, we still need to better understand our market and marketing channels and strategy, but we are also aware of the importance of monitoring the system to ensure it functions well and to continue making improvements.

And there's where SwitchMed comes in.

Yes, indeed.

Support eco and social innovations of green entrepreneurs and Switchers through a mix of grants, loans and equity participations.

Join now

The Switchers Fund and contribute to the first MENA impact investing Fund.

Fondation Diane supports creative minds and actions to boost green entrepreneurship in Lebanon

Diana Fadel's profile:

Diana Fadel is the founder and president of Fondation Diane, the local partner of SwitchMed in Lebanon, and a key stakeholder in the Lebanese green economy system. She wants to prove that eco-sustainability and profitability are compatible.

Fondation Diane, the local partner of SwitchMed in Lebanon and a key stakeholder in the Lebanese green economy system, was founded by Diana Fadel, also its current president. It aims to prove that eco-sustainability and profitability are compatible.

With a focus on civic awareness and eco-sustainable development, Fondation Diane's mission is to enlighten the general public about their responsibilities for Lebanon's environment and to motivate and mobilise people to act and to support creative minds engaged in making the switch to sustainable development. Fondation Diane provides support, and notably financial support, to the best green initiatives to help them grow and achieve their goals.

How can green entrepreneurs succeed in getting the support of investors?

They have to know the stage of their business and think about the market needs. Sustainability is no longer an option but an imperative. Being green should not be about luxury, but an attitude. Green entrepreneurs may only succeed after trying three or four times, but in that phase they acquire experience. More and more mentors are available to help them improve their business plan and change their mindset.

What happens if they are still in the ideation phase of development?

Projects at an early stage do better to rely on family and friends who are willing to help by investing in their project. That is a great way to get started. The approach to investors must be a final phase, when the entrepreneur really knows their market and their impact, not to mention what funding they are seeking.

Investors always look for profitability...

Yes, impact or non-impact investors both want to know that your project is economically viable. If the figures do not work out, the project is not profitable.

So, what would you recommend to businesses in the early stages?

As trainers and incubators, we have learnt that we need to select the best team, not the best project. Motivation is often the most important component in success. I would recommend that entrepreneurs participate in competitions, pitch their ideas wherever they can and listen to mentors, even if they do not necessarily end up doing what was recommended to them.

How do you identify the best green initiatives?

We have basically two channels to identify green initiatives: from applications via our website and by word of mouth. Entrepreneurs submit their applications and we select the top-tier start-ups to interview the people behind them and understand the projects better. We also use social media to launch specific calls for our partners' training programmes.

As in the case of the SwitchMed programme...

Exactly. It is very important for us to increase our green entrepreneurship ecosystem, so we build contact with green entrepreneurs in two ways. First, our partners or other members of our ecosystem connect us with projects that could be of interest to us, and second, we frequently attend events where we can meet entrepreneurs.

What kind of support do you provide to help projects grow?

We provide financial and operational support. In fact, Fondation Diane and Viridis Investment Fund (VIF) rely on a range of financial tools, such as equity, convertible loans, lease-to-own and straightforward loans.

Is the same kind of financial support offered to all of them?

No, because it differs depending on the start-up stage and needs. The average amount is \$100,000. We also help our entrepreneurs to develop their business plan, find new opportunities and also expand their networks, as we connect them with experts who can help them better understand what kind of business model to develop.

What characteristics do you consider in selecting initiatives for financial support?

As we are an impact investment fund, the first thing we look for is an environmentally positive impact. But we also consider other things, such as the value proposition, whether the timing is right to start the business, financial viability in terms of return on investment, the sustainability market in Lebanon and in the region. We also get a general impression of the team's motivation.

Can you tell us more about the Viridis Investment Fund?

VIF is an initiative created in 2015 by Diana Fadel, our founder and president, which provides the necessary financial and operational support to help the best green initiatives grow and achieve their goals. VIF, by investing in start-ups that have a positive impact on the environment and helping tomorrow's green businesses emerge and serve as an example for Lebanon, aims to demonstrate that eco-sustainability and profitability are compatible. VIF also organises green training and mentorship programmes. To date it has invested in nine start-ups in five different sectors: transport, eco-tourism, waste management, healthy food production and renewable energy.

VIF, in collaboration with SwitchMed, has also implemented coaching activities for 45 green entrepreneurs to help them develop

Photo credit: @Fondation Diane



their green business canvas and has organised two access-to-finance events to connect green start-ups with potential investors. It has also arranged technical and business training for entrepreneurs in the water, sanitation and waste management sectors and has run workshops for around 50 entrepreneurs on the challenges facing green businesses in Lebanon.

From the investor's point of view, how do you assess a project's positive environmental impact?

Calculating the environmental impact of a start-up is a novel issue, so the procedure is not standardised as of yet and is therefore open to debate. We have to take into account numerous factors, such as environmental protection, people's health protection, people's needs, etc.

According to our research, to invest in a start-up we need to check three key aspects. First, the project should be related to one of the

eight global environmental goals or their indicators. We then evaluate the environmental impact associated with a product from the cradle to the grave, by comparing the project, product or app with what it replaces and making a life-cycle assessment of both. Finally, we make sure that the project is scalable and we estimate the impact of our investment.

Ultimately, our main goal is to convert a linear economy mindset into a circular economy mindset: developing an economy that is more efficient, diverse and sustainable by extending product lifespans and convert what today is considered waste into valuable resources. Investing in the circular economy is key to us, which is why we try to help entrepreneurs by providing them with new ideas and connecting them with stakeholders.

Is there any green area that needs more attention from investors?

From an investor's point of view, we seek sustainable and profitable businesses. After two years analysing the market, we conclude that 40% of the start-ups come from the waste management and plastic recycling sector, 20% are optimising agricultural processes, 20% are focused on the transportation sector and the remaining 20% reflect a range of sectors, such as air purification, water treatment and eco-tourism. Considering the environmental issues faced by Lebanon, the main areas that need greater attention from investors are solid waste management (plastic recycling), wastewater treatment and deforestation solutions. However, initiatives in these sectors are only viable with the support of the government.

"This kind of initiative offers the opportunity to adopt a more comprehensive approach to the green economy and to provide entrepreneurs with the exposure they deserve."
Diana Fadel, founder and president of Fondation Diane

How have the synergies and collaboration between SwitchMed and Fondation Diane developed and how have they benefited Fondation Diane?

Our collaboration with SwitchMed has been a great success. Through it, we have developed our green support programme for entrepreneurs and have also implemented programmes supported by SwitchMed resources, such as the pitch deck and green business plan development initiatives. We have also increased awareness in our community and have encouraged people to work in sustainable development.

6

Stepping up internationalisation of SMEs on green business models and resource efficiency in the Southern Mediterranean.



Photo credit: @UNIDO

Enabling conducive technologies and frameworks for green businesses

Small and medium-sized enterprises (SMEs) play a key role in national economies around the world and provide a significant contribution in employment generation and added value to the economy. Therefore, increasing the internationalisation SMEs and helping them to access third markets, and thus, becoming drivers of a green growth, is crucial, not only for the businesses but also for the economy in the Southern Mediterranean.

Eco-innovative business solutions for the Southern Mediterranean

At SwitchMed, we recognize how important it is to engage and exchange best practices and solutions on innovations that can further the uptake of SCP in existing businesses models. For this reason, we support the development of networks that can create business partnerships between European companies and SMEs in the Southern Mediterranean in order to promote the uptake of green business models and eco innovations that can strengthen productivity, deliver a more inclusive growth and assist SMEs in the Southern Mediterranean.

To increase the cooperation between businesses and innovation networks in Europe, UNIDO together with local institutional partners, organized six B2B for eco-innovation events in Egypt, Lebanon, Morocco and Tunisia. 35 selected eco-innovative business solutions were presented at the B2B events where local businesses could get in touch with the latest eco-innovations for their sector. The eco-innovations had been selected from a pool of relevant and ready for market uptake solutions developed under the framework of EU “Eco innovation Programme”, “Best Life Environment”, the “European Business Award”, and innovation Seed initiative. All in all; 725 local businesses attended the six B2B events; to have 315 business to business consultations with providers of eco-innovations from the European Union. As a result of these consultations; 16 business partnerships were concluded during the months following the B2B activities resulting in technology cooperation agreements; skill transfer and innovation research collaboration have been enabled across several industrial sectors such as: textile, food, waste and wastewater management, wood and furniture, constructions, leather, plastic, agriculture. Preliminary investments in eco-innovative technologies concluded to 1.4 million euros and with the potential of totally saving valuable resources, such as 8,432,860 m³ in annual water consumption. The B2B events have displayed the need and potential for eco-innovations in the region and that cooperation between businesses from the EU and the Southern Mediterranean is an attractive bid for the environment as well as for the economy.

Pilot studies for the Product Environmental Footprint framework

Developing the potential of SMEs to participate and reap the benefits of a global and green economy, will also depend to a great degree on enabling framework conditions that can ensure a healthy competition. For instance, the EU single market is one of the most important trading partners for businesses in the Southern Mediterranean region, and every new regulation on this market will eventually also affect businesses ability of producing and exporting goods that are standing in compliance to these market regulations. One example of such a regulation, which might also affect Southern Mediterranean producers, is the EU Single Market for Green Products initiative. This initiative envisages a labelling

scheme that will require the provision of meaningful and verified information from producers about the environmental footprint of products to the consumer. Based on the Product Environmental Footprint (PEF) assessment, the EU Single Market for Green Products initiative is currently evaluating how producers of environmentally friendly products, in Europe, and in other regions, are currently performing and what criteria needs to be applied for certain product categories in order to label a product “green”.

Starting in 2017, UNIDO invited relevant partners in Egypt, Lebanon, Morocco and Tunisia, such as, industrial associations and export orientated businesses, to take part in local organized PEF workshops. The workshops were organized to present the outcomes of the European pilot studies related to the PEF framework development, to inform industry stakeholders on the methodology, and to find suitable businesses from four sectors which could undertake a pilot PEF study in order to see how this new framework would work in the region and the specific sector. The selected sectors for these studies are related to the product category of wine, intermediate paper products, pasta and olive oil, and were selected on the basis of an existing PEF category rules and their financial value in the national exports to the EU and consequently the importance of this sector to the national economy. The selection process was done in this way to ensure not only the interest of the export oriented industries but also the potential for replication in the national or regional context later on, based on the capacity built during the project.

A high interest from local companies was noted and nine companies were selected for the implementation of the PEF CRs on a specific product that they export or plan to export in the EU. Their motivation to participate in this activity, even though the PEF CRs were not yet final at that point, was mainly based on the need to understand their products environmental footprint and the potential for improvement. For each company product, one local expert has been assigned to implement the PEF CRs, after receiving an in-depth training from the international PEF experts from Pre Sustainability, a Consultancy based in the Netherlands involved in their development. These experts now form the core which can respond to future demands from the industries that wish to have the PEF Category Rules implemented on their products.

The studies developed demonstrated the need for national Life Cycle Assessment (LCA) databases which can be used by the LCA and PEF experts. Hopefully, this will be addressed in the near future, enabling the companies and experts in the region to optimize the production faster and much more accurately. In addition, national partners in Egypt, Lebanon, Morocco and Tunisia were assisted in raising awareness among national stakeholders about the framework for a Single Market for Green Products initiative, contributing to the adoption of greener standards for the national manufacturing businesses in order to compete on equivalent terms in the EU market.

Wine from Lebanon growing to new heights

Couvent Rouge, a winery in the Lebanese Beqaa valley, produces organic wine for the local and European market. Knowing what rules and conditions apply to the European Single Market for Green Products is essential in creating a local value-added green industry for the region that can reshape the livelihood of farmers. In Lebanon, UNIDO undertakes a pilot study to evaluate how the wine sector is performing under the EU Product Environmental Footprint (PEF) methodology that eventually will determine how the environmental footprint for green products on the European single market will work.



Photo credit: @UNIDO

The farmers of the Northern Bekaa Valley have due to missing government presence and support often chosen their own paths of development. Without any real alternatives, the farmers have cultivated their fields with illicit crops such as cannabis and poppy, establishing the region into a hotspot for hashish and opium production. This practice often yielded in high profits for the farmers but the income, due to the “non-legal” nature of this business, was often also very volatile, not ensuring a stable livelihood.

But there are people that are working for a change. Charbel El Fakhri is one of the founders of the Coteaux d’Heliopolis, a cooperative that since 1999 has worked together with 11 villages in the region to replace poppy and cannabis with the wines of Syrah, Cabernet Sauvignon, and Tempranillo in order to change the living for the people in the region. Today the cooperative includes 250 farmers with 240 hectares of vineyards and produces 700 tons of grapes annually and the farmers of the cooperative are not the only one benefit from this change.

The unique terroir of the region does not only guarantee an exceptionally high quality of the grapes, it also allows the farmers to grow their wine without any pesticides, making the grapes highly desired among some of the best wine producers in Lebanon. The altitude and location of the vineyards make it free from pests and pollution, so taking the step in producing organic was a natural step for the cooperative. But selling the grapes of the cooperative to other wine producers of Lebanon is not enough for Charbel El Fakhri. Together with an associate form the cooperative, he decided to start producing his own wine under the name Couvent Rouge, aiming important export markets in Europe where organically produced wine is high in demand. “When a winery gets established in a small rural community, it attracts people. The biggest concern of the farmer is always how to sell his crops, with this winery we can now ensure a stable income and make the plantation of illicit crops unattractive for the farmers...”

Since 2009, Couvent Rouge produce and sell wine under the Fair Trade certification label and help bring together local farmers from Christian and Muslim villages in the region to grow grapes for the cooperative, which are used in the organically produced wine. “It is important for us to produce for the local market. However, our main target is to reach the European market as it is more profitable for us and also to show the quality that is available in Lebanon.”

As part of the EU funded SwitchMed Program on Sustainable Consumption and Production, UNIDO has organized capacity building activities on Product Environmental Footprint (PEF) methodology to improve the abilities of Lebanese companies to compete in the EU markets where consumers are taking environmental considerations more and

more seriously. The EU common label and methodology for green products will enable exporters to maintain a competitive advantage on the European Single Market and to communicate this consistently to the market on same and equal terms as European companies over one common label. At the same time, this methodology might also give a reason for Lebanese producers that are interested in adding value to their products with a benchmark methodology that in the long term can prove to be good for the business, the environment and ensure them a green labeled product ready for export to the EU.

Together with businesses, such as the Coteaux d’Heliopolis, UNIDO has undertaken a pilot study to measure the impacts and preparedness of the so far developed framework from the EU PEF methodology within the participating companies and sector.

“Producing organic does not only add value to our product but also to our land, community, and our identity.”

“This pilot study enables us to assess how we perform, producing organically, but it also how we can evolve as a growing company exporting to European markets.”

The findings from the PEF pilot study at the Couvent Rouge Winery revealed that the weight of the glass bottle used in the distribution of the wine could be reduced and would lower the CO₂ footprint of the wine. Also, introducing a reversed logistics scheme for the local market, where wine bottles are being recycled and refilled, would also drastically contribute to the environmental performance of the winery.

Although the EU is still negotiating the final criteria for a “green” wine label, pilot studies, such as these, will eventually provide an important feedback for the EU on how producers in the neighbouring region performs by using the PEF methodology. Introducing the PEF methodology to businesses in Lebanon has inevitably also given the country an expertise on a methodology that can assist businesses to assess the environmental impacts of their products throughout their life cycle. This will sooner or later give green producing business the ability to measure and communicate their products at a better value for the business and the environment.

Who knows maybe your next bottle of wine is organically produced from the Beqaa Valley.

Promoting eco-innovative solutions from the EU for Lebanese SMEs

87

Number of registered participants (EU and MENA)

36

Number of face to face meetings between the EU technology providers and the MENA companies

9

EU companies attendees

1

Projects concluded and under negotiation (April 2018)

VAN MAREN SYSTEMS + PARTNERS IN LEBANON
Netherlands, EU Partner Tunisia, Morocco and Egypt

Type of license: Agreement

Investment: 10% royalties on turnover

Sector: Plastic

Environmental savings: 9.45 Mio kg of plastic to be reused



7

**Exchanging,
synergising
and engaging
with business
& investment
networks to
scale-up demo
actions.**



Supporting the visibility, effectiveness, long-term sustainability and impact of the SwitchMed programme

The SwitchMed Networking Facility, led by SCP/RAC, aims to contribute to the visibility, effectiveness, long-term sustainability and impact of the different activities carried out under the SwitchMed programme. In order to deliver this, the Networking Facility focuses on three main areas of activity:

Firstly, we enable extensive communication and networking and facilitate the exchange of best practices and lessons learnt among SwitchMed partners, connecting them with key external stakeholders. We have been working closely with 32 strategic partners in order to achieve common goals. We have also developed the SwitchMed Action Network, an online platform with a mobile app, to exchange knowledge related to SCP initiatives taking place in the Mediterranean, provide inspiration through disruptive innovations integrating closed-loops and collaborative consumption business models, showcase stories and participate in facilitated in-country stakeholder dialogues. It also functions as a database of experts. Another major activity is the organisation of SwitchMed Connect, a gathering of Mediterranean stakeholders to build synergies, exchange knowledge and scale-up eco and social innovations. Leading start-ups and entrepreneurs, industry agents, initiatives, change agents, policy and financial institutions working on applications related to productive, circular and sharing economies in the Mediterranean come together in Barcelona every year. In total, three events have been held, bringing together more than 1,000 stakeholders from 16 different countries.

Our second area of activity involves encouraging the scaling-up of activities and impact, with a focus on harvesting lessons learnt in order to replicate demonstration pilot projects, thereby contributing to activities' long-term sustainability and increasing visibility with regard to the impacts effected during the programme. To that end, the Networking Facility has promoted the production of regional and national scaling-up roadmaps that aim to replicate and continue the green innovations and demo activities beyond the lifetime of the programme. The Networking Facility has designed a general theoretical framework for scaling-up analysis based on the identification of a specific strategy tailored to the SwitchMed programme. In order to gain traction with regard to

sustainable consumption and production and generate greater impact, the scaling-up of the SwitchMed programme has been defined as "expanding, adapting and sustaining demonstration actions in more locations and over time to reach beyond the original target groups, with the ultimate vision of sustainable consumption and production being mainstreamed into everyday economic life across Southern Mediterranean countries". For instance, the compelling outcomes and impact achieved by the SwitchMed Green Entrepreneurship programme indicate the growing demand for business support in Southern Mediterranean countries for the creation of circular economy business models, and clearly demonstrate the potential benefits of these business models. As the full potential equates to the creation of millions of jobs, effective strategies should be explored for scaling up the impact achieved.

The third line of action includes reinforcing the internationalisation of green start-ups and SMEs through closer cooperation between businesses and investment networks in Europe and Southern Mediterranean countries. As such, the Networking Facility has mapped the range of financial instruments available in four selected countries (Egypt, Lebanon, Tunisia and Morocco), as well as in Europe, and has organised seminars with national and international investors to discuss the barriers that restrict access to markets and sources of finance.

Despite the results for the relevant countries being collected at national level, it is important to process the results achieved across beneficiary countries and to provide a regional perspective; thus we collect data and facilitate information exchange across all SwitchMed activities, primarily at regional and thematic levels, communicating these to external stakeholders in line with the programme identity, as has been done since the start. Indeed, well-proven methodologies, tools and initiatives that avoid unnecessary efforts are used or carried out on a regular basis.

Meet our strategic partners

We work in strategic partnership with international and national organisations that are very experienced and active in addressing the shift to sustainable consumption and production in the Mediterranean region. Our strategic partners are like-minded organisations to facilitate the exchange of ideas, build bridges and synergies and foster cooperation among diverse organisations in different countries with shared goals.

Our strategic partners represent a diverse range of organisations whom we trust to help us execute our mission. Their expertise enables us to do far more than we could alone, and their passion and talent inspire us.

Our strategic partners have long-term commitment in the Mediterranean region have deep technical expertise on sustainable consumption and production work on a broad range of topics such as eco and social innovation, collaborative economy, life cycle assessment, green entrepreneurship business models...involve the Mediterranean countries in project design and implementation share the same values and vision for the region with us.

Our current strategic partners are:





Credits

Concept

SwitchMed

The SwitchMed Programme is implemented by the United Nations Industrial Development Organisation (UNIDO), UN Environment Mediterranean Action Plan (UN Environment/MAP), Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC) and UN Environment's Economy Division.

This publication has been produced with the assistance of the European Union.

The content of this publication is the sole responsibility of SwitchMed and can in no way be taken to reflect the views of the European Union.

Supervision and coordination:

Roser Gasol (SCP/RAC)

Authors:

Alessandro Miraglia (SCP/RAC), Ananda Alonso (SCP/RAC), Chang Yan (UN Environment), Claudia Pani (SCP/RAC), Fabiola Martínez (SCP/RAC), Michael Barla (UNIDO) and Roser Gasol (SCP/RAC)

Design: Florencia Cufre Meyer

Translation & Editing: T&S

Contacts:

For more information on the SwitchMed policy-makers Programme please get in touch with us:

- Magali Outters: moutters@scprac.org
- Luc Reuter: luc.Reuter@unep.org

For more information on the SwitchMed MED TEST II Programme please get in touch with us:

- Roberta de Palma
r.de-palma@unido.org
- Carolina Gonzalez-Mueller
c.gonzalez-mueller@unido.org

For more information on the SwitchMed Green Entrepreneurship and Civil Society Empowerment Programme please get in touch with us:

- Giorgio Mosangini
gmosangini@scprac.org

For more information on the SwitchMed Networking Facility please get in touch with us:

- Burcu Tunçer
btuncer@scprac.org

Join us now at

switchmed.eu/en/community/jointhe-action-network

For further information visit us:

- www.switchmed.eu
- www.theswitchersfund.eu
- www.theswitchers.eu
- www.switchmedconnect.com

Follow us on our social media channels at:

- Twitter: [@SwitchMed](https://twitter.com/SwitchMed)
- Facebook: [Switchmed.eu](https://www.facebook.com/Switchmed.eu)



SwitchMed programme is funded by the European Union



United Nations Environment Programme



Mediterranean Action Plan Barcelona Convention



Regional Activity Centre for Sustainable Consumption and Production

The SwitchMed Networking Facility, is hosted by the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC).

Sant Pau Art Nouveau Site – Nostra Senyora de la Mercè Pavillion. Sant Antoni Maria Claret, 167. 08025 Barcelona (Catalonia) Spain.

Find us at:

- www.switchmed.eu

For further information:

- The Switchers: www.theswitchers.eu
- SwitchMed Connect: www.switchmedconnect.com
- Switchers Fund: www.theswitchersfund.eu

Our social media channels:

- [Facebook](#)
- [YouTube](#)
- [LinkedIn](#)
- [Twitter](#)
- [Flickr](#)