



Supporting the Circular Economy: illustrations from the EU SWITCH programmes



switch
green

Development
and Cooperation

Supporting the Circular Economy: illustrations from the EU SWITCH programmes

This publication takes us to a journey across selected economic sectors, with a view to inspiring and encouraging a **switch to green, notably circular, practices**. Facts and figures on the environmental impact of economic activities are used to explain the challenges faced in each sector. These are complemented with stories from the field, showcasing successful green economy projects with strong replication potential.

Supporting the Circular Economy in:

Tourism (3)

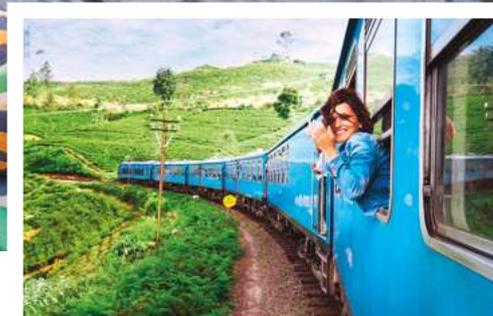
Agri-food systems (7)

Textile (11)

Leather (15)

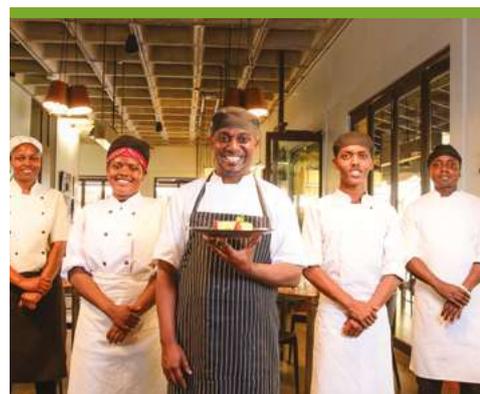
Buildings construction (19)

Electrical and Electronic Equipment (23)



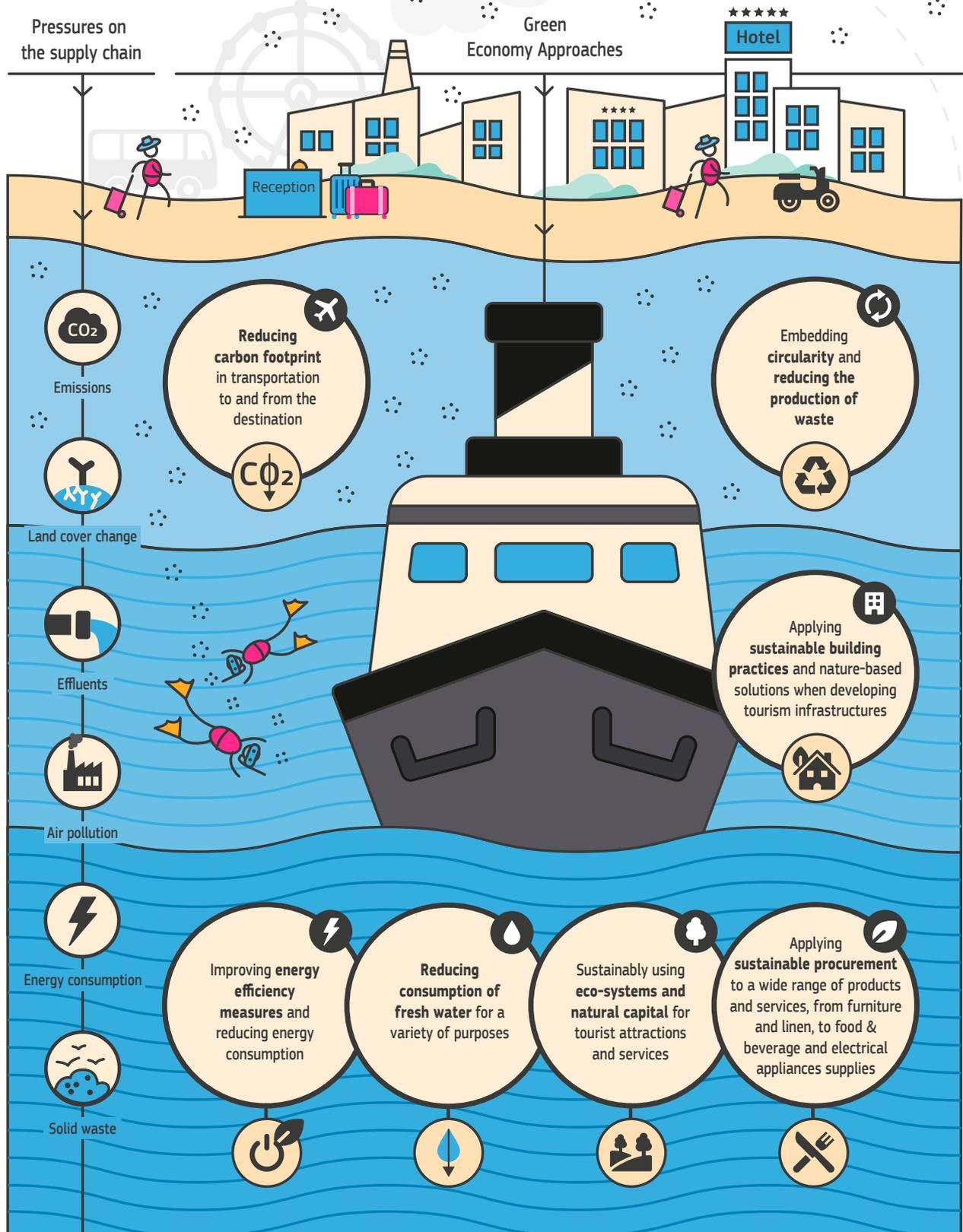
Sustainable tourism in development cooperation entails a wide range of interventions, from investments in transportation and other infrastructure to the uptake of sustainable consumption and production practices by MSMEs in the related value chain. Planning for sustainable tourism actions, needs to carefully consider aspects like **minimising the need for transportation** of people and goods, promoting the **purchase and use of zero-emission vehicles and other equipment**, giving preference to **climate proof, green infrastructure** (focusing on **nature-based solutions**), giving better access to easy and comfortable public transportation, and **developing green tourism businesses**. These are hotels, restaurants and related companies whose establishments respect the local natural ecosystem, apply appropriate water saving and sewage management measures, are energy-efficient, prioritise the use of renewable energy over fossil fuels, and apply circular economy or other green business models to minimise waste generation.

Tourism is closely interlinked with other sectors, such as the transport, agriculture, food and beverages, handicrafts and creative sectors, ecosystem services, etc. — with leverage for supporting a wider promotion of the green economy, when developed in a sustainable manner.



The EU has supported several projects promoting sustainable tourism through the SWITCH to Green Initiative, for example by focusing on the development of environmental certification for tour operators, hotels and restaurants (with projects in Sri Lanka, the Philippines, Kenya and Mauritius), and on the promotion of energy certification or eco-labelling standards.

Green practices in Tourism



The EU SwitchMed programme: An eco-friendly holiday in an organic paradise



In the Oulja d'El Jadida region of Morocco, a man has decided to bring together tourists, locals and farmers with a vision to construct and operate a small organic paradise for visitors. The EU supports this entrepreneur's efforts through the SwitchMed programme, offering him incubation services to develop his ideas into a viable green business.

Imagine a place that respects humans, the environment, the local region and its biodiversity. A house that is surrounded by wooden bungalows and a bioclimatic chalet, with shrubs and bushes separating the narrow lanes in the landscape. Nearby, a large greenhouse is ready to welcome a group of visitors who are curious to look at the seeds growing in the organic plantations. A bit further away, there is a magnificent forest surrounded by green spaces. This place exists for real and can be found in the province of El Jadida, near Casablanca.

This "Camping farm – Riad Green House" has been specially designed by Mr Hamid Ben M'Barek Riad, a Doctor of Engineering and an expert in energy and sustainable development, to invite tourists to "holiday responsibly". Hamid, with the SwitchMed teams at his side, has gone through an incubation phase and has managed to put together his own green business plan. By analysing the market, focusing on demand and risks, Hamid has carried out "very accurate simulations to minimise the risk of debt". Based on an eco-construction, Hamid has used the **EU Eco-label** as a reference for tourist accommodation, and applies sustainable construction practices, traditionally used in Morocco. This involves the use of timber and natural resources to construct the buildings required, whilst taking into account their energy consumption and using renewable energy wherever possible. By doing so, Hamid's project is aligned with the triple A (African Agriculture Adaptation) Initiative.

Specifically, the project foresees the construction of bioclimatic greenhouses and various seed plantations. Cultivating and owning plantations within the same campsite offering tourist ac-

commodation has numerous benefits: awareness amongst tourists of the organic farming process, support for the local economy, links between artisans and tourists, and offering a sense of being at one with nature. Hamid claims that, perhaps



even more importantly, "by raising awareness of ecology, we will be able to transpose this sustainable tourism model to small farmers and thus avoid the rural exodus towards towns, and sales of land to large property developers". Hamid foresees the creation of a small daily artisans' market and looks forward to sharing the message throughout the region by travelling in a green van around the local area:

"I want to welcome customers who are keen about nature, calm and well-being, all in comfortable and secure surroundings. Eco-tourists will discover the actions required to conserve the biosphere."

The Hamid project is based on three aspects: environment, economy and society. It is expected to employ a dozen people at local level and indirectly create jobs for other locals through the artisans' market.



STORY



Agri-food Value Chains

Agriculture is the mainstay of many economies, supporting their food security, export earnings and rural development. The agri-food sector contributes significantly to GDP growth, reduces poverty and provides employment opportunities, especially for women. At the same time, the agri-food sector puts pressure on the environment. Current food systems over-exploit ecosystems, leading to land cover change, biodiversity loss, water and energy consumption, and increased CO₂ emissions. As the world's population rises, pressures on the agri-food business and the environment increase.

Globalisation and a growing middle class in emerging economies drive changes in consumers' choices away from traditional production systems and local food supply chains.

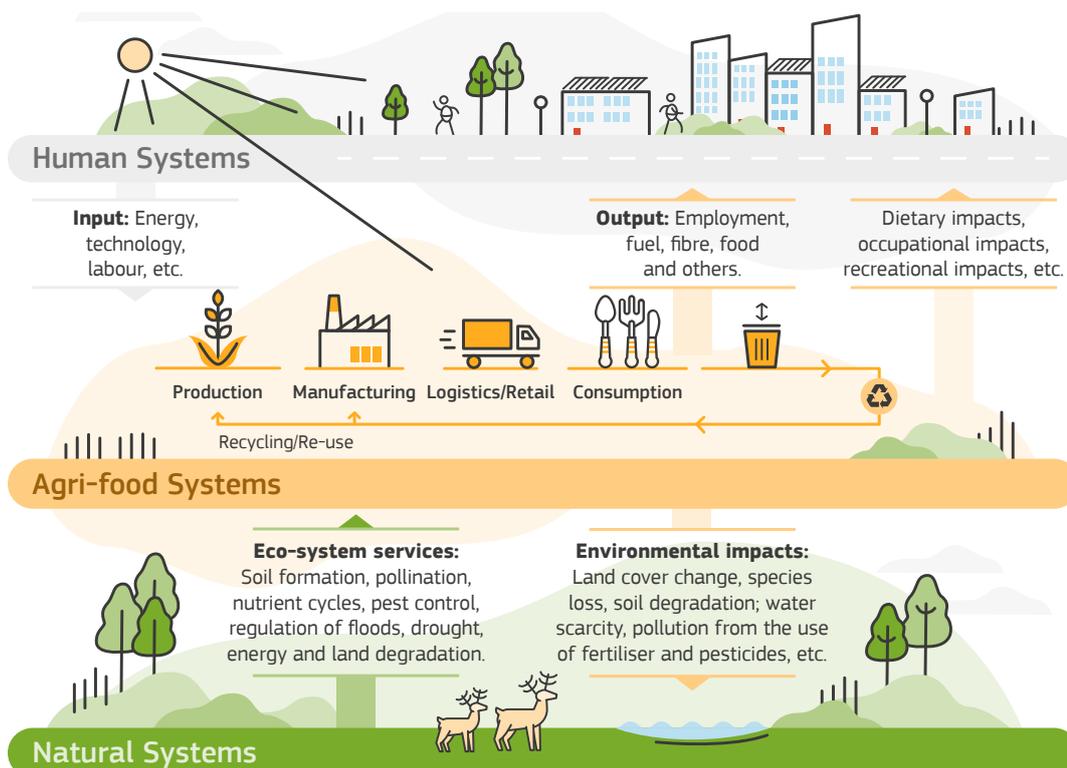
Climate change and the agri-food sector are closely interlinked too. While the agricultural sector contributes to greenhouse gas emissions, it also faces profound impacts from changing weather conditions — leading to crop failure, soil degradation, impacts on livestock and fisheries, and finally, to economic losses.



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In order to achieve sustainable development, support to agri-based value chains requires social, economic and environmental dimensions to be thoroughly considered. [The EU Value Chain Analysis for Development \(VCA4D\) methodology](#) provides a framework for the analysis and understanding of the agri-food value chains.

Agri-food value chain environmental linkages





Greening the agri-food value chain provides increased economic opportunities, innovative processes and operations, upgraded technologies, as well as important social benefits. Promoting sustainable agri-food value chains in development cooperation entails a combination of interventions. Sustainable value chain approaches promote **resource efficiency** and the environmental performance of farms and supporting businesses.



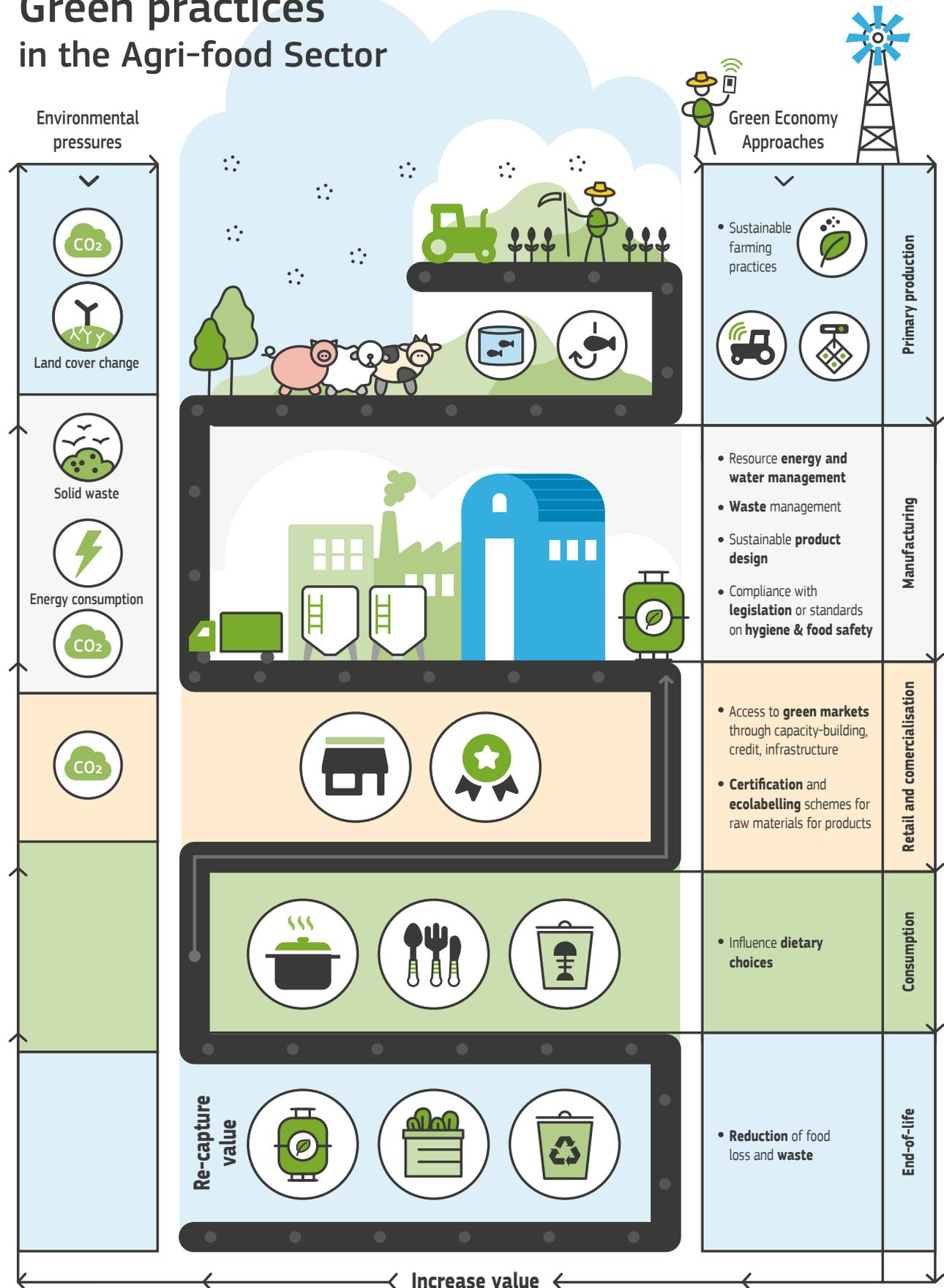
Farmers need to consider environmental aspects when choosing crops for cultivation and when selecting cultivation systems. **Sustainable farming practices** can reduce negative externalities (e.g. emissions) and gradually increase positive ones (e.g. carbon sinks or biodiversity). **Enhancing the exportability** and both national and **international market penetration of green products** provides a strong incentive

to farmers and producers to take up sustainable consumption and production. Relevant actions can strengthen **compliance with international food hygiene, health and safety standards**. The introduction of **eco-labelling and certification** can boost the market acceptance of food products and the competitiveness of the producers. Planning for sustainable agri-food value chains needs to embed **circularity** and thereby **reduce the generation of waste** all along the chain.



The EU has supported several projects promoting sustainable agri-businesses through the EU SWITCH programmes, for example: by improving the environmental performance of farmers and processors (Indonesia, Morocco, Myanmar, Palestine, Pakistan, Tunisia, Vietnam); by linking producers and markets (Kenya, Mauritius, Morocco, South Africa); by strengthening food safety and promoting eco-labelling standards (Bangladesh, China, Kenya, Sri Lanka, South Africa); by recycling food waste (Algeria, Egypt, Morocco); by developing saleable by-products (Cambodia, Lebanon, Tunisia); by raising awareness on food, nutrition and consumption (Egypt, Laos, Morocco, Uganda, Spain); by promoting local green products (Bangladesh, Egypt, Indonesia, Lebanon).

Green practices in the Agri-food Sector



The EU SWITCH AFRICA GREEN: Greening production practices, a story from the Green Horticulture at Lake Naivasha (GOALAN) Project



STORY

'18 April 2019 was a great day for me. I made my first delivery of tomatoes to Kongoni Lodge in Naivasha. I have been practicing horticulture farming for the last seven years and the biggest challenge is market access. More than half of my harvest would go to waste while the rest would be sold at a throw-away price. I am happy that I will be supplying this hotel for the next six months.'

Ms Zaineb Malicha, beneficiary of the SWITCH Africa Green GOALAN Project

Zaineb Malicha runs her horticulture business in the Lake Naivasha Basin where water is scarce. In a training provided by the EU's **SWITCH Africa Green** GOALAN Project, the 46-year-old learnt sustainable farming practices including aspects on the maximum use of organic fertiliser, the use of certified seeds, the safe use of pesticides (integrated pest management), post-harvest handling, and harvesting rainwater.

For those farmers who are ready to scale up their businesses, the project enables **access to finance** by creating links to financial institutions, such as microfinance institutions (MFIs) and commercial banks (e.g. the Equity Bank). The GOALAN Project addresses public institutions, retailers and hotels as potential customers. The GOALAN Project employs **green procurement guidelines** to drive the shift towards sustainable consumption.

GOALAN is short for **Green Horticulture at Lake Naivasha** in Kenya. The EU-supported **SWITCH Africa Green** project, implemented by WWF Kenya (lead implementer) and the Collaborating Centre on Sustainable Consumption and Production (CSCP), works towards making the horticultural sector in Kenya sustainable through a large uptake of SCP practices, the provision of green jobs and the reduction of poverty.



© WWF Kenya

Lake Naivasha is the largest freshwater lake in Kenya's Rift Valley — the hub of Kenya's cut flower industry. This unique blend of biodiversity and business requires **sound ecological approaches**. The GOALAN Project goes beyond farming practices and strengthens producers' **entrepreneurial and marketing skills** so they can negotiate for better prices, enter farming contracts, and develop green business plans for financing. GOALAN trains farmers on **product diversification** and promotes **eco-certification**. With certified products, the farmers have opportunities to enter untapped markets.

For Ms Zaineb Malicha, it has all worked out well. Thanks to the SWITCH Africa Green GOALAN Project, today she is sustainably producing her vegetables, ensuring food safety, maximising on her income while minimising negative impacts on the environment — and has a first contract in her pocket.

(SOURCE: WWF Kenya, CSCP)

Textiles

Textiles and clothing are everyday products making an important contribution to the global economy. The sector provides employment to more than 300 million people along the value chain worldwide ([Ellen MacArthur Foundation](#)). Globally, the industry is seeing a rapidly increasing demand. If growth continues as expected, total clothing sales will triple by 2050 ([Ellen MacArthur Foundation](#)). As a resource-intensive industry, the textile sector has a large social and environmental impact. Textiles production (including cotton farming) is a large water consumer, escalating water scarcity in some regions. Many chemicals used in the production processes trigger environmental and health problems. Without proper treatment, the industries' wastewater constitutes a serious problem. Sourcing wood-based fabrics, like rayon, modal and viscose, increase deforestation. Polyester fabrics discard micro-plastics when they are washed. Via drinking water and aquatic food

chains, micro plastics end up in the human food chain. About 10% of total global CO₂ emissions emerge from the fashion industry ([UNFCCC](#)). Approximately 75% of garment workers worldwide are female ([ILO 2019](#)). Women's opportunities are hampered by non-compliance with minimum wage standards, persistent gender-based pay gaps and decent-work deficits. Due to the sector's scale and the profile of the workers employed, the textile industry has great potential to upscale in terms of the green economy and social development.

Trends like 'fast fashion', with a quicker turnaround of new styles and a shorter use time, add to the amount of waste generated by the industry. Only 1.3% of the total material input across the industry is recycled after use. To transform textile waste into raw materials would be a major innovation towards a circular economy.



The European Commission Joint Research Centre, has elaborated a report on the [Environmental Improvement Potential of Textiles](#) providing detailed recommendations for a greener textile supply chain.

Environmental impact of the textile industry





Green, notably circular economy practices may address both supply and demand factors across the supply chain, including agricultural practices, textile production processes, product design and the functionalities of washing/drying/ironing appliances, as well as sorting and recycling schemes. At the beginning of the supply chain, **sustainable farming or forestry practices** that reduce or substitute agro-chemical use result in better feedstock.

At the processing and production phase, attention needs to be given to **resource efficiency**. **Cleaner production** measures can introduce **water recycling** and the **reduction of chemical use** and management. **Product and process innovations** may advance the phasing out of substances of concern and micro-fibre release. Automation can enhance material efficiency and enable agile made-to-order production cycles.

The promotion of good manufacturing as well as **occupational health and safety standards** strengthens both factories' competitiveness and workers' satisfaction. Relevant action towards sustainable textiles can focus on **increasing compliance** with national and international regulations and introducing companies to **Corporate Social Responsibility (CSR)**. The adoption of **sustainable procurement** can encourage enterprises to source green feedstock and products. Transparency across the supply chain can be reinforced by **certification** and **eco-labels**. Eco-labels or product information can inform the growing group of middle-class consumers who are questioning 'conventional' manufacturing processes. Interventions for sustainable textiles can also directly target consumers and thereby tackle **demand factors** such as **consumers' choices** of products/fibres and their **care practices** in terms of washing, drying and ironing. In the context of fast fashion,

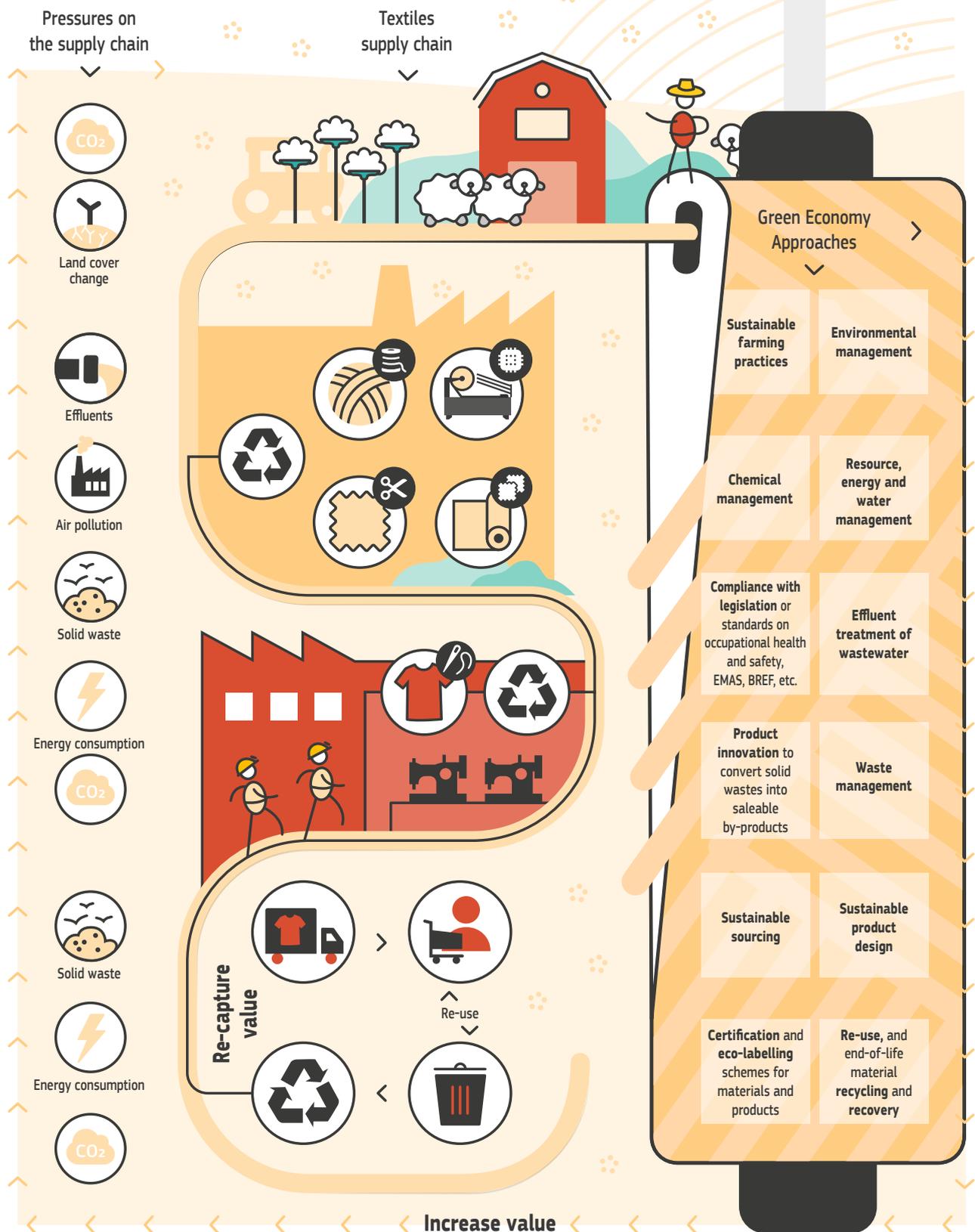
actions need to focus on **prolonging the lifetime of textiles** and how they are disposed of. The **textile value chain needs to embed circularity**. Relevant action may focus on **increasing recycling rates** and **establishing collection channels** — thereby generating fresh input for the production.



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*The EU has supported several projects promoting sustainable textiles through the SWITCH regional programmes, for example: by focusing on implementing **cleaner production and efficiency measures** (China, India, Indonesia, Myanmar, Nepal, North Korea, Pakistan, Vietnam); by strengthening **compliance with regulation and occupation measures** (Myanmar, Vietnam); by **promoting eco-labels** (India); by **diversifying product design and raw materials** (Israel, Morocco); by **linking actors across the supply chain** (Indonesia, Philippines); by **promoting corporate social responsibility** (Vietnam) and **strengthening consumer awareness of sustainable textiles** (India, Mongolia); by **re- and up-cycling materials into fashion products** (Algeria, Egypt, Lebanon, Morocco, Spain, Turkey).*

Green practices in the textile supply chain



The EU SWITCH-Asia Programme: Comply to compete — a story from SMART Myanmar

switchasia

“SMART Myanmar helped us to identify inefficiencies in our workflow. When we realised how much money we saved due to these improvements, we were surprised, we had not seen this [before].”

Daw Moe Moe Lwin, general manager, golden jasmine intimates manufacturing

As a general manager, Daw Moe Moe Lwin oversees the production of pyjamas, tracksuits, T-shirts and other items of clothing at Golden Jasmine Intimates Manufacturing in Yangon. She was impressed with the lessons from the SMART Myanmar project. Since 2013, the EU co-funded SMART Myanmar project has supported business associations and factories in order to modernise the garment industry and achieve global manufacturing standards. Global business is one of Ms Moe Moe Lwin's goals. She knows that to attract retailers from abroad her factory needs to increase the quality of its products and address labour issues, as well as health and safety concerns.

SMART Myanmar introduced social compliance to the Myanmar garment industry, and improved productivity and product quality management. It currently upscales many of these capacity building programmes among thousands of managers, staff and workers from over 200 garment and footwear factories across the industry. The EU-supported project continues to promote SMART Management Systems and SMART Environmental Management across the sector.

Golden Jasmine participated in the SMART Myanmar in-house consultancy on productivity improvements, and the assessment of production techniques and work flow analyses. SMART Myanmar's recommendations to Golden Jasmine paid off: Golden Jasmine was able to shorten production time, lower costs and thus increase the profit of the company — for Daw Moe Moe Lwin this was unexpected, but undoubtedly welcome.



Story

Leather Industry

The global production of leather has recorded a steady increase (FAO, 2016). Global footwear production, for example, hit 24.2 billion pairs in 2018, a 2.7% growth compared with the previous year (World Footwear Yearbook, 2019). Besides footwear, the leather industry supplies furniture manufacturers, the automotive industry, clothes manufacturers and other leather goods producers. More than half of the world's supply of leather raw material originates in developing countries (FAO, 2016), contributing to GDP and employment — about 2.5 million people work in the sector in India alone (IJST, 2016). As meat consumption rises globally, the availability of hides and skins as raw materials for the leather industry increases. Disregarding the farming phase, the leather industry causes significant environmental impact due to high water, energy, and chemical use and waste generation. The conversion

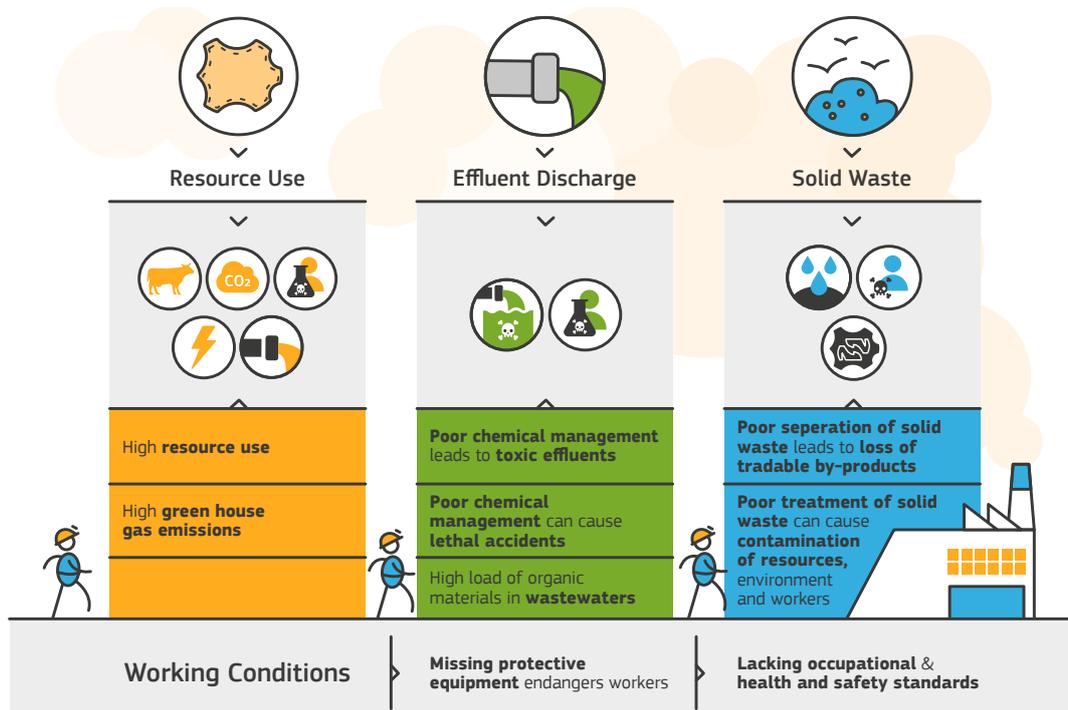
of hides and skins into leather in tanneries is a complex process. If handled incorrectly, the production of leather produces large volumes of hazardous effluent and waste leather materials that contain chromium in forms that are possibly hazardous to health and the environment. The use of organic solvents and dyes also generates emissions that pollute the air. Contaminated waste from tanneries causes health problems for tannery workers, people living in the immediate neighbourhood of tanneries and in areas downstream of the tanneries.

A [framework for sustainable leather](#) production exists with chemical recipes, processes, practices and procedures that reduce environmental harm and increase occupational health and safety. As environmental awareness increases among consumers, future manufacturing can be driven towards a green economy.



The European Commission Joint Research Centre has elaborated a [Best Available Techniques \(BAT\) Reference Document for the Tanning of Hides and Skins](#) providing recommendations for the core leather processes, starting from a raw hide or skin and ending with leather products.

Impacts of leather processing and production





Green, notably circular economy practices in the leather industry entail a wide range of interventions, from the **sustainable sourcing and processing** of raw materials, to **sustainable product design, cleaner production, and green supply chain management**. **Circularity** should be a key principle during tannery processes, leading to **resource efficiency**. Development cooperation action may support **pollution control, safe chemicals' management and environmental management** during the hide preparation and tanning processes. Introducing water-efficient equipment and associated processes, as well as innovative treatment technologies for water **re-use** and **recycling** will reduce water consumption and wastewater quantities. The design, construction, and operation of tannery effluent treatment plants (ETPs) may also be supported, including well established, low cost systems for SME clusters. Circular economy approaches may promote **waste minimisation** strategies using product innovations and eco-designs that promote the conversion of **solid wastes into saleable by-products**.

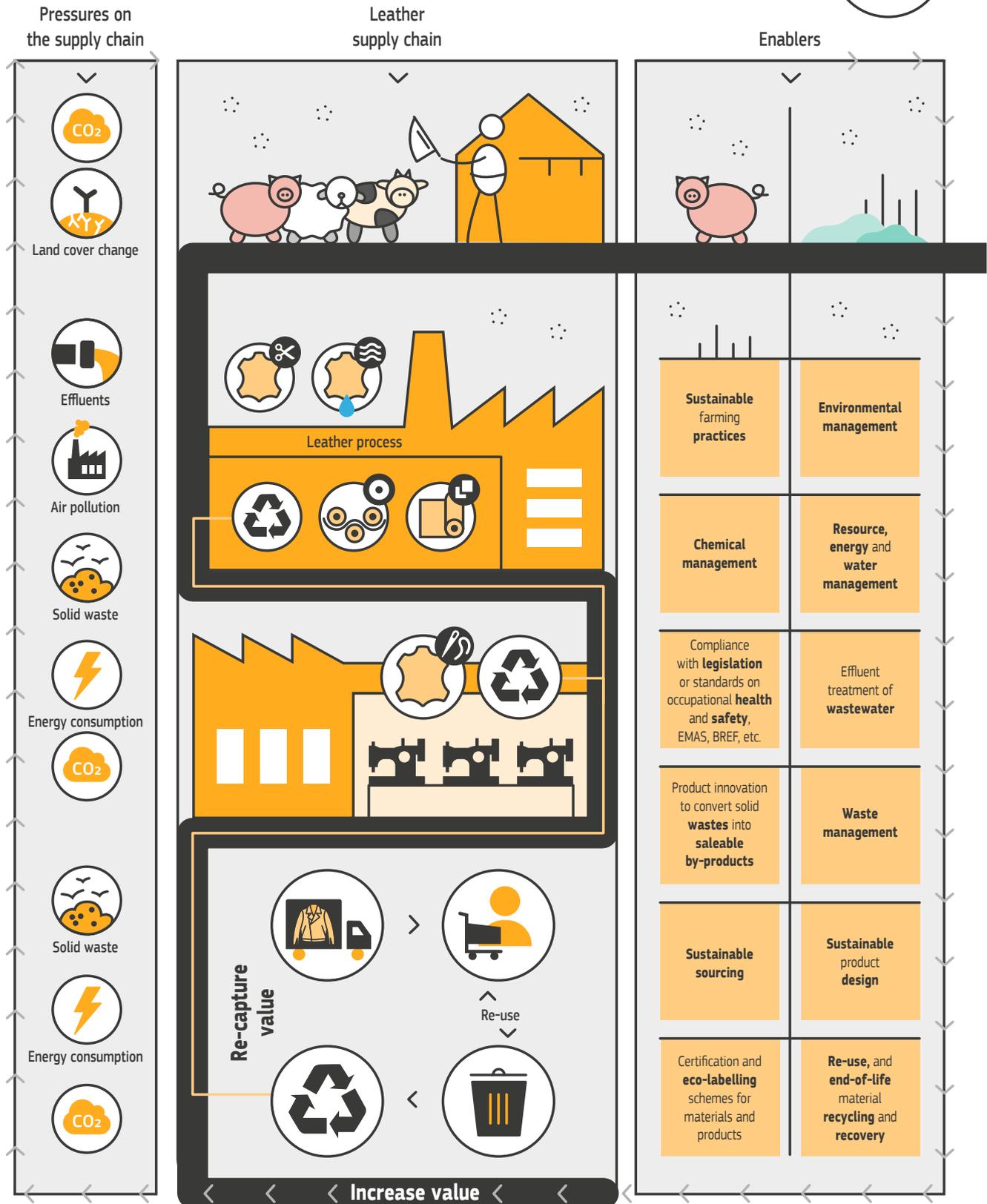
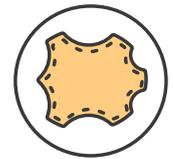
Due attention needs to be given to **human resources**. Building appropriate capacities may enable tannery managers and workers to implement environmental management processes and operate, measure and monitor resource use, effluents, different production areas and modern equipment. Actions can also encourage companies to comply with **environmental legislation and occupational health and safety standards** or

BAT. Transparency across the supply chain can be reinforced by **certification and eco-labels**. A strong environmental performance, coupled with certified compliance, may create a better image with international buyers and set the basis for a green business strategy.



The EU has supported several projects promoting sustainable leather production through the EU SWITCH programmes, for example: by implementing cleaner production and occupational health and safety (Bangladesh); by improving SME product compliance to international quality standards (Kenya); by introducing eco-labelling (Bangladesh); by supporting wastewater treatment options (Palestine, Kenya); by developing products from leather waste (Palestine, Kenya).

Green practices along the leather supply chain



The EU SWITCH AFRICA GREEN: 'Greening SMEs Leather Clusters and Leather Tanning Industry' project



'I saw an opportunity, especially here in Kisumu. I saw huge piles of fish skin lying idle and everybody assumes they had no value. So, I thought I'd give it a try, if I can convert this trash into money.'

Newton Owino, entrepreneur and beneficiary of the EU SWITCH Africa Green Programme.

Located on Lake Victoria, where fishing is big business, Newton Owino's company turns fish skin into leather. He produces leather jackets, bags, shoes, wallets, caps, purses, sandals, binders, belts and utensils from raw materials obtained from Nile Perch. Every week, about 70 tonnes of fish skins are generated in the region polluting the environment as they decompose — resources that Owino wanted to tap.

Owino is one of many entrepreneurs and small and medium-sized enterprises (SMEs) that have received support from the EU-funded **SWITCH Africa Green Programme**.

The **'Greening SMEs Leather Clusters and Leather Tanning Industry'** project aimed at improving SMEs' competitiveness and promoted waste management, recycling and reduction in the use of chemicals with a negative impact on the environment. Owino was aware that conventional tanning agents can be hazardous and lethal. He mostly uses organic ash solution to avert bacterial processes on the skins and tans them with a solution made of banana, papaya and bean leaves.

Newton Owino wants to move his sector. The trained leather chemist is currently the chair of the Kisumu Leather Dealers Association, established with support from **SWITCH Africa Green**. The Association assists its members to produce high quality leather, acquire better bargaining power, increase their margins and obtain access to financing through loans, so that the leather industry in Kisumu can progress. And Newton Owino has ambitions. In the long run, he dreams of establishing a leather college for green tanning only, and the biggest fish leather centre in Africa.



Thanks to support received by the **SWITCH Africa Green Programme**, the quality of Owino's products improved as they were subjected to conformity assessment tests and held up to international quality standards. Through business networking enabled by **SWITCH Africa Green**, the Kenyan entrepreneur was able to showcase his products internationally. He convinced buyers in several countries in Europe and North America to do business with him.

STORY



Building and Construction

A growing global population coupled with the prevailing urbanisation trends create the right mix for a dynamic building and construction industry. It is expected that built-up areas in developing countries will increase threefold by 2030 (IRP, 2013). More than one-third of global resource consumption is accounted to construction materials and the building sector (Ellen McArthur Foundation 2019). Sand, ubiquitous in construction and industrial production, is the world's largest resource extracted and traded by volume — though at the expense of nature, with extraction rates surpassing natural sand replenishment rates (UNEP, 2019). Some construction products are a substantial cause of indoor pollution, and may be a risk to the health and well-being of construction workers and building occupants (Brown, et al., 2013). The building and construction industry, including the manufacturing of materials and products for building and construction, generates nearly 40% of global energy-related CO₂ emissions

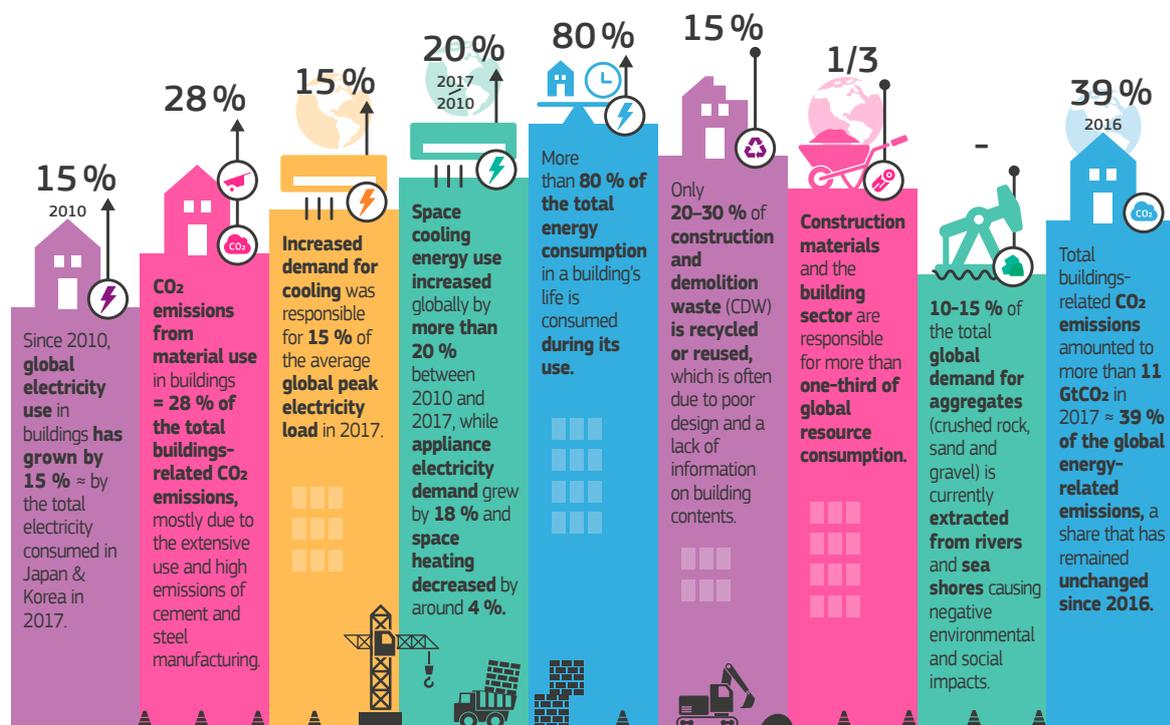
(UNEP/IEA, 2017). Energy demand from buildings is likely to increase by 50% until 2050, compared with 2015 levels, under business as usual scenarios (UNEP / Global Alliance for Building and Construction, 2018). The decarbonisation and dematerialisation of the building and construction industry is therefore a significant and necessary step towards a green economy.

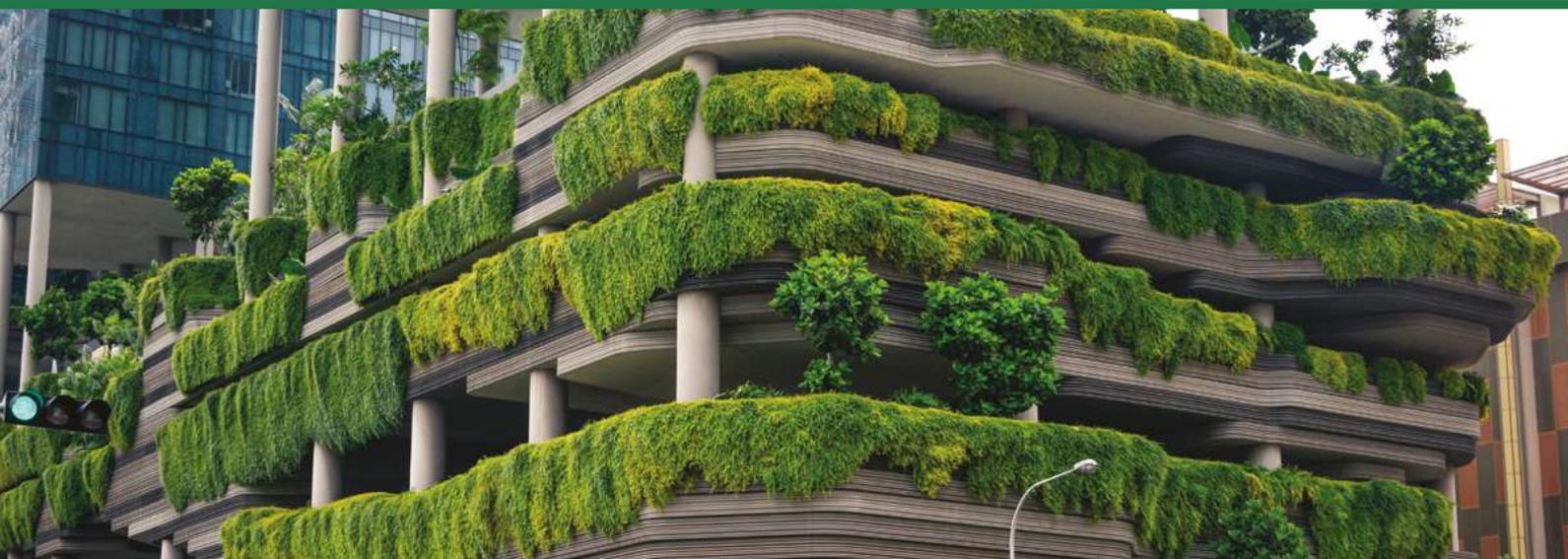
The building and construction sector has great potential for climate change mitigation. The possibilities for energy and emissions savings in buildings remain mostly unexplored as few efficient technologies stay in use, and there is a combination of ineffective policies and a lack of investments in sustainable building and construction in many regions. The IPCC highlights the co-benefits of mitigation efforts in the building sector, such as job creation, improved indoor and outdoor air quality, and improved climate resilience and adaptive capacity (IPCC AR5, 2014).



The European Commission published voluntary reporting framework 'Levels' to improve the sustainability and performance of buildings. The framework targets the whole lifecycle of buildings to address their huge potential for emissions reductions, and efficient and circular resource flows, with the objective to support the health and well-being of those for whom the buildings are constructed.

Potential adverse effects of the construction and building industry





Promoting sustainable building and construction in development cooperation targets various stages across the lifecycle of buildings, including design, use, refurbishment, re-use, and end-of-life material recycling and recovery. Relevant actions can focus on **improved building design** by ensuring sustainable material choices, **energy and water efficiency**, as well as thermal and visual comfort during the building's operation. Lighthouse projects can showcase passive buildings, exemplifying insulation and ventilation techniques alongside the elimination of indoor pollutants.

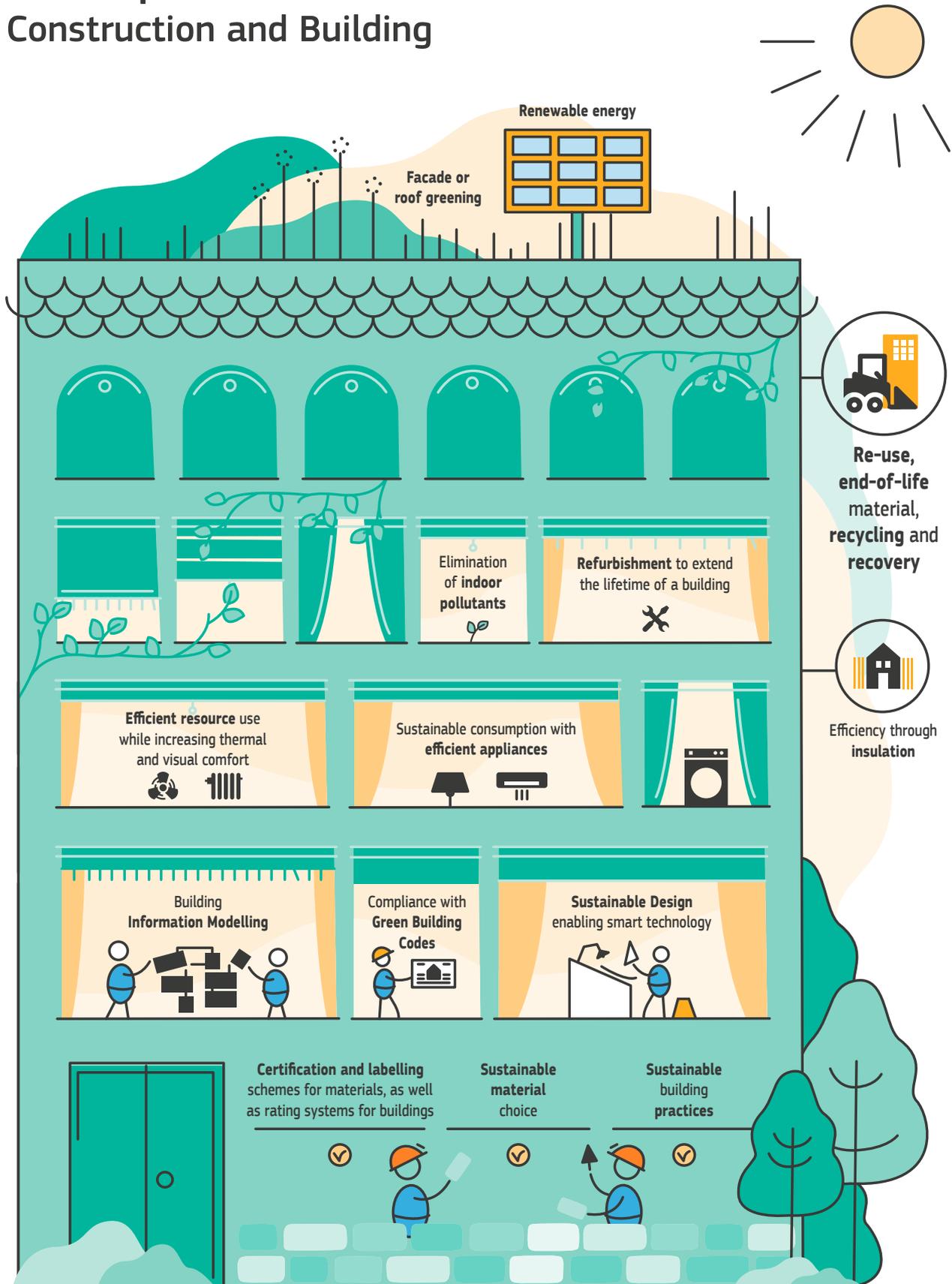
Actions reducing the energy consumption and emissions attributed to the use of buildings may focus on **efficient heating, cooling and lighting systems**. **Efficiency schemes** in development cooperation can also address lifetime extension and waste reduction. Refurbishment, further to extending the lifetime of a building, can also be a cost-effective strategy for improving energy performance. The **implementation of Building Information Modelling (BIM)** enables construction professionals to quantify the embodied environmental impact and lifecycle cost performance of buildings. BIM also enables planning for the potential future **re-use and recycling of demolition materials**. Sustainable consumption in the form of high-performance, low-carbon buildings, can be promoted through the design and implementation of **complementary policies** and market incentives, including mandatory frameworks focusing on **building codes** and procurement rules.

Moreover, **certification and labelling schemes for materials**, as well as **rating systems for buildings**, can be a driver for both consumers and developers, drawing their attention to green buildings.



*The EU has supported several projects promoting a sustainable building and construction industry through the EU SWITCH to Green programmes, for example: by focusing on the **development of alternative, efficient building materials** (Bangladesh, Lebanon, Mongolia, Morocco, Nepal, Sri Lanka); by promoting **sustainable housing technologies and services** (Afghanistan, China, Nepal, Thailand); by engaging with **public-private partnerships** between construction bureaus and developers to upscale green buildings (China); by **building capacity** with construction workers, planners and architects (China, Bangladesh); by advancing the **re-use of building and demolition materials** (Israel, Mongolia); by setting up **Green Building Councils** (Palestine); by **promoting green roofs and walls** (Egypt, Tunisia); by promoting **carbon accounting and the certification of building materials** (Malaysia).*

Green practices Construction and Building



The EU SWITCH-Asia Programme: Cheaper, cleaner, greener – a story from the Sustainable Building project

'I like the hollow-block; it can be a good alternative to fire-bricks for our construction work.'

Md Abul Basbar, beneficiary of the EU SWITCH-Asia 'SusBuild' project

Md Abul Basbar has good reasons to like the alternative bricks and blocks developed by the EU-funded SWITCH-Asia 'Promoting Sustainable Building in Bangladesh' (SusBuild) project. The raw material and production are greener than traditional burned clay bricks. They are made of dredged river sand, stone dust and a small percentage of cement, rather than agricultural top soil, and do not need coal or wood to dry. The SusBuild project is engaged in contributing to the delivery of what Bangladesh's capital Dhaka and other urban hubs urgently need: an option to cut air pollution and energy use from traditional brick kilns as well as reduce overall construction costs.

SusBuild aims at offering a more environment-friendly and affordable building material to the construction sector market. Targeting manufacturers, the project develops business models to ensure the upscaling of green brick production. When necessary, the project links businesses to financial institutions to avail of initial business support. To stimulate demand for alternative bricks, the project engages with potential house builders, real estate developers and individual homeowners. The acceptability of the new bricks is a pre-condition for market penetration. The project targets a wide range of stakeholders, including masons, sub-contractors, civil engineers, architects, urban planners and policymakers. Through the project's awareness raising activities, judicial experts and policymakers can gain a better understanding of existing policy gaps in both the building code and the brick manufacturing act. Working closely with the Government, the SWITCH-Asia project is expected to contribute to the implementation of the new Brick Manufacturing and Brick Kiln Establishment (Control) (Amendment) Act, aiming at encouraging the production and use of alternative bricks.

As a mason, Md Abul Basbar, benefited from the technology transfer and capacity building activities conducted under the project. He participated in trainings on alternative construction technologies for masons and now has ideas on how to boost the acceptability of the new material: model constructions using alternative bricks.



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Electrical and Electronic Equipment sector

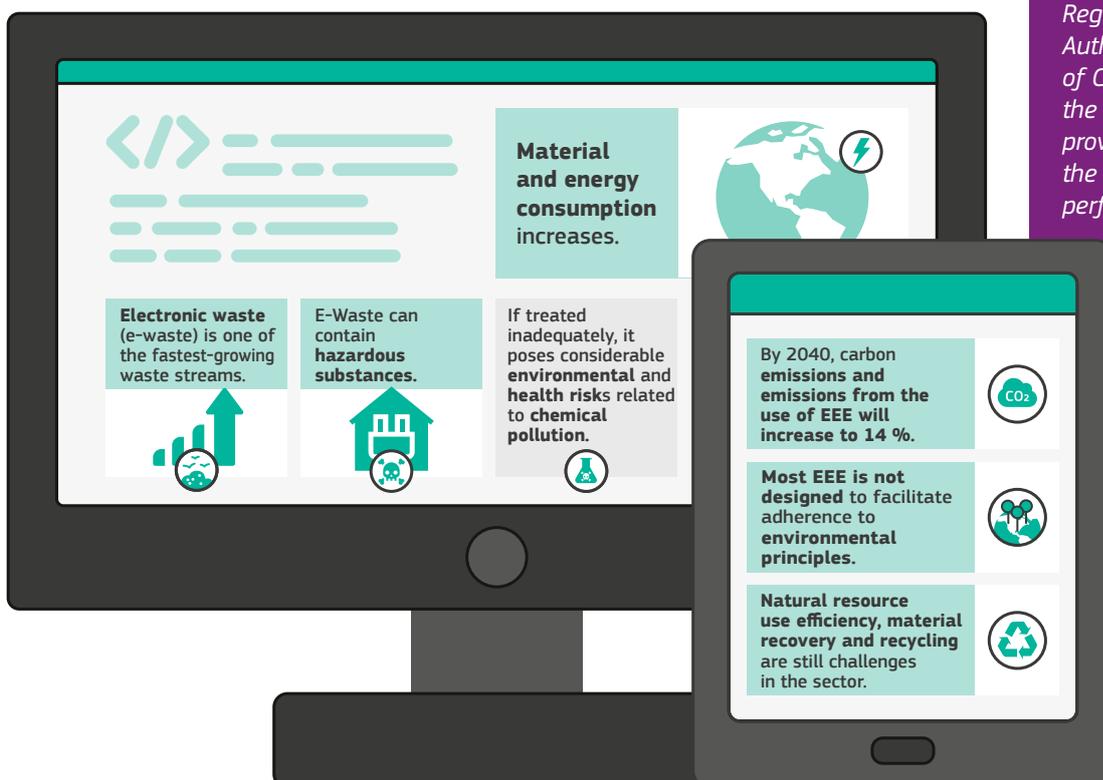
The Electrical and Electronic Equipment (EEE) industry is at the heart of digitalisation. In 2016 alone, the annual global consumption of new EEE amounted to 60 million metric tonnes ([Baldé et al., 2017](#)) — with an upward trend. Developing countries typically show growth rates from 10 to 25% ([Baldé et al., 2017](#)). Fridges, washing machines, electric furnaces, electric centralised heating units, and flat panel TVs were the products that had the largest absolute growth of consumption in terms of weight. Innovation drives consumers' choices, resulting in even shorter replacement cycles for EEE, in particular for mobile phones and computers. Digitalisation provides great opportunities for sustainable development with its options for dematerialisation. At the same time, information technology has an environmental impact of increasing significance. Material and energy consumption increases

have made electronic waste — e-waste — one of the fastest growing waste streams. E-waste can contain hazardous substances. If treated inadequately, it poses considerable environmental and health risks related to chemical pollution.

By 2040, carbon emissions and emissions from the use of EEE will increase to 14% of total global emissions ([Nordic Council of Ministers, 2019](#)). Most EEE is not designed to facilitate adherence to environmental principles, including circularity and the waste hierarchy. Natural resource use, efficiency, material recovery and recycling are still challenges for the sector. Plastics in EEE products, for example, comprise 20% of material use, and with eco-design, significant environmental and financial savings could be achieved ([Nordic Council of Ministers, 2019](#)).



The EU has provided strategic regulatory guidance through: [The Directive on Waste from Electrical and Electronic Equipment \(WEEE Directive\)](#), [the Directive on the restriction of the use of certain hazardous substances in Electrical and Electronic Equipment \(RoHS Directive\)](#), [the European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals \(REACH\)](#), and [the Ecodesign Directive](#), providing rules for improving the environmental performance of products.





Actions for a sustainable EEE industry in development cooperation target various phases of the supply chain, from product design to production processes and end-of-life material recycling and recovery. Strengthening **product innovation** is required to achieve **material efficiency** and **circular design**. Circular designs **improve reparability**, upgradability, modularity and ease of disassembly, thus allowing for the **recovery of components** without destroying them, which in turn enables **remanufacturing**. Greening the EEE supply chain can also include actions addressing **energy and resource efficiency** during production. Improving, for example, energy **efficiency standards** for product groups can be a strong lever for more efficient EEE. Actions can support companies to comply with **environmental legislation, occupational health and safety standards** or international requirements, including the WEEE and RoHS Directives and the REACH Regulation. To address the e-waste challenge, development cooperation can also link secondary raw material supply and demand.

By promoting the **formalisation of informal businesses**, development action can advance safe working conditions for those dismantling hazardous e-waste. Targeting businesses with **Extended Producer Responsibility (EPR)** can encourage producers to take responsibility for the end-of-life management of their used products. Planning for a sustainable EEE supply chain can also include generating **alternative business models** that focus on the use of goods and services rather than their ownership, on extending product value through take-back

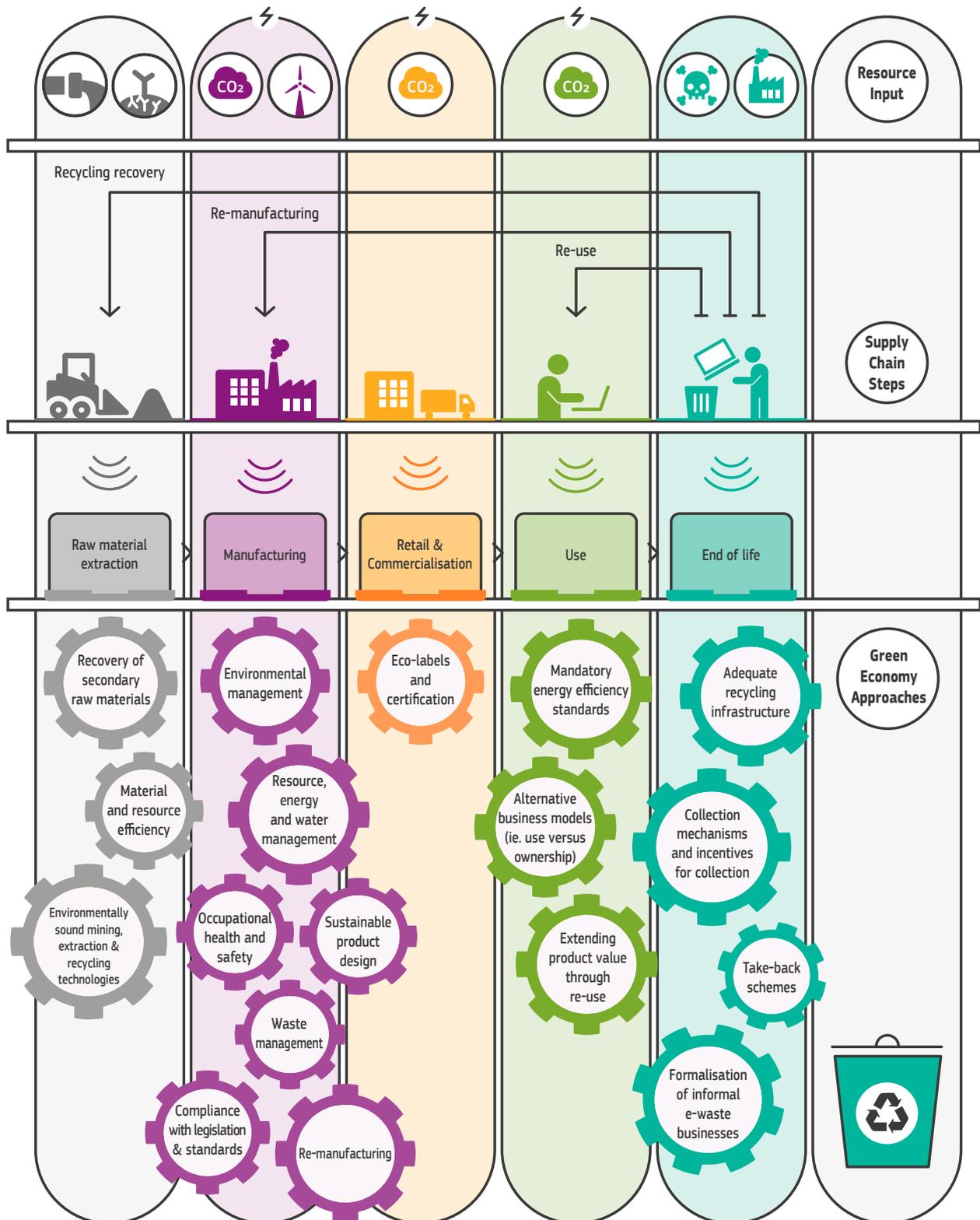
and re-use programmes, on extending resource value (including promoting the use of secondary raw material), and on decreasing the use of, or replacing, virgin material altogether.



*The EU has supported several projects promoting a sustainable electrical and electronic industry through the EU SWITCH programmes, for example: by focusing on the **development of efficiency standards** for product groups across production processes (China, Thailand); by focusing on **product innovation** (Thailand, China); by improving **resource efficiency** during production (China) and by **strengthening e-waste recycling** (Egypt, Jordan, Malta, Palestine, Tunisia); by **establishing e-waste collection systems** (China, India, Ghana).*

Green practices

Electric and Electronic Equipment Industry



The EU SwitchMed programme: Tafkeek Resource Efficiency & Sustainable Waste Management



'SwitchMed for me is all about empowerment, innovation and turning ideas into projects.'

Tasneem Abuhijleh, operator of an e-waste disposal facility and beneficiary of SwitchMed

Tasneem Abuhijleh noticed that Idhna, a town outside Hebron in the West Bank, received vast quantities of e-waste. E-waste was disposed of in open fields. Valuable materials were not recovered, instead toxic emissions leaked into the water and soil. Still at university writing her Master's thesis, Tasneem Abuhijleh realized that she wanted to work in environmental protection. Today, Tasneem Abuhijleh is a SwitchMed-incubated green entrepreneur, founder of Tafkeek. Tafkeek in Arabic means dismantling. Abuhijleh's business wants to dismantle and treat e-waste to reduce local contamination, and her ambitions are high. In the long run, she envisions developing a formal e-waste recycling market in the West Bank.

SwitchMed delivers a training programme to entrepreneurs across the Meditarrean to develop green business ideas. Tasneem Abuhijleh was one of the 2700 entrepreneurs that

received training. Alongside the training she has face-to-face support from a local mentor, a private sector development specialist that helped her elaborate her business plan. As part of the incubation phase, Tasneem will receive some specialised technical assistance from external experts too. Under Ms Abuhijleh's business plan, a monthly collection system will be set up to gather electronic equipment from large buildings, companies and repair shops. Tafkeek's dismantling facility will then extract the valuable materials in a sustainable way, before selling the end product to recycling companies.

With support from SwitchMed, Tasneem Abuhijleh was able to secure financial assistance to set up her company. Tasneem Abuhijleh's initiative drives change in Palestine as it is the first e-waste facility in the country.



Story

The EU SWITCH to Green initiative

A Gateway to Inclusive Green Economy – For the European Union and Partner Countries

The EU SWITCH to Green initiative aims at facilitating the transition to an inclusive green economy that generates growth, creates decent jobs, and helps reduce poverty. Developed by the European Commission Directorate General for International Cooperation and Development (DG DEVCO), **SWITCH TO GREEN** links complementary programs to improve the overall coherence, coordination and visibility of existing and future EU funded international cooperation initiatives on green economy.

It builds on several initiatives, in particular the SWITCH regional programmes:

switchoasia

In Asia
<http://www.switch-asia.eu>

**switchafrica
GREEN**

In Africa
<http://www.switchafricagreen.org>

switchmed

In the Mediterranean
<http://www.switchmed.eu>

The initiative combines policy level cooperation to contribute to the establishment of the right incentive structures and instruments, with support to private sector initiatives to promote SCP practices and the development of green businesses. The expected results of the initiative are:

1. Inclusive green economy policy reforms take shape/are in place in partner countries;
2. Economic actors are better equipped and have greater opportunities to develop green business and/or apply SCP practices in partner countries.

The SWITCH To Green Facility

The technical assistance Facility provides resources to support the development and steering of the SWITCH to Green Initiative.

It assists dialogue and cooperation between the EU and partner countries' stakeholders promoting a green transition process.

Actions to improve synergies

The facility has a multi-task role, broken down into three main areas of action:



TECHNICAL SUPPORT

Technical advice is provided to the European Commission and development partners to better identify and formulate actions contributing to the green economy transition in partner countries. The facility also assists with monitoring and evaluation, with a view to identifying and understanding potential synergies and opportunities to accelerate this transition.



DIALOGUE AND EXCHANGE OF EXPERIENCES

The facility supports the organisation of policy and learning events to assist coordination and dialogue among inclusive green economy stakeholders. Likewise, the facility creates dedicated tools contributing to knowledge sharing.



KNOWLEDGE CREATION AND MANAGEMENT

The facility supports the planning and delivery of trainings and publications, with a view to promoting capitalisation on existing knowledge and EU domestic experience on inclusive green economy.

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The SWITCH to Green facility is implemented by a consortium led by Sequa gGmbH, with GFA Consulting Group and Pracsis.



Partner of German Business





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