

ECO-ENTREPRENEURSHIP STRATEGIES AND EXPERIENCES FROM THE SWITCH-ASIA PROGRAMME

Scaling-up study 2013



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Abbreviations

| | |
|------------|---|
| ADB | Asian Development Bank |
| Bamboo | Sustainable Revival of Livelihoods in Post-disaster Sichuan: Enhancing Eco-friendly Pro-poor Bamboo Production Supply Chains to Support The Reconstruction Effort |
| BGR | Bundesanstalt für Geowissenschaften und Rohstoffe |
| Biomass SP | Sustainable Production (SP) of the Biomass Industries in Malaysia: Optimising Economic Potential and Moving Towards Higher Value Chain |
| BMU | Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit |
| BoP | Base of the pyramid |
| BRIC | Brazil, Russia, India, China |
| CIP | Competitiveness and Innovation Framework |
| COTEX | Consortium of Textile Exporters |
| CSCP | Collaborating Centre on Sustainable Consumption and Production |
| CSR | Corporate social responsibility |
| DENR | Department of Environment and Natural Resources |
| EC | European Commission |
| EcoJute | Jute: An Eco-friendly Alternative For a Sustainable Future |
| EDII | Entrepreneurship Development Institute of India |
| EIB | European Investment Bank |
| EIF | European Investment Fund |
| EIP | The Entrepreneurship and Innovation Programme |
| EU | European Union |
| GDP | Gross domestic product |
| GEPA | Gesellschaft zur Förderung der Partnerschaft mit der Dritten Welt mbH |
| GPIoS | Green Philippines Island of Sustainability |
| ICT | Information and communication technologies |
| ILO | International Labour Organization |
| JEREMIE | Joint European Resources for Micro and Medium Enterprises |
| JITPPL | Jaipur Integrated Texcraft Park Private Ltd |
| KIA | Kenan Institute Asia |
| LED | Light-emitting diode |
| LGU | Local government unit |

| | |
|--------------|--|
| LIFE | The EU Financial Instrument for the Environment |
| MAIT | Manufacturing Association Information Technology |
| MEET-BIS | Mainstreaming Energy Efficiency Through Business Innovation Support |
| METP | EU-China Managers Exchange and Training Programme |
| NGO | Non-governmental organisation |
| OSH | Organisational safety and health |
| Pro-Sustain | Promoting Fair Trade and Sustainable Consumption in India |
| R&D | Research and development |
| SCP | Sustainable consumption and production |
| SIP | Action Plan for Sustainable Consumption and Production and Sustainable Industrial Policy |
| SMART Cebu | SMEs for environmental Accountability, Responsibility and Transparency |
| SME | Small and medium-sized enterprise |
| SPIN VCL | Sustainable Product Innovation in Vietnam, Cambodia and Laos |
| SusTex | Sustainable Textiles for Sustainable Development |
| TMP | Toyota Motors Philippine |
| TtT | Train the trainers: a proposal to train Chinese construction sector SME's in energy saving Techniques and technologies |
| UN | United Nations |
| UN ESCAP | United Nations Economic and Social Commission for Asia and the Pacific |
| UNEP | United Nations Environmental Programme |
| WEEE-Recycle | Establishing E-Waste Channels to Enhance Environment Friendly Recycling |

List of projects accessed for this study

| Project title | Project Abbreviation | Project location | Target consumer group |
|--|------------------------|-------------------------|---|
| <i>Establishing E-Waste Channels to Enhance Environment Friendly Recycling</i> | <i>WEEE Recycle</i> | India | Informal e-waste businesses |
| <i>Train the trainers: a proposal to train Chinese construction sector SME's in energy saving Techniques</i> | <i>TtT</i> | China | Companies and educational institutes in the construction sector |
| <i>Sustainable Textiles for Sustainable Development</i> | <i>SusTex</i> | India | Small block-printing textile enterprises |
| <i>Greening Philippine Islands of Sustainability</i> | <i>GPIoS</i> | Philippines | Companies of different sizes |
| <i>Mainstreaming Energy Efficiency Through Business Innovation Support</i> | <i>MEET-BIS</i> | Vietnam | Technology providers in the region |
| <i>Shop for Change Fair Trade</i> | <i>Shop for Change</i> | India | Farmers and textile producers |
| <i>Promoting Fair Trade and Sustainable Consumption in India</i> | <i>Pro-Sustain</i> | India | Farmers and textile producers |
| <i>Sustainable Product Innovation in Vietnam, Cambodia and Laos</i> | <i>SPIN VCL</i> | Vietnam, Cambodia, Laos | SMEs in the region |
| <i>Sustainable Production (SP) of the Biomass Industries in Malaysia: Optimising Economic Potential and Moving Towards Higher Value Chain</i> | <i>Biomass SP</i> | Malaysia | SMEs working with biomass |
| <i>Sustainable Revival of Livelihoods in Post-disaster Sichuan: Enhancing Eco-friendly Pro-poor Bamboo Production Supply Chains to Support The Reconstruction Effort</i> | <i>Bamboo</i> | China | Companies operating in construction |
| <i>SMEs for environmental Accountability, Responsibility and Transparency</i> | <i>SMART Cebu</i> | Several | Wood-based industries |

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Introduction

Eco-entrepreneurship is about developing market-based solutions to development challenges.

As sustainable consumption and production (SCP) is increasingly recognised as an effective, workable approach for businesses to improve their environmental performance, anything that contributes to its success and expansion should now be shared urgently in the push to use our earthly resources more efficiently. The challenge these days is to rapidly increase SCP for businesses who usually only change their methods in response to financial incentives in the market place, or to new legal requirements imposed by the government.

Green or 'eco' entrepreneurs are those deliberately seeking business opportunities to provide, or support, profitable yet resource-efficient products and services. Developing market-based solutions, revenue models, and eco-entrepreneurial activities are key to long-term sustainability. The dossier outlines the potential of eco-entrepreneurs and proceeds to describe relevant environmental and eco-entrepreneurial trends in Europe and Asia. In its main part, this dossier explores the eco-entrepreneurial potential of SWITCH-Asia projects, many of which are three or more years old, showing how they are doing it and what they have learnt along the way.

A study of the projects revealed that entrepreneurs have been working in three broad areas that have good potential to 'scale-up' SCP: raising awareness of specific practices through strategic marketing activities with their target groups;

acting as match-makers for players along their supply chains to help implement new environmental standards; and developing revenue-based services within business membership organisations.

Within the projects, the starting point is usually where an individual wishes to launch a 'sustainable business' or where existing partner organisations decide to improve their long-term continuity or expand pilot activities, and kick off with an eco-entrepreneurial activity. This report is published as an on-line dossier of SWITCH-Asia projects presented according to the market opportunities they are tapping into. These 'entry points' to entrepreneurship include match-making, formalising informal activities, becoming service providers, capacity building, and training the trainers.

'Scaling-up' activities can be very effective in replicating patterns of sustainable consumption and production and it is this information that the EU and its partners in Asia now want to share as broadly as possible.



1.0 The potential of eco-entrepreneurship

“The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man”.

George Bernard Shaw

1.1 Eco-entrepreneurs as agents of change

Socially and sustainably minded entrepreneurs (or social-/eco-entrepreneurs) solve environmental problems through the market, identifying environmental challenges and reinterpreting them as market gaps. They subsequently aim to turn those gaps into business opportunities and reduce or eliminate negative impacts on the environment through market mechanisms by offering their products and services (Carter, 2010). Eco-entrepreneurs have an overall business approach similar to more conventional entrepreneurs, including a revenue model. However, major drivers for setting up their enterprise are the strong ethical and environmental considerations which form part of their business model (OECD, 2011). In addition, their entrepreneurial activity has an overall *positive* effect on the environment (SustainAbility, 2007). Eco-entrepreneurs are often closely connected to SMEs as they usually operate smaller business and/or target their services particularly to SMEs.

Eco-entrepreneurs do not only strive to solve environmental problems but are vital agents of change. In a resource-constrained and market-based world, they are pioneers and leaders of sustainability as they provide the business community with a role model using green business practices (Schaper, 2005). Eco-entrepreneurs are driving the mainstream adoption of environmental practices and help to implement and fix change in society. They are long-term problem-solvers, since they usually aim to be self-sustaining while transforming environmental externalities into revenue generating business models. Their success does not depend on continued external funding but is self-perpetuating (Carter, 2010).

Box 1 explains the concepts of entrepreneur, social entrepreneur and eco-entrepreneur and how they may intercept and/or differ.

Projects or businesses can be eco-entrepreneurial minded in several ways. For the stories featured in this dossier, three major approaches have been identified that define projects as being eco-entrepreneurial.

Some projects featured in the eco-entrepreneurial case studies have an individual eco 'hero' who drives the project, a person with a specific idea to meet an environmental challenge by setting up an enterprise. Others act more collectively and foster eco-entrepreneurship in the region, helping new (eco-) entrepreneurs to set up their own business or to make it more eco-entrepreneurial. In both cases the individual and/or the project will in some way promote both environmental sustainability and enterprises/ entrepreneurship.



1.2 The potential of eco-entrepreneurship to meet environmental challenges in Europe

This section outlines environmental challenges in Europe and the role of SMEs and entrepreneurs to meet those challenges. It also highlights European policy responses to the challenges

Box 1:

Concepts related to eco-entrepreneurship

The concept of eco-entrepreneurship is connected to other concepts such as that of entrepreneurship and that of social entrepreneurship.

Entrepreneurs are people who, through the practical exploitation of new ideas, establish new ventures to deliver goods and services currently not supplied by existing markets. (SustainAbility, 2007, p. 7). Entrepreneurs are people who have a business idea/vision and develop it, by launching new products, services or making innovations to the process. This often makes them agents of change.

Social entrepreneurs prioritise social returns on investment and aim to solve social challenges as part of their business model and raison d'être. They often aim to transform dysfunctional systems that create social problems in the first place (SustainAbility, 2007, p. 7).

Eco-entrepreneurs have environmental problem-solving techniques as part of their business model and raison d'être. They either offer their services to other enterprises to help them become more eco-entrepreneurial or are themselves eco-entrepreneurial by offering products and services that are more sustainable than those commonly offered. Their solutions are always market-based and dedicated to solving a contemporary environmental problem. Overlaps between social and eco entrepreneurship are not uncommon. Organisations or projects are also regarded as being eco-entrepreneurial if their purpose is to promote the eco-entrepreneurial concept and encourage other companies to become increasingly green and/or develop eco-entrepreneurial characteristics themselves (i.e. a revenue model)

and discusses policy programmes that support eco-entrepreneurs in order to show the role of policy support and to provide examples of its fostering power. Such examples could be taken up by other regions, such as Asia, to encourage eco-entrepreneurship as one long-term solution to environmental challenges.

The role of SMEs and eco-entrepreneurs in a resource-constrained Europe

Environmental trends in Europe challenge entrepreneurs but also present new opportunities. The region faces a number of environmental challenges that can provide significant economic opportunities for enterprises. One such challenge relates to the falling availability of natural resources on the one hand, and rising material costs on the other hand. Material costs have increased due in part to their finite nature and the laws of supply and demand, but also due to a general rise in demand, which exacerbates the first trend (CSCP, 2010). Peak oil, (oil extraction begins to decline after it reached its maximum), might be reached by 2020, copper may be exhausted within 40 years, lead and zinc may be all consumed in 20 years (BGR 2009, BMU 2009). Increasing demand from emerging economies and population growth exacerbates these challenges (UN DESA 2010). In Germany alone, the BMU estimates that material costs account for about 40% of an enterprise's production costs (BMU 2009). This price surge may affect SMEs in particular as they already

tend to have less capital, and experience more difficulty in obtaining finance compared with larger enterprises. It is therefore not easy for them to sustain the higher costs of energy and water, for example (European Central Bank, 2013, UNEP, n.a.).

Global challenges such as climate change affect Europe as well, exacerbating the shrinking state of natural resources, and increasing pressure for sustainable production and consumption patterns (see Box 2). Since such trends are likely to continue, there is an urgent need for SMEs in particular to be prepared, and become as resource efficient as possible. Policy, too, must emerge with adequate responses that are both long-lasting and innovative.



Box 2: Global environmental challenges - climate change and Europe

Between 1970 and 2004 global emissions increased by 70%, exceeding the natural range of climate related gases (UNEP CSRO, 2011). The past decade has seen annual increases of 2.7% with 2012 emission growth increasing to 3%. If such trends continue, global average temperatures are likely to exceed 2 degrees, resulting in increasing melting of sea ice, an increase in extreme weather events and severe consequences for global agricultural production. According to IPCC predictions, emissions need to fall by 50-85% between 2000 and 2050 and peak between 2000 and 2015 in order to stabilise the climate and keep the global average temperature below 2 degrees. The EU with its current per capita CO₂ emission of 7.5 tons (11% of global emissions), has committed itself to a 20% decrease by 2020 (from 1990 levels) and 80-95% by 2050 (European Commission 2013). About 60-80% of such change can come from changes in energy supply and use, with efficiency measures being particularly promising.

There are over 23 million SMEs in Europe which have a defining role both for the region's prosperity and for its sustainability (European Commission, 2012c). SMEs are the backbone of the European economy being 99% of all com-

panies, providing 70% of all employment, and 60% of turnover from manufacturing and services (European Commission, 2013d). At the same time, 60-70% of environmental impact is connected to SMEs, with main contributions to greenhouse gas

emissions occurring in the sectors relating to energy, manufacturing, gas and water supply (Danish Technological Institute, 2010). Increasing SME efficiency is a win-win situation both in terms of decreasing material costs and lowering CO₂ emissions.

For eco-entrepreneurs in Europe, such a situation provides considerable business opportunities. They can offer services to SMEs but also to bigger companies to help them meet environmental challenges. They can promote resource efficiency or provide support in the face of new environmental regulation, sometimes even anticipating it to gain business advantages.

Rising resource prices and international pressure on governments for more stringent environmental regulation increases demand from the private sector for such services and eco-entrepreneurs can bridge the gap between rising pressures on the one hand and rising demand for environmental services on the other. Eco-entrepreneurs can also produce eco-innovative products and services, such as new products made from recycled waste or existing products made from more sustainable materials. They may also provide services in the field of environmental technology, for instance in renewable energy or efficient production. Using such technology may increase a company's or region's international competitiveness and boost overall European economic performance (especially if the technology is exported). Already, the global greentech market is estimated at US\$ 0.6 - 1 trillion and growing, and European companies are holding the greatest market share (Eco Innovation Observatory, 2012).

EU policy responses and support programmes to meet environmental challenges and promote eco-entrepreneurship

European policy has found several responses to environmental challenges such as rising resource prices, increased resource scarcity and global environmental issues. And they tend to centre on market-based solutions and support for eco-entrepreneurs. This section highlights the fact that policy instruments fostering eco-entrepreneurship and meeting environmental challenges are already available and in practice. Some of them could serve as examples for other regions, such as Asia, to help foster eco-entrepreneurship there. The EU has several strategies and policy programmes to support the greening of industry, eco-innovation and eco-entrepreneurship.

Many policy measures are embedded in the new economic strategy, *Europe 2020*, which emphasises smart and sustainable growth and the creation of *green jobs*. Green Jobs are: “decent jobs which help protect the environment, ensure a shift to a low carbon development and adapt to the effects of climate change. This includes jobs that reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable.” (ILO, 2012). In Europe around 20 million jobs are thought to be connected to green industries, with renewable energies being the main employer. Other jobs need ‘upgrading’ and re-orientation in order to become ‘green’ though heavy industry, for example, would need more significant product and technical innovation or complete restructuring. The agenda *New skills for New Jobs* focuses on training and capacity building to green the European economy by installing the

necessary technical and organisational knowledge in modern workers.

The EU has set up a *European Resource Efficiency Platform*, which was to make recommendations in the summer of 2013 (European Commission, 2013e). The *Action Plan for Sustainable Consumption and Production and Sustainable Industrial Policy (SIP)* is a policy framework for more sustainable consumption and better products and focuses on resource and energy efficiency and product innovation. *SIP* supports the competitiveness of eco-industries by promoting measures such as eco-design standards and eco-labelling.

Such policy strategies for green jobs and sustainable growth provide an ideal ground for eco-entrepreneurs to grow and become either part of the green industries themselves or help businesses restructure in order to become green or provide greener jobs.

Next to the new economic strategy for sustainable growth and green jobs, the EU offers a number of support programmes to green the European economy and support eco-entrepreneurship, financially, through information and awareness-raising, or through networking support. A particularly interesting one regarding eco-entrepreneurship is the *Eco-Innovation Programme* which supports SMEs and entrepreneurs in financing green ideas. This programme offers support to SMEs and entrepreneurs towards the optimal use of resources, such as water and recycling measures. Eco-innovation is intended to meet environmental aims and improve economic performance in the EU (European

Commission, 2012a). To date, the EU controls about one third of the world's 'green market' which provides considerable business opportunities for SMEs and eco-entrepreneurs particularly in areas such as clean energy and waste management. However, BRIC (Brazil, Russia, India, China) countries in particular are engaging increasingly with green markets and eco-innovative practices, for instance in the field of renewable energy (Eco Innovation Observatory 2012).

The *Competitiveness and Innovation Framework Programme (CIP)* promotes innovation in SMEs in areas such as renewable energies and energy efficiency, and additionally in information and communication technologies. It has a particular sub-programme for entrepreneurs, the *Entrepreneurship and Innovation Programme (EIP)*.

The LIFE (*the EU Financial Instrument for the Environment*) programme has specific funds to promote green jobs, mostly through promotion of skills and reorientation of production methods, but also restructuring in heavy industries. For SMEs and other organisations operating in the natural environment or in the field of biodiversity, there is the EU *LIFE+ programme*. Activities in the area of nature and biodiversity, environmental policy and governance as well as information and communication may be funded through the overall budget of 2.1 billion euros.

SMEs in so called 'convergent' regions (economically less developed regions in Europe) may benefit from EU structural funds which provide direct financial aid. The *European Regional Development Fund*, for instance, helps with access to capital and aims at improving the general

entrepreneurial culture in the region by providing entrepreneurship training, for example. The *European Social Fund*, which is part of the EU structural funds, provides specific support for managing economic and social change by improving educational systems and institutional capacity at the national and local level.

The EU also offers a number of financial instruments (mainly loans with favourable conditions) to support SMEs, such as the *Joint European Resources for Micro and Medium Enterprises (JEREMIE)*. Together with the European Investment Fund (EIF) and the European Investment Bank (EIB), the programme provides access to micro-credit, venture capital finance and other forms of capital. Start-ups especially are targeted.

The European Commission provides assistance regarding the internationalisation of SMEs. Some instruments target the European region (such as the *European Neighbourhood Policy*, promoting economic and political cooperation for SMEs), others go beyond that. Among the latter is the *East Invest Programme* to support economic and business development in the Eastern European and East Asia region. Programmes geared specifically towards Asia include the *EU Gateway Programme* which promotes the introduction of European products on Japanese and South Korean markets. The programme *Understanding China* promotes understanding of the Chinese economy and market. The *EU-China Managers Exchange and Training Programme (METP)* provides training for managers in language and culture of the other region. In India, the *European Business and Technology Centre* has been established as an external

business centre and a point of reference for European companies and researchers operating in the region. It aims to promote European clean technologies in the Indian market. Similarly, the *EU SME Centre* in China provides support and information to SMEs operating in that region.

Finally, SMEs can find support at the *Enterprise Europe Network*, the largest network of its kind providing information on EU legislation and support regarding SMEs. The support programmes outlined highlight the fact that the EU frames environmental challenges in the light of enhancing economic performance through increased efficiency, decoupling and enhancing technology and eco-innovation. In several of the policy responses outlined, the economic benefits of environmental measures or at least the likelihood for it to incur no extra cost to businesses and consumers is emphasised strongly. In this regard, eco-entrepreneurship could be a particularly promising response to environmental challenges as they increase market value while contributing to the answers needed for pressing environmental issues.

Tapping the full potential of eco-entrepreneurship

Eco-entrepreneurs are not only interested in being more efficient and greener but as also intend to be environmental problem-solvers and agents of change. Entrepreneurial solutions promise to be innovative, long-term and beneficial to both the environment and the economy (SustainAbility, 2007). Since eco-entrepreneurship can be a win-win response boosting both environmental and economic performance, eco-entrepreneurs are receiving increasing attention from policy-makers as reflected by the many EU programmes supporting them.

Still, despite the increasing value policy makers and institutions such as the EU put on eco-entrepreneurial solutions, funding remains comparatively low. While about US\$ 2 billion is going into 'clean tech' industries in the US and the EU, and US\$ 200 billion into philanthropy in the US, less than US\$ 200 million are flowing into socio- and eco-entrepreneurship worldwide. Part of the reason is that these entrepreneurs often have unique approaches to business, falling somewhere between charitable and profit-oriented work, that do not fit into the typical funding criteria of investors or public authorities. Initial investment and funding hence remains a considerable barrier – a finding that is confirmed by many social eco-



entrepreneurs (Wagner, 2010).

Governments can therefore still do a lot more to support eco-entrepreneurship including the provision of funding opportunities and the introduction of other environmental measures. Even if governments do not target eco-entrepreneurs directly, introducing measures for environmental protection and having stringent environmental legislation such as obligatory minimum resource efficiency or eco-labelling standards, helps

the creation of companies with an eco-entrepreneurship approach. Improving links between eco-entrepreneurs and mainstream business and offering targeted funding opportunities can also be helpful (SustainAbility, 2007).

Finally, investment in training related to green jobs may be helpful, both by the direct provision of training to enterprises, and by including concepts that green organisations wish to promote in tertiary education. The growing green sector increasingly requires green skills such as efficient production methods but in Europe so far only France has adopted a programme that offers green skills training (European Commission, 2013c)

). **Box 3: Some EU support programmes promoting (eco-) entrepreneurship and sustainability**

Europe 2020: An overall European strategy for more sustainable economic growth.

The Eco-innovation Programme: Supports SMEs in introducing innovative environmental measures such as energy efficiency technology.

European Resource Efficiency Platform: Aims to enhance environmental product performance and increase demand for sustainable products.

Action Plan for Sustainable Consumption and Production and Sustainable Industrial Policy: Aims to increase resource and energy efficiency as well as product innovation.

Competitiveness and Innovation Framework Programme (CIP): promotes innovation in SMEs in areas such as renewable energies and energy efficiency and ICT.

Life+: Supports SMEs in the area of biodiversity and environmental policy.

LIFE: Promotes green jobs in enterprises.

Marco Polo: Promotes the sustainability of freight transport.

The EUREKA Programme: Promotes market-oriented research and development (R & D).

The European Regional Development Fund: Support for SMEs in structurally weaker European regions.

The European Social Fund: Supports managing economic and social change.

Joint European Resources for Micro and Medium Enterprises (JEREMIE): Provides access to micro-credit, venture capital finance and other forms of access to capital.

East Invest: Supports economic development and business environment in the Eastern European and East Asia regions.

EU Gateway Programme: Promotes the introduction of European products on Japanese and South Korean markets.

Understanding China: Promotes understanding of the Chinese economy and market.

EU-China Managers Exchange and Training Programme (METP): Provides training in language and culture of the other region to managers.

The Enterprise Europe Network: Provides information on EU legislation and support regarding SMEs.

European Business and Technology Centre: The centre acts as a point of reference to promote clean technologies and support companies and researchers operating in the region.

1.3 The potential of eco-entrepreneurship to meet environmental and social challenges in Asia

Environmental challenges and access to basic needs in Asia

Both Europe and Asia face a number of global and regionally specific environmental challenges such as climate change and resource scarcity which can, and increasingly are, turned into opportunities. In addition to environmental issues, Asia is experiencing rapid social change owing to a rising middle class and its increasing consumption which runs alongside regional challenges in access to basic needs for much of the population. Nearly half of the world's absolute poor, with a per capita income of less than US\$1.25 a day, live in Asia (de Vera et al, n.d.).

Asia makes a significant contribution to

2000 becoming 1.8 million tons/day in 2025 is also a potential business opportunity for eco-entrepreneurs operating in the recycling business (Akenji et al 2012). Other sectors with high environmental impact in the region include food, housing and transport, and the cross-cutting sectors water and energy.

As in Europe, SMEs, forming about 90% of all companies, are some of the most polluting agents in the region and have prompted governments to launch measures to meet their environmental challenges (UN ESCAP, 2012). An increasingly green development provides tremendous opportunities for these SMEs and through

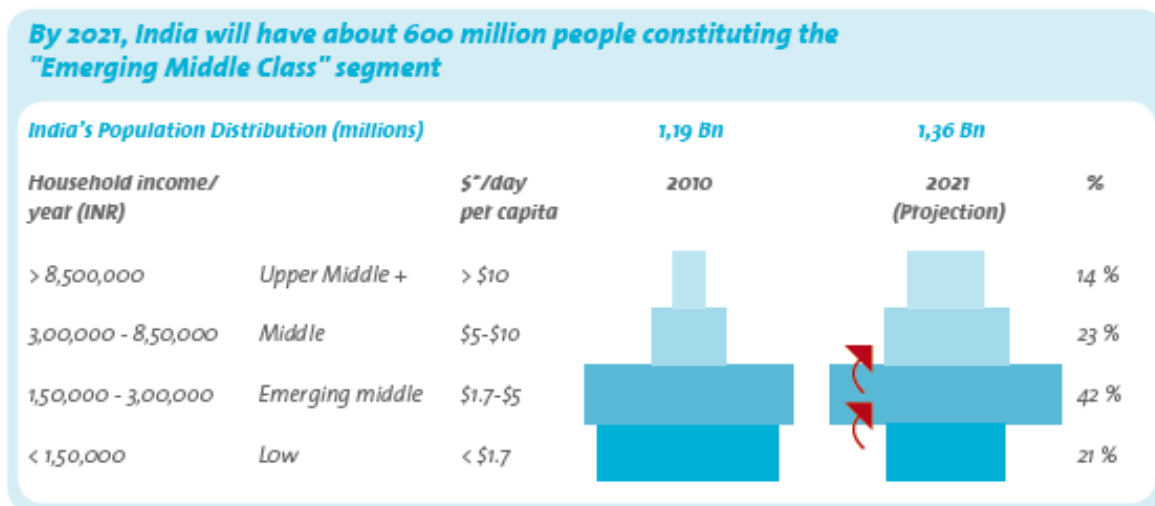


Figure 1: India's rising middle class (source: Tunçer et al, 2012).

global greenhouse gas emissions, due in part to industries fabricating products being consumed in third countries, but it also faces a variety of environmental challenges at country levels. The generation of solid waste is one of them. But the 'challenge' of what to do with 0.76 million tons of waste a day in

them for Asian economies, to become more efficient and innovative and to leapfrog environmentally harmful manufacturing processes.

The *Asian Development Bank* estimates that in 2008 the middle class in developing Asian

economies had risen to 1.9 billion people, 56% of the population, up by 21% since 1990, and reached US\$ 4.3 trillion in annual expenditure. By 2030, two-thirds of the global middle class is expected to live in the Asia-Pacific region, which means it will be responsible for 43% of global consumption (ADB, 2010). In India alone, around 600 million people will constitute the new middle class in 2021 (see Figure 1) (PwC, 2012). Some surveys indicate however, that a significant share of these consumers (55%) is willing to pay extra for sustainable products (UNEP, 2013).

The trend of the emerging middle class and its rising consumption aspirations is accompanied by a growing inequality gap. According to the Human Development Report, inequality is increasing in most countries in East Asia and the Pacific with a more acute lack of access to basic needs at the lower end of the gap (UNDP, 2010). Rising consumption comes with increasing social and environmental challenges and where possible, both should be addressed together.

Environmental issues, social issues, and unsustainable consumption patterns are posing significant challenges but also open up new prospects and together with the growing middle class represent a considerable business opportunity for potential entrepreneurs. As in Europe, wasteful consumption provides an additional leverage point for green entrepreneurs and policy-makers to seek out more efficient, sustainable solutions to environmental problems (Tunçer et al, 2012).

Responses in policy and development cooperation to environmental and social challenges

Many policy-makers in Asia pay increasing attention to environmental sustainability. For instance, 79% of the South Korean economic stimulus package during the economic crisis in 2008/2009 was considered green, accounting for about 7% of its GDP. China used 21% of its stimulus package for green investments, representing 0.9% of its GDP (OECD, 2011).

In development cooperation in general, and in Asia in particular, there is a trend towards market-driven solutions. The charm of this lies in the possibility of not having to provide funding after initialising a project. If it has its own revenue model, a development project could be self-supporting. Many organisations place their hopes in approaches that boost economic performance while addressing a particular social or environmental challenge. USAID for instance has introduced a specific fund to support such measures, saying “(at) USAID we’re pursuing market-driven solutions that really look to see how to involve the business community and we just unveiled a new venture capital style fund called *Development Innovation Ventures (DIV)* which will invest in creative ideas that we think can lead to game-changing innovations in development.” (USAID, 2010).

The various internationally operating foundations such as the *Ashoka* or the *Skoll Foundation* that specifically support social and eco-entrepreneurial solutions further emphasise this trend. Searching the project database of the *Asian Development Bank*, it is noticeable how many projects have a private sector, market-driven approach especially those dealing with energy access,

renewable energy and/or energy efficiency (ADB, 2013b). One example is the off-grid-pay-as-you-go solar power project in rural India which aims to enable under-served people in rural areas to meter pay as they go for electricity using mobile phones (ADB, 2013a).

Box 4: Asian institutions promoting entrepreneurship

The Entrepreneurship Development Institute of India aims at establishing entrepreneurship in education and to promote social and economic opportunities. It set up 12 entrepreneurship institutes across the country and offers a postgraduate diploma in entrepreneurship. It has links to both international organisations and local governments and offers specific training for social entrepreneurship and entrepreneurial education to rural, poor people (EDII, 2013).

Another entrepreneurship focused institute based in Thailand is the Kenan Institute Asia. It specialises on market driven solutions and has five key areas among which are economic development as well as sustainable tourism and corporate social responsibility (CSR) (KIA, 2013).

Many regions in Asia have a certain tradition for social entrepreneurship and market-driven solutions. The considerable efforts to provide poverty alleviation through so-called 'base of the pyramid' business approaches such as the Aravind Eye Care Hospitals (providing eye care to the poor by means of cross-subsidizing and extreme efficiency) highlight this (Aravind, 2011). Additionally, many larger companies in the region engage in considerable social entrepreneurship efforts. An example is Tata and its *Tata Social Enterprise Challenge*

which aims to find and reward the most promising social entrepreneur in India. Asia also has a number of local institutes specifically set up to support entrepreneurship in the region (Box 4). The promotion of entrepreneurship is prominent when it comes to gender equality. By providing a source of income, women's entrepreneurship leads to female empowerment by and thus may increase their status (UN ESCAP, 2012).

Greener markets and eco-entrepreneurship on the rise

In the context of environmental sustainability receiving more attention in Asia and the importance of eco-entrepreneurship as a provider of innovative, sustainable solutions, studying it "went from being simply 'fashionable' to being essential for policy guidance." (OECD 2011). Similarly, UN ESCAP identifies entrepreneurship that is coupled with finding social or environmental solutions as an emerging trend. Policy-makers, they say, should pay close attention to this trend due to its considerable innovation and solution potential. Some governments in Asia are already implementing specific programmes to support social and eco entrepreneurs. The Thai government for instance initiated a national committee on social enterprise development in 2010, which became the permanent Thai Social Enterprise Office in 2011. In Singapore the first stock exchange, *Impact Investment Exchange Asia*, focusing solely on social enterprises aims at providing access to capital for social entrepreneurs.

Sectors which have a tendency to be unnecessarily inefficient, for instance waste or energy, offer particularly promising eco-

“At a time when there is growing mainstream interest in ‘base of the pyramid’ (BoP) markets, these people (entrepreneurs) are in the thick of the BoP action. They aim to evolve new strategies to harness a wider range of resources to the task, while simultaneously experimenting with new ways of meeting the myriad needs of poor people. Their hands-on knowledge of such markets and of the political and regulatory environments potentially offers hugely valuable market intelligence to mainstream business.” (SustainAbility. 2007. p.

entrepreneurial opportunities. Other areas with eco-entrepreneurial potential include approaches that address resource use and poverty at the same time. Product service systems are an example, as they imply not having to purchase (which people may not have the means to do) but instead to ‘rent’ a product. Technology transfer can be helpful in some cases where SMEs in Asia are facing obstacles in building their capacity (Eco Innovation Observatory, 2012). By exchanging environmental technology and region.

Besides leapfrogging, a rise in stricter environmental legislation in some regions, such as the EU, is already providing eco-entrepreneurial opportunities. Such legislation can force businesses in other regions to achieve minimum standards to be able to export to the EU (MIT, 2012; Ng 2006). Adhering or surpassing those standards may mean a significant business advantage, a fact which eco-entrepreneurs can exploit when selling their products or services.

New, more sustainable markets (i.e. fair-trade products, certification processes) also

offer significant eco-entrepreneurial opportunities to meet social and environmental challenges, as those markets tend to grow faster than conventional markets: In the agricultural sector for instance, the production of socially and environmentally sustainably produced tea has grown significantly in recent years. Such trends are especially important in countries like Nepal and Sri Lanka where tea is a prime export and where organic tea, with growth rates of 15-20% annually, has considerable potential for improving the sustainability and the quality of life in rural areas. Green farming practices may hence not only benefit the environment, but also show significant social returns as, especially on small farms, such practices can increase yields by 54 to 179% (UNEP, 2013). Next to the agricultural sector, the manufacturing sector has seen significant changes as well: In this sector, responsible for 20-35% of global CO₂ emissions and significant chemical pollution, ISO 14000 certifications have increased, and eco-labelling and energy efficient practices are on the rise. Interestingly, in 2011 for the first time, the Asian region had more certification bodies than Europe. Increasing sustainability certification may need to be treated with caution however: In regions where corruption is a challenge, sustainability certificates may have less informative value.

Globally, the efficient technology market is expected to rise to \$US 2.2 Trillion by 2020. Asia increasingly engages in the sustainable energy and technology market. India and China for instance are important producers of wind- and solar technology (UNEP, 2013).

2.0 SWITCH-Asia's eco-entrepreneurship stories

Eco-entrepreneurial activities are market-based solutions which aim to remove barriers or address opportunities towards environmental sustainability besides making profit. These activities can flourish only if certain enabling factors are in place. Market conditions and policy measures should be supportive and the necessary skills and capacity should be present, among others. These elements are presented within each of the case studies of entrepreneurial SWITCH-Asia projects.

How is eco-entrepreneurship understood in the context of the SWITCH-Asia programme? It refers to companies adopting eco-friendly business strategies and/or SWITCH-Asia projects launching an eco-entrepreneurial activity. Seeds of eco-entrepreneurship may also be growing in a project even though they are not mainly focused on eco-entrepreneurship. In SWITCH-Asia

projects, it is particularly important for the development of market-based solutions, revenue models or eco-entrepreneurial activities to continue beyond the lifetime of a project in order to bring long-term sustainability.



Case studies are presented below according to the market opportunities they are tapping into. These 'entry points' for entrepreneurship include facilitating matchmaking, formalising informal activities, becoming service providers, building capacity and training the trainers and product innovation.

2.1 Enabling factors for successful eco-entrepreneurship in Asia

There are a number of enabling factors that are important for the success of an eco-entrepreneur which fall roughly into four categories:

- 1) Factors related to policy, such as regulatory frameworks;
- 2) Factors that depend on the broader economic framework, such as market demand or macroeconomic trends like a national/global recession or boom;

- 3) Factors related to the cultural environment and traditions of the region in which the entrepreneur operates;
- 4) Factors that depend more on the eco-entrepreneur and their knowledge.

Figure 2 summarises these factors, highlighting those that are specific to eco-entrepreneurs (factors in light blue are relevant for all entrepreneurs). Some factors highlighted are relevant for all entrepreneurs, for instance 'legal

framework' (as part of the policy section framework). However, they have a special relevance for eco-entrepreneurs, as stringent environmental regulation may provide more market opportunities for them, increasing demand for their products or services. 'Policy framework' is clearly shown to be important to eco-entrepreneurs with four out of five enabling factors being highlighted.



ENABLING FACTORS FOR ECO-ENTREPRENEURS

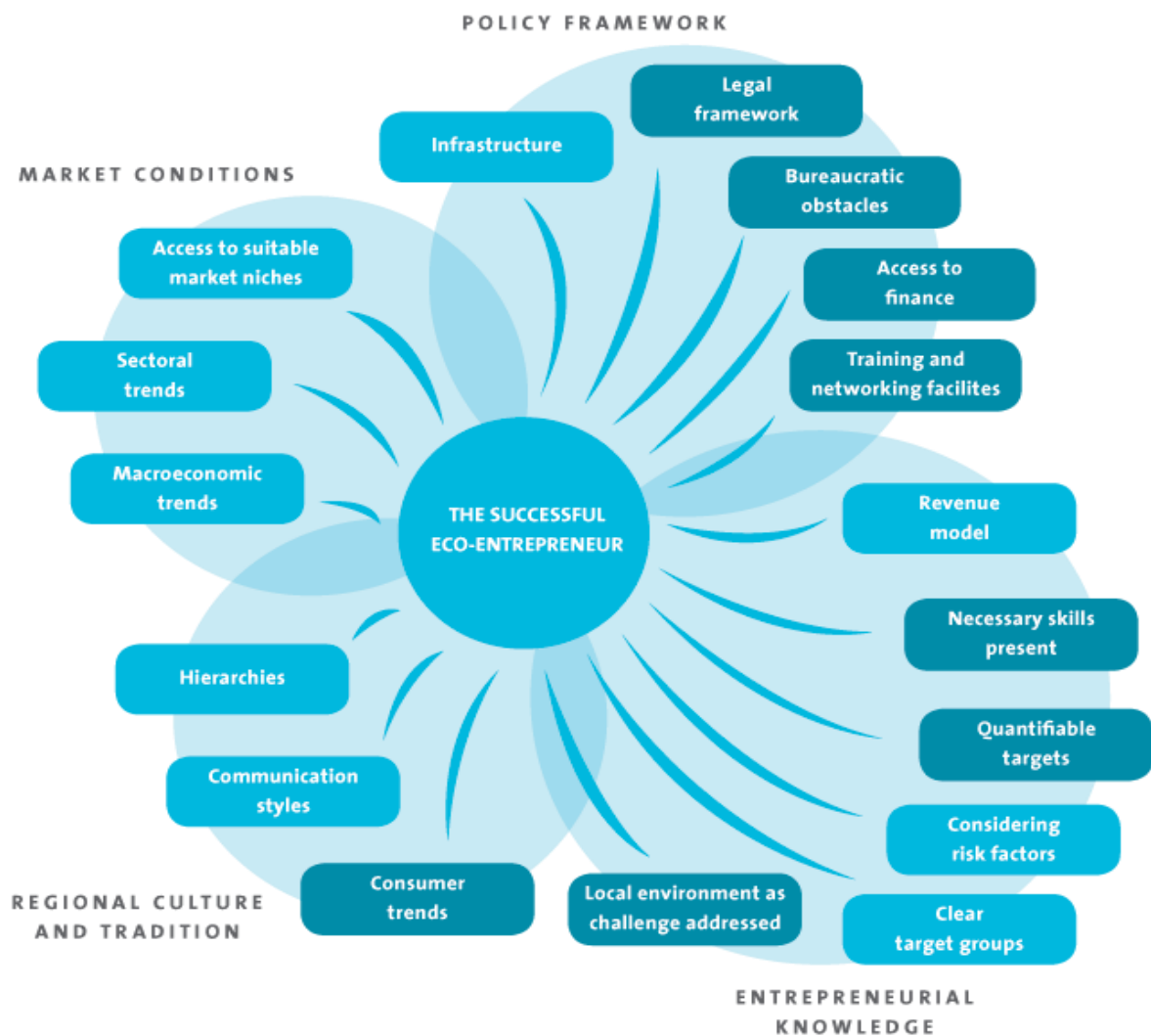


Figure 2: Enabling factors for eco-entrepreneurs

There are connections and interdependencies between each level. The

factors with specific relevance for the eco-entrepreneur are highlighted in bold.

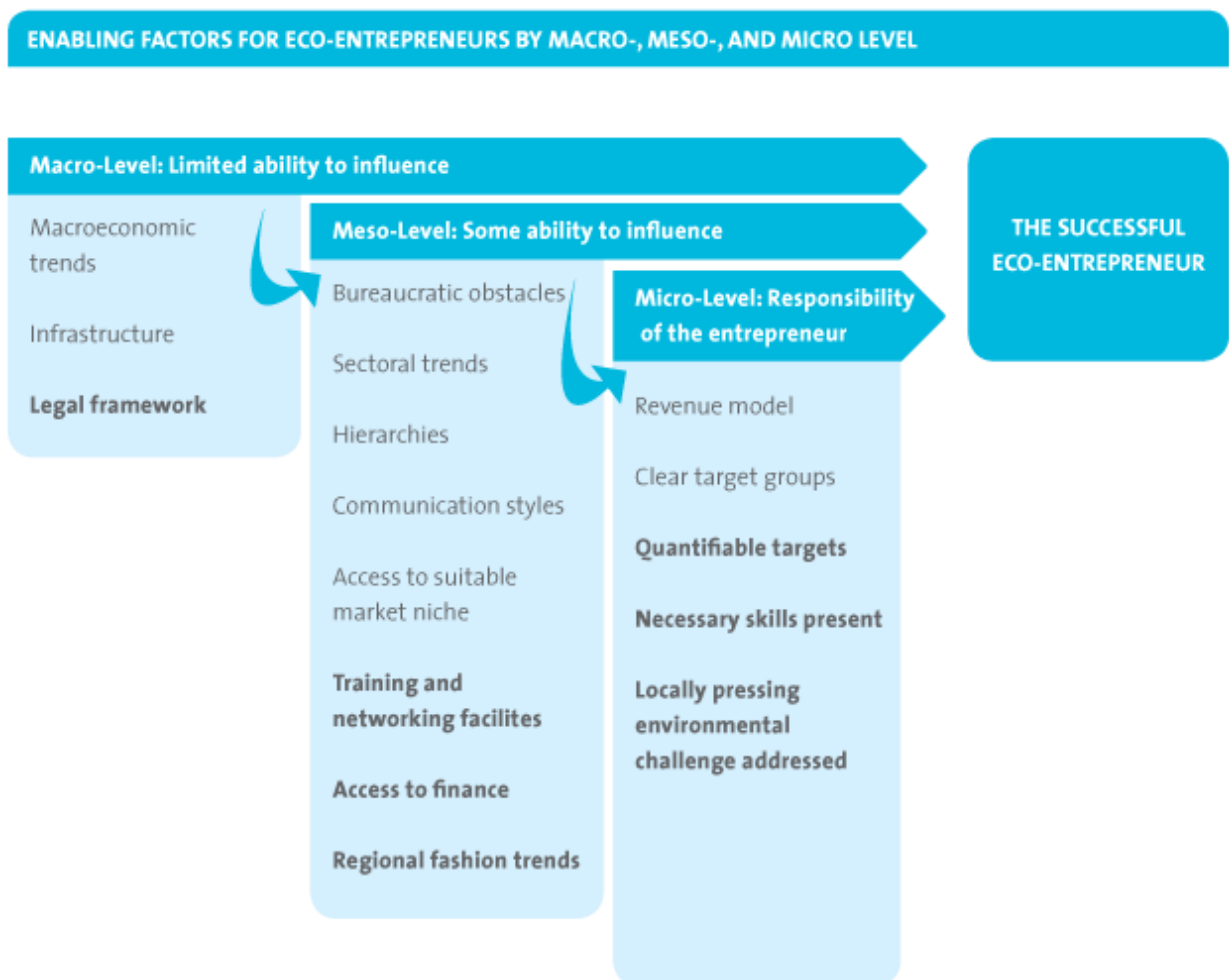
All factors are explained more in depth in the paragraphs that follow, along the lines of Figure 2 (policy framework, market conditions, entrepreneurial knowledge and local culture and traditions).

Figure 3 attributes enabling factors to different levels:

macro – where the entrepreneur has little or no influence, such as a global recession

meso – where the entrepreneur has some influence such as bureaucratic obstacles

micro – where the entrepreneur can have considerable influence



Figures 3: Enabling factors for eco-entrepreneurs at the macro-, meso-, and micro level

Policy framework

Major enabling factors connected to policy include a supportive legal framework that promotes eco-entrepreneurship by having, for example, low entry barriers and easy market access, few bureaucratic obstacles, and a favourable environment for

innovation, technology and entrepreneurial culture. In the Philippines, for instance, the introduction of a Sea Transport Policy Reform to make inter-island transport cheaper by making cargo-loading more efficient spurred investment and made it easier, and generally more profitable, to set

up enterprises (The Asia Foundation, 2012). An example of an enterprise operating in a supportive policy environment is the *Train the Trainers* project in China that trains key stakeholders in the construction sector to implement energy efficiency measures. The project works in a favourable environment since the Chinese government recognised energy efficiency as an important topic.

Removing bureaucratic obstacles relates especially to initial barriers for founding a company. But for the eco-entrepreneur these hurdles can also be relevant where processes such as certification and eco-labelling are concerned. These are important to as they distinguish an eco-entrepreneur's products and services from others and can ensure a business advantage. Smaller companies may not be able to afford the often lengthy and expensive sustainability certification processes and either specific funds need to be available, and/or the process should be made as efficient as possible (SWITCH-Asia, 2012). The *SusTex* project in India, for example, is working with organic textiles and seeking certification, but is struggling with this problem.

Further enabling factors for eco-entrepreneurs include sufficient initial resources being available (including public funds, private investments and loans at favourable rates), sufficient education and training availabilities, and accessibility to necessary information. Relevant networks to ensure adequate business advice and support are important, too. On-going support is particularly important in the early days of setting up an eco-entrepreneurial SME due to the higher risks and fears of failure, bureaucratic challenges, and the need for

networking opportunities. Initial financial funding is important as entrepreneurs focused not only on their profit margin but also on the improvement of environmental or social conditions may have higher initial investments (i.e. by purchasing special energy efficiently producing technology). There are more generic institutional and regulatory barriers not geared specifically towards eco-entrepreneurship that nevertheless affect its success. Among the most commonly cited challenges encountered by entrepreneurs are:

- a lack of regulatory enforcement and administrative efficiency (which feeds

A number of key factors influence the success of entrepreneurs, and these elements can generally be classified under five categories: (a) internal traits of the entrepreneur; (b) adequate resources; (c) a solid business plan; (d) a favourable external environment; and (e) the wider political, social and cultural contexts. Another key consideration is the existence of entry barriers, especially the 'fear of failure', which discourages many potential entrepreneurs in Asia-Pacific countries" (UN ESCAP, 2012, p.2).

- into bureaucratic obstacles when setting up a company);
- inefficiencies and additional expenditure due to corruption; and
- additional obstacles and costs due to poor infrastructure such as roads, power networks, etc. (Eco Innovation Observatory, 2012).

Good hard and soft (i.e. communication) infrastructure is an important ingredient for successful (eco-) entrepreneurship as it provides a solid base and minimises initial investments. If the eco-entrepreneur opens a business in a country with poor recycling, energy, or road infrastructure, working towards positive environmental change may be harder.

Waste may first need to be sorted before it can be put to good use, power cuts may result in frequent interruptions at work, and travel may be unnecessarily lengthy resulting in loss of time and money. In Vietnam, for instance, poor energy infrastructure results in frequent power cuts which tend to make day-to-day work more difficult, particularly for SMEs which have to run expensive generators. Overall, however, Vietnam's hard infrastructure (i.e. roads) and communication infrastructure is good and is an important factor for the rapidly growing entrepreneurial landscape there.

Market conditions

A conducive economic framework includes the existence of, and access to, a suitable market niche, as well as favourable general market demand and macro-economic and sectoral trends. Sectoral trends include, for instance, surges in international demand for sustainably sourced and manufactured goods. The *Train the Trainers* project may illustrate the benefits of a booming construction sector in China. While such a trend is generally positive for the eco-entrepreneur, sudden changes in trends may create a mismatch between supply and demand, making it difficult for smaller eco-entrepreneurs to find the appropriate reaction (i.e. increasing production capacity accordingly). This was partially the case with

the *SusTex* project which struggled with obtaining sufficient organic cotton to dye. The global demand for organic cotton was so high that it became difficult for smaller companies to obtain it. There are also general macro-economic trends such as a global recession or economic boom which impact the local economy and the success probability of the eco-entrepreneur. The rise of the Asian middle class and the associated economic boom in some Asian economies, for instance, provides significant opportunities for the eco-entrepreneur, both in terms of environmental challenges and increasing demand. Both sectoral and macro-economic trends affect market demand though it can be influenced by the eco-entrepreneur by marketing and publicity campaigns.

Regional culture and tradition

Factors relating to regional culture and traditions are important as well. The perception of products made with local material or ingredients as being traditional and not modern may be a serious obstacle to their sale. In some Asian economies there appears to be a trend for imported products to be regarded as inherently better than locally produced ones. Such perceptions can present a considerable challenge for marketing strategies – the distinct advantages of the locally sources product, such as sustainability or practicality, need to be advertised strongly together with the product being modern and fashionable. The companies *RULA* and *Kilus* are working with the *GPIoS* project in the Philippines and face such a challenge – all their clients are from abroad, there is no interest for their products in the Philippines. They state: “to make green consumption cooler in the

Philippines it will take somebody like Angelina Jolie to turn it around." A distinct understanding of local culture may be important in addressing this problem (SWITCH-Asia, 2012). In addition, the eco-entrepreneur as well as public authorities should do all they can to raise awareness about sustainability markers such as fair trade and eco-labels. This awareness-raising could not only promote the eco-entrepreneur's own sales but increase sensitivity for environmental topics in general.

For business newcomers to the region, lack of knowledge in how to deal with local authorities and cultural differences, especially when relating to hierarchies and communication, may be an issue. Generally, eco-entrepreneurs new to the region should take care to investigate specific circumstances, opportunities and obstacles in the country.

On the other hand, local culture and tradition can present considerable business opportunities to the eco-entrepreneur: Traditional production methods, developed over long periods of time, may be well adapted to the natural and social environment and therefore be particularly sustainable. The *SusTex* project in Rajasthan, India for instance works with textile block printing methods that developed in Rajasthan over decades. Working with this method has the potential to strengthen local identity and culture and at the same time present considerable regional and international business opportunities.



Entrepreneurial knowledge

Entrepreneurial knowledge can, to a certain degree, be influenced by eco-entrepreneurs themselves. Having such knowledge strengthens their capacities. Eco-entrepreneurs should make sure they have a solid business plan/revenue model and clear target groups as well as business and environmental targets they wish to reach in order to be able to assess success and discover opportunities for improvement. The *WEEE Recycle* project which aims at formalising informal e-waste recycling businesses for instance worked with a clear target from the beginning 'the rate of recycling done by informal business to drop from 95% to 65%, with 25% being recycled by newly formalised waste pickers'.

Generally, training from previous work experience and a solid network appears to be of particular importance in some Asian economies (IADB, 2002). Informal networking seems to be particularly important to female entrepreneurs in Asia, owing in part to a lack of access to formal business associations. In general, starting a business endowed with considerable social capital is paramount in many Asian regions (The Asia Foundation 2013).

Eco-entrepreneurs need to engage with consumers and use adequate marketing techniques. The SWITCH-Asia project *Shop*

for *Change Fair Trade* which aims to increase fair trade in India for instance identified many Indian farmers' situation as both socially and environmentally unsustainable and addressed it by effectively promoting Fair Trade: They used Bollywood celebrities and mainstream media to raise awareness. Eco-entrepreneurs may need special skills as well as general business knowledge, in fields such as technology, manufacturing, or R&D. For the eco-entrepreneur, skills need to extend into finding sustainable ways for what may have previously been done in a more wasteful, inefficient manner. The successful eco-entrepreneur should also set out to address a clearly defined, pressing and where possible locally relevant environmental or social challenge. It is also important to have a sufficient number of enterprising individuals willing to take risk and responsibility, as well as adequate human resources for their budding SME (Schaper, 2005). The number of people intending to set up their own business appears to be rather low in the Asia-Pacific

region with 17% intending to start their own business, compared with 34% in Latin America and the Caribbean. Fear of failure is particularly high (41% compared to 28% in Latin America and the Caribbean and 34% in the Middle East and North Africa) (GEM, 2012). These numbers may indicate the need for policy to create a more conducive entrepreneurial framework.

It is important to recognise that policies targeting SMEs in general are also important to promote eco-entrepreneurship since an overall conducive entrepreneurial framework has a positive impact on them as well. But additional policies may be essential, as eco-entrepreneurs expect more from themselves and their businesses which therefore could need more tailored support.

Table 1 gives an overview of the enabling factors for eco-entrepreneurship and some SWITCH-Asia project's they can be particularly found in. Such factors are also illustrated in the following section within the individual case studies.

Table 1: Overview over enabling factors and respective SWITCH-Asia project examples.

| Type of facilitating factor for eco-entrepreneurship | Facilitating factor in detail | Project examples where facilitating factor is particularly relevant |
|--|--|---|
| Policy framework | Supportive legal framework | <i>Train the Trainers</i> |
| | Promotion of an entrepreneurial culture: low entry barriers, easy market access, few bureaucratic obstacles, promotion of innovation & technology, efficient certification processes | <i>SusTex</i> <i>Most SWITCH-Asia projects</i> |

| | | |
|---|---|---|
| | Administrative efficiency | <i>Most SWITCH-Asia projects</i> |
| | Good infrastructure | <i>Most SWITCH-Asia projects</i> |
| Market conditions | Macro-economic trends | <i>Most SWITCH-Asia projects</i> |
| | Sectoral trends/market demand | <i>Train the Trainers, SusTex</i> |
| | Existence of, and access to, suitable market niches | <i>WEEE Recycle</i> |
| Regional culture & tradition | Regional fashion, tradition & trends | <i>RULA & Kilus (GPIoS), EcoJute, Smart CEBU, SusTex</i> |
| | Approach to hierarchy | <i>Most SWITCH-Asia projects</i> |
| | Communication styles | <i>Most SWITCH-Asia projects</i> |
| Entrepreneurial knowledge | Access to capital | <i>Most SWITCH-Asia projects</i> |
| | Access to training & education | <i>Most SWITCH-Asia projects</i> |
| | Access to networks | <i>MEET-BIS</i> |
| | Clear targets & target groups | <i>WEEE Recycle, GPIoS, Shop for Change</i> |
| | Clear revenue model | <i>Shop for Change</i> |
| | Clear, local environmental challenge addressed | <i>Shop for Change, WEEE Recycle, Train the Trainers, Sustainable Revival of Livelihoods in Post-disaster Sichuan: Enhancing Eco-friendly Pro-poor Bamboo Production Supply Chains to Support The Reconstruction Effort (Bamboo).</i> |
| | Successful marketing | <i>Shop for Change</i> |

2.2 Entry points for successful eco-entrepreneurship

There are a number of different entry points providing market opportunities where eco-entrepreneurs can set up a business. In this dossier, we categorise case studies by the entry point they used to penetrate the market:

The first 'entry point' is match-making, where an entrepreneur recognises a market gap between supply and demand or an opportunity along the supply chain to bring new actors together and create new business opportunities. Eco-entrepreneurs working with this entry-point are catalysing new business opportunities by bringing together new actors. An example is the SWITCH-Asia project *Mainstreaming Energy Efficiency Through Business Innovation Support (MEET-BIS)* where providers of energy efficiency related technology are matched up with SMEs investing in energy efficiency measures. The project both turns a market gap into an opportunity, and serves as a catalyser by opening up new business ventures for both sides. The SWITCH-Asia project *Jute: An Eco-friendly Alternative for a Sustainable Future (Eco-Jute)* is another example, where SMEs manufacturing Jute products are matched up with domestic and international buyers.

Another entry point consists in providing assistance with the formalisation of originally informal activities. An example is the SWITCH-Asia project *Establishing E-Waste Channels to Enhance Environment Friendly Recycling (WEEE Recycle)* where informal recycling businesses in India receive advice and support to become formal enterprises. During the process entrepreneurs receive

capacity building in social security issues and environmental management and hence become increasingly eco-entrepreneurial.

Eco-entrepreneurs may also act as service providers to meet a demand or need that previously has not been fulfilled. An example is the SWITCH-Asia project *SMEs for Environmental Accountability, Responsibility and Transparency (SMART Cebu)*. This project provides assistance to make SMEs more sustainable in sectors such as furniture and furnishing, fashion accessories, gifts, toys and house ware. The project also helps to stimulate demand with the help of marketing specialists. The SWITCH-Asia project *Green Philippine Island of Sustainability (GPIoS)* is another example, where existing companies of all sizes receive training in environmental management depending on their needs.



Training trainers provides an another entry point and offers market opportunities for eco-entrepreneurs: Here, key stakeholders such as consultants, companies or teaching institutions receive training in some aspect

of sustainable development such as material efficiency so they can then act as multipliers. In the SWITCH-Asia project *Train the Trainers: a Proposal to Train Chinese Construction Sector SME's in Energy Saving Techniques and Technologies* a Chinese university offers training to key stakeholders in the construction sector to increase its energy efficiency.

Finally, there is an entry point revolving around the idea of new, more sustainable products and/or improved production methods. Companies served by the SWITCH-Asia project *Green Philippines Island of Sustainability (GPloS)* are an example. *RULA* and *Kilus* both use waste material such as bags and magazines to make new products such as bags and jewellery. Another example is the SWITCH-

Asia project *Sustainable Textiles for Sustainable Development (SusTex)* where textiles that are organic and printed with sustainable dye in a water-saving fashion are produced and sold.

In some of these entry points projects act as 'catalyser' or service provider but do not themselves generate revenue; This does not mean, however, that the entry point is not a valid business opportunity. Other entry points include projects themselves having eco-entrepreneurial characteristics (a revenue model and a vision to be an eco-/social enterprise). All entry points discussed above provide valid business opportunities for eco-entrepreneurs and all projects featured promote eco-entrepreneurship in one way or the other.

2.2.1 Entrepreneurship opportunities by facilitating match-making

Matching actors who have not come together in the past, specifically where there is a market gap and/or there is a pressing social or environmental challenge may provide significant entrepreneurial opportunities. Match-making can include bringing together different types of enterprises or individuals such as SMEs and technology providers. Often, match-making consists of bringing together stakeholders who work along the same supply chain but so far have not had direct or mutually productive interaction.

Eco-entrepreneurs or organisations that are eco-entrepreneurial and bring together new actors often actively intervene in the supply chain, and make it more efficient and/or sustainable. An example is the *MEET-BIS* project in Vietnam that is matching up technology providers offering energy efficiency technology with SMEs that previously had no interaction with them. The *Eco-Jute* project and the *Sustainable*

Matching up producers and buyers to help consumers shop for change

Realising the difficult, socially and environmentally unsustainable situation many Indian farmers were in, Seth Petchers from Tradecraft Exchange (UK) founded *Shop for Change*, a fair trade organisation and label aiming to improve their situation.

Product Innovation in Vietnam, Cambodia and Laos (SPIN VCL) project are matching local experts with SMEs to increase their sustainability and innovation potential.



The *Shop for Change* project in India and fair trade in general are further examples of match-making and supply chain intervention. In the next section, the stories of two eco-entrepreneurial SWITCH-Asia projects working with this match-making approach are told.

Shop for Change is now part of the SWITCH-Asia project *Promoting Fair Trade and Sustainable Consumption (Pro-Sustain)*. Turning need into opportunity, he recognised the entrepreneurial prospects of bringing together different stakeholders along the textile and food supply chain and promoting fair trade in Indian society.

Turning market gaps into opportunities

The concept of fair trade was little known in Indian society, although surveys recognised a desire for more sustainable consumption among the growing middle class. On the other hand, many Indian farmers were in a socially and environmentally unsustainable

Box 5: Pro-Sustain and Shop for Change

The SWITCH-Asia project *Promoting Fair Trade and Sustainable Consumption in India* or *Pro-Sustain* aims at building environmentally sustainable consumption and production practices to reduce poverty amongst poor farmers and handicraft producers in India. It is led by the Humanist Institute for Collaboration with Developing Countries (HIVOS) and jointly implemented by the organisation International Resources for Fairer Trade (IRFT) and Fair Trade Forum India (FTF-I). In 2010, Seth Petchers from Traidcraft Exchange (UK), together with IRFT looked to expand fair trade activities within *Pro-Sustain* and created the *Shop for Change* umbrella label. *Shop for Change Fair Trade* is now an associate partner of *Pro-Sustain*.

situation with very little income and considerable debt, a situation which sometimes led to suicide. Recognising the need for change on the one and the entrepreneurial opportunity on the other hand, the social entrepreneur began by directly connecting producers, buyers and retailers, instead of having farmers go through six or more middlemen until their products reached retailers. At the same time, he created 'Shop for Change' as an umbrella fair trade brand under which different fair trade products could be sold. He also introduced capacity building programmes for farmers to produce more sustainably, get certified and increase their

"By making farming, for example, more sustainable for the small farmers that we're looking to benefit, we're also becoming a more sustainable, and we hope at some point, an entirely self-sustaining organisation" Seth Petchers, CEO and founder of Shop for Change

efficiency. Buyers paying a premium of 15% for products sold under the *Shop for Change* label helps to finance these capacity building programmes. *Shop for Change* began working together with Bollywood celebrities and major Indian newspapers such as the Times of India to raise awareness.

From the beginning the organisation's vision was that, alongside its clear social mission, it should be financially self-sustaining, a social enterprise. Their main product offered clients (mainly farmers) is their *Shop for Change Fair Trade* certification mark. But services may also include support and advice for their stakeholders concerning marketing of their products and supply chain activities, mainly match-making between buyers and sellers.

The vision for the organisation from the very beginning was, although we have a social mission, that we want to be a self-sustaining organization at some point (Seth Petchers, CEO and founder of Shop for Change).

The revenue model built into the organisational set-up evolved with the organisation and is still being adapted according to stakeholder and situation. *Shop for Change* in some cases charges those using their label a licensing fee, but in other cases, as with some farmers' organisations, clients only need pay when their products have been sold under the *Shop for Change* label. This model is used especially for consumer-ready products, particularly in the

food sector, for instance mango-pickles. It works in such a way that for every previously agreed amount that comes in, 100 rupees for example, both the farmers' organisation and *Shop for Change* receive a certain amount. Revenue is based on a pre-negotiated percentage of turnover. This model has the advantage that stakeholders such as farmer organisations who often do not have a lot of funds do not need to consider expensive investment before seeing results. Additionally, the revenue of both stakeholder and *Shop for Change* increases as the volume of the products sold grows. In such cases, it is not only the certification, but the entire service package including match-making, marketing and sales which can be considered *Shop for Change's* product.

However, in cases of an unfinished product or a raw material, such as cotton, certification remains the main product *Shop for Change* offers, as the producer does not directly get involved in the sales process.

The sustainability impact

Farmers producing under the *Shop for Change* label get a guaranteed, regular and increased income. Producers, producer organisations and buyers are all certified, ensuring social and environmental sustainability along the entire supply chain. In order to get certified, producers and producer organisations must meet minimum production standards.

These include cultivation and post-harvest handling, minimum decent work requirements, a commitment to capacity building as well as environmental standards such as the safe use of agrochemicals.

Shop for Change also offers match-making services, helping retailers identify farmers and cooperatives they can work with and setting up a suppliers' network to ensure consistent market supply.

Their products are now available in over a 100 stores across India, some of which specialise in fair trade, and some of which do not. They are working with nine partner brands that sell *Shop for Change* products; 7 000 farmers are registered with them and 140 tons of cotton seed have been sold to *Shop for Change* buyers so far. Initially focusing on textiles, they have expanded

Box 6: Key facilitating factors, *Shop for Change*

Key enabling factors being met:

- **Clear environmental challenge:** Clearly defined locally relevant challenge addressed.
- **Clear target group & revenue model exist.**
- **Visibility & consumer engagement:** Clear visibility through media coverage and celebrities.
- **Local circumstances:** The founder adapts his model to local circumstances.

Key enabling factors that are not yet fully met:

- **Market demand:** Studies indicate that fair trade is still not fully known in the Indian middle class. Demand may be volatile and subject to general economic conditions.
- **Institutional support:** The institutional involvement and support could be stronger.

and are now also working with food

produce, looking to include handicrafts in the future.

Ensuring long-term success

The founders made change possible by addressing both the producing and the consuming side. They knew that an important barrier to the success of fair trade products was their visibility and availability. In order to increase visibility, they worked with Bollywood celebrities and mass media who promoted the *Shop for Change* brand. In addition, they strategically use social media such as Facebook and Twitter for promotion.

Important to their success was the consideration of regional factors: While fair trade is a billion dollar industry and very successful in Europe, the US and Australia, founder Seth Petchers recognised that models were not simply transferrable to India. He continuously adapts methods to local circumstances and focuses on domestic markets, reaching farmers that otherwise may not benefit from the fair trade boom because they have no share in the export market or simply because even though fair trade markets are growing in the West, this growth in foreign markets is not enough to support the billions of farmers in India. Furthermore, he makes use of the fact that the demographics in India are changing and the emerging middle class is increasingly interested in matters of sustainability.

While the enterprise is not yet self-sustaining, it does have a functioning revenue model which is adaptable and a growing, increasingly diverse set of clients: they do not only work with retailers, but increasingly with corporations and corporate gift giving, where fair trade products are often popular. Moreover, the enterprise is approaching the hotel sector. Mr Petchers hopes to scale-up the model considerably, once the fine tuning is done.

Supportive policy initiatives have been launched, such as the National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business released by the Ministry of Corporate Affairs. Despite this institutional involvement could be stronger, especially with regards to official recognition of the social enterprise in terms of taxes and with regards to access to capital for farmer organisations. On the other hand, however, a lack of government involvement may be beneficial in that it allows enterprises such as *Shop for Change* to set their own standards. Another challenge could be that market demand is still somewhat volatile due to fair trade not being widely known yet (see Box 6).

The above information on the operations and issues of the *Shop for Change* project is based on an interview with Seth Petchers on 26th July 2013, project background documents and project websites.

Creating opportunities through catalysing functions: MEET-BIS Vietnam

Many technology providers in Vietnam are not fully aware of the business opportunities the SME sector holds since their main business partner used to be the public

sector. Moreover, they often lack capacity to service the SME sector, such as having the necessary installation and sales teams or specific skills. Additionally, knowledge on

energy efficiency is in general quite limited in the country. For SMEs especially, energy efficiency is often not a priority, and they lack expertise or access to relevant information in

“MEET-BIS is a project that actively intervenes in the supplychain: The project creates a commercial network where SMEs and technology suppliers are brought together (...). The project provides a forum for them, a playground, which in particular is a great motivation for the suppliers for whom it works as a marketing tool “

Eric Kamhuis and Remco van Stappershoef, MEET-BIS

this field. In this context, technology suppliers focusing on energy efficiency could become an important player in bringing knowledge about the business case of efficiency technology to SMEs.

The SWITCH-Asia project *Mainstreaming Energy Efficiency through Business Innovation Support Vietnam (MEET-BIS Vietnam)* recognised the opportunity to act as a catalyser for eco-entrepreneurship and business promotion: It brings together technology suppliers, energy- and water-efficient technology and SMEs as customers



Turning market gaps into opportunity
The project provides commercial solutions

and actively intervenes in the supply chain. Technology suppliers and SMEs that previously had not (directly) interacted are encouraged to do so, which activates new business opportunities. *MEET-BIS* provides the technology suppliers with capacity building in sales and marketing, offering training workshops and seminars. While not being a direct client base for *MEET-BIS*, the project addresses SMEs through marketing campaigns to make them aware of the benefits of water/energy efficient

Key enabling factors being met:

- **Networking:** *MEET-BIS* connects technology providers with SMEs, develops client databases and explores opportunities with multinational companies for mainstreaming their approach. This leads to more sustainable supply chains and more eco-entrepreneurial activities especially among technology suppliers.
- **Training and capacity building:** Technology suppliers are receptive to capacity building and new ideas.
- **Good infrastructure:** Vietnam has good 'hard' and 'soft' infrastructure.

Key enabling factors that are not yet fully met

- **Policy framework:** Energy in Vietnam tends to be heavily subsidised, decreasing the incentive to save. What is more, enforcement of environmental laws and standards is often weak which again leads to a lack of incentives
- **Market demand:** The market for business support services in energy and water efficiency technology is not yet mature enough to fully commercialise *MEET-BIS*
- **Access to finances:** SMEs have poor access to finance.

technologies with the help of occasional energy audits. The website gives more practical and graphic information about the advantages of energy and water efficient technologies and renewable energy options.

By matching up technology providers with SMEs, the project creates a win-win situation for both: SMEs increase their profit margin (by reducing energy costs and increasing business with buyers that require their suppliers to behave sustainably), while technology suppliers increase their client numbers and turnover. Moreover, technology suppliers often act as a kind of guide/consultant to SMEs, providing them with commercial advisory services, knowledge on benefits of energy efficiency, and advice on technology installation. Box 7 highlights examples of two successful technology providers that, with the help of the *MEET-BIS* project, become increasingly eco-entrepreneurial. *MEET-BIS*' added value hence lies in its catalysing function for new business opportunities. It does not in itself have a revenue model and does not charge fees to its clients (i.e. technology suppliers), although some suppliers engage in cost-sharing, carrying a small percentage of seminar costs for instance.

MEET-BIS is active in the sectors food, hotels, restaurants and commercial buildings, as well as textiles, mainly in the field of energy efficiency and, to a lesser extent, water efficiency.

The sustainability impact

Besides the obvious gain regarding energy and water savings, *MEET-BIS* boosts market penetration of energy- and water efficiency technology. Water-saving technology is particularly promising for the hotel sector, and waste water treatment would be especially needed in the textile

sector. Water efficiency and waste water technology is, however, not as successful as energy efficiency technology due to water prices being lower, investment especially for waste water treatment being higher, and a general lack of awareness about its potential. Nation-wide implementation of waste water standards is lacking as well. Water efficiency measures have, however, been well established in some hotels with the support of *MEET-BIS*.

MEET-BIS works with 10 technology suppliers on a regular basis. By mid-2013, 420 SMEs had implemented energy or water efficiency measures as a consequence of *MEET-BIS*' catalysing activities. Contacts with more than 3 800 SMEs were established during the project period. Their approach also served to lessen the impact of the frequent power cuts felt in the region. Most SMEs appear to have a generator, but running it is expensive. By promoting energy efficiency, generator use declines and the demands on the energy distribution system are reduced, which saves costs and may ultimately make power cuts less likely.

Ensuring long term success

There are a number of factors facilitating the project's success. Besides SMEs and technology providers, *MEET-BIS* explores the opportunity to work increasingly with multinational companies, such as Phillips, to mainstream their approach. Among others, the project cooperates with bigger companies to gain access to new technology, such as water saving and water flow solutions by the Swiss company Neoperl. *MEET-BIS* works together with chambers of commerce and SME associations. Good relations with government are important as well since it is

a key player in forming markets and can provide support in networking. Additionally, *MEET-BIS* is developing a database on technology providers and customers to help improve its match-making.

Infrastructure is generally good in Vietnam with communication and 'hard' infrastructure such as roads providing a solid framework for eco-entrepreneurs to operate in.

The legal framework and its enforcement could, however, be more supportive for environmental issues: frequent power cuts may increase demand for energy efficiency as generators are expensive, but energy subsidies make electricity quite cheap, reducing incentives to save. Energy prices are slowly increasing and an energy bill has been passed to promote energy saving, though enforcement remains relatively weak. Where water efficiency is concerned, government action would be even more important as the concept is still quite unknown and the market only in its early stages.



Another challenge is access to finance: SMEs would need access to inexpensive loans to grow their business but most Vietnamese banks are not interested in financing SMEs and particularly not technology providers as they are not used to assessing their particular needs and risks. If

they do provide loans, these tend to be small, leading to high transaction costs. The relatively recent banking crisis has made banks even more conservative in their risk assessments. SMEs and technology providers on the other hand do not consider banks to be trustworthy partners due to high interest rates, reimbursement conditions and cumbersome credit assessment procedures, preferring to finance investments through their own means. Due to this miss-match, *MEET-BIS* is considering working with lease firms, specialised equipment financiers who serve medium-size as well as large companies and provide asset finance, structuring the loan according to the productivity gains expected from the asset.

In recent years, the number of energy efficiency devices sold by technology providers to SMEs has gone up significantly, indicating that SMEs are increasingly

Box 7: Technology providers as eco-entrepreneurs: VESCO & SOLAR-BK

VESCO and SOLAR-BK are two of the technology providers *MEET-BIS* works with.

VESCO offers energy efficiency equipment sales and installation. The company also does consulting on energy efficient technology transfer, including clean and renewable energy and control of consumed electricity.

SOLAR-BK works in the field of renewable energy technology, including solar energy water heaters, collecting plates and hybrid systems. To date, it carried out several large scale installations in bigger hotels as well as renewable energy systems in several regions in Vietnam.

*For more information on committed technology suppliers working with *MEET-BIS* please click [here](#).*

interested. With the help of *MEET-BIS*, many technology providers are becoming increasingly eco-entrepreneurial. Still, despite the considerable potential of many Vietnamese markets, the market for business support services in energy and water efficiency technology is yet not big enough to run a project like *MEET-BIS* on a fully commercial basis. Technology providers are used to selling mainly to the government and interacting less with other SMEs. Their staff turnover tends to be high and incentives to invest in employees for instance by training them are low. However, demand is growing and their business interactions are shifting towards SMEs, among others, due to growing entrepreneurial activity in the country. Young people especially are very receptive to new ideas and play an increasingly important role. In this way it is possible that in a couple of years, technology providers

would pay for services that *MEET-BIS* now provides for free.

More information about the *MEET-BIS* project can be found on their website, [here](#).

The above information on the operations and issues of the *MEET-BIS* project is based on an interview with Eric Kamphuis and Remco van Stappershoef (ETC International) from 12th July 2013, *MEET-BIS* project factsheets, background documents and the *MEET-BIS* website.



2.2.2 Entrepreneurship opportunities through formalising informal activities

By formalizing, we are creating a whole number of green jobs across this sector. We are trying to show that this greening doesn't have to be divorced from the social and the economic aspects. And I think we've been very successful in doing that at a small scale"

Dr Ashish Chaturvedi, project manager of GIZ India/ Indo-German Environment Partnership (IGEP) led WEEE-Recycle project)

Formalising informal businesses is a particularly promising approach in that it may include considerable social improvement. The entrepreneur works with informal enterprise and helps them become formal businesses which can then enjoy increased legitimacy and take advantage of any funding and support options available for SMEs. Employees and founders may

also enjoy social protection and formal networking possibilities that were previously unavailable to them. The *WEEE Recycle* project in India works with this approach, providing assistance for informal waste recycling enterprises to become formal businesses.

Solving E-waste problems through formalisation: WEEE Recycle

About 80-95% of electronic waste in India goes through the informal channels of backyard, home and cottage industry recyclers. When informal workers handle e-waste it is often harmful to both themselves and to the environment. Emissions from the material, unhealthy dismantling and smelting units, makeshift facilities not meeting

occupational health and safety standards but being used for toxic waste, unsorted e-waste openly dumped, are all commonplace.

After 25 years of operating informally, Mohammed Sabir, recently formalised his e-waste recycling businesses with the help of the SWITCH-Asia project *Establishing E-Waste Channels to Enhance Environment Friendly Recycling (WEEE Recycle)*. This formalisation ensures that he now operates in a more structured business environment, earns more and achieves a higher recycling efficiency, and adheres to environmental and social standards. At the same time it gives him a certain degree of legal stability as well as access to social protection and health and safety measures. Sabir now owns his own company *Green E-Waste Recyclers PVT*, which also has its own website. More information about Mohammed Sabir's story and the *WEEE Recycle* project can be found [here](#).

Turning market gaps into opportunities

The SWITCH-Asia project *WEEE Recycle* implemented by GIZ India/ Indo-German Environment Partnership (IGEP) works with entrepreneurs like Mohammad Sabir and encourages them to formalise their often informal businesses and subsequently introduce environmental and health measures. Project partners approach the businesses, initiating the formalisation process and help to build up their capacity, providing environmental management training and explaining e-waste related health risks. Courses teach how to remove toxic waste and recover precious metals. Basic courses are offered free-of-charge but businesses must

register and pay to qualify for advanced courses. Training focuses on all aspects of the formalisation process and business development. This includes registration, documentation, tax rules and capacity building in terms of pitching, occupational health and safety measures, and environmental management. In this way, a major social and environmental challenge in the region is approached and met in an eco-entrepreneurial way.

WEEE Recycle works in Bangalore, Delhi, Kolkata and Pune where waste is dealt with slightly differently in each region. Pune has a strong tradition in terms of waste pickers being organised in associations so *WEEE Recycle* engages with groups that have already been self-organised. This approach has a number of advantages. Often, over 100 waste pickers operate together in one association, so it is relatively easy for them to distribute their costs, especially fixed costs, over a large number of people. Negotiation, advocacy and fund raising are easier when individuals work in association. In Pune, for example, associations were able to obtain workspaces from the municipality for free. Associations can also provide members with a sense of empowerment, security and ownership. They can even provide basic forms of social insurance for their members. Waste associations in Pune receive support from international agencies and have been able to sign a waste management contract from the municipality for the entire city.

In Delhi, *WEEE Recycle* works with individual waste pickers that are more loosely organised in small groups of 15 - 20. While formalising measures are very successful there as well, groups lack some of the advantages seen in Pune. They rent

land from the municipality instead of obtaining it for free. Such differences have historical roots but illustrate the potential for increased cooperation among social and eco-entrepreneurs.

The sustainability impact

The *WEEE Recycle* project is led by GIZ India under the Indo-German Environment Partnership (IGEP), and partners with Toxics Link, an advocacy organisation, the Manufacturers Association for Information Technology (MAIT) and Adelphi Research GmbH. It aims to reduce health risks and pollution arising from informal recycling in four urban areas, and addresses all relevant stakeholders along the value chain.

The project target is for 25% of all e-waste to be recycled by formal recycling businesses, and that waste processed by informal businesses is reduced from 95 to 65%. So far, in Delhi 11 collection centres have been established, and in Pune 150 representatives of the 7 000 strong union of waste pickers became part of the e-waste collection channels, operating in a formal way. These numbers could actually be higher as there are a number of companies that have started formalising on their own, recognising the business case behind it.

Fourteen training workshops were conducted for informal companies. And 75 e-waste collection bins were installed, with three central ministries and four state governments involved in the process.

Ensuring long-term success

Consumption trends aggravate the waste challenge as electronic products are not, as was previously the case, handed down from one generation to the next but are easily disposed of and often improperly. Informal

businesses handling electronic waste results in efficiency loss as a lot of material is lost along the recycling chain. As such trends become increasingly visible, the engagement of government and policy-makers in their encouragement of formalisation mechanisms and awareness-raising for proper disposal grows. Policy

Box 9: Key facilitating factors, *WEEE*

Recycle

Key facilitating factors being met

- **Clear, locally pressing environmental challenge** addressed: 95% of e-waste is recycled informally.
- **Clear targets:** The rate of recycling done by informal businesses is supposed to drop from 95% to 65%.
- **Strong policy support:** Ministerial and state government support and involvement is ensured and project partners successfully shaped a supportive legal framework.

Key facilitating factors that are not yet fully met:

- **Bureaucratic obstacles:** Setting up/formalizing a business often comes with many regulatory hurdles.
- **Access to finance:** Especially newly formalized business not organize in an association struggle to obtain financial means.

engagement especially was, and is, crucial to the success of the *WEEE Recycle* project. Through a multi-stakeholder dialogue, project partners shaped the policy agenda around the formalisation of e-waste handling. In 2004, project partners put e-waste on the political agenda with a national workshop, mapping e-waste activities,

analysing formalisation strategies, and pointing out options for recycling and making greener products from waste. After releasing a study showing that the vast majority of e-waste was handled informally, the Central Pollution Control Board released first guidelines for handling e-waste which initiated a series of stakeholder meetings involving policy-makers, manufacturing associations and civil society organisations. As a consequence, GIZ together with Toxics Link and Greenpeace as well as MAIT were entrusted with preparing draft legislation for the formalisation and proper handling of e-waste. Thus, the project helped to push for the new *Indian E-Waste (Management and Handling) Rules* which rely on a form of extended producer responsibility and became effective in May 2012. This regulation seeks to formalise the informal recycling sector by organising, registering, and monitoring activities rather than to shut informal recyclers down.



Access to finance remains a considerable challenge for many newly formalised recycling businesses. This is especially true for those waste pickers in Delhi that are not organised in associations. Another substantial challenge is the formalisation business process or the setting up of a business itself. In India, this process is often complicated and comes along with many

bureaucratic obstacles. This causes delays which, for the (newly formalised) business owner often means loss of money.

Yet, the project is very successful in promoting formalisation, with businesses now going ahead on their own. The project has high visibility and T coordinated a campaign with the Department of Consumer Affairs, which was aired on National Television in 18 different languages.

The above information on the operations and issues of the *WEEE Recycle* project is based on an interview with Rachna Arora & Dr Ashish Chaturvedi from 30th July 2013, background documents about the project and IGEP, a video by the European Union about the project and project websites.

2.2.3 Entrepreneurship opportunities for service providers

A considerable number of entrepreneurs use the provision of services as market entry point. Service providers offer a service for a demand that has previously not been met or possibly not existed. Consultants in various areas who are supporting businesses by optimising a particular process are typical of this. Project examples include *SMART Cebu* which offers services to increase market demand for Cebu products. Another example is the SWITCH-Asia project *Sustainable Production (SP) of the Biomass Industries in Malaysia: Optimising Economic Potential and Moving towards Higher Value Chain (Biomass SP)* which, as the name indicates, offers services to optimise the use and potential of biomass to enterprises in the sector. Finally, the *GPIoS* project described in the next section offers services to large, medium-sized and small companies to increase their energy performance.

Tailoring eco support for companies of all sizes: GPIoS

When Editha Santiago saw the challenges of her region – increasing waste, unemployment and poverty – she decided to link those three problems and turn them into a business opportunity. Her company *Kilus* now provides employment while turning waste to good use. In order to achieve this, she cooperated with several local government units (LGUs) and the city mayor to set up eco-centres where waste collectors can sell non-degradable waste (old bags, juice boxes, plastic). Women employed by *Kilus* then proceed to make new products from this waste, including bags, jewellery and other accessories, which are sold to clients in 17 countries outside the Philippines. Inside their country, there is less interest since high-end, brand products are more popular. Each collection zone has its own coordinator and the 40-70 women employed can work from home which is particularly beneficial as this enables them to take care of their children at the same time. The community is heavily involved in decisions and reaps direct benefits from the project. It was the LGU which introduced the company to the SWITCH-Asia project *Green Philippines Island of Sustainability (GPIoS)* to further enhance their operations with proper training. By participating in the GPIoS enterprise training they learned better energy management, business planning and the value of increased staff involvement in decision-making.

In a similar approach, the company *RULA* found a way to add value to waste and make a living from it, while also benefiting local livelihoods. The enterprise produces accessories such as bags, table covers, and purses etc. which are made out of re-used

magazines with the core objective of improving conditions for women in the local community. *RULA* is supported by the local Planters Bank which supplies them with old magazines in exchange for a 40% price reduction on the company's products. The enterprise provides a strong sense of ownership as joint investments allows the entire community to own it. Like *Kilus*, *RULA's* main market is outside the Philippines, with very limited domestic sales. *RULA* approached GPIoS in order to find a way to provide their employees with electricity at night – their 30 female employees generally work at home while their children sleep.

Both *RULA* and *Kilus* are now part of the more advanced GPIoS Eco-CLUB programme, where members support each other in increasing and recognising environmental measures. Members also serve as sustainability role models for the wider region.

Turning market gaps into opportunities

Wilson Baldonado and Juvy Stummer, managing the GPIoS project, help companies understand the advantages of cleaner production using workshops or finding tailored solutions to challenges such as the ones *Kilus* and *RULA* were experiencing.

GPIoS has the vision to create long-lasting, entrepreneurial solutions to the environmental problems their region faces: Manila is a hotspot in terms of environmental pollution and dependency on fossil fuel. A considerable part can be attributed to the SMEs located in the region (50% of all SMEs in the country are located in Manila/Calabarzon). Most of the enterprises have significant potential in terms of efficiency gains. GPIoS seized this

opportunity and now works with SMEs, and larger companies, encouraging them to adopt more sustainability measures.



At the heart of the project are workshops in cleaner production, combined with individual advice by experienced consultants. An initial 12-month capacity building programme is intended to help interested companies clean up their production processes. Here, *GPIoS* offers tailored approaches with **ECOBONUS** for larger companies (for instance Manila Waters and Philippines Airlines) with more time and budget, **ECOFOCUS** for medium-sized companies and **ECOSENSE** for small enterprises. These courses differ in intensity and cost. The programme finishes with an environmental audit and an **ECOSWITCH** award for those companies performing well (in the initial phase, 85 companies received the award, among which were local branches of multinationals, such as Toyota). The practically oriented workshops cover topics such as waste management, corporate energy analysis or ecological purchasing. They also deal with material flow analyses (quantifying flows and stocks of material) and material safety data sheets (MSDS) (showing procedures to handle potentially dangerous material). The project has additional, independent consultant hubs, providing revenue generating services.

Larger companies often request improved environmental standards from their supplier, affecting the sustainability of the entire supply chain in this way. Thus, many of *GPIoS*' smaller clients join the **ECOFOCUS** or **ECOSENSE** programme because of such demands. This seems to be a bigger driver for implementing environmental measures than local or national environmental legislation. Mitsubishi, for instance, invited *GPIoS* to participate in its supplier meeting so it can approach the company's small suppliers in an informal way.

GPIoS enjoys considerable success which is in part due to the project linking better environmental performance to an increase in financial returns. There is now increasing demand not only from enterprises, but also from banks and universities wishing to improve their environmental performance.

The sustainability impact

To date, *GPIoS* has worked with over 410 companies.

The project aims to address a diverse set of environmental challenges, ranging from waste reduction to energy conservation in the private sector. Its aims include:

- An average 40% reduction in mixed waste
- An average reduction of water use of 20%
- An average 10% improvement in electricity conservation
- An average rise in fuel conservation of 25%
- An average reduction in hazardous material of 20%

In its initial phase, the project has achieved 63% reduction in hazardous waste, 76% reduction in solid waste and 39% reduction in water use in participating companies.

Furthermore, it achieved 7% more efficiency in the use of electricity and 13% where fuel is concerned. Within one year, 95 participating companies saved 2.3 million euros by implementing environmental measures with a return on investment of 0.8% and an average payback period of 9 months.

Ensuring long-term success

The project works with local administrative and government units to address policy. *GPIoS* is consulting with the Department of Environment and Natural Resources (DENR) and has partnerships with the National Eco-labelling Program of the Philippines (Greenchoice) and with the Municipal Government of Pasig City to promote the project. Furthermore, *GPIoS* is collaborating with universities, to help them analyse their data and give them access to their own networks.

GPIoS partners with chambers of commerce and has started partnering with private sector financing institutions such as Planters Bank which has distinct benefits for the

project: When the bank identifies companies with whom they would like to establish a financial agreement (typically when those companies have identified a potential new business idea), they request these companies to participate in one of *GPIoS*' workshop, as part of the final deal. Additionally, the project works with media to ensure good public relations. Through their advertising campaigns, awareness has increased significantly. Toyota Motors Philippines (TMP) for instance was celebrated for their environmental achievement (for example solar tube installations and LED lighting) receiving an ECOSWITCH award, which led to an article in a major newspaper.



Even more interestingly, *GPIoS* is considering setting up a long-term ECOSWITCH training platform which can sustain itself without external funding with the Eco-labelling Program of the Philippines, the Planters Bank and the Pollution Control Association. SMEs, larger companies

and even financing institutions increasingly require environmental measures as part of their corporate social responsibility or risk management strategies. Hence, there is strong demand for *GPIoS* services and this platform could prove to be very successful. Participation will be membership based, where members are required to pay a small fee in return for their services and to cover expenses. Clients may also pay a service fee to experts registered with their platform.

GPIoS has considerable institutional involvement, both on a policy and on a private sector/financial level, which can ensure long-term support and success. Even though certification processes can sometimes be lengthy, such support is particularly valuable since companies tend to attach more value to their sustainability certificate if it is awarded or backed by a governmental institution such as the Department of Natural Resources.

GPIoS established clear, quantifiable targets from the beginning against which the project and SMEs participating could be audited so their progress could be measured. The project raised considerable awareness through the media and built up a substantial network.

Since *GPIoS* involves some companies producing and selling their own sustainably manufactured products, a consideration for local trends and culture in the form of

tailored marketing may be needed: Imported goods are seen as more modern, leaving local goods with a poor image underperforming in the marketplace.

Box 10: Key facilitating factors, *GPIoS*

Key enabling factors being met:

- **Networking:** The project has a diverse network including research, financial, government and private-sector institutions
- **Clear targets:** The project works with quantifiable targets and tracks its own success
- **Institutional support:** The project collaborates with several local and national government institutions to obtain policy support
- **Marketing & publicity:** The project successfully markets itself with the help of local media

Key enabling factors that are not yet fully met:

- **Local culture and trends:** The project may need to look into local trends and culture to anticipate product reactions
- **Policy support:** lack of coordination among public authorities and lack of supportive environmental legislation
- **Certification:** Lengthy and expensive certification processes make official recognition difficult
- **Access to finance:** SMEs lack access to loans specific to their need

Projects may also face challenges as a result of the lack of coordination among government institutions where support for SCP activities is concerned as they need to deal with several

public authorities. This sort of a gap makes it more difficult to link their efforts with other green initiatives in the country. There is also a weak policy framework, little in the way of environmental legislation and policy support, resulting in low awareness about sustainable consumption and a weak local market for green products. Lengthy and expensive certification processes make it difficult for some of the SMEs serviced by *GPloS* to obtain formal recognition for their efforts, apart from the ECOSWITCH award. Finally, access to finance for SMEs with specific needs but lacking collateral is a challenge though project partnerships with local banks, such as Planters Bank, seem promising.

The above information on the operations and issues of the *GPloS* project is based on an interview with Wilson Baldonado (*GPloS*) from 26th July 2013, *GPloS* project factsheets, background documents and earlier interview transcripts.

2.2.4 Entrepreneurship opportunities in capacity building and training the trainers

Training provides a strong entry point to eco-entrepreneurship because of its multiplication and replication capacity. The eco-entrepreneur, or in the project/platform, can offer training to a key stakeholder



(person or institution) who in turn can act as a trainer and thus spread the learning they received. An example is the *Train the Trainers* project in China, where a Chinese university offers training to key stakeholders in the construction sector to implement energy efficiency measures and pass on their knowledge. This project is turning into a permanent self-financed platform and therefore does not only offer eco-entrepreneurial training to SMEs but has eco-entrepreneurial components itself.

Improving the energy performance of Chinese buildings through stakeholder training: Train the trainers

When the *Train the Trainers* project at Tongji University advises construction companies on energy efficiency, they see the opportunities for business as well as recognising they are addressing some major environmental concerns in China: The Chinese construction sector is booming with 2 billion m² of newly built space per year but measures that maximise energy efficiency, such as insulation, are still lagging behind. With low energy efficiency rates, the construction sector is responsible for 80% of the country's CO₂ emissions.

Turning market gaps into opportunities

Tongji University decided to address this challenge and turn it into a marketable opportunity: Through the *Train the Trainers* project it trains representatives from the Chinese construction sector in energy saving techniques and technologies who then go on to implement energy efficiency innovations in buildings in its training centre: They share international experiences and best practices in energy efficiency, building materials standards and installation techniques. The centre also advises construction companies who are increasing

their market potential through better energy efficiency knowledge. The project is both increasing entrepreneurial knowledge and has entrepreneurial characteristics itself. It was due to run for four years but following its considerable success and high market demand, the university decided to maintain and strengthen it as the *Sino-European Energy Efficient Building Training and Research Centre* while expanding services, mandate and geographical scope. The project's effort and success is a collective one with several new departments now joining in and, support coming from the highest levels within the university, such as the dean and the vice president.

Initially, the project depended heavily on external funding. However, since it is becoming an independent, permanent part of the university, the new centre is increasingly looking for its own finance. While there are some university resources earmarked for the centre, it will charge for its training courses. Courses involve practical training on outdoor training sites using real construction material. As these materials are costly, the centre is looking to public-private partnerships, partnering with suppliers and construction companies to obtain materials more cheaply or even for free in exchange for raising awareness about the importance of building with sustainable materials. The centre will generate income by providing consultancy services both to public authorities and private entities. This financial leg could prove very effective as China is going through a rapid urbanisation process where advice on how to manage it is badly needed. Consulting services also include advice on certification standards, particularly where Europe is concerned. The increasing awareness about the importance of certification on the one hand, and the lack of

implementation knowledge especially concerning European markets, on the other, provide an excellent opportunity for the new centre to close the market gap.

Tongji University is an excellent service provider and host for the new centre as it is already a recognised centre of expertise in the provision of training in building techniques. The fact that it is a university providing the training is beneficial as universities have a long tradition of contributing to new legislation and policies. Moreover, the university has the advantage of coupling consulting and training with the latest research on best global practices, including adjustments to local conditions.

The sustainability impact

When the project started it focused on energy efficiency as an important step towards mitigating pollution and emissions with the aim of both consumers and policy-makers including this component in their building and purchasing decisions. Now that the centre is expanding, it is moving to broader issues. The new centre will have a macro perspective and focus increasingly on sustainable urbanisation. Nationally, there is a rising focus on this topic, since more than 50% of China's population now live in urban areas – a trend that is set to continue. This is creating considerable needs in the market, and begs the question of how to cope with it in a sustainable way. The centre aims at working with clients along the entire value chain such as suppliers, construction companies, architects and designers, supervising companies, developers, and national and local officials. It is now stretching beyond the original geographical scope of the project by responding to requests from provinces in South west, South and North of China for local centres to

be set up. These are being established in local vocational schools or universities, ensuring their permanency.

Ensuring long-term success

There a number of factors conducive to the centre's success, such as having an overall supportive policy framework. Energy conservation is a priority for the Chinese government, and the rapid urbanisation process increasingly catches the attention of policy-makers. Tongji University's reputation as one of the best in the country together with its expertise in energy policy and urbanisation will ensure a wide range of clients and a high quality output. Many of its professors already act as advisors to the Chinese government, links that can be used for additional policy support. The university's network is hence widespread and diverse, and the centre profits from this as well as from the fact that it had four years to test its services and clients' demands. Furthermore, the university has generally strong institutional relations. Local government agencies have shown interest and support, including the Shanghai Environmental Protection Bureau. Recent contacts with representatives of national ministries have been promising and it is expected that these will be further expanded upon through site visits and observation of training sessions by key policy-makers in the future. Discussions are underway with educational institutions to integrate project training content into construction education syllabi.



Sectoral trends are promising as well: The booming construction sector coupled with low current energy efficiency in buildings makes a continuously rising demand for energy efficiency technology and advice likely. The rapid urbanisation process on the one hand and the lack of knowledge about sustainable urbanisation on the other hand may be beneficial to the centre: It is one of the few service providers in this area.

However, while the set-up of the centre as part of university has many benefits, it may also be a challenge: An institution that traditionally is a public fund receiver may not be used to operating in a business oriented way and having to generate its own funding, even when market demand and service quality are both given. The centre has received some capacity building training in this direction however. Challenges include corruption which tends to be a problem in many emerging countries and the view by some companies in China that CSR investments are a risk to profitability. This view is decreasing however.

The above information on the operations and issues of the *Train the Trainers* project is based on an interview with Silvia Sartori from 26th June 2013 and background documents about the project.

2.2.5 Improved production methods and new material: Eco-entrepreneurship opportunities through innovation in production techniques

As the name suggest, this entry point includes eco-entrepreneurs that focus on making new products or offering products that are revised and significantly more sustainable than their 'normal' counterpart. This may include products where new and/or more sustainable materials are used. Examples of new products include those enterprises using recycled material (such as the *RULA* and *Kilus* companies), or organic fabric/material, such as the *SusTex* project (see next section), which produces sustainably dyed organic textiles. The *Eco-Jute* project in Bangladesh and India is an example of finding market solutions with the help of more sustainable material. This project focuses on supporting local producers of Jute products in diversifying their business and finding new clients. Material does not necessarily have to be new (Jute is a traditional material in Bangladesh), but should be an improvement where sustainability is concerned compared to other common materials used. Another project example is the *Bamboo* project in China which focuses on the promotion of bamboo as a more sustainable material in place of timber, concrete, steel or other non-renewable construction materials.

Collaboration for sustainable textiles and improved livelihoods: *SusTex*

When working in the traditional textile sector in Jaipur, Vikram Joshi recognised the business and sustainability opportunities offered when producers cooperated with each other. Block-printing, a method he

uses is a traditional industry in Rajasthan (India) but chemical dyes are often toxic and, without any effective treatment, are polluting water. What is more, dyeing and textile printing uses up considerable amounts of ground water. Many small companies working with dyes often do not have any health and safety measures for their employees installed. But investment in treatment plants and safety training are not easily affordable by single textile producers.

In 1997, a group of local craftspeople headed by Vikram Joshi recognised these challenges and formed a group called Consortium of Textile Exporters (COTEX) with the aim of bringing together people who truly understand the local craft and intend to increase its economic, environmental and social sustainability.



Turning market gaps into opportunities

In 2003 increasing government pressure threatened to close down block-printing production because of the pollution it was causing to rivers and the lack of any treatment system. This motivated the group around COTEX to bring 600 small block-printing enterprises together to jointly buy land from the government to construct a textile park – the Jaipur Integrated Texcraft Park Private Ltd (JITPPL) which opened on 24th July 2013. This park provides a space and better employment for 2 500 families and pays special attention to occupational health and safety measures. It also includes

an effluent treatment plant and the implementation of eco-friendly technologies such as water recycling and rainwater harvesting. Despite some bureaucratic obstacles, the craft producers are now successfully working together under the SWITCH-Asia project *Sustainable Textiles through Sustainable Development (SusTex)*, promoting their local crafts in an ecologically and socially sustainable way. Each SME still produces block-printed textiles in its own workshop within the textile park and has their own share of the market. Some service the local, others the international, market but for most, market shares are mixed. International clients are mainly fair trade organisations such as GEPA, a company trading fair products, or the international NGO Oxfam. The *SusTex* project works with companies such as *Ojja*, a shop that sells traditional Indian textiles like saris. Demand is considerable partly because block-printing is a unique product made only in some Indian regions like Jaipur. It is important to rekindle appreciation for these hand-crafted products and highlight the difference between those and mass produced textiles. Some production units also do local home furnishing and textiles. The fact that these individual producers are working in a group helps them support one another with technology innovation and marketing. During trade-fairs they jointly organise stalls, share costs and work together to brand block-printing as a prime product from Jaipur. Moreover, as a group it is easier to get certified and obtain rare raw material on the market, such as organic cotton. In fact, the collaborating SMEs are aiming at creating an umbrella brand to minimise length and cost of sustainability certification.

The project brings together a range of partners including technical service

Box 12: Key facilitating factors, *SusTex*

Key enabling factors being met:

- **Clear target group:** Textile SMEs in the region of Rajasthan
- **Institutional involvement:** There is strong collaboration with relevant government institutions
- **Market conditions:** Considerable market demand and positive sectoral trends are given
- **Local culture and traditions:** Traditionally dyed textiles foster local expertise and identity

Key enabling factors that are not yet fully met:

- **Policy framework:** Minimum sustainability standards are missing
- **Material scarcity:** International demand is great, and organic cotton is often scarce
- **Bureaucratic obstacles:** Certification processes are lengthy and expensive

providers, textile producer groups and other SMEs to provide low-cost technological solutions to reducing pollution from textile production activities. On the demand side, the project promotes environmentally friendly textiles, helping to promote sustainable consumption.

The sustainability impact

Water is one of the main inputs required for printing. This is why the textile park has focused a lot of its efforts on this resource: It includes a water treatment plant with several filtering levels which helps to recycle water and break down several chemicals. At a zero discharge plant, residues are treated, and rainwater is collected and conserved in

a separate tank. Solar panels are providing sustainable energy and workshops are constructed in such a way as to maximise natural light and ventilation. Health and safety measures are considered as well and crafts people receive training accordingly. Specific training courses for women are available. More information about the occupational health and safety conditions in textile production in the region can be found in the SWITCH-Asia/European Union document 'Environment, Occupational Health & Safety in the Craft Sector' from May 2010. It can be found on the SWITCH-Asia website). Additionally, SMEs have access to social security and insurance. Producers are able to afford access to these resources due to their collaboration and joint investment in the textile plant, highlighting the sustainability potential of coordinating efforts. *SusTex* currently works with 500 small and medium-sized enterprises in the region. Through their collaboration in the textile plant, the lives of over 2 500 families are being improved in terms of safety at work and income generation.

SusTex benefits the



region culturally. Before the park there was a movement away from the sector with the younger generation preferring other types of work. Bringing different people together and jointly organising efforts supports the survival of the block-printing craft.

Ensuring long-term success

The project works with three public authorities: The Ministry of Textiles, the Planning Commission and the Ministry of Environment and Forestry, which are addressed both at the federal and state level. With the Ministry of Textiles, a service model based on the project experience is in discussion. The Ministry of Forestry and the Environment focuses on and supports OSH issues.

Despite the support from several public authorities, the wider policy framework could be more supportive: Thus, it would be beneficial if the government set minimum standards as to what environmentally friendly production is. This would help the setting up/revitalizing of eco-labelling.

Internationally high demand for organic cotton remains a challenge, as the small companies in the region have trouble obtaining enough even though they are collaborating.

Yet, by supporting cooperation among small entrepreneurs in multiple ways, it greatly enhances eco-entrepreneurship in the region. Clients are diverse and include local the local market and demand for their block-printed textiles is generally high. However, communicating the product's uniqueness in terms of printing practice and environmental measures taken is sometimes challenging especially as customers have to pay a premium due to the extra efforts made upstream in product chain, which may not be physically recognisable in the final product (such as OHS measures). Tailor made communication is therefore especially important.


Eco-entrepreneurial practices are also established long term with the help of

training facilities the textile park offers to workers. This is particularly useful as many are not familiar with environmental management techniques such as sending used water into the treatment plant instead of disposing of it outside. Moreover, the block-printing method has for centuries been passed from father to son and is not written down. By offering training, the project and park help to make it available to a wider audience and ensure the survival of this


practice. The above information on the operations and issues of the *SusTex* project is based on an interview with from 16th July 2013 with Ravi Kharka, Dhananjai Sing and Vikram Joshi, a Jaipur Bloc promotional video under <https://www.dropbox.com/s/rhsbwb5f2w65lio/JaipurBloc-720p.mp4>, project websites, background documents and fact sheets as well as and transcripts of interviews with different *SusTex* stakeholders.

3.0 Lessons learnt

What sort of lessons?


 Which lessons can be learnt from support provided to eco-entrepreneurship and from observing eco-entrepreneurs? How can we make support as effective as possible, that is, use and recognise main challenges, obstacles and main facilitating factors? There are, moreover, lessons to be learnt for eco-entrepreneurs themselves regarding how they can maximise their own impact towards leveraging sustainable consumption and production (SCP) patterns. By considering lessons learnt future initiatives to support eco-entrepreneurs may be able to offer more targeted support to eco-entrepreneurs. And eco-entrepreneurs will be able to have maximum positive impact on the environment, and sustainable consumption and production specifically.

A degree of policy support may be important for long-term success


 Regarding lessons learnt to support eco-entrepreneurship, it may be important to provide adequate financial support in the form of seed funding, grants, favourable loans etc. but possibly at least as important is a favourable policy environment. This does not only include support for the set-up of an enterprise, but it entails laws that are in place to promote resource efficiency and environmental protection as well as standardisation and certification, serving as incentives rather than legal requirements. Where this is the case, a green enterprise can have a business advantage from the start by offering products that adhere to, or surpass, those standards. The *Train the Trainers* project shows how much an eco-

entrepreneurial enterprise can gain from such an environment. *SusTex* textile workers also emphasise the importance of environmental standards. There are, however, enterprises such as *Shop for Change* which see a lack of government involvement as a possible advantage as it allows them to set their own standards without interference.

Where policy support is not given, marketing and publicity become more important


 While such policy support is already given or well underway in some regions, it may still take some time before it becomes a reality in others. Here, other support mechanisms become even more vital. Support in successful marketing techniques and partners for publicity may, to a certain degree, supplement the lack of policy support. *Shop for Change* was, for instance, very successful in marketing the unique sustainability features of its products with the help of celebrities and major newspapers.

Networks are important for the success of eco-entrepreneurs


 Another lesson learnt is that successful entrepreneurs often rely heavily on networks, ranging from business partners to client databases. This is also shown by the stories outlined here. All of these successful cases benefited from a diverse network which in turn opened the door for new clients and business opportunities. Support could come in the form of databases (which could include best practices or lessons learnt) and virtual market places offering and supplying

services, products, knowledge and networks to one another. The importance of this lesson is emphasised by the success of an initiative from the latest SWITCH-Asia networking event, where participants could exchange tools, commodities and activities in a virtual bazaar, an initiative that was already welcomed in the Bangkok networking event in 2012. Such an initiative may have considerable leverage potential as it reduces the time needed to develop the same tools and materials again and again, instead releasing more time for direct project/enterprise implementation.

Exploring domestic markets holds huge leverage potential for SCP


 There are a number of lessons for eco-entrepreneurs themselves to consider. In this way, they may use their potential to influence sustainable production and consumption patterns to the fullest. The measures they take up may be promoted by those institutions and individuals who support eco-entrepreneurs as a means of helping them. One important lesson concerning entrepreneurs directly is to consider selling in local markets, even if there is a strong client base abroad in order to promote sustainable consumption locally and increase their environmental impact. This may be a challenge for several SWITCH-Asia projects but it is especially important for those working with new products or materials, such as *SusTex*, *RULA*, *Kilus*, *Eco-Jute* and *Bamboo*.

Framing products connecting them to relevant trends or values can boost success

 On learning that sustainable and/or locally made products tend to have a less trendy or modern image in many regions (mentioned for instance in the

GPloS project), an adequate communications strategy can be vital for these enterprises: They may wish to avoid communicating the products or services flatly or in a matter-of-fact way, but consider framing them in a way that connects them to the value system of potential customers,, to 'speak their language'. What are the local trends and perceptions, stereotypes, fears? Products could be linked to them or be used to dismantle fears or preconceptions, for instance that CSR is always expensive, as mentioned for the *Train the Trainers* project.

Working with informal markets may leverage social and environmental sustainability considerably


 Another lesson both for eco-entrepreneurs and those supporting them is to consider informal enterprises as clients even if they are not the target group, otherwise an important market segment may be missed. Small enterprises often operate informally. This is especially true in developing economies where a large share of the economy consists of informal businesses. Working with this group also has considerable social leverage potential.

Cooperation between existing eco-entrepreneurs can be enhanced


 Another important lesson is the question of coordination and cooperation. Eco-entrepreneurs can benefit greatly from coordinating wherever possible with other green initiatives – to learn from each other's' experience, lobby together, buy in bulk to obtain the materials needed even if global demand is high (a measure taken by *SusTex*), and coordinate activities so as to not duplicate. *Train the Trainers* and *Bamboo* are both working to make the Chinese construction sector more sustainable and could potentially coordinate

their efforts for example. Even if there is no policy or other support for this, entrepreneurs can start small by connecting to those initiatives they know, or are close buy and subsequently expand, adding to each other's' network expand. The waste picker associations in Pune (India) where more than 100 participants share their costs and risks are a good example of the benefits increased cooperation especially for small eco-entrepreneurs can bring. Their situation is more stable where finances, bargaining, insurance and feeling empowered are concerned, compared to the situation in Delhi where waste pickers work individually.

Partnering with larger companies may affect SME sustainability and foster eco-entrepreneurship

 Even when the focus is on SME and eco-entrepreneurial support, it may be beneficial to work with larger companies as well. As *GPIoS* shows, this can lead to increased SME client numbers and supply chain sustainability especially where the larger companies want to do business with sustainable suppliers which, in turn, seek out support to increase their environmental sustainability. SMEs may thus become increasingly eco-entrepreneurial, and eco-entrepreneurs may benefit from an increased demand for their services.

Partnering with research and financial institutions to ensure long-term success

 Finally, in order to make long-term impact likely, eco-entrepreneurs could consider partnering with research

institutions. Such institutions can ensure latest best practices, studies and trends relevant to the eco-entrepreneur are made available, while in turn learning from the eco-entrepreneur's experience and including it in their sustainability research. Furthermore, if the research institute is a university it can incorporate findings into tertiary education, ensuring training of green skills, an important gap identified in Europe as well (see section 1.2). *Train the Trainers* for instance is hosted by a reputable university which can carry the project's impact further and incorporate them into their research and teaching. Eco-entrepreneurs may also seek partnerships with financial institutions, to obtain favourable loans for themselves or for their clients (for instance for new investments) or to widen their network. *GPIoS* for instance considers partnering with a local bank, which in turn encourages their clients to consider *GPIoS*' services.

Summarising the gaps

 Gaps, meaning lack of awareness for a lesson learnt can be identified particularly where cooperation among eco-entrepreneurs and the accessibility of databases and virtual market places are concerned. Partnerships with policy-makers are often developing well but partnering with research and financial institutions, or larger companies, could be further explored. Finally, an important gap in terms of leveraging SCP consists in framing and emphasising local markets. The table below summarises the lessons learnt and gives an overview of the remaining potential gaps.

SUMMARIZING LESSONS LEARNT

| Lessons learnt | Applicable concerning support to eco-entrepreneurs | Gaps identified in the entrepreneurial stories (concerning support to eco-entrepreneurs) | Applicable concerning eco-entrepreneurs themselves | Gaps as identified in the entrepreneurial stories (concerning eco-entrepreneurial themselves) |
|---|--|--|--|---|
| A certain degree of policy support is important for the long term success | X* | ● | | |
| Sustainability standards are important for a business edge | X | ● | | |
| Where standards and policy support are not given, marketing and publicity become even more vital | X | ● | X | |
| Networks are important for entrepreneurs – they can be made more accessible in the form of databases and virtual market places | X | ○ | | |
| Partnering with larger companies can benefit SME sustainability | X | ○ | | |
| Penetration of domestic markets with eco-entrepreneurial product/service is important to leverage SCP | | | X | ○ |
| Working with informal markets has considerable leverage potential for social and environmental sustainability, particularly in developing countries | X | ● | X | ● |
| Framing sustainable products/services in such a way that they address local trends and values is important in order to make use of local markets | X | ○ | X | ○ |
| Cooperation between existing eco-entrepreneurs could be enhanced to facilitate exchange of lessons learnt | | | X | ○ |
| Partnering with research institutions can be important for long term success of the eco-entrepreneur and SCP | X | ● | X | ● |
| Partnering with financial institutions to obtain finances and widen the network is important for eco-entrepreneurs. | X | ● | X | ● |

X = fully applicable
X = also applicable but to a lesser extend
 ● = No gap/lesson taken up/awareness for factor given
 ● = partial gap
 ○ = considerable gap remaining

4.0 References and further reading

- ADB (2010). Asia's middle class. Manila: ADB.
- ADB (2013a). Off Grid Pay-As-You-Go Solar Power. Project Data Sheet. Retrieved 25.4.2013, from <http://www.adb.org/projects/46931-014/details>
- ADB (2013b). Project records. Environmental Sustainability. Retrieved 25.4.2013, from <http://www.adb.org/projects/search/21256>
- Akenji, Bengtsson, Briggs, Chiu et al (2012): Sustainable consumption and production: A handbook for policy makers. With cases from Asia and the Pacific. SWITCH-Asia Networking Facility.
- Aravind Eye Care System (2011). Aravind Eye Care System. Retrieved 25.4.2013, from <http://www.aravind.org/>
- BGR (2009). Energierohstoffe 2009. Reserven, Ressourcen, Verfügbarkeit. Hannover: Bundesanstalt für Geowissenschaften und Rohstoffe.
- BMU (2009). GreenTech made in Germany 2.0. Environmental Technology Atlas for Germany. Berlin: Bundesministerium für Umwelt, Naturschutz und Nukleare Sicherheit.
- Carter (2010) see page 11
- CSCP. (2010). Exportförderung im Bereich Recycling- und Effizienztechnik *Materialeffizienz und Ressourcenschonung*. Wuppertal: UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP).
- Danish Technological Institute, P. S. A. (2010). SMEs and the environment in the European Union. Brussels: European Commission.
- De Vera, Mitin, Tunçer (n.d.): Mainstreaming Sustainable Consumption in Asia. Part 1: What is holding us back? SWITCH-Asia Networking Facility.
- Eco Innovation Observatory. (2012). Eco-innovation practices and business opportunities for European SMEs in the emerging markets of Asia, Latin America and Africa *Emerging Markets*. Brussels: European Commission.
- EDII (2013). Entrepreneurship Development Institute of India. Retrieved 25.4., 2013, from <http://www.ediindia.org/>
- European Central Bank. (2013). SME financing, market innovation and regulation Retrieved 8.8., 2013, from <http://www.ecb.int/press/key/date/2013/html/sp130411.en.html>
- European Commission. (2012a). Eco-innovation Action Plan – Actions Retrieved 22.5., 2013, from http://ec.europa.eu/environment/ecoap/about-action-plan/objectives-methodology/7-priority-actions/index_en.htm
- European Commission. (2012b). Per capita CO2 emissions in China reach EU levels Retrieved 25.4., 2013, from http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&dt_code=NWS&obj_id=15150&ori=RSS

- European Commission. (2012c). Small and medium-sized enterprises (SMEs). Regional SME policies Retrieved 29.03., 2013, from <http://ec.europa.eu/enterprise/policies/sme/regional-sme-policies/>
- European Commission. (2013a). Action Plan for sustainable consumption and production (SCP) and sustainable industrial policy (SIP), from <http://ec.europa.eu/enterprise/policies/sustainable-business/environment-action-plan/>
- European Commission (2013b). Europe 2020: Europe's growth strategy. Brussels: European Commission.
- European Commission (2013c). LIFE creating green jobs and skills. Luxembourg: European Commission.
- European Commission (2013d). Small and medium-sized enterprises (SMEs). Fact and figures about the EU's Small and Medium Enterprise (SME) Retrieved 25.4., 2013, from <http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/>
- European Commission (2013e). Sustainable Development Retrieved 25.4., 2013, from http://ec.europa.eu/environment/eussd/escp_en.htm
- European Commission (2013f). What is the EU doing about Climate Change? Retrieved 25.4.2013, from http://ec.europa.eu/clima/policies/brief/eu/index_en.htm
- GEM (2012). Global Entrepreneurship Monitor. 2012 global report.
- IADB (2002). Entrepreneurship in Emerging Economies: The Creation and Development of New Firms in Latin America and East Asia.
- ILO (2012). What are Green Jobs, 2013, from <http://apgreenjobs.ilo.org/what-are-green-jobs>
- KIA (2013). Kenan Institute Asia Retrieved 25.4., 2013, from <http://www.kiasia.org>
- MIT, B. (2012). Sustainability Nears a Tipping Point: MIT, BCG.
- Ng, C. B. (2006). *Shaping environmental regulation through technology demonstration: Evidence from the diesel vehicle industry*. Paper presented at the 9th International Conference on Technology Policy and Innovation "Science, Society and Sustainability", Santorini, Greece.
- OECD (2011). Measuring Green Entrepreneurship Paris: OECD.
- PwC (Producer) (2012). The opportunity. Retrieved from <http://www.pwc.in/publications/global-emerging-middle/the-opportunity.jhtml>
- Schaper (2005) see page 9 & 32
- SustainAbility (2007). Growing Opportunity. Entrepreneurial Solutions to Insoluble Problems. n.a: SustainAbility Ltd, Allianz, DuPont, Skoll Foundation.
- Tata (2013). About TATA Social Enterprise Challenge Retrieved 25.4., 2013, from <http://tatasechallenge.org/about-tata-social-enterprise-challenge/>

- The Asia Foundation (2012). Development Entrepreneurship. A Model for Transformative Institutional Change.
- The Asia Foundation (2013). Networking Essential to Women Entrepreneurs in Asia Retrieved 14.5., 2013, from <http://asiafoundation.org/in-asia/2013/02/27/networking-essential-to-women-entrepreneurs-in-asia/>
- Tuncer, B. (2012). Engaging with consumers towards ethical purchase and use strategies and lessons learnt from the Switch-Asia programme. Wuppertal: CSCP, European Union, Wuppertal Institute.
- UN DESA (2010). What's New? Department of Economic and Social Affairs. Population Division.
- UN ESCAP (2011). Promoting Sustainable and Responsible Business in Asia and the Pacific: The Role of Government *Studies In Trade and Investment*. Bangkok: UN ESCAP.
- UN ESCAP (2012). Policy Guidebook for SME development in Asia and the Pacific. In M. T. Abe, Michael; Juneja, J.S.; Narain, Salendra (Ed.). Bangkok: UN ESCAP.
- UNDP (2010). Human Development Report 2010. The Real Wealth of Nations: Pathways to Human Development Published for *Human Development Report* UNDP.
- UNEP (2013). Green Economy and Trade: Trends, Challenges and Opportunities. Nairobi.
- UNEP. (n.a.). Promoting Resource Efficiency in SMEs (PRE-SME) Retrieved 8.8., 2013, from <http://www.unep.org/resourceefficiency/Business/CleanerSaferProduction/ResourceEfficientCleanerProduction/Activities/PromotingResourceEfficiencyinSMEsPRE-SME/tabid/104523/Default.aspx>
- UNEP; CSIRO. (2011). Resource Efficiency: Economics and Outlook for Asia and the Pacific. Bangkok: UNEP, CSIRO.
- US AID. (2010). Development innovation ventures (DIV) – Testing Promising Solutions: Scaling Proven Successes: US AID.
- Wagner, M. (2010). Eco-Entrepreneurship – An Empirical Perspective based on Survey Data. Munich: Technical University of Munich.