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 proactive, 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, 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 Organization (UNIDO) through the Mediterranean Action Plan (UN Environment/MAP), the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC) and the United Nations 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 in 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 the 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 socioeconmic development.

The SwitchMed Programme is funded by the European Union.

Morocco’s facts and numbers

**Population**
- Life expectancy at birth: 74.29 years.
- Population growth: 1.4% (2016).
- Major Religion: Sunni Islam.
- Form of government: Constitutional Monarchy.
- Capital: Rabat.
- Official Languages: Arabic, Berber, French.
- Area: 172 Square Miles (447 km²).
- Nearest Sea: South Atlantic Ocean.
- Nearest River: Draa.

**Geography & Economy**
- Terrestrial protected areas: 30.81 % in 2016.
- CO₂ emissions: 1.7 (2014).
- Land boundaries: Algeria, 1,900 km, Western Sahara 44 km, Spain (Ceuta) 8 km, Spain (Melilla) 10.5 km.
- Coastline: spans from the Mediterranean Sea and Atlantic Ocean on the north and the west respectively.
- Tourist Arrivals in Morocco increased to 11,349,347 in 2017 from 10,331,731 in 2016.
- Currency: Moroccan Dirham.
- The Draa Valley Thars are 200 kilometres of date palms. Dates are harvested in October and are one of the main food and profit of the nomads. Even the sheep are fed dates. The average date palm produces between 110 and 200 pounds of dates in a year.

**SwitchMed beneficiaries in Morocco**

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

Sources: Economy and Demography in Morocco, Wikipedia, United Nations, The World Bank, Ministerio de Asuntos Exteriores y Cooperacion & Araboulder
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Engagement with policy makers to establish a regulatory and policy framework to boost the market for sustainable products and services.
Implementing circular economy measures in the Mediterranean

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

The SCP Regional Action Plan was adopted in February 2016 by the 22 Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (known as Barcelona Convention), during their 19th Ordinary Meeting of the Contracting Parties. The SCP Regional Action Plan is a substantive contribution to the implementation of the 2030 Agenda for Sustainable Development. It is a strategic document that gives clear guidelines on the actions that should be developed in the region to shift towards sustainable consumption and production patterns, long-term sustainability, circular economy and new paradigms in the use of resources. It is also respond- ing 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 2030 Agenda for 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 Morocco

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.

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The Ministry of the Environment of Morocco decided to launch a process to develop a National Action Plan for Sustainable Modes of Consumption and Production (PNA-MCPD), starting with an in-depth evaluation of the MCPD concept in Morocco, which involved a diversified group of actors. The results of this diversified assessment suggested the drafting of sectoral plans for agriculture and construction.

In this context, Morocco has decided to prepare three key documents: (i) a national framework for promoting MCPD and two sectoral action plans—(ii) agriculture and agribusiness and (iii) eco-construction and sustainable buildings. These action plans have been drafted through multi-party consultations with the representatives of various constituent parts of society (public sector, private sector, civil society, academic society, international institutional partners, etc.).

The national framework for the promotion of MCPD is thus structured around the following four priority economic sectors: (i) food and agriculture, (ii) production of goods, (iii) tourism and (iv) housing and construction. This choice was based on the following selection and relevance criteria:

1. Relevance to implementation of existing commitments arising from the Barcelona Convention;
2. Contribution to Mediterranean economies and to social well-being;
3. Environmental impact generated (waste, pollution) by these sectors of activity; and
4. Contribution to the Mediterranean’s ecological footprint.

A number of workshops and working sessions have been organized to polish, validate and finalize the various documents with a view to getting national approval, which is the guaranty of future implementation.

Taking into account sustainable development and the preservation of the environment in the modes of production and consumption is accepted by the political authorities but it still does not describe reality in the daily life of producers and consumers.

National Framework Plan for Sustainable Consumption and Production in Morocco

The process of preparing the National Framework Plan for MCPD in Morocco made it possible to move on to a cross-analysis of modes of production and of consumption, and to define the seven strategic orientations which were a reference and action framework for the promotion of MCPD in Morocco:

1. Anticipating economic and behavioural changes linked to ecological transition;
2. Encouraging national companies to get involved in the process of sustainable production and consumption;
3. Supporting the development of green chains;
4. Promoting the circular economy and an economy based on low carbon intensity;
5. Implementing systems of ecological labelling and of environmental certification;
6. Promoting eco-responsible modes of consumption; and
7. Disseminating information and raising awareness.

Sectoral Plan 'Sustainable Agriculture and Food Supply' Morocco

In Morocco, the major finding that comes out of the analysis of the present situation is the fact that the main concerns of consumers, government departments and consumer associations revolve around three areas: (i) the prices of agricultural and food industry products, (ii) health, and (iii) coverage of food needs.

The present scheme of the MCPD highlights a certain number of issues:

- The shortcomings resource-use efficiency (non-sustainable management of water resources, poor energy efficiency in the areas of irrigation and of mechanisation, poor use of agro-chemical inputs, not very rational use of soil resources and of rangelands, etc.);
- The principles of the circular economy are not being applied.
- The modes of production and consumption in the agricultural and food sector generate quantitatively large deposits of waste and agricultural, crop-related and agri-industrial by-products. They are, in a manner of speaking, not being taken advantage of. This leads to breakdowns in the life cycle of matter which have repercussions in terms of ecological footprints and greenhouse gas emissions.
- The squandering of food resources is without doubt the biggest issue in the sector of agriculture and food supply. There are only a small number of projects aimed at curtailing greenhouse gas emissions and at practices of adaptation to climate change.

The action plan for “sustainable agriculture and food supply” is structured in six parts:

1. Concepts and methodological approach: (i) Relevance to implementation of existing commitments arising from the Barcelona Convention; (ii) Relevance to implementation of the environmental policies and initiatives promoting MCPD; and (iii) Relevance to implementation of the PNA-MCPD plan and the SNDS.
2. Analysis of the current state and the urban activities carried out in order to implement the National Action Plan for Sustainable Consumption and Production (SNDCP): (i) A situation analysis of the rural and urban environment in Morocco and the potential for improving sustainability in terms of use of land and resources; (ii) Relevance of the MCPD in Morocco and the potential for improving sustainability in terms of use of land and resources; (iii) A situation analysis of the progress made in the implementation of the SNDS.
3. Three vectors of action:
   - The first vector aims at ensuring the implementation of the SNDS, with the support of the European Union and of the United Nations Environment Programme, it contributes to the dynamics introduced by the National Strategy for Sustainable Development (SNDS) to ensure the transition to a green economy in order to consolidate a development model which is able to meet the needs and aspirations of present and future generations.

Sustainable modes of consumption and production fit within the process of operationalisation of issue 2 of the National Strategy for Sustainable Development (SNDS), the vectors of which are as follows:

- Reconciling modernisation of the agricultural sector with the needs of sustainable development;
- Ensuring the conservation and rational management of fishing resources;
- Promoting forests to ensure they get sustainable management;
- Positioning industrial acceleration in the trajectory of the green economy;
- Accelerating the implementation of energy transition;
- Have a sustainable mining sector;
- Promote sustainable mobility;
- Reconcile tourist development, sustainable handicrafts and protection of the environment;
- Promote integrated management of waste so as to implement a circular economy; and
- Align urban planning with the principles of sustainable development.
Despite the law enforcement, the survey reports that 49% of respondents believe that the consumption of plastic bags has remained the same or increased. In order to find out and respond to the reasons behind this situation, SwitchMed funded the association Zero Zbel to conduct an awareness campaign in Moroccan markets, addressing both consumers and shopkeepers.

The campaign, named “Kafa Min Amour” (“My Beloved Basket”), included a large survey to find out about shopping habits and constraints to phase out plastic bags. Equipped with explanatory fact-sheets, t-shirts and alternatives to single-use plastic bags, Zero Zbel members covered 8 markets in the region of Agadir and Tetouan and interviewed 235 people who received a reusable bag as reward.

Despite the law enforcement, the survey reports that 49% of respondents believe that the consumption of plastic bags has remained the same or increased. 80% of their customers demand plastic bags. Another worrying fact is that 65% of customers say they buy between 5 and 15 plastic bags each time they shop. “Some people refuse to bring reusable bags because it is not practical and unless they find them on the spot at a reasonable price,” they use plastic bags,” says Jamal Kamali from Zero Zbel.

The survey also points to the price of plastic bags. For example, 80% of merchants consider that the price of plastic bags has increased since the law came into force. “Shopkeepers are directly impacted by the misapplication of the law, because plastic bags are more expensive to buy and are still distributed to customers for free,” says Zero Zbel.

Thus, as long as plastic bags continue to be sold and distributed illegally, it will be very difficult for consumers to change their habits. Traders are caught between the plastic bags ban and consumers who know that plastic bags are still available and continue to demand them. The release of Zero Zbel’s survey was followed by a communication by the Ministry of Industry, in charge of this bill. “The demand for alternative products has increased considerably and the supply by businesses has kept pace,” said the department of Moulay Hafid Elalamy in a statement released July 1st. The same source claims that the production of non-woven bags increased from 1.8 to 3.2 billion bags and that of bags woven from 1 to 1.2 billion bags during the second year of the law implementation. However, it seems reasonable that the solution is not only to replace conventional plastic bags with non-woven bags, which are still made of plastic. One of the respondents stated that “plastic bags have not been banned, they have simply been beautified.” And the problem gets worse when these bags are being produced thinner over time to save production costs, which jeopardizes reusability. For this reason, the Ministry is working on a legal text to define minimum requirements of these bags.

Moreover, in order to address the issues raised by Zero Zbel, the Ministry of Industry plans to revise the law. “We are working on a revision of the law so that the process of banning plastic bags can be smoother and harder,” it’s coming soon.

“A national education effort is needed to promote the many available alternatives, and to allow cultural change to get rid of the disposable bag culture,” says Mamoun Ghallab from Zero Zbel.

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“Shopkeepers are directly impacted by the misapplication of the law, because plastic bags are more expensive to buy and are still distributed to customers for free.”

Zero Zbel
Morocco is not immune to the inescapable growth in the amount of waste produced, currently estimated in 5.3 million tons of household waste in urban areas per year, and forecasted to attain 8.2 million tons by 2020. The development of collection-recycling systems, including packaging, is undeniable one of the pillars of sustainable waste management and remains the solution to limit the extent of controlled landfills, as well as to improve the living conditions of informal operators. SwitchMed has deployed efforts to test a “reward” system in supermarkets to improve environmental, economic and social performance of beverage packaging waste collection and recycling.

Waste mismanagement in Morocco is worth 0.4% of GDP, meaning around 11 135D per inhabitant and year. Morocco is addressing the waste loopholes through the National Plan on Household Waste with an investment of 40 billion dirhams. Among other targets, the plan foresees pilot projects to attain a recycling rate of 20% and other waste valorization processes of 30% by 2020. Currently the plastic recycling rate in Morocco is estimated in 7%.

In this context, the start-up EUNOV Engineer ing has benefited of SwitchMed funding to conduct a feasibility study to implement a pilot project on a reward system for beverage containers, that is, plastic (PET) bottles and aluminium cans, using reverse vending machines in supermarkets. Such a project is inspired in international experiences by which the collection of containers has been highly increased when providing incentives to consumers. The tested system is not exactly the “deposit-refund” scheme, successfully applied in countries like Denmark or Norway, it is rather a softer system where the consumer does not pay a deposit but receives a reward when returning the empty bottles or cans. The reason to choose this option is that a deposit-refund scheme requires a more complex legal and financial arrangement, while in this case the objective was to demonstrate the effectiveness of economic incentives in a simpler way. Hence, this initiative is aligned with the priority on “promoting the circular and low-carbon economy” of the National Framework Plan on Sustainable Consumption and Production, and also complements the National Programme on Waste Valorization.

For this, a first step was to find out about collection and recycling systems in Morocco, not an easy task since most of it occurs informal ly. Individual collectors patrol not only cities but also landfills to pick up waste. A number of them were interviewed, as well as intermediates, waste cooperatives and recycling industries to find out who is involved in the system and material and economic flow. The results show a complexity of stakeholders, from informal collectors (also called scavengers) to recycling industries. There flow through intermediates increases the price of the collected material, in a way that the initial collector receives little money, an average of 0.84 dirham/kg for PET and 4.30 dirham/kg for the cans, which makes around 300 dirham per week (27 euro). However, for example in the case of PET, once the material has been processed into new granulates, it is sold to a much higher price, resulting in the collector at the base receiving less than 10% of that value. Although there are not official available figures on the amounts collected and recycled, one must note the intensity of collection.

Simultaneously, a consumer’s survey was completed to know about beverage containers consumption, habits and the potential acceptance of a reward system for the return of beverage containers. As for the consumption, the study found out a consumption of 4.11 containers/person/week, which would mean a national consumption of 2.21 billions of containers per year. As for the acceptance of a reward system in supermarkets, 80% of consumers would preferly buy in a supermarket where this system exists. More than 50% would favour as reward a purchase discount at the supermarket.

The start-up worked out several scenarios to present the system to supermarkets, particularly on forecasting the number of containers that could receive per week and the income they would have to sell them. This income would serve to finance the purchase discounts delivered by the reverse vending machines. In such a way, both consumers and supermarkets benefit from the system.

But they are not the only ones, there is a third variable in the equation, the collectors. The proposal was that a collectors’ cooperative would be in charge of collecting these containers. Selling the material to a recycling facility would provide them with income, higher than usual since the quality would be much better (no mix with other waste fractions). Yassine Mazout, from the cooperative At-Tawafouk in Rabat says “Waste is a source of money for 111 families. The role of the cooperative in the preservation of the environment is evident through the recovery of waste, of which 70% is plastic”.

Considering the availability of collectors’ cooperatives and recycling facilities, Rabat was the area selected for a potential pilot. Main Moroccan supermarkets brands were approached and meetings were held to explain the system. The feedback was generally positive. However there is certain reluctance in terms of advancing the money for the discounts and managing the reverse vending machines. The project team is considering organizing a mission to a region where the deposit-refund scheme exists to show how it works in real, without specific burden for supermarkets.

Despite the potential of such a system in Morocco, it was also found that the installation of reverse vending machines may be too sophisticated at this stage. There might be other low technology means to reach similar objectives. For this reason, a follow up initiative may consist in working with a Moroccan university to maximize the separate collection of beverage containers using bins and cages and with the participation of collectors’ cooperatives, as well as providing high quality tap water through public fountains and distribution of reusable bottles. All this with the ultimate goal of reducing the amount of bottles and cans ending up as marine litter in Moroccan sea water and coastal areas.

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Main achievements in promoting better collection and recycling of beverage packaging

58 Stakeholders involved in the collection and recycling of beverages containers interviewed

20% Potential increase of revenues for waste collectors with the reward system

80% Of consumers would favour a supermarket with such a system than other without

4 Big Moroccan retailers approached to test the system
Biodôme uses a process called micro-ferment- ation to produce methane gas as an ener- gy source. A tank is built at a farm in which typical organic waste is deposited, including farm animal waste, organic waste and waste- water. All the waste is simply placed in a dome before going on to be fermented in a second un- derground chamber using a patented biological accelerator. In the absence of oxygen, organic matter placed in the ‘digestor’ tank undergoes a natural process of degradation, allowing mi- croorganisms to break down the organic ma- terial and convert it into biogas. Thus, after a period of two to three weeks, the first gas bub- bles start to appear on the surface of the water. Within five weeks, the Biodôme also generates organic compost, which can be used by farmers to fertilise the soil on their plantations, thereby considerably speeding up the natural processes and eliminating any issue associated with un- pleasant odours thanks to the dome’s in-built deodorisation system. “I have developed an op- timised biogas production system by enhance- ing the technology of fermentation to improve its efficiency and reliability,” says Zahra. The optimisation was achieved by addressing three main aspects: selection of a bacterial mix dedi- cated to fermentation, development of an elec- tronic control system, and improvement of the gas production process.

Fatima Zahra was one of the four benefi- ciaries selected by the SwitchMed programme to implement a pilot project that fits into the ‘eco-construction, sustainable buildings and sustainable agriculture’ sectoral plan of the developed Moroccan Sustainable Consump- tion and Production (SCP) National Action Plan under the SwitchMed framework. With this support, the collective unit was built by Biodôme on land belonging to one of the members of the beneficary association, Ouled Abdoun, a farmer’s cooperative located at Khouribga, 120 km from Casablanca. The cooperative has be- come the owner of the biogas plant, while Fa- tima Zahra manages it. “In that way, the plant will allow members of the cooperative to devel- op a new circular economy model, as well as to generate revenue through the sale of compost,” explains Zahra, adding that, “All the legal doc- uments have been completed to authorise the construction of the biogas plant on the cooper- ative’s land for the use of the farmers in Khour- ibga for the next 10 years.” In the future, she is planning to train the members of this associa- tion to enable them to manage the biogas unit themselves and share the profits generated through compost sales. Members will receive training on fermentation and composting tech- niques and the use of the anaerobic digestion unit. They will also receive instruction about the reasoned application of fertilisers, as well as information on the development of a sustain- able agriculture model and alternatives to chemical fertilisers.

Bereaich also plans to collaborate with an- other technology start-up, Easycontrol, to en- able users to control the plant remotely via a smartphone application. With such a scalable initiative, the company is providing a solution which facilitates the implementation of circu- lar economy in agricultural areas, not only on a local, but also a global scale. Biodôme has many advantages. Not only does it offer farmers an independent power supply with a permanent production of biogas and alternative fertilisers that will limit the use of pesticides, but it also helps to reduce greenhouse gas emissions from dumped organ- ic waste. According to Bereiaich, “This region is practically abandoned, particularly in terms of waste collection and treatment. People often have waste in their home and they don’t know what to do with it.” This system could also help reduce household waste which, by weight, ac- counts for around 70% of an average gar- bages. It could also reduce storage costs, transport and waste destruction activities for companies, municipalities and cooperatives. “A 20m³ unit costs 120,000 Moroccan dirhams (1,000 euros) and its lifespan is more than 40 years. It saves around three bottles of gas, 12 kg per month and produces a minimum of 100 Kg of fertiliser per day that can be sold for 3 to 6 Moroccan dirhams (0.28 - 0.56 euros) per kg, depending on the quality of the compost,” con- cludes Zahra.

“The initial response from many of our current customers was driven by curiosity. They wanted to see how the system worked. That’s why we also want to create an associa- tion in parallel to the project to raise awareness about renewable energies, as well as to help farmers who cannot afford to pay for our ser- vices,” explains Fatima. “Biodôme’s an eco- logical dream that will be distributed world- wide.” The owner of Biodôme is also looking at schools and hotels to change their waste man- agement system. For that, she is also preparing a social programme to boost rural employment, which will include income-generating activi- ties related to waste collection and compost sales for unemployed women and young people. “I am now also approaching Casablancas’s res- taurants to collect their organic waste that can later be composted. This process reduces the amount of waste that ends up in landfills and represents a disposal problem for municipali- ties,” she explains.

Biodôme is already receiving both nation- al and international recognition, as the result of winning a number of high profile awards. For example, in 2016 Fatima Zahra was selected as the Female Entrepreneur of the Year at COP22, during the Global Clean Technology Innovation Programme (GCIP) in Morocco, also win- ning the 2017 Tamazight Moroccan Female En- trepreneur Award and the prize for the Most Innovative Moroccan Project, awarded during the Future:ES in Africa Exhibition in 2018. In December 2018, she presented her work at COP24 in Poland.

We certainly need more innovative ideas like Biodôme, which could help the whole planet by providing more progressive develop- ment, generating economic and employment opportunities and building a bio-based, healthy and sustainable society. The potential to break away from the ‘take-make-dispose’ economy and create a new circular economy in the Med- iterranean region is now a reality.
Several international actions have been initiated to gain a better understanding of the potential health, environmental and human hazards linked to the use of chemical substances. Some of them cause cancer and reproductive damage, damage to the nervous system, reproductive disorders, and disruptions in the immune system and other substances that can cause cancer. Medical devices are not the exception. At least 40% of all plastic-based medical devices used in hospitals contain harmful chemical substances classified as carcinogenic, mutagenic, and reprotoxic.

In this context, polyvinyl chloride (PVC) is the most widely used plastic in a range of blood bags and infusion tubing, nutrition feeding bags, nasogastric tubes, dialysis bags, and tubing. The Diethylhexyl phthalate, usually referred to as DEHP is used as a plasticiser to impart flexibility to PVC, and has proven carcinogenic effects in animals, and potential adverse health effects in humans, particularly to those groups of the population that are most exposed. There are a range of existing alternative to DEHP which have non-toxic properties and achieve the same performance in medical devices. PVC/DEHP have been conducted up to now. Currently, the existing regulatory base encourages the phasing out of DEHP. However, the majority (more than 80%) of the respondents do not know if their medical device suppliers are involved in a procurement approach for substituting toxic chemical substances with DEHP. All respondents identified a substitution approach to PVC plasticised with DEHP. About 70% of the responders do not know if their medical device suppliers are involved in a procurement approach for substituting toxic chemical substances with DEHP. The results of the survey were voted as follows: 53% of the responders think that the lack of knowledge about current methodologies on health and environment to the way to develop environmental criteria is an extremely important obstacle. The nine barriers identified as extremely important obstacles, which restrained the institutions from implementing procurement practices in alternative medical devices. The nine barriers identified as extremely important obstacles, which restrained the institutions from implementing procurement practices in alternative medical devices. "The survey also highlights that 94% of the respondents do not know if there is a current regulation restricting the use of certain phthalates in medical devices. Additionally, 94% of the respondents do not know if there is a current regulation restricting the use of certain phthalates in medical devices. The work carried out in Morocco will serve as a baseline study to increase knowledge about the health sector in this country and to design future activities adapted to the context and identified needs", explains Kimberley de Miguel, toxic chemicals expert at the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC). Experts from two institutions were key to the development of the SwitchMed project: Health Care Without Harm (HCWW), which has extensive experience in the promotion of harmful chemicals in the health sector, both in developing countries and at European level and the Centre Hospitalier Universitaire Mohammed VI (CHU) based in Marrakesh.

A three-months long questionnaire procurement practices was carried out by CHU, as the first step towards a phase-out strategy at a national level which was complemented with thorough research on the matter. Ahmed Dhaou, Head of Sustainable Development Department as well as the CHU lead the survey with the main objective being to collect information around the level of knowledge, and the attitudes and behaviours of professionals using medical devices containing PVC plasticised with DEHP.

In total, 305 healthcare Morocco and also 30 semi-structured phone interviews to cover more aspects and add for DEHP. As for the results, Kimberley de Miguel summarises that “the outcome of the survey provides a basis for the assessment of theoretical knowledge, attitudes, behaviours and professional practices regarding medical device purchasing practices.”

The survey was carried out at random amongst a heterogeneous group, which had a good gender balance, as 57% of respondents were men and the other 43% women. More than 9 out of 10 respondents had worked at their institution for over 4 years. According to the survey, 100% of the responders confirmed that “medical devices containing PVC are an approach that is used in the institution and more than 50% of them are aware of the toxicity of the phthalates used in these medical devices”. The majority (more than 90%) of the responders listed polyvinyl chloride, polyethylene, polyethylene terephthalate, polypropylene and polyethylene adipate as the toxic chemicals and the challenges that other professionals face. The survey found that although the majority (more than 80%) of the responders know where to find this information, almost 60% admitted to not have checked it. In addition, knowledge on the pictograms indicates the presence or absence of DEHP, which inform about the type of hazardous or DEHP, which inform about the type of hazardous chemical substances, notably to that the medical device can pose is very limited and as alarming 82.4% of the responders are not familiar with them.

The survey also highlights that 94% of the respondents do not know if there is a current regulation restricting the use of certain phthalates in medical devices. Results also shows that knowledge and awareness raising campaigns tailored specifically for personnel involved in the procurement and use of medical devices must be encouraged in order to bridge the knowledge gap already identified in the awareness of these type of plastic additives. The knowledge of the labelling and symbol for phthalates was also assessed amongst the respondents. For example, the safety datasheet is a valuable source of information. This guide would be particularly helpful to learn about current methodologies on practical tools and information and the importance that more ecological products would not be easily available is also considered very important by 58.8%, and extremely important for 23.5%. In addition, there was also a view that safer products would be more expensive. This issue was raised several times during phone interviews and meetings with healthcare professionals, researchers, the authors.

Another recommendation given was to publish a best practice guide for the procurement of medical devices, including recognised practices, decision-making support and a clear and easy-to-use presentation of the current knowledge. This guide would be particularly useful for suppliers and healthcare institutions, allowing professionals to share the main steps that need to be taken in terms of substitution that are specific to the health sector. Also, numerous initiatives to substitute these chemical products already exist around the world, and some of them could be replicated in the Mediterranean region. In fact, the report includes a review of European success stories written by Health Care Without Harm. These include case studies from Pharma in Dubai, the Swedish collaboration between healthcare institutions and the Stockholm County Council, care units in the Vienna Hospital Association and the progressive phase-out of PVC-coated sutures and the implementation of PVC-free medical devices in the Stockholm County Council.
Demonstrating the business case of a resource efficient and cleaner production (RECP) in Morocco’s food industry.

Photo credit: @UNIDO
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 five 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 resource and reduces pollution. The MED TEST II project, presided by the United Nations Industrial Development Organisation (UNIDO), applies the methodology named the Transfer of Environmentally Sound Technologies (TEST), a concept that addresses the challenges and barriers industries are facing in becoming more resource saving, energy efficient, and less-polluting.

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

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

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

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

In recent years, a gradual growth of Morocco’s industrial sector has been observed. Characterised by frequent and volatile production changes, national policies have been put in place to diversify the industrial production and develop an infrastructure, in the hope that it will strengthen growth and make it more resilient. However, the main constraints faced by Moroccan industries in terms of energy and water availability, remain. With almost all energy consumed being imported, and water scarcity having a tangible effect on industrial production, this situation threatens the growth and competitiveness of Moroccan industries. In order to unlock the full economic potential of the Moroccan industry, constraints related to resource consumption should be overcome. In this respect, efficient and resource-efficient production is one of the most effective options available for Moroccan companies seeking to increase their profitability, competitiveness and position in national and international markets.

In Morocco, 22 companies from the food and beverage, chemical, mechanical, and textile sectors joined the RECP demonstration phase of the MED TEST II project. The companies that took part in the project ranged from SMEs with 50 full-time employees to large companies with 400 employees, and are located in Casablanca, El Jadida, Tanjiers and the Rabat regions.

An important feature of the MED TEST II project in Morocco was the significant potential for renewable energy, which was identified during the project. Nearly all companies included the installation of photovoltaic panels in their action plans with a cumulative investment value of 7 million euros, corresponding to an installation capacity of approximately 30 MW of renewable energy, which is 60% under implementation. The combined annual savings from the investments in renewables, and other identified energy efficiency measures, will reduce CO₂ emissions with approximately 40,000 tonnes per year and almost 100 GWh of energy per year.

Almost all the demonstration companies have approved measures to install monitoring systems for energy and environmental aspects, according to ISO 14001 and 50001 standards. A total investment of 770,000 euros is planned for the implementation of these measures in the 22 companies, which would result in annual savings of 445,000 euros in energy and water costs. Finally, most companies plan to integrate the MFCA tool into their accounting system in order to effectively monitor material flows.

Turning challenges into opportunities is at core to the UNIDO TEST methodology as it supports industries with a toolset to address the resource efficiency of their production, enabling higher productivity while requiring significantly reduced energy, water and resource quantities compared to current processes. If other businesses decide to take on the approach of a resource efficient production in the industry of Morocco, the RECP concept could become a core element of assisting the economic development of the country, contribute to a more equal resource distribution, and maintain the role of the industry as a job creator. A more resource efficient production would also be an important building block for businesses to generate responsibly managed products throughout their life cycle, while increasing productivity and maintaining access to international markets with good quality products that meet international standards.

If Morocco’s industry is about to change and tap into the full extent of its potential, it is fundamental that other businesses and sectors pick up and follow the business case of RECP – as demonstrated in the MED TEST II project. UNIDO, together with stakeholders form the civil society, government and the industry have developed a scaling-up roadmap on how to expand the RECP concept in Morocco. An action plan that will support the facilitation and reinforcement of national competences around the aim of RECP and green growth has been developed with the ambition to mainstream the RECP approach throughout the industry in Morocco.

To download the individual case studies from the MED TEST II project in Morocco, follow the link or scan the QR code here:
Case studies from Morocco

**Tube et Profile**, a Moroccan mechanical company producing pipes and profiles, realized 85% energy savings, 24% water savings and 3% material savings by implementing RECP measures through the MED TEST II project. By training the operators and introducing new management practices, significant savings could be realized by reducing the “out-of-spec” in the production by 50%. This action alone will cut the annual raw material consumption with 450 tons and reduce the generation of solid waste by 134 tons.

**BBM (Best Biscuits Maroc)**, specializes in the production of bakery products (biscuits, sandwich biscuits), wafers and cupcakes and is one of the major producers in Morocco. Through the MED TEST II project, the company could identify improvements in their production that would annually save 639,000 in production costs. For instance, by taking steps that will improve the technology used in the production, optimization synergies could be achieved that will annually save 5,080 m³ of water; 2,398 MWh of energy; and 160 t raw materials. The company has so far decided to implement 95% of the identified measures and is continuing to use the TEST tool as an integral part of their management.

**NatureX** is a company specialized in the production and marketing of aromatic and essential oils exporting to the food and cosmetic sector. In order to ensure quality production and to comply with customer demands, NatureX joined the MED TEST II project to assess the performance of the production in regard to resource consumption and environmental performance. The findings from the MED TEST II project in NatureX were impressive as they revealed an annual saving potential of 814,000 euros. For instance, the recasting of industrial water circuits will save solvents (247,000 liters) and wastewater (1,095 m³), which is a huge improvement for the production and the charge rate in wastewater. Of the recommended measures, 68% were accepted by the management and are in the process of being implemented, the others 32% requiring further study, and no measures have been rejected.

### Total savings by the selected companies

<table>
<thead>
<tr>
<th>Company</th>
<th>Total Savings, p.a</th>
<th>Water Savings, p.a</th>
<th>Energy Savings, p.a</th>
<th>Material Savings, p.a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube et Profile</td>
<td>369,380€</td>
<td>23.9%</td>
<td>84.9%</td>
<td>3%</td>
</tr>
<tr>
<td>BBM</td>
<td>639,194€</td>
<td>19.6%</td>
<td>21.6%</td>
<td>1.06%</td>
</tr>
<tr>
<td>NatureX</td>
<td>814,715€</td>
<td>74.6%</td>
<td>82.8%</td>
<td>24%</td>
</tr>
</tbody>
</table>
Annual environmental impact savings identified in the 22 Moroccan food industries

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

131,519 m³ per year of annual water savings = 393 Moroccan households annual water consumption

97.6 GWh per year of annual energy consumption savings = 108,324 Moroccan households annual energy consumption

39,488 tonnes of annual CO₂ savings = 8,384 tonnes per year of annual energy consumption

3,162 tonnes per year of solid waste avoided = 1,140 years' worth of solid waste produced by a person in Morocco

22 companies = 10.4 million euros saved annually by a total of 457 RECP measures
Scaling up a resource efficient and cleaner production throughout Morocco’s industry

The transition to circular economy is becoming a central issue in sustainable development strategies at international, regional and national levels. To this end, the United Nations 2030 Agenda for Sustainable Development urges member countries to ensure sustainable consumption and production patterns for promoting resource and energy efficiency (SDG 12). By adhering to the goals of this agenda, Morocco is committed to include the dimension of sustainable development in all of its public policies. At the regional level, the SwitchMed program is designed and implemented to facilitate the transition to Sustainable Consumption and Production (SCP) patterns in the Southern Mediterranean region.

At the national level, Morocco has adopted the principle of sustainable development and its implementation through promotion of sustainable production and consumption patterns. In the opinion of the industry federations, there is a need to expand and sustain the MED TEST I and MED TEST II pilot trials, particularly by informing companies of the success stories on the implementation of RECP in Morocco. At the institutional level, there are currently favorable conditions for the generalization of the RECP. These are not only institutional arrangements implemented to apply the framework environmental law, but also existing opportunities to benefit from the expansion of the RECP approach of the support of Maroc PME and from that of the Regional Councils. Maroc PME has tools and support mechanisms for companies that integrate the RECP approach. For their part, the Regional Councils, through their regional development programmes, have decided to support the upgrading of industrial areas and their integration by supporting the process of production and own consumption.

Consequently, making the transition from demonstration activities to a sector wide mainstreamed adoption of RECP in Morocco’s industry, would be pivotal in helping businesses adopt a production that adhere to the goals of a Sustainable Consumption and Production. 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 Morocco and what actions are required to achieve a more wide-scaled adoption of RECP. 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 Morocco, is to eventually create a system change around the topic of RECP for industries in Morocco that will encourage an adoption and change towards RECP.

A detailed activity plan with responsibilities is available in the final scaling-up roadmap, which is online accessible in English, French and Arabic. Click here to download the final ScalingUp Roadmap for RECP in Morocco.
Building technical capacity and supporting green businesses in order to build a green entrepreneurship ecosystem in the Mediterranean.
At SwitchMed we are building a green entrepreneurship ecosystem in the Mediterranean by supporting green entrepreneurs from southern Mediterranean countries. 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 financing 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 20 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.

Our local partners, selected by the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC), are organisations with extensive experience in delivering training programmes specifically addressed to entrepreneurs and promoting environmental sustainability, as well as identifying and mobilising local trainers who have already trained potential entrepreneurs. The main task of the local partners is to assist the SCP/RAC in identifying and selecting local trainers as well as potential green entrepreneurs to join our training programme. They are also responsible for disseminating information, organising training workshops, and follow-up and evaluation.

Meet our local partners

ROYAUME DU MAROC

ROYAUME DU MAROC

Our local mentors, carefully selected by the SCP/RAC, have drawn up a solid framework of cooperation for carrying out the activities associated with the Incubation programme. As trusted counsellors and guides, the local mentors’ main tasks are to help and advise green entrepreneurs selected by the International High Level Jury to participate in the Incubation programme. Over an 8-month period, our local mentors’ specific role is to provide 40 hours of one-to-one coaching as part of the main incubation support, plus some extra administrative hours, to help the green entrepreneur to successfully produce a solid Green Business Plan, among other things. The mentoring framework is implemented according to the work plan and methodology developed by the SCP/RAC, including the principal document “Launch Your Green Business” and other supporting documents. In addition to support from their local mentor, green entrepreneurs will receive technical expertise based on their specific needs, to help them develop their Green Business Plan and guide them through other activities (e.g. marketing and communication). Members of the SCP/RAC Green Entrepreneurship Team are in constant communication with all stakeholders and regular follow-up is essential to ensure that qualitative and sustainable support is available to green entrepreneurs.
How is the green entrepreneurship programme contributing to the environmental, social and economic impact?

Applicants
Entrepreneurs who submitted their green business idea in order to be selected to access to the training programme.

Trainees
Entrepreneurs who received a 5 day intensive on-site training sessions along a period of 3 months in order to develop their green business models and prove their feasibility through the practical tools, exercises and tests provided by the SwitchMed methodology.

Coached
Entrepreneurs who received a 10 hours individual coaching in order to improve their green business models. They submitted their green business model canvas for the incubation phase/follow-up advisory service.

Incubated
Entrepreneurs received support from local mentor and technical experts to develop their Green Business Plan and to launch their product on the market.

Analysing our Moroccan 376 trainees

By sector:
- 30% Tourism
- 17% Resource Efficiency & Sustainable Waste Management
- 14% Renewable Energy & Energy Efficiency
- 3% Sustainable Building & Construction
- 27% Other

By gender:
- 67% Men
- 33% Women

By age:
- 21% 41-50 years old
- 28% <20 years old
- 34% 20-30 years old
- 37% 31-40 years old
- 7% >50 years old

36% Organic Food & Agriculture

Green Businesses created

19

Local trainers
were selected and trained according to the SwitchMed methodology.

1109

23

376

32

8
Meet our Moroccan incubated green entrepreneurs

ENRD2-Engrais Bio
Turning organic waste into energy and compost

ENRD2-Engrais Bio, a project developed by Khoulaa Remmal, aims to give new life to organic waste. By transforming this waste into renewable energy used for electricity, heating and fertiliser, Khoulaa seeks to pursue a more sustainable and inclusive economy.

Tell us about yourself and how the idea for your business was born.
I realised early on that I wanted to do something to impact positively on the environment. Perhaps that is why I enrolled in engineering school and continued my studies in France for five years to specialise in energy engineering and sustainable development. While working as an energy expert for Moroccan cattle farms I decided to start a business after observing how much organic waste was lost. In Fez-Meknes, I targeted small to medium-sized farms and set up an infrastructure to collect organic waste for transformation into biogas. We then developed a biogas plant that can produce electricity and heat from organic waste through an energy cogeneration system, while ensuring some energy independence for cattle farms. We also produce a stabilised digestate, which anaerobically digests organic matter and produces compost. The business also helps raise healthier cattle, as the animals’ living conditions are better and they get fewer infections. I am very eager to enhance the connection between the rural and the industrial sectors by acting as a bridge between the two.

What is the environmental and social impact of your project?
It is a sustainable idea that has a strong impact on the environment, as it reduces waste while creating a cleaner source of electricity and heat. Our goal is to positively impact the environment by using innovative technology and implementing resource efficiency measures. Assisting and advising cattle farmers to install biogas plants contributes to the reduction of CO₂ emissions. As one example, ENRD2-Engrais Bio has been collecting approximately 32 tonnes of organic waste per cow per month, which means 3,400 tonnes per year saved. By 2020, we will have avoided 38 million tonnes of CO₂, while also boosting the development of the renewable energy sector. And these are only the results from one single farm.

By creating a cleaner source of electricity and heating, the farm is also saving money. Additionally, we contribute to reducing organic waste by around 40% in terms of sludge to be treated. We also reduce pollution, bad odours and the health risk for local inhabitants living close to waste disposal in nature. Moreover, the organic fertiliser produced contributes to reducing the amount of chemicals used in nearby fields.

The enterprise also has a social impact through the creation of 24 full-time jobs over ten years. Indeed, for every connected power station, five people will be recruited locally on a full-time basis for its maintenance. My project aims to give everyone – from farmers to industrial workers to the regular consumers – better access to sustainable energy options. It will mean that 155 tonnes of compost will be re-used per year, producing an average of 450 m³ of biogas and thermal energy covering the total energy needs of a cattle farm and part of the dairy production unit. For example, our 4,500-head cattle farm, the electricity produced thanks to our installation is estimated to be around 4,773.60 MWh per year. Besides, the thermal energy which can be generated at the production site is estimated to be around 4,672.51 MWh for an installed 250-kW cogeneration engine.

We have partnered with all royal domain farms with more than 1,000 heads of cattle, thus contributing to this positive change.

How have you benefited from the SwitchMed programme?
SwitchMed helped me bring my ideas and interests to life and turn my dream into a sustainable business model. Their team helped me put together a green business plan, analysing the market data and developing strategies. Specifically, I am very satisfied with the expert support I received in dealing with the hotel and catering industry, developing a market analysis, competitor analysis, and managing the accounting, financial and administrative processes. I also benefited from great expertise in bioclimatic architecture to help us move toward a more energy-efficient structure and savings in heating and lighting. Thanks to SwitchMed’s support, I have been able to come up with a clear blueprint and minimise the risk of debt on the project.

ENRD2-Engrais Bio, a project developed by Khoulaa Remmal, aims to give new life to organic waste. By transforming this waste into renewable energy used for electricity, heating and fertiliser, Khoulaa seeks to pursue a more sustainable and inclusive economy.
What is the environmental and social impact of your project?

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

Tyres form an integral part of our daily lives, helping us get from A to B. But what happens at the end of the road when they are no longer in use? How are they disposed of and what are the associated environmental impacts? In Morocco, a green entrepreneur saw a business opportunity in finding a way to sustainably reuse discarded car tyres. Elomar Naoual launched VDMpneu to reverse an alarming trend she noticed in her country, with more than 40,000 tonnes of scrap tyres being discarded in the natural environment or burned every year.

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

My interest in developing reusable tyre products came after years of witnessing how they are disposed of in Morocco. Growing up, I frequently saw tyres being burned at the side of the road, discharging toxic substances into the air. The sight of black smoke rising into the sky, accompanied by the overpowering stench of burnt rubber troubled me. I simply could not understand why we would incinerate tyres when we know how much damage it causes—soil contamination, air pollution and landscape degradation—so I decided to seek out a better solution. I have always been an active member of a local association involved in collecting, sorting and treating waste plastic, so I decided to move from voluntary work to an entrepreneurial venture focused on the reuse of used tyres. The ‘PVNR – Recycling of used tyres’ venture aims to recycle tyres and transform them into rubber shreds, granulate or powder, which is then used in the manufacture of a variety of sports facilities, roads, sound-proof walls and synthetic turf, providing a second life to used tyres, which is exactly what the circular economy is all about.

What is the environmental and social impact of your project?

More than 40,000 tonnes of tyres are discarded or burned in Morocco each year, resulting in severe environmental degradation. Through a careful study of the local markets, I determined that recycled tyres could serve as an input material for many of the country’s public works and civil engineering projects. The environmental benefits of VDMpneu are clear: air quality is preserved by preventing the incineration of tyres and discarded tyres are removed from nature, where they contaminate soils and pollute the landscape. In fact, by recycling around 2,800 tyres per year, we can reduce power consumption levels by an amount equivalent to a car travelling a distance of 33,300 km, and pollute the landscape—so I decided to seek out a better solution. I have always been an active member of a local association involved in collecting, sorting and treating waste plastic, so I decided to move from voluntary work to an entrepreneurial venture focused on the reuse of used tyres. The ‘PVNR – Recycling of used tyres’ venture aims to recycle tyres and transform them into rubber shreds, granulate or powder, which is then used in the manufacture of a variety of sports facilities, roads, sound-proof walls and synthetic turf, providing a second life to used tyres, which is exactly what the circular economy is all about.

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What is the environmental and social impact of your project?

More than 40,000 tonnes of tyres are discarded or burned in Morocco each year, resulting in severe environmental degradation. Through a careful study of the local markets, I determined that recycled tyres could serve as an input material for many of the country’s public works and civil engineering projects. The environmental benefits of VDMpneu are clear: air quality is preserved by preventing the incineration of tyres and discarded tyres are removed from nature, where they contaminate soils and pollute the landscape. In fact, by recycling around 2,800 tyres per year, we can reduce power consumption levels by an amount equivalent to a car travelling a distance of 33,300 km, and pollute the landscape—so I decided to seek out a better solution. I have always been an active member of a local association involved in collecting, sorting and treating waste plastic, so I decided to move from voluntary work to an entrepreneurial venture focused on the reuse of used tyres. The ‘PVNR – Recycling of used tyres’ venture aims to recycle tyres and transform them into rubber shreds, granulate or powder, which is then used in the manufacture of a variety of sports facilities, roads, sound-proof walls and synthetic turf, providing a second life to used tyres, which is exactly what the circular economy is all about.

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

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Green Services & Terroirs
A great eco lodge that promotes agroecology while boosting the local economy

For Salaheddine El Azouzi, agroecologist and permaculture consultant, it is everyone’s duty to contribute to improving the undermined image of the soil of the Moroccan Rif region and consultant, it is everyone’s duty to contribute to improving the undermined image of the soil of the Moroccan Rif region. He has been living in a mostly mountainous region in Northern Morocco with a few coastal valleys suitable for agriculture and urban settlement.

Tell us about yourself and how the idea for your business was born.
I grew up surrounded by nature and that probably shaped my interests. I learned to adore and respect nature when I was a young boy. My studies were totally aligned with that. My background is in agroecology, agroforestry and sustainable management of mountainous agricultural lands and I hold a master’s degree in Tourism and Sustainable Development.

In 2012, I opened a small eco-lodge called Green Services & Terroirs in the Ouezzane province, which is located 50 km south of Chefchaouen. The idea for this small green business was born out of my wanting to develop ecotourism in this region and promote largely sustainable agriculture.

There is a growing demand for responsible tourism focused on the authenticity associated with enjoying and learning about local culture, local food, etc.

Accommodation is one of the services we offer. We also offer a restaurant, scrupulously prepared with the produce we grow in our own organic vegetable garden, which we also sell to other restaurants. For tourists, we organise hiking tours, traditional cooking lessons and other activities related to agroecology and discovery of the natural environment. Education is also an important aspect of the project. Training programmes and internships in agroecology and permaculture are at the heart of Green Services & Terroirs.

I want the company to become a well-known destination across the farmlands and rural settings of North Africa. But most of all, my goal is to foster a deeper understanding of farming processes through education and hands-on experience.

What is the environmental and social impact of your project?
I believe one of the main contributions of my project is its promotion of the use of greener practices and activities in Moroccan guest houses. In Green Services & Terroirs, our commitment is to support producers, artisans and cooperatives to develop ecotourism and ecological agriculture. We try to integrate women and young people as much as possible in our activities, and we also support the creation of farmers’ markets as well as local family-run farms.

We have a traditional mobile catering service we use to distribute our organic production and promote the use of agrifood products from local producers, other cooperatives and farmers to a network of restaurants. In this way, we support small-scale producers and artisans and develop the local economy.

We currently receive between 300 and 400 eco-responsible visitors per year, and having increased our accommodation capacity and production area, we plan to triple that number by 2020, which will also increase the organic production of our vegetable garden by up to 15 tonnes of produce per year. This expansion will create eight permanent jobs and other temporary positions depending on seasonal activities. In addition, we are following green construction sustainability principles on our farm. For instance, we are now saving 6000 m³ of water per year, saving 600 tonnes of wood a year and recovering 60 or more tonnes of soil per year while protecting the forest.

How have you benefited from the SwitchMed programme?
I did not have the know-how or the appropriate support to realise my dream. SwitchMed has become my source of inspiration and action. I am very happy and motivated by the support of this great programme, which has helped me develop green activities for my project.

Through SwitchMed I received technical support for three months by experts in green entrepreneurship. My project was fortunate enough to be selected to receive ten hours of face-to-face support to improve my green business model, which subsequently allowed me to benefit from the incubation programme as well. For eight months, supported by a local mentor, I worked in depth on the technical and financial setup of my project. Now my green business plan is fully developed, and I have a better idea of how to proceed in order to diversify activities and services. The technical expert in ecological architecture was a great help because I purchased a piece of land next to the current eco-lodge to build five new eco-suites, and I needed comprehensive input on the design of the plans. SwitchMed allowed me to increase the visibility of my project, connect with other green entrepreneurs and meet investors. I also received the necessary funding to continue my adventure. This experience has changed my life and made me feel able to change the lives of others around me.

ZOLIMO-Fellah Pro
Morocco is reviving agricultural practices with floating solar panels

Zolimo Fellah Pro provides innovative irrigation solutions to farmers in the form of floating solar-panel water pumps. Using floating solar panels means that unused stretches of water can sustainably and ecologically be used to capture the radiative heat of the sun. With floating solar panels, pump water flows can reach 200 cubic metres per day. This sustainable approach to the problems of land use, according to Ismail Bouhadim, allows land in conflict to be earmarked for other functions, such as agriculture, mining, tourism or town planning. A floating solar-panel water pump is affordable and highly efficient and can be connected to the needs of the farmer. Zolimo Fellah PRO also provides an end-to-end supply and installation service. The fact that solar panels operate in total autonomy means that farmers have access to a renewable resource that can be a solution to the constraint of needing an oil or gas supply. Zolimo Fellah PRO offers very affordable pricing through its ‘fee-for-service’ model for installing and maintaining its solar panel systems. This shift of focus from a capital-expenditure model to an operating-expense setup suits small farmers. The company has also developed a remote monitoring and control system that helps farmers control water pumps using a mobile app.

Morocco Fellah PRO was supported by a local mentor to develop its green business plan using SwitchMed technology.

TECHNOSOLARS
Moroccan leadership in the manufacture of solar technology for use in Africa

Technosolars is an innovative green start-up that manufactures solar thermal collectors, solar water heaters, solar tunnel and chimney dryers, solar reflectors and solar ovens. Its technology, which has a better environmental performance profile than conventional gas appliances, minimises CO2 emissions and therefore reduces dependence on fossil and organic fuels and contributes to preventing environmental degradation. Achybay El Hassan explains that although similar solar products are already available in Morocco, they are imported, whereas Technosolars’ products, which are more competitively priced and have better quality technology, are manufactured locally. Technosolars’ goal is to create jobs and generate wealth locally. This green entrepreneur applied SwitchMed methodology to the development of his green business model.

BIOCHAR MAROC
One Moroccan entrepreneur is changing the way farmers view organic waste

BioChar Maroc is a start-up specialising in the collection and processing of horticultural organic waste. To transform this waste into something usable, Hassan El Hemer invented a mechanical shredder for greenhouse waste. “It’s quick, and the job is done in one day”, he explains, also mentioning that the cost to farmers is less than the cost of clearing greenhouses and burning the waste. Once shredded, the waste is taken to a site near his family home where it is heated and transformed into biochar, a carbonised charcoal dust that is a natural fertiliser for soil. Due to the high pH composition of Moroccan soil, fertilisers need to have a low pH level. Good quality biochar adapted to Moroccan soil can be obtained by controlling temperature during the pyrolysis process (when the waste is being burned). This is an optimal solution for biochar producers, as, according to El Hemer, “we cannot import a product like this”. El Hemer participated in the SwitchMed incubation programme and was supported by a local mentor in developing his green business model.
“Our organic waste recycling project has also a positive social impact as 24 permanent jobs will be created for a period of 10 years.”
Khaola Remmal, ENRD² Engrais Bio

“By recycling around 2,800 tires per year, I contribute to reduce the level of energy consumption equivalent to 114,800 refrigerators per day, the CO₂ emissions equal to a car traveling for 33,300 km, and the amount of water consumed by 11,200 washing machine cycles.”
Elomari Naoual, VDMpneu

“Currently we receive between 300-400 visitors per year but through the increase of accommodation capacity and the food production area, I expect to triple the number of eco-responsible visitors and double the organic production up to 15 tons by 2020.”
Salaheddine El Azzouzi, Sté Green Services et Terroirs

“Plastic4Life will positively impact both the environment and the local economy. My objective is recycling 2300 tonnes of plastic waste yearly, will reduce CO₂ emissions by up to 3530 tonnes a year.”
Oussama Boutrigui, Plastic4Life

“The campsite has been built according to strict sustainable construction practices. Water, energy and waste management are comprehensively addressed in order to reduce CO₂ emissions as far as possible. Our swimming pool, for example, does not use chlorine. I would like the camping farm to be an example of responsible tourism in Morocco for others to follow.”
Hamid Ben M’Barek Riad, Riad Green House
The Switchers: Discover inspiring changemakers who are switching towards a cleaner Mediterranean

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 Morocco, there are 50 Switchers at the moment in the platform.

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

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

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

Barqu'ade
A front row seat to enjoy the ecology and history of Morocco's Bourregreg Valley
Barqu'ade organises environmentally-friendly boat tours in English, French and Arabic on board small traditional wooden rowing boats called Doncas. Ouamel Ghil Guizlizm sees these boat tours as a good way to promote the heritage of Morocco, while also creating job opportunities for boat drivers.
Barqu’ade’s mission is to revive boat trip activities and turn the Bourregreg Valley into a tourist hub. Despite boat trips being a common attraction in cities around the world, it is a relatively unexploited area of activity in Morocco and across the MENA region. The company currently engages the services of 72 boat drivers. When there are no customers, the drivers are free to work independently and continue their daily crossings between Rabat and Salé. Barqu'ade has enabled them to launch a large number of services and has attracted a great deal of new tourist visitors. Four years in and the demand for boat trips is growing. Barqu’ade has attracted 500 customers on an annual basis over recent years and Ghil Guizlizm plans to up that to 1,000 visitors by the end of 2018.

Green Watch
This multi-soil layer system treats water to be used for irrigation purposes
Green Watch is a multi-soil layering system that works by filtering water through a combination of low-cost materials such as gravel, sawdust, sand and charcoal. Dr. Lahliti-Latouch developed this system to collect wastewater from households, treat it and then use it for the irrigation of plants, such as olives and alfalfa. Green Watch removes pollutants and toxic substances such as nitrogen, phosphorus, toxins and bacteria from wastewater. Much of the wastewater produced in developing countries is not treated, but rather discharged straight back into the environment, where it is likely to cause diseases and other issues such as anaerobic, cholera and dysentery. The resulting clear, filtered water is a far cry from the polluted, brown-tinted wastewater generally seen in the villages and increases food security while reducing the amount of freshwater used for irrigation. Green Watch also helps to improve the local quality of life by employing people from rural villages.

Plastic 4 Life
Turning agricultural plastic waste into useful products
Plastic 4 Life aims to preserve the environment and develop the recycling chain in Morocco by collecting plastic waste generated through agricultural activities a second life. Oussama Bourguie’s idea is to recover film, pipes, nets and other non-biodegradable materials from the greenhouse farming operations that stretch across many miles of countryside and replace their material and equipment every two to three years. Following a process of transformation and an injection of colour, Plastic 4 Life facilitates the reintegration of plastic waste into the economy. More than 23,000 tonnes of agricultural waste is discarded after use, presenting a real problem when it comes to disposal. Recycling one tonne of this waste would reduce CO₂ emissions by up to 1.5 tonnes. The goal is to reduce up to 3,500 tonnes by recycling 2,500 tonnes of plastic waste per year. The project aims not only to reduce its impact on the environment but also to reduce the rate of poverty in the region by creating eight direct job opportunities and approximately another 20 within the local area.

Go Energyless Solutions
A Moroccan entrepreneur is tackling food waste through this energy-less fridge
Go Energyless Solutions has developed its Fresh’it refrigerator that works without electricity. It keeps food fresh and safe to eat for up to 35 days, even in the desert. Raewa Lamhar’s vision with Fresh’it is to benefit rural commu-

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Eco-dôme
Aesthetic domes provide eco-friendly housing in Morocco
Eco-dôme designs and builds eco-houses by integrating green construction methods with design and construction. Mustapha Bahram and Youness Ouazri’s idea of an eco-friendly and self-sufficient building is pushing the boundaries of sustainable housing construction. Their aim is to combine quality and comfort while keeping environmental impact to a minimum.
Eco-dôme is an affordable, 72 m², four-room house with electricity, running water, sanitation and energy-efficient electrical installations such as photovoltaics. Its eco-design works in harmony with nature and the rounded shape of the building is a self-stabilising mechanism resistant to natural disasters like cyclones, floods and earthquakes. The dome shape also provides both sound and heat insulation, keeping the rooms cool during the hot summer days and warm during winter. Eco-dôme uses local raw materials such as natural clay, wood and bamboo, which are treated with salt water to protect them from being damaged by insects and do away with the need to use pesticides or other harsh chemicals. The resulting building represents a 44% reduction in energy widespread emissions across the entire construction process.

Terres d’Amanar
A unique eco-tourism experience in Morocco’s Atlas Mountains
Terres d’Amanar offers a unique tourism concept that combines the pleasures of travelling and respect for the local environment. Martin Herbeq and Mohammed El Anbasswi use locally available raw materials, such as an ecodome located in the natural surroundings of Tahanaout, a town near Morocco’s Atlas Mountains.

Terres d’Amanar showcases traditional Berber hospitality, and a range of eco-friendly activities offered to guests. Travellers are invited to admire the beautiful environment while enjoying a range of adventure activities, including horse riding, mountain biking and hiking. Terres d’Amanar maintains a rigorous policy for the protection of the environment, including reducing waste, energy efficient heating systems, and the promotion of local products to reduce resource consumption, CO₂ emissions and pollution in general. The project was developed in close collaboration with the local community, aiming to benefit both the eco-owners and the local population.

Pomm’it
Overripe apples get a second chance in Morocco
Pomm’it produces cider vinegar, food and cosmetics from semi-deteriorated apples. Wael Yassi has not only managed to produce a shift in the attitudes of a community towards a more sustainable use of resources, but also offers incentives to encourage people to proactively pursue such practices.
Pomm’it uses overripe apples as a solution to apple production losses which may account for 60% of the total harvest. The project consists of processing partially affected apples and removing the deteriorated parts. The usable parts are then used to make vinegar following a traditional recipe dating back to 1904. Pomm’it also promotes the consumption of apple by-products by highlighting their medicinal virtues which range from fighting diabetes to weight loss and system detoxification. Pomm’it also attempts to encourage recycling by offering discounts to consumers who recover glass containers.
(1) Eco-dome, housing & construction  
(2) BioChar Maroc, resource efficiency & waste management  
(3) Ecotourisme et Randonnées, tourism  
(4) AYASO, organic food & agriculture  
(5) Marrakesh Organics, organic food & agriculture  
(6) Green Services et Terroir, organic food & agriculture  
(7) Eco-Heat, renewable energy & energy efficiency  
(8) SHEMS FOR LIGHTING, renewable energy & energy efficiency
The White Paper on “Promotion of Green Entrepreneurship and Grassroots Ecological and Social Innovations in Morocco” highlight the strengths and weaknesses of the Moroccan green entrepreneurship ecosystem, in order to reveal the areas and axes where the needs for action are greatest. It summarises the opinions of some forty stakeholders interviewed individually (public institutions, financial institutions, support structures, project sponsors) as well as the results of the Synergies workshop held on 25th May 2016 in Rabat, which brought together over 100 key actors from nearly 60 different organisations. The document is available only in French for the moment.
Empowerment of civil society organisations and citizens to lead innovative solutions addressing environmental and social challenges.
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.

Supporting eco and social grassroots innovations

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

In total, 260 change agents and civil society organisations were mapped and, 16 local trainers and 8 local partners were selected and trained on-site for the implementation of the training programme. Out of the 370 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 trainers, carefully selected by the SCP/RAC, have extensive experience in initiating, implementing and evaluating environmentally and socially innovative projects, as well as a broad understanding and knowledge of training methodologies based on empowerment, collective learning and the participative approach. At SwitchMed, they actively participate in the regional co-creation workshop alongside other local trainers from all the participating countries. They also support the local partner organisation from their own country and the SCP/RAC by identifying grassroots initiatives and guaranteeing the participation of at least 20 social eco-innovation actors or initiatives in the national workshop. This includes providing support by disseminating the call through the available channels to attract potential actors and initiatives to attend the workshop. They are responsible for facilitating a four-day national workshop with the support and guidance of the SwitchMed’s Civil Society Empowerment team. After that, the best two initiatives among those participating in the workshop are selected to receive further technical support. Local trainers therefore participate in the multi-stakeholder selection process of the best two initiatives. In addition, they provide 80 hours of individual “coaching” support to one initiative for the development of a “support plan” to identify the technical requirements needed to properly develop and implement the initiative over a 6-12 month period.

The Association of Earth, Life and Sciences Teachers (AELST)

It is a non-profit association created in 1994 and consisting of a network of 35 sections Morocco-wide. The association brings together more than 2,000 active members and 10,000 volunteers, and heads a network of 18 environmental education centres (CEE). Through its various national and local programs and projects, AELST MAROC aims to promote scientific culture in environmental education, health and sustainable development.

Our local partner selected by the SCP/RAC is an organisation with extensive knowledge of the current situation in Algeria in relation to civil society organisations, social movements and empowered communities in line with SCP and ecological and social innovation, as well as experience in organising and managing workshops. The main task of the local partners is to assist the SCP/RAC in identifying and selecting local trainers as well as potential grassroots initiatives to join our training programme.
Civil society organisations are empowered to act as agents of change and to start community innovations.

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**Trainees**
Grassroots initiatives received training at the national and local level, which included coaching, external technical support and training programmes and workshops for farmers and schools on a pilot farm close to Marrakech. It also aims to create a network of people skilled in agroecological practices.

**Trains**
Grassroots initiatives’ representatives received training at local level, which included coaching and technical support to develop and implement the proposed initiatives.

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

**Transferring agroecological practices: Earth and Humanity Morocco association**
Sustainable agriculture
The mission is to organise agroecology training programmes and workshops for farmers and schools on a pilot farm close to Marrakech. It also aims to create a network of people skilled in agroecological practices.

**Household waste management: Oued Zem association**
Sustainable waste management
The mission is to promote recycling practices for household waste. The project aims to develop a waste valorisation unit for the recycling of household waste in Oued Zem and improve working conditions for municipal waste sorters.

**Sustainable tourism in Taza: Adrar association**
Sustainable tourism
The mission is to promote social inclusion among young people and highlight the potential and natural, human and cultural wealth of the Taza region. The project aims to create sustainable tourism job opportunities for young people.

**Ouezzane fights plastic waste: Green Economy association**
Sustainable consumption
The mission is to raise awareness in the community of the social and environmental impact of our plastic consumption and instil a sense of responsibility and commitment to a low-consumption lifestyle. The project aims to encourage citizens of Ouezzane to use textile bags in Ouezzane through waste management campaigns.

**Job creation in waste management: Aghbalou N’Kerdous association**
Sustainable waste management
The mission is to contribute to reducing unemployment by promoting organic farming and sustainable sheep farming in Seffrou. The project aims to raise awareness about organic sheep farming and efficient use of resources in agriculture while creating jobs and opportunities for local people.

**Cleaning the Kenitra nature reserve: Social development space**
Sustainable waste management
The mission is to promote the vocational integration of young people and raise awareness about the richness of the Sidi Boughaba reserve in Kenitra. The project aims to support the creation of job opportunities for young people in waste management and preservation of the Sidi Boughaba lake’s natural resources.

**Re-evaluation of Saghro natural resources:**
Waste management and sustainable agriculture
The Ecologe
The mission is to build awareness about natural and cultural resources.

**Organic waste becomes a resource:**
Economy association
Ouezzane fights plastic waste: Green Economy association
The mission is to empower and support the disabled in the implementation of income-generating revenue schemes based on waste recycling and reuse. The project aims to help the disabled turn coffee grounds into organic fertiliser for mushroom cultivation.

**Caring for the Kenitra nature reserve: Social development space**
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Meet our Moroccan civil society organisations supported

An experimental and educational centre for agroecology in rural areas

Local residents in small towns and rural communities, such as Sidi Boukhder in the Rehamna province, located approximately 30 km north of Marrakech, are facing serious environmental and social challenges in an area where traces of previously agricultural land have now become vast arid expanses. The region is struggling with issues such as soil degradation, primarily due to climate change, unsustainable farming, and overgrazing, coupled with the few opportunities open to young people in terms of education and income-generating activities, making rural areas particularly susceptible to illegal immigration, ending up in low-skilled and high-risk occupations.

In order to reverse that situation, an initiative called ‘Crossroads of Agroecological Initiatives and Practices’ (CIPA) was introduced in 2015, and an experimental and educational farm was founded that aims to demonstrate the relevance of agroecology for desertification. One of the project leaders, Gueghlan Boujemâa, explains, “Our goal is to transform the arid rural landscape of Douar Skoura in Rhamna into a productive environment with plenty of local resources for its inhabitants. Agroecology proposes practices aimed at the rehabilitation, preservation, and revalorisation of land. It contributes to the resilience of rural economies based on the valorisation of local resources,” stresses Boujemâa. His and his team, all members of ‘Terre et Humanisme-Maroc’, have been working hard since then to create a multidisciplinary agricultural space, which respects the environment and includes beekeeping, gardening and livestock breeding activities.

The centre is also a research area focused on experimentation, education and training to test and disseminate ecological and social alternatives linked to sustainable agriculture and responsible lifestyles. “The initiative has been a game changer and is now creating a second chance for this land and its young people,” notes Boujemâa. In fact, despite the initial scepticism of local inhabitants, the initiative has fostered a great deal of interest in agroecology and sustainable farming. “Moreover, we have proved that it is possible to make this land green again and that sustainable farming represents a cost-effective solution,” claims Boujemâa, proudly showing us the green plains that surround the farm.

“Our ambition is to be a ‘second chance school’ for young people who love the land and wish to live off of it.”

Gueghlan Boujemâa

The project has morphed into a multidisciplinary venture, thanks, amongst other factors, to the training and support provided by the local SwitchMed mentor, who has been instrumental in empowering the team to manage and diversify its activities. CIPA founders highlighted the different opportunities that could be developed according to their resources and that produced positive changes in terms of management. This prompted the development of several lines of support, including the production of a communication plan, a training programme and a manual, along with other activities centred around the equipment and facilities to complete the buildings. As a result of the training provided, the project now boasts an orchard, a pastoral area, a nursery and an educational beekeeping area. The success of CIPA has attracted local people, particularly the younger generation, who have benefited from agroecology workshops, which, in turn, has sparked a desire to connect and contribute to local development. “To date, hundreds of locals have benefited from these agroecology workshops,” says Boujemâa. Numerous information, awareness-raising and environmental education campaigns on agroecology have also been carried out in different regions of Morocco for schoolchildren, students, women, and farmers. “The educational farm has already proved that agroecology is a healthy alternative that enables farmers and their families to improve their situation, while reversing the effects of desertification,” stresses Boujemâa.

For Gueghlan Boujemâa and his team, there is still plenty more to be done at the centre. The potential is massive. For instance, the neighbouring college has contacted members of the initiative to help create an educational garden. With the experience of its members, the initiative is planning to introduce a training programme aimed at unskilled youngsters from Douar Skoura. In this context, SwitchMed is supporting CIPA in its application processes for accessing participatory funds to train these young people from rural areas affected by the agricultural crisis. Beyond its theoretical and practical scope, the initiative is trying to inspire a passion for the land and aims to connect local inhabitants with their region. “Our ambition is to serve as a ‘second chance school’ for young people who love the land and would like to earn a living from it,” says Boujemâa. This is the case for those who have already benefited from the 10-day agroecology training programme that includes both a theoretical classroom-based and practical, hands-on component, working to create a green oasis in this arid zone and changing the environment and life for the better.

Further information:
http://terre-humanisme.org/maroc-formation-agroecologique

Taxi Social: Mobility has changed life for the better for nearly 50 families

Taxi Social has enhanced the quality of life of the inhabitants of Douiret-Sha, an isolated community in eastern Morocco, by meeting a crucial need: mobility within and from the region. The nearest small town, Beni Tadît, is 15 km away, a distance the inhabitants of the douar must cover for anything from groceries to medical services, more often than not in very harsh weather conditions. The Douiret-Sha Local Development Association, which, as its name suggests, aims to boost local development, has created genuinely dynamic community bonds.

For the 50 families living in Douiret-Sha, “getting weekly supplies from the market or simply going to school or the doctor is inconvenient,” explains Abdelkrim Bougoudh, Douiret-Sha Local Development Association’s founder. Another big challenge is the precarious economic conditions. Indeed, without public transportation, and lacking the means to afford private cars, the ageing local population has no opportunity for self-development.

This challenge sparked Abdelkrim’s desire to take action to improve living conditions in his community. Taxi Social took shape over the course of several meetings of the Douiret-Sha Local Development Association. The idea was, with the help of SwitchMed, to provide a collective vehicle for the community to be able to make regular trips to and from the nearest town. Because collecting enough money to buy a van was not feasible, Taxi Social hires an adapted 17-seater vehicle for people to make the journey once every fortnight. It is also available to the inhabitants for emergencies such as childbirth, medical visits and family crises.

In addition to providing collective transportation, “there is now more social interaction, especially amongst the young,” as “we are raising awareness of the importance of reducing CO2 emissions by travelling together and changing to more sustainable transport habits,” explains Abdelkrim. “Thanks to this initiative we have reduced travel time by 20% and the number of visitors to the village has increased by 50%,” he adds.

The SwitchMed training programme helped Abdelkrim to acquire deep knowledge of the transversal issues of consumption and sustainable production. “It has allowed me to take, not only the Taxi Social initiative, but also other projects that I am managing at the Douiret-Sha Local Development Association to the next level,” explains Abdelkrim. With 45% of the Moroccan population living in rural areas, projects like Taxi Social are crucial for the local economy, as such projects improve quality of life for local inhabitants and create incentives for them to implement projects of their own, he notes.

“Thanks to this initiative we have reduced travel time by 20% and the number of visitors to the village has increased by 50%.”

Abdelkrim Bougoudh, founder of the Douiret-Sha Local Development Association

Photo credit @Pixino

Photo credit @Taxi Social

Further Information:
http://www.switchmed.org

Further Information:
http://www.terre-humanisme.org/maroc-formation-agroecologique
Enabling access to finance for green start-ups and entrepreneurs by mobilising impact investment: The Switchers Fund
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 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 and their green business. 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 (FEBAE) and the Union for the Secretariat of the Mediterranean (UfM).
Access to finance capacity building programme for green entrepreneurs

40 Candidates who applied to join the capacity-building programme.

8 Green entrepreneurs who attended the capacity-building programme.

7 Selected green entrepreneurs to pitch during 'Green start-ups meet investors' October 12th 2017.

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.

74 Financial actors identified in Morocco.

11 Financial actors present at the event, namely players in the Bank sector such as ’Le Crédit Agricole’, Attijari Wafabank and by the Head of the Business Angels network ‘Maroc Numérique Fund’ as well as Private Equity Attijari Invest.

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

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Morocco offers a limited ecosystem for the development and financial support of start-ups. The lack of available financing, especially for green entrepreneurs, is reinforced by the fact that banks remain very risk-averse, although there is indeed an interest in new products. It is a country in which the concept of green entrepreneurship and its associated economic opportunities need to be explained and promoted in order to attract financing. SwitchMed plays an active role in this area of activity but it is an issue that also needs to become a policy priority for the Moroccan government and a vector of innovation for Moroccan entrepreneurs and civil society.

In May 2016, SwitchMed led a mission to Morocco to assess the level of interest among financial institutions with regard to investing in eco-innovative businesses and green entrepreneurship initiatives. “Over the course of a week, we met with a number of key actors, including financing institutions, business support organisations, governmental organisations and green entrepreneurs”, explained SwitchMed impact investment expert, Claudia Pani, going on to say, “we successfully gained valuable insights which helped us gauge the situation in the country”. One of those institutions was the National Federation of Microcred- it Associations (FNAM), an umbrella organisation for 13 microcredit institutions with one million beneficiaries, of which 55% are women, which works to reduce poverty and achieve human development goals in the country, as well as establish ethical rules for microcredit activity. “The Moroccan Network of Social and Solidarity Economy (REMESS), a network of 325 organisations working in the area of social economy that supports and trains entrepreneurs and cooperatives, mostly women, was another key actor we met with”, Pani explained, not to mention the Moroccan Institute of Supporting Micro-Enterprises (INMAA) and the Attijariwafa Bank SA. Seloua Amaziane, who heads up the partnership division at the Environmental Affairs Agency, underlined that “the role played by consumers is key for investment in green entrepreneurship and job creation”. Picking up on the same point, General Director of FNAM, El Mazouri, added that “based on our experience, it is important that the demand for green products and services come from the demand side, a case in point being green tourism, a phenomenon that evolved naturally by itself”.

Many of the stakeholders that were interviewed concluded that, given the persistence and scale of unemployment in Morocco, small and medium green enterprises represent a source of job opportunities, and therefore investing in those start-ups could create employment, making this a win-win strategy for the country. In fact, according to Trading Economics, the youth unemployment rate in Morocco averaged 14.15% between 1999 and 2018, reaching an all-time high of 29.03% in the third quarter of 2017 and a record low of 13.30% in the second quarter of 2006. So what has been done so far to reverse that situation?

As of today, various tools and products have been designed by public institutions to create synergies between SMEs and banks. In addition, crowdfunding looks poised to emerge in different ways to address this problem, at least partially. Morocco will focus on self-employment, particularly through the new legal framework introduced recently. The two major banks in Morocco, Attijari and the Moroccan Bank of Exterior or Commerce (BMCE), seem to have started focusing on self-employed entrepreneurs and redefining their approach to be able to serve this segment of the market. The Moroccan government has taken steps to encourage banks to support small companies; entrepreneurs can therefore expect to receive better treatment from them in the future. In fact, these banks are currently reviewing their approaches towards micro-enterprises and start-ups without collateral.

Taking this into account, the banking sector’s role in financing a green economy needs to be strengthened and there needs to be greater awareness about the importance of developing financial products focused on the promotion of a green economy. Eco-innovative SMEs are the real engines of green economy and, for that reason, they are expected to benefit from new green financing tools and the relevant accompanying measures. The existing range of options is still rather limited and will exclude many new green entrepreneurs, particularly small initiatives which may require more funding than a microloan, but are unable to meet the growth expectations of the limited number of venture capital funds, and which are also neglected by banks. Initiatives with high growth potential can use incubators and coaching programmes to increase their investment readiness and make them more bankable.

Smaller initiatives will be able to capitalise on the microloans offered by Moroccan microfinance institutions, which are well developed and probably easier and faster to access. Generally speaking, the Moroccan situation still exhibits a lack of availability of ad-hoc instruments aimed at green entrepreneurs, particularly for the smallest green companies or those yet to launch. As such, it is common to see young entrepreneurs applying for microloans, which seem to be the most readily available finance option. Moreover, as long as entrepreneurs are able to develop their ideas and ensure growth, they are able to explore a number of other finance options.

Those who meet the expectations of investors, particularly highly innovative SMEs, may qualify for early stage venture capital investment, even though the range of options is currently very limited. And for those companies already established, our so-called Switchers, with some measure of track record, there is the possibility of applying for banking loans and using existing guarantee schemes aimed at SMEs. Small and green businesses, in particular, face huge challenges when it comes to accessing finance. The green market currently seems to present an expensive solution, hence the interactions between banks and green businesses need to consider the constraints under which each party is operating.

The capacity to provide support to companies according to their real stage of development is vital. A specific finance mechanism able to support ideation, start-up and growth phases should be developed in order to help companies survive during the early years until they can gain access to finance and economic stability, and to address the real needs of small businesses at different moments in their corporate life.

According to Rida Lamrini, president of INMAA, “Morocco is not yet ready for a green revolution, as financing institutions are more worried about their loans being covered by a guarantee rather than the existence of a green entrepreneurship ecosystem”. What is key though is that potential green entrepreneurs should be aware and have a comprehensive knowledge of the financing options available to them. “Knowing the differences and advantages of each tool is of paramount importance. Investors and banks look for different features and also represent different opportunities in terms of growth, ownership, risk and future obligations”, Lamrini stressed.

Following the visit, Pani noted, “we can say that, even if the public sector doesn’t support green economy to a sufficient degree and there is no strategy in place to market green business as a win-win sector, the country does represent opportunities. For example, there is potential to build the infrastructure necessary for fostering green entrepreneurship. If done correctly and if the process is set on the right track, its development could be accelerated”. It is clear that the Moroccan government has a comprehensive grasp of transitioning to a green economy and understands that this would provide benefits for both the ecological balance and the opening up of new opportunities for wealth creation and sustainable jobs. Environmental challenges like water scarcity, land degradation, high reliance on fossil fuels, climate change and pollution, together with the limited social development policies in place in terms of employment and reduction of social inequalities, presents a case for rethinking the current economy and promoting a move towards a green and inclusive one. El Mazouri believes that “it is important to start off on the right foot, that is, to find the right people to train”.

Another important point is the support offered to green entrepreneurs in terms of capacity building. SwitchMed has a decisive role to play in this regard, by generating a supply of entrepreneur-ready investors. Amaziane, from the Environmental Affairs Agency, added that “our main goal is to facilitate the creation of a self-sustaining ecosystem of green entrepreneurs. It will not only create synergies between like-minded projects, but could also boost economic growth in the country through job creation”.

The role played by consumers is key for investment in green entrepreneurship and job creation.”

Seloua Amaziane, head of the partnership division, Environmental Affairs Agency

“Based on our experience, it is important that the demand for green products and services come from the demand side, a case in point being green tourism, a phenomenon that evolved naturally by itself.” El Mazouri
Wastewater treatment solution wins the Elevator Pitch in Morocco

Zouhair Chakir’s profile:
Zouhair Chakir CEO and founder of StepMobile is Engineer in Process engineering and Environment. He was doing a PhD at the University of Hassan II. He has realised several internships at Lydec, OCP or MargAfrica, where he acquired many skills in managing polluted water. In December 2016, Zouhair participated in the Social Entrepreneurship SEED EURO-MED Bootcamp in Algeria and in the WaterCampus Business Challenge in Netherlands, where he had the opportunity to meet and engage with other experts and start-ups in the Water Sector and pitch for StepMobile.

In 2014, Zouhair Chakir came up with the idea of StepMobile after the new Moroccan laws started to require manufacturers to responsibly dispose of their wastewater. Chakir saw an opportunity to create a mobile wastewater treatment unit aimed at small and medium-sized businesses, with the relevant permanent infrastructure representing an investment that was out of the reach of all but the largest of companies. And it was this initiative that won him the 2017 SwitchMed Elevator Pitch in Morocco.

How has winning the Elevator Pitch meant for you?
Winning the green elevator pitch has opened up more opportunities for StepMobile. For me, it was a great experience because it opened my eyes to the importance of doing a good job of publicising a project to attract its customers as well as attention from investors.

Winning the green elevator pitch has opened up more opportunities for StepMobile.

Did you find that eco-system?
Yes. I discovered the whole Mediterranean ecosystem in Morocco, so I took part in the first edition of the SwitchMed programme, promoted by the Young Entrepreneur Foundation (FJE) and the Moroccan Network of Social & Solidarity Economy (REMESS). And I have remained connected ever since.

What do you think it was that made your project the elevator pitch winner?
I think that StepMobile responds to one of the most urgent environmental and social issues in Morocco: pollution and environmental degradation. My project focuses on the handling of untreated industrial water, particularly for small and medium-sized businesses through the use of a mobile wastewater treatment unit.

What kind of things did you learn?
Thanks to the training, I learned how to highlight the strengths of my business model and to dedicate the correct amount of time to each part of the presentation. I learned how to structure and develop my green business plan, how to define the right market and identify competitors, and design a communication strategy.

And what about the feedback from investors?
After the presentation, I felt that I had successfully explained my project to the jury and emphasised its added value. The main lesson I learned from them, however, was about clarifying the financial aspect of my business plan. I realised that I needed to define that better, specifying the amount being asked for and how it would be spent in order to send a clear message to investors.

What are the environmental impacts addressed by StepMobile?
Proper wastewater treatment is essential to prevent a number of environmental and health problems caused by contaminated effluents. As Touria Jaouher from the Ministry of Water said in the Workshop on Sanitation, Wastewater Treatment and Reuse (ACT), industrial activity in Morocco is responsible for generating high levels of pollution that has an impact on marine life and wildlife, leading to oxygen depletion, beach closures and fishing restrictions, and, ultimately, affecting the consumption of fish, shellfish and crustaceans.

And all this affects human health as well...
Yes, of course. There are many restrictions related to the consumption of drinking water. Bacteria, viruses and pathogens pollute the beaches and contaminate different species of shellfish, thus affecting beach access and water consumption.

Wastewater pollution also generates other impacts that people are perhaps not aware of.
That’s true, for instance, large amounts of decaying organic matter and debris can cause eutrophication, which means that the water contains an excess of minerals and nutrients, such as phosphorus and nitrogen, resulting in accelerated plant growth which reduces the amount of available oxygen.

Is your standard customer aware of these issues?
Yes, I discovered that some customers are aware of these issues.

And your specific goals?
I believe that StepMobile will change industrial wastewater treatment in Morocco and Africa! Within five years, we expect to install and pilot 60 mobile units in Morocco to help reduce industrial pollution by 15%.

Finally, what are the next steps for your project?
We have a complete management system plan involving water treatment and the management of sludge and waste to generate a biomas energy source. Although, due to a lack of financial resources, we are still in the research and development phase, we expect to recover the investment of the first unit to fund the next phase of the project.
Thermal fabrics replace fuel in Morocco

The smoke produced by cooking fires billowing from houses is a common sight in rural areas of Morocco. Powerful pollutants such as butane gas, wood and coal are frequently used for everyday activities as an alternative to electricity, due to its high cost. According to the Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA), families in rural areas use around two tonnes of firewood per year for cooking purposes, causing global deforestation and chronic respiratory diseases. The World Health Organisation estimates that 1.5 million people, mostly women and children, die prematurely every year as a result of exposure to indoor air pollution from the use of solid fuels, which equates to more than 4,000 deaths per day.

Concerned by this problem, and after visiting several rural Moroccan regions as part of their social university work placements, Eco-Heat’s three co-founders, Othmane Benhlima, Soumia Hasnaoui, and Imane Mekkaoui, came up with the idea of creating a portable slow-cooker consisting of an isothermal bag using technology based on the thermodynamic principle of heat retention. The stove, which bears the same name as the company, was designed to save time, effort and energy. It is a simple electricity-free bag entirely made of cloth, so not only is it kinder to the environment, it is also washable and reusable. The eco-design process was essential to successfully developing the product, the ellipsoidal shape of which makes it much more effective at retaining heat. The principle behind the eco-bag involves using a small amount of fuel to boil food for 20 minutes, and then, once boiled, the dish can be placed inside the thermal bag to continue cooking for a further 90 minutes to five hours. This slow cooker method represents a saving of up to 75% of the butane gas or 55% of the wood that would typically be used. Although Eco-Heat was initially developed as a solution for cooking in rural communities, the young start-up have realised that it also offers benefits as a time-saving product for urban communities. The team is also planning to market it for travellers and campers. With these other markets in mind, Eco-Heat has developed a tiered pricing scale so that urban sales would subsidise the costs for rural consumers.

In order to achieve balanced growth, Eco-Heat intends to strengthen both its production capacity and its sales force, which this grant will certainly help with. To date, the initiative has successfully changed the lives of ten people who are now working on designing reusable eco-friendly bags and earning a monthly income. The company has a production capacity of 200 bags per month, with 150 units already sold in Morocco and 130 in Senegal. Eco-Heat’s three co-founders use their engineering skills and their power of entrepreneurial action to transform lives and shape a more sustainable development model. They believe that comfort, quality and efficiency are the essential ingredients to improving quality of life for everyone.

Eco-Heat’s ingenious combination of technology, innovation and ecological design resulted in the project being selected as one of the six winners of the SwitchersFunds first ever OSCE GEMS Awards. Each winner, from one of the programme’s six participant countries (Tunisia, Morocco, Jordan, Egypt, Israel and Algeria), was awarded a 15,000-euro grant. The successful finalists were chosen from 240 young entrepreneurs with projects that, like Eco-Heat, are addressing important environmental problems, developing the circular economy and promoting sustainable lifestyles. The selection criteria was based on the innovativeness and scalability of their idea, the environmental and social impacts of the project and the sustainability of their business model. The mission of SwitchersFund is to encourage green and social entrepreneurship in the Mediterranean region, while connecting financiers and investors with innovators. The awards aim to provide an additional injection of funds to the Switchers, the innovative entrepreneurs involved in designing new products and services by applying eco-design principles, who are contributing to making sustainable consumption and production in the Mediterranean area a reality.
Stepping up internationalisation of SMEs on green business models and resource efficiency in the Southern Mediterranean.
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 of SMEs and helping them to access third markets, and thus, becoming drivers of a green growth, is crucial, not only for the businesses but also for the economy in the Southern Mediterranean.

Eco-innovative business solutions for the Southern Mediterranean

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

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

Pilot studies for the Product Environmental Footprint framework

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

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

A high interest from local companies was noted and nine companies were selected for the implementation of the PEF category rules on a specific product that the export or plan to export in the EU. Their motivation to participate in this activity, even though the PEF category rules were not yet finalized at that point, was mainly based on the need to understand their products environmental footprint and the potential for improvement. For each company product, one local expert has been assigned to implement the PEF category rules 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 process and much more accurately. In addition, national partners in Egypt, Lebanon, Morocco and Tunisia were assisted in raising awareness among national stakeholders about the framework for a Single Market for Green Products initiative, contributing to the adoption of greener standards for the national manufacturing businesses in order to compete on equivalent terms in the EU market.
Textile from Morocco spinning off on eco-innovations from the EU

The SwitchMed B2B events in Morocco presented Italian eco-innovative textile yarn from recycled polyester that could lead to new market opportunities for Moroccan textile producers with eco-friendly products and circular supply chains.

Plastics are a versatile and popular material that has become an omnipresent resource in our everyday lives. Unfortunately, plastics also increasingly influence the waste streams from our societies, creating an abundant pollution in our oceans and environment. Finding ways to recycle and re-consume plastics would therefore not only be an interesting opportunity to reduce this pollution, but it could also become an interesting resource for textile producers.

An innovation, developed by the SUPERTEX project, is aiming to demonstrate that post-industrial and post-consumer polyester waste can be exploited in the textile industry for the production of high added value multifilament yarns to be applied in the production of technical textiles.

An innovation by SUPERTEX involved the transformation of post-industrial and post-consumers polyester wastes into multifilament thread production used for technical uses such as the automobile sector or textile. Recycled polyester threads from SUPERTEX can be treated in the same way as virgin thread, where additional functionalities may be added such as fire retardant characteristics. This eco-innovation demonstrates that the use of recycled plastics as a raw material for the textile industry is a promising approach for the reuse of post-consumer waste.

The SUPERTEX project has been coordinated by Next Technology Tecnotessile and is a private research organisation enrolled among the laboratories recognized by the Italian Ministry of Education, University and Research (MIUR), operating for the improvement of technological innovation and the competitiveness of companies. Participation in RD and technology transfer projects has allowed it to consolidate a vast network of links and collaborations, with the most important industrial companies, universities, research centres and companies service operating in Italy, Europe and worldwide.

The eco-innovative solution from SUPERTEX was, among others, selected for the B2B event organized by UNIDO within the framework of the SwitchMed initiative in Tunisia and Morocco. The promotion of eco-innovations from the EU that could create new business opportunities for Moroccan businesses and provide them with new innovative solutions in recycling plastics, raised the interest from Moroccan companies and industry stakeholders on the issue of upgrading supply chains for reused plastics.

During the B2B meetings held on October 26th in Morocco, Next Technology Tecnotessile held meetings with the C2TM a Moroccan cluster for technical textiles, and the company POLYFIL, specialized in yarn production (spinning, texturing, grinding and dyeing PET Polyester yarn).

Created in 1990, POLYFIL is based in Berrechid, south of Casablanca, and lays over 85,000 m² and is equipped with automatic production lines with an annual capacity estimated at 5,500 tons of yarn. The company is considered to be the regional leader in the development, production and marketing of continuous polyester yarns. POLYFIL produces dyed, super-bright, semi-dull polyester yarn 100% PET. Besides fabrics for automotive market, the yarn is reserved for furniture and decoration, sportswear, trimming and dressmaking accessory.

Since 2008, POLYFIL oriented its development strategy towards the internationalisation of its products. The automotive market was the focus of this new policy. Spain and France were the first destinations for its products. Since then, POLYFIL has steadily increased its customer portfolio abroad. Today, she has a wide range of clients in Europe and North Africa, operating in particular in the automotive sector, but also in technical textiles. POLYFIL is REACH, Imantor and Veritas certified.

Ms. Imane Saadane, R&D manager at POLYFIL, states that their production of PET yarns on an industrial scale generates every year about 400 tons of PET scraps (50% of which contain finish oil). Those wastes are generally either dumped or sold at a very low price to informal waste brokers. Discussions were held along with C2TM and Next Technology Tecnotessile about a possible application of this material for different applications such as recycling into technical textiles.

POLYFIL is extremely interested in the innovation presented in the SUPERTEX Project and would like to plan a deployment of this technologies at POLYFIL’s facilities. At the time of the meetings, POLYFIL was already looking for solutions to recycle and upgrade its wastes.

At this point, through C2TM, POLYFIL has sent an official invitation to Mr Daniele Spinelli from Next Technology Tecnotessile to come for a visit at the factory to give him a detailed idea of the existing situation. Information is being exchanged back and forth. Next Technology Tecnotessile is studying the feasibility of such collaboration providing an offer to POLYFIL for the development and realization of non-woven components from process co-products (PET scraps). The design and production of textile prototypes (yarns), possibly mixed with other fibres (wool, cotton etc.), for the determination of the process solutions to reuse the scraps into textile manufacturing cycles will be considered.
Promoting eco-innovative solutions from the EU for Moroccan SMEs

Number of face to face meetings between the EU technology providers and the MENA companies: 18

Number of announced initiatives: 116

Projects concluded and under negotiation (April 2018):

- **VAN MAREN SYSTEMS**
  - Type of license: Agreement
  - Investment: 10% royalties on turnover
  - Sector: Plastic
  - Environmental savings: 9.45 Mio kg of plastic to be reused

- **INESCOP**
  - Type of license: Technical assistance
  - Investment: Under evaluation
  - Sector: Leather and shoes
  - Environmental savings: To be defined

- **JEANOLOGIA**
  - Type of license: Technology transfer
  - Investment: 143.000€ (New Wash)
  - Sector: Textile and garments
  - Environmental savings: 250.000 to 300.000 m³/year water (national forecast)

- **NEXT TECNOTESSILE**
  - Type of license: Technology transfer
  - Investment: Under evaluation
  - Sector: Textile and garments
  - Environmental savings: 400 tons/year of PET scraps

- **POLYFIL**
  - Type of license: Technology transfer
  - Investment: Under evaluation
  - Sector: Textile and garments
  - Environmental savings: To be defined

- **CETMA**
  - Type of license: Studying phase: 25/45.000€ - investment under evaluation
  - Sector: Plastics
  - Environmental savings: 162 tons/year recycled polypropylene

- **BROSAHEL**
  - Type of license: Technology transfer
  - Investment: Under evaluation
  - Sector: Environmental savings: To be defined

- **INNOVATION PARTNERS IN MOROCCO**
  - Type of license: Agreement
  - Investment: Under evaluation
  - Sector: Plastic
  - Environmental savings: 9.45 Mio kg of plastic to be reused

- **POLYFIL**
  - Type of license: Technology transfer
  - Investment: Under evaluation
  - Sector: Textile and garments
  - Environmental savings: 250.000 to 300.000 m³/year water (national forecast)

- **NEXT TECNOTESSILE**
  - Type of license: Technology transfer
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  - Type of license: Technology transfer
  - Investment: Under evaluation
  - Sector: Environmental savings: To be defined
Exchanging, synergising and engaging with business & investment networks to scale-up demo actions.
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 12 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 achieved during the programme. To that end, the Networking Facility has promoted the production of regional and national scaling-up pacts effected during the programme. To that end, 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.

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

Meet our strategic partners

We work in strategic partnership with international and national organisations that are very experienced an 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 current strategic partners are:
The SwitchMed Programme is implemented by the United Nations Industrial Development Organisation (UNIDO), UN Environment Mediterranean Action Plan (UN Environment/MAP), Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC) and UN Environment’s Economy Division.

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Join us now at switchmed.eu/en/community/jointhe-action-network

For further information visit us:
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- www.theswitchersfund.eu
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