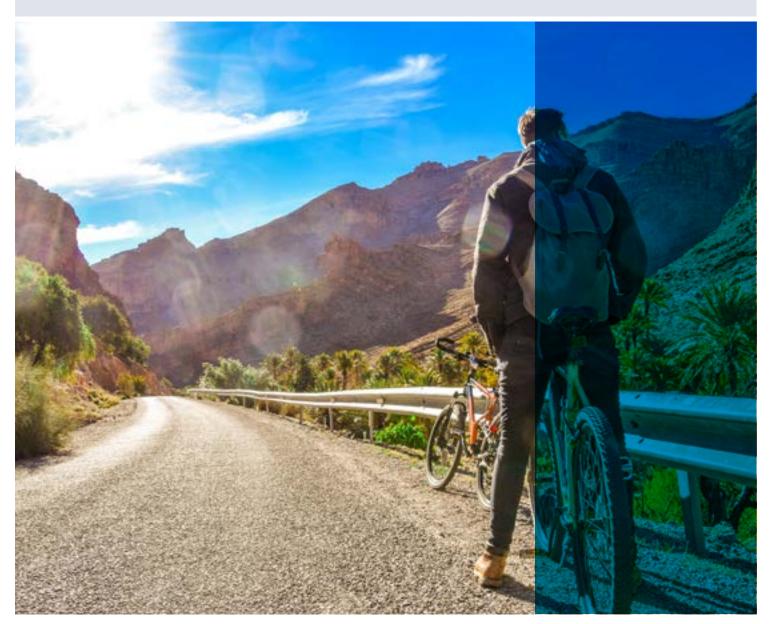


Sustainable Consumption and Production

# HOW MOROCCO IS SWITCHING TO A CIRCULAR ECONOMY

Building climate resilience and resource efficiency







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ISBN: 978-92-807-4088-2 Job number: DTI/2579/NA

DOI: https://doi.org/10.59117/20.500.11822/43862

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Suggested citation: UNEP (2023) How Morocco is switching to a circular economy, United Nations

Environment Programme, Nairobi

https://wedocs.unep.org/20.500.11822/43862





SwitchMed is an EU-funded initiative to support transformation towards Sustainable Consumption and Production (SCP) and Circular Economy in eight Mediterranean countries. SwitchMed directly supports the reinforcement of an enabling policy environment, practices by private sector, and experience-sharing among stakeholders to build a community of practice on SCP, circular and blue economy and reducing the environmental footprint of consumption and production activities.

SwitchMed is implemented by the United Nations Industrial Development Organization (UNIDO), the United Nations Environment Programme (UNEP), the United Nations Environment Programme Mediterranean Action Plan (UNEP/MAP) and the Regional Activity Centre for Sustainable Consumption and Production (MedWaves, former SCP/RAC). The initiative is carried out in close coordination with the Directorate-General for Neighbourhood and Enlargement (DG NEAR).

During SwitchMed's first phase (2013-2018) UNEP's collaboration with the countries focused on the development of National Actions Plans (NAPs) for the transition to SCP and demonstration projects. The Sustainable Consumption and Production National Action Plans (SCP-NAPs) feed into and are closely linked to related national strategies (Sustainable Development, Green Growth) and the regional SCP action plan developed by UNEP-MAP.

The second phase of the project (2019-2024) builds on the successes of the first phase by focusing on enhancing economic opportunities for businesses following green and circular economy models, enabling resource-efficient circular economies at national and regional levels. As a result, this action provides new employment opportunities, including for women. A special focus is encouraged to support their participation in trainings and capacity building activities and benefit from other supporting measures.

#### Acknowledgement

The United Nations Environment Programme (UNEP) would like to thank the authors, editor, reviewers and designer for their contribution to the development of this report:

Ms. Meriem Houzir, National Consultant of SwitchMed

Ms. Moira O'Brien-Malone, Editor

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Special thanks to

Ms. Seloua Amaziane, National Focal Point of SwitchMed for her contribution and valuable input to this report.

# SCP: PLANNING FOR CHANGE - IMPLEMENTING THE CHANGE

The core aim of SwitchMed is to assist countries in making the transition to SCP and circular economy, one of the objectives the world set itself when it adopted the Sustainable Development Goals (SDGs) in 2015.



SwitchMed started back in 2013 at a time when the SDGs were not yet adopted as the international Agenda for 2030. UNEP's first activities at country level were to present and raise awareness of SCP and present the positive impact such a switch could have. As a first step, UNEP provided technical assistance and capacity reinforcement for countries as they developed National Action Plans (NAPs) for making this switch. The plans focused on resource efficiency in tandem with other social and environmental challenges such as gender equality and climate change.

In the Kingdom of Morocco, work on developing its National Action Plan on SCP was led by the Ministry of Energy Transition and Sustainable Development with support from SwitchMed. As a result of wide-ranging consultations, Morocco decided to develop three separate documents:

- A national framework for the promotion of sustainable consumption and production.
- A 10-year plan for agriculture and agri-food.
- A 10-year action plan for eco-construction and sustainable buildings.

More than 60 participants in the consultations came from wideranging backgrounds, including government, business and industry, non-governmental organization, news media and academia. This helped develop a sense national ownership of the National Action Plan and buy-in from across societal sectors.

In developing its National Framework Plan for Morocco, the country examined a number of strategic orientations, including the economic and behavioural changes needed for ecological transition, incentives for business and industry to shift to sustainable production, promotion of the circular and low-carbon economy, and support for eco-responsible consumption patterns.





## TEN SUCCESS STORIES | MOROCCO



#### LEADING BY EXAMPLE

Morocco adopted its National Sustainable Development Strategy in 2017, and two years later encouraged public institutions to put it into practice when it established the Exemplary Pact of the Administration (Pacte de l'Exemplarité de l'Administration 2019-2021). The aim was to have government institutions lead by example by asking them to commit to key objectives, which are strengthening their role as a responsible employer, mainstreaming environmental approaches in public buildings and their management, adopting sustainable waste management practices, promoting sustainable public procurement and sustainable mobility, and promoting participatory, transparent approaches.

The Department of the Environment developed thematic guidelines (water, waste, mobility, energy efficiency, etc.) to help institutions to achieve their goals, and also set in place standard terms for reference for environmental audits of public buildings.

In 2021, 21 ministerial departments had committed to the pact. Some have been able to reduce their water consumption by 50 per cent and produce 22 per cent of their electricity needs from renewable energies. Others were able to achieve 32 per cent clean vehicles in their vehicle fleet and achieve a waste recycling rate of about 35 per cent.

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#### **CUTTING FOR CLIMATE**

As part of its commitment to the world's fight against climate change, Morocco has set itself some ambitious goals in its energy policy. The country aims to have 52 per cent of its electricity coming from renewable sources by 2030, and also to have cut its energy consumption by 20 per cent by the same year.

To achieve these objectives, strategic orientations have been adopted and broken down into short-, medium- and long-term action plans. These provide for a diversified energy mix, the development of renewable energies and energy efficiency, as well as the strengthening of integration within the region.

The country has also decided to explore new sources of sustainable energy, including recovering energy from biomass, supporting desalination plants with renewable energy production units, and setting up a national hydrogen roadmap.

Consequently, Morocco hopes to meet its commitments on Green House Gas emissions reductions of 45.5 per cent by 2030, against a reference scenario, and an unconditional cut of 18.3 per cent.



#### REDUCE, RE-USE, RECYCLE

To reduce its reliance on imports, and to conserve natural resources, Morocco is keen to switch to a circular economy and has begun with an ambitious strategy to manage waste, expected to reach 39 million tonnes a year by 2030. Significant efforts have been made to upgrade and professionalize the waste sector, where, in 2008, 44 per cent of collection by done informally. Now, thanks to the National Household Waste Collection Programme, 90 per cent of workers are now professional, and 62 per cent of household waste goes to controlled landfill, or to waste recovery centres (up from 10 per cent in 2008).

Reduce, reuse, recycle have become the bywords of the waste sector, which is now credited with creating wealth and new jobs around the country, as well as supporting innovation in materials management.

Separate disposal channels have been established for plastics, polychlorinated biphenyls (PCBs), batteries, tyres, lubricating oils, cardboard, edible oils, e-waste, construction and demolition waste, and used cars.

Recovering energy from biomass is also part of the strategy, with the aim of achieving 52 per cent renewable energy development in 2030.



#### BANNING PLASTIC BAGS

To deal with the problem of plastic pollution, Morocco has opted for a total and definitive ban on the manufacture, import, export, marketing and use of plastic bags through law 77-15.

The decision was made after the report of the National Strategy for Waste Reduction and Recovery, which estimated the deposit of plastic waste in Morocco at 800,000 t/year, of which only 25 per cent was recovered and recycled.

The Department of Industry set up a fund of 200 million Dirhams (\$US 22 million) to aid those affected by the ban, with the money dedicated to financing and support for retraining. Some 104 industrial entreprises were involved, providing 3,840 direct and indirect jobs. It benefited 25 eligible companies, which not only maintained existing jobs but created an additional 600.

A programme to promote alternatives to plastic bags has been launched by the Department of the Environment with a budget of Dh 70 million which has resulted in the production and distribution of nearly 2.5 million canvas bags, improving the turnover of 139 women's sewing cooperative, increased income for their 2,600 members, support for around 80 local associations working in the environmental field in 26 pilot towns, and sensitization of around 2.5 million households to the negative impact of plastic bags.







#### TURNING WASTE INTO ENERGY

For some years now, the city of Fez has produced electricity from biogas. Installed within the Fez landfill, the city's bioelectric power station represents a successful model in terms of energy recovery from waste and contribution to the production of electricity from renewable energies.

Thanks to the 10 million kilowatts produced, the landfill produces 25 per cent of the electricity for public lighting in Fez.

Other cities are in the process of equipping themselves with this technology.

In addition, the city of Marrakech has also initiated a cogeneration project at its Wastewater Treatment Station. This is the first such plant to integrate biogas recovery and water reuse throughout the region. It generates 130-140 tonnes of residual sludge every day. This is treated in a digester by a bio-methanization process. The biogas produced by the station co-generates 30 MWh/day of electricity, enough for 50 per cent of the needs of the plant, and 40 MWh/day of heat for the thermal needs of the station. This is the equivalent of 67 barrels of oil a day.

Due to its innovative technology, the Marrakech wastewater treatment plant has been registered by the United Nations under the Clean Development Mechanism (CDM) of the Kyoto Protocol on climate change. The CDM is a carbon offset scheme allowing countries to fund GHG-reducing projects in other countries and claim the saved emissions as part of their own efforts to meet international emissions targets.



#### FARMING FOR THE FUTURE

Around the world, and within Morocco, consumers have developed a taste for organic produce. To meet this growing demand, the Generation Green Agricultural Strategy (SGG) aims to reach 100,000 hectares of cultivated area for organics by 2030. To illustrate the rapid growth of this sector, it generated 120,000 tonnes of produce in 2019, compared to 40,000 tonnes in 2010. In terms of exports, some 17,00 tonnes of citrus fruit, vegetables, frozen orange juice frozen strawberries, and olive and argan oils, were sent out of the country in 2019, compared with just 10,000 tonnes in 2010.

Since September 2018, when Morocco became the second country in Africa to adopt legislation on organic production, the industry has a regulatory framework (law number 39-12). The sector now has two accredited certification and control bodies. One is the Bio Maroc label, and the other is the SPG label (guaranteed participatory system), set up by the Crédit Agricole du Maroc Foundation for Sustainable Development.

Since the entry into force of the legal and regulatory framework for the sector, agricultural products have been certified according to Moroccan regulations and Maroc Bio origin is the SPG label (guaranteed participatory system), to identifiers producers of sustainable agriculture and promote their products to consumers.

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#### TRANSFORMING TRANSPORT

Transport is Morocco's most energy intensive sector, accounting for more than a third of the country's total energy consumption and 23 per cent of its GHG emissions. Recognizing the potential of sustainable mobility, the Ministry of Equipment, Transport, Logistics and Water drafted a Roadmap for Sustainable Mobility in 2017. The country is now working on a national master plan for sustainable mobility that is expected to be released in 2022. The plan will help determine the amount of electricity needed, the infrastructure and regulatory framework necessary to develop electric mobility.

But a number of mobility projects are already under way: for example, tramways in the cities of Casablanca and Rabat and an electric bus in Marrakech, which have become the most widely used ecological modes of public transport in Morocco.

In Marrakech a fleet of electric buses operates on two lines, providing the city with clean public transport in line with its Urban Displacement Plan. Bus recharging infrastructure and a supply of green electricity from a photovoltaic plant have been established. This project has contributed to the reduction of GHG emissions by nearly 1,040 tonnes of carbon dioxide equivalent/year.





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#### **CLEANING UP INDUSTRY**

Switching the industrial sector to cleaner production is the aim of the MED TEST II programme, implemented in Morocco as part of the SwitchMed programme. Twenty pilot companies were selected from four industrial sectors (agribusiness, textiles, medical and paramedical mechanics and metallurgy) for a preliminary evaluation of potential savings in materials, energy and water consumption if they moved to more resource-efficient low-carbon practices. Savings of 5,153 t year of raw materials, 98.8 GWh/year of energy, 137,399 m³ of water, as well as a reduction in the pollutant load of 3,162 T/year of solid waste and 39,971 T/year of CO<sub>2</sub> were identified across the 20 companies.

The project identified 475 measures to improve the Resources Efficiency and Clean Production (ERPP) in the 20 pilot companies, among which 407 measures, or about 86 per cent, were slated for implementation. The expected annual savings in the 20 companies amount to 10.5 million euros with investments of around 21.6 million euros. Although the financial gains are relatively large, the payback time is also relatively short, with 36 per cent being paid back within six months.



#### IMPROVING HOUSING

The building sector is a major player in the climate because of the energy consumption and GHG emissions it generates. In Morocco, the energy performance rules for buildings, and standards relating to thermal insulation, building performance, sustainable construction and building waterproofing are governed by the General Building Regulations.

A building constructed according to current regulations consumes on average nine times less energy than the same building constructed previously. It also emits three times less GHG emissions. Improvement of existing buildings is essential because the stock is only renewed at a rate of one per cent a year.

Since 2010, the Real Estate Development Group, which builds social housing, has been carrying out energy efficiency demonstration projects which have served as tests for the regulations on thermal requirements in the construction, created in 2015.

Another group, Al Omrane, a semi-public institution, has also launched demonstration projects on energy efficiency in buildings, which integrate architectural, urban planning, environmental, technical and construction solutions aimed at offering residents optimal conditions and a living environment and well-being while guaranteeing maximum reduction in energy consumption.

Another pilot project, carried out in the towns of Tamesna and Chrafate, takes an environmental approach to urban planning and integrates energy efficiency, waste management, water use, rainwater and urban transport management.

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#### **CREATING VALUE FOR WASTE OIL**

In Morocco, 86,400 tons of used frying oil are produced each year by households. These oils generate the risk of groundwater pollution (one litre of oil poured into the sink can contaminate up to one million litres of water, the amount necessary to meet the needs of a human being for 14 years); and the marine ecosystem (organic matter decreases the oxygen level in the water and so can suffocate fish and other organisms).

But used frying oils can be collected and converted into biodiesel, which cuts the cost of wastewater collection, and reduces the risks of degradation and congestion in sanitation systems as well as the proliferation of microorganisms that may be harmful to human health. Also, using biodiesel instead of fossil fuels cuts carbon emissions (one ton of used oil = 2.6 T CO<sub>2</sub> reduction).

Kilimajaro Environnement, a Moroccan SME, is testing collection of household waste oils and recycling them into biodiesel. This home collection project will ultimately lead to the creation of 2,000 jobs, the reduction of  $CO_2$  emissions by nearly 230,000 tonnes of waste per year, as well as the emergence of a sector estimated at DH 1 billion in strengthening of the country's trade balance.

### SCP IN MOROCCO: LOOKING AHEAD

Around the world, humanity is making ever-increasing demands on nature, taking from the planet natural resources at a rate far greater than that with which nature is able replenish them. Simply, we are living beyond our planetary means.

How we adapt to this challenge of rising demand for shrinking resources will be our legacy to future generations. We have a choice: we can leave them a diminished world, or a more resource-efficient low-carbon one. The true value of programmes such as SwitchMed is that they show a way forward to this new world, one where we still produce the goods and services that we need, but do so in a cleaner, greener way. Switching to SCP also contributes to the UN Decade on Ecosystem Restoration (2021–2030) which aims to prevent, halt and reverse the degradation of ecosystems on every continent and in every ocean. It can help to end poverty, combat climate change and prevent a mass extinction.

The current Covid-19 pandemic has provided a tragic illustration of how closely linked human and environmental well-being are. Biodiversity loss, shrinking habitats, dwindling natural resources, pollution and climate change all adversely affect humans as well as flora and fauna.

But the pandemic has also created a rare opportunity to begin again, to adopt a systemic life-cycle approach that balances nature's needs with national priorities. Implementing sustainable consumption and production practices across all sectors would be a significant step towards achieving this equilibrium.

Sustainable consumption and production policies also provide important opportunities to trigger transformative changes in economic and social systems and promote the human rights of women and girls as well as men and boys. It is imperative to integrate a gender perspective into sustainable consumption and production work in general and national action plans, which are the key policy instruments at national level that create the enabling policy environment to achieve SDG 12.

Currently, for instance, about one-third of all food produced is wasted or spoiled because of poor transportation. This equates to 1.3. billion tonnes of food worth about \$US 1 trillion. And if the world switched to energy-efficient light bulbs we would save \$US 120 billion a year. Additionally, in the decade between 2010 and 2019, electronic waste grew by 38 per cent but only 20 per cent of that waste was recycled (United Nations n.d.).



The National Action Plans developed by countries with the support of SwitchMed recognize the potential of making the transition to SCP and Circular Economy and set out the pathways they intend to follow.

In its National Action Plan the Kingdom of Morocco focused on two priority sectors: sustainable agriculture and sustainable buildings. Those priorities have been continued in the country's National Strategy for Sustainable Development, which is now being implemented.

SCP and the circular economy have great potential to respond to national priorities, and to the three global crises (biodiversity loss, pollution, and climate change) the world is facing. Switching to more sustainable patterns of consumption and production across these sectors and others will need behavioural change at both national and individual levels but could generate significant economic benefits. Research by the International Resource Panel shows that more efficient use of materials and energy could add an extra \$US 2 trillion to the global economy by 2050 (UNEP 2017), while a study by the International Renewable Energy Agency (IRENA) shows that transforming the energy system could boost cumulative global Gross Domestic Product gains above business-as-usual by \$US 98 trillion by 2050, nearly quadruple renewable energy jobs to 42 million, and expand employment in energy efficiency to 21 million.

















The opportunities for countries from sustainable consumption and production are rich and varied. Some ideas for building on successes and moving forward, subject, of course, to alignment with national priorities, include:



+ TOURISM. Tourism around the world has been hard hit by Covid 19, so, as the sector turns its mind to recovery, now may prove an opportune moment to support and encourage doing things differently. Embedding resource and energy efficiency, waste reduction, and protecting flora and fauna could build resilience in a sector that, traditionally, is jobs intensive. Working to reduce food waste from restaurants in the hospitality sector, as well as promoting locally grown in-season food, could help Morocco achieve some of its goals on GHG emissions, land use and waste management. Additionally, for some marine or coastal destinations, a focus on sustainable actions could support Morocco's efforts to expand its "blue" economy as a pillar of development.

+ PROMOTING CIRCULAR ECONOMY. A circular economy is a strong first step on the path to more sustainable consumption and production in that it encourages us to reduce, reuse, and recycle, but a truly circular economy closes the loop by encouraging the repair and remanufacture of goods produced. Morocco is already taking steps along this path with the introduction of regulations that promote polluter-pays principles and extended producer responsibility. Projects that support the creation of a market for repaired and remanufactured items (where goods at the end of their useful life are made into something else) could be valuable. Examples here could be creating standards for second-hand or remanufactured goods, making room for them within public

procurement regulations, putting in place incentives for their purchase, and supporting factories and start-ups in the production of remanufactured goods. Targeting particular sectors, such as housing and construction, for instance, where much of the waste produced could be reused, may prove useful, and would build upon Morocco's existing work in promoting circular economic models.



#### + SUPPORTING CHANGE IN THE BLUE ECONOMY.

There is significant potential for SCP within the "blue" sector, from establishing more environmentally friendly port operations, to embedding resource efficiency in coastal and marine areas management plans, to innovative cleantech solutions, and standards for marine sports and eco-tourism. Protecting the biodiversity of marine environments could have significant flow-on economic effects, particularly in eco-tourism, and also by improving the livelihoods of local communities with the development of small-scale eco-

tourism projects that highlight the cultural traditions and crafts of the populations along the coast. Additionally, greening operations in busy ports could be useful in cutting GHG emissions and in creating jobs. Morocco is developing a roadmap to raise awareness of the potential of this sector and to guide development in a sustainable way. Inplementing this, along with Investing in low-carbon technology and sustainable infrastructure could create new jobs and aid in the transition towards a competitive, profitable, secure national fishing fleet, as well as in the promotion of a sustainable seafood industry.



## + **SUSTAINABLE FINANCING.** Globally, a switch to green financing is under way. A database maintained by UNEP and the Green Growth Knowledge

Partnership (GGKP) shows that there are now at least 391 national and sub-national policy and regulatory measures on green finance in place around the world, with 79 new measures were implemented or announced in 2019 (UNEP 2019). These measures range from transparency in climate-related risks in investment portfolios, to providing incentives for investing in green assets, and strengthening environmental risk management practices within institutions. Projects that support green investment, or a shift towards considering environmental impacts as a fundamental pillar of investing and lending practices, could be a significant contribution to building a better, greener, post-Covid economy.





+ DIGITAL TRANSFORMATION Delivering on the 17 Sustainable Development Goals the world set itself in 2015 will require commitment and innovation. Projects that examine, develop and assess the digital tools necessary to scale up ambitions in existing projects, to measure and record their achievements against SDG indicators, to understand the digital needs of industrial sectors to transform to cleaner more sustainable production, or that support technological start-ups working on creative solutions to climate change, biodiversity loss and pollution or that collect and disseminate data, statistics and knowledge will be important steps in the transformation to a more sustainable society. For instance, the work already in place on sustainable agriculture may benefit from investment in cleantech solutions, perhaps supported by green financing options offered to the private sector. Smart energy grids are another way that digital transformation could support low-carbon development, and digital delivery could be considered for workers upgrading their skills for new, green jobs in a range of sectors.

Whatever path Morocco decides to follow in the years ahead, it is important that environmental, economic, and social concerns especially on gender equality, remain at its core. The country's commitment to sustainable consumption and production provides a solid foundation, but behavioral change at all levels of society will be essential to achieve the transformation to a resource-efficient low-carbon world. An agile, resilient, innovative approach could see us all doing more and better with less as we work together to face any challenges that arise.

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#### **SWITCHMED: INSPIRING CHANGE**

SCP is about doing more and better with less. It is about meeting humanity's needs but remaining within planetary boundaries, about using the natural resources that the Earth provides without degrading the environment. Now in its second phase, the SwitchMed projects works to support the development of policies and practices that support a switch to sustainable consumption and production (SCP) in the Southern Mediterranean region and to make the circular economy the mainstream business model there.

Morocco has developed a national strategy for sustainable development that has SCP at its core. By building on the foundations laid in its National Action Plan, the country hopes to expand its work on circular economic models, on waste reduction and recycling, and on building a its blue economy as a pillar of development. It is clear that sustainable consumption and production is no longer just something discussed in meeting rooms. Now it is happening on the ground, across business and industry, in cities and regions, reducing pollution, improving the air we breathe, and promoting better use of nature's gifts through resource-efficient and low-carbon consumption and production practices.

In this document you will see 10 success stories inspired by the work of SwitchMed in the Kingdom of Morocco. They show how what began in workshops developed into plans that created a ripple that flowed out around the country. This short publication shows that opportunities for countries from sustainable consumption and production are rich and varied.

The Switch to SCP is off and running. SwitchMed is proud to have supported Morocco in its work to build a society where people and planet thrive and prosper together.









