

Winter 2018

# SwitchMed Magazine

# Egypt

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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 socioeconomic development.

United Nations Environment Programme Mediterranean Action Plan (UN Environment/MAP) is a Regional Seas Programme under UNEPs 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.

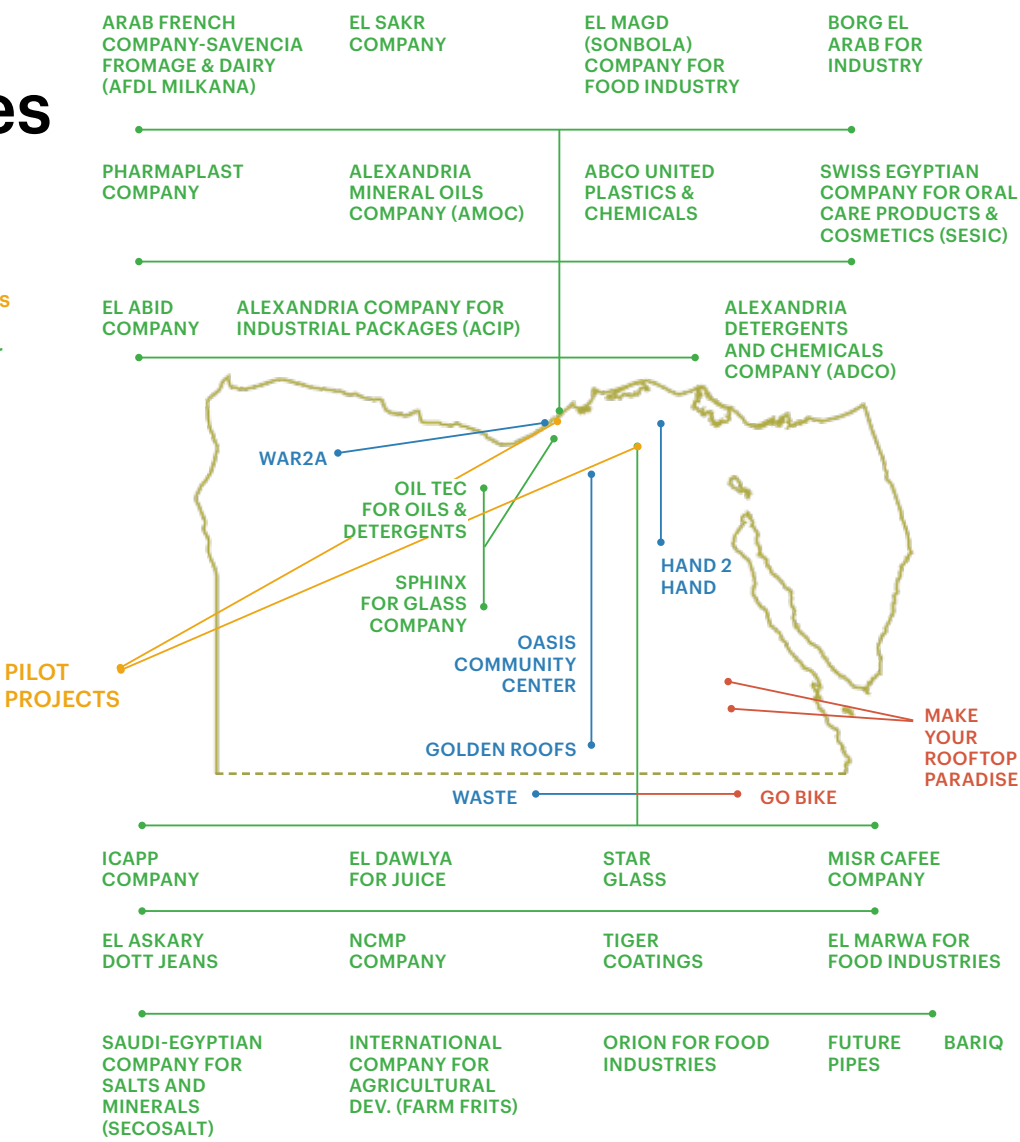
# Egypt’s facts and numbers

- Population**
  - Capital and largest city: Cairo.
  - Population: 94,798,827.
  - Area: 1,001,449 k².
  - Major Mountain Ranges: Eastern Highlands.
  - Major River: Nile.
  - Life expectancy at birth: 83.58 years.
  - Population growth: 1.9297 % in 2017.
  - Official languages: Egyptian Arabic.
  - Major Religions: Muslim and Christian.
- Geography & Economy**
  - Terrestrial and marine protected areas: 9.58%.
  - Urban population growth: 2.1793 % in 2017.
  - CO<sub>2</sub> emissions: 219,377.4 kt In 2016.
  - Land boundaries: Israel, Libya, Sudan, and the Gaza Strip.
  - Coastline along the Mediterranean Sea, the Gulf of Suez, the Gulf of Aqaba, and the Red Sea.
  - Most populous country in the Arabic speaking world.
- Tourism growth: 793,000 visitors in December 2017.
  - Currency: Egyptian Pound.
  - GDP (PPP): \$1.1 trillion, 4.2% growth, 3.4% 5-year compound annual growth, \$12,554 per capita.

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

# SwitchMed beneficiaries in Egypt

- **2** Pilot projects from policy-makers
- **28** Industries from the food sector joined MED TEST II
- **5** Incubated green entrepreneurs
- **2** Civil Society Organisations



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



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

Photo credit: @Mohamed kamal



# 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 19<sup>th</sup> 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 Egypt

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 Environment (MoE)

It is responsible of formulating environmental policies, preparing the necessary plans for environmental protection and environmental development projects, following up their implementation, and undertaking pilot projects. It is the national authority in charge of promoting environmental relations between Egypt and other states, as well as regional and international organisations.



## Ministry of Industry, Trade and Small and Medium Enterprises

### Ministry of Trade and Industry (MoTI)

It plays a key role in economic development through promoting exports in different sectors, creating real export opportunities for exporters in foreign markets and raising local production in order to meet global competition.

# Integrating sustainability in Egypt’s key economic sectors

**Background**

The Sustainable Consumption and Production Action Plan for Egypt (SCP-NAP) process in Egypt is based on the 2013 “Green Economy Scoping Study” that assessed the potential for Egypt’s transition to a green economy and sustainable development. Building on the diagnosis of the Egypt Green Economy Scoping study, the SCP-NAP for Egypt is considered a significant milestone contributing to a continuum of knowledge accumulation for nationally integrating sustainability in Egypt’s key economic sectors. The national action plan addresses four priority sectors including: Energy, Agriculture, Water, and Municipal Solid Waste.

The action plan is the outcome of a participatory consultation process following a multi-stakeholder approach (including government, academia, private sector, civil society and international organisations) to ensure its realistic reflection of Egypt’s actual socio-economic and environmental needs and aspirations. At the European Commission’s funding, the Ministry of Environment led the SCP consultation process supported by UN Environment and CEDARE who facilitated and supported the development process of the action plan. The action plan was designed, structured and drafted in complete synchronization with the Egyptian Ministry of Environment and focal points, to facilitate its validation and endorsement and to ensure the ease of its implementation by respective line-ministries.

**Sectoral focuses**

For the energy sector, the key strategic goal is to ensure sector sustainability by promoting both Energy Efficiency “EE” and the use of Renewable Energy “RE”. It is predicted that by 2035, a considerable level of energy efficiency can be reached with total potential savings from final energy consumption of about 18% including the following sectors; 23% transport, 18% industry and 16% buildings (residential, commercial and public). In addition, the Combined Renewable Energy Master Plan “CREMP” finalized in 2015 predicted RE contribution by 2025/2026 to reach 18% of the total produced electricity, while in 2029/2030 it will reach 22% including 14% wind, 4% PV, 1% CSP and 3% Hydro. In order to achieve this key strategic orientation in the energy sector, the strategy is based on the following main objectives:

- Ensuring security of supply, through diversified energy sources;
- Ensuring both the technical and financial sustainability of the sector;
- Modernizing the system, improving its governance and promoting private sector investment.

The key strategic goal of agriculture sector is to promote sustainable rural agricultural communities as part of the 1 million-feddan project to drive economic activities and provide jobs and other services for different segments of the population. To achieve this key strategic orientation in the agriculture sector, the strategy aims to:

- Introduce solar powered water pumps to replace traditional water pumps, and the use of solar energy to power water desalination stations for agricultural cultivating purposes;
- Utilization of agricultural waste to produce energy and biofuel;
- Use of new modern grain storage mills to cut on wastage and promote more sustainable storage practices.

The key strategic goal for the water sector is based on the 2030 national wastewater strategy developed by CEDARE Water Department to extend wastewater treatment for agricultural purposes. The strategy aims at promoting the efficient and sustainable use of water from all sources, underground, Nile water, rainwater, and treated wastewater. The use of desalinated seawater is also being seriously considered as well as changing the legal codes for desalination and wastewater reuse for agricultural purposes.

In the municipal solid waste sector, the key strategic goal is to develop an integrated solid waste management system in Egypt. In order to achieve this key strategic objective, the actions undertaken are promoting good governance, R&D and innovation; supporting public awareness and community engagement; restructuring certain public institutions and changing legislations, providing access to finance, and encouraging investments; and expanding the recycling sector by endorsing the concept of polluter pays principle, and adopting a process that promotes the reduction, reuse, recycling, and recovery of waste.

**Priority Actions**

Special emphasis is on the following Priority Actions to be undertaken by the government to facilitate SCP across sectors:

- Create a coordinating mechanism to be attached to the Prime Minister’s Office to ensure proper coordination between different sectoral ministries, monitor implementation of strategies and action plans, evaluate outcomes, and introduce corrective actions as appropriate.
- Undertake a review of existing laws and regulations, as well as market incentives and assess their impact on SCP and reformulate and or introduce a package of regulatory reforms supported by incentive measures that promote SCP across sectors.
- Initiate a national process for integrating SCP considerations in sectoral strategies, action plans and programs.
- Institute in law the requirement for government bodies to purchase equipment, supplies and services that are produced in an environmentally sustainable manner.
- Launch a public awareness campaign using conventional means, including television, radio and newspapers as well as non conventional means such as mobile phones, through mosques and churches, identifying public figures as goodwill ambassadors for SCP to communicate the importance and benefits of adopting an SCP approach for different target groups and from the perspective of each sector.
- Develop a long-term research and development (R&D) agenda to support a transition to a green economy and SCP across sectors.
- Develop a capacity development program to include training courses and on-the-job training to promote SCP in the different sectors.
- Ensure the integration of SCP and green economy concept in the education curricula of the different disciplines, and consider awarding academic degrees in this field.
- Provide a package of incentive measures that promote the engagement of the private sector in investing in projects that support SCP, including through PPP.
- Design trade policies that encourage the import and export of environment-friendly technologies and equipment.
- Direct financial institutions to fund projects and investments, particularly by SMEs in the field of SCP and green economy.



Credit: @Flying Carpet

**Demonstration projects**

These strategic directions are directly translated into 28 projects presented by 13 different entities. The projects have been identified through an open and transparent process, including specialized experts, government representatives and a wide range of stakeholders who actively participated in working groups meetings addressing the 4 priority sectors: Water, Agriculture, Energy, and Municipal Solid Waste. These projects are grouped under 6 SCP components of Policy Instruments for SCP; Integrated Community Development; Sustainable Agriculture; SCP Integrated Sustainable Water Management; Sustainable and Renewable Energy Applications; and integrated Solid Waste Management. The 28 projects were supported by the following 13 entities:

- Ministry of Environment - Egyptian Environmental Affairs Agency (EEAA); Ministry of Industry, Trade & SMEs - Egypt National Cleaner Production Centre (ENCPC);
- Housing and Building National Research Centre; Agriculture Economic Research Institute (AERI) and the Egypt National Solid Waste Management Program –GIZ;
- ENCPC and Olive Oil Council;
- Ministry of Agriculture and Land Reclamation; Ministry of Water Resources and Irrigation – Holding Company of Water and Wastewater (HCWW) – Ministry of agriculture and Land Reclamation;
- Soils, Water and Environment Research Institute (SWERI) Agricultural Research Centre & Climate Change Information Centre;
- AERI – Agriculture Economic Research Institute; Egypt National Solid Waste Management Program -GIZ;
- Centre for Environment and Development in Arab Region and Europe (CEDARE); Ministry of Energy and Electricity (MoEE)/New and Renewable Energy Agency (NREA), Ministry of Local Development; and
- Arab Water Council; and the Ministry of Water Resources and Irrigation.



# Circular economy measures adopted in 2 pilot projects

By the end of 2018, 2 demonstration projects will be implemented on the ground. The national pilot project selection was based on the priorities expressed in their SCP National Action Plan that has been developed under the SwitchMed policy component.

## Reducing plastic bag consumption

This pilot project aimed to raise awareness of the environmental harm caused by plastic bags, and ultimately change behaviour through lobbying for a levy on single-use plastic bags charged by retailers at the point of sale. The pilot activities included the organisation of consultation sessions to identify stakeholders and the production of a baseline study to identify alternative bags, which was successfully concluded in collaboration with the Plastic Technology Centre of the Ministry of Trade and Industry. An awareness-raising campaign was prepared for dissemination through different media channels and launched on the World Environmental Day on 5 June 2017. Alternative bags were distributed to 72 branches of seven hypermarkets within Cairo, and biodegradable bags were distributed through a private-public partnership between the Ministry of Environment and seven supermarket chains in Cairo and Alexandria. The initiative was highlighted in a number of international conferences, such as the 5<sup>th</sup> SCP Roundtable for the Arab World in December 2017 and the League of Arab States / ESCWA HLPF preparation forum in April 2018.

## Sustainable public procurement assessment

The aim of this pilot project was to implement a demonstration of sustainable public procurement by assessing the existing institutional system for purchasing within the governmental body. The pilot activities included establishing policies for mainstream sustainable public procurement and guidelines for practitioners. The recommendations that set clear roles and mandates were also developed. In September 2017 the Second Sustainable Public Procurement Roundtable and a training session on SPP with the participation of more than 100 government officials were organised.





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

Photo credit: @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 m<sup>3</sup> of water, 707 GWh of energy, reducing the solid waste generation with 19,602 tons and CO<sub>2</sub> 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 Trade and Industry (MoTI), and the Ministry of Environment (MoE), the MED TEST II Project in Egypt has been led by the Egypt National Cleaner Production Center (ENCPC) affiliated to the Ministry of Trade and Industry- Innovation and Technology Centres, in close collaboration with the Egyptian Federation Industry (EFI) (Chambers of Chemical and Food Industries), Food Export Council and Chemical & Fertilizers Export Council. The main implementing partners assisting ENCPC were EnviGlobe and EWATEC Consultants.

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 three important industry sectors of Egypt, and to establish reference cases for national service providers willing to offer the TEST concept to interested industries through Egypt. Together with the Egyptian partners, UNIDO demonstrated through capacity building activities and industry demonstrations more sustainable manufacturing techniques and new green business models within 28 companies from the chemical, food, and textile sectors thus stimulating the national capacities in transforming Egypt's industry in becoming more resource efficient.



## Egypt National Cleaner Production Center (ENCPC)

It was established as a service provider for the Egyptian Industry in 2005 by the Ministry of Trade and Industry (MoTI) in close cooperation with the United Nations Industrial Development Organisation (UNIDO) as a part UNIDO/UNEP global network of NCPCs/NCPPs and part of the Egyptian Industrial Council for Technology and Innovation. The ENCPC act for the Egyptian industry as a knowledge centre and works to enhance productivity and competitiveness through promoting the transfer of clean and innovative technologies, and resource efficiency & cleaner production methods, tools and practices. During the MED TEST II project, the ENCPC coordinated the project in Egypt and offered technical assistance to 5 industries in implementing the TEST methodology.



## EnviGlobe

It was established in 2010 and is a recognized service provider offering regional consultancies in the areas of cleaner production, renewable energy, environmental engineering, and environmental and social performance. During the MED TEST II project, EnviGlobe offered technical assistance to 8 industries in implementing the TEST methodology.



## EWATEC Consultants

Founded in 1992, it provides consulting services in environmental engineering and environmental management and in related disciplines to a wide range of clients. Employing a number of professional engineers and scientists, EWATEC has over the year's accumulated extensive experience in all aspects of environmental engineering and possess expertise in cleaner production assessments, waste management, waste recycling, wastewater treatment and environmental risk assessment. During the MED TEST II project, EWATEC offered technical assistance to 15 industries in implementing the TEST methodology.

# Resource efficiency a major opportunity for Egypt’s economy

A growing population, combined with rising costs for resources, have put Egypt in front of a challenging situation where a continuing economic growth and the creation of jobs are direly needed, while at the same time any additional pressure on the already scarce resource supply must also meet the growing demand and manage a fair distribution of these resources to a growing population. This situation makes the need for a model of economic growth that can deliver both a widespread prosperity and assure a proper management of resources even more fundamental, not only to ensure the natural capital of Egypt but also to boost the productivity of the industry.

In the past, the industrial sector of Egypt enjoyed highly subsidized prices of energy and water, which created a distortion of market prices for various products. This situation did not serve a maintainable economy, and exerted additional burden on the government providing the subsidy. For the past five years, the government has started to introduce corrective measures to reduce their subsidies on energy, and with devaluation of the Egyptian Pound prices for resources such as imported raw materials and energy have increased rapidly. These actions have put companies in front of trials to reduce existing costs, while at the same time maintaining a production at a price competitive level. With 33% of Egypt's GDP, industries, and especially SMEs, continue to play a key role in the contribution to the national GDP, not only as a resource consumer, but also as a supplier to other economic sectors and as a driver of economic growth and job creation. But the way industries deal with waste, energy, and water needs to change fundamentally, especially if Egyptian businesses are going to be able to compete on the growingly important global export market. Therefore, industries require tools and investments that would make the production more resource and energy efficient, non-polluting, and safe – maintaining the competitiveness of the businesses.

The MED TEST II Program, implemented in Egypt from 2015 to 2018, addressed the challenges and the barriers national industries are facing in becoming more resource and energy efficient, non-polluting and safe. It assisted industries in producing goods that are responsibly managed throughout their life cycle, while also increasing productivity and maintaining access to international markets with good quality products that comply with international standards. 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 current business operations.

In 2009 UNIDO introduced the TEST concept in Egypt as part of the MED TEST initiative, which was co-funded by the GEF and the Italian government. Building on this experience, 28 companies from the food, beverage, chemical and textile sectors were engaged for the RECP demonstration phase of MED TEST II. The companies that took part in the project ranged from SME's with 15 full-time employees to large

companies with 1,200 employees, and are located in Alexandria, Cairo, and Sadat City. The selected sectors for the MED TEST II project in Egypt were of particular interest because of the high “replicability” potential that the results can have to other production sites. Also, supporting these particular sectors would allow a demonstration on the business case of RECP in some of the most recognized industries in Egypt. The project enabled the 28 industries to identify 192 RECP measures with the potential to annually save 411 GWh of energy; 2 million m³ of water, and 5,111 tons of raw materials. The identified RECP measures require an investment of 36.5 million euros and would enable the 28 businesses to save 10.6 million euros in annual production costs. Approximately 77% of the identified measures were approved by management in the demonstration companies and included in the action plan for implementation in 2018.

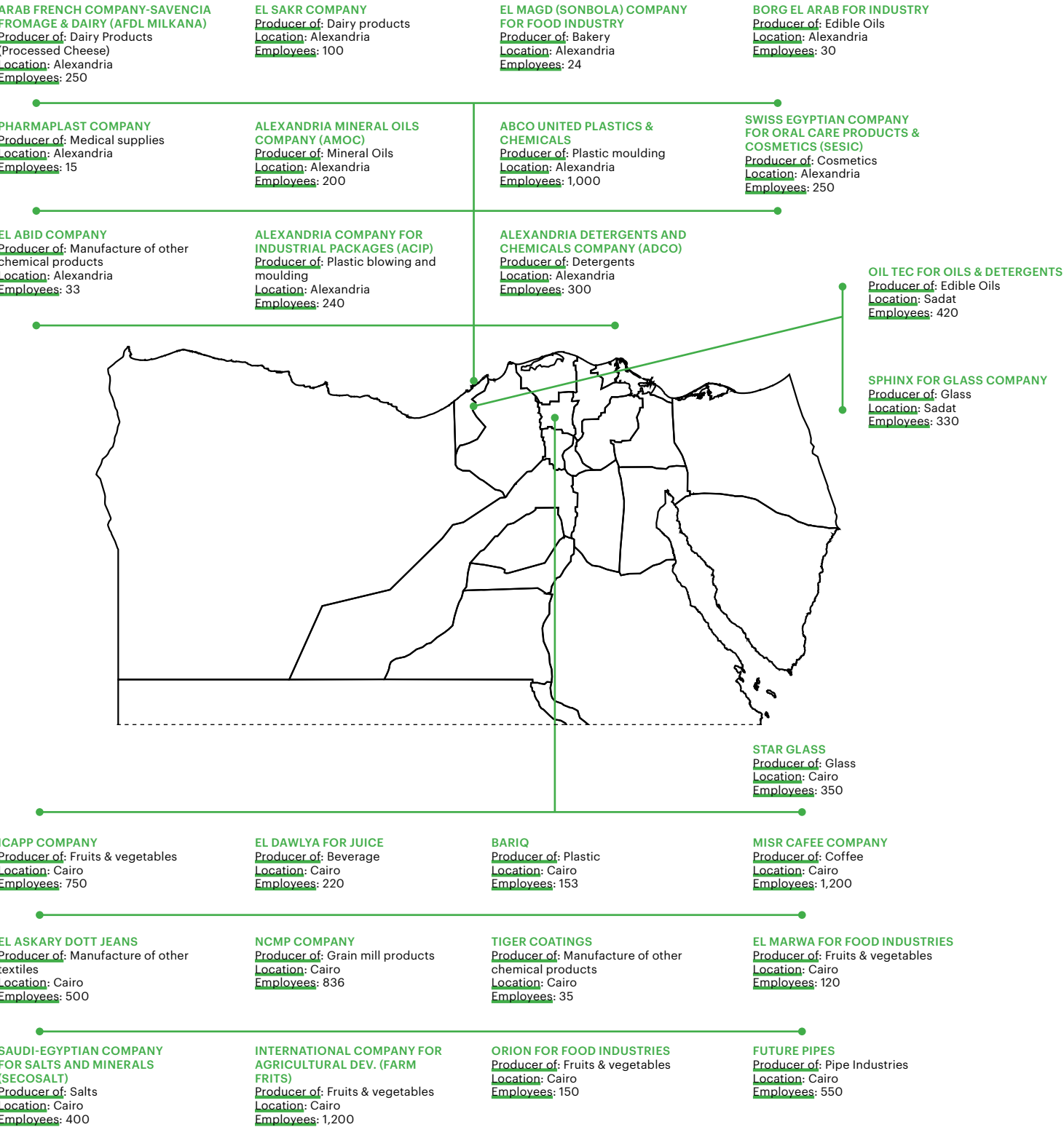
Responding to the sometimes high investments that new resource efficient technologies require, companies in the MED TEST II project were given guidance by UNIDO on how to access existing green financial incentives that have been developed by the Green Economy Financing Facility (GEFF) of EBRD and with the Egyptian Pollution Abatement Programme (EPAP III). So far, four companies have accessed the existing green financial incentives, accelerating the implementation of more than 19 million euro of RECP investments, almost half of the total private sector leverage of the MED TEST II project in Egypt. In this regard, one company was enabled to finance a zero liquid discharge RECP investment amounting over 17 million euros through the EPAP III Programme. Four additional companies are preparing to apply for GEFF financing for investments exceeding 7.5 million euros, and two companies are preparing to apply for the EPAP III for investments amounting to 450,000 euros.

The demonstration of RECP in the Egyptian industry also gave 180 industry professionals from the participating companies the opportunity to join in RECP training, forming TEST teams, and to undertake resource efficiency improvements within their own workplace. Moreover, additional expertise from industry associations, financial institutions, government administrations and academia, received training on the TEST methodology. For instance, 10 local service providers from the consulting sector joined the TEST programme and received on the job training. There is a growing market potential for sustainable production services in Egypt that now can be met by a qualified offer of RECP services thanks to the contribution of the UNIDO MED TEST II initiative.

To download the individual case studies from the MED TEST II project in Egypt, follow the [link here](#).

# Partners for a green growth

In Egypt 28 industries from the chemical, food, and textile sectors joined the MED TEST II project:





# Case studies from Egypt

Alexandria Mineral Oils Company (AMOC) is a medium size petrochemical company producing lube complex oils. Having a long term vision to operate their business, the company was interested in economizing their resources in order to achieve sustainability. As a large consumer of water, the company was in particular interested in this area, also due to concerns about future availability of water as a resource and to continue operating their business. The MED TEST II project identified improvement measures that would annually save 802,254 m³ of water and implemented a Zero Liquid Discharge Project recycling 622,080 m³ of water per year. Despite the long return on investment these projects would entail, the company believes that this will have great benefit in light of future increase of water tariffs and an anticipated water crisis.

Alexandria Company for Industrial Packages (ACIP) is an Egyptian company operating in the plastic packing sector and produces PET preforms and plastic bottles for the detergent industry. Through the MED TEST II project the company discovered an eco-design solution by replacing imported virgin PET resins with recycled (RPET) resins from the local market. This impacted significantly on the carbon footprint of the company along with bringing important economic savings for the business. Establishing linkages with other companies in the MED TEST II project along their value chain to explore opportunities for raw material inputs, which relates to the circular economy concept, can effectively contribute in preserving resources to last in the local economies, while also reducing dependency from expensive imported of raw materials.

“The MED TEST II project enabled AMOC to explore opportunities to save our resources. We are planning to also apply TEST procedures in the other production complexes to evaluate its performance.”  
Eng. Amr Lotfy General Manager of Utilities, AMOC

“PET as a resin is not produced in Egypt, it is imported. When you work with a local supplier this is something very interesting to us and could help us remain cost competitive in the market.”  
Samy Awad, Chairman – ACIP

ACIP by @UNIDO



El Dawleya, a company of the Juhayna Group, is one of the largest industrial complexes in Egypt and the MENA region. Active since 2009, this flagship manufacturing facility is primarily used for the production and packaging of fresh juices and drinks, including Juhayna Classics, Pure, Bekhero, and Oriental beverages. The MED TEST II project identified measures that will optimize the water use within the production facility of El Dawleya, reducing water consumption by 25.3%. The total anticipated reduction in the water consumption amounts to around 92,928 m³/year. In addition, the project could realize 2,775 MWh/year in energy savings that together with the saved water will save the company a total of 111,000 euros per year in additional production costs. Following the improvements at El Dawleya, the Juhayna group is planning to utilize the knowledge gained by El Dawleya’s TEST team to replicate the whole approach at their other sites.

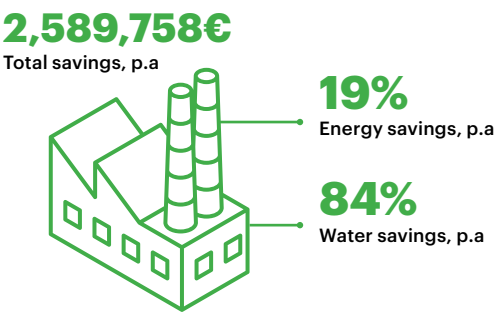


El Dawleya by @UNIDO

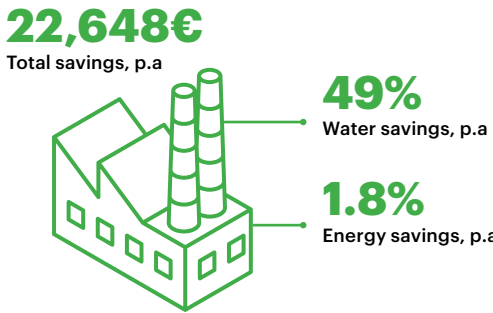
“For any business, there are always drivers for cost and the MED TEST II project drives efficiency and costs. So, it benefits us completely in all KPIs that we want to drive.”  
Martin Lomas, Manufacturing Director, Juhayna Food Industries

## Total savings by the selected companies

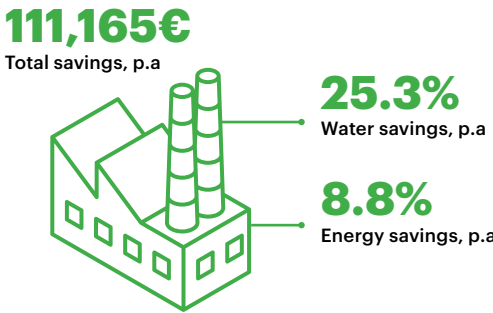
### AMOC



### ACIP



### El Dawleya



# Annual environmental impact savings identified in the 28 Egyptian food industries

180

professionals

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

2,020,608

m³ per year of annual water savings

=

19,240

Egyptian households annual water consumption

411

GWh per year of annual energy consumption savings

=

248,000

Egyptian households annual energy consumption

79,452

tonnes of annual CO<sub>2</sub> savings

=

16,869

passenger vehicles driven for one year.

28

companies

=

10.3 million

euros saved annually by a total of 255 RECP measures

# Scaling up a resource efficient and cleaner production throughout Egypt’s industry

The transition to circular economy is becoming a central issue in sustainable development strategies at international, regional and national level. To this end, the United Nations 2030 Agenda for Sustainable Development urges member countries to ensure sustainable consumption and production patterns for prompting resource and energy efficiency (SDG 12). By adhering to the goals of this agenda, Egypt is committed to include the dimension of sustainable development in all of its public policies. At the regional level, the SwitchMed program is, therefore, designed and implemented to facilitate the transition to Sustainable Consumption and Production (SCP) patterns in the Southern Mediterranean region. At the national level, Egypt’s commitment to sustainable development is realized through the Sustainable Consumption and Production Action Plan (2016) and the Green Economy Work plan and Strategy (2010) that have been developed in line with Egypt’s 2030 Sustainable Development Strategy adopted by the Cabinet.

Scaling up resource efficiency is an important step for the implementation of the goals stated in the Sustainable Development Strategy and 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, often with brief payback periods, will allow businesses to integrate RECP solutions in their current production without threatening the day-to-day business operations. However, despite the many benefits a more resource efficient production would offer and a relatively favourable institutional framework for SCP, the situation on the ground still faces challenges in the uptake and generalization of sustainable production modes in Egypt’s industry and it is often limited to the implementation of pilot projects that justifies the need for a scaling up roadmap.

Making the transition from demonstration activities to a sector wide mainstreamed adoption of RECP in Egypt’s industry, would be pivotal in helping achieving the SDGs in Egypt. In this regard, UNIDO together with the Government, the local partners from MED TEST II, 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 Egypt 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 Egypt, is to eventually create a system change around the topic of RECP for industries in Egypt that will encourage an adoption and change towards RECP. The capacitated service providers and government institutions will have a significant role in mobilizing and cooperating effectively with key stakeholders consisting of policy makers, members of the public administration, funding institutions and target group associations.

The table below lists the priority areas that were identified in the development of the roadmap for RECP in Egypt. A detailed activity plan with responsibilities is available in the final scaling-up roadmap, [which is online accessible in English and Arabic.](#)



**Financial Support**

Financial support is one of the main enablers for RECP as highlighted by the majority of stakeholders. Within the framework of MED TEST II component, UNIDO has signed a cooperation agreement with EBRD to provide financial support and a pipeline of RECP investment projects through the Green Economy Financing Facility (GEFF). ENCP also formalized a partnership with EPAP III which allows projects that achieve compliance through RECP measures to receive financial support within EPAP III. Continued efforts will be led by ENCP in Egypt to promote green financing in order to meet the private sector demand for sustainable financing.



**Awareness and Capacity Building**

Boosting the demand for RECP investments by the private sector requires extensive awareness, increasing the business case for resource efficiency, promoting the results of MED TEST II, as well as the strengthening of national service providers’ base through training on BAT, RECP and TEST approach.



**Sector Technology Adaptation**

The large number of industrial establishments and the representation of the Industry Sectors in the Federation of Egyptian industries facilitate a collective approach for the implementation of BAT and RECP measures through positive incentives, technical support and the development of guidelines with the goal to increase the number of facilities implementing BAT and RECP.



**Support Innovation Award**

The Industrial Council for Technology and Innovation is presenting two types of innovation awards: one for equipment and the other for processes. ENCP can assess and propose candidate applications in order to encourage innovation in RECP.



# 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.



### Egypt National Cleaner Production Center (ENCPC)

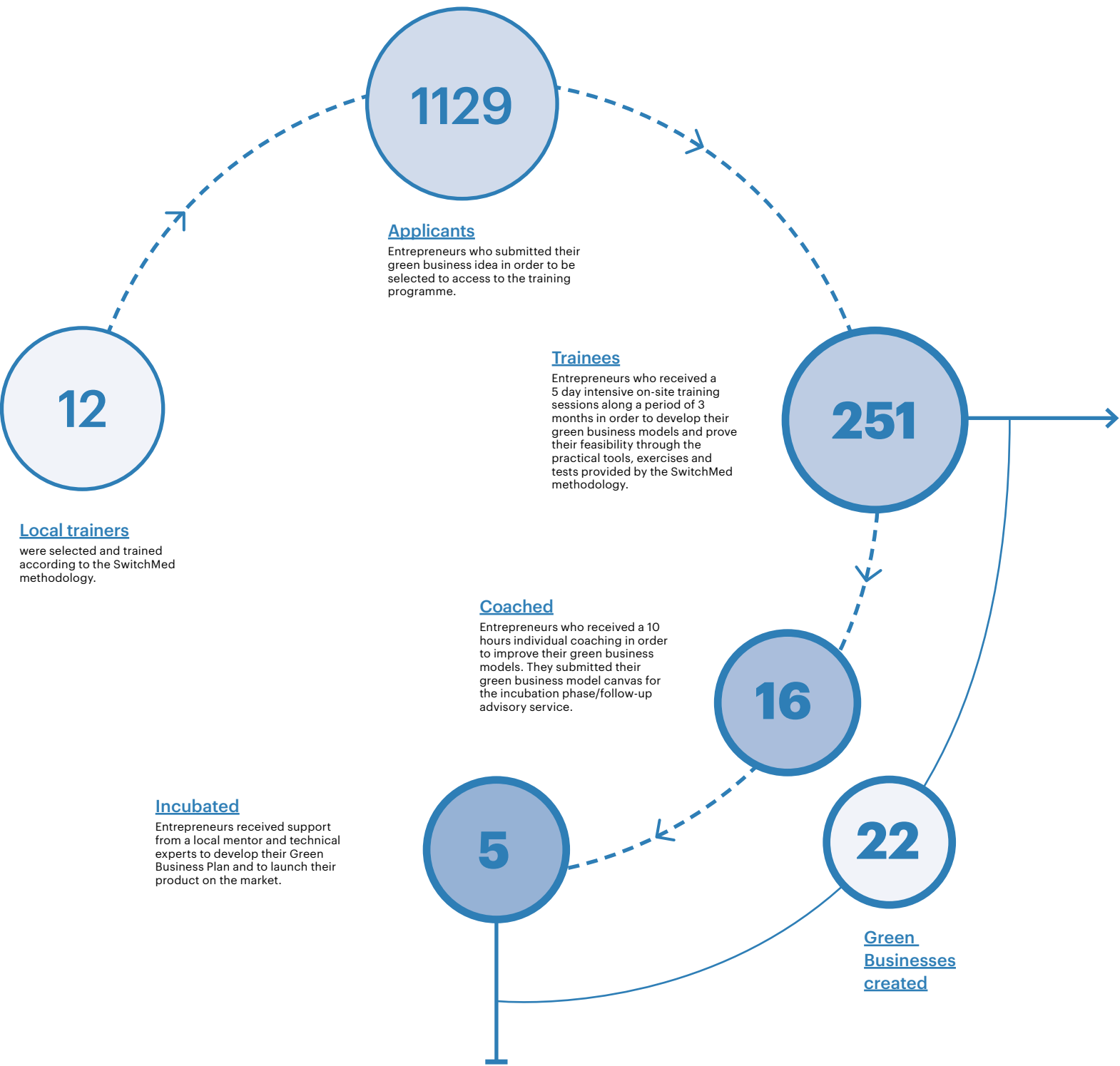
It was established as a service provider for the Egyptian Industry in 2005 by the Ministry of Trade and Industry (MoTI) in close cooperation with the United Nations Industrial Development Organisation (UNIDO) as a part UNIDO/UNEP global network of NCPCs/NCPPs and part of the Egyptian Industrial Council for Technology and Innovation.

The ENCPC act for the Egyptian industry as a knowledge centre and works to enhance productivity and competitiveness through promoting the transfer of clean and innovative technologies, and resource efficiency & cleaner production methods, tools and practices.

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.

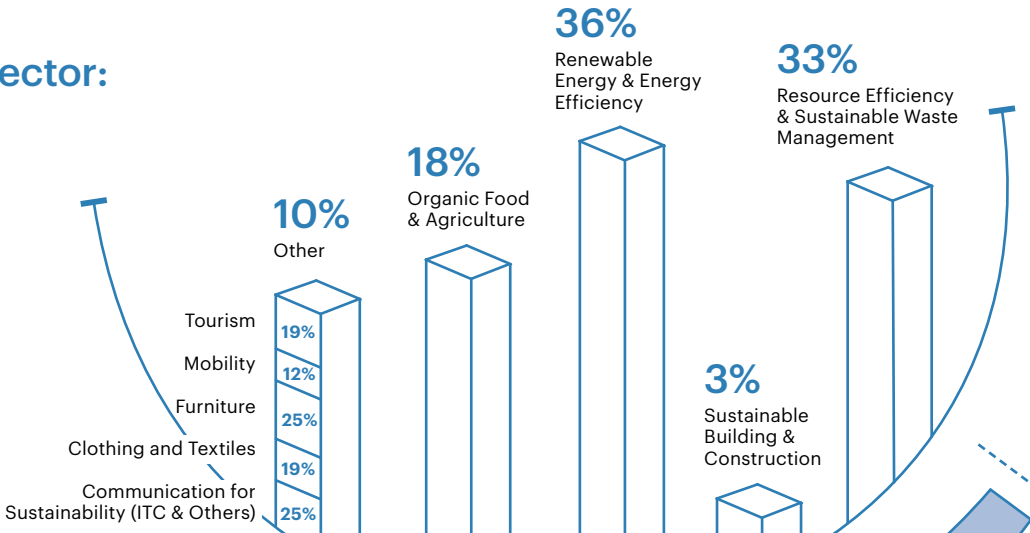
The local trainers participate in the multi-stakeholder process to select the best two initiatives arising in the workshop to receive further technical support. They also provide 50 hours of individual coaching support over 6-12 months, aimed at the development of a support plan to identify technical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

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

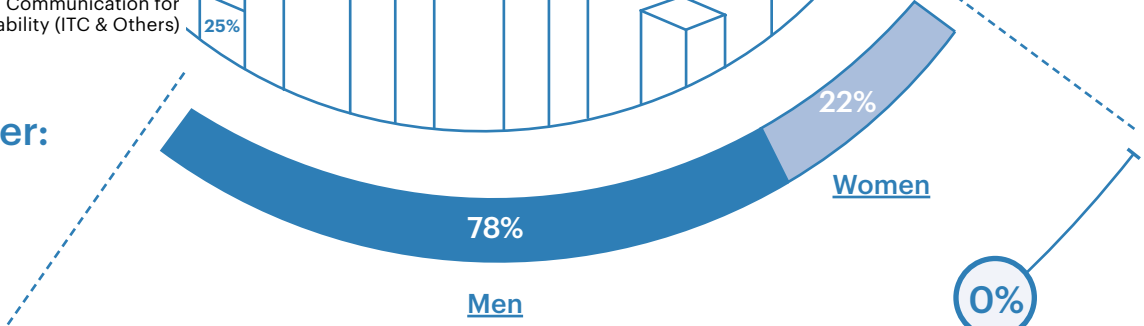


## Analysing our Egyptian 251 trainees

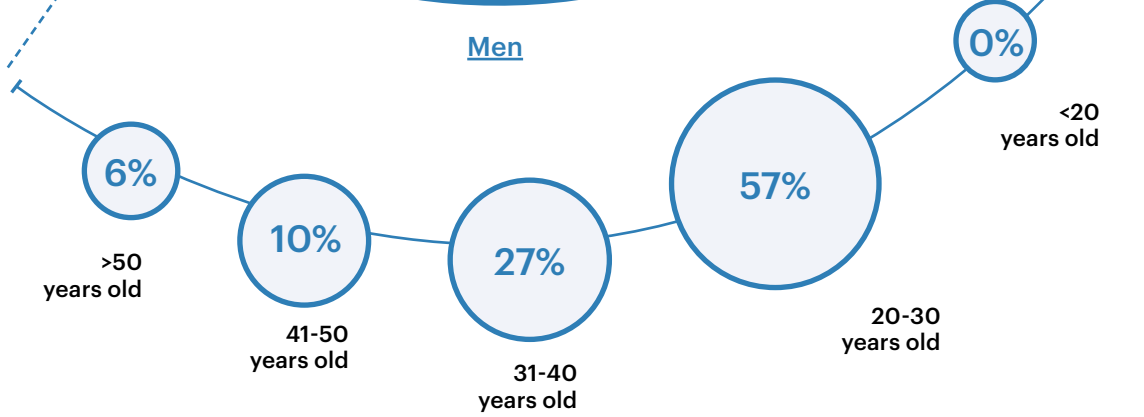
### By sector:



### By gender:



### By age:





# Meet our Egyptian incubated green entrepreneurs

## ECO food dehydrators Food security through dehydrators: an ancient food preservation technique revised

Eco Food Dehydrators is a project that aims to reduce crop waste by providing farmers with innovative solar food dehydrators for their products.

Tell us about yourself and how the idea for your business was born  
My name is Ahmed Abdallah. While studying in Cairo University's Faculty of Agriculture, I got a deep insight into the Egyptian farmers' number one problem, which is distribution. Farmers experience severe post-harvest loss and quality deterioration due to the long transportation period, which, combined with the country's high temperatures, makes delivery very costly and as a result, it is cheaper to throw away part of their crops. Besides, wasted crops have an enormous impact on the environment as their decomposition is responsible for large quantities of greenhouse gas emissions. In order to address these challenges, I wanted to find a genuine way to preserve crops and minimise their weight and volume for transportation. So, I was able to do this through food dehydration using mostly solar power.

Food dehydrators rely on a flow of hot air to greatly reduce moisture in the products, thus inhibiting microbial activities and preventing the food from spoiling. The technique derives from sun drying, which helps preserve perishable foods like meat, vegetables and fruits. But our dehydrators are based on new technologies and an eco-design approach, which allows uniform drying. Unlike existing industrial dehydrators, Eco Food Dehydrators can control the solar heat to avoid food from over drying. Users can also monitor the dehydration process, avoiding unnecessary door opening, conserving energy and reducing dehydration time.

What is the environmental and social impact of your project?  
My project aims to preserve the environment by reducing the number of wasted crops. It provides a low-energy solution to increasing the shelf life of crops, allowing them to be transported to faraway markets for as little as a twentieth of the original cost. It can also help families reduce food expenses and reliance on conventional energy sources. Additionally, we help to create income opportunities for the unemployed. I believe food dehydrators could be the answer to the food-shortage problem and a part of the solution for sustainable agriculture in Egypt.

Part of our project is to turn tomato waste into nutritional powders and sauces that are free of chemicals and artificial colours. Usually, to produce sauce, tomatoes should be peeled, which is a costly automated process that also consumes time and energy. As a result, around 25% of the fruit goes to waste and a large number of by-products are generated, such as the skin, seeds and pulp. Our appliances can effectively process virtually 100% of the tomato into a powder that can be instantly turned into sauce. Unlike other food dehydrators from China, Korea or the USA that use plastic components in their products, we are committed to using environmentally-friendly materials and reducing dimensions and weight. This way we not only save on material costs but also reduce the extraction of raw materials. For example, we designed the sides of our appliances to serve a double purpose, both integrating solar panels and electric mode. It can be disassembled and reassembled to reflect sun rays both horizontally and vertically, reducing costs by half. Tomato waste in Egypt makes up 75% of the total production, which corresponds to around 6 million tonnes per year. One tonne of tomato waste generates up to 22 m³ of methane gas as well as 89.3 kg of CO₂. Estimates show that up to 132 million m³ of greenhouse gases are released in Egypt each year due to tomato waste, and up to 536 million kg (about 267 million m³) of CO₂. Eco Food Dehydrators also help to reduce fuel consumption in transportation or shipping from farm to market by up to 90%.

How have you benefited from the SwitchMed programme?  
The SwitchMed programme has been a really unique experience and it surpassed all my expectations. It has provided me with an essential combination of professional training, technical and financial support and has motivated and inspired me to build a healthy and successful project. It supplied me with the right tools to develop a sustainable business model, which has already drawn the attention of the United Nations Development Programme (UNDP), and has won awards in Austria, Belgium and the UK.

Thanks to the support of SwitchMed we were able to set a price strategy according to each segment target. We could also calculate how many kilograms of fresh tomato and mango were needed to produce 1 kg of powdered fruit, and what was the potential reduction in transport costs for each kind of fruit once it has been dehydrated.



Photo credit: @Bernat Mestres (White Horse)



Photo credit: @Bernat Mestres (White Horse)

## Hand 2 Hand Transforming the city of Zagazig into a model of sustainability through collaboration on waste management

Hand 2 Hand is a community-oriented project which aims to transform Zagazig into a clean and secure city, with chemical-free food grown using only top-quality compost. Its other goal is to change household garbage sorting behaviour by collaborating with garbage scavengers and farmers to improve the overall waste management system, making sure that organic waste goes to the compost heap and plastic waste to the recycling plant.

Tell us about yourself and how the idea for your business was born  
My name is Ahmed Elmasry. I am from Zagazig, a city in Lower Egypt rich in history but spoiled by the abundance of uncollected garbage and gangs of youths in the streets. Both phenomena are often linked as these kids are prevented from going to school and are instead employed to sort garbage and recover recyclable materials. My goal is for Zagazig to become a clean, civilised and safe city with healthy food that is free from chemicals and fertilised by top-quality compost.



Photo credit: @Brennan Burling



Photo credit: @Pxhere

What is the environmental and social impact of your project?  
Hand 2 Hand aims to reduce carbon dioxide in the atmosphere by preventing the burning of garbage and reducing demand for chemical fertilisers. We are working on three aspects of Zagazig's waste management problem: residents, garbage scavengers and farmers. We hope to clean up garbage dumps by using awareness campaigns and teaching citizens about sorting and recycling organic household waste in order to create organic fertiliser. We also want to support scavengers and collaborate with them with the educational and social state of them, their families and children. By cleaning up garbage dumps, we decrease greenhouse gas emissions and mitigate global warming, preventing burning pollution and providing a clean and renewable source of energy (biogas) that uses food waste for energy, which cuts methane emissions. We will collect 1,200 tonnes of household waste per year, and I expect to turn five tonnes of organic waste per day before reaching 100 tonnes per day by the third year. Six hundred tonnes of organic fertiliser will be manufactured a year to help farmers produce healthy food. Our organic fertilisers will provide 30% of the water used for irrigation. At Hand 2 Hand we also have the social mission of taking care of garbage scavengers' families and educating their children in order to break the cycle of poverty that heavily constricts these families. Around 30 jobs will be created for these kids in this neighbourhood. In addition, we will teach the women about modern ways to rationalise consumption and preserve natural environmental resources.

How have you benefited from the SwitchMed programme?  
I would not have been able to create this business network without the help of SwitchMed. The incubation was one of the best experiences I have ever had and my view changed completely as a result, going from being focused on creating a lucrative business to becoming more and more environmentally and socially oriented. Thanks to their technical support, we were able to design and construct a five-tonne biogas unit, which will separate and identify the entrances and exits of raw materials and finished products, maximising space use and minimising energy consumption. We also received legal support when starting the process of registering the company. I also learned how to incorporate the goals of community responsibility into my business. During the incubation we were able to create a website and social media pages, we developed a popular campaign to clean the streets and advertise the company's activities and objectives, and we started collecting and separating garbage to feed the digester. After that we began to promote the fertiliser in the nearest areas. At the end of the incubation we were ready to think about expansion and construction of another plant to be able to reach 30,000 of Zagazig's inhabitants and start in the villages neighbouring the city.



## Oasis Community Center

### Educating Egyptian youth to build a more sustainable world

The Oasis Community Center is an educational hub for renewable energy, environment and sustainability. This project offers hands-on workshops for young students from national and international schools and universities. Dr Sally Bahgat is the brains behind this marvellous 10,000-square-metre initiative. At the age of 40, Sally decided she no longer wanted to work as a doctor. Instead, she wanted to have an impact on people’s lives in a different way by spreading the culture of eco-friendly behaviour in society.

Tell us about yourself and how the idea for your business was born  
My name is Sally Bahgat. I like to define myself a physician, a social entrepreneur and a mother of three. I’ve always been passionate about sustainability, and I raise my kids trying to show them the importance of recycling and planting trees to become better stewards of the Earth.

It all started in 2003. My husband drove me along an unpaved road in the middle of the desert, 40 km outside Cairo. Though there were only a few empty villas and no water or electricity supply, we fell in love with the place. We decided to buy a piece of land where we could have family gatherings. Our dream was to build a sustainable building in the Hassan Fathy style, and that’s what we did. We started inviting our relatives and friends and spending time planting small trees. By then, I already had a dream of teaching sustainability to youth through very simple activities, and that’s how the Oasis Community Center began. From experience with my kids’ education, I knew the environment was discussed in school, but it was always purely theoretical. Kids don’t know what recycling is, and they have never planted a tree. Sometimes they don’t even know what a goat looks like! So I did a very simple thing: I started a farm run on renewable energy, where kids do everything with their hands and in an interactive way. I built an oasis in the middle of nowhere.

What is the environmental and social impact of your project?  
Education and sustainability are the pillars of the Oasis Community Center. I’m trying to build a more sustainable world while impacting and actively involving a young generation. We are committed to educating youth by engaging them in actual life experiences and providing the appropriate scientific content. We encourage them to live in a sustainable way and teach them about recycling, upcycling and using renewable energy, among other green processes. In our workshops, kids learn how to reuse empty plastic water bottles. We teach them, for instance, that recycling one tonne of paper can save 17 trees, 7,000 gallons of water, two barrels of oil, and 4,000 kilowatts of electricity, and that the energy saved can power a home for five months. We target 135 schools and approximately 62,000 kids. Besides that, we plant trees.

Every year we receive visits from over 2,000 kids of different ages from 10 or 11 schools, and 300 to 400 students through different university initiatives. We have also transformed the centre to comply with environmentally friendly guidelines. We irrigate the trees using recycled water. We upcycle wood, plastic, tyres: everything that comes through the Oasis. We’ve reduced our general consumption, and whatever trash we generate we throw in special bins to be reused in the artistic workshops. By using solar water heaters and PV cells, we have reduced our conventional energy consumption by 30%. This year we have also launched the A Thousand and One Trees initiative, through which we’ve already planted 400 trees, and we are expecting to plant another 400 trees by mid-2019. We have also created 21 job opportunities for young people.

How have you benefited from the SwitchMed programme?  
The SwitchMed’s incubation programme helped me to give shape to my initiative and now I have a solid business plan. Though I had no business background, the Green Entrepreneurship Handbook helped me understand what I needed to do. It helped me define my clients’ needs, and diversify my activities. Our offering used to be limited to a sustainability workshop, but we have since expanded to include green camps, leadership workshops and many other activities. SwitchMed helped me to write my GBP and canvass in a comprehensive way. It also gave me with the chance to receive world-class training on GAIA’s Eco Design Education course in the Netherlands.

The programme has also opened my eyes to a crucial truth about entrepreneurship: it needs a network. I learnt to seek out new partnerships, and seek out other green initiatives to solidify our work. After the training, I was lucky to benefit from mentoring and customised technical support. Both helped me to dig deeper into my business idea, and bring it further along the path of circular economy. What I appreciate most about the programme is the absence of an age limit and the fact that it offers excellent opportunities for women in the Middle East and North Africa.



Photo credit: @Oasis Community Center



Photo credit: @Oasis Community Center

## War2a

### System to collect waste from universities and produce recycled paper

War2a is an Egyptian startup that collects and recycles waste paper material discarded after consumer use in educational institutes and universities. Its goal is to encourage paper recycling while raising awareness about waste management. With this system, War2a is also helping its customers to reduce costs in material, providing them with recycled paper at a lower price than the new one. For War2a is important to influence the students and affect their daily behaviour in a positive way, so as part of its work, War2a shares with them inspiring information about the benefits of recycling paper. They explain, for instance, that every ton of mixed paper that is not sent to landfill avoids 3.52 metric tons of CO<sub>2</sub> and saves up to 17 trees, 4.000 KWh 3.5 cubic meters of landfill space, and 26.000 litres of water. Also, the project’s model aims to be scaled up in other private and public schools creating job opportunities proportionally.



Photo credit: @Christa Dodoo on Unsplash

## VWASTE

### Adding value to Egypt's citrus waste

Valuable Waste is a start-up created by two young electrical engineers, Diaa Eldin Adham and Abdelnasser Farrag, who met at the SwitchMed Green Entrepreneurship training, and later teamed up at a waste management and sustainability camp in Cairo.

VWaste transforms orange peel waste from juicing companies into raw orange peel powder. By producing the powder, VWaste adds value to what would otherwise be garbage, creating an additional revenue stream for themselves and orange juice companies. The resulting orange peel powder can then be sold to pectin manufacturers around the world. Pectin is an ingredient in many food products like jellies, jams, and juices. It is also becoming increasingly popular in the cosmetics and pharmaceutical sectors as companies search for more natural ingredients. In that sense, VWaste is well positioned, especially as the outlook for the global pectin market predicts a 7.7% growth in demand over the next decade.



Photo credit: @Vwaste



Photo credit: @Oasis Community Center



**“After finishing SwitchMed Green Entrepreneurship Programme I was able to register my company legally.”**

Ahmed Abdallah, Eco Food Dehydrator

**“Education and sustainability are the pillars of the Oasis Community Center. Every year we receive visits from over 2,000 kids of different ages and we have transformed the centre to comply with environmentally friendly guidelines. By using solar water heaters and PV cells, we have reduced our conventional energy consumption by 30%. We have already planted 400 trees.”**

Sally Bahgat, Oasis Community Center



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

Photo credit: @Gebraa

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 Egypt, 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](http://www.theswitchers.eu)



# Meet our Switchers in Egypt

**Maten’s Farm**  
Can hungry worms make tidy profits and reduce rampant food waste in Egypt?  
Vermicomposting ensures that food scraps do not go to waste and are instead reincarnated as organic fertiliser capable of producing healthy food. To this end, the star recruit at Maten’s Farm is the African night crawler, a species of worm renowned as a highly efficient composter. The worms eat food waste, digest its nutrients and produce manure that can be used as plant fertiliser.

To date, Maten’s Farm has successfully produced trial samples of fertiliser, with a view to commencing public sales by early 2019. According to Tony, the vermicomposting industry offers lucrative business opportunities in Egypt, while also making a positive social contribution.

Vermicomposting is viewed as a growth industry outside Egypt, in light of the growing interest in the use of small-scale farming techniques and more efficient waste management processes.

**Reform Studio**  
Plastic bags impress European design experts courtesy of this Egyptian studio  
Reform Studio converts discarded plastic bags into fashion and homeware products. Mariam Hazem and Hend Riad have invented Plastex, a sturdy material made from discarded plastic bags. The company also helps mitigate a range of social problems in Egypt, from breathing new life into traditional manufacturing techniques to employing women in underprivileged communities.

Reform Studio is a for-profit lifestyle design business that employs a team of Egyptian plastic cutters and fabric weavers at its factory, commissioned with the task of transforming the humble plastic bag into the durable Plastex thread used in Reform Studio’s products. The company’s social contribution extends beyond addressing Egypt’s plastic waste dilemma. According to Hazem, Reform Studio is determined to continue reviving traditional Egyptian weaving techniques, a centuries-old handicraft threatened by economic hardship and increased automation in the manufacturing industry.

**Schaduf**  
Sustainable vegetable gardens turn Cairo’s rooftops green  
Schaduf uses hydroponic technology to create rooftop gardens and constructs living walls and small-scale farms around Cairo. Brothers Sherif and Tarek Hosny’s goal is to help poor families generate income by growing vegetables, teaching them soil-less farming techniques and the skills they need to sell their crops at market.

Schaduf uses the practice of hydroponics to grow vegetables in dry climates. They also create living walls for businesses, shops and residential buildings to improve the city’s air quality and provide natural insulation. The company has already constructed the largest continuous outdoor green wall in Egypt. Traditional agriculture is the main cause of deforestation in the world and, to the Hosny brothers, soil-less farming represents the most environmentally friendly agricultural technique available and a great alternative through which countries are able to become self-sufficient even when the cold, heat or lack of rain make traditional agriculture impossible. Part of Schaduf’s mission is also to educate Egyptians about the role they can play in tackling environmental issues through lectures and workshops that aim to make the Earth a priority.

**Wara’a**  
A partnership on a mission to promote the manufacture of environmentally sustainable paper in Egypt  
Wara’a are on a mission to promote the recycling of paper from domestic paper waste and rice straw. Heba Saeed and Ola Balbaa’s idea was sparked by their concern about the huge increase in paper consumption and the direct effect it has on trees and, consequently, the environment.

Wara’a started out by raising awareness around the issue of paper consumption and the value of reusing paper. They want to educate people on the need to separate waste at home and recycle whenever possible. Their stakeholders include students, city councils and environmental affairs agencies. They already have a plan to implement a paper recycling prototype in schools to help promote a clean environment and increase the possibility of domestically supplied paper using the most cost-effective method possible. Wara’a was part of the SwitchMed Incubation Programme, which gave them advice on defining the business scope of the project, tackling challenges related to market research and devising a financial plan, and on how to link their innovative idea to market needs.

**Vecchio**  
Egyptian vintage clothing designers join fight against unsustainable ‘fast fashion’  
Vecchio is a sustainable clothing start-up making a stand against global market trends that promote ‘fast fashion’. Seif El Attar and Nouran Sleat were inspired by the waste problem in Egypt and believe that their compatriots need to start taking these issues very seriously.

Vecchio scours thrift stores for quality second-hand garments which they can upcycle and redesign as funky new shirts, jackets and skirts. The young business has encountered challenges in relation to sourcing quality materials and marketing its products but continues to pursue its mission to change Egyptian attitudes and promote the benefits of pre-loved clothing.

Shoppers used to look for clothes that would last them for years but now, with a supply of cheap products available, they can opt for constantly rotating their wardrobes with up-to-the-minute looks. These wasteful practices have wreaked various forms of environmental havoc. Toxic clothing dyes run into clean water sources, while textile waste piles up – the debris of the latest outmoded trend. Such factors have contributed to the apparel industry becoming the world’s second largest industrial polluter.

“People have this notion that second-hand clothing is unclean”, says co-founder, Sleat, who came up with the idea for Vecchio after wondering why people buy from mass producers when they already own clothes that are in perfectly good condition.





Photo credit: @Dayra Camp



Photo credit: @Desert Lodge



Photo credit: @NHASD



Photo credit: @Gebraa

(1) **Dayra Camp**, tourism (2) **Desert Lodge**, tourism  
(3) **NHASD**, tourism (4) **Gebraa**, resource efficiency



Photo credit: @Complete Energy Solutions



Photo credit: @KarTag



Photo credit: @Schaduf

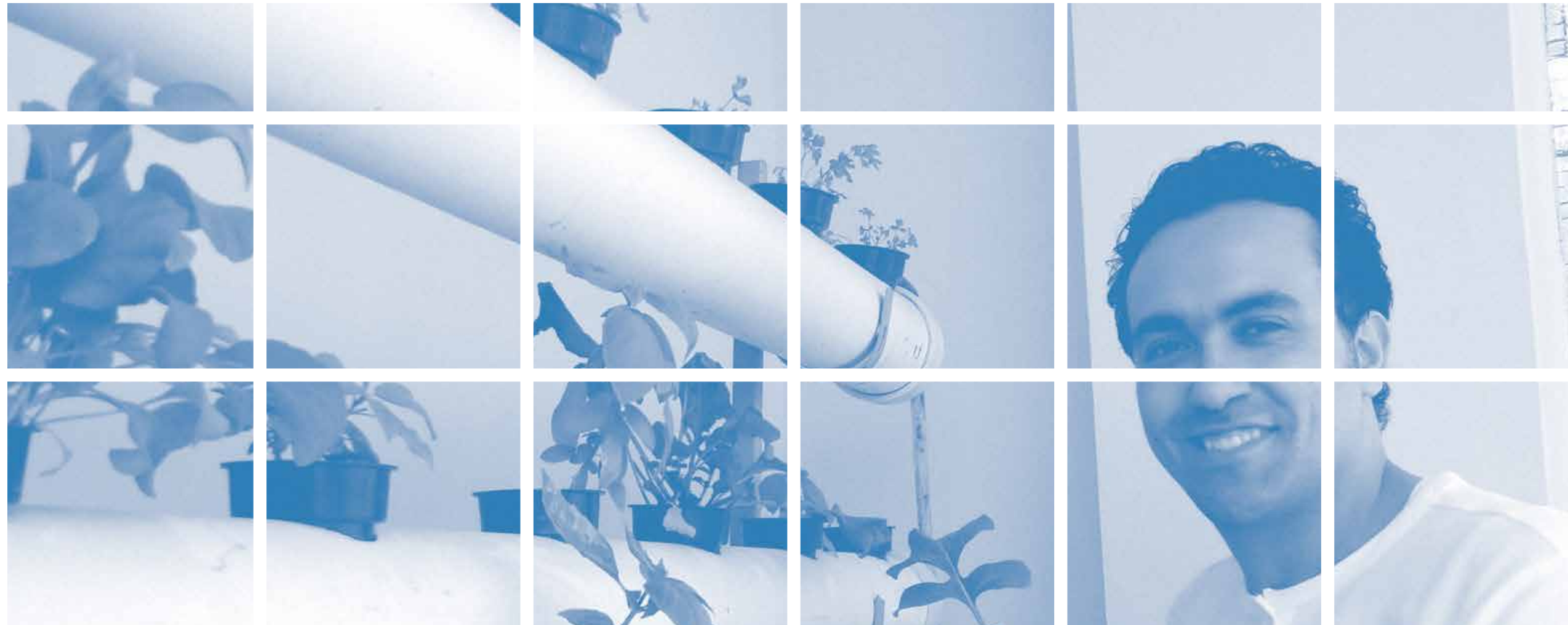


Photo credit: @Tukutuno

(5) **Complete Energy Solutions**, solar energy in MENA (6) **KarTag**, transport  
(7) **Schaduf**, housing & construction (8) **Tukutuno**, textiles & clothing



Photo credit: @EcoOcean



**The White Paper** on “Promotion of Green Entrepreneurship and Grassroots Ecological and Social Innovations in Egypt” is a publication that highlights the strengths and weaknesses of the Egyptian green entrepreneurship ecosystem, in order to reveal the areas and axes where the needs for action are greatest. It summarises the opinions of some thirty three stakeholders interviewed individually (public institutions, financial institutions, support structures, project sponsors) as well as the results of the Synergies workshop held on October 2018 in Cairo, which brought together over 100 key actors.



4

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

Photo credit: @GoBike





# 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 crowd-funding 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.



## The Centre for Environment and Development for the Arab Region and Europe (CEDARE)

It is a non-governmental organisation based in Mostaganem, and very active in the fields related to the protection of the environment as well as to sustainable development. Thanks to its wide national network, the foundation federates skills and experiences and makes them available to any person or organisation interested in the protection of the environment, in a spirit of responsible citizenship.

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.

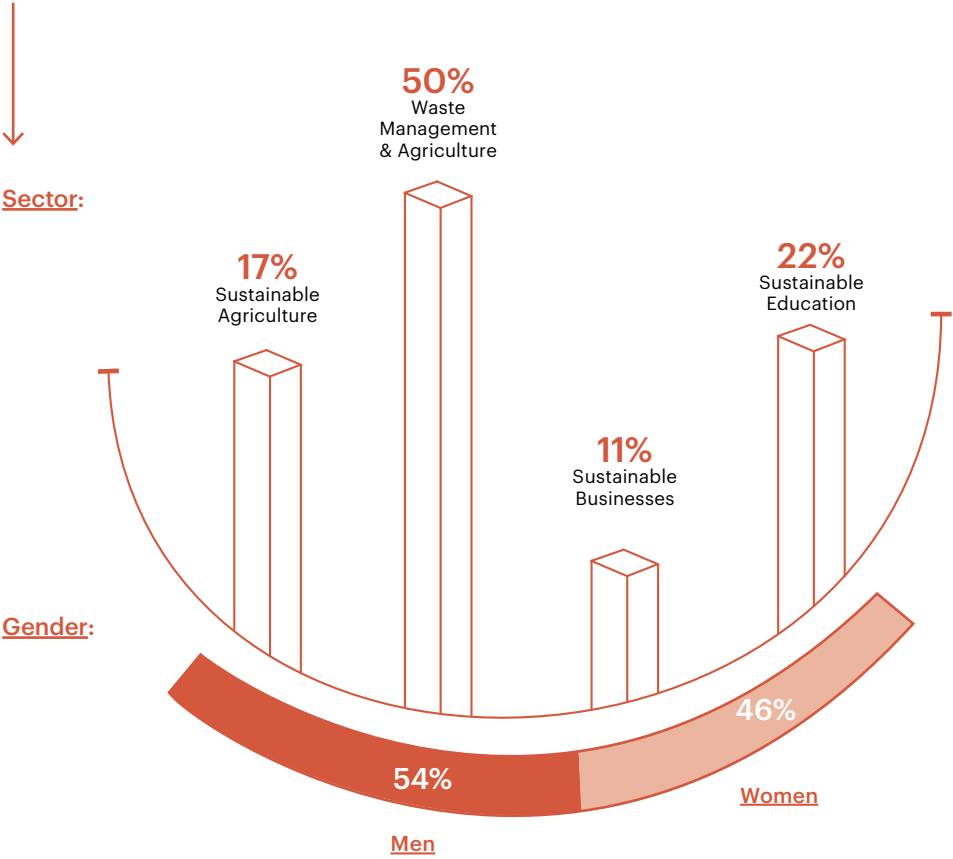
**Trainees**  
Grassroots initiatives received training at a national workshop. Some of the topics included how to develop an idea for social eco-innovation, obtaining strategy advice, finding out what the grassroots initiatives entail, how to overcome challenges, using the ideas of other participants 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) Your rooftop is your paradise**  
**Sustainable agriculture**  
The mission is to raise awareness and contribute to the development of organic agriculture in cities by using rooftops to produce healthy and organic food.  
The project aims to engage people in Qena and the neighbouring Sohag area to produce organic food themselves on their rooftops and to implement sustainable consumption and production practices.
  - (2) Go bike**  
**Sustainable transport**  
The mission is to promote cycling as an environmental and healthy mode of transport in all governorates of Egypt.  
The project aims to promote cycling by organising thematic cycling events based around visiting historical or natural areas or museums. The initiative is based in Cairo but events are also organised in many other governorates and rental bikes are supplied for a minimal price to encourage people who do not yet have their own. in Qena and the neighbouring Sohag area to produce organic food themselves on their rooftops and to implement sustainable consumption and production practices.



- The untapped potential of palm trees**  
**Sustainable waste management**  
The mission is to contribute to reducing unemployment among young people in Qena by creating job opportunities related to the exploitation of palm trees, from fruit production to waste upcycling.  
The project aims to install a facility in the village of Abulreish, which converts palm tree and date waste into diverse products and handicrafts. The facility will serve as a platform for raising awareness, training, and providing support with regard to palm waste upcycling for young people in Abulreish.
- Hand in hand for our city**  
**Sustainable waste management**  
The mission is to raise awareness and engage citizens in green initiatives related to urban public spaces.  
The project aims to engage local residents in Qena in an innovative approach to making their urban spaces greener and collaborating with local authorities. The initiative implements clean-up operations and planting activities.

- Neighbours: an innovative app for community members**  
**Sustainable businesses**  
The mission is to encourage collaboration and civic engagement within neighbourhoods and shared urban spaces by connecting neighbours and community members through an innovative virtual platform.  
The project aims to create an application to connect sustainable service providers and neighbours for more efficient collaboration and better use of shared public space.

- Sorting at source**  
**Sustainable waste management**  
The mission is to promote sorting at source at village level and increase the income potential of garbage collectors.  
The project aims to raise awareness among residents in Menya to encourage sorting at source. Another innovative approach in the villages is to further use the organic fraction of waste to produce biogas, a sustainable source of heat energy.

- Clean-up Sohag**  
**Sustainable waste management**  
The mission is to develop an extensive awareness and preventive campaign for a cleaner environment, starting in Sohag.  
The project aims to start an awareness campaign about waste management and beautification, turning the waste crisis in Egypt into an opportunity. Extensive clean-ups and community engagement have been achieved in the village of Koum El-Arab and plans are underway to extend the scope of the project further afield. The idea is to build on this achievement to tackle the severe air pollution problem being faced in Sohag.

- Assiut rooftops go green**  
**Sustainable production, organic farming**  
The mission is to provide healthy and sustainable food by developing rooftop gardening businesses and aquaponics to improve the living conditions of citizens.  
The project aims to build awareness with regard to rooftop gardening and fish cultivation to improve the lives of young people and women in Assiut. The initiative is implemented in collaboration with the local university in Assiut and the Arab Union for Sustainable Development.
- Building a more beautiful world together**  
**Waste management**  
The mission is to integrate environmental activities with art and aesthetics.  
The project aims to engage young people in neighbourhood clean-ups and beautification activities around Luxor. Artistic interventions including the painting of murals and houses creatively are also among the activities planned.

- Public bike rental**  
**Sustainable transportation**  
The mission is to promote cycling in Zamalek, an urban Nile island in Cairo, and foster a healthier and more environmentally aware lifestyle.  
The project aims to establish a bike-sharing system that will enable customers, including students, to rent public bikes from bike stations and return them to another so that they can use bikes as a daily means of transport through a monthly membership scheme. Two stations have been set up for the trial phase of the initiative.

- Waste recycling: WTDS**  
**Waste management**  
The mission is to develop the skills base of individuals and organisations in relation to waste reuse, recycling and upcycling.  
The project aims to build a community for the exchange of experiences and benefits of waste management to promote sustainability. It helps both corporations and individuals understand the importance of waste management within their environment and provides training on how to recycle, reuse or upcycle waste into creative artistic products. The innovative approach of this initiative is that creativity with regard to recycling is fostered from within the community itself not by the initiative.

- Green deals**  
**Waste management**  
The mission is to create a platform to foster collaboration for generating local solutions for waste reduction and management.  
The project aims to build a community and train its members on how to recycle, reuse or upcycle waste materials into artistic products and simultaneously reduce food waste.

- Gharbeya sorts at source**  
**Waste management**  
The mission is to address unemployment and environmental challenges at the same time by providing young people with waste management business training.  
The project aims to provide training and raise awareness about the entrepreneurial opportunities in the area of waste management

- The initiative tackles the youth unemployment problem and the wasted resources found in different types of discarded waste, such as municipal and agricultural waste and construction debris.
- From clothes to carpets**  
**Waste management**  
The mission is to create jobs by training women and young people to upcycle old clothes to make carpets and artistic handicrafts.  
The project aims to mitigate the threats posed by the unsafe disposal of waste fabric in the village of Koum Hamada in Qena. Women and young people will receive training on the production of carpets and handicrafts from scrap cloth.
- Ezbet El-Safih kids go green**  
**Environmental education**  
The mission is to provide street children with environmental, social, and aesthetic awareness to reduce social exclusion.  
The project aims to provide a space for educating and training disadvantaged children in Ezbet El-Safih, an informal settlement in Cairo. It provides interactive activities to boost their awareness of environmental, social and artistic/aesthetic values. In fact, the project assists them in exploring their hidden skills and abilities through activities centred around self-exploration and art.
- Smart contractors**  
**Waste management**  
The mission is to contribute to increasing skills in order to create jobs while solving waste management problems in the Qena region.  
The project aims to raise awareness among young people about opportunities that can be created through waste management and recycling by providing them with training. Collaborations with government training agencies are planned to ensure a ripple effect once the proof-of-concept has been established.
- Green city**  
**Diversity and inclusion business**  
The mission is to increase the number of green spaces while protecting groundwater sources in the city for the people and the environment.  
The project aims to develop an educational and awareness campaign about water use and management, as well as to protect groundwater resources. The project will also transform open dumpsites into green public spaces for the benefit of the whole community.
- Fabric waste creates jobs in Qena**  
**Waste management**  
The mission is to promote recycling, reuse and upcycling to reduce waste and improve the employability skills of local people.  
The project aims to tap into potential waste management employment opportunities by training local people in Qena to collect and recycle their scrap fabric.

# Meet our Egyptian civil society organisations supported

## Getting people to ride, have fun and promote environmental and social causes in Egypt



Photo credit: @GoBike

Egypt is home to more than 98 million people. A noisy country with dead-locked streets, traffic jams and endless honking of car horns. A Worldwide Hearing Index report showed a 64% correlation between hearing loss and noise pollution.

In recent years, initiatives to raise awareness of the importance of healthy lifestyle have been on the rise in Egypt, gaining momentum from the enthusiasm of participants. “In many countries around the world, cycling is a safe, affordable and environmentally friendly transport that people use every day. Bikes are a much-needed alternative in cities like Cairo, where cars fill the streets, and the two-hour commute reigns supreme,” says Mohammed Samy Mohamed, founder of Go Bike.

Go Bike is a community of people who cycle. Their goal is to expand bicycle culture and encourage Egyptians to leave their cars behind to reduce pollution and traffic congestion. “We’re a team of 25 volunteers who share a passion for cycling. With Go Bike we’ve made friends, seen new places in our own country, and brought hundreds of cyclists into our community,” explains Samy. Go Bike organises weekly events to visit archaeological, touristic, cultural and recreational sites. “Cycling appears to be experiencing something of a boom, leading some environmentalists to wonder whether Cairo might one day take to two wheelers in serious numbers,” says another member of the initiative. Go Bike aims to teach people how to ride bikes, too, paying special attention to encouraging women to cycle and fighting harassment in the streets.

“We started off small, organising rides around Cairo every Friday morning when the traffic is light and the city is at its most beautiful,” says Samy Mohamed. “Since we started, we’ve hosted over 300 riding events across Egypt,” he goes on, explaining that many of these rides have focused on raising awareness about important causes in Egyptian society. In partnership with local companies, NGOs and international organisations, they have organised over 40 rides, with the focus on issues like hepatitis C, diabetes and hand hygiene. “As part of our effort to preserve the environment, we’ve organised rides for climate change and biodiversity with the Ministry of Environmental Affairs, as well as rides for recycling and cleaning public spaces,” he adds.

Go Bike is poised to install 100 bicycle racks to accommodate up to 200 bicycles. Planning and installation locations have been agreed in consultation with all the local stakeholders in each area. “Recently we’ve begun implementing a biking system across Egypt, in partnership with the Danish Embassy, UN Habitat, Green Arm, Nahdet El Mahrousa and Cairo Governorate. We’ve installed bike racks in the Downtown and Heliopolis neighbourhoods of Cairo, and we’re in the early stages of conducting feasibility studies for a bike-sharing scheme and eco bike taxi solutions,” Samy Mohamed proudly explains.

Founded in 2011, Go Bike joined SwitchMed at a crucial phase. “We were facing serious challenges on how to proceed and what changes were needed to advance towards a sustainable initiative. At that time, SwitchMed boosted our motivation and self-confidence,” remembers Samy. “We have also consolidated our financial and operational plan and increased our visibility and outreach,” he adds. The Centre for Environment and Development for the Arab Region in Europe (CEDARE), together with Ahmed El Dourgamy, who was their mentor, helped the initiative to lead an event to meet eight other cycling and rooftop gardening initiatives in Egypt. “Finding out who are the main actors on the Egyptian biking scene was very useful for us. We also received valuable feedback and

recommendations from the participants,” explained Samy. “We have certainly benefited from that by networking and collaborating with national and international bodies, such as the Egyptian Ministry of Environment and the delegation of the European Union in Egypt,” he added. In fact, Samy is now also managing Sekketak Khadra (“Your Path is Green”), an initiative launched by Nahdet al-Mahrousa, an NGO working to promote social and development enterprises, in partnership with the Embassy of Denmark in Egypt, the Cairo Governorate administration, the UN Human Settlement Program (UN-Habitat), and Heliopolis Heritage.

The mentoring stage revealed a serious need to improve their communication, especially on social media. “Thanks to SwitchMed’s support, we developed a social media strategy to increase our visibility,” explains Samy. This was done with the collaboration and expertise of The Creative Zone, a marketing agency that uses ground-breaking technologies and follows the latest trends to put businesses in the spotlight. “Being on social media also allowed us to offer a new service to citizens: we use all their questions to develop thematic handbooks, such as how to maintain and clean your bike in ten easy steps,” says Samy, who goes on to explain that they want to professionalise their communication even more by setting up an online consultation service through their newly launched website: “We are very happy to launch our new website and we hope to reach a wider audience in other parts of Egypt.” A professional writer, Katie Patterson, was contracted to adapt the Go Bike website content to internet language and create new content where necessary. As part of the incubation, a promotional video showing Go Bike’s activities and goals, and raising awareness of cycling as an alternative means of transport was also developed. An expert on internal control management, Therese Anwar, was hired to design a management tool to systematise Go Bike procedures and finances, helping them to organise their agenda of activities such as events, training and awareness-raising campaigns. “This will become a key tool for streamlining the operational processes of the initiative and its activities,” explained Anwar.

Go Bike has already increased participation in its public cycling events from 20 people to around 250 each week, many of them women. “This is excellent news; the increasing participation of women in these events means that women are gaining access to public space usually occupied only by men,” says Samy. He firmly believes that women are being empowered through the expansion of bike culture in Egyptian society: “This is why we organise cycling lessons aimed at bringing new cyclists to the streets of Egypt, but clearly targeting women, because for cultural reasons we have traditionally been excluded from this practice,” says Yasmin Mahmoud, Go Bike co-founder and spearhead of the Academy project, where she teaches women and girls to cycle with confidence. “Cycling is a symbol of freedom,” says Yasmin.

Go Bike brings people together to cycle for specific causes at the same time as working to bring about long-term positive change in society. “We believe cycling can help drive positive change in many other areas,” say the Go Bike co-founders. There is no doubt that this initiative is doing great work by promoting healthy living, strengthening community bonds, empowering women and combating climate change, all of which places Go Bike as a key milestone on the path toward sustainability for the prodigiously growing city of Cairo.

## Micro-level gardening as a starting point for regenerative cities

Regenerative city models work to improve the health of an ecosystem by reusing waste as a source of value. Professor of Architecture at the American University in Cairo (AUC), Tarek El Akkad, noted that any vision of a regenerative city must, first and foremost, include an integrated approach among the different players. “Green roofs can play a key role in mitigating the challenges created by cities, as they introduce natural, evaporative cooling and air filtration properties to the urban landscape,” says El Akkad, remarking that architects and planners can use green roofs in Egyptian cities to improve sustainability and biodiversity while reducing urban heat island effects and greenhouse gas generation.

“According to a report by German development agency, GIZ, Cairo’s flat rooftops provide suitable conditions for urban farming and could be utilised in greening the city,” explains urban and rural sociology and architectural engineer and Progress magazine contributor, Taher Abdel Hamid. The report goes on to note that Cairo currently provides approximately 0.33 m<sup>2</sup> of green space per person, “one of the lowest ratios of people to green space in the world,” writes Abdel Hamid.

Speaking during a seminar on regenerative cities at Design Build Breathe, Bastana Life Learning Space founder, Soraya Abouleish, explained that one of the biggest challenges facing modern cities is the lack of connection to rural areas. “City dwellers have lost their connection to how their food is grown and produced,” she said, emphasising the role of urban farming as a means of integrating rural resources within cities to grow local healthy food, either on rooftops, balconies, or gardens.

Make Your Rooftop Paradise is a start-up that promotes the planting of edible crops and medicinal plants on rooftops, not only aimed at making Egypt greener, but also ensuring a continuous healthy food supply for marginalised families in areas like Qena and Sohag. “With Make Your Rooftop Paradise, we also want to raise awareness about the importance of recycling household waste to tackle environmental pollution,” explains the initiative’s founder, Assad Mohamed Ahmed.

According to Mohamed, the concept of green rooftops is not a new one in Egypt, but the idea gained strength when a google review ranked the country as the worst for rooftop views. “A media campaign to promote rooftop cultivation has been implemented along with the organisation of more than 20 seminars to educate people in Qena and Sohag,” says Mohamed, talking about a practical experiment implemented to raise awareness about the importance of surface cultivation through recycling household waste, paint buckets and plastic bottles, as well as the use of food residue as organic fertiliser. “The project still needs infrastructure in order to really help poor families though,” he adds, explaining that one of the key challenges his enterprise has faced has been gaining access to finance to expand their activities.

The Make Your Rooftop Paradise initiative has benefited from a variety of SwitchMed-funded training programmes, as well as having access to technical support. During the first training session, with Soraya Abouleish, they visited rooftops in different areas of Cairo to learn how to use the appropriate materials, seeds, and other gardening tools. The second took the form of a workshop given by Soraya Abouleish and Sherreen Aly, where the entrepreneurs were taught how to upcycle materials for gardening and establish the green rooftop pilot project. They also

benefited from support received from a marketing agency specialising in innovative technologies, The Creative Zone, which helped with the design of their website.

As Timothy Beatley says in his 2010 book Biophilic Cities, “human beings have an innate need to connect with the natural world.” Integrating nature into urban design and planning through regenerative interventions, such as Make Your Rooftop Paradise, helps to create an overview of the legislative and financial priorities required to build a sustainable urban future in cities where preserving health and nature enhances the lives of its residents.



Photo credit @Thomas Gamstaetter



Photo credit @pxhere



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).

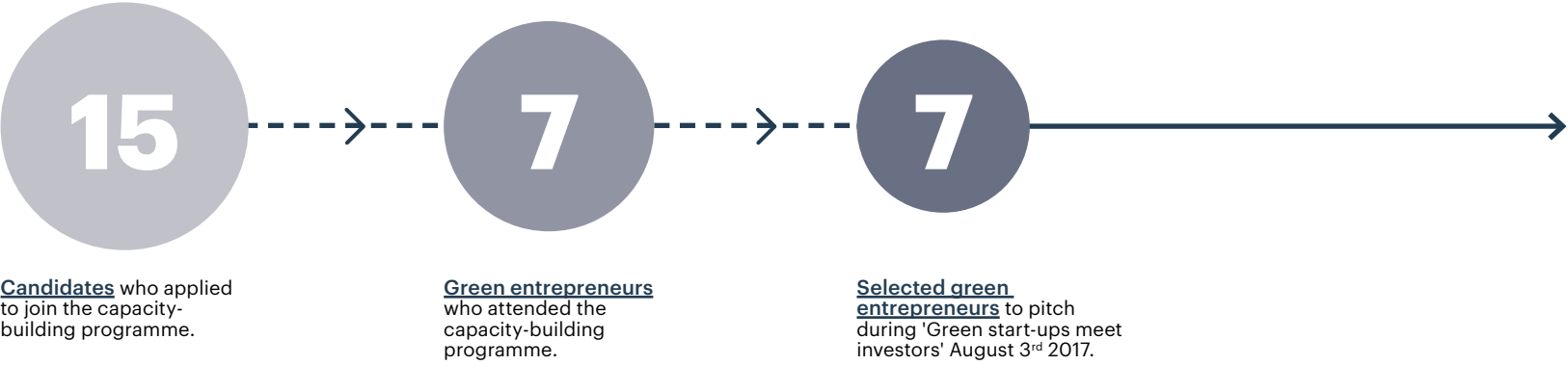
# Meet our service providers

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.

# Access to finance capacity building programme for green entrepreneurs



Discover our 7 green entrepreneurs who pitch during the “Green start-ups meet Investors” event

30h

Capacity-building for green entrepreneurs, who are guided through the stages of the investment process, to prepare their businesses for evaluation by financial players and improve their communications skills for more effective promotion of their business idea.

33

6

250,000€

Financial actors identified in Egypt.

Representatives of banks, guarantee funds, business angels and venture capital attended the “Green start-ups meet investors” event as potential investors.

Is the potential investment raised by the Egyptian green entrepreneurs.

Name of the company	Business stage			
VWASTE		●		
Elwady For Fiber Glass		●		
Collect and recicle waste Company		●		
Hand 2 Hand		●		
Shamsia Space			●	
MALEK FOOD			●	
EatWater	●			
	Ideation	Early stage	Growth	Scale



# Merging the gap between upcycled products and aesthetics

Up-fuse promotes eco-conscious lifestyle choices by designing and producing upcycled bags from discarded plastic waste and encouraging the use of environmentally friendly materials in design. Yara Yassin’s goal is to promote awareness of the over-consumption of single-use plastic bags. She also wants to create job opportunities that involve upcycling techniques while developing the skills and talents of local artisans in Egypt.

What was it like to be one of the six winners of the Switchers Fund Award?

When I received the SwitchMed newsletter with information about the award, I knew that my project could be a good fit for the requirements, but it was really amazing to win because I already had a plan for how to make use of the 15,000-euro prize.

So you have already spent it.  
Yes!

How have you made use of it?

Well, first of all, we used part of this money to buy new machines because we wanted to improve our material. We also hired another seamster to speed up production.

Have you managed to speed up production?

We are on our way to doing that, and with the help of the award we have also recruited the services of 28 immigrant women through an NGO and they will help us to produce simpler products. The next step is to hire an expert in textile sciences, with whose help we hope to enhance the quality of our upcycling to make our production process more sustainable and improve employee working conditions.

What about improving your marketing and communication efforts?

Actually, we are investing part of the money in that area and we’ll soon be launching our new website. We want it to look more professional, be more user-friendly and reach out to international markets. In the future, we would also like to hire an experienced marketing manager to create an attractive digital marketing campaign, and a freelance sociologist to monitor community impact.

What would you say was the added value that made your project win?

I think Up-fuse won because of the social, economic and sustainable aspects of the business.

What kind of business support do you think that SwitchMed and the Switchers community can offer you?

Project visibility and potential product collaborations. We are aiming to produce ethical giveaway products for SwitchMed, which will help us access trade fairs, funds and mentoring.

Can you describe your business model?

We sort and collect plastic bags. Then we send them for cleaning. After the cleaning process, we upcycle the bags with the help of 16 women in an NGO in Garbage City in Cairo. The women produce leather-like sheets. Each sheet is made from nearly 30 plastic bags. Then we take the plastic sheets to our workshop and production sister NGO, where the product is manufactured. Every month we produce 200 to 250 products that we sell through our website and retailers.

The product you are developing is sustainable and includes eco-design. Could you tell us about the creative process behind the design?

Our team is always on the lookout for what is missing in our product line that could help our customers be more organised and comfortable. We are inspired by people’s mobility and all our products help our customers to travel in the city or elsewhere in comfort.

Do you have any specific goals in relation to environmental and social impact?

We currently upcycle more than 30 thousand plastic bags every year. We aim to raise that figure to 60 thousand and help to support 30 women every year.

**“Up-fuse is your everyday bag that loves and respects the Earth and its people. By owning an Up-fuse product, you have helped save 30 plastic bags and support stable jobs for women in the underprivileged community.”**

Yara Yassin, founder of Up-Fuse

# Meet VWaste, Egypt's only business focused on processing citrus waste and the winner of the SwitchMed Elevator Pitch

Egypt produces an estimated three million metric tonnes of citrus waste; for every cup of freshly pressed orange juice comes a notable quantity of remaining wasted peel and rind. Two entrepreneurs created VWaste, a business that adds value to orange waste by transforming waste from juicing companies into raw orange peel powder and oil. We had a conversation with Diaa Adham, founder of VWaste, about his project:

That orange peel powder is pectin, right?

Yes, it is an ingredient present in many food products like jellies, jams and juices, and it is becoming increasingly popular in the cosmetics and pharmaceutical sectors, as companies search for more natural ingredients. In that regard, VWaste is well-positioned, especially as the outlook for the global pectin market predicts a 7.7% growth in demand over the next decade. Right now, there is just not enough raw pectin powder out there, and we would like to reduce this market gap.

What do you do at VWaste?

We use several by-products from orange peel, such as orange peel powder, which is used in pectin extraction in the food and beverage industry, and its essential oil, used for flavouring and aromatics. The first step in producing these products is obtaining waste from orange juicing plants. Timing is critical in ensuring the quality of the powder, so we make sure to collect the peel within two hours after juicing. The peel is washed several times, then dried and milled to a suitable particle size, before finally being packed and prepared for exporting. Oil, on the other hand, can be extracted chemically and by cold pressing, which is eco-friendlier and preferred for food applications. Throughout the manufacturing phase, quality control procedures are followed to ensure compliance with both global and Egyptian food-grade standards.

How did you hear about the SwitchMed Elevator Pitch?

I was part of SwitchMed's first Green Entrepreneurship training programme in Cairo, where I was working on a different start-up. This programme introduced me to the green business model canvas and business model validation practices which helped me a lot in my past venture and now with VWaste. One year later, I received the invitation to take part in SwitchMed's Access to Finance Elevator Pitch competition, which was a follow-up event to the first training program. So, I entered the competition with VWaste.

And you won!

Yes! Luckily, we won.

What would you say were the most important things you learnt during this experience?

Before the one-to-one interviews with investors, they helped me improve my communication skills and understand the different stages of the investment process.

How to obtain financing is essential knowledge that every new start-up needs to acquire.

Yes, indeed. Our financial projections were very basic. Making a short-term cash flow for daily operations is one thing, but creating a financial model that is detailed enough to give investors the whole picture, including profitability and where the business is going, is totally different. Me and my partner, Farrag, come from an engineering background and did not have much finance knowledge. However, thanks to the training programme, assistance from other participating start-ups and their feedback, we were able to jump into the deep end when enhancing our financial projections. This really helped us out a lot.

I guess it was also a great opportunity to practice your pitch deck.

Yes, we were able to master it during the programme. It was our first time pitching VWaste to investors, so we identified the key points and content flow, pitched in front of our coach and cameras multiple times and received feedback. Those were the most crucial skills that we learnt during the training programme, helping us go on to win the pitching event and other competitions that followed.

And what about feedback from investors?

We gained some valuable insights from the business and legal perspectives. The investors in attendance were experienced in dealing with start-ups with a similar scope to ours. It is very important for any start-up to continuously seek feedback and adapt its business plan accordingly.

What other kind of support do you think SwitchMed could offer you to help your company grow?

SwitchMed's support has been an important source of motivation for us to continue moving forward and believing in our business model and our ability to make an impact on our community environmentally, socially and economically. SwitchMed can help us succeed at this stage by giving us access to potential investment opportunities or partners who are willing to work with us to explore an untapped yet huge business opportunity.

In what stage is your financing plan?

We are currently raising funds to build our first mass production line. The plan is to process 10,000 tonnes per month in the beginning before eventually expanding to 60,000 tonnes per month. We have been facing issues in sourcing manufacturing partners as this is a relatively new industry in Egypt. There aren't enough successful recycling ventures in the Egyptian start-up ecosystem, so most Egyptian venture capitalists and investors are hesitant to enter this field.

It sounds like your project will be able to grow and offer job opportunities to more people.

Yes, but we are still testing our pilot model, so we can only provide temporary job opportunities, equally to men and women in order to achieve gender balance in the working environment. We currently offer eight temporary opportunities for four men and four women in the operations department. Moreover, in 2019 we plan to increase this number of opportunities to fit our progress.



# Enabling access to finance for Green entrepreneurs in Egypt

According to the experts met in Egypt, Green Entrepreneurship has a great development potential in Egypt, with clear opportunities in specific sectors such as waste management, recycling, energy efficiency, organic agriculture and tourism.

The number of green start-ups is relatively small compared to other types of start-ups in the country and the number that receive support is also limited. This means that support is given only to the enterprises with the highest potential, resulting in the fact that the success rate of start-ups is higher than the usual rate of 10%. Another benefit of the small number of start-ups is that they can take advantage of informal sources of funding based on contacts and recommendation.

To concisely illustrate the situation in Egypt, the figure below highlights the main financial products available to Green Entrepreneurs in each phase of the creation of an enterprise (ideation, early and growth stage), with an example of financial institution providing such products.

The main funding sources for innovative green start-ups during ideation stage are financing through family and friends and applying to foundations and awards. Business angels do exist but are mostly focused on entrepreneurs with high and quick growth potentials, i.e. entrepreneurs in ICT sector, and accessing them relies on having the right connections. Venture capitals consider green start-ups in early stage depending on their growth potential and management skills. Beyond that, Bank finance or commercial SME finance is available only for enterprises with a positive track record. This leaves few options to Green Entrepreneurs who are starting their businesses and registering companies. The financing situation for new entrepreneurs and start-ups, of any kind, in Egypt is somewhat a double-edged sword. On the one hand, Banks are reluctant to finance start-ups, at least during their first two years of existence, as they are considered too risky and therefore not an attractive investment. Transaction finance through financing companies does exist but is oriented mostly towards existing SMEs who have a track record and guarantees. It compensates partly for the lack of risk appetite of the main Egyptian Banks.

On the other hand, an ecosystem to support and finance green start-ups is developing in Egypt. It includes incubators and accelerators (Flat6Labs), Business Angels (Cairo Angels), Crowdfunding (Shekra), Venture Capital Funds (Sawari Ventures) and good old-fashioned intermediation between Egyptian potential Investors and new start-ups.

This ecosystem has the specificity of being purely local: It brings together investors (including the diaspora) with new start-ups. It is oriented mostly towards high potential start-ups that are likely to grow and develop fast in the coming years to produce the expected financial returns for the investors. In this sense, it is a sophisticated system to spot new ideas and new entrepreneurs, provide them with starting capital, nurture them and accompany their growth until they become profitable.



Photo credit: @Qalam Eka Maulana

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

**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 becoming drivers of a green growth, is crucial, not only for the businesses but also for the economy in 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 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. 16 business partnerships were concluded during the months following the B2B activities resulting in technology cooperation agreements, skills transfer and innovation research collaboration 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 m<sup>3</sup> in annual water consumption. The B2B events have displayed the need and potential for eco-innovations in the region and that cooperation between local businesses and businesses from the EU could create is an attractive bid for the environment as well as for the economy.

In order to develop and grasp the potential of SMEs in participating and reaping 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 regulation on this market will eventually also affect businesses ability of producing goods that are standing in compliance to the market regulations. One of those regulations that could also affect Southern Mediterranean producers is the Single Market for Green Products initiative, a labelling scheme that foresees the provision of meaningful and verified information about the environmental footprint of products to the consumer. Therefore we are focusing through closer cooperation between the Single Market for Green Products Initiative in Europe and business association from Egypt, Lebanon, Tunisia and Morocco, to review the preparedness of key sectors on the coming regulatory framework for Green Products and to inform interested stakeholders on what is about to come. This will allow producers of green labelled products to assess their current standards to the new developed EU standards on green products and, if needed, adapt their production to the new criteria in order to compete on equivalent terms in the EU market.

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## Eco-innovative business solutions for the Southern Mediterranean

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## 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”.

Beginning 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 PEFs on a specific product that they export or plan to export in the EU. Their motivation to participate in this activity, even though the PEFs 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 PEFs, 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 adaption of greener standards for the national manufacturing businesses in order to compete on equivalent terms in the EU market.



# Footsteps to be followed by industries in Egypt

## Dr.Dalia Nakla's profile:

Dr. Dalia Nakhla has more than 20 years of experience as an environmental and energy management consultant. She is a Certified Environmental Impact Assessment Consultant and Solid Waste Management Consultant by the Egyptian Ministry of Environment. She is also certified by the United Nations Industrial Development Organisation (UNIDO) as an Energy Management Systems National Expert. She is an expert in the area of environmental management especially environmental impact assessment. She was the project manager and participated in a number of EIAs related to different sectors; oil and gas, industry, solid waste, infrastructure and tourism. Dr Nakhla also aided in the introduction of Energy Management Systems in a number of energy-consuming industries in Egypt according to the requirements of ISO 50001, including cement, petrochemical and ceramic industries.

**As one of the first experts in Egypt to apply life cycle assessment methodology as a researcher and as a consultant, Dr. Dalia Nakhla shares her perspective on how the PEF methodology can improve Egyptian business to produce with a better impact for the environment and for their ability to compete on the global market, and what reasons can further this development in Egypt.**

Could you please briefly describe in your words what is PEF?

Product Environmental Footprint is a multi-criteria measure of the environmental performance of a product or means to identify significant issues and support in the assessment and labelling of the products.

PEF is based on Life Cycle Assessment Methodology which evaluates the environmental impacts of a product through its life cycle stages; from “cradle to grave”. It is modelling the environmental impacts of the flows of material/energy and the emissions and waste streams.

What benefits can a company in Egypt have from it?

A company in Egypt will benefit from the fact that a complete inventory of its material and energy flows as well as the emissions and waste streams will be compiled. Their consumption in terms of material, chemicals, water and energy will be identified in detail as well as all their waste streams. The environmental impacts associated with their inputs and outputs will be evaluated and the ‘hot spots’ identified. The impacts of the product’s life cycle on the environment will be identified not only in the local context but rather in the global context.

The environmental performance of the product produced by an Egyptian company will be comparable to that of the same product produced by other companies in Europe. PEF will allow the company to be rated on an international scale and will enable the company to export to European countries that are keen to allow only “green” products on their markets.

What consequences could PEF have on the economy and business level in Egypt?

Having “Green Products Made in Egypt” is in line with Egypt’s Vision 2030 for Sustainable Development Strategy (SDS), which promotes sustained improvement of the quality of life for the present generations to raise awareness on environmental protection, and reduce the impact of climate change in order to provide a clean, safe environment for the future generations. An integrated environmental approach that strikes the balance between economic growth and environmental factors is adopted.

This will prevent environmental degradation and maintain its balance, move towards more sustainable consumption and production patterns, and protect biodiversity. SDS also aims at fulfilling environmental international obligations, waste management based on governance concepts, and the promotion of recycling with a high environmental cognitive technical content.

You implemented the PEF methodology in Piel Color. Take us through your experience of the process and its implementation specifics.

The Product Environmental Footprint Category Rule for Leather Products was a great guide on the requirements of primary data that had to be collected from the factory.

The company was willing to cooperate but had to understand why data was requested in that detail such as the type of chemicals used with indicators on their composition as their commercial names were not enough. Also, data on quantities of material, water, energy, emissions and wastes were not all available. They had to be calculated by the technical team of the factory from their records and referenced to the reference flow as per the request of the PEF expert. This required time from the company’s team and data verification by the PEF consultant. As there were no benchmarks to verify the data, the Consultant searched for publications for the same product to verify the range of data collected from the factory and suspected data was recalculated by the company.

The other challenge resided in modelling the electricity mix of Egypt as per the requirements of the PEF CR instead of using default mix of similar countries. That was done per the annual reports of the Egyptian Electricity Holding Company.

As for the upstream including animal farming and slaughtering, default data as per the PEF CR were used as well as the inventories of Ecoinvent. It was assumed as per the information provided by Piel Color that 80% of the slaughtering was carried out in Egypt and the remaining amount was imported. This influenced the source of water and electricity mix in the slaughtering inventory.

Photo credit: @UNIDO



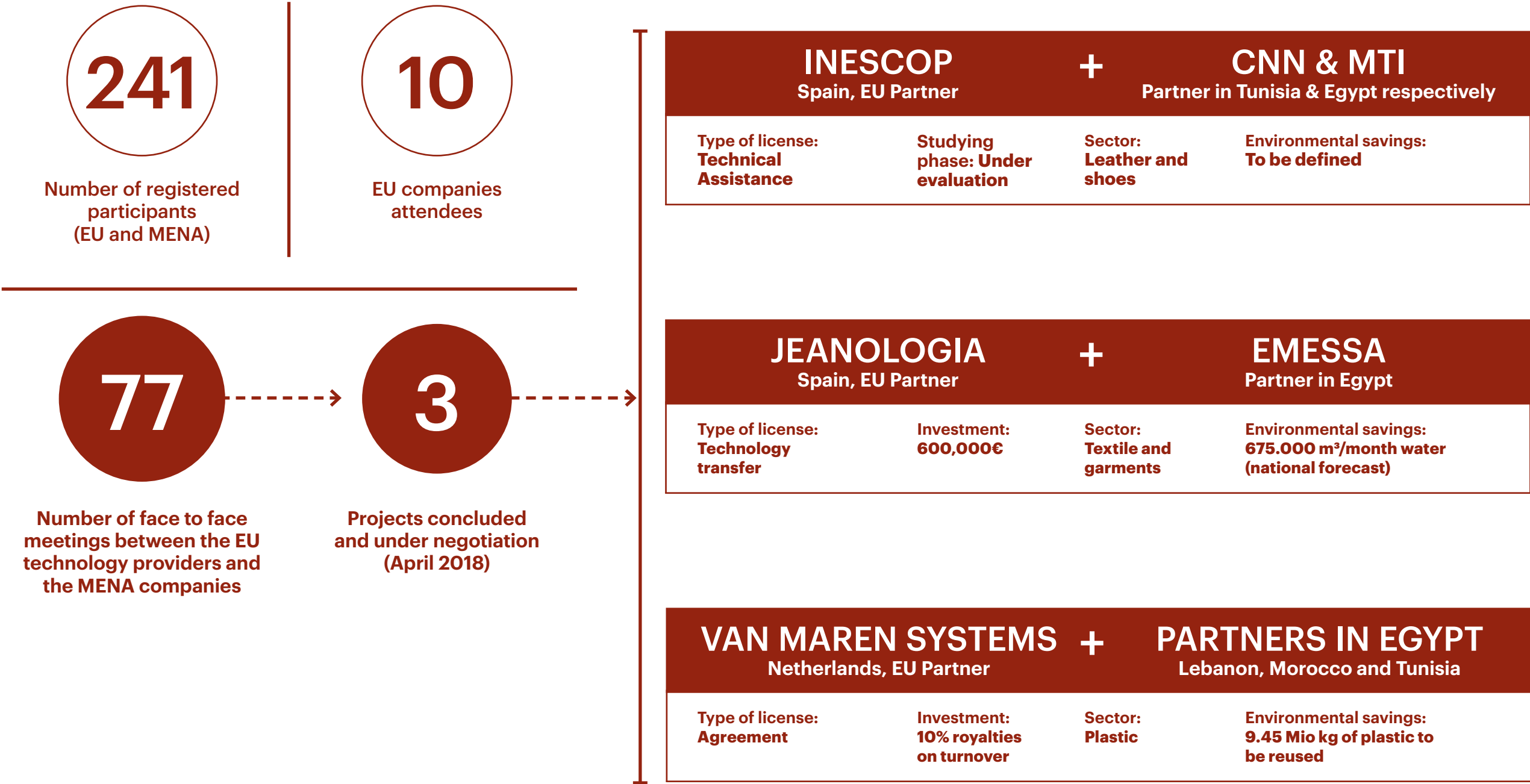
**“PEF would allow Egyptian Products to be competitive in the international markets not only in terms of quality and performance but also in terms of protecting the environment or environmental sustainability in the global context.”**

Generally, Egypt lacks life cycle inventories for its basic infrastructure including fuel composition, energy production and electricity generation, national electricity mix, energy transmission losses, water and wastewater treatment, etc. Egypt does not have national emission factors for environmental characterization, such as emission of greenhouse gases from different sources including transport modes, energy generation, industrial processes etc., and thus relies on international guidelines such as that of IPCC to make these calculations. Uncertainty can be improved for the inventory by having a country-specific database on electricity, transport, upstream activities such as slaughtering etc.

What conclusions can you bring from the PEF pilot study in Piel Color?

PEF pilot project was found beneficial by Piel Color and it is recommended to expand the experience of the life cycle assessment and environmental footprinting to other industrial sectors and to other industries in Egypt even if it is not for the exporting objective but rather to promote the idea of ‘green production’ and ‘green products’.

# Promoting eco-innovative solutions from the EU for Tunisian SMEs





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:







Photo credit: @SwitchMed

Credits

Concept  
SwitchMed

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