2014

Doing Better Business through SCP: Lessons on Public-Private Partnerships towards a Green Economy in Asia

A TECHNICAL REPORT ON THE BASIS OF THE 11th APRSCP. SECOND DRAFT

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Abbreviations and Acronyms

APRSCP	Asia Pacific Roundtable for Sustainable Consumption and Production
ASC	Aquaculture Stewardship Council
ASEAN	Association of Southeast Asian Nations
CER	Certificate of Emissions Reduction
CHUEE	China Utility-Based Energy Efficiency Programme
CSCP	Collaborating Centre on Sustainable Consumption and Production
CSIRO	Commonwealth Scientific Industrial Research Organization
CO_2	Carbon Dioxide
EU	European Union
EUPIC	EU Project Incubation Centre
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPP	Green Public Procurement
GrAT	Center for Appropriate Technology (Austria)
GRI	Global Reporting Initiative
ICLEI	International Council for Local Environmental Initiatives
IFC	International Finance Corporation
INBAR	International Network for Bamboo and Rattan
ISO	International Organization for Standardization
MW	Megawatt
Php	Philippine Peso
PPP	Public-Private Partnership
RECP	Resource Efficient & Cleaner Production
RMB	Renminbi, currency of China
SCP	Sustainable Consumption and Production
SME	Small and Medium Enterprises
SPP	Sustainable Public Procurement
UNEP	United Nations Environment Programme
UNIDO ITPO	United Nations Industrial Development Organization - Investment and Technology Promotion Office
WWF	World Wildlife Fund

I. The argument for business development and SCP

As the demand for natural resources continues to grow especially in developing and emerging economies where population, urbanization, industrialization and income disparity are increasing and as the impacts of external pressures and climate change are felt globally, sustainable pathways of development are needed. In particular, implementation of sustainable consumption and production (SCP) practices from demonstration or pilot projects to national and regional large scale activities and programmes would be a major stride for sustainable economic development. Learnings and insights from the participation of the United Nations Environment Programme and the SWITCH-Asia Programme in the initiatives in the region in terms of policy support, knowledge transfer and financing SCP projects have been translated into action plans in some countries. Critical choices have to be made by governments, businesses and consumers to prevent losses from pollution and environmental disasters, and enable long-term economic growth decoupled from resource use and environmental impact (UNEP, 2012).

A Green Economy provides this framework for sustainable growth which results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities (UNEP, 2011). Transitioning to a Green Economy requires collaborative effort among the stakeholders. Substantial work has been done by a number of governments in the region in mainstreaming SCP in policies and part of the challenge now lies in implementation of these policies, and encouraging other governments to start the same process as well as support those that are still learning the meaning and implications of sustainable growth. While governments have started looking at opportunities to shape national development plans around a low carbon and resource efficient economy and consumers are beginning to understand the value of sustainable products, opportunities abound for businesses. But have businesses taken advantage and invest on such opportunities?

Business has the capacity to scale up sustainable practices towards a Green Economy by investing in resource efficiency, cleaner production, eco-innovation, research and technology, and social responsibility. As the business cases in the next chapters illustrate, monetary benefits are realized in implementing even minor changes in production practices and outcomes of varying magnitude are accomplished through partnerships and collaborations between public and private sectors. *New Business Development* opportunities have been demonstrated in the sustainable tourism and agriculture sectors, and new green products, and at the same time complemented by efforts like sustainable public procurement program at different levels of government (Chapter 2). *Business Diversification* opportunities also exist which can lead to sustainable ventures such as industrial symbiosis in an industrial park and pro-environment livelihood opportunities as a means of rehabilitation of disaster-stricken areas (Chapter 3). Projects on *Improving Productivity* featured in Chapter 4 implement resource efficiency, cleaner production to prevent or lessen pollution and reduce resource input in manufacturing leading to savings. Lastly, *Cost-effectiveness and Profitability* can drive organizations to adopt practices that examine the environmental impacts and opportunities in the product value chains using life cycle assessments and participate in green investments to stimulate the use of technologies and practices that improve environmental performance and social responsibility (Chapter 5).

This Technical Report illustrates various opportunities available for businesses to implement sustainable production, resource efficiency and innovation. Hence, companies can adapt and grow enabled by the right tools, partners, incentives and technical and policy support even as resources become depleted,

environmental protection and health and safety demanded, and trade conditions become stricter. The Report recognizes that while barriers transitioning to a Green Economy exist, the role of the business sector in setting the pace of the transition becomes more significant. Hence, the Report draws on examples of SCP projects implemented in partnership between government, nongovernment and international partners in the Region to illustrate how businesses are adapting their core business operations to consider both sustainability and profitability. The term public-private partnerships (PPP) in this report is loosely defined as having a public and private component or partner in the project. The Report concludes with recommendations for private sectors (Chapter 6) on how SCP tools and similar initiatives can be a competitive advantage in a Green Economy, and for policy-makers (Chapter 7) on how to create an enabling environment for a Green Economy. A Chapter 8 provides suggestions on themes for the 12th APRSCP.

As part of the post research work of the 11th APRSCP in May 2014, this Technical Report has the following specific objectives:

1. Provide an overview of current public-private partnerships in Asia for sustainable consumption and production,
2. Identify key lessons on PPP for the private sector to effectively engage with policy makers and other stakeholders to scale up SCP and Resource Efficient & Cleaner Production (RECP) best practices and initiatives in the region, and
3. Provide recommendations to scale up PPP for SCP in Asia.

The next four chapters provide examples of cases or projects on SCP in the Region which largely come from publications and conference presentations available to the Research Team (Lead Researcher and Assistant Researchers). SWITCH-Asia Programme (EU, 2014), the 11th APRSCP held in Thailand on May 2014 (APRSCP, 2014) and eco-innovation and cleaner production networks in the region were the primary sources of PPP Cases. Online research was done to supplement the information provided in the said publications. The choice of PPP Cases was based on its impacts and representativeness of the socioeconomic and environmental issues the Cases dealt with to those challenges faced by the Region in general. The projects presented may have been implemented or are being implemented; hence, the project information and results given vary. Suggestions on activities and plans moving forward after project implementation was given as an APRSCP Perspective to those Cases where a future plan was not given. While complete Case data and information are ideal, this may not be apparent in all examples that were chosen given the timeframe allotted for the preparation of the report. Most of the data and information presented are of qualitative nature due to the time constraint. The recommendations of the Technical Report were formulated as a general guide for the scale up of SCP initiatives in the Region and were distilled from inputs of participants to the 11th APRSCP, lessons learnt from SWITCH-Asia projects and international SCP experience of the author. Careful consideration of underlying sustainability values, local practices, economics, policy and governance and institutional mechanisms as well as further studies may be necessary to support a local (country-specific) interpretation and implementation of the recommendations provided by the Report.

II. New business development

The first of four classifications of cases, New Business Development features projects that encourage (1) sustainable tourism, develop (2) green products and support (3) sustainable agriculture. These cases look at new business opportunities that apply sustainability principles in existing sectors such as hospitality, biomass and fish supply, and also the design of public procurement systems that can help grow the demand for sustainable products.

In the hospitality sector, there is recognition of its economic, social and environmental impacts from intensive energy consumption to the magnitude of waste generation. In addition, energy cost and supply are also a consideration among the businesses in the sector. Because the outlook for tourism in the region remains positive, substantial efforts to reduce the material and energy intensity of this sector need to be in place. As illustrated by the two cases in the next pages, baseline assessment of the performance of hotel operation led to the identification of problem areas that were subsequently addressed through a number of measures such as switch to efficient appliances; development of best practices, strategies and replicable results, and dissemination of such in industry circles and other regions; and setting up of recognition awards. Fostering cooperation among hotels can facilitate exchange of experiences and lessons obtained from implementation of various practices.

The four cases presented on green products highlight ongoing measures to improve product quality, competitiveness and process efficiency, reduce raw material inputs and pollution, and enhance workplace conditions; as well as steps taken by government in the form of sustainable public procurement to support a market for these green products and make way for ecolabels. In the development of green products, voluntary measures taken by businesses to improve production processes and product quality to cope with market competition are critical towards the implementation of ecolabels. Training employees and officers, disseminating technical toolkits, guidance from project partners, support from CP centres and chamber of commerce or industry associations were among the activities undertaken in these projects on green products. Aside from the technical aspects of creating green products, marketing of such products was also carried out through Fair Trades. Creating a market for green products is as important as ensuring a supply of green products. The fourth case in this subcategory tackled the administration of a sustainable public procurement model at the local level. Support from European partners enabled the implementation of the SPP policy in target cities, and resulted to draft guidelines in the implementation of such. Knowledge transfer and learning from European experiences proved to be instrumental in the actualization of SPP Policy in three Chinese cities.

Lastly, the sustainable agriculture case acknowledges that the price competitiveness requisite in capturing global market share can overshadow the importance of product quality. To establish a sustainable Pangasius supply in Vietnam and ensure product passes ASC certification, the project aims to build local technical capacity to be able to create a model farm

Sustainable Tourism Case No. 1: Greening Sri Lankan Hotels

Organization	- Lead Partner: Ceylon Chamber of Commerce in Sri Lanka - Partners: The Travel Foundation (UK), Responsible Tourism Partnership (Sri Lanka), Sustainable Energy Authority (Sri Lanka), Institute of Environmental Professionals of Sri Lanka
Background	- The hospitality sector in Sri Lanka is one of the most energy and resource intensive sectors in the country - Waste generation is also high - Total budget: EUR 1,829,828
Trigger for SCP Measure/ Activity	- Reducing operational cost, and at the same time promoting the hospitality sector as low carbon footprint green hotels - High energy cost and resource use of hotels in the country
Changes made	- Advisory support, capacity building and technical guidance on natural resource management were made available to target groups.
Period of implementation	11/2009 - 7/2013
Outcomes	- Baseline environmental performance was identified. - Suppliers of hotels and customers have been engaged. - Resource Management Circles that serve as a venue for sharing success stories and experiences were set up. - Recognition awards were organized - The project has been promoted in international markets
Benefits	- *Environment:* Reduced pollution, and better energy, water & waste management - *Society:* Sustainable growth of tourism sector - *Organization:* Reduced operation costs
Way Forward (APRSCP Perspective)	- Strengthen dialogue and partnership among project partners and hotels through the Resource Management Circles to continue the progress made and to attract other hotels to be sustainable. - Best practices on greening hotels in Sri Lanka can be made available by the Sustainable Energy Authority or a similar government agency and relevant industry associations.

Source: EU, 2014

Sustainable Tourism Case No. 2: Zero Carbon Resorts: Building Energy Autonomous Resorts Creating Appropriate Technology Solutions

Organization	- Lead Partner: Center for Appropriate Technology (Austria) - Partners: Palawan Council for Sustainable Development (Philippines), CIEMAT (Plataforma Solar de Almería – Spain), Asia Society for Social Improvement and Sustainable Transformation (Philippines) - With involvement of relevant national agencies and target SMEs
Background	- Tourism in the Philippines is experiencing growth and providing local employment. - Total budget: EUR 2,108,859
Trigger for SCP Measure/ Activity	- High energy demand, energy costs and corresponding carbon dioxide emissions, inefficient appliances and poor electricity infrastructure are among the challenges faced by the tourism sector in the Philippines.
Changes made	- Upgrading appliances with efficient ones - Switching to renewable energy sources - Formulating and disseminating easy to understand energy practices
Period of implementation	11/2009 – 4/2014
Outcomes	- Reduce, replace and redesign (3R) strategy - New design of zero carbon resort - Inclusion of replicable results in the regional environmental policy and dissemination in other regions
Benefits	- Environment: Reduced carbon footprint and energy wasting - Society: Generates more jobs, tourism growth - Organization: Reduced operation costs
Way Forward	*Other proposed changes for future implementation:* - Develop Philippine Green Hotel certification scheme based on Thai Green Leaf standard and ZCR principles - Establish new generation of Zero Carbon Resorts members in Thailand - Establish at least 5 additional locations of Zero Carbon Resorts members in the Philippines

Source: EU, 2014

Green Products Case No. 1: Green Products Development and Labelling in Mongolia

Organization	- Lead Partner: IVAM UvA BV, Netherlands - Partners: Mongolian National Chamber of Commerce and Industry (MNCCI), Mongolian Agency for Standardization and Metrology (MASM), and Centre for Appropriate Technology (GrAT), Austria; participation from various Ministries (Industry and Trade, Nature and Environment, Food and Agriculture)
Background	- Locally produced goods in Mongolia are on the average of poor quality. Manufacturing processes have been inefficient and with lack of pollution prevention measures. - Total Budget: EUR 933,257
Trigger for SCP Measure/ Activity	- Green labelling in Mongolia is underway, and manufacturers lack the awareness of sustainable product standards and experience on improvement of manufacturing.
Changes made	- Conducted information and expert training seminars - Technical support and in-depth training were provided to selected participants
Period of implementation	12/2009 – 04/2012
Outcomes	- Baseline assessments and business development plans were received by the MNCCI and Capitron Bank, respectively. - Green Product Fairs and 'Organic Mongolia' programme were organized. - A new version of Mongolian Eco-label standard was drafted.
Benefits	- Environment: Efficient use of resources - Society: Availability of green products - Organization: Creation of market for green products
Way Forward (APRSCP Perspective)	- Strengthen institutional capabilities in developing green product categories and criteria, product certification and testing - Enhance policy support for sustainable public procurement and market incentives for green products

Source: EU, 2014

Green Products Case No. 2: Sustainable Product Innovation in Vietnam, Cambodia and Laos

Organization	- Lead Partner: Delft University of Technology, Netherlands - Partners: Vietnam Cleaner Production Center, Asian Institute of Technology Center (Vietnam), Laos National Chamber of Commerce and Industry, Cambodian Cleaner Production Programme, UNEP France
Background	- Economic growth in Vietnam, Cambodia and Laos has significant environmental and social impacts. - Total Budget: EUR 2,854,782.14
Trigger for SCP Measure/ Activity	- Relatively low competitiveness and added value of products made in Vietnam, Cambodia and Laos
Changes made	- Implemented sustainable product innovation
Period of implementation	4/2010 – 9/2014
Outcomes	- Sustainable Product Innovation toolkit - Train-the-trainer workshops; branding and marketing trainings for SMEs - SPIN Networks, conferences, publicity and reports
Benefits	- Environment: Less use of chemicals, resources and energy - Society: Better working conditions - Organization: Profit, market diversification
Way Forward (APRSCP Perspective)	- Maintain collaborative effort among the chamber of commerce or cleaner production center of the countries to continue empowering enterprises and even the backyard businesses in sustainable practices. - Later on, national product criteria or certification requirements may be pursued.

Source: EU, 2014

Green Products Case No. 3: Sustainable Production of the Biomass Industries in Malaysia

Organization	- Lead Partner: Malaysian Industry-Government Group for High Technology (MIGHT) - Partners: European Biomass Industry Association (EUBIA) (Belgium), Danish Technological Institute (DTI), and Association of Environmental Consultants and Companies of Malaysia (AECCOM)
Background	- Malaysia produces a minimum of 168 million tons of biomass annually. Biomass SMEs face some challenges: access to green financing facilities, compliance with environmental standard, and availability of raw material. - Total Budget: EUR 2,248,688.37
Trigger for SCP Measure/ Activity	- Biomass products appear to have a huge economic potential for commercialization that could also support green technology and climate mitigation.
Changes made	- Uptake of biomass utilization projects
Period of implementation	1/2010 – 1/2014
Outcomes	- 11 SMEs certified with ISO 14001, one certified eco-label, one registered with Verified Carbon Standard, and one completed LCA - Greenhouse gas reductions - Green financing awarded (from project referral)
Benefits	- Environment: Climate change mitigation - Society: Employment - Organization: Business potential
Way Forward (APRSCP Perspective)	- Promotion of green investments to businesses in sustainable biomass utilization, and similar projects that are in accord with natural resource management and sustainability standards. - Develop green financing opportunities to provide favorable loans to businesses engaging in projects that meet set environmental and social standards.

Source: EU, 2014

Green Products Case No. 4: Sustainable Public Procurement in Urban Administration in China

Organization	- Lead Partner: Wuppertal Institute for Climate, Environment and Energy, Germany - Partners: Environmental Management College of China; Collaborating Centre on Sustainable Consumption and Production, Germany; Faculty of Environmental Science and Technology, Nankai University; Lanzhou Environmental Protection Bureau; Public Procurement Centres of Tianjin, Lanzhou and Qinhuangdao
Background	- In 2006, the Ministry of Finance and State Environmental Protection Administration (now Ministry of Environmental Protection) issued a directive fostering green public procurement. A 'green purchasing list' of eco-friendly products and producers is frequently updated to support implementation. - Total Budget: EUR 917,450
Trigger for SCP Measure/ Activity	- Implementation of the green public procurement at the local level is lacking
Changes made	- Sharing of European good practices, experiences and lessons learnt with the procurement centres - Workshops and conferences to disseminate project results to several Chinese cities interested in SPP - Product groups and services with high potential for environmental improvement were the focus
Period of implementation	12/2008 – 12/2011
Outcomes	- Technical guidelines, design and implementation of sustainable public procurement in the target cities - Reductions of 105,749 tonnes of CO_2 from changes in procurement practices
Benefits	- Environment: Reductions in greenhouse gas emissions - Society: Safe workplace - Organization: Contribute to better environmental performance of the city; help increase demand and market for green products
Way Forward (APRSCP Perspective)	- Development and dissemination of a local GPP implementing guidelines to help other cities in the uptake of GPP. - Provision of technical support and guidance through relevant government agencies to empower local enterprises in coming up with green products or those that could quality for an eco-label. - Ensure strong policy support and market for green products.

Source: EU, 2014

Sustainable Agriculture Case No. 1: Establishing a Sustainable Pangasius Supply Chain in Vietnam

Organization	- Lead Partner: Vietnam Cleaner Production Centre - Partners: WWF Austria; WWF Vietnam; Vietnam Association of Seafood Exporters & Producers (VASEP) - Associates: Hung Vuong Co., Vietnam; Asian Institute of Technology in Vietnam; Delft University of Technology, Netherlands
Background	- About 90% of the total exported Pangasius in the world is supplied by Vietnam. - Total Budget: EUR 2,372,437
Trigger for SCP Measure/ Activity	- Environmental and social impacts of Pangasius farms and processing facilities are a cause for concern: uneaten feed, unused medication, untreated chemicals discharge to rivers - Market competition focuses on price rather than quality
Changes made	(Ongoing)
Period of implementation	4/2013 – 3/2017
Outcomes (Target)	By 2020 the Pangasius producing, processing and exporting sector in Vietnam is environmentally, economically and socially sustainable. - By end of the action at least 70% of the targeted middle to large Pangasius producing and processing SMEs, and 30% of the feed producers and small independent production SMEs are actively engaged in Resources Efficiency and Cleaner Production (RE-CP). - At least 50% of targeted processing SMEs are providing sustainable products compliant with the ASC standard to EU and other markets.
Benefits	- Environment: Less water pollution - Society: Better quality of aquaculture product; livelihood - Organization: Product compliant with ASC standard and EU market
Way Forward	- Defining the model farm and setting up training centre - Identifying potential buyers and conducting awareness-raising in the EU - Conducting capacity building on market requirements - Conducting study tours to model farm and leading companies - Providing capacity building for Vietnam national experts on international legislation regarding seafood markets - Providing advisory support in developing “bankable” investment proposals - Providing one-to-one support for ASC certification - Establishing synergies between feed producers and production and processing SMEs

Source: EU, 2014

III. Business diversification opportunities

Business diversification opportunities in this report refer mostly to projects that have incorporated social responsibility in addition to improving environmental performance. This theme includes initiatives (1) by businesses in poverty eradication, (2) in greening the industries, and (3) in corporate sustainability reporting.

One of the business and poverty eradication cases illustrate the opportunity of creating a sustainable business of engineered bamboo out of a need for livelihood in the aftermath of an earthquake in Sichuan province in China. The collaboration among the public, private and nongovernment project partners in setting up a policy and investment frameworks and environmental monitoring systems that ensured the success of the project in providing livelihood, engineered bamboo (complying with product standard) and investments in the province as well as lessening the use of timber. The other case on Bangchak Petroleum Community Service Station represents a private sector initiative in taking on the responsibility of giving back to communities. Such a voluntary action by the company exemplifies what is possible when businesses commit sustainability as one of its core business values.

In the two business cases on greening the industries, pollution from clusters of industries along a waterway and from an industrial park were addressed through the application of cleaner production techniques and industrial symbiosis, respectively. Technical trainings, knowledge sharing platforms, voluntary certification systems and cooperation among stakeholders are appear to be a common feature of these projects, enabling them to manage wastes, lessen pollution and energy and material consumption, and achieve savings. Capacity building would increase the local capacity and expertise to implement similar projects. Knowledge sharing platforms and avenues would promote exchange of ideas, best practices and experiences in greening the industry. Voluntary certification systems would encourage businesses to perform better and enhance competitiveness in the global market. Cooperation among stakeholders brings together public and private sector interests that can better direct formulation of policies and guide implementation.

The case on corporate sustainability reporting is the National Green Reporting System of Sri Lanka as presented in the 11th APRSCP. With a few governments in Asia making corporate sustainability reporting mandatory, CSR remains to be mostly a voluntary activity undertaken by businesses. The Ministry of Environment of Sri Lanka has initiated the National Green Reporting System (NGRS) in 2011 to integrate environmental aspects into the socioeconomic development process. Starting with fifty reporting indicators and nine verification institutes, training programs were held, and a database and web portal were developed in preparation for the implementation of the NGRS. There are 112 reporters as of May 2014.

Business and poverty eradication Case No. 1: Bangchak Petroleum Community Service Station

Organization	- Bangchak Petroleum Public Company Ltd in Thailand - Petroleum business with more than 1,000 service stations nationwide
Background	- Business culture: sustainable business development in harmony with the environment and society - The company has grown its business to new ones both related and unrelated to its core product. It opened its first community service station in 1990. - The Center provides a learning center that supports agricultural cooperatives, and supports the selling of community products and promotional gifts at a better price and as additional income of cooperatives. These centers also provide cheaper oil for agricultural use and retail gasohol and biodiesel.
Trigger for SCP Measure/ Activity	Establishment of a renewable energy project by H.M. the King in 1985
Changes made	Business values were based on sustainability
Period of implementation	1985 to present
Outcomes	- One million households have benefited from the community service stations • Sufficiency Economy Learning Center • Non-formal Education Center • Agricultural Product Market
Benefits	- Energy security, foreign currency savings, pollution reduction - Creates additional income on community goods (from better prices of agricultural products), reduce pressure on urbanization - Improved health with environmental restoration, strengthen rural communities
Way Forward	Innovative Company Leader in ASEAN in 2015-2020

Source: APRSCP, 2014; 11th APRSCP Presentation

Business and poverty eradication Case No. 2: China Eco-Friendly Pro-Poor Bamboo Production Supply Chains

Organization	- Lead Partner: International Network for Bamboo and Rattan (INBAR), China - Partners: Benelux Chamber of Commerce, China; Sichuan Provincial Forestry Department (SPFD), China; EU Project Incubation Centre Changdu (EUPIC), China
Background	- Post-disaster development, especially in reestablishing livelihood opportunities, is critical. In the aftermath of the 2008 and 2013 earthquake that hit the province of Sichuan, bamboo was seen to have an economic potential for environmentally sustainable production of bamboo rebuilding materials. - Total Budget: EUR 2,467,869
Trigger for SCP Measure/ Activity	- Livelihood opportunities in post-disaster Sichuan province
Changes made	- Resource efficiency - Environmental Monitoring System was adopted by two local government agencies - Collaboration among target bamboo SMEs - Set up policy and investment frameworks
Period of implementation	1/2010 – 1/2014
Outcomes	- The monitored SMEs (211) meeting environmental standards grew from 38% to 71% - Over 20,000 farmers have gained new income - Estimated waste reduction by 10-15% - 80 million RMB investment agreement signed - The Sichuan Construction Department has reviewed the "Technical Code on Sichuan Engineered Bamboo Structure (Recommendation)" - 220,000 m^3 of bamboo additionally processed, replacing 256,000 m^3 of timber
Benefits	- Environment: Decrease in use of timber - Society: Livelihood and income - Organization: Post-disaster development program, business opportunity
Way Forward (APRSCP Perspective)	- Update the "Technical Code on Sichuan Engineered Bamboo Structure" regularly to reflect sustainability and quality in processes. - Enforcement of Environmental Monitoring System to regulate bamboo plantations. - Study replication of the project in other areas for livelihood and business opportunity, and to promote engineered bamboo over timber.

Source: EU, 2014

Greening the Industries Case No. 1: Creating Green Philippine Islands of Sustainability

Organization	- Lead Partner: VSB-Technical University Ostrava, Czech Republic - Partners: Centre for Appropriate Technology and STENUM as member of GrAT, Austria; Austrian Recycling (AREC), Austria; ASSIST, Philippines; European Chamber of Commerce of the Philippines; Philippine Chamber of Commerce and Industry; Philippine Business for the Environment - Associates: Environmental Practitioners' Association, Philippines; Department of Environment and Natural Resources, Philippines; Philippine Trade Training Centre (PTTC)
Background	- Manila Bay in the Philippines is a major economic center. It is a hotspot for pollution, and enforcement of environmental regulations among industry is low. - Total Budget: EUR 2,386,970
Trigger for SCP Measure/ Activity	- A huge energy deficit and high pollution levels are among the challenge for Metro Manila and its linked CALABARZON region.
Changes made	- Individual coaching to companies by consultants in cleaner production, energy and resource efficiency, and service and product development - Knowledge transfer through workshops and coaching, combined with a system of quality assurance and monitoring - 12-month capacity building programme tailored to the needs of the clients; and a CLUB (advanced level) Programme for clients who were able to complete the base programme
Period of implementation	11/2009 – 5/2014
Outcomes	- 95 companies participated in the first year of implementation - 143,841,776 Php savings as of August 2011 in Phase 1 of implementation (2010-2011) - ECO-SWITCH Certification (built on triple bottom line philosophy of People, Profit and Planet
Benefits	- Environment: Decrease in energy and resource use, prevented pollution - Society: Legal compliance, safeguarding of jobs and labor - Organization: Improved environmental performance; financial benefits from energy and water savings, and waste avoided
Way Forward (APRSCP Perspective)	- Create an online repository of practices developed or modified that resulted to enhanced processes for the benefit of other businesses - Consider replicating the approach of the project in other industrial areas as well as strengthen the CLUB

Source: EU, 2014; website: www.greenphilippines.com.ph

Greening the Industries Case No. 2: Implementing Industrial Symbiosis and Environmental Management Systems in Tianjin Binhai New Area (China)

Organization	- Lead Partner: Tianjin Economic and Technical Development Area (TEDA) Administrative Commission - Industrial Symbiosis Ltd., UK; UNIDO – Investment and Technology Promotion Office, China; Tianjin Municipal Economic Commission; Tianjin Port Free Trade Zone Administrative Committee; Tianjin Harbour Industrial Park Administrative Commission
Background	- Tianjin Binhai New Area is rich in natural resources and home to various industrial clusters dominated by secondary and tertiary industries. - Total Budget: EUR 1,848,316
Trigger for SCP Measure/ Activity	- Generation of large quantities of industrial waste and weak environmental management capacity
Changes made	- Industrial symbiosis network was developed with 99 synergies among member companies - TBNA industrial symbiosis information (supply and demand of green technology in the TBNA) platform was built - Walk-through audits and environmental management system trainings were conducted
Period of implementation	10/2009 – 10/2013
Outcomes	- 41 SMEs obtained ISO14001 certification - Guidelines for establishment of industrial symbiosis network in China was developed - Policy reports submitted to local authority on the implementation of industrial symbiosis network in eco-industrial parks - Supported TEDA Environmental Protection Bureau to launch whole process of management of normal solid waste in 47 pilot SMEs
Benefits	- Environment: Management of waste and other environmental impacts - Society: Safe workplace - Organization: Better environmental performance
Way Forward (APRSCP Perspective)	- Develop financing mechanisms and technical trainings to support businesses opting to establish sustainable practices and join the industrial symbiosis network. - Encourage voluntary Environmental Management System certification

Source: EU, 2014

Corporate sustainability reporting Case No. 1: National Green Reporting System of Sri Lanka

Organization	- Ministry of Environment, Sri Lanka
Background	- The Ministry of Environment of Sri Lanka initiated the National Green Reporting System (NGRS) in support of the National Action Plan for Haritha Lanka Programme (2009-2016). Reporting Guidelines of NGRS is based on Global Reporting Initiative (GRI) guidelines. There are fifty reporting indicators and nine verification institutes.
Trigger for SCP Measure/ Activity	- Greening of the industries in the country - Integrating of environmental aspects into the socio-economic development process - Encouraging self-monitoring and reporting of the performance in manufacturing and service sectors of Sri Lanka
Changes made	Implementation of the NGRS of Sri Lanka
Period of implementation	2011 – ongoing
Outcomes	- Five training programmes were held - The Cabinet Ministers' approval was obtained - National Green Reporting Coordinating Committee Meetings were held - 1st Green Reporting Annual Ceremony was held in December 2012 - Database and web portal for the NGRS has been developed - A total of 112 reporters (May 2014)
Benefits	- Environment: continual improvement of quality of environment Public value of organization - for maintenance and reputation - Society: Foster dialogue and build relationship with the community - Organization (Government): Availability of information and data needed for decision making integration of environmental aspects into socioeconomic development process - Organization (Manufacturing and services sectors – the reporters): Reducing operational costs, optimum resource utilization, trustworthy stakeholder relationships, outstanding Investor relationships, and new business opportunities
Way Forward	- Launching NGRS Database and web portal - Actions related ESR Projects to be implemented at NGRS Entities - Demonstration on Sustainability Performance of Green Reporters - Join 'Friends of Paragraph 47'

Source: APRSCP, 2014; APRSCP Presentation

IV. Improved productivity

The theme improved productivity presents cases on management of resources: (1) energy, (2) water and (3) waste. Resource efficiency, productivity and cleaner production tools are often the choice in implementing resource management. While three subcategories have been identified, the cases presented are generally categorized as resource management because the water and waste management cases included here usually simultaneously manages both in an industrial or manufacturing sector.

The energy management cases in this section have implemented varied approaches in promoting energy efficiency: from the rigorous training/ certification of ASEAN Energy Managers to simple introduction of energy efficient appliances in the market and switch to high-efficiency motor systems. Solutions can sometimes be as straightforward as replacing inefficient equipment with new efficient ones.

In resource management of water and waste like the cases on textiles and cotton highlights the importance of capacity building, trainings and workshops on cleaner production and related practices in order to develop the local capacity to manage such projects. Baseline surveys, development of guidelines and best practices to suit local conditions, and provision of incentives for sustainable products are among the other measures undertaken to implement the projects. Guidelines and best practices are a way of demonstrating that the results can be replicated. Incentives are also important in encouraging action towards a common goal.

For waste, less waste generation would be an ideal scenario. In the resource management case number 8, the idea of making use of waste became central to the public-private partnerships in the sustainable production of commercially viable products from municipal wastes. In this case, waste became a resource from which organic farming relied.

Resource management Case No. 1: Establishment of the ASEAN Energy Manager Accreditation Scheme

Organization	- Lead Partner: ASEAN Centre for Energy, Indonesia - Partners: Action Sustainable Development, France; International Copper Association Southeast Asia, Thailand; Green Technology Corporation, Malaysia; Myanmar Engineering Society, Myanmar; Energy Efficiency Practitioners Association of the Philippines, Philippines; Pelangi, Indonesia; Research Center for Energy and Environment, Vietnam
Background	- Industry/ Service/ Local Government/ Etc. - Total Budget: EUR 2,152,056.76
Trigger for SCP Measure/ Activity	- Promote energy efficiency of industries
Changes made	- To the business model/ strategy - To operational activities
Period of implementation	2/2010 – 1/2014
Outcomes	- Php 1.6 million/year (EUR 26,033/year) savings - An increase of profit returned to capex for more energy efficient equipment - New green product has been introduced to market: inverter air conditioner using ozone-friendly refrigerant (R410A) - CO_2 reduction from 147 tons to 62 tons upon project completion - Reduction of 186, 000 KWh (3%) energy use - Establishment of 6 national councils (Country Chapters) - Contribution to content of Energy Efficiency & Conservation - Laws (amendment to existing rules and regulations)
Benefits	- Environment: CO_2 reduction, less energy use - Society: Availability of green product - Organization: Savings
Way Forward	- Train and certify energy managers and provide certification on a large scale for energy end-users

Source: EU, 2014

Resource management Case No. 2: Improving the Operating Efficiency of Chinese Electric Motor Systems

Organization	- Lead Partner: China National Institute of Standardization (CNIS) - ESCO Association of China Energy Conservation Association; Instituto de Sistemas e Robotica of University of Coimbra (ISR-UC), Portugal; UN Industrial Development Organization, Investment and Technology Promotion Office (UNIDO ITPO), China
Background	- The operational efficiency of electric motor systems in China is about 10-30% below international best practice, consuming about 60% of the total electricity consumption of the country. - Total Budget: EUR 1,124,946
Trigger for SCP Measure/ Activity	- Reduction in electricity costs and associated CO_2 emissions
Changes made	- Switching to high-efficiency motor systems by industrial motor users - Training and workshops
Period of implementation	11/2008 – 11/2011
Outcomes	- 400 major industrial users of electric motor have improved operating efficiency - 1 million tons/year CO_2 emissions reduction - Ongoing China Motor Systems Challenge Clubs with membership of around 600 - Future standards to removing outdated low-efficiency products from the market - New labelling providing clear and simple information to users who will be able to make a more informed buying decision
Benefits	- Environment: Better energy efficiency - Society: CO_2 emissions reduction - Organization: Savings
Way Forward (APRSCP Perspective)	- Update and implement standards on electric motor efficiency to continue improving energy performance as well as eliminating inefficient motors in the market - Awareness and education of consumers or businesses on the labelling implemented on motor efficiency.

Source: EU, 2014

Resource management Case No. 3: Sustainable and Cleaner Production in the Manufacturing Industries of Pakistan

Organization	- Lead Partner: TTZ Bremerhaven Institute for Water-Energy and Landscape Management, Germany - Partners: Collaborating Centre on Sustainable Consumption and Production (CSCP), Germany; Iqbal Hamid Trust, Pakistan; Cleaner Production Institute, Pakistan
Background	- Despite having undertaken various cleaner production initiatives in the last decade, the target sectors of this project, the leather and textile manufacturers in Pakistan, lack the know-how and capacity to apply sustainable production and be aware of environmental impacts and associated potential financial benefits. - Total Budget: EUR 1,408,592
Trigger for SCP Measure/ Activity	- The need to strengthen the capacity of local enterprises in sustainable production technologies
Changes made	- Implement a range of resource and energy efficiency initiatives - Pilot energy and resource efficiency implementations
Period of implementation	3/2009 – 2/2013
Outcomes	- A complete model for sustainable production in the manufacturing process for replication by leather and textile SMEs - Academic-industrial partnerships educating students in Energy & Renewable Energy technologies - Sustainable production network and linkages established - Strengthened and innovative policy framework for implementing and encouraging sustainable practices in the manufacturing industry - Worker satisfaction
Benefits	- Environment: Efficient use of resources and energy - Society: Decreased water pollution - Organization: Possible profits from cleaner production
Way Forward (APRSCP Perspective)	- Strengthen the collaborations formed by the project. - Dissemination of sustainable production model for leather and textile sectors. - Continue capacity building and increasing the number of cleaner production practitioners in the country. - Conduct an environmental assessment of other highly polluting sectors and prepare a corresponding sustainable production model.

Source: EU, 2014

Resource management Case No. 4: Enhancing Environmental Performance in Key Sri Lankan Export Sectors

Organization	- Lead Partner: Industrial Technology Institute (ITI), Sri Lanka - Partners: The Ceylon Chamber of Commerce, Sri Lanka; IVL Swedish Environmental Research Institute Ltd, Sweden; Megaskills Research Company Ltd, UK; Fraunhofer Institute IFF, Germany
Background	- Poor environmental performance among the export sectors of Sri Lanka can be attributed to weak enforcement of environmental laws, and lack of awareness, know-how and cost-effective solutions for sustainable production by manufacturers. - Total Budget: EUR 1,588,538
Trigger for SCP Measure/ Activity	- The poor environmental performance of export sectors hampers business across the value chain
Changes made	- Introduction of sustainable production practices and technologies - Awareness and training among company staff
Period of implementation	03/2009 – 09/2011
Outcomes	- Mapping of value chains and benchmark studies - Sector wide analysis of ceramics industry - Action plans for target sectors - Involvement of 250 enterprises - Commitment from waste management companies towards a waste management network
Benefits	- Environment: Management of waste - Society: Reduced environmental impacts - Organization: Better environmental performance, increase in product export opportunities
Way Forward	- Move on to other high polluting target sectors like plastics and rubber, leather and footwear, coconut products - Cooperation among government agencies (such as the export development board) and related industry organizations in the dissemination of success stories through print or other media

Source: EU, 2014

Resource management Case No. 5: Improving Environmental and Safety Performance in Electrical and Electronics Industry in China

Organization	- Lead Partner: Delegation of German Industry and Commerce Beijing / Deutscher Industrie- und Handelskammertag, China - Partners: China Standard Certification Center; China National Institute of Standardization; Chinese Institute of Electronics
Background	- The electrical and electronics industry of China have been significant contributors to its economic growth, but have also been substantial contributors to water and air pollution and CO_2 emissions. - Total Budget: EUR 2,599,087
Trigger for SCP Measure/ Activity	- Substantial pollution from the industry, and the need to improve health and safety
Changes made	- Promote sustainable production in the electrical and electronics industry - SME training and assessment programme - Baseline survey of environmental performance of Chinese enterprises - Implemented corporate social responsibility
Period of implementation	2/2009 – 2/2013
Outcomes	- Involvement of more than 1,600 SMEs and 200 policy makers - Compliance with eco-efficient and sustainable production standards - Developed and disseminated Standards Guidelines - Reduced risk of workplace accidents and health hazards - Applied Conformity Model for SMEs in 5 regional clusters
Benefits	- Environment: Efficient use of electricity - Society: Improved workplace and sustainable practices - Organization: Savings from reduced electricity usage
Way Forward (APRSCP Perspective)	- Introduce the Standards or applicable guidelines for sustainable production in the electronics industry in other regions. - Apply Conformity Model to other regions.

Source: EU, 2014

Resource management Case No. 6: Encouraging and Implementing Sustainable Production and Consumption of Eco-Friendly Batik in Indonesia and Malaysia

Organization	- Lead Partner: Indonesian-German Chamber of Commerce and Industry (EKONID), Indonesia - Partners: Malaysian-German Chamber of Commerce and Industry, Malaysia IHK-Akademie, Germany - Associate: Indonesian Cleaner Production Centre (ICPC)
Background	- The production process of batik by SMEs use excessive water and chemicals, which result to hazardous carcinogenic wastes that are left untreated. - Total Budget: EUR 2,316,792
Trigger for SCP Measure/ Activity	- The need to improve the environmental performance of the batik industry in Indonesia and Malaysia - To provide incentives for cleaner production efforts among SMEs by creating demand for eco-friendly batik products
Changes made	- Introduced cleaner production
Period of implementation	12/2009 – 12/2013
Outcomes	- Training of trainers for local business support organisations on environmental oriented cost management, good housekeeping, chemical management, water/energy efficiency, and marketing of eco-friendly batik - Clean production workshop, implementation and in-field technical assistance and evaluation for batik SME owners and key staff - Media liaisons, press conferences, e-news, and awareness campaign events targeting different consumer groups - Business matchmaking, online marketing, and domestic and international trade fairs support for selected batik SMEs - Policy dialogues with local, regional, and national government authorities, followed with lobby group activities
Benefits	- Environment: Less pollution and waste, proper management of waste - Society: Less exposure to hazardous substances, better working conditions - Organization: Better environmental performance
Way Forward (APRSCP Perspective)	- Strengthen the technical and institutional capability of the national cleaner production centres. - Conduct regular trainings and environmental assessments of the sector for continual improvement.

Source: EU, 2014

Resource management Case No. 7: Sustainable Cotton Production in Pakistan's Cotton Ginning SMEs

Organization	- World Wide Fund Pakistan (WWF) in Pakistan - Main Products: Cotton and Textile
Background	- Cotton has a high environmental footprint resulting from excessive use of pesticides and chemical fertilizers at the cultivation stage with considerable wastage of water. - Total Budget: EUR 1,979,286
Trigger for SCP Measure/ Activity	- Environmental Impacts of processing cotton result from high energy consumption and inefficient production process in the ginning stage.
Changes made	- Sustainable Production Processes - Better Ginning Practice Guidelines - Procurement Practices
Period of implementation	January 2012 – December 2015
Outcomes	- Reduction of costs from use of pesticides, and other chemicals - 500 SMEs in Pakistan apply sustainable cotton production
Benefits	- Environment: Decreased water consumption and other wastages - Organization: More cotton RM yielded during production, and lowered price of cotton
Way Forward	- Working with 30 gins to demonstrate more sustainable ginning practices (and business benefits) and to increase supply of Better Cotton to European markets - Development of Better Ginning Practice Guidelines, to be endorsed by the Pakistan Cotton Ginning Association (PCGA) - Building the capacity of 200 gins and key supporting institutions to adopt and support the adoption of Better Ginning Practices - Promoting the Better Ginning Practices Guidelines among a further 300 gins (PCGA members) and other cotton producing countries - Encouraging EU retailers to procure Better Cotton, and strengthen their links with Pakistani gins

Source: EU, 2014

Resource management Case No. 8: Sustainable Production of Commercially Viable Products from Municipal Wastes through Public-Private Partnerships in Green SMEs, Green City, Green Agro Products, and Green Employment Generation

Organization	- Lead Partner: Winrock International, USA - Partners: PlaNet Finance, Nepal; Namsaling Community Development Center (NCDC), Nepal - Associates: Ilam Municipality, Nepal; Ilam District Development Committee; Ilam Chamber of Commerce and Industry; Agro Enterprise Center, Nepal; Solid Waste Management Technical Support Center, Nepal Ace Development Bank Ltd.
Background	- Waste management in Nepal follows a disposal-centric approach. Some recovery-centric approach has been made, but still lacks financial viability. - Total Budget: EUR 982,577
Trigger for SCP Measure/ Activity	- Need for waste management
Changes made	- (Ongoing project)
Period of implementation	1/2014 – 1/2018
Outcomes	- Expected Outcome: Enable a sustainable waste management system, construction and management of compost plant through Public-Private Partnership approach, promotion of compost use for organic tea and vegetable farming, and mobilisation of financial institutions to increase access to credit for the enhancement of organic farming
Benefits	- Environment: less waste to be disposed - Society: organic products - Organization: management of waste, creation of livelihood opportunities
Way Forward	- Conducting awareness campaign on waste segregation at various levels - Establishing a Public-Private Partnership between Ilam Municipality and the private sector - Activating tole committees for waste management and income generation activities - Enhancing the capacity of agro-cooperatives on organic farming - Enhancing the quality of orthodox and CTC tea producers by supporting the production of high quality organic products - Enabling financial institutions to mobilise various forms of financing for SMEs and agro-cooperatives - Drafting policy papers for sustainable waste management system - Carbon documentation to explore additional financial potential from carbon market

Source: EU, 2014

V. Cost effectiveness and profitability (Tools)

The cost effectiveness and profitability classification of cases refer to those projects (1) employing life cycle assessments as a tool for cost effectiveness, (2) providing green/ sustainable investments to projects that fit predefined criteria, and (3) improving financial performance through pollution prevention tools and similar measures. The changes made in the four cases presented here were triggered by the need to enhance the profitability of business or support sustainable investments.

Life cycle assessments as a tool for cost effectiveness can reveal which stages in the product life cycle consumes the most energy and material resources, has the greatest impact on the environment, and therefore highlights the potential for less inputs and better outputs, leading to reduced operating costs or savings. In an increasingly global market, raw materials may come from one country, processed in another, and then transported to a third country for assembly of finished product. Despite the global nature of production processes and of supply chains, assessments of product life cycle and value chain can provide a quantitative assessment of the environmental performance of a product.

Two cases are presented in green/ sustainable investments and both are a product of the IFC China – Utility-Based Energy Efficiency (CHUEE) Program. Through the CHUEE, loans are granted to finance energy projects such as the waste heat recovery and landfill biogas recovery and utilization projects in China. The IFC CHUEE has partnered with local banks that disburse approved loans. These partnerships are instrumental in financing various sustainable energy projects in the country.

Lastly, the case on improving financial performance in the food and beverage industry in Sri Lanka has demonstrated that pollution prevention tools promote savings. The food and beverage sector in the country has lost some portion of the market due to high operating costs. Pollution prevention measures were implemented, new technology were introduced and voluntary certifications were sought by the businesses, and these simple and straightforward actions taken led to improvements in the financial performance of the businesses.

Life Cycle Assessments Case No. 1: Greening the Supply Chains in the Thai Auto and Automotive Parts Industries

Organization	- Lead Partner: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany - Partners: Thailand Automotive Institute, Foundation for Industrial Development; The Federation of Thai Industries; Small and Medium Enterprises Development Bank of Thailand; Collaborating Centre on Sustainable Consumption and Production, Germany
Background	- International standards need to be met in exporting cars to international markets. However, there is a lack of highly skilled automotive engineers and product engineering/innovation capacity to enhance productivity and environmental performance of automotive sector in Thailand. - Total Budget: EUR 2,020,000
Trigger for SCP Measure/ Activity	- Need to comply with international standards by enhancing environmental performance throughout the value chain and improving quality of Thai automotive products, and maintaining a competitive price to compete in international market
Changes made	Proposed: - Disseminating good practices and promoting the development and implementation of related policy and economic instruments - Enhancing networks, business and financial services for greening of the industry
Period of implementation	2/2012 – 1/2015
Outcomes	(Ongoing)
Benefits	- Environment: Efficient and cleaner production - Society: Capacity building - Organization: Market share, profit
Way Forward	- Supporting the improvement of technical equipment as well as operation procedures to increase SME productivity and thus competitiveness - Providing financial support for technical equipment as well as financial support for consultation and management services, audits and evaluations - Dissemination of good practise examples to the final target groups and drafting of policy recommendations that can serve as input of the SCP Policy Support Component action in Thailand

Source: EU, 2014

Green/ Sustainable investments Case No. 1: Financing by IFC China-Utility Based Energy Efficiency (CHUEE) Program and Bank of Beijing of an EMC Project in a Cement Plant in Hunan Province

Organization	- Hunan Shaofeng Building Materials Co., Ltd. (Shaofeng Cement) in Xiangtan City - Project: Hunan Shaofeng Cement Kiln Waste Heat Recovery and Power Generation (9MW)
Background	- Hunan Xiangtian Tianhao Shaofeng Energy Saving Technology Co., Ltd. (Tianhao EMC) has proprietary technologies in waste heat recovery and power generation. In 2007, the application of Tianhao EMC for a loan to finance its waste heat recovery and power plant project with Shaofeng Cement was approved. - Total Investment: 54.90 million RMB – two CHUEE loans of 16 million RMB each (disbursed by Bank of Beijing through cooperation with IFC CHUEE Program)
Trigger for SCP Measure/ Activity	- Energy efficiency
Changes made	- Low temperature waste heat recovery and power generation
Period of implementation	Four-year loan
Outcomes	- 60,350 MWh/year power generation - 57,600 tons/ year greenhouse gas reduction - RMB 18.23 million/year power sales
Benefits	- Environment: Reduced greenhouse gas emissions - Society: Reduced local air and water pollution - Organization: Improved financial returns
Way Forward (APRSCP Perspective)	- Diversify projects granted with funding by the CHUEE. - Collaborate with more financing institutions for similar loans to be available to more businesses.

Source: CHUEE Project Fact Sheet, website: www.ifc.org/chuee

Green/ Sustainable investments Case No. 2: Financing by IFC China-Utility Based Energy Efficiency (CHUEE) Program and Industrial Bank of Landfill Biogas Recovery Projects in Meizhou

Organization	- Meizhou City, Guangdong - Project: Landfill Gas Recovery and Power Generation Project (Phase II)
Background	- Shenzhen Phascon Technologies Co., Ltd. (Phascon) has implemented their patent technology called "3R Recycling Technology" in its Biogas Recovery and Energy Utilization Project in Longfeng Landfill in Meizhou (Meizhou Project Phase I) from June 2004 to December 2006. In 2007, Phascon received a loan from Industrial Bank (Shenzhen Branch) to finance the second phase of its biogas recovery project in Meizhou that will cover the seven other landfills in the area. - Total investment: RMB 9.50 million – RMB 7.50 million loan disbursed by Industrial Bank through cooperation with IFC CHUEE Program
Trigger for SCP Measure/ Activity	- Use of energy resources to address climate change challenges
Changes made	- Landfill biogas recovery
Period of implementation	Three-year loan
Outcomes	- 17.7 million cubic meters/year recovered biogas - 0.5 MW installed capacity of biogas power generation - 2.62 million kWh/year biogas power generation - RMB 1.81 million/year biogas power sales - RMB 6.67 million/year from carbon emission reduction sales
Benefits	- Environment: Reduced methane emissions - Society: Improved air quality and quality of life (less risk from groundwater contamination and flammable air emissions) - Organization: Sales from power generation and CERs
Way Forward (APRSCP Perspective)	- Diversify projects granted with funding by the CHUEE. - Collaborate with more financing institutions for similar loans to be available to more businesses.

Source: CHUEE Project Fact Sheet, website: www.ifc.org/chuee

Improving financial performance Case No. 1: Sustainable Production in the Food and Beverage Industry in Sri Lanka

Organization	- Food and Beverage (F&B) sector
Background	- While the food and beverage industry is an important economic sector of Sri Lanka, F&B producers are experiencing difficulty in maintaining market share due to increasing production costs. - Total budget: EUR 1,981,917
Trigger for SCP Measure/ Activity	- Inefficient and unsustainable production practices (poor awareness, lack of expertise and resources to address them)
Changes made	- Promotion of best practices of sustainable production among SMEs
Period of implementation	1/2009 – 12/2012
Outcomes	- Increased profits from implementation of pollution preventive measures - Increased revenue from adoption of advanced methodologies that won more businesses - Reduction in material consumption by 4.05% - Reduction in energy consumption by 20.23% and water by 15.51% - 22 SMEs gained ISO 22000 certification, and 53 are pursuing certification - A study identifying new policy instruments that can help in SCP implementation
Benefits	- Environment: Less pollution, resource and energy consumption - Society: Better environmental quality - Organization: Increased revenues and maintained/enhanced market share
Way Forward (APRSCP Perspective)	- Compile and disseminate tested pollution prevention practices in the local F&B sector for the uptake of more businesses. - Encourage working towards voluntary certification systems to enhance competitiveness of locally produced goods.

Source: EU, 2014

VI. Recommendations for the private sector

In addition to fulfilling the demand for products of the growing population and make profit, businesses need to be able to address the challenges of evolving local and international markets that now include sustainability criteria and legal requirements that necessitate pollution limits and cleaner production practices. Furthermore since businesses and business owners are the recipients of the biggest part of the added value of the economic activity, firms of various sizes have a responsibility to contribute proportionally financial recourses for environmental and social sustainability. These changes receive attention from regional and international organizations that not only provide guidance in mainstreaming SCP policies in countries and regions, but also assist in capacity building, financing and implementing resource efficiency and sustainable production tools in the industry sector especially among the small and medium enterprises. Some groundwork has already been accomplished by these entities and are still moving forward with supporting and complementary activities in both public and private sectors to strengthen the foundations of sustainable development. Given this progress, below are recommendations for the private sector on scaling up SCP practices in the region.

Identify and seize new business opportunities. The key for businesses to survive in the economic and trade conditions, and the environmental regulations and social responsibility necessitated by current national and international affairs is acknowledging the need to adapt their businesses to the changing business and legal environment, and incorporate these elements into the core of business operations. For instance, the global demand for food as a basic need is increasing and sustainable food systems need to be in place to ensure supply. In this case, opportunities exist to make agriculture practices less resource (water and chemical) intensive, improve productivity of land (or of other modes of producing crops) and be accessible to urban population (less energy requirement for transportation and taking advantage of food systems that target dense population), among others. In addition to the demand, businesses must also be aware of policy directions and national development goals in order to plan, align and prepare businesses goals in terms of how they would mobilize financial and human resources. A combination of forward looking, long-term planning and technical knowledge are inherently needed by businesses to recognize emerging business opportunities. The 2014 report *The Business Case for Eco-innovation* presents how businesses in developing and emerging economies have integrated eco-innovation in the business strategy and how it created a market opportunity for businesses (UNEP, 2014).

Invest in human capital and innovation. Sustainable practices should be reflected in the entire value chain from upstream to downstream of a product or service considering not just cost efficiency, but also resource efficiency, pollution prevention and product quality at every stage. Investing in the technical knowledge and experience of staff can ensure the availability of the capacity to create and innovate. Application of cleaner and safer production practices does not necessarily mean an overhaul of processes. Sometimes, a simple decision of switching to higher efficiency transformers or motors can result to the intended energy efficiency and savings from energy consumption (See Resource Management Case No. 2, p. 16). Creativity supports the use of known resource efficiency and cleaner production tools in new situations or of old practices in modern applications, a combination of these, or just the application of creative thinking in making the most of limited resources to manufacture a green product or apply sustainable production. Technical knowledge in green practices and technology innovation is essential in understanding the needs of sustainable growth, identifying areas for improvement and implementing the correct tools, measuring outcomes and plan future actions.

Capacity building is one of the elements involved in implementing SCP projects as can be observed in the cases included in this report. Investing in human resources is crucial in the implementation of sustainable production practices and eventually in the transition to a green economy.

Establish the right partnerships and involvement in local, national or regional networking. Initiatives have been undertaken by UNEP in supporting policy and action planning, UNEP-Food and Agriculture Organization (FAO) in sustainable agricultural systems, International Council for Local Environmental Initiatives (ICLEI) in sustainable cities and urban management, among other organizations working in the Region. Such initiatives have shown many possible avenues where SCP can be implemented and result to significant improvements, and a number of reports have identified priority sectors in the region. Networking and partnership with such organizations and other similar partners allow for knowledge transfer, capacity building, experience sharing, guidance and mentoring, and even access to financing schemes. Many countries have had successes in implementing cleaner production and resource management, and developing countries can learn from their experience. The continuing presence of the UNEP, programmes like SWITCH-Asia, financing schemes and similar groups and projects in the region can aid and be a source of guidance for businesses, especially the SMEs, in planning and implementing sustainable production. To illustrate, the SWITCH-Asia projects on a SPP model for urban administration has the potential for replication in other local governments in China (p. 8), and the environment friendly and pro-poor bamboo production supply chain project has generated significant investments (p. 11). Industry organizations or business chambers can also play a supporting role in establishing and strengthening partnerships and building support among businesses as well. Aside from assistance from partners and support from business chambers, businesses has to drive investments in enhancing sustainable practices, green technology and developing new green sectors. While capital may not be easily accessible to SMEs in developing and emerging economies, financing mechanisms offered by institutions like the Green Climate Fund and development banks can be of aid.

Consider social acceptability of business. In addition to adapting to changing business demands, market environment, trade requirements and environmental legislations, businesses need to be socially acceptable to have a staying power in the market. Aligning business strategies with social values and practicing corporate social responsibility are among the means that businesses can do to enhance acceptability among stakeholders.

Market green products and implement proper valuation of goods. The price of goods and services should reflect externalities such as the cost of pollution prevention, waste management, environmental protection, social welfare and others. Furthermore the business accounting models should start to internalize the negative externalities of the production processes and also accounting for the value of natural capital that are using without paying for it. By ensuring that goods are priced according to its true value, additional costs incurred by the private sector in greening its products and processes are supported, and consumers become aware of the need to conserve resources and avoid overconsumption and wastage. Consequently, businesses also need to sell these green products at a competitive price and ensure at the planning stage that there is a market segment it would cater to. Creative marketing and advertising schemes could include awareness components to educate, and help promote green products and sustainable consumption among consumers.

Collaborate and communicate with the government/ public sector. While businesses may have the private capital needed to pave the way for a green economy, political support from the public sector is critical to facilitate the introduction of green products, creation of a green market, mainstream SCP in

the national policies and provide market-based schemes like tax incentives and loans. Businesses should therefore start to demand from government to support pro-environmental incentives and stop financing "business as usual practices" and bad subsidies. Public sectors, especially the local government units that are proactive in planning and developing sustainable infrastructures and related services and procurement of green products, are important partners for businesses. Secondly, communication with the government would allow for the private sector to express the needs of industries in implementing SCP practices and supporting a green economy, and allow the private sector to synchronize business plans with government programs. Businesses can be a key driving factor for changes in policy that would favor a paradigm shift to enable green growth. Lastly, market-based mechanisms favorable for SMEs in developing countries where capital may not be easily accessible are needed. The increasing demand for food, water, energy, clothing and housing need to be supplied with products sourced through sustainable agricultural and food systems, renewable and sustainable energy sources, sustainable production processes and efficient transport systems. To be able to invest in these green sectors, the private sector would benefit from favorable terms of loans, tax deductions, and other incentives the government could make available. Communication and collaboration with national agencies and local governments are key to scaling up of SCP practices.

VII. Recommendations for policy makers

While businesses have the financial capital to drive investments in sustainable practices and set the pace for a green economy, policy makers, in turn, have the capacity to shape laws and regulations favorable for the implementation of such practices by businesses and in markets. The following are suggestions on how policy makers can create an enabling condition for sustainable consumption and production practices by businesses, markets, financial institutions and consumers.

Embody a paradigm shift in policy making. A clear and well-defined sustainable growth path should be reflected in and supported by national and local policies. Existing regulations and policy framework that were crafted based on the structure of a brown economy need to be reevaluated and shaped based on the framework of a green economy. Setting this new paradigm for development requires comprehensive planning and policy support that would consider natural resource management, human development and economic growth on an equal level. Economic, environmental and societal goals and objectives of sustainable growth reflected in the national development plans need to be translated into policies to guide and shape implementation of sustainable practices. Implementing existing environmental policies that aim to prevent pollution, regulate emissions and protect the environment would push industries to evaluate production methods and improve environmental performance. Subsidies and incentives need to be shifted away from polluting industries and directed on to supporting efforts to green the industries and emerging green sectors. Incorporating environmental values in national policies and formulating new policies emphasizing awareness, capacity building, investments and green markets could adequately transform the policy climate in support of SCP and innovation.

Incorporate SCP indicators in policy making. In addition to embodying a green economy framework in policy making, SCP indicators can be used as basis of policies. Having clear indicators and targets can help direct decision making on what policy instruments to use, activities to prioritize, disincentives to create and needs to fulfill. Moreover, indicators can also be a measure to which progress or effectiveness of objectives and policies can be assessed, and be incorporated and developed into a monitoring mechanism to sustain SCP efforts. The result of the work of UNEP with countries in the region and APRSCP and Commonwealth Scientific Industrial Research Organization (CSIRO), *Indicators for a Resource Efficient Green Asia*, which identified 32 indicators of Green Economy, Resource Efficiency and SCP and will be implemented in countries in the region, can be used as a guide by countries in drafting development plans and policies.

Optimize use of market-based instruments. New policies and a mix of policy instruments are needed to proactively pursue sustainable growth. Policies on new green products, upcycled or recycled products, product certifications and fair trade are needed to regulate its manufacture, sale, promotion and adaptation to local scenario or practice. Framing, timing and implementing of new policies on SCP considering the needs of industries in terms of capacity building, knowledge transfer, technology resources and innovation, consumer awareness and financing schemes, and the requirements of a green economy can enhance sustainable production practices and support technology innovation. Subsidies, tax incentives, financing schemes (Green/ sustainable investments cases on pp. 24-25) and green certification systems can be utilized in support of regulatory measures to change the direction and pace of growth from polluting industries to one that supports green technology and sustainable and safe practices. Thorough and country specific studies need to be done to determine the mix of policy

instruments applicable and effective to national scenario. Partnership with academia and consultation with stakeholders can enhance actualization of policies.

Strengthen institutional coordination, technical capabilities, and research and development. National agencies on industry, environment, economic development, finance, science and technology, and cleaner production centers need to have the critical knowledge and skills to support the scale up of SCP practices and green economy. While countries in the region are benefiting from the capacity building and knowledge transfer from international cooperation and similar projects, governments should allocate budget to create a pool of national SCP experts, establish and empower national cleaner production centers, and enhance research and development to support development or implementation of applicable technologies in the local setting taking into consideration local practices, culture and capabilities. Strong institutional coordination and technical capabilities are specifically beneficial in trickling down national level policy down to local level implementation. Government staff and officers need to be equipped with the knowledge and capability to frame and plan national SCP programs such as benchmarking, establishing, implementing and teaching the application of various SCP indicators, LCA methodology and eco-labelling among other tools that can be taken up to pursue sustainable growth. Organizational coordination and technical foundation should be developed for the right tools and technologies to be deployed and enhanced, and for industries to be properly advised in making informed decisions. Policy support on strengthening institutional capabilities to handle technical and practical challenges in implementing green sectors, developing green skills and creating awareness of green products among consumers are essential in the early stages of implementation.

Stakeholder outreach and public participation. Communication and collaboration is advised among policy makers and businesses to support not just scaling up of SCP, but also in establishing complementary efforts in the widespread implementation of sustainable production practices and creation of opportunities for sustainable consumption. Policies can influence and guide businesses where to direct investments by being clear with priority development sectors and by providing favorable institutional, governance and financial mechanisms. To be able to create a momentum for sustainable production practices and eventually green sectors, policies need to be written according to the development path they envision and that will also address the needs of the private sector. Opening communication lines and partnering with the private sector on various objectives and needs of the government is a step to further cooperation. Operationalization and implementation of SCP can be accomplished through public-private partnerships in delivering sustainable infrastructure and businesses, and also of innovation technology. Various schemes can be agreed on in the financing of public sector projects by private investments to hasten implementation.

Foster regional cooperation. Environmental and social requirements vary among national, regional and international markets. For instance, some countries in Asia that have established national eco-labels may not recognize other national eco-labels. The existence of various national eco-labels and certification process could create further hurdles for companies specializing in the export market and also of supply chains spanning various countries. Regional initiatives like the ASEAN +3 (China, Korea and Japan) Green Public Procurement could help increase the demand for green products, facilitate harmonization and mutual recognition of national eco-labels, and development of eco-labels in other countries in the region. In addition, participation to regional networks on sector-specific initiatives such as sustainable tourism, sustainable food systems and SCP can enhance benchmarking opportunities, knowledge and technology transfer, collaboration on SCP projects and harmonization of trade

requirements among countries. Regional platforms such as that of the APRSCP and academic fora could open up opportunities for collaborations in implementing SCP practices, research and development and innovation.

VIII. Recommendations for 12th APRSCP

The 11th APRSCP gathered stakeholders from international organizations, academe, government, business and civil society groups to share progress on planning, implementation and mainstreaming of SCP in priority sectors, sustainable consumption topics such as eco-labelling and green public procurement, uptake of SCP in the business sector and policy making, and recent activities and trends on Resource Efficient, Safer and Cleaner Production in the Region and some practical examples and lessons from other regions as well. The APRSCP has served as a platform for dialogue, networking and collaboration among stakeholders in these timely themes and aim to continue sharing the goal of sustainable consumption and production in Asia Pacific. As APRSCP prepares for the 12th roundtable to be held in Cambodia in 2016, the following are suggested themes or areas of focus in the next roundtable as the region moves forward in scaling up SCP practices.

Extending sustainable practices from one sector to another. Many cases presented in this report demonstrated the efficiency gains after introducing and implementing sustainable production practices in specific highly polluting or energy-intensive sectors such as the electric motors, and the leather and textile sectors, and also in using waste (e.g. heat) as a resource or in closing the loop (industrial symbiosis). Other similar cases have been implemented or are being planned in the same sectors as a result of such demonstration projects. Scaling up of SCP practices can be done in this scale (within the sector) and also in extending the scope beyond established sectors. For instance, lessons learnt on planning and implementation of SCP projects as well as technical ideas from these established sectors may be used and applied to the planning of SCP projects and implementation of green technology or efficient practices to other sectors. Ways in which sector-specific sustainable consumption and sustainable production projects are able to broaden its focus, and apply effective tools and approaches in efficiency to other sectors would be interesting to showcase. SCP Projects in the region involving both public and private sectors (PPP) which have the potential for upscaling (such as those that developed models and strategies or those with replicable results) can be invited to share key findings and learning from implementation of sustainable production and sustainable consumption practices and how these can be successfully implemented in similar scenarios and other sectors.

Enhancing dialogue platform on business strategy for the private sector and use of SCP indicators for the government. Outcomes and lessons learned from PPP cases in the region specifically on how businesses are able to adopt better production practices provided evidence that such practices can enhance the environmental performance of enterprises and at the same time result in economic and social gains. This result can encourage more businesses to follow suit, and dialogue with those successful ones can result to a better understanding of resource efficiency and cleaner production, faster uptake of sustainable practices and future collaborations and research and development. Similarly, work has been done by international organizations and research institutions on the use of SCP indicators for policy making and development plans, and by governments in applying these indicators in planning national development agenda. As more countries decide to advance policy making and take up a framework on SCP indicators, these research and experiences will be a significant support. Platforms for dialogue and networking such as that provided by APRSCP would be very much relevant to promote cooperation and synergies in the Region.

Exploring new areas and approaches for sustainability, while focusing on sustainable lifestyle. Innovation technology and creative solutions have a tremendous potential as the region face growing challenges from embedded unsustainable practices, environmental degradation and growing needs of the population. Research and innovation are being developed by industry and research institutions to addressing these challenges. In addition, eco-innovation has increasingly been incorporated in the businesses to help them with the changing demands of consumers, markets and environmental policies. Eco-innovation cases especially those businesses in high impact sectors can be showcased. Development of new green technologies for pollution prevention, redesigning methods of and improving tools for product development that account for environmental impacts and enhance sustainability, and eco-innovative strategies of businesses are among the areas that can be promoted further in the next roundtable. Other areas that can be further explored include mobility, specifically the aviation sector. With the increasing wealth in the region, more flights are taken and more routes are made available. Additionally, the cheap fares offered by low-cost airlines may not reflect the real cost of air travel considering the associated greenhouse gas emissions from aircraft operation and inflight services. As airlines increasingly become conscious of sustainability, technical solutions are being introduced for fuel efficiency. Where sustainable practices can be developed and implemented in this sector will be an interesting new area for discussion.

Supporting activities of business. Aside from incorporating sustainability and innovation in production and business strategy, businesses need to function optimally through its primary and support activities. The four supporting activities of business as defined by Porter (1985), namely, firm infrastructure, human resource management, technology development and procurement are critical to the efficiency of any corporation, and these supporting activities are increasingly being outsourced to provide better service and allow the company focus on its primary functions. In recent years, outsourcing has been observed even the primary activities of businesses. The next roundtable can highlight ways in which the supporting activities of businesses can be fulfilled through various channels and players without compromising core business activities to help companies align its practices with sustainable values, and cases on how businesses have establish strategies that help increase sustainability and efficiency in business models and value chains.

Developing sustainable cities and urban settlements. As the percentage of urban population in the region increases, food, water and energy security, waste generation, mobility, and air and water pollution are among the challenges of cities. While other proponents suggest the creation of industrial or business hubs outside of cities to decongest and disperse the economic activities, some have also suggested using the dense characteristic of city population in planning for sustainable urban development. How are the world's urban areas delivering the basic needs of the urban population and coping with threats like extreme weather in cities? This theme can also explore the means megacities and cities are being sustained, and whether urban planners and city administrators are finding solutions to make them sustainable. What roles do the population, local government, national government, businesses and other interest groups need to assume for sustainability to be achieved in an urban setting? What shifts in business models, city planning and zoning, and property ownership could be introduced?

Training sessions on Resource Efficiency and Cleaner Production. Notable in the cases presented is the need to scale up RECP practices even in the most basic sector of agriculture, food and beverage up to the manufacturing sectors such as textiles, furniture (timber), leather and metals that have regional

significance. As a networking platform, APRSCP can invite consultants and RECP practitioners to deliver training sessions on RECP as applied to the said sectors, while at the same time allowing them to advertise the services their organization or firm offer in order for participants with skilling and training needs to easily communicate with them.

Sustainable Public Procurement. As more countries pursue ecolabelling and possibly mutual recognition of ecolabels between countries, the role of sustainable public procurement in facilitating the demand for sustainable products will increasingly be crucial. Mutual support is needed between efforts of the private sector in greening and safeguarding its production practices and the measures put forth by public policy and public procurement centers in prescribing sustainability criteria for particular supplies needed. As one of the five 10YFP on SCP under implementation, countries in the region can benefit from examples or models of sustainable public procurement implemented in pioneering countries in Asia and the Pacific as well as other regions. APRSCP has also been involved in studies on regional cooperation on ecolabels and SPP which can be updated and shared in the next roundtable.

IX. References

APRSCP. (2014). *11th APRSCP 2014. Paving the Way for the Future We Want in Asia and the Pacific, Summary Report.*

EU. (2014). *Fact Sheet Brochure SWITCH-Asia Programme. 80 Projects at A Glance.*

UNEP. (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication.*

UNEP. (2012). *The Business Case for the Green Economy. Sustainable Return on Investment.*

UNEP. (2014). *The Business Case for Eco-innovation.*