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SWITCH-Asia turns 10

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ABOUT

switchasia PROGRAMME

The overall objective of the SWITCH-Asia Programme is to promote sustainable growth, to contribute to the economic prosperity and poverty reduction in Asia and to mitigate climate change. For more information, see: www.switch-asia.eu

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EDITORIAL

Celebrating a decade of SWITCH-Asia interventions

Now officially a Sustainable Development Goal (SDG 12), Sustainable Consumption and Production (SCP) is firmly established in the development agenda, adopted in 2015. The SWITCH-Asia Programme contributed to the related processes, through its ten-year commitment to supporting development, promotion and implementation of SCP projects and policies in 17 out of its 19 Asian target countries.

In its first decade, the Programme has been supporting 100 SCP promotion and demonstration projects in the region, including National and Regional Policy Support Components. These projects' successful work has been documented through the SWITCH-Asia website, SWITCH-Asia videos and publications (e.g. briefings, impact sheets, studies such as 'Sustainable Asia'), all produced and shared by the SWITCH-Asia Network Facility. This 2017 issue of the SWITCH-Asia Magazine reviews the impact and some milestones of the first decade of SWITCH-Asia grant projects.

The SWITCH-Asia Magazine has been highlighting particularly successful projects and achievements, whilst exploring current SCP themes such as 'Green finance for MSMEs', contributions of 'Green Growth to Poverty Reduction' and challenges and opportunities resulting from the 'Circular Economy' approaches in Asia. First published in 2014, the Magazine established itself as a relevant flagship publication for the global SCP community.

Starting from 2007, the Programme has granted support to consortia totalling more than 400 Asian and European not-for-profit partners, about 100 private sector associates and benefitting up to 30 000 Asian micro, small and medium-sized enterprises (MSMEs). The environmental performance of their operations has been raised and their products' and services' environmental quality improved. In short, their environmental sustainability enhanced. Considering that the countries where SWITCH-Asia works account for about one

> ***Starting from 2007**, the Programme has granted support to consortia totalling more than **400** Asian and European **not-for-profit partners**, about **100 private sector associates** and benefitting up to **30 000** Asian **micro, small and medium-sized enterprises** (MSMEs).*

third of the world's population, the Programme's environmental impact cannot be underestimated.

These interventions increased the resilience and domestic competitiveness of the cooperating SMEs, made existing occupations safer and created new jobs, thus contributing to the reduction of poverty in Asia, which is home to more than 320 million of the world's extreme poor. As the poverty challenge persists, the focus of the latest SWITCH-Asia calls for proposals shifted to Asia's least developed countries (LDCs).

Simultaneously, the growth of Asian economies continues to bring about an expansion of the local middle classes, with their increased consumption power and demand. Yet, up to now, only about 15% of the contracted SWITCH-Asia projects explicitly address the topic of Sustainable Consumption. Future Programme design may respond to this imbalance by providing additional incentives for consortia that intend to work on this important but nevertheless contentious theme.

Whether focused on sustainable consumption or production, the work to be done in Asia's developing countries can't always be fitted into the common four-year project contracting framework, which questions the organisational and financial sustainability of projects beyond their EU-funded time window. In particular, for projects to make a long-lasting impact, it remains crucial to mobilise private sector finance and commercial credit to continue their work in the long-term. As the Magazine article from India illustrates, it is promising that a few projects are successfully designing sustainable access-to-finance solutions that are conducive to a long-term continuation of their initial interventions.

Lastly, with this issue the current SWITCH-Asia Network Facility would also like to bid farewell to its readers. At the end of 2017, the mandate of the current team is coming to an end, while a new SCP Facility is being established.

On behalf of the SWITCH-Asia Network Facility team, I would like to express our sincere appreciation to all our partners and stakeholders with whom we have been cooperating since September 2013. We are thankful to all those who followed and supported our wide-ranging work in the course of these 51 months. Our joint efforts to create synergy, promote best practices and share know-how have helped guide Asia-Europe cooperation along the path towards more sustainable development.

Uwe Weber
Team Leader, SWITCH-Asia Network Facility

ABOUT

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TEN YEARS OF SWITCH-ASIA

Supporting Asian SMEs in achieving sustainable development

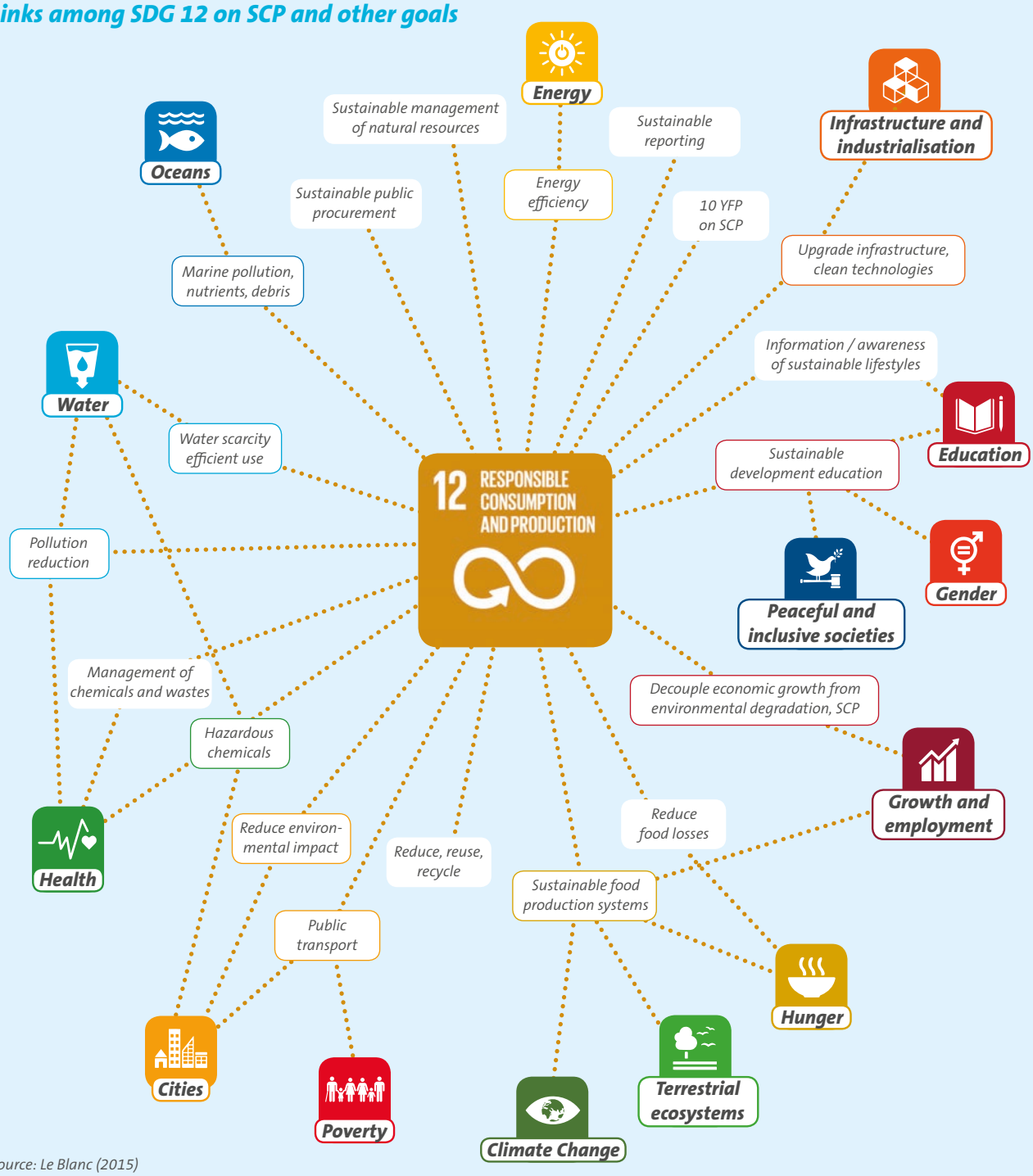
By Kartika Anggraeni

Sustainable Consumption and Production (SCP) has been recognised as an integral part of the 2030 Agenda for Sustainable Development. It has become a standalone Sustainable Development Goal (SDG 12) and a central component of many of the 17 goals and 169 targets. The importance of SCP patterns in achieving the 2030 Agenda is shown through many interlinkages between targets under other goals with SDG12 (Le Blanc, 2015).

Recent studies have identified linkages among SDGs, and SDG12 can be linked to other 14 goals (Figure 1). This underlines the prominent role of the SWITCH-Asia Programme. SWITCH-Asia has been involved in promoting SCP practices in Asia through its support to 17 Asian countries in the past ten years (2007-17), specifically towards small- and medium-sized enterprises (SMEs) which generally form about 90% of enterprises in developing countries. SMEs are the backbone of Asian economies and

FIGURE 1

Links among SDG 12 on SCP and other goals



Source: Le Blanc (2015)

working with them to embrace SCP contributes to creating huge economic, environmental and social impacts. Since 2007, the Programme has provided funding to 95 grant projects (completed and ongoing), four National Policy Support Components (NPC) and one Regional Policy Support Component (RPSC), implemented by the UN Environment, and the Network Facility (NF). Total funding reaches EUR 300 million (2007-20). With a focus on greening the production side, SWITCH-Asia grant projects mainly work with SMEs, although they also engage with consumers to promote sustainable consumption (SC).

In general, SWITCH-Asia projects contribute to the countries' national objectives, especially in reducing environmental impacts of their economic growth along with the social problems

that accompany industrial advancement. Therefore, these projects engage with various industrial sectors and stages of value chains (Figure 2), e.g. 18% out of 95 projects address the highly polluting textiles and leather sector. Another 18% of the projects take place in various industrial sectors, here called ‚multi-industries', thus creating a wider impact in the countries. The next key sectors for SWITCH-Asia projects are building and construction (14%) and food and beverages (10%). SCP practices implemented by SWITCH-Asia projects are illustrated in Figure 3. During its first decade and through its grant projects, the SWITCH-Asia Programme has increased the uptake of SCP considerably in the Asian SME sector. This article provides an overview of the grant projects' contribution to eight 'impact areas'. Overall, impacts are more long-term and SWITCH-Asia projects on average have a lifetime of three to four years. So, regardless of their name, impact areas actually highlight the improvements made by the projects in their key areas of intervention. Data available so far refer to 53 projects that are already completed as of April 2017, providing a comprehensive picture of results achieved by these individual grant projects.

Economic impact

SWITCH-Asia grant projects have contributed to economic improvements for their beneficiaries, especially the key target group of SMEs. This economic impact is frequently the result of the implementation of cleaner production or energy/resource efficiency (RECP) in their production processes. This in turn enabled the SMEs to reinvest the ensuing savings to expand their businesses, thus creating new jobs, increasing business competitiveness and eventually improving local people's livelihood.

FIGURE 2

Industries where SWITCH-Asia projects operate

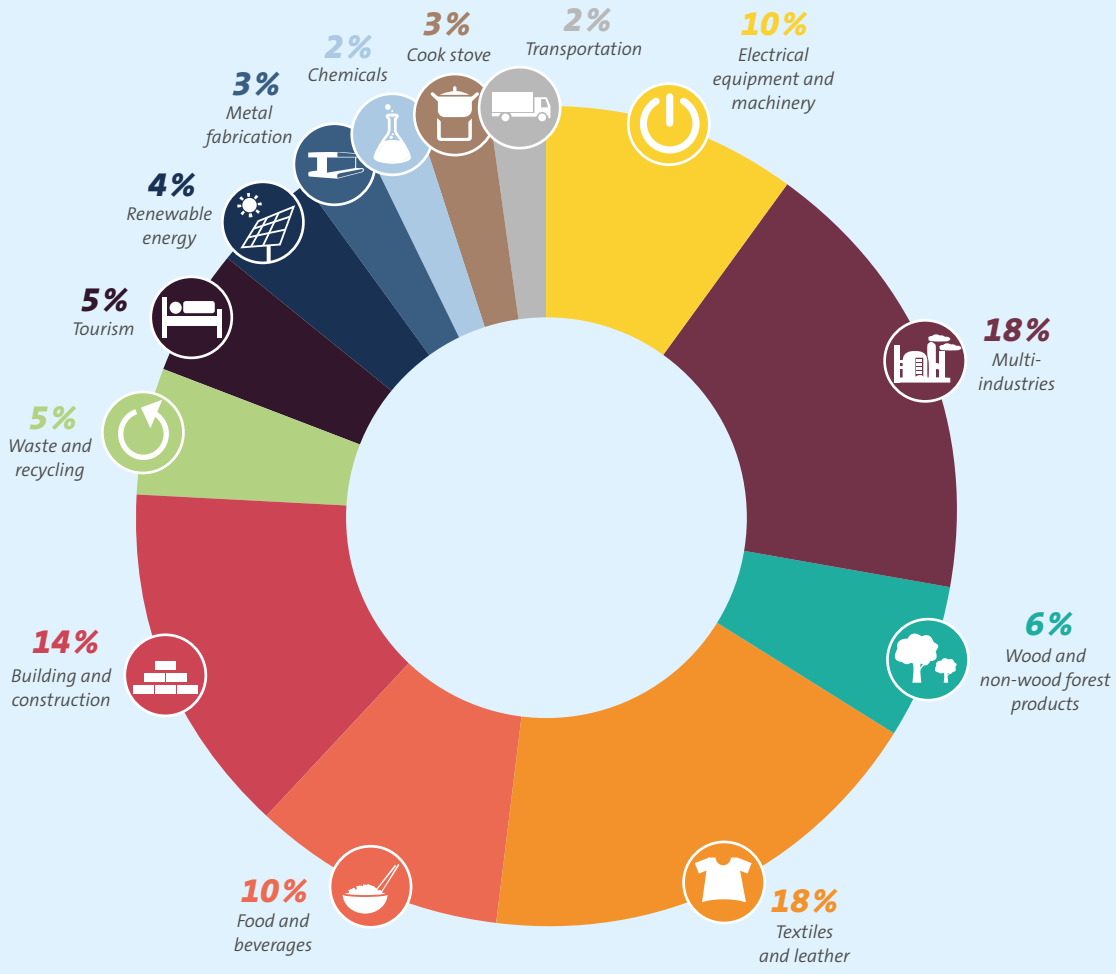
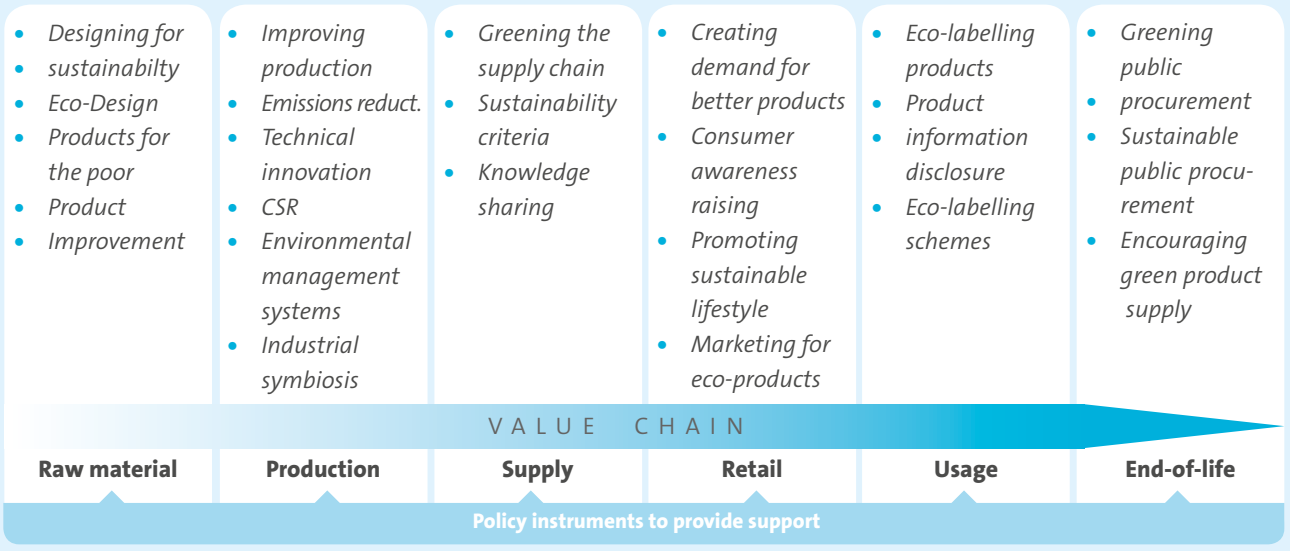


FIGURE 3

SCP practices supported by SWITCH-Asia



SWITCH-Asia projects have used various methods to identify and document their economic impact. Asian SMEs are micro and small in size, and many of them are also informal and do not keep sufficient accounts to track the economic improvements that result from their participation in a SWITCH-Asia project.

However, some numbers can help better define the SWITCH-Asia projects' performance. Cumulatively, seven SWITCH-Asia projects have facilitated investments in new, clean technologies of around EUR 22.3 million, five projects facilitated an increase in revenues totalling EUR 17 million, and another five projects helped their SMEs achieve annual cost savings of around EUR 6 million in total. To put this impact in context, small enterprises in Bhutan have working capitals of up to EUR 130 000 and in Nepal of up to EUR 250 000.

Environmental improvement

SWITCH-Asia projects have implemented various SCP measures at different stages of the value chains of the industries in order to reduce the SMEs' environmental footprints. Projects addressing natural resource utilisation, such as timber and rattan, worked closely with farmers and those merchants who collect raw materials from the farmers and sell it to factories or distributors, promoting more sustainable harvesting methods as well as local eco-labels and product certification. Most of the SWITCH-Asia projects focused on 'greening' the middle stages of value chains by working with SME producers, manufacturers, distributors and retailers. However, there are also some projects addressing the final stage of the waste management value chain (reuse, recycling). Often, the projects cover three major areas of environmental improvements, which are energy, water and waste.

Decrease in energy consumption

Reducing energy consumption not only benefits SMEs in terms of lowered production costs but also helps to mitigate climate change. Nine projects reported helping SMEs achieve **total** energy savings of about 30 000 GWh during the projects' three to four years of activities (Figure 4). Another nine projects, through their SMEs, accumulated **annual** energy savings of approximately 93 800 GWh (Figure 5). Energy savings sometimes only materialise after the projects are completed. For example, the *ASEAN SHINE (Efficient Air Conditioners)* project reported a reduced consumption of electricity due to its success in facilitating the harmonisation of ASEAN's minimum energy performance standards (MEPS). When all ASEAN countries adopt these MEPS, the electricity consumption of the ASEAN residential sector would be reduced by 5 373 GWh per annum. These project reports indicate that the improvements made during project implementation generally continue beyond a project's lifetime.

Projects working within the building and construction sectors identified substantial opportunities to improve sustainability by reductions in energy consumption. The energy efficiency measures include LED lighting, solar panels, and insulation technology. The *Low Energy Housing* project, promoting energy efficient buildings in China, reported to have achieved energy savings amounting to approximately 18 610 GWh during its implementation.

FIGURE 4

Total energy saving during implementation of nine SWITCH-Asia projects

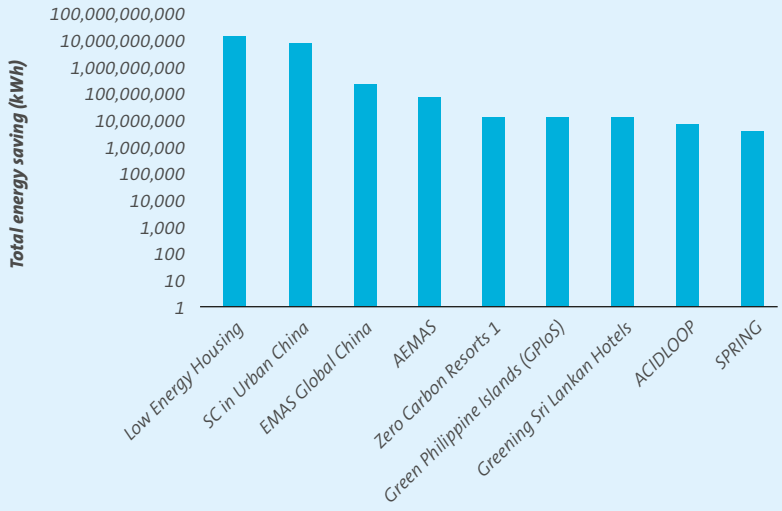
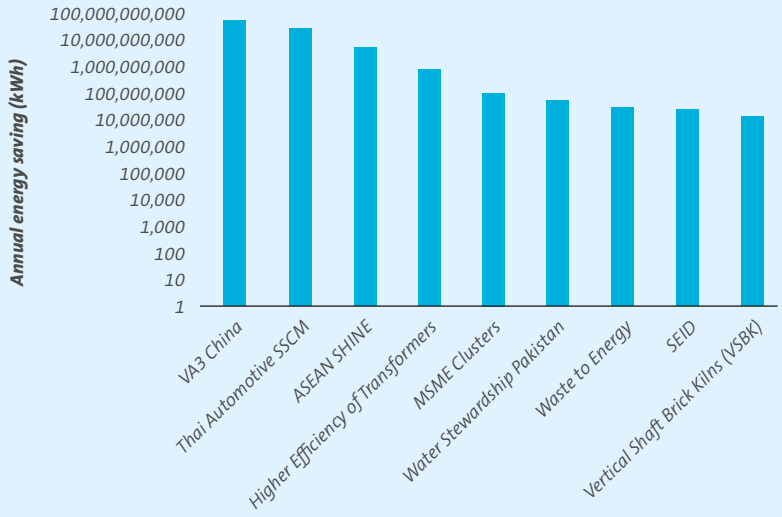


FIGURE 5

Annual energy saving realised by SMEs associated with nine SWITCH-Asia projects



Urban China project reports that those retailers and suppliers with whom the project was working achieved 11 140 GWh energy reduction during the project's life time.

Among the nine projects' reporting annual energy savings, three projects show a major reduction, *VA3* in China, *Thai Automotive SSCM* in Thailand, and *ASEAN SHINE* in eight ASEAN member countries. The *VA3* project addressed the textiles and laundry sectors, *Thai Automotive SSCM* the automotive supply chain, and *ASEAN SHINE* more highly efficient air conditioners. These are energy-intensive industries or products where SCP measures can create a significant change in a company's energy profile. Further, the energy-intensive automotive and textiles and laundry sectors show where leverage can be created and further replicated. The *Thai Automotive SSCM* and *VA3 China* projects enabled a combined annual reduction of electricity consumption of 87 400 GWh.

Reduction in water consumption

As a natural resource, water is becoming increasingly scarce, not only in water-stressed countries like Pakistan. Sustainable water management contributes not only to reduced water pollution, but also to local communities' ability to adapt to climate change.

Ten SWITCH-Asia projects have reduced their SMEs' water consumption. Out of ten, four projects achieved substantial **total** water savings during

Retailers and suppliers in the fast-moving consumer goods (FMCG) supply chain also have considerable scope to improve energy efficiency, especially when it comes to supply chains in a country like China with a large population (leverage for promoting sustainable products/services) and a long distance between cities (sustainable logistics). The *SC in*

Photo: Low Energy Housing project

> ***The Low Energy Housing project reported to have achieved energy savings amounting to approximately 18 610 GWh during its implementation.***

project implementation that cumulatively amounts to 143.1 million cubic meters (m^3), with the *SC in Urban China* project contributing 141 million m^3. This indicates where potential leverage can be created in future projects, i.e. sustainable consumption. The *SC in Urban China* project facilitated voluntary agreements between retailers and suppliers to improve their environmental performance in terms of energy efficiency, water consumption, etc. At the end of the project, 40 retailers and 3 419 suppliers in Beijing and Tianjin were involved in project activities, contributing to these savings of 141 million m^3.

Five projects reported **annual** reduction of water consumption. Together, these projects achieved reductions of 7.2 million m^3, where the *VA3 China* (laundry and textiles sector) and *Water Stewardship Pakistan* (textile processing, sugar, paper & pulp, and leather tanneries) projects provide the major contribution of some 6.3 million m^3. The *VA3* project promoted water reuse and incorporation of a tunnel washer to reduce water consumption. *Water Stewardship Pakistan* implemented better water management practices (BWMPs) which include technological changes within SMEs, e.g. use of reverse osmosis and softeners for water treatment, use of level switches in water storage tanks, reuse of cooling water (in mills bearings, turbines bearings), use of efficient motors, and reuse of vessels' cooling and hydraulic testing water (100-400 m^3/day).

> ***"The Industrial Symbiosis project (China) diverted waste from landfill through its focus on promoting an eco-industrial park to improve industrial waste management"***


Photo: Industrial Symbiosis project


Photo: SusTex project

> ***"By recycling used water in the textile park, SusTex reported that SMEs reduced the use of groundwater by about 500 m^3 per day."***

Out of the ten projects, three projects also report on individual SME's reducing their annual water consumption. *SMART Cebu* in the Philippines, *SEID* in Bhutan and Nepal, and *Water Stewardship* in Pakistan documented their SMEs' improved **annual** water savings as respectively 390 m^3/SME in the Philippines, 20 m^3/SME in Nepal, 153 m^3/SME in Bhutan, and 127 429 m^3/SME in Pakistan. The Better Water Management Practice (BWMP) employed by the Water Stewardship Pakistan shows the potential for replication at the SME level. *SMART Cebu* promoted the installation of aerator taps and the reduction of cistern volume to reduce water consumption.


Photo: SMART Cebu project

> ***"SMART Cebu project documented their SMEs achieved annual water saving of 390 m^3/SME in the Philippines"***

Waste reduction and pollution prevention

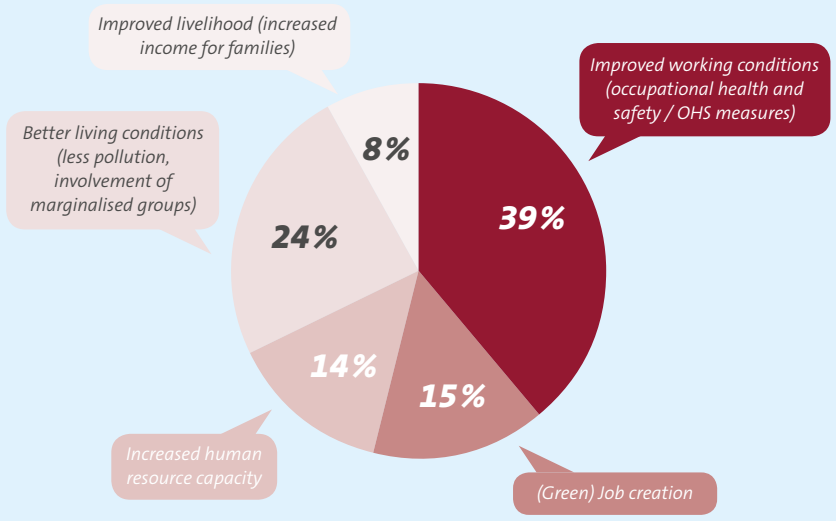
Reducing waste and pollution due to inadequate treatment and disposal benefits both the environment and people. SMEs involved in SWITCH-Asia projects generally achieve this target by acquiring clean technologies or embracing resource efficiency principles, such as good housekeeping which decreases wastage of energy and materials. Reports from 12 projects indicate their achievements in reducing waste.

Out of 12 projects, six projects effectively reduced **total solid waste** during their three to four years of activities, totalling approximately 2.3 million tonnes. The *Industrial Symbiosis* project (China) diverted waste from landfill through its focus on promoting an eco-industrial park to improve industrial waste management, where the waste of one company becomes raw material for other companies, thus partially 'closing the loop' and following a **circular economy** approach. Through RECP measures, SMEs involved in the *Thai Automotive SSCM* project reduced solid waste by about 2 100 tonnes per year.

Two projects reported on **total wastewater** reduction during their lifetime, totalling 0.28 million m³. Here the *Greening Sri Lankan Hotels* project contributes to the majority of savings, where hotels reduced their water usage. Another two projects, *SusTex* and *VA3* China, reported on SMEs' **annual reduction of wastewater discharge**. Both projects worked with the textiles sector that uses water intensively. Changes in the way textiles and laundry SMEs use water have made huge positive impacts. By recycling used water in the textile park, *SusTex* reported that SMEs reduced the use of groundwater by about 500 m³ per day. Not only creation of infrastructure for effluent and sewage treatment, water harvesting, and water recycling, but the textile park also installed a solar PV system to reduce SMEs' non-renewable energy consumption. A similar approach has been followed by the *VA3* project. By implementing good housekeeping measures, such as reduction of rewashing and optimised internal logistics, the textiles and laundry companies reduced their water usage. The project also motivated participating companies to improve air quality and reduce soil contamination by eliminating volatile organic compound (VOC) emissions from dry cleaning equipment.

FIGURE 6

Five areas of social improvements reported by 53 SWITCH-Asia projects



Social improvement

Depending on the industrial sector, SWITCH-Asia projects contribute to social improvements both directly and indirectly that often continue after a project is completed. Out of 53 completed projects, 40 projects provide qualitative information on their social impacts, while 13 projects focused on changing the way SMEs do their business, instead of working directly with producers, consumers or surrounding communities. Social impacts on target groups resulting from their main engagement with SMEs can be expected, such as safer working conditions for SME workers and reduction of hazardous discharges adversely affecting communities in the vicinity. Considered together, all 53 projects have engaged with over 36 600 SMEs and about 200 000 farmers.

Despite the complexity of reporting on social impacts, the projects generally report on **five areas of changes** (Figure 6), i.e.:

1. improved working conditions (through implementation of occupational health and safety/OHS);
2. (greener) job creation;
3. improved human resource capacity;
4. better livelihoods, (incl. involvement of marginalised groups);
5. poverty reduction through increased families' income.

Almost 40% of projects have improved SMEs' working environments by promoting and implementing occupational

TABLE 1: SIX SWITCH-ASIA PROJECTS REPORTING ON JOB CREATION

Country	Project	Sector
India	SusTex	Textiles and leather
China	Train the Trainers	Building and construction
India	WEEE Recycle	Waste and recycling
Nepal	Vertical Shaft Brick Kilns	Building and construction
Cambodia	Waste to Energy	Renewable energy
Nepal	Green Homes	Building and construction

health and safety (OHS) measures, such as the use of personal safety equipment (helmets, gloves, masks). Among others, these improvements resulted in a reduction of work-related accidents. This identifies where future SWITCH-Asia projects may focus their efforts to bring about effective positive impacts within industries, i.e. safer working environments, which further influences workers' families, not least by transferring good housekeeping practices to their homes.

Another two areas where SWITCH-Asia projects create significant social outcomes are better living conditions due to less pollution and waste emissions by the SMEs, and (green) job creation due to new ways of production and business development. SMEs often create additional profits due to the implementation of SCP measures. They re-invest the additional earnings in expanding their factories, thus creating new jobs. Six projects report on the creation of roughly 5 100 new jobs, substantially contributing to improved livelihoods (Table 1).

Contributions to climate change mitigation and adaptation

The SWITCH-Asia Programme's focus on greening the SME sector in Asia also contributes to climate change mitigation and adaptation. Out of 53 projects, 43 projects have addressed climate change issues either directly or indirectly. These projects operated in sectors such as textiles and leather, machinery, utilities, water, and food and beverages. Five common areas where the projects share similar activities are GHG emission reduction, reduced fossil fuel consumption, renewable energy use, forest conservation, and increase of public awareness on climate change issues (Figure 7).

Together 14 projects achieved a **cumulative annual** GHG emission reduction of approximately 24.7 million tonnes of CO_2e (Figure 8). Another ten projects achieved a **total** GHG emission reduction of approximately 1.17 million tonnes of CO_2e during their project implementation (Figure 9). How did the projects achieve these significant results? It was mainly through SMEs reducing their energy consumption (electricity, fuel) and improving resource efficiency. Improving efficiency in production and implementing good housekeeping have led to reduced CO_2 emissions. The numbers provided here can only be based on estimations, as projects had different ways of measuring their results. The other 19 projects reported on improving public awareness of climate change related issues. Furthermore, out of the 43 projects, 16 projects reported on reductions in fuel consumption (diesel, coal, etc.). Out of these 16 projects (Table 2), three projects helped SMEs reduce their use of liquid fuels (diesel), saving a total of 5.6 million litres. Another three projects

FIGURE 7

Five areas of climate change mitigation and adaptation efforts of 43 SWITCH-Asia projects

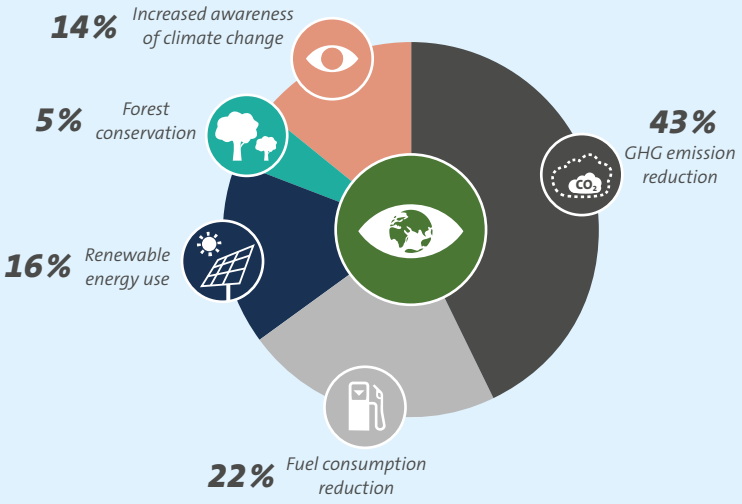


FIGURE 8

Annual GHG emission reduction reported by 14 SWITCH-Asia projects

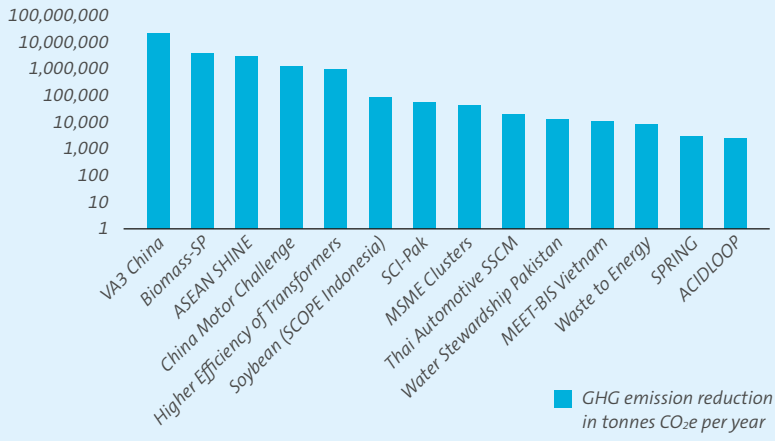
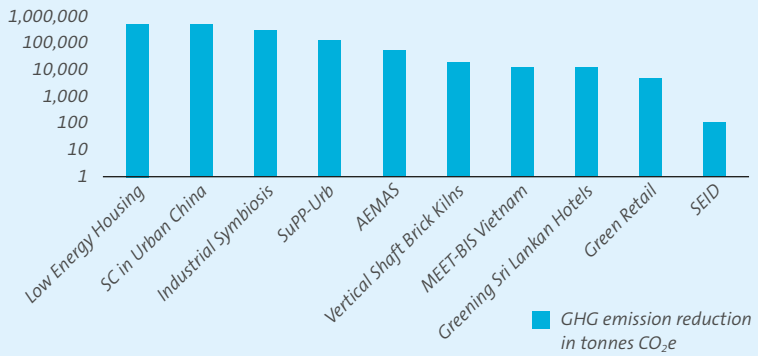


FIGURE 9

Total GHG emission reduction reported by 10 SWITCH-Asia projects



reported a reduction in usage of 375 000 tonnes of coal, which is linked to energy saving.

Furthermore, 13 projects successfully integrated renewable energy sources, for example biomass or heat recovery from hot wastewater streams. The *Zero Carbon Resorts* project, which was initially implemented in the Philippines and at the time of writing the second phase is being implemented in Thailand, reported the use of 0.79 GWh solar energy sources.

Four projects contributed to forest protection, supporting climate change mitigation. The *Sustainable Rattan* project successfully managed to certify 1 142 ha of forests in Vietnam, Cambodia and Laos. Similarly, the *Eco-friendly Bamboo* project in China replaced the use of 256 000 m^3 timber with 220 000 m^3 bamboo, reducing pressure on slow-growing trees by increasing the use of fast-growing bamboo.

Eleven projects increased awareness of the issue of climate change towards the public or their beneficiaries. The *Timber Indonesia* project contributed to climate change mitigation by facilitating an amendment of national law on Timber Legality Assurance System (TLAS). TLAS is the basis for the Voluntary Partnership Agreement (VPA) on Forest Law Enforcement, Governance and Trade (FLEGT) with the European Union (EU). The system certifies that timber from Indonesian forests and industries is legally sourced. Influenced by this project result, in 2016, the Indonesian Ministry of Trade amended its regulations and started requiring all wood-based products to be certified, while the previous regulation from 2015 excluded furniture.

TABLE 2: 16 PROJECTS REPORTING ON REDUCTION OF FUEL CONSUMPTION

	Country	Project
1	Cambodia, Laos, Vietnam	Sustainable Rattan
2	Bangladesh	Re-Tie
3	Pakistan	SCI-Pak
4	China	Higher Efficiency of Transformers
5	Philippines	Green Philippine Islands (GPIoS)
6	Malaysia	Biomass-SP
7	Philippines	Zero Carbon Resorts / ZCR
8	Bhutan	Tourism in Bhutan
9	Nepal	Vertical Shaft Brick Kilns
10	Bhutan, Nepal	SEID
11	Thailand	Automotive SSCM
12	Vietnam	Get Green
13	Cambodia	Waste to Energy
14	India	MSME Clusters
15	China	EMAS Global China
16	Pakistan	Water Stewardship Pakistan

Increasing access to finance

Many SMEs share the same problems in lacking access to finance. Among others, this is due to their often informal status and lack of reliable and meaningful bookkeeping. Therefore, banks and financial institutions consider SMEs as particularly risky debtors.

Out of 24 projects that reported on SME green finance, six projects reported the volume of finance leveraged, totalling approximately EUR 6 million. Out of the six projects, the *MSME Clusters* project in India leveraged loans of EUR 4 million for 100 MSMEs from state-owned banks, such as Punjab National Bank, Oriental Bank of Commerce, Axis Bank, Small Industries Development Bank of India (SIDBI), State Bank of

India, and State Bank of Patiala. Another five projects mobilised EUR 1 million of investments in the sectors of automotive, renewable energy, building and construction, and food. These six projects engaged with banks and financial institutions successfully to increase SME access to finance for sustainable production (Figure 10). Figure 11 illustrates a range of interventions by the SWITCH-Asia projects in addressing those challenges faced by SMEs as well as financial institutions.

In addition, three projects reported on facilitating business agreements between large companies and SMEs as well as private investments by SMEs for the acquisition of clean technologies. The agreements and investments have a total value of EUR 14.5 million (Figure 12).

Another three projects helped SMEs to overcome hurdles successfully in accessing governmental SME financing programmes (Figure 13). So far, this type of public financing (government

FIGURE 10

SME green finance from financial institutions leveraged by SWITCH-Asia projects

FIGURE 12

Investments made by companies, facilitated by three SWITCH-Asia projects

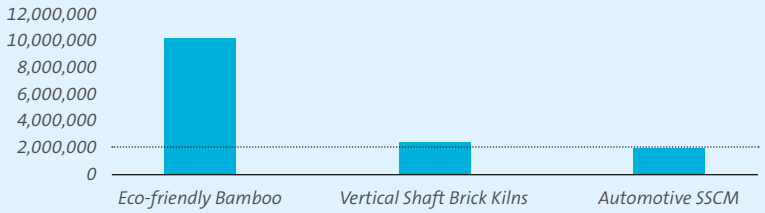


FIGURE 11

Types of SWITCH-Asia project interventions in improving SME access to finance (A2F)

The demand side
What are the barriers faced by SMEs?

- *Lack of financial literacy*
- *Lack of financial transparency*
- *Services from financial institutions perceived too costly*
- *Poor marketing and communication by financial institutions*

SWITCH-Asia's role

- *Addressing the legal framework for A2F*
- *Promoting financial solutions*
- *Increasing capacity of SMEs to access finance*
- *Addressing banks from awareness to technical assistance*
- *Enabling investment linkages*

The supply side
What are the barriers faced by financial institutions?

- *SMEs lack collateral*
- *Banks require SMEs' transparency*
- *Lack of effective channels and modalities for communication with credit providers for funding purposes*
- *Banks do not consider SME lending as profitable business*

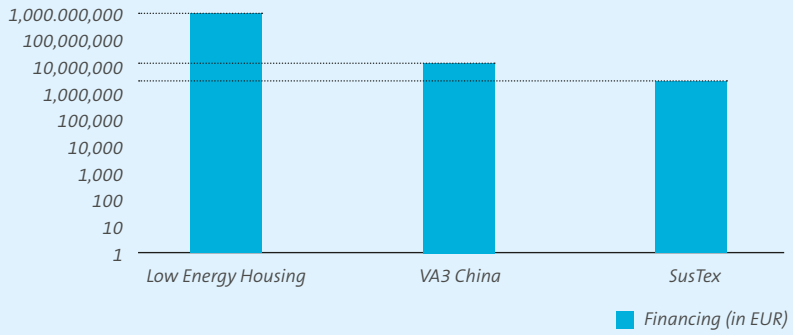
Source: SWITCH-Asia Network Facility (2013). Greening SMEs by enabling access to finance: Strategies and experiences from the SWITCH-Asia Programme.

incentives, subsidies) constitutes the largest part of SME green finance reported by SWITCH-Asia projects, highlighting the role of government in supporting the SME sector.

Based on the available data, 330 SMEs in China's building and construction sector benefitted from government subsidies totalling EUR 1 billion. The *Low Energy Housing* project succeeded in convincing the Chinese government of the importance of installing energy efficiency measures in new buildings. The *VA3* project managed to get the government on board, providing green incentives of EUR 13 million to companies signing voluntary agreements where companies have to improve their energy efficiency and reduce waste. The India-based *SusTex* project facilitated financial support from the government to SMEs of EUR 3.4 million.

FIGURE 13

SME financing through government financing instruments

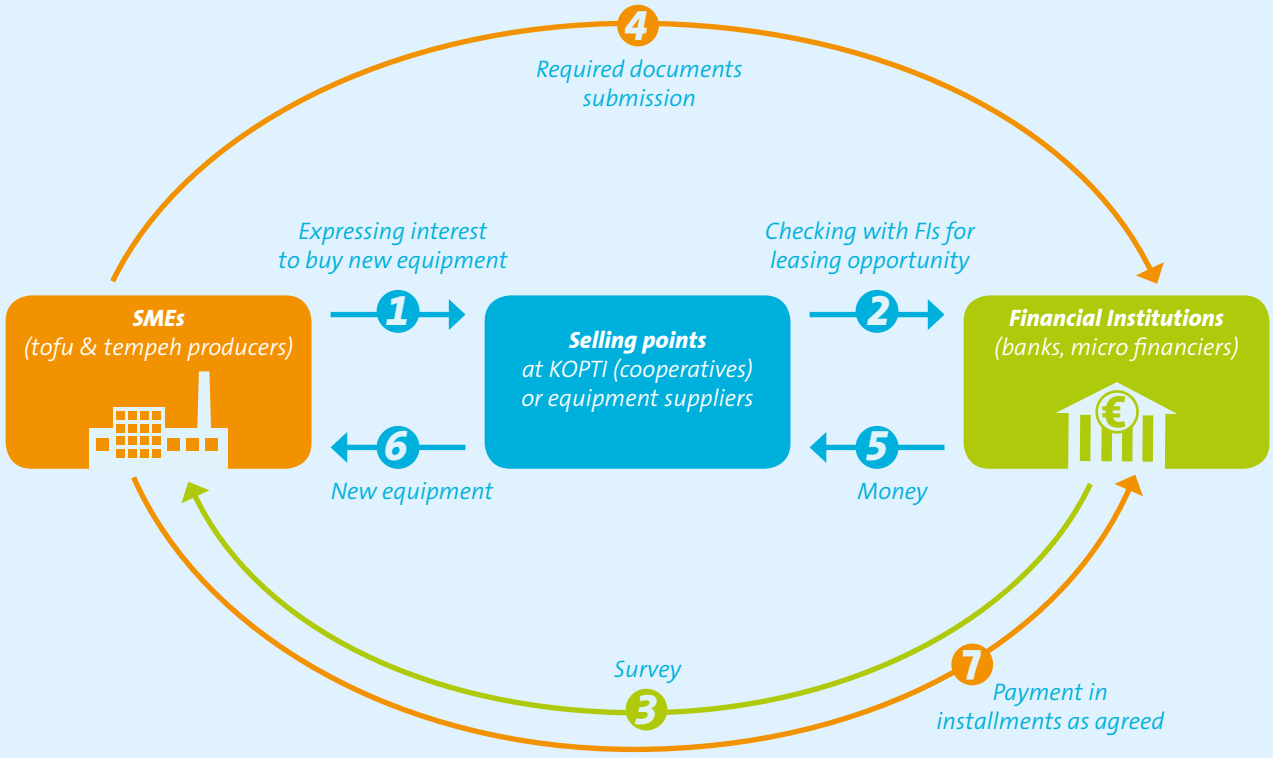


Financing schemes

The *SCoPE / Soybean Processing* project, implemented in Indonesia, provides an example of a financing scheme which has proven to be effective. Through engagements with financial institutions and implementing several financing schemes, the project identified leasing to be the most viable for the industry, where production equipment serves as collateral (Figure 14). Using the leasing scheme, the project leveraged SME green finance of around EUR 70 000.

FIGURE 14

Viable SME financing scheme for tofu and tempeh producers in Indonesia, facilitated by the SCoPE project



Source: SWITCH-Asia Soybean Processing (SCoPE) project impact sheet (2015)

Despite various project interventions, SMEs in Asia still encounter challenges in obtaining loans from financial institutions. This leaves ample room for further improvement or experiments in financing schemes by ongoing and upcoming SWITCH-Asia projects. Currently there are two projects working primarily on SME financing, which are *Financing Energy and Environmental Solutions/FEES*[1] and *Asian Cleantech MSME Financing Network/ACMFN*[2].

Multi-stakeholder engagement

All SWITCH-Asia projects address a range of target groups. Based on the experience collected by 53 projects, SWITCH-Asia projects generally address the following five stakeholder groups: private sector (SMEs), policymakers, financial institutions, research institutions, and consumer organisations (Figure 15).

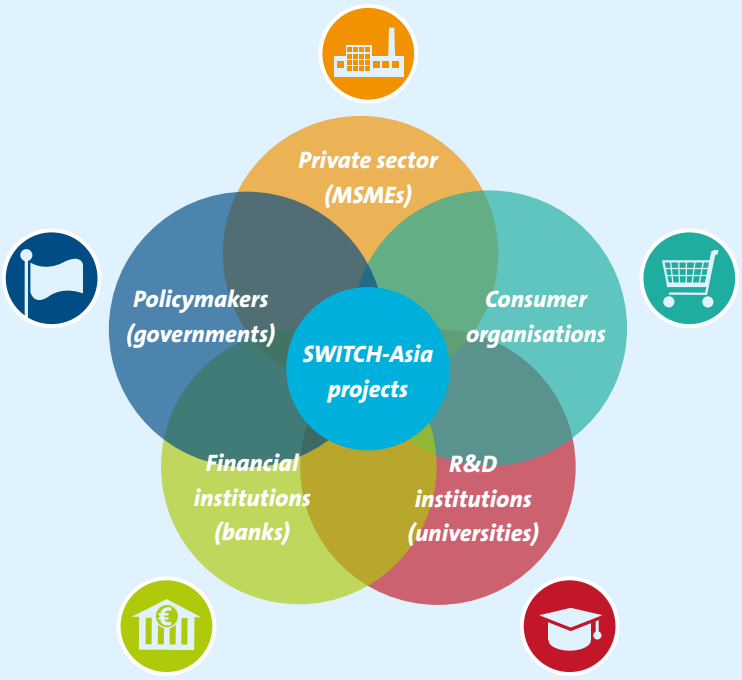
Depending on the sector and level of engagement, SWITCH-Asia projects often work with:

1. business membership organisations (BMOs), cooperatives or chambers of commerce, providing access to their SME members;
2. national/provincial/city-level policymakers and governments (various ministries) to obtain policy support;
3. financial institutions (FIs), such as banks and leasing companies, to identify potential SME financing schemes and develop new ones;
4. academic/research institutions, to support the projects with research and data;
5. consumer organisations, to create demand for new or more sustainable products/services.

So far, around 36 600 MSMEs have been engaged with 53 SWITCH-Asia projects, directly and indirectly, through project activities such as seminars, workshops, trade fairs or exhibitions. Involving business associations as a project partner proved to be a strategic manoeuvre for almost all projects. It gives SWITCH-Asia projects access to a pool of member SMEs to be engaged in project activities. Through the business associations, projects also can ensure the commitment and participation of SMEs in the project activities effectively. Some 7 000 organisations, e.g. government agencies, companies, business membership organisations, consumer organisations, universities, etc., have cooperated with the 53 SWITCH-Asia completed projects. In addition, some projects have also engaged with individuals; more than 600 000 individuals (trainers, promoters, salespersons, and consumers) were involved in various project activities (capacity building, study tours, exhibitions).

FIGURE 15

Main target groups of SWITCH-Asia projects



> ***Some 7 000 organisations, e.g. government agencies, companies, business membership organisations, consumer organisations, universities, etc., have cooperated with the 53 SWITCH-Asia completed projects.***

1) http://www.switch-asia.eu/projects/fees-financing-energy-and-environmental-solutions/
2) http://www.switch-asia.eu/projects/msme-financing-network/

Supporting SCP policy development

Realising the importance of engaging with governments to create an enabling policy environment for SCP-related investment, SWITCH-Asia projects always work with national, provincial and city-level policymakers. The projects organised policy dialogues and later submitted policy recommendations, based on experience of their pilot SMEs, as an input for policy changes favouring sustainable consumption and production patterns. Introduction of SCP into SME sectors in Asia requires a buy-in from governments that will provide incentives and define 'rules of the game' benefitting SMEs that implement, for example, cleaner production and resource efficiency practices and technologies.

Out of 53 projects, 42 projects actively engaged with (local) governments through dialogue and policy events, bringing specific SCP issues to government attention to muster their support and endorsement. 26 projects submitted policy recommendations and/or guidelines to the governments and, out of these, 13 projects had their recommendations taken up by government departments resulting in the issue of new policies, the amendment of existing ones or the integration into government five-year plans (FYPs). Through policy recommendations, the projects contributed their systematic knowledge of specific industrial sectors and problem analysis, which were often not available to policymakers, to evidence-based policy processes. Several examples of new policy developments facilitated by SWITCH-Asia projects can be identified. The *SusTex* project in India, for example, submitted policy recommendations on OHS and Social Security of Artisans and Craft Workers that were adopted in India's 12 FYP for the handloom and handicraft sector.

In the ASEAN region, the *AEMAS* project contributed to the amendments of existing Energy Efficiency and Conservation Laws in ASEAN member countries. The *ASEAN SHINE* project managed to establish harmonised standards for testing methods for more efficient air conditioners, and established a regional policy roadmap and seven national policy roadmaps towards an improvement of minimum energy performance standards (MEPS) in ASEAN member countries.

In the Philippines, the *Zero Carbon Resort (ZCR)* project instigated policy changes, which resulted in making participation in the *ZCR* project mandatory for new resorts, hotels or any tourism-related establishment requiring strategic environmental plan (SEP) clearance in Palawan. The *WEEE-Recycle* project in India supported the development of e-waste management rules issued by the Ministry of Environment and Forest (MoEF). The *Timber Indonesia* project has seen success in their policy engagement where the Ministry of Trade eventually revised its regulation following the project's recommendation. This new regulation requires the Timber Legality Assurance System (SVLK) certification 'without exception' for all timber products for export from Indonesia. The SVLK is the basis for a Voluntary Partnership Agreement (VPA) of the EU Forest Law Enforcement, Government and Trade (FLEGT), ensuring the legality of timber traded between the EU and Indonesia.

These grant projects' engagement with local policymakers complement the work undertaken by the SWITCH-Asia Regional Policy Support Compo-

CHINA

As China expands its economy and experiences unprecedented growth, industrial expansion has led to environmental degradation affecting the health of Chinese citizens, such as poor air quality in large cities. Realising the importance of reducing its environmental impacts while enabling its economy to grow, the Chinese government has included green economy elements into its 11th Five-Year Plan. In the 11th Five-Year Plan (2006-10) it has made provision to increase the consumption of renewable energy sources. During this period, the total investment for combating environmental pollution increased 15% annually. By 2009, the environmental investment had reached 1.33% of China's GDP. Taking this ambition further, the Chinese government identified seven major targets in the 12th Five-Year Plan (2011-15), which among others include reduction of pollutant emissions, protection of drinking water sources and their quality improvement, management of hazardous chemicals and dangerous waste, and a reversal of ecological deterioration.

Complementary to these policy initiatives, the SWITCH-Asia Programme contributed to reduce Chinese industries' environmental footprint by introducing SCP to China's SME sector. Out of 53 concluded projects, 30% were implemented in China with total grants of EUR 20.5 million. The main sectors addressed by the SWITCH-Asia projects included electrical equipment and machinery, wood and non-wood forest products, building and construction, waste and recycling, textiles and leather, chemicals, as well as food and beverages.

nent (RPSC) and the National Policy Support Components (NPSCs), which operate(d) in Malaysia, Indonesia, the Philippines, Thailand and Sri Lanka.

Conclusions

Operating in various industrial, service and agricultural sectors in developing Asian countries, SWITCH-Asia projects cope with multiple challenges, especially in furthering the adoption of sustainable consumption and production (SCP) patterns. In their contributions to address these challenges, SWITCH-Asia projects clearly seized opportunities that resulted in tangible economic, social, and environmental improvements. The positive contributions to the local economy, with further support from local governments through targeted policies, is hoped to attract further SMEs to implement SCP practices. Projects' engagements with financial institutions and governments pave the way towards a green SME industry, and eventually a green economy, in many Asian countries including China and India. Despite the many positive impacts created by the projects, the effectiveness of SWITCH-Asia's approach to sustainable development in Asian developing countries requires further study.

INDIA

India experienced strong economic growth in the last decade. However, the growth comes at an environmental price. According to a 2014 World Bank report, the environmental degradation in India was estimated to cost EUR 67 billion annually or about 5.7% of GPD in 2009. Clearly, enhanced environmental protection would sustain India's economic growth.

In the 12th Five-Year Plan (FYP 2012-17) the Indian government therefore has identified 'managing the environment and ecology' as one of 12 strategic challenges that the country needs to address. The identified environmental challenges include mitigation and adaptation strategies for climate change, improved waste management and enhanced pollution abatement, as well as countering the degradation of forests and loss of biodiversity.

Contributing to the Indian 12th FYP the SWITCH-Asia Programme funded many projects in India to promote sustainable consumption and production patterns further. About 17% of 53 completed projects with a total funding of EUR 13.5 million were implemented in the country, putting India just after China in terms of number of SWITCH-Asia grant projects. These projects were operating in various industries, i.e. wood and non-wood forest products, textiles and leather, waste and recycling, metal fabrication, and chemicals.

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Photo: MSME Clusters project

ACCESS TO FINANCE

Financing Sustainable Production among Indian MSME Clusters

Striving to improve energy efficiency in the foundry sector, a SWITCH-Asia project designs access-to-finance solutions to enable green investments

By Mukesh Gulati, Sangeeta Agasty and Ruchita Sanwal

Like elsewhere in Asia, manufacturing in the MSME sector plays a major role in the Indian economy, contributing to 8% of the country's GDP and represents the second largest employer (over 100 million) in India after agriculture[1]. Despite their significant role in the economy, micro, small and medium sized enterprises (MSMEs) often find it hard to comply with environmental legislation due to various technical and non-technical limitations resulting in poor levels of sustainability. It has been mentioned in India's Planning Commission's Working Group paper (2012) that around 70%

1) Ministry of MSME, Government of India, Annual Report (2015-16)

SWITCH-Asia project "Scaling Up Sustainable Development of MSME Clusters in India"

1 100 foundry enterprises across the three states of Punjab, Rajasthan and West Bengal

474 received direct technical support to improve their energy efficiency

Saving of 24 992 metric tonnes of CO_2 emissions every year

of total industrial pollution originates from MSMEs in India. In India, according to a study[2] from the Foundation for MSME Clusters (FMC), 11 sub-sectors have been identified which are economically significant, energy intensive and environmentally sensitive clusters. Out of these sectors, foundries are singled out as the most significant polluters. Excluding a few larger foundries, 96.6% of small and micro foundries in India suffer from technological obsolescence and production inefficiencies, resulting in them falling into the 'red list category', i.e. the category that indicates the most polluting industries according to a scale of three categories established by the Ministry of Environment, Forest and Climate Change of the Government of India. One of the key factors adversely affecting the adoption of sustainable practices among MSMEs is considered to be the non-availability of institutional finance.

The SWITCH-Asia project entitled *Scaling Up Sustainable Development of MSME Clusters in India*[3] (2012-2016) endeavoured to enhance the competitiveness of less sustainable MSME clusters, while at the same time reducing their adverse environmental and social impacts such as improving social security and occupational health and safety. The project was implemented by a consortium of national and international partners, including FMC, GIZ (German bilateral technical development agency), Global Reporting Initiative (GRI), United Nations Industrial Development Organisation (UNIDO), Indian Institute of Corporate Affairs (IICA) and Small Industries Development Bank of India (SIDBI). The project implemented five main activities, through work packages. Out of these, Work Package Four specifically aimed at enhancing the access of MSMEs to credit through stronger linkages with Financial Institutions (FIs) and by developing innovative financial products and delivery mechanisms in cooperation with banks, Business Membership Organisations (BMOs), financial consultants, equipment providers and MSMEs themselves as business partners. This addressed one of the key problems faced by MSMEs in adopting sustainable practices, i.e. the limited availability and access to credit for sustainable production.

The project reached out to up to 1 100 foundry enterprises across the three states of Punjab, Rajasthan and West Bengal. Out of these, 474 received direct technical support to improve their energy efficiency, leading to the saving of 24 992 metric tonnes of CO_2 emissions every year. In this context, the project assisted 101 enterprises to obtain sustainability-linked financing from several banks in India.

MSMEs struggle to access credit

As reported by the Reserve Bank of India[4], 8% of all MSMEs across different sectors in the country have access to banks and financial institutions, while the remaining 92% are excluded and compelled to raise money through informal channels.

Although medium and large enterprises can access credit through commercial banks and open debt markets, many micro and small entrepreneurs remain under-served, particularly in the loan range of EUR 700 to 14 000 per enterprise. Such financial needs are

A project visit to a foundry

2) http://fmc.org.in/wp-content/uploads/2012/10/Mapping-Energy-Environment-and-Social-Issues-among-MSME-Clusters-in-India-Way-Forward_upload.pdf
3) http://www.switch-asia.eu/projects/msme-clusters/
4) RBI (2015): https://www.rbi.org.in/scripts/BS_ViewMasCircularDetails.aspx?id=9018

generally too large for microfinance, but too small for commercial banks and open debt markets. This financing gap limits the development of MSMEs and results in a substantial loss to the formal financial sector.

Below, this problem shall be analysed from a three-fold perspective: on the **(1) demand side**, most of the MSMEs are not aware of relevant financial products, government schemes and their ability for an improved accounting, etc. On the **(2) supply side**, the bottlenecks include lack of innovative financial products and public schemes that enable enterprises to switch to green technology at the same time reducing their operating costs. Besides, local bankers, credit officers and other actors in the **(3) credit delivery channels** are often not trained to understand the needs of MSMEs regarding wider sustainability issues. Such differential factors have hitherto limited the MSME owners' ability to address sustainable production.

New divided blast cupola installed

The financing schemes launched through the project

Based on FMC's experiences, a large majority of micro enterprise owners prefer cash-based transactions to avoid the payment of taxes, which are of course an additional cost. However, this incomplete accounting results in a poor reflection of their true financial viability in the written account statements provided to banks along with filed credit applications for green investment proposals. Thus, the banks remain unable to lend to these enterprises.

To address these problems, the project developed a multipronged approach. Working on both the demand and the supply side, it provided the following solutions:

1. Organise cluster level sensitization and awareness workshops and training programmes: Four sets of sequential services were developed and provided to the MSMEs, which were (a) awareness raising of the MSMEs on financial discipline related to loan products and processes; (b) identification of bankable investment proposals; (c) documentation to be provided with loan applications; and (d) follow up with potential lending banks with assistance from the financial consultants.

For any kind of financial linkage development, especially in the MSME sector, it is very important to build the capacities of MSMEs in terms of documentation and awareness creation, and to help them in developing credit discipline, i.e. maintaining records like cash flow, balance sheets, repaying loans in time.

Through seven cluster-level workshops on capacity building and industry association training on new and modified financial products, 200 foundry MSME owners were informed. In addition, more than 400 MSMEs were coached through bilateral meetings by the project team and consultants. A frequently asked questions (FAQ) booklet[5] with 51 key points was prepared by the project to prepare the MSMEs better to become loan-fit and also to make them aware of various financing schemes of banks and the Government of India. The FAQ booklet was disseminated to more than 1000 MSMEs in the country and also to various other development organisations and FIs.

2. Facilitate and strengthen linkages between MSMEs and banks and public schemes: Out of all MSMEs trained, 101 enterprises were coached by six chartered accountants (three in Punjab, two in Ajmer and one in Howrah cluster), who facilitated their financial dealings with their banks.

The chartered accountants provided all 101 MSMEs with overall 'hand-holding' support (the four-step sequential support mentioned under the previous point), which enabled faster loan processing, namely in less than six months compared to one year on average previously. The total term loans sanctioned and disbursed to 101 MSMEs for working capital during the project period were EUR 4.02 million and EUR 1.71 million respectively. Out of the 101 MSMEs, 56% have taken loans from banks for the first time.

A financial needs assessment for more sustainable production was required for comprehensive understanding and factoring of the techno-commercial aspects of the targeted businesses. Through this needs assessment, it was understood that the investment return ratio of the technological improvements (based on a standard production condition) for better practices (costing only expert fees) and partial technology corrections (costing expert fees and retrofitting) was highly remunerative, whereas a complete technology overhaul would demand substantially higher investment.

However, a widespread notion in the policy segment is that only substantive

5) http://fmc.org.in/wp-content/uploads/2012/10/MSME-BOOK-FINAL-1-4.pdf

Convincing BMO executives to adopt SCP measures

Conducting OHS training for MSME workers to increase safety in the workplace

technology equipment improvements would lead to noticeable energy savings. Generally, the energy saving potentials by changing habitual practices are ignored and the focus is on savings from adoption of improved technologies. Consequently, most of the government policies and schemes focus primarily on tangible technology-oriented schemes that require capital infusion by linking up with formal financial institutions. Instead, this project proved that substantial energy savings can be produced by improved everyday practices. This in turn can be improved through relatively low cost training on energy efficient practices and retrofitting, or smaller retrofitting efforts.

3. Schemes availed: The project thoroughly analysed the existing public support schemes and identified the three most relevant ones which subsidise technology upgrading, i.e. Credit Linked Capital Subsidy Scheme-CLCSS (15% subsidy), Technology & Quality Up-gradation Support-TEQUP (25% subsidy) and Credit Guarantee Fund for Micro & Small Enterprises-CGTMSE (75% of the credit provided by the banks) and facilitated their uptake for MSMEs in availing themselves of credit from the banks. The application process of CLCSS is as follows: micro and small enterprises need to approach the nodal banks/ eligible FIs to sanction the term loan for the purchase of eligible machinery. The financial institutions / nodal banks / agencies sanction and recommend the subsidy eligible applicant to the office of Development Commissioner, Ministry of MSME (DC-MSME). While the CGTMSE scheme provides a guarantee to the bank for a collateral-free term loan and working capital facility, TEQUP is a subsidy scheme for technology upgrade which is routed through the banks. However, most MSMEs and even bankers do not know about these schemes. Through project-trained chartered accountants, awareness was raised among the MSMEs as well as bankers about these schemes and linkages were subsequently facilitated.

Out of 101 units, 83 enterprises availed themselves of CLCSS, followed by the TEQUP scheme and CGTMSE scheme for a total credit of EUR 5.73 million. These credit and subsidy applications were facilitated by the chartered accountants trained by the project.

Foundry Operation

4. Launch of new financial product by SIDBI: By taking inputs from the project, an 'End to End Energy Efficiency (4E) Financing scheme' was launched in 2016 by SIDBI (one of the associates of the project consortium) with the objective to help MSMEs adopt energy efficiency measures and to ensure their access to all the required services of reputed technical and financial consultants at a reasonable price. The scheme supports various energy efficiency measures in MSMEs through steps such as: (1) executing a detailed energy audit and suggesting suitable energy savings measures; (2) providing support for the implementation of suggested energy saving measures; and (3) conducting a measurement and verification audit to quantify the actual energy savings achieved.

The scheme supports part of the costs of (i) capital expenditure including for the purchase of equipment/ machinery, installation, civil works, commissioning, etc. in order to implement the energy efficiency measures recommended in the Detailed Project Report (DPR) prepared by the SIDBI consultants according to an established DPR template, and which is drafted after completing the audit with the purpose of making a detailed technical and financial plan for the changes to be done in the unit, (ii) any other related expenditure required by the MSME, provided it is not more than 50% of (i). The loan may be for an amount up to 90% of the energy efficiency improvement project cost, with a minimum loan amount of about EUR 13 000 and a maximum loan amount not exceeding EUR 199 000 per eligible borrower under this scheme. No collateral is required and the eligibility criteria for MSME units in the manufacturing or services sector are as follows:

- The applicant unit should have been in operation for at least three years, should have made a profit in the last two years of operation and should not be in default to any bank or FI.
- A minimum credit rating of ME4/ SER4/CR5 or its equivalent.
- The unit should have undergone a Detailed Energy Audit (DEA) through a technical agency / certified Energy Auditor consultants certified by the Bureau of Energy Efficiency. Further, the Detailed Project Report (DPR) prepared by the technical agency / consultant, should have been vetted by EEC, SIDBI.
- The unit should not have availed Performance Linked Grant under the WB-GEF Project for the proposed EE Project.
- The unit should be in compliance with the Environment and Social Management Framework.

Release of learning paper on sustainable financing and FAQ booklet in a national workshop

Against a prevailing lending range of 11 to 15%, the annual interest rate for this loan is 2.5% below the normal lending rate as per the credit rating (both fixed and floating options are available) to attract more MSMEs to opt for energy efficiency measures. Until August 2017, 70 MSMEs had used this 4E financing scheme and received approximately EUR 10 million credit from the bank. India SME Technology Services Ltd. (ISTSL), an associate firm of SIDBI, has spearheaded the 4E intervention. It has also identified consultants or energy service companies based on their competences so that MSMEs can obtain easy and reliable expert help under the scheme.

> ***"Until August 2017, 70 MSMEs had used this 4E financing scheme and received approximately EUR 10 million credit from the bank."***

5. Strengthen and create delivery channels: The project capacitated business intermediaries, especially Business Membership Organisations (BMOs) and Business Development Service Providers (BDSPs), including chartered accountants, to mobilise synergies between sustainable business and finance by informing MSMEs about innovative SCP-based financial products and public schemes, and supporting them with application procedures as well as linking them to banks and public funding agencies. At the same time, BMOs and BDSPs would be the point of information for FIs about MSME needs and performance with regard to SCP as well as acting as a bridge between MSMEs and FIs.

In conclusion

The key to effective implementation of such targeted intervention lies in the ability to design interventions with convergence. Such initiatives cannot be scaled up without coordination among various institutions, industry and service providers. With this objective, a learning paper entitled "Financing Sustainable Production among MSME Clusters – Experiential Learnings and Policy Recommendations"[6] was prepared based on project experience and disseminated widely to more than 500 banks, financial intermediaries, BMOs, development organisations, ministries and other key institutions in India.

The project concluded in April 2016. It is still early to assess any policy level impact, however, four national banks and non-banking financial institutions have expressed interest in trying cluster-based financing for MSMEs.

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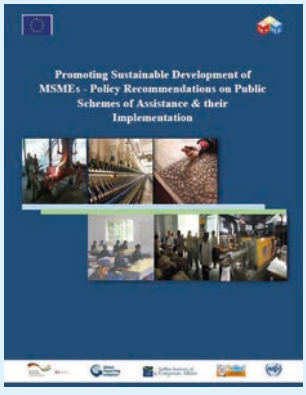
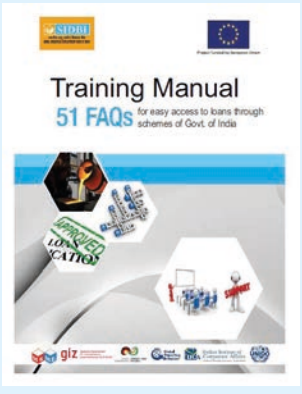
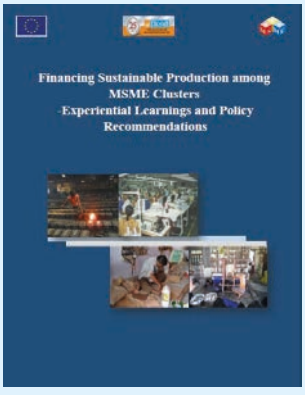






The project's major publications

6) http://www.switch-asia.eu/fileadmin/user_upload/Project%20news/MSME/Financing_sustainable_production.pdf

Photo: Sustainable Rattan project

SOCIAL IMPACT

SCP as a women's empowerment resource

In advancing sustainable consumption and production, SWITCH-Asia projects are contributing to improve the living and working conditions of thousands of women across Asia

By Silvia Sartori

A new study compiled by the SWITCH-Asia Network Facility shows that, in their promotion of SCP practices, at least 20% of the SWITCH-Asia projects – both completed and ongoing – have played a significant role in empowering women in their target communities.

The study, published in May 2017 and entitled 'Advancing Sustainable Development and Women's Empowerment in Asia', reviews those projects where a link between their SCP interventions and an impact on women's empowerment can be explicitly identified. The publication highlights barriers, opportunities and successful approaches that can help inform a broader overview on whether and how SCP can serve as a women's empowerment resource. The book compiles the experiences of 19 SWITCH-Asia projects from 11 coun-

tries in South Asia and Southeast Asia that are active in three main sectors: garment and textiles, energy, and agriculture and natural resources. Female beneficiaries of the project range from low-skilled farmers and company workers to SME managers and owners with higher levels of education.

Through capacity building, training and education, occupational health and safety (OHS), technological upgrades, social compliance promotion, business support, and financing opportunities, the featured SWITCH-Asia interventions are positively affecting living and working conditions of thousands of Asian women.

In supporting a more sustainable production of cotton in Pakistan, the 'SPRING' project contributed to empower local women

What is holding women back?

Despite sectorial, socio-cultural and geographical differences across the 19 projects, their experiences point to a common set of barriers that limits the empowerment of women.

A low level of education is one of the most prominent, and is particularly noteworthy in the case of women working in the natural resource sector, where as many as 19% of female workers in Bangladesh, 25% in Vietnam and up to 50% in Cambodia and Laos are reportedly illiterate. When literate, many of the women nonetheless possess only basic literacy.

Across the sample examined, women are observed generally to lack independent access to finance and ownership of land, which limit their financial autonomy and investment capacity and expose them to precarious seasonable occupations.

In specific cases, cultural and social norms additionally exacerbate the position of women, with implications including limited female participation to activities outside the household in India and banned access to markets for women in Bangladesh.

As a result of these factors, women often display low self-esteem and self-confidence levels, which in turn weakens their ability to generate change in their life choices. The perpetuation of traditional cultures that assign women to take care of household chores, including provision for fuel, with no financial remuneration, make them the most exposed to energy poverty and domestic hazards caused by inefficient cooking and heating devices. As a result, women are the main victims of indoor air pollution caused by inefficient cooking equipment that increases their drudgery and prolongs cooking times.

At the corporate level, female employees represent a significant share of the workforce, especially in the garment and textile sector. In Myanmar, for instance, women account for almost 95% of the workforce in the industry. Yet, the ratio of female participation decreases among business owners and in managerial, decision-making positions. Generally, an imbalance is evident in the male-to-female ratio across the employment spectrum, with women broadly more numerous than men in lower-paid and less-skilled positions. Furthermore, when holding seasonal occupations or working from home (e.g. as artisans) and in workshops, women are usually informal workers, thus working without official social welfare.

The 'Women-centred Cook Stove' project promotes improved cook stoves among 10 000 poor and vulnerable women in India

Success factors

For some of the 19 projects covered in the study, addressing the above problems was an intended goal from the onset of their activities, as they had a declared women-oriented objective. This is the case, for instance, in the 'Women-centred Cook Stove' project in India. Others, instead, contributed to tackling these problems as they went about their overall SCP-promoting interventions.

In spite of this difference of approach, the featured projects were able to bring about significant enhancements in the condition of women by leveraging a combination of or all of the following key instruments:

1. Mobility and association: Some projects organised women together into newly formed groups, others linked up with existing women's cooperation groups. These exclusive women's platforms release many women from household confinement, providing them with a degree of independent mobility – often for the first time in their life – and a comfortable space to speak up and share with peers. They effectively become the official avenue where women take part in project activities, receive training, practise new skills and manage joint entrepreneurial ventures.

2. Training: Awareness raising, education and skills transfer together are a pillar in all projects. Training content differs, ranging from financial literacy and business management to cleaner production and resource efficiency. They equip female beneficiaries with new knowledge and skills that improve their living conditions and/or professional status.

3. Self-confidence: As a result of the previous factors, as well as targeted support activities, many female beneficiaries have acknowledged an increase in self-esteem after engaging with the projects. In turn, this has enabled further developments: some women decided to become entrepreneurs and set up their own businesses, others became trainers or group leaders, for instance.

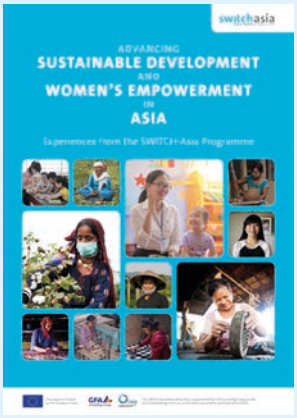
4. Business support: SWITCH-Asia projects have been instrumental in strengthening the business capacity and managerial skills of female entrepreneurs, SMEs run by and/or employing women and individual women interested in starting a business. By providing business management skills, marketing and product design training, linkages to new domestic and international markets, stronger bargaining

The 'Going Green' project provides women-only self-help groups in India with new, improved livelihoods through sustainable textile businesses

power, resource-saving and productivity-increasing measures, projects contributed to enhance the business profile and competitiveness of SMEs and to equip female entrepreneurs with the skills needed to run a greener business sustainably. At a wider scale, sounder corporate performance paves the way for new employment opportunities, increased job stability and higher salaries.

5. Social compliance and OHS: The projects operating in the textile and garment industries as well as those in the agriculture and natural resource sectors started promoting SCP interventions through measures that make working environments cleaner and safer, with positive repercussions on factory and workshop productivity and efficiency. As a result, for instance, a decrease in occupational hazards and a reduction in overtime hours have been reported in Nepal and Myanmar respectively.

6. Access to finance: The ability to implement SCP is frequently conditional on the availability of credit to invest in 'green technologies'. Asian SMEs are usually confronted with de facto inaccessible loans due to lengthy bureaucratic processes, requirements not tailored to the needs and features of smaller businesses and a financing market not yet familiar and comfortable with 'green investments'. About a third of the SWITCH-Asia projects featured in the study have been able to facilitate the development of SME-friendly financial products that enable interested entrepreneurs, including women, to access credit for investing in greener technologies and production processes. Other projects supported the financial inclusion of women by guiding them through the processes for opening individual and collective bank accounts and imparting financial literacy, starting with the creation of saving schemes.



*The study **Advancing Sustainable Development and Women's Empowerment in Asia** can be viewed and downloaded at: https://publications.europa.eu/en/publication-detail/-/publication/d3a049c6-7b1b-11e7-b2f2-01aa75ed71a1/language-en/format-PDF/source-37467718*

7. Technical upgrades: SWITCH-Asia projects promote the development and adoption of improved technologies that minimise the consumption of resources and operate more efficiently. This is best exemplified by projects in India, Laos, Myanmar, Pakistan and Sri Lanka, where better and more cost-effective cook stoves and biogas digesters are freeing up women's time, both saving them drudgery and reducing exposure to hazardous smoke.

The added value of empowering women

The SWITCH-Asia experiences presented in this study illustrate the far-reaching impact of women's empowerment. Not only does women's empowerment reinforce human rights, social justice and gender equality, it also unleashes women's multiplier potential.

SWITCH-Asia case studies illustrate how women's improved status and opportunities immediately translate into improved wellbeing of families, in particular children. Female artisans and entrepreneurs from Indonesia and Nepal, for instance, are declaredly investing the additional salaries, earned by implementing project-initiated measures, into children's nutrition, education and healthcare. Female factory workers in Nepal transferred the OHS practices learned via the project in their workspace to their households: their families now enjoy cleaner, safer and more resource-efficient living environments that reduce their medical expenses and household bills.

In the broader sustainable development horizon, to which SCP interventions belong, women are however more than 'passive beneficiaries' of external programmes. Although more limited in numbers, the case studies from SWITCH-Asia projects promoting sustainable consumption demonstrate that empowered women are powerful change-agents in driving the sustainability agenda. The study's experiences from Cambodia and Vietnam indicate that women tend to be more sensible and more responsive to calls for action that positively affect the environment and society. In their capacities as consumers, family and household caretakers, they are vested with a significant decision-making power that, if accurately informed and enabled, can spearhead significant impact at the family and societal levels.

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Photo: EcoWaste Coalition

MULTI-COUNTRY IMPACT

Protecting children's health by eliminating lead paint

In its four years of implementation, a regional SWITCH-Asia project paved the way for the progressive reduction of hazardous paint through some of the strictest regulations in the world

By Dr. Sara Brosché, Valerie Denney and Manny Calonzo

Lead is a toxic metal and, according to the World Health Organisation (WHO), no known level of lead exposure can be considered safe for children[1]. When it became widely known in 2008 through reports by scientists and IPEN-associated NGOs that lead paint for decorative purposes was still sold in many low and middle-income countries, many people were shocked.

This discovery was particularly alarming because of the life-long effects of lead exposure, such as lower intelligence quotient and cognitive problems, and most developed countries adopted laws or regulations to control the lead content of paint used in homes, schools and childcare facilities beginning in the 1970s and 1980s. In the European Union (EU), all lead-containing paint

1) http://www.who.int/mediacentre/factsheets/fs379/en/

ingredients are restricted under REACH, an EU regulation protecting humans and the environment from chemical hazards.

To begin to address this issue, the NGO network IPEN and seven of its Participating Organisations (POs) implemented a SWITCH-Asia *Lead Paint Elimination*[2] project between 2012 and 2015, to initiate a trajectory towards eliminating the use of lead in paint for decorative purposes in Bangladesh, India, Indonesia, Nepal, the Philippines, Sri Lanka and Thailand.

As a result of the project's work, today five project countries – India, Nepal, the Philippines, Sri Lanka and Thailand – have enacted regulations on lead in paint based on a total maximum allowed lead limit. In Nepal and the Philippines, this limit is 90 parts per million (ppm) for all types of paint, making these regulations the strictest anywhere in the world. The 90 ppm limit is the recommended limit in a model law developed by the Global Alliance to Eliminate Lead Paint provided to governments[3]. In India, the regulation is the same as in the USA, i.e. limiting the lead content of decorative paint to 90 ppm. In Thailand, the limit selected was 100 ppm and in Sri Lanka limits for various types of paint range from 90 ppm to 600 ppm. Bangladesh and Indonesia are expected to follow suit soon.

Many paint manufacturers reformulated their paint during the project and lead levels were verified to be decreasing. In addition, the world's first third-party certification programme for Lead Safe Paint® was established in 2013, and four manufacturers from the Philippines, Sri Lanka and Bangladesh now participate in it. The programme is open for any type of paint and verifies that a paint brand only sells paints that contain less than a total of 90 ppm lead.[4] The certification programme is now also being introduced to manufacturers worldwide, e.g. in Kenya, Colombia and Russia.

EU Ambassador Guy Ledoux celebrates lead free schools in the Philippines

The SWITCH-Asia project inspired activities to eliminate lead paint all around the world, and replication of its strategies by IPEN partners have led to regulations on lead paint being enacted in Africa and Latin America in 2016 and 2017. Activities based on the same strategies are today being implemented by IPEN POs in more than 15 countries.

Key strategies used in all project countries include: 1) generating data on lead in paint, using internationally-recognised scientific methods; 2) sustained public awareness and media campaigns; 3) industry engagement; and 4) multi-stakeholder collaborations.

The collaborative approach promoted throughout the project, for all partners to work together as much as possible, was of vital importance for its success. Each year a workshop was held with participation by everyone working on the project to undertake training in, for example, communications, technical issues and policy development, to share experiences, successes, and strategies to overcome challenges, and to discuss the plans for the upcoming year. In between, there were active online conversations as well as teleconferences to facilitate further collaboration between the project partners.

Philippines

When the Philippines adopted the strongest restrictions in the world on lead content of paint, i.e. a 90 ppm total lead limit for all types of paint, and a range of other consumer products in 2013, project partner EcoWaste Coalition was named in the regulation as a key stakeholder. Although their advocacy had started earlier, it was the SWITCH-Asia project that provided the means to facilitate the regulation being enacted. Their work also resulted in two additional government policies requiring the mandatory use of paints without added lead in schools and in facilities of social welfare and development agencies. A paint study conducted at the end of the project in 2015[5] showed that 10 out of 24 brands which had been analysed in 2013 had reduced lead content in one or more of their paints to below 90 ppm.

The project's campaign in the Philippines shows the strength of having key stakeholders from government agencies, industry, civil society, health sector and consumer organisations on board and working together. Support from the country's highest environmental and health officials and partnerships with

2) http://www.switch-asia.eu/projects/lead-paint-elimination/
3) http://www.unep.org/chemicalsandwaste/model-law-and-guidance-regulating-lead-paint-draft-comments
4) http://www.leadsafepaint.org/
5) http://ipen.org/documents/lead-enamel-household-paints-philippines-2015

the health sector elevated the public's and officials' understanding of the hazards of lead exposure.

EcoWaste Coalition also developed a fruitful collaboration with the Philippine Association of Paint Manufacturers, who provided the needed support for the government to enact the lead paint regulation as well as to developing the project's Lead Safe Paint® certification programme. The country's top two major paint producers, Pacific Paint (Boysen) and Davies Paints, were the first to be certified by the programme, and applications for certification from three additional Philippine companies are now undergoing a soon-to-be-completed evaluation by the certification body, SCS Global Services.

A project visit to a paint factory in Sri Lanka

Nepal

Earlier studies conducted by project partner Center for Public Health and Environmental Development (CEPHED) had shown that many Nepalese paints contained extremely high lead levels, and that some companies producing unleaded paint in other countries still sold lead paint in Nepal. Thanks to the project activities, Nepal enacted a 90 ppm total lead limit for all types of paint in 2015, also one of the strictest in the world. As an added precaution, the Department of Education published a public notice announcing that they would only use paints that complied with the regulation in all public and private schools throughout the country. Compliance monitoring is performed by the Ministry of Population and Environment, and the paint study conducted at the end of the project[6] showed there was much still to be done. Although the five paint companies comprising 70% of the paint market in Nepal were shown to comply with the new standard by the project's end, over 90% of the brands included in the study sold one or more paint with lead levels above 90 ppm.

The success in Nepal clearly shows what can be accomplished in a short time period during a sustained project involving several countries. For example, between 2013 and the end of 2014, CEPHED generated more than 70 newspaper articles and extensive coverage in electronic media; conducted hundreds of follow up contacts with government agencies; and organised or participated in nearly 50 meetings, exhibitions, school rallies and/or events all aimed at educating the government, the paint industry, school leaders, the media and the public about lead in paint.

An awareness raising activity by the project in Nepal

Sri Lanka

In 2011, project partner Centre for Environmental Justice (CEJ) won a lawsuit, which led to the enactment of legally-binding limits on lead in paint just before the start of the project. However, the first study conducted by CEJ immediately after the regulation took effect in 2013 found that less than half of the paint brands met the new Sri

6) http://ipen.org/documents/lead-enamel-household-paints-nepal-2015

Lankan standard. Therefore, in Sri Lanka, the SWITCH-Asia *Lead Paint Elimination* project aimed to increase both consumers' and producers' awareness about lead paint health hazards to facilitate compliance. CEJ conducted information and training sessions with consumers, retailers, and manufacturers, visiting companies individually at their facilities to discuss paint reformulation. Based on the information obtained through these meetings, CEJ invited paint manufacturers and raw material suppliers to a workshop with the aim of facilitating the technical advice needed for the manufacturers to find the right replacement to leaded raw materials.

In response, Sri Lanka's Consumer Affairs Authority strengthened the paint regulation by requiring all paint manufacturers and traders of paints used in the building industry to state the lead content of paints used.

By 2015, these activities had paid off. A study of lead in paints in Sri Lanka[7] showed that both local and international paint brands comprising 90% of market had by then complied with the regulation. Also, one of the largest Sri Lankan paint companies, Multilac, is now participating in the Lead Safe Paint® certification programme.

Thailand

A baseline paint study released by project partner Ecological Alert and Recovery Thailand (EARTH) in 2013[8] demonstrated that many paints on the Thai market still contained extremely high levels of lead despite the newly-strengthened voluntary standard for lead in paint issued in 2010 in response to earlier paint studies.

Though EARTH faced strong resistance from some national paint manufacturers, they successfully implemented the project activities, such as public awareness raising and building a strong national coalition of health professionals, consumer organisations and government agencies that led to a legally-binding total maximum lead limit of 100 ppm being enacted in 2016. A project paint report in 2015[9] showed that one-third of the companies that previously produced lead paint had either reduced or eliminated leaded ingredients from their paints.

Also, several municipal governments began to issue legally-binding municipal notices in 2014 requiring publicly-funded childcare centres to purchase only paints that complied with the voluntary, 100 ppm lead standard issued by the Thai Industrial Standard Institute (TISI). Today, thanks to this progress, the government of Thailand represents Asia in the WHO-UN Environment hosted Global Alliance to Eliminate Lead Paint.

A campaign about hazards of lead in Thailand

Dust sample collection in India

India

Multiple studies performed by Project Partner, Toxics Link (TL), from 2007 to 2011 were the first to generate widespread attention to the use of

7) http://ipen.org/documents/lead-enamel-household-paints-sri-lanka-2015
8) http://ipen.org/documents/lead-thailands-new-enamel-household-paints
9) http://ipen.org/documents/national-report-lead-new-enamel-household-paints-thailand-june-2015

Paint sample preparation in India

lead in paint sold in India and many other countries. Though large Indian paint companies began shifting away from using lead in paints following the release of TL's first studies, as shown in the project's baseline paint report released in 2013[10], it was clear that complete lead paint elimination would be a challenge given India's large size and a vast paint industry with an estimated 2500 manufacturers. However, the project enabled TL to implement activities such as public awareness raising and outreach to industry, paving the way for lead paint regulation as well as substantially shifting the market.

At the end of the project, paint companies holding 70% of the market share in India no longer sold lead paint, and, in 2016, the government issued a legally-binding regulation limiting the allowed lead content in decorative paint to 90 ppm.

In addition, the Quality Council of India, together with TL and IPEN, developed an India-specific section of the Lead Safe Paint® certification programme, officially announced in 2016, and now is working to get paint companies to join the programme.

Bangladesh

At the start of the SWITCH-Asia project, its local NGO partner, Environment and Social Development Organization (ESDO), knew that paint with very high levels of lead was being sold in Bangladesh and that some regional paint companies applied callous double standards by selling toxic paint in Bangladesh

A rally organised by the project in Bangladesh

10) http://ipen.org/documents/national-report-lead-indias-enamel-household-paints

while producing safe paint in other countries.

By 2013, the project baseline paint study[11] showed that the largest paint brands in Bangladesh had stopped producing lead paint as a result of earlier advocacy both before and at the start of the project and by 2015, a project study[12] showed that paint from brands representing 84% of market share would meet the 90 ppm lead limit that constitutes the most stringent paint regulation anywhere in the world. In 2017, Bangladeshi paint company, Elite Paint, became the first in the country to qualify for the Lead Safe Paint® certification programme developed by the project.

Though the Bangladeshi government has not yet established a legally-binding restriction, the Director General of Bangladesh Standards and Testing Institution (BSTI) has indicated it intends to establish a mandatory lead paint standard. Several ministries have expressed support for a regulation, and it seems just a matter of time before this will be enacted.

Day care center in Indonesia

Indonesia

The issue of lead in paint was not on anyone's radar when project partner BaliFokus shared their 2013 paint report[13] with government officials, showing that paints with high lead content were widely available on the Indonesian market. BaliFokus then went on to make sure that lead paint elimination was on the mind of all key stakeholders, through various meetings with government officials, the paint industry and civil society organisations as well as public awareness-raising activities.

Their work led to the Indonesian standards agency issuing a new voluntary standard limiting lead levels in paint in 2015. After two years from its issuing, it will be possible to convert this into a mandatory standard, which is the next step towards eliminating lead paint in Indonesia. During the project, the government procurement policy agency also agreed to include lead-free paint criteria in public procurement requirements.

Finally, by working together with producers of lead-free raw materials to conduct training seminars with smaller paint manufacturers in combination with the other outreach activities, lead levels in paint on the market already began decreasing in 2015. The paint report released in 2013 showed that only five of the included brands (both local and international) produced one or more paint with no added lead, and the report released in 2015[14] showed that this number had increased to fifteen brands.

Students in Bangladesh organise a campaign calling for a ban on lead paint

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11) http://ipen.org/documents/national-report-lead-new-enamel-household-paints-bangladesh
12) http://ipen.org/documents/national-report-lead-enamel-household-paints-bangladesh-2015
13) http://ipen.org/documents/lead-indonesias-new-enamel-household-paints
14) http://ipen.org/documents/national-report-lead-indonesias-new-enamel-household-paints

Photo: Kabul Green Homes project

NEW FRONTIERS

First SWITCH-Asia project in Afghanistan

An interview with Riaz Ramin by Silvia Sartori

Afghanistan has been among the countries eligible for SWITCH-Asia funding since the beginning of the Programme. Yet only in 2015 has a SWITCH-Asia grant project been awarded to the war-torn country. The project, entitled *Kabul Green Homes*, started in 2016 and promotes energy-efficient buildings in 15 districts in the capital. In a conversation with Network Facility's Silvia Sartori, Project Manager, Engineer Riaz Ramin explains the project's objectives and approach in working in Afghanistan, and why green buildings play a critical role in its development.

After years of war and with a security situation that remains unstable, multiple humanitarian and reconstruction efforts have been launched in Afghanistan. 'Sustainable consumption and production' – a concept at the core of the SWITCH-Asia Programme – seems to be a new comer among international programmes in the country. What features of Afghanistan convinced you of the need to develop this project?

Afghanistan ranks 15th in terms of climate change vulnerability, according to the 2017 Global Climate Risk by German Watch. Between 1977 and 2002, most of the original forests disappeared: cut down to provide fuel for cooking and heating, for construction and by illegal logging. Forests now occupy only 2% of the country. The country experiences cold and snowy winters with extreme temperature variations between night and day. However, much of the country also benefits from 300 days of sunshine annually, meaning that energy-efficient houses that reduce heat losses in winter and improve sun gain are well adapted to the Afghan climate. Yet, despite this high solar energy potential, Afghans still rely mainly on traditional solid fuels for cooking and heating: firewood, animal dung cakes, crop residues and charcoal.

How does your project fit in here?

Kabul Green Homes is a three-year initiative aimed at "Scaling up green homes in Kabul towards sustainable energy consumption and low emission development". Green homes are energy-efficient houses built to increase solar gains and limit heat losses through a combination of passive solar heating and insulation, providing clean, therefore 'green', energy.

In Kabul, the urban population has quadrupled since 2001, reaching an estimated 4.6 million in 2015. This increase, combined with fossil fuel scarcity and a high dependency on solid fuels, has led the country to the pressing necessity of moving in the direction of sustainable energy consumption and low-emission development, both at urban and rural levels. At the same time, being the capital and most populated city of Afghanistan, Kabul offers the opportunity to explore a range of innovative solutions to optimise domestic energy consumption and supply, protect the local and global environment, empower communities and reduce energy poverty.

"In Kabul, the urban population has quadrupled since 2001, reaching an estimated 4.6 million in 2015. This increase, combined with fossil fuel scarcity and a high dependency on solid fuels, has led the country to the pressing necessity of moving in the direction of sustainable energy consumption and low-emission development."

Green homes may not be commonly perceived as a priority for a war-torn country, yet your project is contributing to address some of the most urgent needs of Afghanistan precisely by promoting sustainable building practices. Can you elaborate on this?

In Afghanistan, basic energy needs are not met for nearly two thirds of the population, as decades of war have left the country's power grid badly damaged. Afghanistan's most populated cities suffer from severe air pollution due to the heavy consumption of fossil fuel, and Afghan families face challenges in domestic energy practices in what most of the time are makeshift dwellings not equipped for heat retention and energy saving. During wintertime, between December and February, temperatures are around -10°C and can fall down as far as -20°C.

How is the project promoting the transition towards greener buildings?

Kabul Green Homes researches, develops and tests new solutions to save energy, reduce fuel and create a better, safer domestic environment. The current array of solutions that we promote includes solar verandas, thermal roof insulation with glass wool or polystyrene, fuel-efficient cook stoves and double glazing on windows. In the coming winter, the project plans to test out the feasibility of a new range of products, including solar hammams for bathrooms and biogas digesters in the rural districts of Kabul province.

What makes you confident that the country is ready for such a transition?

All the products that we are promoting are purposely kept low-tech and constructed largely by using cheap materials. Local artisans have the necessary basic skills and we provide them with the training and continuous support to build as well as market the range of energy saving solutions researched and validated by our technical team. We support them so that they can offer good products that are very accessible and well adapted to household needs. For us, it is important that the solutions we promote are affordable, and thus accessible, to all Afghans to improve their living conditions.

> ***For us, it is important that the solutions we promote are affordable, and thus accessible, to all Afghans to improve their living conditions.***

The role of local counterparts must be essential to meet these objectives. How are you engaging with them?

Kabul Green Homes is implemented by the French NGO 'Group for the Environment, Renewable Energy and Solidarity' (GERES), in partnership with the Afghan NGOs 'Rural Movement Organization' (RMO) and 'Afghanistan Microfinance Association' (AMA). The project is rooted firmly in the community it supports and is being implemented in close collaboration with the Kabul Municipality that, in November 2016, signed a MoU with GERES to ensure timely implementation and the engagement of local institutions.

With its long experience in development projects, capacity building and community engagement, RMO is the on-ground implementing partner. AMA, the network of financial institutions in the country, helps house-owners and small and medium-sized enterprises (SMEs) access tailor-made green loans from micro-finance institutions to improve their housing facilities and upgrade them to a more energy-efficient habitat. GERES is responsible for the overall management of the project and contributes the technical expertise in passive solar housing.

Each partner covers a role that makes *Kabul Green Homes* a comprehensive project: it responds to a practical need of the community, offers financial support to increase the adoption rate, and is focused on effective, measurable outcomes.

Which areas and groups in the country is your project reaching out to?

In September 2016, GERES undertook a baseline survey to understand the socio-economic composition of the households as well as to understand their existing energy use practices. The survey also tried to assess the security situation and logistical feasibility for each of the 22 districts in Kabul Province, as well as to gauge the interest of local authorities and community representatives. Based on its findings, 15 out of the 22 target districts in Kabul were selected for intervention, with an estimated 700 000 individuals to be reached through awareness-raising campaigns and 4500 households to be directly benefitted and equipped with at least one energy-saving solution (ESS) by the end of the project in June 2019. So far, 200 000 individuals have been reached and 585 houses have been equipped with an ESS.

Afghanistan suffers from a fragile environment and severe security challenges. How do they affect the implementation of your project? What mitigation strategies have you devised to cope with them?

Kabul is not an easy place to work in, especially for international staff and high profile NGOs. GERES and project partners adopt strict safety measures to mitigate security risks, which include security studies and assessments prior to the launch of the project – leading to the development of security guidelines and training – a thorough coordination with the security focal points, following closely security alerts, and keeping a very low profile and good relations with the local communities, among others. During the feasibility study, we selected areas that would best match all criteria to allow our staff to work in a secure environment as far as possible and ensure smooth implementation.

Building the Veranda

Double glazing and ceiling insulation installation

Is the project new to the area or have you had any previous experience working locally?

The SWITCH-Asia project builds on a pilot initiative by GERES, called 'Energy as Key Factor for Local Economy Development and Lower Carbon Emissions' which for the first time in Afghanistan tested out the feasibility of disseminating passive solar housing in an urban context. This project was implemented from 2012 to 2015 on a smaller scale (three districts only, compared to 15 now). The project was quite successful in demonstrating the efficacy of energy-efficient houses (particularly the solar veranda) among middle and low-income households and served as a proof of concept to be promoted further and more broadly across Kabul.

'Kabul Green Homes' is surely newer, having run for only a year on the ground. Do you already have any indication of the local response to the solutions that you are promoting?

The most popular solution among locals is the solar veranda, a screened-in porch that has become the project's flagship product for its overall usefulness, energy-cost savings, replicability and adaptability to the needs of families from a wide range of socio-economic backgrounds. In Afghanistan, solar verandas have been developed and promoted since 2003. Besides saving up to 30-40% of fuel consumption for house heating, they also promote a cleaner habitat with reduced smoke and more natural light. As built-in house extensions, they offer an extra living space that captures sunshine and allows the maximisation of solar gain in winter and the transfer of heat through windows inside the dwelling. Verandas come in different models and costs, according to the materials: wood or metal-framed, and covered in plastic panels or glass and polycarbonate. This variety provides a wide range of choices, based on aesthetic preferences and financial resources.

Awareness-raising session in Kabul

What is then preventing wider uptake?

With the country's economic development and the job market being hindered by the constant armed conflict between the government and opposition groups resulting in political instability, people cannot afford to make investments to improve their homes. Given the very low annual growth rate and per capita income of the country and the very high unemployment rates, most people are not in a position to prioritise energy-efficient housing, while adequate nutrition and access to quality health and education still remain a challenge. In this context, it is thus difficult to expect poor households to make investments in improving the energy efficiency of their houses. It also doesn't help that taking loans to tide over shortage of immediate cash is not seen as acceptable practice according to the religious/cultural beliefs of most people.

Can you give us an overview of the costs and returns associated with these investments?

The most basic solar veranda (wood and plastic) can be built for USD 334 (AFN 22 938), with an average production cost of USD 312 (AFN 21 438). Average declared annual income is approximately USD 2645 (AFN 180 889) per household. SMEs and craftsmen earn around USD 22 (AFN 1500) for the installation of the most basic veranda. The most expensive model in metal and glass costs on average USD 924 (AFN 63 472). For the first veranda, the return on investment, in terms of reduction in heating cost, is calculated at around three years, whereas for the second type, it is five years.

How are you addressing the financial challenges faced by prospective users?

To incentivise the adoption of ESS across different income groups, GERES and RMO designed a three-tier subsidy policy, whereby the project provides a 10% subsidy to 2700 households, a 30% subsidy to 1000 households and an 80% subsidy to the 300 most vulnerable households. The project subsidies are disbursed by GERES directly to the beneficiaries or through the SME in charge of the EES implementation.

Who benefits from the project's subsidies and how do you select the beneficiaries?

Prior to the subsidy allocation, a holistic assessment of vulnerability criteria is conducted on the ground to identify the most eligible households: in the first instance, GERES and RMO teams prepare a list of potential beneficiaries based on suggestions by the resident community.

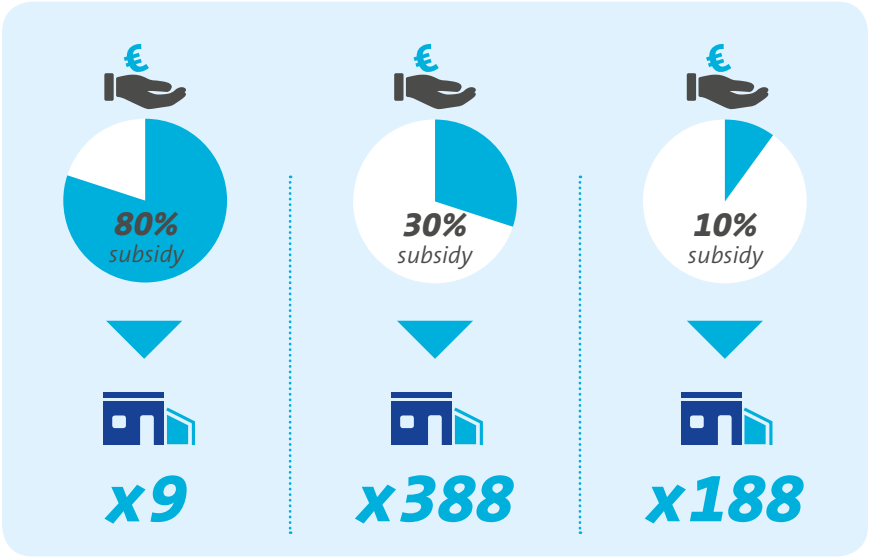
Veranda covered by glas

Veranda covered by pastic

This list is eventually validated by local authorities: the Wakil (community representative), Shuras (local councils) and district office workers. The project team visits these households to assess the technical feasibility and collect information for a fair decision. The assessment includes parameters such as the overall condition of the house – especially walls, roofs and ceilings – the number of family members, number of children below 14, number of widows, monthly income and other criteria.

You also mentioned that AMA, your project partner, is supporting access to credit.

AMA's objective within the project is to facilitate access to green loans for the households and SMEs who need credit for ESS installations. AMA operates through its member Microfinance Institutions (MFIs). In order to achieve this, AMA organises awareness-raising sessions on microfinance practices and loans that target local SMEs and individuals, then links interested beneficiaries with MFIs and follows up with them through the loan application process. AMA operates despite multiple challenges, such as the unstable national security situation, a limited availability of guarantees by the project beneficiaries to the MFIs, cultural sensitivity against interest-bearing loans (which Islam considers haram, i.e. forbidden/immoral) and a lower public demand for ESS during the hot season.



Response by local households to the subsidy policy launched by the SWITCH-Asia project

And how have your financial products been received so far?

Nine houses benefitted from the 80% subsidy, 188 houses from the 10% subsidy and 388 houses from the 30% subsidy. According to AMA, four SMEs have been granted a loan so far, for a total value of USD 6300 (AFN 430 000) and at least four families have benefitted from a loan. As loan beneficiaries are not obliged to share their future intentions with AMA once the credit provided, it is challenging to track how they have been using it. In six weeks, we will conduct a follow up questionnaire to assess in detail where the loans have been invested.

Moving forward, and considering the long-term sustainability of the initiative, do you think the sector can develop without subsidies?

GERES is working on this, as long-term sustainability of the initiatives is one of the main goals of the project. The socio-political instability of the country constrains wider financial participation by households, but we see that the solutions offered by GERES are wanted by those who can afford to invest in them. Definitively, in the long run, our plan is to have SMEs incentivise the adoption of passive solar solutions and spread proper understanding of their financial and structural benefits among the local population.

Besides access to finance, the development of the local market for energy-saving building solutions is another key factor for ensuring long-term sustainability of these practices. What is the current status of such a market in Kabul and what kind of work are you doing in this area?

In 2014, GERES founded the Solar House Technicians Association (SHTA) with the aim to train SMEs in marketing and business development, encourage knowledge sharing, and establish connections with retailers. The number of private sector enterprises providing active solar energy solutions (e.g. solar panels) is growing: today there are 22 among national and international businesses. They import the wood from Russia and the polycarbonate from Iran, whereas plastic is produced in the country.

A project team of 22 local staff are currently working closely with a network of around 90 SMEs – mostly carpenters, welders, tinsmiths – and 15 retailers to further develop a market for energy saving solutions, raise awareness among Kabul citizens and ensure smooth implementation of project activities. Our capacity building activities with the private sector mainly involve identification of structural suitability in buildings, and techniques to install verandas properly and assemble all components. As mentioned before, through SHTA, GERES also provides business development training and organises meetings with SMEs and local authorities to strengthen their bond and identify demand, as the latter are key to identifying potential consumers.

GERES remains the only NGO implementing solar verandas in the country. Besides RMO, GERES also trained two other partnering NGOs on the construction of verandas, as part of a wider programme in the central highlands funded by the French Agency for Development.

> ***"Our experience in Afghanistan shows that these passive solar solutions are not only a cost-effective investment that improves living conditions of local communities and reduces their dependence on non-renewables, but they are also instrumental in supporting the rights of the most vulnerable groups."***

Matters of access to finance and local market development aside, do you think that your project has the potential for replication?

From a geographical point of view, the project is replicable in almost all cold areas globally with only modest exposure to direct sunshine. It works well at high altitudes, where it is less cloudy throughout the year compared to low-lying regions. GERES has implemented similar initiatives across 15 provinces in Afghanistan and is also active in other Asian countries, such as Tajikistan and Mongolia. However our experience shows that it takes three to five years before people are ready to trust and adopt these new technologies. In Bamyan province, where GERES has implemented similar projects in the past, 4000 solar verandas were built with project support and approximately 6000 independently afterwards.

What are the main benefits generated by the solar verandas in Afghanistan so far?

In winter 2014-2015, we conducted a study to monitor fuel use with beneficiaries from previous projects. It shows that, on average, five weeks after installing a solar veranda, households reduced their firewood consumption for heating by 32%, which translates into an average yearly saving of ca. USD 40 (AFN 2720). In addition, the study found that, on average, houses increased the indoor air temperature by 2.4°C. In the long term, though, there is a deeper impact that we aim to achieve: improving health and education. Figures on health benefits, especially on health issues related to smoke inhalation, are harder to obtain but the qualitative studies we conducted in Ladakh, India, in 2012, point to reduced adverse health incidences among beneficiary families. Education-wise, children often find the veranda a cosier space for studying long hours during winter, compared to indoor rooms that aren't always heated due to cost-saving reasons.

Our experience in Afghanistan shows that these passive solar solutions are not only a cost-effective investment that improves living conditions of local communities and reduces their dependence on non-renewables, but they are also instrumental in supporting the rights of the most vulnerable groups.

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TECHNOLOGY IMPACT

Exploring the potential of improved cook stoves

A new study captures the contributions made by SWITCH-Asia projects to improve efficiency of cook stoves

By Bastiaan Teune and Theo Shand

For most products in the developed world, quality standards and performance indicators have been set by regulatory bodies and government institutions to objectively qualify or disqualify goods offered on markets in order to protect consumers from potentially harmful effects. For instance, before gas cook stove models can legally enter the market in the European Union, they need to first undergo thorough testing assessments by independent, accredited testing agencies according to the Gas Appliance Directive 2009/142/EC. This obviously protects customers from risks such as exposure to carbon monoxide.

On the other hand, in developing countries worldwide cook stoves are sold locally without any certification

or tests. There are only a few laboratories across the developing world – one example of which being the one set up by SNV Laos in the framework of the SWITCH-Asia project 'Improved Cook Stoves' – that can actually test cook stoves, and even fewer that can certify cook stove producers or ensure the standardisation of cook stove models. In recent years, this issue has been addressed by various governments, INGOs and multilateral agencies – including the EU-funded SWITCH-Asia Programme through some of its projects – through support for the development of global standards for cook stoves under the International Standards Organisation (ISO), as well as capacity building to support the installation of laboratories, and improved cook stove dissemination by the establishment of market regulations.

The negative impacts of traditional cooking

The relevance of improving the cooking situation is evidenced by the fact that nearly three billion people around the world burn wood, charcoal, animal dung or coal in open fires or in inefficient stoves for daily cooking and heating[1]. Reliance on inefficient cook stoves and fuels leads to a wide variety of environmental problems, including deforestation, air pollution and climate change. At the same time, daily exposure to toxic smoke from traditional cooking practices is one of the world's biggest but least well-known killers, leading to more than four million deaths a year . Penetrating deep into the lungs of its victims, this acrid smoke causes a range of deadly chronic and acute health effects, such as child pneumonia, lung cancer, chronic obstructive pulmonary disease and heart disease, as well as low birth-weights in children born to mothers whose pregnancies are spent breathing toxic fumes from traditional cook stoves[2].

The assessed projects

Photo: Myanmar cook stoves project

Location: *Myanmar*
Project: *"Upscaling improved cook stoves dissemination in Myanmar through replication of best practices from Cambodia and the region"*[3]
Duration: *2014-2018*
Stove Description:
- *Charcoal-fuelled, clay-moulded natural draft ICS*
- *Wood-fuelled, clay-moulded natural draft ICS*

Photo: ICS project

Location: *Laos PDR*
Project: *"Improved Cook stoves Programme"*[4]
Duration: *2013-2017*
Stove Description:
- *Charcoal-fuelled, clay-moulded with rice husk char insulation natural draft ICS*
- *Wood-fuelled, clay-moulded with rice husk char insulation natural draft ICS*

Photo: CARE India

Location: *India*
Project: *"Evolving a women-centred model of extension of improved cook stoves for sustained adoption at scale"*[5]
Duration: *2016-2019*
Stove Description:
- *Wood-fuelled, clay inner chamber with sand insulation. Fixed, natural draft rocket stove*
- *Additional 19 ICS in the field under end-user testing*

Photo: SPRING project

Location: *Pakistan*
Project: *"Sustainable cotton production in Pakistan cotton ginning SMEs"*[6]
Duration: *2012-2015*
Stove Description:
- *Cotton gin agricultural residue fuelled, galvanised steel*
- *Solar-powered, fan-assisted gasifier*

In 2017, the SWITCH-Asia Network Facility commissioned a study to review the work undertaken by the different SWITCH-Asia projects active in the field of cook stoves, to identify common challenges, solutions and innovation as well as the best cook stove designs. The study, which will be published in late 2017, assessed the technical performance of stoves in four different cook stove related grant projects across Asia. Each of them aims to address the environmental and health issues stemming from traditional cooking in the country context of Myanmar, Lao PDR, India and Pakistan respectively. This study encompassed desk study, visits to the locations (except for Pakistan) and additional tests in the test laboratory in Vientiane, Laos. The following observations have been extracted from the study report.

1) http://cleancookstoves.org/about/news/08-29-2017-national-geographic-three-billion-people-cook-over-open-fires-with-deadly-consequences.html
2) http://www.who.int/mediacentre/factsheets/fs292/en/GACC, 2017, http://cleancookstoves.org
3) http://www.switch-asia.eu/projects/myanmar-cook-stove/
4) http://www.switch-asia.eu/projects/cook-stoves/
5) http://www.switch-asia.eu/projects/women-centered-ics/
6) http://www.switch-asia.eu/projects/cotton-production/

The cooking context

The SWITCH-Asia study delivered a range of contextual information and testing data for the stoves, which use different fuels, namely charcoal, wood or industrial residue, and can be divided between combustion stoves and gasifier stoves. The baseline cooking assessment conducted during the study also uncovered that the cooking time requirements vary greatly between the four countries.

In Laos, for instance, an average main cooking event lasts 60 minutes, compared with 200 minutes in Myanmar. In Pakistan, in many households the cook stove is in operation all day, and in India the data on time spent cooking varied from location to location. This obviously affects the energy service requirement of the stove and fuel, and what the most appropriate cooking solutions should look like. Cooking is also done in inside areas in Pakistan and India, but in Myanmar and Laos this is done in open areas, which will impact the levels of smoke exposure of the cook.

Cook stove selection

The intervention strategies of these projects were based on different principles, depending on the local context.

One approach was to improve existing cook stoves, such as in Laos and Myanmar. The stoves found in the market at the beginning of the intervention had typically been introduced in the past by a project or initiative and suffered gradually over time from design drift (i.e. producers changed the way they were made), due to producers wanting to ease production processes or cut costs at the expense of quality. Because of a lack of standardisation and quality control after past projects ended, these stoves were being sold in many shapes and forms. The SWITCH-Asia stoves project re-introduced the original designs and added some improvements. This generally increased the cost to end-user (from USD 3 to 5), making the stoves project slightly more expensive than some other options available in the market, but through promotion and awareness-raising, many consumers could be convinced to buy a stove that offers returns on fuel, time and durability. An advantage of this strategy is that no behavioural change activities are required and that supply chains are already in place. The study showed that with over 150 000 such improved stoves having been sold in Laos and Myanmar since 2013 and markets already ramping up, this strategy is a viable approach to developing local markets and ensuring large-scale distribution of improved cook stoves.

Charcoals testing

The second strategy was to introduce new cook stove technologies. In Pakistan, a stove had been developed around the availability of a specific fuel source that was a by-product of an industrial process (cotton ginning). This technology has a significant positive impact on the user as the new fuel is less expensive than locally-sourced wood, providing immediate cost savings and, through the processes of gasification, has high potential to reduce exposure to emissions of CO and PM2.5. Feedback from Pakistan was very positive and gives hope for a larger uptake in the future, but for the time being the market is limited to those households or communities where cotton ginning takes place. Steps are being undertaken to access the suitability and acceptance of the stove by rice farmers as there is potential, with minor modifications, to adapt it for use with rice husk as a fuel source.

A third approach to cook stove selection was observed in India, where the SWITCH-Asia project had stepped away from introducing technological improvements or new cook stove technology, and instead started off by assessing different existing stove models through an evaluation of user satisfaction, letting villagers decide which ones best fit their needs. This information is gathered through village focus groups and stove trials conducted over a 10month period to capture all seasonal usage/suitability. The households actively participate in the stove assessment by conducting weekly Uncontrolled Cooking Tests on their selected stove model to assess Specific Fuel Consumptions and proved qualitative feedback. All of this provides highly relevant intelligence for supply actors supported by the project, at the same time as slowly changing user perceptions through experiential learning and local level promotional activities. Launched in 2016, the project has not yet taken the next step of ramping up production or sales of stoves until best 'fit for purpose' is identified per region, but the potential for high levels of sales was apparent.

Across all four projects, the reduction of fuel use was the primary driver for intervention uptake and willingness to pay was in a similar bracket of between USD 3-5 across all four country contexts.

Such a low willingness to pay for a stove, that will have a minimum value chain of two actors – producer and re-

Cook stove characteristics

Laos: Charcoal PTT4

Market price:	USD 4
Life span:	2 years
Fuel & max. load:	400g charcoal
Time to boil 2 litres:	15 minutes
Estimated efficiency:	35%
Recorded Fuel savings:	19% from CCT Testing
Recorded Time Savings:	18% from CCT Testing
Manufacturer:	Accredited Local Manufacturers

Product Overview: *This is one of the three models marketed under the Lao project under a franchise model, propagated by a blue superhero logo. A layer of rice husk ash between the ceramic body and metal bucket ensures thermal insulation and the grate is designed to ensure an air mixture for optimal combustion. Heat transfer is further optimised by a narrow space between the pot and the cook stove.*

Myanmar: Charcoal Pathein

Market price:	USD 4-5
Life span:	1 year
Fuel & max. load:	400g charcoal
Time to boil 2 litres:	20 minutes
Estimated efficiency:	28%
Recorded Fuel savings:	25% from AWBT
Manufacturer:	Accredited Local Manufacturer

Product Overview: *Key design parameter improvements were quite similar to the stoves in Laos, namely lowering the pot rest height, improving the grate, and optimising the volume of the combustion chamber. In Myanmar, much greater efforts were made in getting the right clay mixture/additives, to strengthen the stoves' durability and reduce the breakage fraction during firing.*

Myanmar: Woodstove A1 Standard

Market price:	USD 3
Life span:	1 year
Fuel & max. load:	Local wood, continuous feed
Time to boil 2 litres:	12 minutes
Efficiency:	26%
Fuel savings:	40% from CCT
Manufacturer:	Certified Local Manufacturer

Product Overview: *The thermal efficiency and life expectancy of the stove has been improved by the addition of rice husk char to the clay. In addition, a refractory layer around the combustion chamber reduces heat loss via the stove body.*

India: Woodstove Fixed Rocket Stove

Market price: USD 5
Life span: 4 years
Fuel & max. load: 400g charcoal
Time to boil 2 litres: 11 minutes
Assumed fuel savings: 40%
Manufacturer: Uncertified

Product Overview: *One of the candidates for the cook stoves project (out of 20 options being explored) is the fixed rocket stove, with a stove body that is comprised of an iron frame with ceramic panels to improve thermal efficiency and durability. These panels are mixed with cement and powdered glass that strengthens the structure. To further prevent heat loss, insulating materials between the inner chamber and the brick/mud construction of the stove body are added. An air inlet located on the side of the fuel opening ensures a steady air flow to the fuel for optimal combustion. The stove is fixed but can be installed in different configurations according to user preferences (high or low position, 1 or 2 burners, with or without chimney, etc.)*

Laos: Wood Stove version 2 (WS 2)

Market price: USD 5
Life span: 2 years
Time to boil 2 litres: 10 minutes
Efficiency: 34%
Manufacturer: Accredited Local Manufacturer

Product Overview: *This stove has the same clay mixture as the charcoal stove and has a grate with smaller holes to optimise the air mixture. It has a concrete base to make it bottom heavy and reduce the risk of the stove tipping when fuel is resting on the tray. The fuel opening is detachable. This stove is incrementally better than the ceramic stoves used before.*

Pakistan: Cotton Gin Gasifier

Market price: USD 30
Life span: 1-2 years
Time to boil 2.5 litres: 12 minutes
Fuel: Cotton gin agri-residue, continuous feed
Estimated Efficiency: Further Testing Required
Manufacturer: Metal workshop

Product Overview: *This gasifier is made from standard off-the-shelf galvanised steel parts with universal dimensions to allow for ease of replication and aftersales service. Because of the high density of cotton gin agri-waste, the gasifier operates effectively. A solar/battery powered fan is used for primary and secondary air flow.*

tailer – each with associated overheads and minimum profit margin requirements, creates a barrier for the private sector to grow. As we have seen in Laos and Myanmar, the market can be developed into a sustainable model so long as development costs, such as marketing, promotion and quality assurance, are borne by external funds.

Other common demands from consumers were durability, ease of use and smoke reduction (though the last one is more commonly linked to the cleanliness of pots and the kitchen rather than health).

Distribution strategy

The distribution strategy is an important aspect in cook stove interventions. The stages of market development among the countries can be seen by the current uptake, where in Laos 150 000 improved stoves have been distributed since the start of the project in 2013 to the time of writing (mid-2017) through a franchise model. Stove producers, mainly existing ones, receive accreditation from the Ministry of Science and Technology after training and passing a test. After accreditation, they are allowed to put a sticker on the stove that gives market recognition of quality and proof that the stove meets standards for fuel efficiency and durability.
In a similar fashion in Myanmar, the value chain is developed around the improved A1 stoves for wood and charcoal, and the market is starting to take off with the sale of the first 2000 stoves. In Pakistan, the market is being tested and, after a successful pilot of 50 stoves with positive user feedback, another 500 are due to be disseminated.
In India, the final choice of cook stove will be determined later, as well as the dissemination strategy. Once a cook stove has proven popular among users and the supply is commercially viable, the concept also has the potential to expand to a larger scale in a next phase.

Impact prospects

During the data collection and analysis, one striking observation was that across all projects, a clear need was identified for accessible stove testing services. Like in Europe, testing capacities are vital for market regulation, and to be able to distinguish low from high performing. Especially for such a common product as a cook stove, regulation is particularly important in developing countries given the tremendous impact cooking has on livelihoods, health and the environment.

In the compilation of the SWITCH-Asia study on cook stoves, in order to assess the environmental impact, fuel savings from the stoves were taken as a proxy to determine the amount of wood/charcoal saved, and greenhouse gas emissions reduced. The charcoal stoves from Myanmar and Laos used 25% less charcoal compared with baseline stoves. Savings when using wood highly depend on the stove used before and vary from 15% compared to a clay pot stove to 40% compared to an open fire. Around 0.5 tonnes of CO_2e per stove per year can be saved on improved charcoal stoves and double that amount on wood.

The gasifier stoves from Pakistan are operating on waste that is otherwise disposed of, and replace 100% of the wood that would have been used for cooking in a 'business as usual' scenario, as well as saving much more greenhouse gas emissions per stove.
In the case of India, the many stove models undergo a village-based selection process that may display different performances. The model that was selected for this study saves approximately 40% wood compared to an open fire. With a growing number of stoves sold and used, these interventions thus have the potential to greatly contribute both to the environment and livelihoods of consumers and producers.

On the issue of health on the other hand, the cook stove models promoted under these projects are not sufficiently advanced to assume a reduction in smoke exposure for the cook to a level that diminishes risks for smoke-associated diseases. Essentially, an almost smoke-free solution is required to address health concerns, whereas partial reductions have little impact. The interventions in the projects studied for this survey focused on reduction in fuel consumption, rather than smoke reduction. However, as a result of transitioning from a fixed three-stone fire to a portable cooking stove, this enables the end user conveniently to conduct cooking tasks outside which greatly minimises exposure, through ventilation, of harmful emissions.

Only the gasifier from Pakistan may prove to reduce significantly CO emission and PM2.5 (smoke) for indoor cooking as long as stove stacking, or partial use of traditional stoves is not happening simultaneously. Considering the short energy burst a gasifier provides, and the prolonged cooking time in this country, it needs to be assessed if alongside this clean cook stove also additional, smokier stoves are used for parallel cooking activities. If so, the health benefits would likely be negated.
In the India project, the introduction of chimneys was also being studied and considered from one stove manufacturer, in order to address the issue of indoor smoke pollution.

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Photo: LP2M

CHANGING LIVES

Weaving new livelihoods

Reviving traditional and eco-friendly weaving practices, female artisans turn into successful entrepreneurs

By Jana Brauer, Miranda Miranda and Silvia Sartori

For a young, well-educated woman hailing from a small village in Indonesia, Anita Dona Asri has embarked on an unexpected path to make a living.

The latest turn in her journey has brought her to the European Development Days 2017 (EDDs), the largest get-together of the international development community in Europe, organised annually in Brussels by the European Commission. Dona came to EDDs 2017 to demonstrate Indonesia's traditional "songket", weaving on an original handloom shipped directly from West Sumatra. West Sumatra is one of the Indonesian regions where the songket weaving technique has been flourishing since the 7th Century. It was used to produce hand-woven silk or cotton fabrics, intricately patterned with gold or silver threads that stand out against the background cloth to create a shimmering effect.

While centuries ago it was only the nobles who practised weaving as a form of privilege, nowadays weaving is usually performed by poor women with little,

"In 2014, Dona was nominated one of 20 most successful small entrepreneurs in West Sumatra Province by the Indonesian Central Bank. In 2016, she was awarded second best entrepreneur in Sawah Lunto city."

if any, education. They turn to this craft as a source of income to complement their full-time work as farmers.

31-year-old Dona grew up in Lunto Timur, one of five villages in Lembah Segar sub-district, Sawah Lunto city, in the West Sumatera province. The village has 1500 inhabitants, whose main livelihoods to date remain rice farming and coal mining. 270 women in the village work as weavers.

Coming from a traditional family of farmers who weaved to earn some extra income, Dona learned the craft when she was 12 years old. As she grew up, she was able to finance her university studies by selling her hand-woven textiles to middlemen who would then sell them in urban markets. In 2010, Dona completed her Bachelor's degree in psychology. Her family expected her to become a government official, a civil servant, or an employee in a big, well-known company.

And indeed that's how her formal career started. In 2011, Dona moved to Riau province in Sumatra island, and began work as an employee in a large metal trading company. Yet it did not take her long to realise that she did not enjoy her job and life as a full-time corporate employee. Her health was negatively impacted: the intensive work schedule led her to neglect her health and she contracted typhoid fever. In early 2013, to the dismay of her family, Dona quit her socially reputable job and returned to her village, unemployed.

That was the time when the SWITCH-Asia project *Hand-Woven Eco-Textiles*[1] was starting its activities in Lunto Timur. When Dona met one of the project's field staff, it immediately piqued her interest: weaving was what she had always loved to do!

After she joined the project, not only her life but also the reputation of weaving in her hometown experienced a dramatic change.

1) http://www.switch-asia.eu/projects/hand-woven-eco-textiles/

The four-year project, started in 2013 under the coordination of Hivos, was promoting sustainable production practices across the hand-woven eco-textile sectors of Indonesia and the Philippines, with a particular focus on supporting female entrepreneurship.

Traditional hand-woven textiles are produced in one third of the provinces in the Philippines and throughout the Indonesian archipelago. Yet, poor product standardisation and limited technical capacity often prevent entrepreneurs from meeting buyers' demands on quality and design. On the other hand, constraints in accessing quality natural dyes and eco-fibres coupled with the introduction of modern, cheaper – but chemical – dyes also limit the production of environment-friendlier products.

Via the SWITCH-Asia project, Dona and fellow weavers in Lunto Timur learned how to produce natural dyes by making use of traditional techniques, using organic waste, or indigenous plants such as teak leaves, indigofera tinctoria, tree bark and guava leaves that are available locally and can be readily planted in the weavers' gardens. Prior to the project's intervention, local weavers used synthetic colours exclusively. Now, around 60% of Dona's products use entirely natural dyes, whose local availability still remains limited.

From the *Hand-Woven Eco-Textiles* project, Dona also acquired business management, marketing and design skills. For example, the project mobilised an Indonesian designer from Jakarta to train and assist the weavers in improving their design, patterns and colour combinations. Dona has now learned to make her own designs and, in January 2014, with the assistance of a field officer of LP2M, the local NGO that supports Hivos in implementing the project in West Sumatra, she started her own business. Using her motorcycle as collateral, she successfully borrowed EUR 750 from the commercial financial institution, Bank Rakyat Indonesia (BRI).

"Motivation and support from the field officer have been key to Dona's success but she is a very determined person", remarks Miranda Miranda, the Hivos Project Coordinator.

Today, Dona runs her own weaving business producing fabrics, scarves, table runners and fashionable clothes, which are sold both through social media and in her own store, "Dolas Songket", that she opened in 2016 in Sawah Lunto city. On average, she earns EUR 230 a month, against an average salary of EUR 145 in her province. With her income, she has been supporting her younger brother and sister to finish their studies. In addition, she provides employment to eight female weavers, hiring more when seasonal demand increases. They each usually produce three pieces of 3m x 1m fabrics per month, which are then sold throughout the country.

But Dona dreams beyond her national borders. As she speaks of her future plans, she discloses her intention of opening her own boutique by 2025 to serve not only the national, but also international, markets. Meanwhile, in the nearer future, she intends to host her own fashion show in 2018.

In 2014, Dona was nominated one of 20 most successful small entrepreneurs in West Sumatra Province by the Indonesian Central Bank. In 2016, she was awarded second best entrepreneur in Sawah Lunto city. Her name has become popular in the city; she frequently

Photo: LP2M

> ***In celebration of Dona being only the second weaver of Sawah Lunto to travel to Belgium since the 1910s, the local government funded a new 1.6 metre-wide handloom that she used while in Brussels.***

gets invited by the local government to different events as a speaker to promote hand-woven textiles, and as a trainer to produce natural textile dyes.

In sustaining the remit of the SWITCH-Asia project, which concluded in May 2017, Dona now wishes to open a workshop to teach the wider community how to produce natural dyes, as she is still struggling to source enough and affordable natural dyes. The market for natural coloured substances remains limited, as the price is higher than synthetic equivalents and not many consumers are aware of the value of natural dye products. For the time being, she has no option other than to use some synthetic products to meet market demand. But, she hopes to be able to secure sufficient capital to open a natural dye workshop and to finance further R&D in natural dyes. Access to new markets would support her endeavour.

While the traditional image of weaving had prevented her parents from considering it as a respectable job, Dona succeeded in becoming a role model for the younger generation and making weaving more popular among them. Her passion and success have improved the image of the craft: now, many young women in Sawah Lunto are interested in learning how to weave.

In June 2017, Dona's path reached another milestone: the SWITCH-Asia Network Facility invited her to represent *Hand-Woven Eco-Textiles* at EDDs 2017. In Brussels, she displayed samples from her collection of hand-woven fabrics and garments, and performed the traditional songket weaving technique at the SWITCH-Asia booth, before hundreds of international visitors. They gazed in awe at the patient, skilful and sophisticated work behind the production of these beautifully intricate indigenous patterns.

As an ambassador of the SWITCH-Asia project and songket at EDDs, for the first time in her life, Dona had the opportunity to travel to Europe. When she received the confirmation of her participation, two months before the event, she started working on her basic English to improve it ahead of her international debut. Once in Brussels, she was able to converse livelily with visitors interested to know more about the eco textiles – another sign of her ceaseless determination and perseverance!

Meanwhile, as soon as Dona's participation at EDDs had been confirmed, the local government quickly spread the news in Sawah Lunto city. Her popularity increased significantly, with a resultant positive impact on her business: sales went up by more than 35% in the eight weeks preceding EDDs. In celebration of Dona being only the second weaver of Sawah Lunto to travel to Belgium since the 1910s, the local government funded a new 1.6 metre-wide handloom that she used while in Brussels.

Dona is not only living proof that it pays off to follow one's true passion against all odds. Hers is also the success story of a woman from a rural area who benefitted from a SWITCH-Asia project, passed her knowledge on to other women and contributed to preserve a traditional craft. Before the project's intervention, weaving was neither considered an aspirational profession, nor was it a sustainable practice, and

the skill of producing natural dyes from local plants was being lost.

In Indonesia and the Philippines, the *Hand-Woven Eco-Textiles* project trained 4500 weavers and 1500 natural fibre and/or dye producers. To date, 40% of them have undertaken business endeavours, either individually or in groups, thus laying the foundations for a return to artisan and natural textile-producing techniques that ensure the preservation of valuable social and cultural crafts.

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Photo: Abbie Trayler-Smith / Panos Pictures / Department for International Development (DFID)

POLICY IMPACT

Outlawing illegally logged timber from the Indonesian market

Following a successful SWITCH-Asia project, all timber products from Indonesia now have to meet the Timber Legality Assurance requirements

By Nur Maliki Arifiandi

On 15 November 2016, Indonesia became the first country in the world to export FLEGT-licensed legal timber and timber products to the EU. Indonesia has proved to other countries which are considering governance reforms to support forests that, by working together with all stakeholders, a nationwide system to stop the flow of illegal timber to the EU and other countries is achievable.

The SWITCH-Asia project *Promoting the Implementation of Timber Legality Assurance (FLEGT License) as a key step to sustainable production and consumption in Indonesia's wood processing industry*[1] was implemented by WWF-Indonesia in partnership with ASMINDO

1) http://www.switch-asia.eu/projects/timber-indonesia/

(Indonesia Furniture and Handicraft Association) and WWF-UK. Implemented between 2013 and 2017, the project focused on advocating the importance of sound implementation of SVLK (Sistem Verifikasi Legalitas Kayu/Timber Legality Assurance)[2] in the Indonesian market, especially related to the furniture sector.

The support from the furniture industry was instrumental in finally convincing the Indonesian government to remain consistent in implementing SVLK. The SWITCH-Asia project provided SVLK capacity building and training to 355 small and medium-sized enterprises (SMEs), equivalent to approximately 14% of the total ASMINDO membership across Sumatra, Java-Bali and Kalimantan. From this group, 29 SMEs were selected for in-depth assistance, known as 'direct facilitation'.

The project worked with the media to inform the wider public and decision makers in order for SVLK to act as a catalyst for good forest governance as well as providing market advantage in EU markets. Through high-level meetings at the ministerial and presidential levels, the project contributed to making SVLK mandatory for the entire furniture industry. As a business association, ASMINDO played a crucial role in ensuring the legitimate support and commitment of SMEs towards full implementation of SVLK.

One of the key points to support the implementation of SVLK in all timber products was the joint work of all stakeholders (government, NGOs, and associations). The project facilitated discussion with all stakeholders, including presidential staff, in order to convey their message to the top of the government in Indonesia. As a result, ASMINDO was granted an audience with the President.

As the government gave more focus to the formal verification of legality, buyers of Indonesian timber products became progressively more sensitized to issues around illegal trade. For the first time, they risked criminal liability under Indonesian law if they were unable to prove legality for timber they had placed on the European market, or had not practised adequate due diligence in their purchasing of Indonesian forest products, or those from other countries. In its work with SMEs, the project supported sellers in following due diligence and meeting all necessary SVLK requirements. The project also assisted SMEs in understanding clearly where their raw materials came from and which documents were needed to support the legality.

"Eyes on the Forest": WWF-Indonesia and Asmindo representative in Metro Plus (Metro TV)

MoU signing between WWF-Indonesia and City of Pasuruan government on supporting the Implementation of SVLK

To leverage the implementation of SVLK at the national scale, the project placed a high priority on supporting a public procurement policy that would trigger the demand for SVLK-certified products. As a policy maker, the government has considerable potential to promote good business practices across the entire timber market and to drive market demand for SVLK certification in different product sectors, including furniture. Green procurement practices help provide a domestic incentive for change, and engagement to influence government purchases was a further aim of this action, and an important parallel to its work with businesses. Significant success was delivered by project work related to the Government Procurement Policy, when the National Procurement Policy Agency (LKPP) made a commitment in early 2016 to include SVLK as part of its requirements via a procurement e-catalogue. This is one of the government procurement procedures, besides bidding, that promotes transparency and minimises the risk of corruption in the procurement of goods and services using public money.

In parallel with the approaches to the central government, the project actively engaged the local governments with a view to facilitating their introduction of green procurement policies that support SVLK. A MoU was signed between WWF-Indonesia and the city government of Pasuruan on 27 August 2015, entitled "Supporting the Implementation of Timber Legality Assurance System (SVLK)". The MoU sets out how Pasuruan as a city authority will support SVLK through capacity building of the SME furniture industries in Pasuruan and with green procurement policy actions. To date, through this agreement, WWF-Indonesia has given direct assistance to four SMEs to implement SVLK, conducted two SVLK training sessions for SMEs and government staff, promoted SVLK-compliant SMEs from Pasuruan's furniture sector and is also contributing to the drafting of a voluntary local green procurement policy.

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2) SVLK is a tracking system which was developed in 2003 by involving multi-stakeholders to assure the legality of sources from which timber being traded in Indonesia originates.

Photos: www.switch-products.eu

LONG-TERM SUSTAINABILITY

Asian green products enter international markets

Thanks to a new online platform, launched by the SWITCH-Asia Network Facility in 2016, 'green' artisans, communities and small businesses from Asia can now promote their sustainable products globally

By Jana Brauer

SWITCH-Asia projects work with hundreds of micro, small and medium-sized enterprises (MSMEs), artisans and community groups, supporting them to embrace more sustainable production practices and innovating their production along greener standards. By switching from synthetic to natural materials, using cleaner production technologies and processes, sourcing resources responsibly, restoring traditional crafts, training local artisans and vulnerable social groups, these Asian beneficiaries are creating new products and services which reduce the environmental footprint of their industry, strengthen the competitiveness of small businesses, generate local employment and preserve cultural traditions.

Products shown on the left:

1. *Sustainable Rattan briefcase "Wakato" by Hand-Woven Eco-Textiles*
2. *Chair "Ibiza" by PROSPECT*
3. *Handmade Lokta paper notebooks by Lotus Paper Crafts*
4. *Reversible Tye Dye Scarf by Gayatri Pashmina Inc.*
5. *Ceramics from Dong Gia Enterprise in Vietnam*
6. *Magazine rack "Domino" by SMART Cebu*

To learn more about 'SWITCH Products', please visit:

www.switch-products.eu

Workers in Indonesia's rattan industry

Notable examples include beautiful rattan furniture from the *Prospect Indonesia*[1] project, handmade lampshades from leaves of palm trees made by the *Smart Cebu*[2] project, accessories made of recycled textiles from Indian rural women of the *Going Green*[3] project and ceramics manufactured through cleaner production like those of the *SPIN-VCL*[4] project in Vietnam. These products are exclusively manufactured locally in Asia by SMEs and/or marginalised social groups, such as illiterate women, disabled groups or unskilled labour, who have been actively engaged and trained by the SWITCH-Asia grant projects.

Yet, despite their quality and exclusivity, too often a common problem prevents these products from reaching prospective buyers: the lack of access to bigger or international markets. The remote location of many communities and entrepreneurs coupled with the human and financial resource constraints typical of many SMEs make it difficult for many producers to promote their goods beyond their local market. In larger countries, reaching regional and national markets remains a challenge for many.

This market barrier is all the more serious considering that usually the producers' livelihoods and often that of their communities and villages rest on the production and trading of their products. If, upon the project's completion, the business case for these 'greener' products and services is not strongly embedded in the markets, the newly instilled production practices risk being discarded in favour of less environment-friendly ones.

To tackle this problem and enhance the visibility of greener Asian producers, the SWITCH-Asia Network Facility launched 'SWITCH products' (www.switch-products.eu), an online platform that allows Asian SMEs, artisan groups and local communities to promote their 'greener products' to a wider audience, at no cost. With no need to register or open an account, interested viewers have the possibility to contact the producers directly, to request more information on the production process or resulting goods, or to place an order.

Launched in September 2016, this promotional platform currently features more than 40 products, grouped under four categories: sustainable furniture and home décor, textiles and accessories, green technologies and sustainable services. By July 2017, 14 vendors associated with as many SWITCH-Asia projects in eight Asian countries have taken advantage of this new window for visibility.

In July 2017, SwitchMed[5] joined this initiative and is starting to display products produced by associated entrepreneurs – 'the Switchers'[6] – from the Mediterranean. Besides handmade eco-bags and sustainable tourism offers, visitors can soon expect to find delicious organic food products!

'SWITCH products' had its public debut in June in Brussels, on the occasion of the 2017 European Development Days. In a booth shared with partner programmes SwitchMed, SWITCH-Africa and SWITCH to Green, SWITCH-Asia exhibited some of the green products that are featured on 'SWITCH products': samples from India, Indonesia, Nepal and Vietnam were on display jointly with eco-bags from Lebanon. The diversity and quality of beautiful handmade products, such as soft cashmere scarfs, hand-woven eco-textiles and earrings made of recycled textiles, attracted a large crowd of visitors who also took the opportunity to talk to some of the Asian producers present and learn more about the sustainability principles embedded in their collections.

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1) http://www.switch-asia.eu/projects/promoting-eco-friendly-indonesia-rattan-products/
2) http://www.switch-asia.eu/projects/smart-cebu/
3) http://www.switch-asia.eu/projects/going-green/
4) http://www.switch-asia.eu/projects/spin-vcl/
5) http://www.switchmed.eu
6) http://www.theswitchers.eu

COUNTRY FOCUS: NEPAL

Nepal moves towards SCP

SWITCH-Asia experiences in Nepal demonstrate how SCP can contribute to poverty alleviation and sustainable growth in a least developed country

By Dr. Uwe Weber and Silvia Sartori

Since the end of a decade-long civil war in 2006, Nepal has achieved noteworthy progress in poverty reduction: between April 2003 and November 2010, the percentage of its population earning less than about EUR 1.15 per day has been halved from 53 to 25%[1]. However, the devastating earthquakes of April and May 2015 not only halted this process, but pushed about 3% of the population back into poverty[2].

These earthquakes, which affected approximately 8 million people, killed 8700 and injured at least 22 000 people, destroying more than half a million homes and leaving more than 250 000 damaged[3]. Consequently, in 2017 about 25% of the population continues to live below the poverty line[4].

Only in 2017 did the country's growth trajectory turn back on track, with an expected economic growth of above 5%. Currently the agricultural sector still accounts for one third of Nepal's GDP and is expected to remain the largest employer in the near future, providing livelihoods for up to 70% of the population. Remittances from Nepalis working in foreign countries are another key contributor of GDP, at approximately 25%, while industry contributes 15% of GDP, most notably, carpets, textiles, small rice, jute, sugar, and oilseed mills, cigarettes, cement and brick production, metal processing and the remaining is contributed from tourism and by the service sector [5,6].

1) http://www.worldbank.org/en/country/nepal/overview
2) http://www.firstpost.com/world/one-million-people-fall-below-poverty-line-in-nepal-after-earthquake-2295416.html
3) https://www.mercycorps.org/articles/nepal/quick-facts-what-you-need-know-about-nepal-earthquake
4) Asian Development Bank: https://www.adb.org/countries/nepal/poverty
5) http://www.worldbank.org/en/country/nepal/publication/nepaldevelopmentupdate
6) https://en.wikipedia.org/wiki/Economy_of_Nepal

Nepal is frequently affected by natural disasters and incidences possibly related to climate change. Recent records indicate an increase in the number of droughts, floods, hailstorms, landslides and crop diseases, in particular affecting the livelihoods of the poor[7]. In addition, it is located on the edge of a tectonic plate coupled with high earthquake risks, particularly in the Kathmandu valley, the most densely-populated area of the country.

The political process has witnessed extensive slowdowns in conjunction with the drafting of a new constitution (2015) and yearly government changes. In these circumstances, urgent tasks were prioritised over legislation on environment and occupation health and safety (OHS). With the newest constitution in place since 2015 and the first regional elections held in 2017 after 20 years, the continuance of administrative work is expected to improve substantially, allowing for new legislative outputs related to environment and OHS.

SWITCH-Asia in Nepal

Of the 19 Asian countries eligible for funding under the SWITCH-Asia Programme, Nepal ranks amongst the main recipients of grant projects. Between 2009 and 2016, nine SWITCH-Asia grant projects have been awarded to Nepal, three of them regional projects. These grant projects operate in various sectors, ranging from construction to forestry, and positively impact multiple dimensions of the country's development and poverty alleviation (Table 1). They focus on creating or securing alternative, safe and sustainable livelihoods. In this context, addressing the cleaner production (CP) aspect is mostly coupled with training about and implementation of essentials, like good housekeeping practices in the often very small companies.

7) www.iwmi.cgiar.org/Publications/Working_Papers/working/WOR139.pdf

SWITCH-Asia supported projects in Nepal

Sectors	SWITCH-Asia projects
Forestry & wood based	Bio-Energy http://www.switch-asia.eu/projects/bio-energy-project/ Lokta Handmade Paper http://www.switch-asia.eu/projects/lokta-handmade-paper/
Construction/ Chemical	Green Homes http://www.switch-asia.eu/projects/green-homes/ Vertical Shaft Brick Kilns http://www.switch-asia.eu/projects/vsbk-vertical-shaft-brick-kiln/ Lead Paint Elimination http://www.switch-asia.eu/projects/lead-paint-elimination/
Metal processing/ Construction	METABUILD http://www.switch-asia.eu/projects/metabuild/
Cleaner production	Sustainable and Efficient Industrial Development (SEID) http://www.switch-asia.eu/projects/seid/ Sustainable Carpet and Pashmina http://www.switch-asia.eu/projects/sustainable-carpet-and-pashmina/
Waste management	PPP for 4Gs http://www.switch-asia.eu/projects/ppp-for-4gs/

Photo: www.goodfreephoto.com

With support from the Bio-Energy project, forest dwellers have started producing charcoal

This article intends to provide an overview of the main contributions to Nepal's sustainable development enabled by these projects and in so doing illustrate the potential role that sustainable consumption and production (SCP) can play in addressing the development challenges of a country in a holistic manner. This is all the more relevant for a least developed country (LDC), such as Nepal, that while pursuing SCP can concurrently address issues of sustained growth, environmental preservation and improving livelihoods.

Improved livelihoods

The SWITCH-Asia project *Bio-Energy* (2014-2017) is training vulnerable rural and mountain communities to clear invasive species and shrubs, which have been infesting forest areas, and turn this biomass into charcoal. The reported benefits are fourfold: poor farmers are able to access more stable and profitable livelihoods, the impact from invasive species on forests is reduced, the risk of fire hazards is lowered and firewood is replaced by charcoal as a cleaner source of energy, in particular substantially reducing indoor air pollution. Additionally, reduced dependency on firewood also contributes to biodiversity preservation. This project works along the whole supply chain, supporting local subsistence farmers interested in setting up charcoal-producing units, establishing a network of charcoal collection centres and creating further linkages with companies who purchase the produced charcoal, process it into briquettes and incense sticks and then market and sell these charcoal products to barbecue restaurants and brick kilns. Since the start of the project and up to the end of August 2017, 460 new charring units have been established, for a total production of 7598 metric tonnes of charcoal. As the production capacity expands further, the charcoal can be promoted as an alternative energy source for domestic purposes, too.

Bio-Energy operates in remote forest areas with precarious livelihoods

The charcoal produced by forest dwellers is then processed into briquettes

Green Homes introduced the 'Compressed Stabilised Earth Blocks' (CSEBs) in Nepal

The processes and logistics are partly still to be refined, however new companies and facilities have already been established and started their operations. By August 2017, 30 collection centres were in the process of registering and five registered business development service providers were selling the charcoal produced by the project beneficiaries, which is regularly being purchased by 200 enterprises in the hospitality sector, such as hotels and restaurants, two incense factories and four processing units.

With these interventions, sustainable income opportunities have been created along the whole charcoal supply chain. Poor forest dwellers who used to rely on subsistence agriculture have now turned into entrepreneurs producing charcoal, which provides them and their household with a stable income, secured by increasing market demand.

Earthquake reconstruction

Two SWITCH-Asia projects promote the utilisation of environmentally friendlier bricks, respectively *Vertical Shaft Brick Kilns (VSBK)* for alternative brick production and *Compressed Stabilised Earth Blocks (CSEBs)*.

The *VSBK* project (2012-2015) mobilised private investment of EUR 2.5 million for upgraded kilns, creating about 1500 new jobs. Thanks to the lower amount of firewood/coal required to burn the bricks in vertical shafts, 12 500 tonnes of CO_2 emissions are avoided annually, black carbon emissions reduced by more than 90% and 130 new brick making companies using this improved technology were founded or upgraded[8].

The *Green Homes* project (2013-2015) introduced cement stabilised coarse sand blocks and the necessary production equipment, e.g. a manually-operated press, with which the blocks are formed. After testing the technical specifications for these bricks, these have been added to Nepal's building code as compliant construction material. Because of the particular shape of these blocks, the construction of walls is fast and easy. Walls can be stabilised easily with additional steel rods, resulting in earthquake-resistant wall structures.

Thanks to these properties, brick production and house construction is performed also by women, who are nowadays often found in construction sites, in the absence of men, many of whom have migrated to Malaysia or the Gulf States for higher paying jobs. The wider utilisation of these building blocks is currently only hindered by the currently limited production quantity. This project also has a significant livelihood improvement component as it allows less affluent households to produce their own construction materials and build their houses at a lower price. As government subsidies for earthquake victims are limited and not straightforward to access, many farmers are forced to sell their land – their only valuable possession – and give up farming to become labourers, in order to afford the re-construction of their home. Via the solutions promoted by *Green Homes*, reconstruction now has more affordable options[9].

CSEBs are being used for Nepal's post-reconstruction efforts

8) http://www.switch-asia.eu/publications/promoting-innovative-building-materials-to-green-nepals-construction-sector/
9) http://www.switch-asia.eu/publications/sustainable-housing-mitigates-climate-change-and-creates-green-jobs-in-nepal/

Health and safety

Lead is particularly dangerous to children because their growing bodies absorb more lead than adults and their brains and nervous systems are more sensitive to the damaging effects of lead. Lead-containing paint is a significant source of lead exposure in some developing countries, whereas in more industrialised economies the lead content of paints is severely scrutinised and restricted. This differentiation has spurred the creation of a regional SWITCH-Asia project that has been working between 2011 and 2015 to reduce childhood lead poisoning in Bangladesh, China, India, Indonesia, Nepal, the Philippines, Sri Lanka and Thailand. A major contribution to improving health conditions in Nepal has been provided by the Nepal component of the regional SWITCH-Asia project *Lead Paint Elimination*. Through its advocacy and awareness-raising efforts, currently 80% of the paint sold and used in Nepal is lead free. In addition to those occupationally exposed to paint, this milestone is particularly relevant for children, who are naturally more susceptible to chronic lead poisoning[10].

More information about this regional project and its work in Nepal are provided in the dedicated article in this Magazine issue.

Environmental protection

In line with the economic and physical framework conditions of Nepal, where one third of the GDP and 70% of employment rest with the agriculture sector, the direct and indirect effects of agricultural activities pose a significant adverse environmental impact leading to forest degradation and water pollution from runoff of agricultural lands with unsustainable application of fertilisers, herbicides and pesticides. Forests are further degraded by indiscriminate logging for timber and fuel wood as well as the spread of invasive species. As mentioned earlier, the last two effects are addressed by the *Bio-Energy* project, which improves livelihoods by creating additional income for farming communities through weeding and charring invasive species. Despite contributing only about 15% of GDP, industry contributes to the severe air and water pollution because of its concentration in and

Photo: Silvia Sartori

Photo: Silvia

Photo: Silvia Sartori

The PPP for 4Gs project is sensitizing the Ilam municipality to improve waste segregation, collection and reuse

10) http://www.switch-asia.eu/publications/lead-in-new-enamel-household-paints-in-nepal/

around the few urbanised areas and lax government oversight. Today the Kathmandu Valley and Kathmandu city rank as the 5th most polluted city in the world[11]. Rivers in the Kathmandu Valley are biologically dead[12], although intense efforts are underway to restore the Baghmati River, considered to be holy by Hindus as well as Buddhists. Water pollution either results from the disposal of untreated sewage or industrial effluents. The latter are discharged mainly from dyeing enterprises, tanneries and the metal processing industry. Over-extraction of groundwater has depleted the water table in the Kathmandu Valley resulting in many wells falling dry, thus causing additional chores for females to collect water for their families. Air pollution results in particular from brick kilns using low quality Indian coal or firewood as well as from the ever-increasing traffic exacerbated by insufficient traffic management and dust from extensive road and building construction.

SWITCH-Asia projects demonstrate improved water saving, recycling and discharge practices in the carpet and pashmina industry in the Kathmandu Valley[13] and in the metal processing factories in the Biratnagar industrial zone. In the former case, for instance, through the SWITCH-Asia project *Sustainable Carpet and Pashmina* (2014-2017), 33 SMEs from both the wool dyeing and the carpet washing sectors have adopted CP practices such as improved water utilisation and the recycling or reuse of process waste like fibres. Also, air pollution is addressed within the metal and textile industries via in-process energy efficiency measures, which result in less fuel needed for boilers and ovens and the installation of cyclone dust filters[14].

Another dangerous environmental impact of Nepal's development and growth results from improper solid waste management. Only six municipalities[15] in Nepal dispose of waste into sanitary landfills, the remaining dispose waste – including hazardous and medical waste – into rivers, forests or open fields. As a demonstration, the SWITCH-Asia *PPP for 4Gs* project is establishing a public private partnership in cooperation with the Ilam municipality and a private waste management company capacitated to collect and separate waste, encouraging recycling, building a composting facility for the organic waste fraction and improving the city's landfill layout and management[16].

Concurrently, the project is also helping local entrepreneurs to set up or expand businesses based on the reutilisation of waste, such as textile fabrics and plastic.


Photo: Silvia Sartori

Photo: Silvia Sartori

The PPP for 4Gs project engages public and private stakeholders to enhance waste management in Ilam

11) https://thehimalayantimes.com/nepal/nepals-kathmandu-ranks-5th-in-pollution-index-2017/
12) https://www.dandc.eu/en/.../waste-management-has-not-kept-kathmandus-fast-growth
13) http://www.switch-asia.eu/fileadmin/user_upload/Project%20news/Nepali_pashmina/Nepal_pashima_int_l_competitiveness.pdf
14) http://www.switch-asia.eu/publications/resource-efficient-cleaner-production-in-the-metal-industries/
15) https://www.adb.org/sites/default/files/publication/30366/solid-waste-management-nepal.pdf, page 27
16) http://www.switch-asia.eu/multimedia/green-ilam/

Photo: Silvia Sartori


Photo: Silvia Sartori

Improved living and working conditions

The concepts of cleaner production and OHS are in their infant stages in Nepal, with the basic OHS law dating back to 1992 and few – if any – enactments since. Working with industry associations, employers, the workforce and public administrators, the SWITCH-Asia projects *Sustainable Carpet and Pashmina* as well as the previous *SEID* project (2012-2015)[17,18], provided valuable inputs on the criteria for SCP and OHS in industries, for instance to the new National Sustainable Production Policy.

In practice, the CP concept is frequently translated into 'good housekeeping' measures and changing the mind-set of the workforce, who is generally unaware of even basic OHS provisions and thus exposed to occupational hazards.

The experience of the *Sustainable Carpet and Pashmina* project illustrates that, once successfully introduced in the work space, good housekeeping practices are often transferred back home, thus improving not only working but also living conditions for entire households[19]. In addition, initial results from the Nepal component of the regional SWITCH-Asia project *METABUILD* indicate that CP interventions that start with simple but cost-effective 'good housekeeping' measures are promising in encouraging the uptake of and investment in major CP measures.


Photo: Silvia Sartori

Many of the SWITCH-Asia projects in Nepal support cleaner production among local SMEs


Photo: Silvia Sartori


Photo: Silvia Sartori

17) http://www.switch-asia.eu/projects/sustainable-carpet-and-pashmina/
18) http://www.switch-asia.eu/projects/seid/
19) see for example: https://youtu.be/FOWthK05UDo

SWITCH-Asia projects in Nepal contribute to improve living and working conditions for local women

Women's empowerment

In terms of gender equality, Nepal is traditionally listed among the lowest ranking countries worldwide, as recently re-confirmed by the World Economic Forum's 2016 Global Gender Index that positioned it 110th among 145 surveyed countries. Traditional cultural and social barriers negatively impact women's economic empowerment, which have been indirectly addressed by the SWITCH-Asia projects *Sustainable Carpet and Pashmina* and *Bio-Energy*. The former worked in the carpet and pashmina industries, where women account for a significant share of the workforce. By enhancing OHS and introducing CP practices in these factories, the project contributed to make working conditions safer for employees, many of them women. In particular, it was noted that because of their typical outfits and long hair, women are especially exposed to the risks of accidents and becoming victims due to unsafe occupational practices. The project made over 2300 professionals, approximately half of them women, aware of health and safety protocols, cleaner production practices, reduction of waste and resource optimisation.

In its promotion of charcoal, the *Bio-Energy* project is instrumental in providing new and improved sources of livelihoods to women from poor communities, and in so doing boosting female entrepreneurship. Working mostly with forest dwellers, the project has effectively established a whole supply chain for charcoal production, sales and utilisation (ref. section 1 of this article). More than 40% of the trained beneficiaries, who are now charcoal producers, is constituted of women, usually rural residents with little or no education and otherwise living from subsistence agriculture. The new concept facilitated by the project has enabled at least 440 women to become charcoal producers, earn an independent source of income and manage a business. Their uplifted economic standing is also generating positive social repercussions as women acknowledge improved social acceptance and consideration.

Conclusions

While SWITCH-Asia projects are not a game changer in Nepal, they are instrumental to upholding the momentum for cleaner production, SCP and OHS in Nepal. They are supporting the reconstruction efforts after the 2015 Gorkha earthquake and showcasing improved and cost-effective solutions for rural livelihood improvements, cleaner production practices and waste management, with additional positive impacts in terms of women's economic and social empowerment.

As the economic development recovers, SWITCH-Asia projects are a timely contributor to align the renewed growth along paradigms of environmental protection and OHS uptake.

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PARTNER PROGRAMME

The SwitchMed Programme

Supporting the Switch to a Circular Economy in the Mediterranean

By Matthew Lagod

Switching from linear to circular economies has been recognised as an effective means of increasing the competitiveness of enterprises while significantly reducing their impacts on the environment. Making this switch in the 21 countries that constitute the Mediterranean region is key to the sustainable development goals of the region, where small and medium-sized enterprises (SMEs) account for 90% of businesses and where human and economic activities exert intense pressures on natural resources and ecosystems, especially in coastal areas. With populations in the Mediterranean's coastal region alone expected to increase to 174 million by 2025 and current consumption patterns far exceeding the capacities of ecosystems[1], a fundamental change is needed to ensure that human populations in the region can fulfil their needs, now and in the future, and within the limits of the Mediterranean's unique but delicate ecosystems.

Staff of EDAMA, a Switcher that promotes the effective management of water and renewable energies in Jordan, install photovoltaic systems in a poor village.

1) According to the Global Footprint Network, "the Mediterranean region currently uses approximately 2.5 times more natural resources and ecological services than their ecosystems can provide." (Global Footprint Network 2015)

The SwitchMed Programme[2] – a sister initiative of SWITCH-Asia – 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 and with the aim of decoupling human development from environmental degradation. Its activities benefit eight countries in the Southern Mediterranean: Algeria, Egypt, Israel, Jordan, Morocco, Lebanon, Palestine and Tunisia. The Programme supports policy makers, eco-innovative small and medium-sized enterprises, industries, start-ups and entrepreneurs in these southern Mediterranean countries, which have identified job creation and natural resource protection as priority issues that also contribute to their economic stability. The SwitchMed Programme accomplishes its mission through policy development, capacity building, business support services, demonstration activities and networking. The current phase of the SwitchMed Programme will continue until July 2018.

SwitchMed started by establishing policy tools[3] to foster an enabling environment for the switch to more sustainable consumption and consumption patterns. Between 2013 and 2015, SCP/RAC led an extensive consultation process with governments and regional organisations to establish the SCP Action Plan for the Mediterranean[4], which was adopted by the Contracting Parties to the Barcelona Convention in February 2016. This regional plan gives clear guidelines on the actions that should be developed to shift towards sustainable consumption and production patterns, long-term sustainability, circular economies and new paradigms in the use of resources.

Each of the eight participating countries subsequently has elaborated its own SCP national action plan[5] to integrate SCP principles formally into the national policy framework and to address its priority economic sectors. SwitchMed is now supporting these countries in the execution of pilot demonstrations[6] on the ground to implement some of the key activities from the SCP national action plans. Many of these demonstrations feature concrete examples of circular economy solutions, including the valorisation of downgraded dates and co-products of date production in Algeria, production of compost from by-products of the wine industry in Lebanon, and the production of biogas from organic waste on farms in Morocco.

NOEL/Tunisia, a textile producer that has joined the MED TEST II component to become more resource efficient.

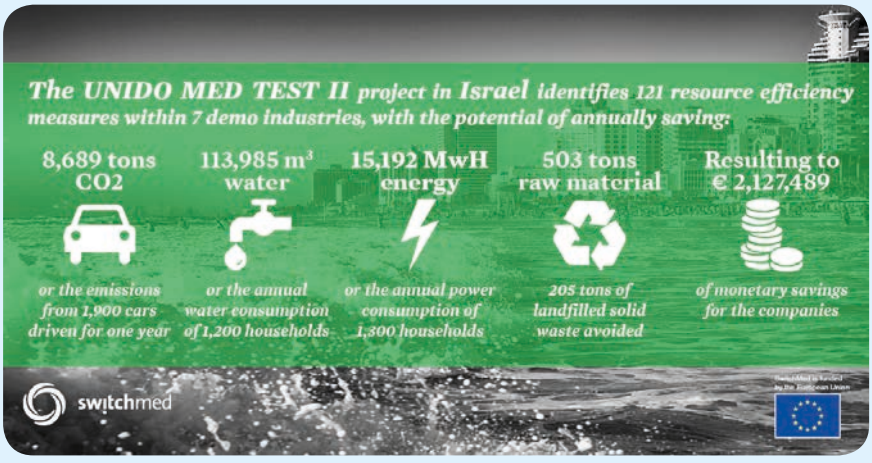
The SwitchMed Programme is implemented by the ***United Nations Industrial Development Organisation****, the* ***United Nations Environment Programme Mediterranean Action Plan****, the* ***Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC)*** *and the* ***UN Environment Economy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

Regional Activity Centre for Sustainable Consumption and Production

2) http://www.switchmed.eu/en
3) http://www.switchmed.eu/en/documents/policy/switch-med-scp-policy-toolkit.pdf
4) http://www.switchmed.eu/en/e-library/regional-action-plan-on-sustainable-consumption-and-production-in-the-mediterranean
5) http://www.switchmed.eu/en/corners/policy-makers/actions/action-2
6) http://www.switchmed.eu/en/corners/policy-makers/actions/action-3

Siniora, a food company in Palestine that has identified measures to significantly reduce water consumption through the application of UNIDO's TEST methodology in the SwitchMed Programme.

SwitchMed has also been able to demonstrate the business case for circular economy and resource efficiency solutions among the region's industries through the application of UNIDO's TEST methodology[7] for sustainable production. More than 130 companies in the region have piloted this methodology in their production lines, and early results from seven companies in the chemical, plastic, mechanical and food sectors in Israel speak for themselves: significant potential for cost savings and avoided waste and pollution that will lead to protection and conservation of the region's precious natural resources, and that can enable the seven participating industries in Israel to save over EUR 2 million annually.



Achievements of the TEST methodology implementation in Israel

One of the companies that has applied the TEST methodology in the SwitchMed Programme is Siniora, a multinational food company producing meat and poultry products in Palestine where water resources are scarce. By evaluating the cooling operations of the company, the local team was able to identify water conservation measures that will reduce the total water consumption by 50%, saving 17 000m³ of water annually. Due to the scarcity of water in the region, these savings will not only be beneficial for the company but also for the community as a whole. In each of the pilot industries, UNIDO is working to evaluate the full range of savings, in terms of costs, natural resources and avoided pollution.

Another key contribution of the SwitchMed Programme to the shift to SCP in the Mediterranean is through its capacity building[8] and networking activities for emerging green entrepreneurs and start-ups. An innovative methodology[9] on how to launch a green business in the Mediterranean has been developed for the programme, which includes modules on the development of business models that consider a life cycle approach to product design and that seek circular economy solutions. The methodology has been used to train more than 1500 individuals to date, 36% of them women, contributing

7) http://www.switchmed.eu/en/corners/service-providers/actions/action2
8) https://www.switchmed.eu/en/corners/start-up
9) https://www.switchmed.eu/en/corners/start-up/Porlets/training-materials

The eco-friendly hotel Feynan Ecolodge is a Switcher that employs 80 Bedouin families

to the creation of 150 new green businesses and hundreds of jobs, primarily in the waste management, renewable energy and organic farming sectors. By 2018, more than 2500 individuals will have been trained on the green entrepreneurship methodology and 200 new businesses launched.

These new green entrepreneurs as well as established green businesses are also benefitting from SwitchMed's networking activities, including the development of 'The Switchers'[11], an online community of more than 300 entrepreneurs and change makers that are leading the shift to green and socially-inclusive economies in the Mediterranean region as well as the annual SwitchMed Connect[12] event that brings together Mediterranean stakeholders to build synergies, exchange knowledge, and scale up eco and social innovations. As sister initiatives, the SWITCH-Asia and SwitchMed Programmes have mutually benefitted from sharing knowledge and joint collaboration. For example, the SwitchMed's Networking Facility[13] was built upon the lessons learned from the first phase of the SWITCH-Asia Network Facility, taking up concepts such as development of long-term sustainability (scaling up) strategies and roadmaps for the demonstration activities as well as impact communications. The Networking Facilities of both programmes collaborate regularly to boost the visibility of their beneficiaries through the organisation of collective events, such as booths and thematic sessions at the 2017 editions of the European Development Days and the World Circular Economy Forum.

Looking ahead to the future and wider collaboration, there are potential South-South synergies such as exchanges of lessons learned among the beneficiaries of all SWITCH programmes. For instance, entrepreneurs in sustainable tourism, textiles and agro-food sectors face similar challenges, despite their geographic differences. Likewise, lessons from industries applying the UNIDO TEST methodology in the Mediterranean can provide valuable insights to industries in other parts of the world that may employ similar processes. Finally, there are also potential B2B opportunities between the beneficiaries of the programmes that could be explored further for additional synergies.

Full details about the SwitchMed Programme are available at http://switchmed.eu

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Hamou Boussada, manager of Rima Dates, is implementing a circular economy productive model in the value chain of dates in Algeria. His innovative project aims at producing syrup and vinegar as well as extracting oil from downgraded dates.

10) The SwitchMed green entrepreneurship handbook is available at https://www.switchmed.eu/en/documents/ge-green-entrepreneurship-corner/handbook_en.pdf. Its companion workbook can be accessed at https://www.switchmed.eu/en/documents/ge-green-entrepreneurship-corner/wb_eng_digital_single.pdf.
11) http://www.theswitchers.eu/
12) http://switchmedconnect.com/en/
13) https://www.switchmed.eu/en/contact

PARTNER PROGRAMME

Switch Africa Green

Supporting African countries in the transition towards an inclusive green economy based on sustainable consumption and production patterns

Building on the successful implementation of the Green Economy Initiative and the National SCP programmes in Africa, the European Commission and UN Environment signed an agreement in December 2013 to fund and implement SWITCH Africa Green. The project supports six countries in Africa – Burkina Faso, Ghana, Kenya, Mauritius, South Africa and Uganda – in their transition towards an inclusive green economy pathway.

This ambitious project unfolds in three components: policy support to governments, green business development (grants component) and a networking facility to ensure exchanges of best practice. The first phase of the project (EUR 19 million) started in March 2014 and ends in December 2017, with a second phase (EUR 20 million) expected to start in January 2018 until the end of December 2021.

Photo: SWITCH-Africa Green Project

Integrated Waste Management (Burkina Faso): Community awareness and sanitation campaigns were held. After sensitization the Community Based Organisations have doubled their incomes.

African economies are highly dependent on natural resources, which form the basis of the economic activity in most countries. These include agriculture, mining, tourism, forestry, fishing, water and energy supply. The transition to a green economy offers opportunities for the region to attract investments in environmental assets; promote resource efficient production processes; encourage eco-innovation and investments in renewable energy, all of which will support economic development, reduce poverty and create employment. SWITCH Africa Green supports the six countries in Africa to achieve sustainable development by engaging in the transition towards an "inclusive green economy which generates growth, creates jobs and reduces poverty". The programme supports 1) the establishment of policies, incentive structures, and instruments for green business development and 2) private sector initiatives promoting Sustainable Consumption and Production (SCP) practices. SWITCH Africa Green contributes to implement the Sustainable Development Goal (SDG) 12 "Ensure SCP patterns" and is coherent with other SDGs, in particular SDG 8 "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all", and its target 8.4 on "decoupling".

Africa's strong growth is projected to continue in the medium-term due to increasing domestic demand, driven mainly by the rising middle class, improving regional business environment and macroeconomic management, increasing public investment, a buoyant services sector and robust trade and investment ties with emerging economies. The continent requires a great leap in economic performance that is sustainable, inclusive, and transformative in order to improve the livelihoods of the bulging population in Africa. Green economy investment is one way to achieve this.

Main objectives

The overall objective of SWITCH Africa Green is to support countries in Africa to achieve sustainable development by engaging in the transition towards an inclusive green economy, based on sustainable consumption and production patterns, while generating growth, creating decent jobs and reducing poverty. The objective will be achieved through support to private sector led, inclusive green growth.

The specific objective is to support the development of green businesses and eco-entrepreneurship and use of SCP practices by having in place (i) MSMEs and business service providers that are better equipped to seize opportunities for green business development, ii) better informed public and private consumers, and (iii) enabling conditions in the form of clear policies, sound regulatory frameworks, incentive structures, tax and other fiscal and market-based instruments influencing key sector(s).

Implementing partners:
***UN Environment**, in collaboration with **UNDP** and **UNOPS**, is implementing the first phase of the project covering the six pilot countries Burkina Faso, Ghana, Kenya, Mauritius, South Africa and Uganda.*

UN environment · UNDP · UNOPS

Main achievements

- *SWITCH Africa Green supported an e-learning course on "Introduction to Sustainable Consumption and Production in Africa" which was held between 5 September and 28 October 2016 in collaboration with 10YFP and UNITAR. A total of 94 fellowships were awarded to policy makers and SCP practitioners in 33 countries in Africa. The course attained a 90% certification rate.*

- *Via the Programme's grants component, about 3000 MSMEs have been supported in the uptake of SCP practices and patterns across the four main sectors: agriculture, manufacturing, tourism and waste management.*

- *The SCP practices implemented by the MSMEs have led to increased incomes, cost savings, job creation, improved time efficiency, improved health and increased productivity[1].*

- *Through the 34 grantees in the project across the six pilot countries, the beneficiary MSMEs are receiving toolkits and training on adopting SCP practices and patterns. Focused training and mentoring is also being provided to these MSMEs. Existing and new SCP toolkits have been given to the beneficiaries and have also been uploaded on the SWITCH Africa Green website for use by the MSMEs and wider stakeholders.*

- *In the networking facility component, the first SWITCH Africa Green networking forum was held on 28-29 May 2016 in Kampala, Uganda back-to-back with the 9th Africa Roundtable on Sustainable Consumption and Production (ARSCP 9); about 170 SCP practitioners in Africa participated in the forum. Some of the grantees and MSMEs exhibited their project activities. Sharing and dissemination of case studies and green business practices is a continuous process in the project. National forums have also been held in some of the pilot countries and dissemination of results is on-going in various national, regional and global platforms.*

- *Overall, about 6000 people are benefitting from the project, including individual farmers in the six pilot counties.*

1) A compilation of success stories from MSMEs supported by SWITCH AFRICA GREEN is available at: http://switchafricagreen.org/index.php?option=com_docman&view=download&alias=38-switch-africa-green-quarterly-report-october-december-2016&category_slug=sag-quarterly-reports&Itemid=1366&lang=en

Sustainable Consumption and Production Practices in Agriculture value chain (Kenya): A women led enterprise making banana flour in Kenya. The enterprise has incorporated SCP practices into its operations.

Promoting SCP among African MSMEs

During the first phase of the project, USD 11.5 million was awarded as grants to successful applicants after a competitive call for proposals. The grants range from USD 200 000 to USD 250 000 and were distributed as follows: four grants in Burkina Faso, five in Ghana, four in Kenya, and six each in Mauritius, South Africa and Uganda.

The grants focus on the countries' priority sectors, namely agriculture, manufacturing, integrated waste management and tourism. In addition, they also target these cross-cutting themes: energy efficiency, water efficiency, labelling and standards, eco-innovation and sustainable trade.

The successful projects cover a wide range of activities, including supporting the private sector in resource efficiency (e.g. energy and water efficiency and industrial symbiosis), sustainable agriculture practices (e.g. crop farming and sustainable animal keeping and marketing), developing eco labels and standards, and creating awareness of sustainable consumption and production practices. The successful projects have also incorporated training on sustainable business practices, for instance costing of green products, record keeping (general records including efficient stores management), product packaging and presentation, support towards product approval by the standards bureaux in the respective countries, as well as mentoring on maintaining good financial records. The development of cooperatives as a form of a successful business model for the communities was also integrated.

Final beneficiaries of the project are Micro, Small and Medium-sized Enterprises (MSMEs) in the six pilot countries. Overall, about 3000 MSMEs are benefitting from the project. In total, some 6000 individuals, including small-scale farmers, have benefitted directly from the project in the six pilot countries.

More information
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PARTNER INITIATIVE

The EU SWITCH to Green initiative

The EU SWITCH to Green initiative supports the Inclusive Green Economy transition process with strategy, coordination, technical assistance, knowledge management and communication

By Alexander Charalambous and Isabelle Demolin

switch2green

Promoting an Inclusive Green Economy (IGE) is a priority for EU development cooperation, in line with the new EU Consensus on Development, which commits the EU and its Member States to advance "resource efficiency and sustainable consumption and production [...] to decouple economic growth from environmental degradation and enable the transition to a circular economy"[1].

The 2030 Agenda for Sustainable Development, which provides a framework for EU development cooperation, encourages further action in this area, in particular on "Ensuring sustainable consumption and production (SCP) patterns" – SDG 12.

Complementarily, the EU Action Plan for the Circular Economy[2] aims to boost global competitiveness, foster sustainable economic growth and generate new

Photo: ©DEVCO

A multi-stakeholder training in the field of Inclusive Green Economy took place in Uganda in April 2017 and gathered representatives from the EU Delegation, the national government, other development partners and the private sector.

1) Joint statement by the Council and the representatives of the governments of the Member States meeting within the Council, the European Parliament and the Commission (2017/C 210/01), available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2017.210.01.0001.01.ENG&toc=OJ:C:2017:210:TOC

2) COM(2015) 614 final: Communication from the Commission: Closing the loop – An EU action plan for the Circular Economy

> ***"The SWITCH to Green initiative [...] is being implemented globally, linking complementary programmes to improve the overall coherence, coordination and visibility of existing and future EU-funded international cooperation initiatives on the green economy."***

jobs. It acknowledges the global dimension of the circular economy and supply chains and, in this context, says that the Commission will cooperate closely with international organisations and other interested partners as part of global efforts to reach the 2030 Sustainable Development Goals.

The SWITCH to Green initiative aims at facilitating the transition to an inclusive green economy that increases the share of environmental goods and services sectors (pollution management, cleaner technologies and products, resources management) in the economy, improves livelihoods with higher incomes and decent job creation, and reduces environmental impact in (selected) economic sectors (for example in agriculture, manufacturing, tourism). Developed by the European Commission Directorate General for International Cooperation and Development (DG DEVCO) at the beginning of the 2014-2020 programming period, it is being implemented globally, linking complementary programmes to improve the overall coherence, coordination and visibility of existing and future EU-funded international cooperation initiatives on the green economy.

It builds on several initiatives, in particular the SWITCH regional programmes (SWITCH-Asia, SwitchMed and SWITCH Africa Green) and complementary actions such as the Partnership for Action in Green Economy (*http://www.un-page.org/*), the Green Economy in the European Union's Eastern Neighbourhood programme (*http://www.green-economies-eap.org/*) and the Green Economy Coalition (*http://www.greeneconomycoalition.org/*).

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 develop green businesses (sustainable production), promote sustainable consumption practices and enhance access to green finance and investments.

At the policy level, actions under the SWITCH to Green initiative have so far resulted in inclusive green economy policy reforms taking shape in some 45 partner countries (in South East and Central Asia, Africa, Latin America, the Caribbean, and the Mediterranean). Moreover, the initiative has supported actions engaging with economic actors in these countries, e.g. through national workshops, multi-stakeholder training (see example at *http://www.switchtogreen.eu/?p=1025*), or the provision of grants (e.g. by SWITCH-Asia and SWITCH Africa Green programmes), to increase opportunities for green business development and/or the application of SCP practices.

A technical assistance facility (implemented by a consortium led by Sequa gGmbH, with GFA Consulting Group and Pracsis sprl) provides resources to support the development and steering of the SWITCH to Green initiative.

The SWITCH to Green Facility has a multi-task role, broken down into three main areas of action:

1. **Technical support:** Technical advice is provided to better identify and formulate actions contributing to 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.

2. **Dialogue and exchange of experience:** The facility supports the organisation of policy and learning events to assist coordination and dialogue among inclusive green economy stakeholders (for example UN organisations, government representatives and the private sector). On an annual basis, it facilitates the organisation of the SWITCH Coordination event involving key partners implementing the main EU-supported international cooperation initiatives on the green economy (*http://www.switchtogreen.eu/wordpress/wp-content/uploads/2016/10/Meeting-report.pdf*).

3. **Knowledge creation and management:** The facility supports the planning and delivery of training and publications, with a view to promoting capitalisation on existing knowledge and EU domestic experience on the inclusive green economy, such as the Green Action Plan for SMEs or the Eco-innovation Action Plan (relevant case studies can be consulted at *http://www.switchtogreen.eu/?p=153*).

Lab session organised during the recent European Develoment Days (Brussels, June 2017) where clear and successful examples from the SWITCH Programmes' grant projects and beneficiaries were showcased and a set of recommendations on improving the effectiveness of private sector investments in terms of sustainable growth and green jobs put forward.

The SWITCH to Green facility has been involved in the identification and formulation of more than 50 EU-supported actions (from private sector development to technical vocational education and training and from agri-processing to industrial innovation and logistics programmes) contributing to a green economy transition in partner countries globally. It has built bridges between more than 15 development cooperation partners involved in EU-funded inclusive green economy actions, encouraging collaboration, e.g. among the regional SWITCH programmes (such as joint actions supporting the private sector in terms of access to green finance, green business/products access to international markets and global value chains, etc.), or policy-related initiatives (such as coordinated implementation of activities by PAGE and the policy components of the SWITCH regional programmes).

In addition, it conceived and designed a gateway to the Inclusive Green Economy, for the European Union and partner countries, through its website and the interactive map displaying those EU-funded actions which promote an Inclusive Green Economy.
The SWITCH to Green initiative efforts to improve the overall coherence, coordination and visibility of EU-funded international cooperation initiatives on the green economy are continuing. Ongoing priorities include the development of an EU strategic approach to international cooperation on the green economy, as well as the identification and formulation of new actions, aligned to the new European Consensus on Development and complementing relevant activities under the European External Investment Plan.

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ANNOUNCEMENTS

Farewell from the SWITCH-Asia Network Facility

As 2017 draws to an end, so does the mandate of the SWITCH-Asia Network Facility. In December, the present team, led by Dr Uwe Weber, will complete its assignment, after more than four years of intense interactions and exchanges with the multiple SWITCH-Asia components and the SCP community at large.

Uwe Weber, Kartika Anggraeni, Silvia Sartori and Jana Brauer would like to thank all organisations and professionals, based in Asia, Europe and beyond, that have contributed to the Network Facility's initiatives during the past years, providing insights, guidance and support to our different undertakings, from publications to events, from impact documentation to data collection, and more.

Our exchanges and synergies have been a source of constant inspiration and growth along our joint mission to advance sustainable development. In these 51 months, important foundations have been laid to further embed sustainability into our lifestyles and growth models. We remain committed to continue these efforts and trust our paths will cross again.

Our legacy will be carried forward by a newly-established 'SWITCH-Asia SCP Facility', located in Bangkok. More information about it will become available in the coming weeks and shared with you via our website and newsletter.

Farewell Greetings from the SWITCH-Asia Network Facility

It has been a pleasure to work with you all!
Best wishes for your projects and to the new SCP Facility!

Let us stay connected

Uwe, Jana, Kartika, Silvia