

The 10th Asia Pacific Roundtable for Sustainable Consumption  
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**Background Paper**

**Asia-Pacific Outlook on Sustainable  
Consumption and Production Policies**

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# Asia-Pacific Outlook on Sustainable Consumption and Production Policies

Lewis Akenji

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## 1 Introduction

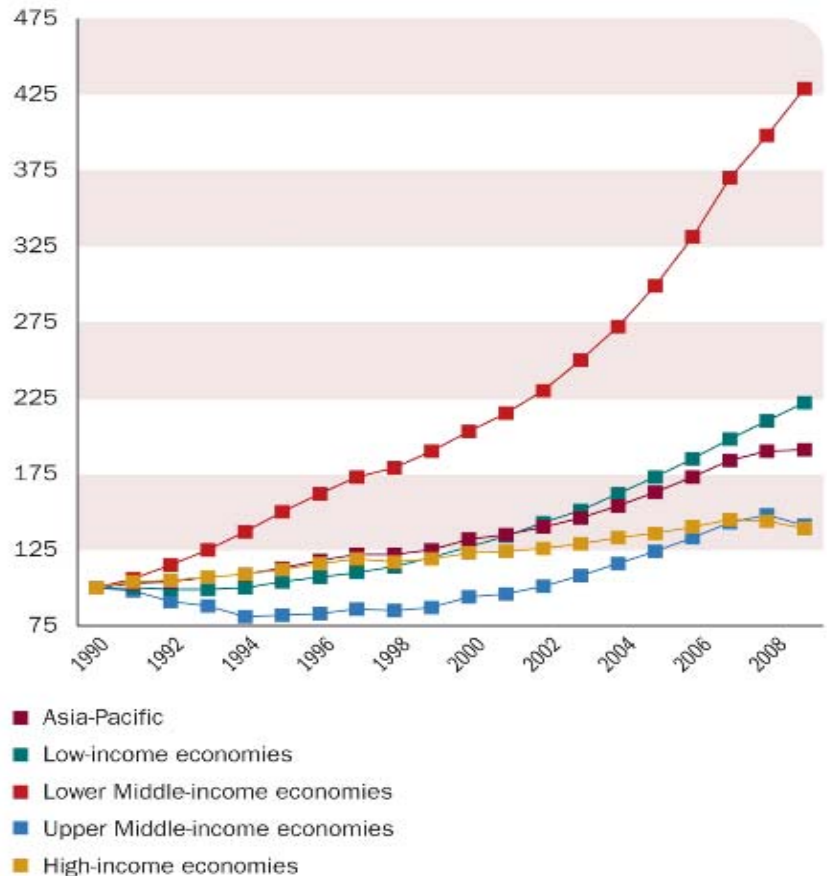
The Asia-Pacific region covers over 40 per cent of the planet's land area and is home to almost two thirds of the world's population. Recently, it has witnessed some of the world's fastest economic growth and, simultaneously, rapid rates of urbanization. Conversely, the region also has some of the highest numbers of people living in poverty; in 2009 the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP, 2010a) estimated the number of people living on less than \$1.25 per day to be 979 million.

Sustainable consumption and production (SCP) patterns are framed by the economic climate of the country. Policy responses and initiatives on SCP thus follow clustered characteristics for economies of the region, which can be placed into three broad categories: industrialized economies (e.g., Japan, Australia), emerging or fast developing economies (e.g., the Kingdom of Thailand and the People's Republic of China), and least developed economies (e.g., the Socialist Republic of Viet Nam and the Lao People's Democratic Republic).

Industrialized economies like Japan and Australia have, over recent decades, seen single-digit economic growth rates; however, Gross Domestic Product (GDP) per capita remains high in these countries. Correspondingly, consumption per individual is high, with overall higher ecological footprints than are sustainable (WWF, 2010). Rates of population growth in these countries have been fairly stable in recent decades; some, such as Japan, are witnessing decreasing population. Although rural-urban migration has slowed down, most of the population resides in urban areas. With high minimum incomes distributed over these countries—in both rural and urban areas—there is much disposable income, the rate of poverty is low, and the income distribution gap between the rich and the poor is fairly small, compared to other industrialized countries like the United Kingdom (Asia Development Bank, 2010).

In emerging economies, a typical trend over the last few decades has been the surge in industrial expansion and consumption activity. This is most clearly illustrated by China and India and, to a lesser extent, by Malaysia and Thailand. Even as the financial crises threatened European, American and other industrialized economies, these countries still registered growth rates of about 8 per cent. By 2006, the People's Republic of China surpassed the United Kingdom of Great Britain and Northern Ireland to become the world's third largest economy; in 2010 it moved up behind the United States of America after replacing Japan as the second largest. Given its high growth rates and the fact that a large volume of the goods and services consumed in industrialized countries are produced here, the Asia-Pacific region is now the world's largest user of natural resources. In 2005, led by the People's Republic of China and the Republic of India, the region consumed about 32 billion tons, or 8.6 tons per capita, of resources, including biomass, fossil fuels, metals, and industrial and construction materials (United Nations Environment

Programme (UNEP), forthcoming). This intensive industrial activity among emerging economies has seen jumps in total emissions of greenhouse gases. Between 1970 and 2005, carbon dioxide (CO<sub>2</sub>) emissions in the region grew by 400 per cent and rose from 13 per cent to 30 per cent of global emissions (UNEP, forthcoming). However, in terms of per capita emissions, developing economies like China and India are still well below industrialized countries.

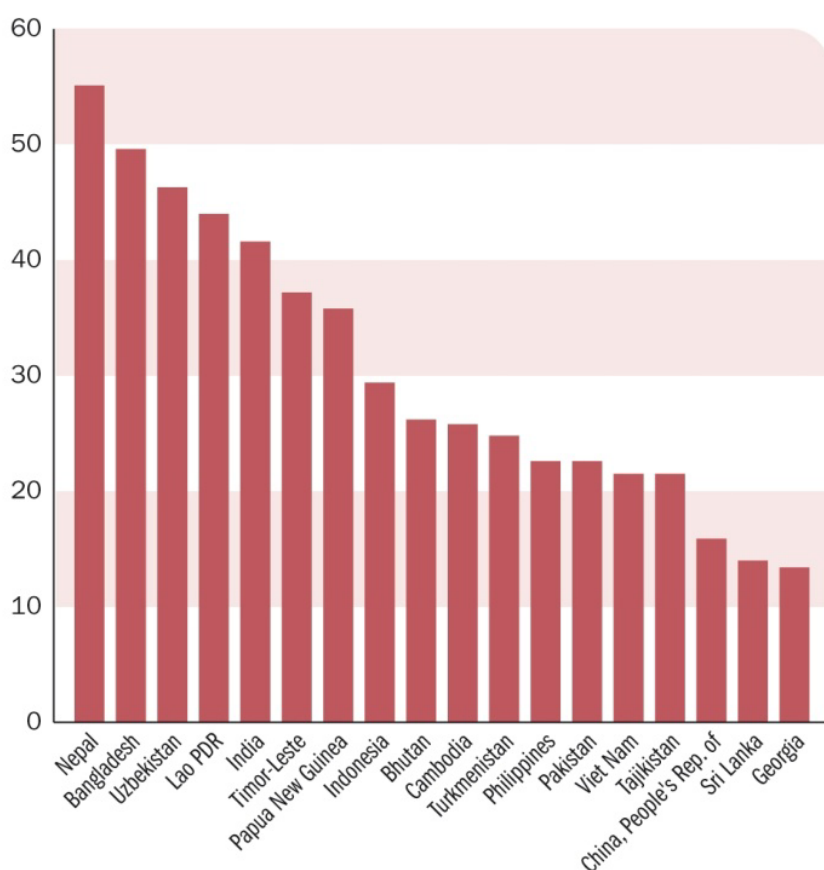


**Figure 1: Index of change in GDP, by income groupings of Asia-Pacific countries, 1990–2008. Source: UNESCAP, 2011 (calculated by UNESCAP using data from United Nations Statistics Division, National Account Main Aggregates Database).**

Hand in hand with this economic growth, these economies have seen the rise of a new consumer class, with lifestyles that largely emulate those seen in more industrialized societies. A recent report by the Asia Development Bank (ADB) looked at growth rates among developing Asian economies over the last 20 years and extrapolated that at such rates, developing Asian countries will comprise about 43 per cent of worldwide consumption by 2030. According to the ADB authors, “Asia’s emerging consumers are likely to assume the traditional role of the US and European middle classes as global consumers” (ADB, 2010). Unsustainable production and consumption patterns are becoming an issue and governments are starting to address them. The

growing number of people now living in urban areas is leading to even more resource-intensive lifestyles. But per capita consumption in these countries is still much lower than in industrialized countries.

There is a dichotomy of social existence (Akenji and Bengtsson, 2010) in emerging Asian countries: income distribution in the People's Republic of China, the Republic of India and others is lopsided, leading to conspicuous consumption by the rich, an emerging consumer class cast against the many slums in cities and large pockets of poor rural areas around the countries. About 35 per cent of Asia-Pacific urban residents were living in slums in 2005 (UNESCAP, 2010a). Basic health and social needs are yet to be met among the poor; in some cases, livelihoods are being threatened to accommodate development projects.



**Figure 2: Economies with more than 10 per cent of population living on less than \$1.25 a day. Sources: ADB, 2010; Secretariat of the Pacific Community, 2010; United Nations Statistics Division, 2010.**

Waste is increasingly a problem in Asia-Pacific economies. In general, there is noticeable increased volume and varieties, qualitative diversification and more transboundary movement of wastes. Industrialized economies maintain high waste outputs, a result of the relatively high material consumption lifestyles of citizens. Emerging economies have been seeing rapidly

increasing waste generation, correlating with increases in GDP and growth in disposable income. In the People's Republic of China and the Republic of India, for example, e-waste generation from old computers was predicted to jump by a factor of 2 to 4 between 2007 and 2020; during this period, the number of discarded mobile phones was projected to increase by 7-fold in China and 18-fold in India (UNEP, 2009).

Open dumping is the usual means of waste disposal by households, leading to water contamination, foul odours and other environmental, health and social problems (Akenji and Bengtsson, 2010). The situation among least developed economies tends to be the worst. Desoldering and wet chemical leaching of printed circuit boards found in computers, televisions and radios often causes contamination via heavy metals and flame retardants; dioxins and furans are released from open burning of poly-vinyl chloride (PVC) or wire insulation and this contributes to the contamination of air, water and soil.

Consumption and production patterns in least developed economies are more restrained versions of those in emerging economies, the primary restraints being poverty and resource scarcity. As a region, the challenge is therefore to develop production and consumption that can meet the needs of an increasing population that is rapidly urbanizing and decreasing biophysical capacity due to resource constraints, while at the same time curbing increasing rates of pollution.

## **2 Initiatives at the regional level (outlook, initiatives, policies)**

In the Asia-Pacific region, SCP rides on the back of the economic growth and broader sustainable development agenda. The strategy of Environmentally Sustainable Economic Growth, or Green Growth, is an approach that, promoted by UNESCAP, has been widely adopted by countries in the region. It was launched in 2005 at the 5th Ministerial Conference on Environment and Development (MCED) in Seoul, Republic of Korea, as a way to reconcile tensions between efforts to achieve two of the Millennium Development Goals, namely, poverty reduction and environmental sustainability (UNESCAP, 2005). Green Growth promotes SCP, the development of sustainable infrastructure, and the introduction of green tax reform for reducing poverty, raising fiscal revenues, and improving the eco-efficiency of economic growth. UNESCAP has since provided capacity-building to some national governments towards the development of Green Growth Strategies. One such government is Cambodia, which has gone ahead to develop a national roadmap towards Green Growth. However, at the recent MCED held in Astana, Kazakhstan, in 2010, several major economies—including China and India—expressed the need for further clarification of the Green Growth concept (Dorji and Dorji, 2010).

A number of platforms exist in the region for collaboration on issues of sustainability. Most of these involve meetings by government officials, but quite often other stakeholders are brought in at the project implementation phase. A majority of these platforms address climate change, followed closely by the number addressing biodiversity conservation and water problems. The Tripartite Environment Ministers Meeting (TEMM) has been bringing together Japan, the

Republic of Korea and the People's Republic of China since 1999 for cooperation concerning climate change, biodiversity conservation, pollution control and transboundary movement of e-waste, among other issues. In 2005 TEMM member countries formed a working group on common standards for environmental labels (TEMM, 2010). Through the working group, the three countries have agreed to develop common standards (for water-based paints, stationery, personal computers and plastics) and to harmonize their eco-labels to facilitate green purchasing with each other (TEMM, undated).

One SCP-dedicated initiative is the Asia-Pacific Roundtable for Sustainable Consumption and Production (APRSCP). The APRSCP is a network of industrialists, environmental professionals, university academics and researchers, as well as policymakers. It was started in Bangkok in 1997 as a roundtable for cleaner production; however, indicative of the general trend to shift from strictly technical approaches (such as eco-efficiency) to more socio-technical approaches that include consumer behaviour and psychology, the forum was renamed and given a new focus on the broader subject of SCP. The Roundtable has been held every 18 to 24 months since being founded, working to facilitate uptake of SCP research, policy and practice. (see case study 1)

### **Case study 1: Asia-Pacific Roundtable for Sustainable Consumption and Production**

The Asia-Pacific Roundtable for Sustainable Consumption and Production (APRSCP) is an Asia-focused international, non-governmental, non-profit, network institution that promotes sustainable consumption and cleaner production in the Asia-Pacific. The APRSCP is concerned with reducing environmental impacts while maintaining or improving economic outputs and standards of living. The Roundtable has a strong network of industrialists, environmental professionals, university academics and researchers, as well as policymakers.

The Roundtable was established between 1997 and 1999, from a regional cleaner production meeting in Thailand with catalytic support from United Nations agencies, the United States–Asia Environmental Partnership, the ADB and other partners. The participants in this meeting agreed that there was a need for a forum to discuss and promote the idea of cleaner production and share results regionally, in order to speed up acceptance of what was then a new concept. Along the way, cleaner production evolved into the more challenging topic of SCP. Since those earlier years, a regional Roundtable has been held every 18 to 24 months.

Participating economies, including those on the Board of Trustees, are Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, Hong Kong (China), India, Indonesia, Japan, Taiwan (China), Kazakhstan, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, the Republic of Korea, the United States, Russia, Singapore, Sri Lanka, Thailand, Uzbekistan, and Viet Nam, along with member countries in the United Nations agencies (UNEP, the United Nations Industrial Development Organization, and UNESCAP) and the ADB.



The APRSCP has undertaken several programme activities such as (1) engaging in information exchange among members, using approaches such as newsletters, e-mail list servers, technical journals, special publications, conferences and symposia; (2) conducting training sessions, workshops and staff exchanges for the purpose of increasing the skills and knowledge of members and other interested parties; (3) acting as a clearing house for the exchange of data and information on sustainable consumption and cleaner production in the Asia-Pacific region, including reports, books, articles, data and statistics; (4) developing and maintaining a register of professionals involved in promotion of sustainable consumption and cleaner production who are available to provide advice and counsel; (5) supporting development of new country-level SCP roundtables and fostering the sharing of information and experience among existing and planned country-level SCP roundtables; (6) assembling qualified and objective committees and working groups that can provide competent and objective analyses as well as information on sustainable consumption and cleaner production; (7) maintaining relationships among APRSCP, its members, and appropriate regional and international organizations; and (8) carrying out activities, programmes and initiatives as necessary to fulfil the mission and objectives of APRSCP, such as the periodic regional roundtable.

The Roundtable has been successful in including participants from all subregions including South Asia, South-East Asia, North-East Asia, Central Asia and Australasia. The stakeholders have commented that the roundtable format is very effective for the consideration of technology, management and policy issues. APRSCP Roundtable outputs have been used as major inputs in global decision-making processes such as the World Summit on Sustainable Development and the Commission on Sustainable Development (CSD)-18/19, to name two.

The APRSCP network has grown and matured over the years and, with its supporters, has cooperated in recent projects such as collaborating with Resource Efficient and Cleaner Production activities in the Asia-Pacific region.

*Sources:* APRSCP (undated) and input from APRSCP Board members.

An example of a broader and more practice-oriented mechanism is the Asia-Pacific Forum for Environment and Development, or APFED. It promotes model local initiatives and brings together experts to formulate lessons learned in policymaking and apply them to climate change, biodiversity conservation, the 3Rs (reduce, reuse and recycle) and water management. In its second phase, launched in 2005, APFED has been giving out awards to outstanding projects, funding showcase projects and running events on capacity-building, stakeholder empowerment, governance, technology and finance for sustainability (APFED, 2010).

Several sustainability policy platforms tend to be subregional in geographic focus. Examples include the Northeast Asian Sub-regional Programme of Environmental Cooperation, the North West Pacific Action Plan, the South Asia Cooperative Environment Programme, and the Pacific Islands Forum. Other corporation platforms are more focused on specific issues: the Asia Forestry Partnership and the Acid Deposition Monitoring Network in East Asia are examples.

### **Text box 1: Weaving sustainable consumption and production into broader policy platforms**

Rather than just stand alone, SCP policies and programmes are quite often embedded in broader policy platforms. As an example, recognition for SCP is enshrined in Association of Southeast Asian Nations (ASEAN) key documents, among them the *ASEAN Declaration on Environmental Sustainability* (ASEAN, 2007). ASEAN was created out of security concerns amidst political upheavals in the 1960s. Over time, it has expanded its scope, with economic cooperation becoming a priority. ASEAN founding documents from Bangkok, 1967, highlight the need for prosperity of the peoples. In 2003, the *Bali Declaration of ASEAN Concord II* (ASEAN, 2003) created a Socio-Economic Community as a third pillar of the association and under which ASEAN environmental issues are addressed through a working group. The *ASEAN Vision 2020* (ASEAN, 1997), which charts a future for ASEAN countries, aspires for “a clean and green ASEAN with fully established mechanisms for sustainable development to ensure the protection of the region’s environment, the sustainability of natural resources and the high quality of life of its peoples.” SCP is further built into the Roadmap for an ASEAN Community 2009–2015 under the *ASEAN Socio-Cultural Community Blueprint* (ASEAN, 2009). Components of Section D, on Ensuring Environmental Sustainability, show SCP as a cross-cutting theme for “promoting clean and green environment by protecting the natural resource base for economic and social development.” The *ASEAN Environmental Education Action Plan 2008–2012* (ASEAN, 2008) also provides a basis for stakeholder awareness-raising and involvement in SCP activities.

Some countries have also championed regional initiatives as parts of their foreign environmental policies. One example is the promotion of the Clean Asia Initiative by the government of Japan. Launched in 2008, the initiative aims for developing countries to learn from the experiences of Japan in order to “leapfrog”, primarily through transfer of technology and the sharing of know-how. The goal is to achieve a low-carbon society with a sound material cycle and to live in harmony with nature. A cross-cutting objective is to “promote environmentalism in the marketplace” (Ministry of the Environment, Japan, undated a). A number of high-level forums and initiatives have been started under the Clean Asia Initiative to address environmental issues related to water, pollution, biodiversity and other concerns. An example is the Regional 3R Forum in Asia (Ministry of the Environment, Japan, undated b), which brings together ministers of environment for high-level meetings and collaboration on the problem of growing waste that has paralleled rapid urbanization in the region.

Other governments around the world are also active in promoting SCP in the Asia-Pacific region. The SWITCH Asia programme is one such example and remains one of the better funded major initiatives in the region. Through the programme, the European Commission provides grants to build the capacity of small and medium enterprises in SCP practices, maintains a Networking Facility that facilitates upscaling of successful practices, and offers a Policy Support component for the implementation of SCP-related policies in the region. The SWITCH Asia programme (see

case study 2) has funded over 30 projects in 15 Asian countries in areas such as green public procurement, cleaner production and eco-labelling. The Policy Support component has so far targeted Malaysia, Thailand, Indonesia and the Philippines (European Commission Development and Cooperation—EuropeAid, 2011).

### **Case study 2: The SWITCH Asia programme**

The SWITCH Asia programme was set up by the European Commission in line with its Regional Strategy paper for assistance to Asia (2007–2013). The aim is to promote SCP among small and medium enterprises in Asia, with three strategic components. Through project grants, SWITCH Asia funds projects that can produce quantifiable reductions both of CO<sub>2</sub> emissions and of resource, water and energy consumption. The Network Facility provides support for projects funded under the SWITCH Asia programme in order to increase the quality and impact of project activities, along with facilitating the uptake of successful results by Asian policymakers. The Policy Support component, launched in 2010, aims to strengthen the formulation and implementation of SCP policies in the region. This is done primarily through capacity building, in collaboration with UNEP, for countries interested in developing SCP. The component will also focus on selected countries—Malaysia, Thailand, Indonesia and the Philippines—that have already gathered experience in applying SCP tools. For the period 2007–2010, the allocated amount under the programme was €90 million. SWITCH Asia has funded 30 projects in 15 Asian countries in areas such as greening supply chains, marketing for eco-products, green public procurement, cleaner production, eco-labelling and products for the poor. In addition to promoting specific SCP practices, the projects employ innovative replicating mechanisms such as voluntary agreements, public–private partnerships, and upgrading of technical standards or reinforcement of existing SCP service providers to make countries self-sustainable on the market.

*Source:* European Commission Development and Cooperation—EuropeAid, 2011.

Despite recognition of their necessity by regional organizations such as ASEAN and by national governments, SCP policies have so far not been met with sufficient follow-through to implementation—and although demonstration programmes and pilots have occurred, SCP on the whole has yet to become mainstream. Even at the policy level, however, achievements encourage the establishment of precedents and provide the necessary groundwork for further developments.

### **3 National strategies**

This section aims to highlight positive examples of progress in the Asia-Pacific region that could be emulated as good practice and improved upon.

Following the Rio and Johannesburg Earth Summits, Asia-Pacific countries actively developed national strategies for sustainable development (NSSDs). The 2002 Johannesburg Earth Summit called upon countries to draft these by 2005. Although many countries in the Asia-Pacific region got off to a slow start due to capacity and financial constraints, with support from UNEP, the ADB and the Norwegian Ministry of Foreign Affairs, most governments in the region have formulated NSSDs as part of a larger effort to mainstream sustainability into decision-making (UNEP, Regional Resource Center for Asia and Pacific, 2008). There is also strong regional interest in the Millennium Development Goals, with most countries—especially the least developed countries—pursuing them as primary objectives of their NSSD.

The concept of SCP is embedded in NSSDs, usually as a cross-cutting theme, but in some cases as a dedicated strategy that parallels other approaches. The following examples do not comprise an exhaustive list of representative SCP policies; rather, they demonstrate some of the innovative approaches emerging in the region—with some showing how SCP policies take shape in the local context.

In 2005 the Republic of Korea launched its National Vision for Sustainable Development (Chung and Hwang, 2006), which highlighted the need for economic growth that enhances the quality of life and, through environmental preservation, ensures resources for future generations. The vision was followed by development of an NSSD (2006–2010), which was approved by the national cabinet in 2006. Similar to most other NSSDs, the Korean strategy contains five main themes: sustainable management of natural resources; social integration and national health promotion; sustainable economic development; climate change and global environmental issues; and education for sustainable development. Each of the five themes has “implementation tasks”. SCP is included as an implementation task in the strategy. More recently, in 2010 Korea passed the Framework Act for Low Carbon, Green Growth (Ministry of Government Legislation Korea, 2010), laying out a strategy towards “creating the green technology and the green industry to ensure that the economy and the environment are harmonized, encouraging green buildings, and helping people to lead a green life”. As an economic priority, Korea has created a Presidential Committee on Green Growth (Ministry of Environment Korea, undated).

The NSSD in Japan, based on an act passed in 2000 and called the Fundamental Plan for Establishing a Sound Material-Cycle Society (Japan, 2008), has the objective of restraining the consumption of natural resources and minimizing the environmental burden. In 2007 the Japanese cabinet passed a broader plan to guide environmental policy in Japan, entitled *Becoming a Leading Environmental Nation Strategy in the 21st Century: Japan's Strategy for a Sustainable Society* (Japan, 2007). The strategy aims to achieve a Low Carbon Society, a Sound Material-Cycle Society, and a Society in Harmony with Nature. Under this plan, for example, Japan’s 3R (reduce, reuse, recycle) activities are based on the spirit of “Mottainai”. Mottainai is a long-established Japanese concept expressing, essentially, that it is a shame for something to go to waste without having made use of its full potential. This expression encompasses a respect for the environment that has been handed down from ages past (G8, 2008). In 2010 the Japanese strategy was revised and integrated into a national New Growth Strategy (Japan, 2010), emphasizing the country’s strength in low-carbon technology and providing incentives for green

innovation. Among others, the strategy provides incentives for green production and procurement, development of smart energy grids and energy-efficient housing. It also sets targets for 2020, among which are to realize a ¥50-trillion green market, create 1.4 million new environment-related jobs, and reduce CO<sub>2</sub> emissions by 1.3 billion tons.

Each country's strategy introduces aspects of sustainability unique to the national context. For example, the NSSD in New Zealand pays attention to the role of women in the country's society. The strategy also focuses on the integration of Maori communities.

SCP is one of four national strategies of the Tenth National Economic and Social Development Plan of Thailand, effective from 2006 to 2011 (National Economic and Social Development Board, 2007). It is complemented by a guidance manual covering the period of 2007 to 2036. Thailand aspires to a balanced state of happiness, self-sufficiency and social security for present and subsequent generations. The Thai approach of a Sufficiency Economy (UNEP, 2006) was developed by His Majesty King Bhumibol Adulyadej as a guiding philosophy for the country's sustainable development. It seeks a balance between society at the local level and the market in the global context. According to the King, it is not important for Thailand to be an "economic tiger" or to become characterized as a newly industrialized country; instead, a Sufficiency Economy requires people to live in moderation and be self-reliant in order to protect against changes that could destabilize the country. Among others, the objectives of the government of Thailand are to increase the proportion of national income from green service sectors; to reduce government subsidies and supports for dirty production and service sectors; to increase tax on dirty sectors and decrease tax on incomes; and to promote green governmental procurement (Termpittayapaisith, 2008).

In the People's Republic of China, SCP is guided by the Circular Economy approach, which promotes the 3Rs—reduce, reuse, recycle—through reduced material input and increased efficiency in production, and integration of consumption and production systems in order to facilitate resource circulation within industries and municipalities. Reflecting the fast pace of China's resource-intensive growth in the last decades, one of its priorities is ecological efficiency in economic development. A series of pilot projects towards the above objectives have been initiated at the levels of individual firms, eco-industrial parks and eco-industrial networks, and at the municipal and provincial levels (Pintér, 2006).

In September 2006 the Royal Government of Cambodia organized an inception workshop for beginning the formulation process of its NSSD. In a process of over a year of consultations, the NSSD was formulated by consolidating a Cambodian Social-Economic Development Plan and its National Poverty Reduction Strategy and aligning it with the country's Millennium Development Goals and Action Plan (Cambodia, 2009). The strategy underscores the need in Cambodia, as with the least developed Asian countries, to lift substantial portions of the population out of poverty. Recently Cambodia, with the assistance of UNESCAP, has developed a Green Growth Roadmap. (see case study 3)

### **Case study 3: The Green Growth Roadmap in Cambodia**

Cambodia has joined the Republic of Korea as an innovator in the field of low-carbon Green Growth. Supported by the Korean International Cooperation Agency and UNESCAP, the country has recently declared its intention to embark on a path to environmentally sustainable economic growth. To aid this process, the Cambodian government created a Green Growth Secretariat in the Ministry of Environment, who has liaised heavily with other ministries to set up an inter-ministerial working group. Throughout 2009, the group convened several times and identified the contents and structure of the recently published National Green Growth Roadmap. The Roadmap was produced in consultation with other development experts and practitioners, with a view to identifying a way of balancing economic growth with environmental limitations.

The Roadmap lays out a vision for increased multi-stakeholder collaboration in the design and implementation of projects and programmes, placing special emphasis on agriculture, tourism, industry and commerce. As an overall goal, the Roadmap accentuates the increase of access to crucial goods and services necessary for Cambodian people. Being a communicative effort by the government to propose greater coherence between sectoral and agency development priorities, the Roadmap begins by proposing a number of interventions to aid the mainstreaming of Green Growth concerns into the overall development framework of Cambodia. Such interventions aim to enhance inter-ministerial and multi-stakeholder cooperation. If implemented, the suggested interventions will, in the short term, create green jobs and make major contributions towards stimulation of the economy while protecting vulnerable groups and improving environmental sustainability.

The Roadmap identifies necessary actions, including the creation of a National Ministerial Green Growth Council, a national public awareness and consultation process, the integration of eco-village/eco-city initiatives into the country's National Strategic Development Plan, development of a national strategy for greening industries that is based on resource efficiency and the 3Rs, and development of stimulus measures for promotion of sustainable agriculture in cooperation with international and local development agencies. Finally, the document proposes the establishment of green funding mechanisms, including payments for ecosystem services, internalization of environmental externalities, and debt-swap schemes and measures to strengthen the national environmental industry sector.

*Source:* UNESCAP, 2010b.

Bhutan has a strong emphasis on cultural and environmental preservation, and its SCP is very much embedded in its use of Gross National Happiness (CBS, undated) as a guiding framework for development. The country's strategy is explained in *The Middle Path: National Environmental Strategy for Bhutan* (Bhutan, 1998).

In what is typical of least developed economies in the region, good strategies are not necessarily complemented by concrete targets. Sri Lanka, for example, has an NSSD that emphasizes eco-tourism, cleaner production, sustainable fisheries, high quality of healthcare and so on, and yet

no targets or indicators have been set for any of the aforementioned policies; more capacity building is needed to realize NSSD objectives (UNDESA, 2007).

Broader sustainability activities by the government of Viet Nam are guided by the Operational and Organizational Charter of the National Council on Sustainable Development (Viet Nam, 2005). Although Viet Nam showed a keen interest in cleaner production in the 1990s, it got off to a slow start, due in part to capacity constraints and limited awareness of sustainable options. However, by 2010 the Government of Viet Nam had established a cleaner production model for industry, developed and implemented 3R projects through cooperation with Japan, established economic incentives for environmentally friendly investment, and integrated the Green Growth/Economy concept into the national socio-economic development strategy for 2011–2020 (Thuy, 2010). In 2010 Viet Nam, with support from UNEP, developed an SCP national action plan.

In December 2009 the Prime Minister of Viet Nam signed its National Strategy for Integrated Solid Waste Management covering the period up to 2025 and with a longer-term vision to 2050 (Viet Nam, 2010). The objectives are to improve community health and environmental quality, achieve source separation of domestic waste by households, and apply the 3R approach to minimize waste disposal and reduce pollution. Among some of the tools, Viet Nam will provide state incentives for investment in solid waste management facilities; boost environmental technology development and support technology transfer; develop capacity of waste collectors and volunteers at local and central levels; develop a database system on solid waste patterns for use at central and local levels; create a fund to support solid waste reduction and recycling; and promote scientific research, environmental education and awareness raising at schools, communities and business establishments. Up until 2015, Vietnam's target objectives under its waste management strategy are to collect and sustainably treat 85 per cent of domestic solid waste in cities, 50 per cent of construction waste in urban areas, 80 per cent of non-hazardous industrial solid waste and 60 per cent of hazardous solid waste from industrial parks, and to clean up all its seriously polluted dumping sites. These percentages and goals increase and expand from 2015 to 2025.

Most countries see economic growth as a way to end poverty. Viet Nam, Lao PDR and Cambodia all have strategies that reflect this. In the Viet Nam Vision 2020, the country aspires to be a modern industrialized country in 2020 by doubling its GDP, increasing the level of savings/investment and improving upon the Human Development Index. SCP activities in Lao PDR are a part of the National Socio Economic Development Plan, and also the National Growth and Poverty Reduction Strategy; the government's overarching development goal is to lift the country from the ranks of least developed countries by 2020. Bhutan, Bangladesh, Lao PDR, Nepal, Thailand and Viet Nam have all been working with UNEP to mainstream poverty–environment linkages in national planning, through the UNEP–United Nations Development Programme (UNDP) Poverty–Environment Initiative (UNEP and UNDP, undated).

Local strategies and initiatives have also contributed to multiplier impacts that, in turn, have promoted further SCPs. Examples include sustainable local agriculture and marketing in the rice-

producing town of Ikeda in Japan, and the Green Shop movement started in the city of Gwacheon, Korea. ( see case study 4)

#### **Case study 4: Using local shops to bolster sustainable community lifestyles**

In the rice-farming town of Ikeda, in the Fukui prefecture of Japan, the decreasing number of farmers in the town (whose population declined by almost 20 per cent from 1995 to 2005) and a faltering local economy inspired the mayor to use sustainable local production and consumption of agricultural products as part of an overall plan to promote sustainable lifestyles and revitalize the community. One successful initiative is a store named Koppoi-ya, which means “thankful” in the local dialect. The store is run by people from Ikeda; it sells organic rice and other agricultural products produced by Ikeda’s farmers at a shopping centre in the capital city (population 270,000) of Fukui prefecture. Ikeda has its own certification mechanism for organic foods, in particular for products consumed by farmers themselves; today, about 160 farmers participate. In 2007 the annual sales through this store exceeded 20 per cent of Ikeda’s total agricultural sales. The town developed a centre to produce fertilizers from organic waste, generated by town residents by mixing dung and rice husks. Collection of household organic waste is implemented by local non-profit organization volunteers, of which about one third are town government staff. The fertilizer produced at the centre supports Ikeda’s agricultural production. One success factor has been the mayor’s effort to develop and deepen the trust between local government staff and local residents. The mayor identifies agriculture as “a part of life, bond among people, art for living, and the cornerstone of local lives”. The mayor also instituted a green tourism package that invited people to come and experience the agricultural way of life and that included the development of a facility where urban residents can stay and experience agriculture in Ikeda, further deepening the common citizen’s understanding of the fundamentals of a sustainable lifestyle and culture (Nakamura and Elder, 2010).

In the city of Gwacheon, Korea, the opening of a “Green Shop” was initiated by local community members. The original aim of this shop was to encourage citizen participation in exchanging everyday items that they did not use anymore but that were still in good condition. It soon became very popular and gathered support from the wider community and from the municipal government. As a result, the city of Gwacheon started to support this Green Shop movement, setting up a formal office to replicate the city’s achievements in other cities in Korea. By supporting governmental agencies and citizen organizations, the Green Shop network has expanded, with 55 Green Shops operating in different provinces across the country by 2009. An education programme is first provided to community members whenever a Green Shop opens in a new city or province. The Green Shop Movement’s primary website shares information and experiences to facilitate sustainability, not only via the exchange of products but also through citizen donations and other activities. This expanded activity indicates an evolution of the Green Shop goals over the last two decades from simple recycling or energy-saving activities into



creation of a culture of sustainable community living. According to one of the participating cities, Suwon-City, its Green Shop has raised 19,400,000 won and provided student grants to 28 local students. Local volunteers continuously offer various social service activities—for example, provision of services, food and daily necessities twice a week to local elderly people living alone or in poor conditions. The Green Shop membership also runs a “Green Farm Sharing Happiness” and donates products to social welfare facilities. The local authority is now considering setting up an administrative unit to oversee the Green Shop, as its scale increases.

*Source:* Green Shop, undated.

The Phitsanulok municipality in Thailand has carried out a number of waste management initiatives using the 3R approach; these have helped to reduce the amount of waste for final disposal, thereby mitigating environmental impacts and greenhouse gas emissions. As a strategy, the municipality decided to make waste management a priority area in several departments. It educated residents through a door-to-door campaign and by making public announcements. The municipality then reduced the budget for automatic street sweepers by 70 per cent, creating 97 new jobs for residents. In addition, public–private partnerships were established to promote recycling and decentralized composting of household waste. While these interventions already managed to reduce waste generation by 40 per cent, the “Faber-Ambra” mechanical biological treatment method prior to landfill further reduced the amount of waste. The combined impact of these activities yielded an 80 per cent reduction in waste headed to the landfill; the potential exists for even further reduction via using plastic waste fragments as refuse-derived fuel, increasing composting and reducing the arsenic contamination of the organic fraction from the mechanical biological treatment. The SCP benefits of the Phitsanulok municipality’s strategy are increased resource efficiency, income generation for families supporting the recycling business, a raised social status of waste pickers, and increased social acceptance and awareness of 3R practices (Sang-Arun and Bengtsson, 2009). This example mirrors another by the city of Surabaya under the so-called Kitakyushu Initiative that has come to be seen as a model of waste management success in the region (see case study 5).

### **Case study 5: Supporting compost utilization in the Republic of Indonesia**

The Kitakyushu Initiative for a Clean Environment Network, initiated by the city of Kitakyushu, Kitakyushu International Techno-Cooperative Association, and the Institute for Global Environmental Strategies (IGES), with support from UNESCAP, provided its technical assistance to the city of Surabaya in establishing a Sound Material-Cycle Society through promotion of composting in 2004. The system was first piloted in an urban community called Rungkot Lor, which is located adjacent to the largest industrial area in the city. Pusdakota, a local non-governmental organization (NGO), organized a community and educated its residents

in the separation of waste at the source, introducing a simple technology to treat the organic waste at the household level (the design of the household compost bin being based on the Takakura Home Method) and encouraging residents to grow vegetables and herbal plants in home gardens using household compost. The results revealed that the project provided extra economic opportunities for community members, improved the sanitary conditions in the community, and created greener and cleaner waste handling at the community level.

Based on the success of the pilot project, the city of Surabaya introduced some policy measures to positively support the community-based composting programme at a city level, building partnerships with the women's network, local NGOs, informal waste pickers, academic institutions, private ventures and the media. A system of environmental waste collectors and volunteers was established to share information regarding the new waste collection system, to assist new families in starting household composting and to educate those families about the benefits of keeping the environment clean and green. Once the households had a general knowledge of the system, free compost bins were given to them by the city. In addition, 16 composting centres have now been established throughout the city to process waste collected from markets, streets and parks. City-wide, environmental competitions and award systems were established in partnership with the private sector to motivate and strengthen community participation in the city's new waste management system and to encourage communities to improve their neighbourhood environments. The city also enacted a local regulation, No. 1/2006, on community-based solid waste management and incorporated this new strategy into the preparation of the midterm development plans (2006–2010) of the city.

As a result of this supportive policy environment, there has been a significant reduction of transported waste to the final disposal site, as much as 20 per cent. About 1,797 community groups in the city are actively involved in promoting community composting activities, which has provided additional income-earning opportunities for low-income families, since they are able to sell their own compost, on average, for US\$0.07 per kg. The green spaces in housing areas have increased from 269.29 acres in 2006 to 274.44 acres in 2007, due to the establishment of an urban farming programme by the communities. About 15 small and medium scale recycling businesses have been started by private ventures, creating new job opportunities for low-income people. The social capital within communities has been strengthened by the active involvement of community members in the pursuit of common goals. In addition, compost utilization has mitigated greenhouse gas generation in landfills, a reduction of about 8,000 tons of CO<sub>2</sub> equivalent in 2009. The city of Surabaya has also received a number of international awards in recognition of its achievements, including the Energy Global Award in 2005 from Austria, the Green Organisation's Green Apple Award in London in 2007, and Urban Environmental Improvement from UNESCAP in 2007.

*Source:* Interviews with Secretariat of the Kitakyushu Initiative for a Clean Environment: IGES, D. G. J. Premakumara, Toshizo Maeda, and Miwa Abe.

Waste management remains the most widely addressed life cycle stage by governments. This is a reflection of the visible pressures that come with increased consumption. But it also reflects that policy is more reactive than proactive. Although there is much consensus on the scarcity of resources to feed business-as-usual economic growth in several Asian countries, there is yet to be an implementation of policies aimed at shifting from a consumptive growth scenario to a more sustainable economy. Closest to such a scenario is the strategy of Bhutan, which strives to replace GDP with the happiness of its citizens as a measure of successful development. Even so, the Gross National Happiness strategy in Bhutan faces implementation challenges and is still seen more as a novel concept rather than a replicable policy approach. Going forward, government policy instruments would have to encourage reduced material consumption among the growing middle class while simultaneously balancing it with increased consumption of basic needs among the large numbers of poor. Progressive taxation systems for the rich, reward systems for community service and for corporate social and environmental responsibility, development of infrastructure for clean water, and rural energy, as well as subsidies for viable rural economies to avoid rural-urban migration, would be possible approaches.

### **3.1 Policy instruments**

Analysis shows that there are differences in approaches across the region depending on economic, political, environmental and social contexts.

#### **3.1.1 Regulatory instruments**

These are the least-favoured instruments by governments, in part because they need human, financial and technical resources to monitor implementation. Given such demands, it is easier for regulations to be enforced in industrialized economies than in developing ones. Japan and Australia, for example, maintain very strict monitoring procedures and liabilities for the use of certain banned chemicals in food, food packaging or children's toys. Although China and India have such regulations, enforcement remains a challenge; tests of common products often reveal traces of banned chemical components above regulated limits. Regulatory instruments also tend to be applied more where there is high social pressure or there are directly visible damages or point sources. There is a partial ban on plastic shopping bags in Australia, China, Singapore and other countries. The South Korean Ordinance on the Standards of Packaging Methods and Materials sets "empty space ratio" goals for most product packaging. A complementary Act restricts the use of disposable cups, plates, plastic bags and paper bags in restaurants, public baths and department stores, among other places. In Taipei, Taiwan (China), there is a per-bag household waste collection fee, based on a so-called "Pay as You Throw" scheme. In the Republic of Korea, the Volume Based Garbage Collection Fee system also charges per garbage bag discharged per household. Authorized bags can be bought in grocery and department stores; unauthorized bags and illegal waste dumping are fined (Akenji and Bengtsson, 2010).

A regulatory approach that features prominently is extended producer responsibility (EPR), whereby producers are required to take responsibility for managing waste from their own

products at the post-consumer phase. Several economies now include EPR as a part of their waste management strategy. Typically, industrialized economies like Japan, Australia and Korea have properly implemented EPR legislation; emerging economies like China, Thailand and Malaysia either have drafts or have developed systems where implementation is still a challenge; least developed economies like Lao PDR and Viet Nam are still in evaluation stages or simply have EPR mentioned as an instrument but lack the capacity to put it into practice.

To boost the competitive advantage of its green technology market and encourage employment in the sustainable production sector, the Republic of Korea's Green Procurement Policy was adopted in 2005. It legally requires all public sectors including the Central Authority, Provincial Councils, and Governmental Investment Institutions to use sustainable products. As a result, for last five years the scale of green production has increased by a factor of four—from 1,540 products (443 companies) in 2004, to 6,531 products (1,739 companies) in 2010. Japan has been a leader in sustainable public procurement, mainly facilitated by its Green Purchasing Network (see case study 6). The total Japanese government expenditure is equivalent to 17.6 per cent of its GDP, or about ¥58 trillion per year (¥14 trillion from national government and ¥44 trillion from local governments). With the proper economic incentives, such an amount has a leveraging power to usher in a strong market for SCP.

### **Case study 6: The Green Purchasing Network in Japan**

The Green Purchasing Network of Japan (GPN-J) was established at the initiative of the Environmental Agency as a collaboration of consumers, businesses and government organizations to promote green purchasing. As of June 2009, GPN-J had 3,000 members. The early efforts of GPN-J were to build consensus on the “Principles of Green Purchasing”, and from these principles GPN-J went on to create purchasing guidelines covering products in 16 different categories. GPN-J has also developed a database in which assessments of 11,000 products are provided, consistent with the purchasing guidelines. In 2000, the efforts of GPN-J were supported with the enactment, by the Ministry of Environment, of the Law on Promoting Green Purchasing, which requires government agencies to purchase environmentally friendly products. To disseminate the purpose of this law and the purchasing guidelines, GPN-J now runs training courses six to eight times a year for purchasing officers in the government. The other notable outcome of the Law on Promoting Green Purchasing is that many companies have improved their products to meet the criteria of the purchasing guidelines, and this has helped to expand the quantity and quality of environmentally friendly products available to consumers.

One of the key factors in GPN-J's early success was the achievement of strong multi-stakeholder collaboration that promoted many innovative activities. The coordinated efforts of these stakeholders served to stimulate each other and resulted in overall performance improvement. GPN-J was supported by the Ministry of Environment to collect and disseminate good practice through award schemes and seminars. The mandating of governmental green purchasing has been the key factor in ensuring the long-term effectiveness of this project; an additional factor is

that the various stakeholders have clearly understood their roles and responsibilities. GPN-J has also engaged in several important educational activities through promoting the green purchasing criteria to companies/product developers, training government procurement officers in the new criteria, international networking to share good practice, and working to raise consumer awareness regarding the availability of green products.

GPN-J has taken a leading role in the formation of the International Green Purchasing Network, whose objectives are similar (albeit on a broader scale) to the national network. It further serves to share information and good practice on green purchasing and to harmonize green purchasing activities among countries.

*Source:* Interviews with Secretariat of the Network; Green Purchasing Network of Japan (undated).

### **3.1.2 Economic instruments**

Industrialized economies, like Japan, with mature industries are capitalizing on their experiences to drive economic growth in a more resource-efficient manner by using new technologies. Japan provides incentives for green technological innovation; India, Malaysia and other countries undergoing fast growth are employing economic instruments to signal directions for preferred growth.

In 2009 Japan revised its laws on industrial development and innovation, introducing programmes aimed at increasing the resource efficiency of industrial production facilities and the energy efficiency of household appliances, while at the same time providing financial support to industry. Under one of these programmes, companies that achieve certain improvements in energy efficiency or carbon efficiency can receive tax reduction measures, such as immediate depreciation of capital investment, financial assistance, and exemptions from certain regulations. The other programme offers similar benefits to companies producing appliances ranked among the top 20 per cent most energy-efficient.

The Chinese Renewable Energy Law from 2005 offers a variety of financial incentives, such as a national fund to foster renewable energy development, discounted lending and tax preferences for renewable energy projects, and a requirement that power grid operators purchase resources from registered renewable energy producers. The combination of investments and policy incentives has encouraged major advances in the development of both wind power and solar power (UNEP, 2010).

Much like regulatory instruments, in order to generate the desired effects, economic instruments usually require sophisticated institutions to implement and enforce them. Charges and taxes need to be collected, and monitoring is needed to avoid free-riding. Tradable permits are especially challenging: to create a well-functioning market can require a fairly large administration, and the regulated entities usually need training in how to utilize the permit market effectively (IGES,

2010). This, again, leaves least developed economies challenged in terms of capacity to take control of their own sustainability direction through use of economic instruments.

### **3.1.3 Voluntary and informational instruments**

Due to the challenges in the use of mandatory regulatory and economic instruments, governments often prefer the use of voluntary measures to address unsustainable production and consumption patterns.

The Singapore Packaging Agreement came into effect in 2007 between the government and the food and drink industry. Each industry sector prepares its action plans, in which it set targets to reduce packaging waste from various packaging materials. The government encourages more sustainable packaging by giving an annual award to exemplary companies. A similar agreement is the National Packaging Covenant in Australia, which promotes reduction in consumer product packaging. Parties to the Covenant submit a three- to five-year plan to meet the negotiated targets, prepare annual progress reports, and contribute an annual fee that is used to fund waste recycling.

### **3.1.4 Information based instruments**

Informational instruments are some of the most widely used, especially through eco-labels, consumer awareness-raising campaigns and corporate sustainability reporting. Thailand has a Carbon Reduction Label to help consumers purchase more environmentally friendly products. The scheme results from cooperation between the Thailand Greenhouse Gas Management Organisation and the Thailand Environment Institute. It uses a life cycle approach to give a measure of a product's contribution to greenhouse gas emissions, thus providing the consumer with information that can help direct consumers towards less environmentally harmful purchases. Among businesses that have applied for registration are producers of dried food, cement, rice bags, condoms, artificial wood, milk cartons, cooking oil and floor tiles (Rabhi et al., 2010).

Most governments, in collaboration with NGOs, encourage corporate sustainability information disclosure. The Indonesian Program for Pollution Control, Evaluation and Rating (PROSPER), Green Watch in China, Eco Watch in the Philippines and the Environmental Rating Project in India are some examples.

The emergence of better information technology has decreased costs of information dissemination, partly contributing to the popularization of informational instruments in recent years. One of the advantages of informational instruments is the relatively low implementation cost, compared to the complex administration often needed in order for regulatory approaches to work properly. The limited costs in the use of such tools means they can be more easily employed by least developed economies. However, the effectiveness of informational and voluntary instruments is more pronounced in societies where consumers, investors, government officials and other key actors have high awareness of sustainability issues, and where there is the availability of sustainable product options at competitive rates (IGES, 2010). This again puts least developed economies at a disadvantage, because information on a sustainable product or service will have little effect in a society where people are still trying to meet their basic needs, let alone choosing between sustainable and unsustainable options. Fair trade and highly energy-

efficient products are generally consumed by the middle class, who can afford to pay slightly higher market prices for such goods.

#### **4 Business initiatives**

Recently, due to a combination of external stakeholder pressure, government regulation and business competitive strategy, businesses tend to have a pro-sustainability stance.

Some of the most conspicuous voluntary business initiatives towards sustainability have been in developing greener corporate images. Some of this has been through advertising or repositioning of products to carry green labels. Sustainability reporting, as a part of corporate social responsibility (CSR) communication, is also on the rise. Both the Global Reporting Initiative (GRI) and the International Organisation for Standardisation (ISO standards) have reported an increasing number of CSR reports by companies from Asia and the Pacific. Whereas in 2000 there were fewer than 10 reports from Asia-Pacific businesses registered with the GRI database, in 2005 that number had climbed to over 60, and in 2010 there were over 300 registered reports (GRI, 2010). The situation is similar with respect to implementation of ISO 14001 standards for environmental management systems. In 2008 the top two countries for number of ISO 14001 certificates were the People's Republic of China (with 39,195 certificates) and Japan (with 35,573 certificates). In most countries, the number of certificates jumped by over 30 per cent between 2006 and 2008—in Malaysia, the number went from 593 to 997; in Indonesia from 369 to 849; in the Republic of Korea from 5,893 to 7,133 (ISO, 2009).

Corporate sustainability awards are also a developing trend, with international agencies and business associations either giving out their own awards or affiliating with a third-party corporate sustainability award. The International Chamber of Commerce, the UNDP, and the International Business Leaders Forum have developed World Business and Development Awards in support of the Millennium Development Goals. Every two years, winners are recognized for their roles in alleviating poverty, thus contributing to more sustainable production. Among the winners in 2008 was SMART Communications, a telecommunications corporation in the Philippines, for providing millions of people access to communication and micro-enterprise opportunities through its mobile phone services in the Philippines. A more recent winner in 2010 was a social enterprise, LifeSpring Hospitals in India, described in more detail on the following page.

Although awards and sustainability reports have been touted as early steps to more integrated corporate sustainability, participating businesses are usually major corporations. The selection criteria, financial and human resource costs and organizational memberships are generally greater than small and medium enterprises (SMEs) can meet. SMEs often lack the technical expertise needed for improvements in environmental and social responsibility. This means that local practices and SMEs, which constitute the majority of businesses in Asia and are active within the value chain as suppliers of major corporations, are left out of these pro-sustainability incentives.



Asia and Pacific businesses have been developing their capacities to meet the sustainability challenge. For example, Business for Social Responsibility, a global network of over 200 major corporations, started the China Training Institute in 2004 as a CSR capacity-building project for brand companies and their suppliers in China. It offers long-term and short-term training on topics such as environmental risk management, worker healthcare programmes and analyzing the causes of excessive overtime. In April 2010 the Institute held a workshop in Guang Zhou, China, in collaboration with the Cleaner Partner Project of Hong Kong government, to share experiences on energy saving in manufacturing industries. Participants explored trends of energy efficiency in manufacturing industries and were presented best practices.

Like awards, such capacity-building trainings are increasingly common, funded or supported by international agencies, national governments or industry. Another example is a partnership formed among Fraunhofer IFF of Germany, the Asian Society for Environmental Protection in Thailand, the Viet Nam Productivity Center, Viet Nam, and the Louth County Enterprise Board of Ireland, and funded through the European Commission's Asia Invest programme. The partnership's aim has been to empower Asian Business Intermediaries through knowledge-based networking focused on sustainability management. The partnership has brought together European and Asian researchers and business intermediary organizations to promote European know-how and information and communication technologies (ICT), along with the transfer of best practices. Over 800 representatives of SMEs were trained in Viet Nam and Thailand.

New business strategies, such as social entrepreneurship, are also spreading in the region. A well-known example is the Grameen Bank, which provides micro-grants to rural women who would otherwise not have the collateral to receive loans from traditional banks for their small business. Entrepreneurial activities using micro-grants have lifted several families out of poverty. LifeSpring Hospitals, a winner of the World Business and Development Awards, is another example of social enterprise. Across India, it provides low cost, high quality maternal care to low income mothers who would otherwise not have access to such services. Launched in 2005, LifeSpring Hospitals has grown to a chain of nine clinics; it has delivered more than 7,000 babies and its doctors have treated over 100,000 outpatient cases, thus contributing to reduced rates of infant mortality and better health care for mothers.

Some financial and insurance organizations are beginning to insist on comprehensive environmental audits to limit the environmental risk in their project financing. In order to promote a green credit policy to businesses, in 2007 China's State Environmental Protection Administration, the People's Bank of China, and the China Banking Regulatory Commission jointly issued a policy called Notes on Reducing Loan Risk by Enforcing Environmental Protection Policies and Regulations. Incorporation of environmental concerns into business planning is increasingly a prerequisite to obtain loans. There are broadening signs of socially responsible investment.

Businesses are also getting innovative regarding management strategies. Criterion Furniture, a furniture manufacturer with headquarters in New Zealand, has seen multiple benefits (financial and non-financial) by shifting its management and manufacturing approach towards sustainable



production; another example is TanTec, a leather goods company with bases in the People's Republic of China and Viet Nam, which has invested extensively in reducing energy needs, raw materials and waste generation (see Case Studies 7 and 8) for more on TanTec and Criterion Furniture). Toyota Motor Thailand (TMT) has developed Green Purchasing Guidelines. Suppliers are requested to submit certified test reports that products supplied do not contain substances of concern (lead, mercury, cadmium and hexavalent chromium), show improvement in their use of natural resources, take measures to reduce CO<sub>2</sub> emissions generated by deliveries to the company, and cooperate with TMT's efforts to reduce usage of packaging and wrapping materials. In its own operations, TMT has reduced waste by 7,900 tons and water by 1,910,000 tons between 2001 and 2008 (TMT, 2007; TMT, undated).

### **Case study 7 TanTec: Green business practices in China and Viet Nam**

TanTec produces leather goods for overseas companies from tanneries located in China and Viet Nam and has achieved significant cost savings by implementing energy efficiency and waste management practices. The key, according to the CEO, is to constantly innovate and look for better solutions. The company uses a combination of existing in-house and external benchmarks, comparing them with the company's existing manufacturing performance. Accordingly, the Saigon TanTec uses on average only 33 megajoules (MJ) of energy per square metre of leather, in comparison with a leather industry standard of approximately 52 MJ—as calculated by the British Leather Technology Centre (Leather international, 2010). The energy reductions have been achieved through a host of improvements, including the installation of continuously controllable compressors and pumps, the retrofitting of dryers, and the installation of energy-efficient re-tanning drums, as well as shifting heating sources from oil to liquefied gas. In addition, the factory has invested in energy-efficient lighting systems with light sensors and timer control and is using translucent plastic panels that allow sunlight to penetrate parts of the roofs and walls. Bamboo walls also allow for a natural ventilation of the factory. The use of reed grasses and “wetland” methods for wastewater management and post-purification, along with the use of solar thermal and wind energy, have been among the most central measures. The company has now achieved a 40 per cent reduction of its energy consumption, and has reduced CO<sub>2</sub> emissions by 2,700 tons per year. In addition, TanTec has reduced both water and chemicals consumption by 50 per cent and 15 per cent, respectively.

*Source:* United Nations Environment Programme, Division of Technology, Industry, and Economics, undated a.

### **Case Study 8: Criterion Furniture benefits from shift to sustainable production**

An example of a company that has changed its management strategy to embrace more sustainable production is New Zealand-based Criterion Furniture, manufacturer of ready-to-assemble furniture and employer of 200 people. In 2005 the company noticed initial indicators from its target export markets in Europe that environmental sustainability criteria were increasingly becoming important. In addition, it noticed that waste treatment and energy

consumption had an impact on the company's financial bottom line. These provided an initial nudge for the company to change its management approach and manufacturing practices.

The company went through a process of developing an environmental vision and strategy for itself, estimating the resource requirements, potential savings, and benefits of running a sustainable operation. It developed the basis for an Environmental Management System (EMS) and accountability structure, which it then proceeded to implement. In 2009 Criterion's EMS was certified to ISO 14001, which added further recognition to its sustainability efforts among external stakeholders. It adopted a 3R approach in its design and manufacturing process and integrated environmental considerations into its purchasing decisions. It further works together with its suppliers to ensure that the raw materials used for manufacturing have low environmental impact. It also set up an eco-portal to facilitate communication among various functions of the business.

Excess polystyrene in packaging was identified as a needless waste of material and resources. That project resulted in a 15 per cent reduction in polystyrene usage, leading to an NZ\$75,000 annual material cost savings. By reducing packaging size, the company also achieved a 7 per cent increase in the number of products that can be shipped in containers, leading to cost savings and reductions in carbon emissions from transport. Criterion Furniture achieved financial benefits of about NZ\$100,000 in cost savings through material reduction from cutting optimization, and a further NZ\$300,000 reduction in landfill costs.

*Source:* Criterion Furniture, 2011.

Least developed economies, driven by the need for foreign direct investment, are generally more relaxed when it comes to regulating corporate behaviour towards sustainability, inviting major multinational corporations as a means of offering employment to local populations. There is, however, international collaboration to encourage voluntary sustainable corporate behaviour.

The most widely addressed business aspect is sustainability communications. This is partly because business sustainability is seen to give a competitive advantage in a market of increasingly conscious consumers, and also because communication comes naturally to businesses, as they need to advertise their products and services. Going forward, there are still opportunities for businesses to explore models such as leasing or hiring services instead of the outright purchase of products. For example, car leasing instead of car sales, and collaborative consumption, such as community computer services, would be in the community spirit of Asian societies.

## **5 Civil society initiatives**

Civil society organizations (CSOs) work on a variety of issues related to sustainable development—from Asian values in sustainability to Pacific island climate change adaptation to zoological species management. Thus their activities vary, depending on the targeted sustainability stakeholder group: government, the public or the private sector.

The creation of public awareness on SCP issues has been central in civil society in recent years. In Viet Nam, for example, the groups Center of Support for Combating Climate Change and Action for the City have joined forces to organize “The Green Days”, a campaign to encourage people to change their behaviour and promote a sustainable lifestyle. As well as media activities, during the campaign organizers get people and businesses to pledge to use green transportation, support organic agriculture and avoid use of plastic bags.

Holding corporations accountable is also a core activity of CSOs. This could be through commenting on CSR reports or boycotting companies or products that are considered unsustainable. Primary targets of recent campaigns in the region include pharmaceutical and agricultural businesses—including those dealing with seeds, farming and fertilizers. In 2007 the National Asian chapters of Consumers International campaigned for a ban on promoting unhealthy foods in schools, along with broader restrictions on television and Internet advertising. In Nepal, Fiji, Malaysia, Hong Kong, India, the Philippines and Thailand there have been campaigns against junk food. Consumers International members in Asia and the Pacific have also held campaigns demanding more transparent practices in the marketing of pharmaceutical products.

CSOs are good at mobilizing grassroots action. Through the Indian Office of the Global Alliance for Incinerator Alternatives (GAIA), grassroots action is coordinated against polluting, end-of-pipe waste-management activities. “Zero Waste for Zero Warming” is one of GAIA’s coordinated campaigns. GAIA members share information online and in regional meetings; organize trainings and skillshare events; provide technical support to member groups and communities; and provide mini-grants for advocacy and education campaigns to stop the expansion of incineration as a method of waste management. According to GAIA, its members in the region have contributed to the cancellation of the Broga mega-incinerator project in Selangor, Malaysia, and the success of waste-reduction projects at the 2002 World Cup in South Korea and the 2005 Southeast Asian Games in the Philippines (GAIA, undated).

### **Case study 9: Collective buying and distribution in India**

The case of the Mumbai Grahak Panchayat (MPG) in India demonstrates CSO understanding of local communities and the use of that understanding to self-organize into meeting societal needs in a more sustainable manner. MPG brings together households in Mumbai under a common system to collectively buy and distribute groceries. To overcome food shortages, ensure better distribution and get better prices for food, consumers are organized into buying groups, which then take advantage of their large numbers to eliminate the middleman and buy directly from producers and wholesalers. In 2010 there were more than 2,000 buying groups and more than 26,000 families as members of the system, managed by volunteers and housewives.

MPG has seen 15 to 20 per cent savings in families' grocery budgets. Collective buying and bulk delivery eliminates about 60,000 km of transportation and saves about 10,000 litres of fuel per

month, thereby reducing carbon emissions and air pollution. The group uses textile bags instead of plastic bags for packing sugar, wheat and rice. These bags are then reused several times. It has also banned the use of plastic bags at product fairs, which bring together local producers, small entrepreneurs and consumers; this prevents the use of nearly 1,500 kg of plastic per month or 18,000 kg of plastic per year, reducing waste generation. Broader sustainability benefits of MPG's activities include wider awareness and participation in SCP, and inspiration for other communities to follow suit.

*Source:* Mumbai Grahak Panchayat, 2010.

The Asia-Pacific Forum for Environment and Development has documented an extensive number of civil society initiatives (APFED, 2010), some of which are highlighted by Kobayashi (2010), a coordinator at the APFED Secretariat. NGO involvement at a local level also provides opportunities to promote resource-efficient lifestyles. Since 2006, a local NGO from Nikaweratiya, Sri Lanka, has supported experimentation on the production of oil from the *jatropha* shrub in order to supplement fuel consumption in the local community of Gurugoda. With support from an international NGO, this project has seen multiple benefits, from mitigating contributions to climate change to supporting livelihoods and, of course, the cost savings from reduced dependence on imported fuel and local-level recognition of sustainable alternatives to fossil fuel-based energy. *Jatropha* shrubs have been planted as natural barriers around houses and gardens to prevent crop damage from animals—and in so doing, the common land-use conflict that occurs with biofuel production has been avoided. Further avoiding conflict, *jatropha* oil is inedible by humans and the plants typically can grow in soil unsuitable for plants used for consumption. The locals harvested the seeds and sold them to a local processing centre, later benefiting from reduced expenses on fuel for local transport and equipment. One limiting factor is the water demand of *jatropha* during its first year of life. However, after the initial water-intensive year, *jatropha* grows quite well as a hardy shrub in tropical climates with a fair amount of annual rainfall. Although the allure of *jatropha* is compelling, it should be seen as one part of an overall approach to sustainable consumption, which necessarily includes other lifestyle changes (Kobayashi, 2010).

CSOs also run capacity-building projects. Live and Learn Environmental Education, a Fijian NGO, has been running a project in which training workshops are conducted to promote environmentally sound resource and waste management practices such as composting and recycling. A unique feature of the project is the involvement of youth leaders in the training programme to encourage them to disseminate their newly acquired knowledge and skills within their own community. As a part of the project implementation process, monitoring and evaluation are carried out to share successes and failures and to ensure the delivery of expected outcomes. Throughout the project activities, the people participating in the project have been changing their consumption patterns, thereby reducing waste generation and promoting resource circulation (Kobayashi, 2010).

CSO understanding of traditional practices and community engagement, and using these to address sustainability problems, is demonstrated by a case in Viet Nam, where poaching and illegal trade in endangered species has become a major social concern. Education for Nature Viet Nam, a Vietnamese NGO, has been carrying out an environmental education project to promote public understanding of the protection of endangered species and to increase public collaboration to halt illegal wildlife poaching and trade. One of the key features of the project is a “wildlife hotline”. Tigers and bears are poached illegally for the trade of bones and gallbladders, respectively, and as alleged aphrodisiacs, a claim that is rebuffed by mainstream science. In winning support to prevent the unsustainable consumption of endangered species, public education and consumer awareness campaigns have contributed greatly. To curb such illegal transactions, community members keep an eye out for illegal trading of wildlife and its by-products and operate public peer pressure systems involving the media. From the beginning of 2005 to the end of 2006, almost 400 cases were reported and culprits were arrested in over 80 per cent of the cases. By 2008, more than 1,400 criminal cases were reported and documented. Information disclosure on illegal trafficking of wildlife and its products, along with prosecution of the culprits, strengthens local authorities and communities in their suppression of illegal poaching and trading of wildlife (Kobayashi, 2010).

Another dimension of civil society activity calls for government action to address the sustainability issues identified. Examples include a call for banning plastic bags in almost all countries of the region and extensive campaigns for legislation to mandate environmental labelling by producers as a means of providing information to consumers. CSOs have been active through policy processes, pushing for the right policies to address unsustainable consumption and production. In China, Cambodia, Thailand, Korea and other countries, CSOs have been active participants at SCP roundtables and in the provision of input to NSSDs. The first national consultation in the region towards the United Nations Earth Summit in 2012 (Rio+20) was organized in Sri Lanka by civil society, through the Climate Sustainability Platform. At the CSD-18 session in New York, interventions were made by IGES, on behalf of NGO Major Groups at the High Level Segment on SCP.

CSO partnerships with business and the private sector have been instrumental in bringing solutions to some sustainability issues. The Regional 3Rs Forum for Asia has spurred collaboration among governments, businesses, research groups and NGOs towards better technology for waste management in countries including Japan, Malaysia and Thailand. In Sri Lanka, the Federation of Electricity Consumer Societies promotes the use of environmentally sustainable energy technologies by developing the technical capacities of off-grid communities; it works together with the national government and local communities. In one such project, the Federation helped members of the remote Sinhala, Tamil and Muslim areas of Sri Lanka to generate energy for households through micro-hydro technology. Some 300 remote villages now have micro-hydro schemes, providing electricity to some 10,000 households. The Federation’s activities have led to establishment of national standards for micro-hydro power generation.

The World Resource Institute, through its New Ventures programme, has gone beyond research, facilitating partnerships and helping small businesses to access investment opportunities. It

connects entrepreneurs and SMEs to venture capital funds, angel investors and banks, and then helps the entrepreneurs achieve success by providing business development training. Within its portfolio is Accura Bikes Private Limited in India, which manufactures and sells pollution-free and noise-free electric bikes. A China-based company in WRI's New Ventures portfolio is Landwasher, a producer of environmentally responsible toilets that utilize a water-free flushing system. This technology both conserves resources and meets the sanitation needs of rural communities lacking access to current public infrastructure. In Indonesia, WRI works with Intaran on sustainable agriculture through the Tree of Life programme. Intaran has reforested more than 200 hectares with neem trees, supplied over 30,000 seeds to the local community, and provided technical assistance and training on the environmental benefits of this sustainable activity. By providing communities with an alternative, stable economic activity, Intaran has aided efforts to prevent further deforestation in three provinces. The company has developed a line of 15 products, including organic fertilizers, pesticides, cosmetics and natural medicine, maximizing the use of the different parts of the neem tree (WRI, undated).

In general, civil society has been most active in areas of raising awareness, especially through education on sustainable livelihoods and lifestyles. CSOs have also been instrumental in getting businesses to respond positively to CSR and other sustainability concerns. However, owing to limited research capabilities, funding and other relevant capacity, CSO engagement has not been able to go much further than grassroots activism and the taking up of causes that reflect more immediate societal concerns, such as food shortages and water pollution. There is a need for efforts to involve CSOs in policy dialogue processes, to expose them to scientific research on sustainability, and for deliberate efforts to increase funding for their activities. CSO initiatives should also be encouraged to cover more nuanced areas, for example, the upholding of traditional values and sustainable community examples of consumption and production.

## 6 Conclusion

On paper, several countries have policies and programmes in place that should guide a societal shift towards SCP. Despite recognition of its necessity, however, SCP policies rarely lead to implementation; where programmes are established, they rarely move from demonstration and piloting to mainstream society. The challenge is not only for national and stakeholder capacities to develop good policies but also—for those who already have some policies in place—to move on to effective action.

There is little coordinated action or collaborative effort for common capacity-building and addressing cross-regional issues. One action that could begin to make collaboration more concrete would be the creation and funding of a programme-oriented working group on SCP.

The Marrakech Process consultations have identified some priority tools for SCP in the Asia-Pacific. Among them is development of national SCP action plans and education for all stakeholders. Needed for consumers is the provision of information on sustainable lifestyles; for businesses, the main need is for enhancing competitiveness through sustainable production, with a special focus on SMEs. Governments need to lead by example, to develop sustainable public procurement guidelines and practices. This will allow the high purchasing power of public institutions through economies of scale to increase demand for sustainable products and services, thus reducing their prices and increasing their competitiveness. It will also send a signal to the market on future and encouraged production directions.

Economic growth is the overriding policy driver in Asia and the Pacific, meaning that SCP-related policies and initiatives are scattered throughout various components of national economic growth strategies. As such, Asia and Pacific economies tend to approach SCP policy as an add-on, rather than as a common thread running through NSSDs, as well as an opportunity for policy integration. To ensure integration, the relationship between SCP and the Green Economy paradigm needs to be emphasized. This should involve development of concrete indicators for a green economy, including production and consumption standards and targets that reflect resource constraints, societal needs and environmental carrying capacity.

There tends to be a heavy emphasis on solid waste management in several countries, a reflection of where government feels pressured; when economies grow quickly, the national infrastructure cannot keep pace with waste generation. Here, to promote SCP, emphasis needs to be shifted upstream to address issues of resource efficiency. The threat of low biophysical capacity in the region means that if countries are to meet their economic development targets, provide infrastructure for fast growing cities, feed their growing populations and lift hundreds of millions of people out of poverty, there is an urgent need to shift to proactive approaches rather than end-of-pipe management.

To ensure that economic growth in the region is sustainable, progressive policies need to use ecological taxation as a tool to address the problem of resource scarcity and inefficient use, as well as to internalize costs of pollution. Further, given the rapid development of infrastructure

among countries, environmental impact assessments need to be mandated, to ensure that project development and use are incorporated into the design phases of large projects.

To give a sense of ownership, individual country and cultural interpretations should be encouraged, along with initiatives demonstrating clear benefits to society and individuals. Part of this entails moving beyond the technology emphasis that puts eco-efficient economic growth at the centre of development. Some appropriate policy approaches include provision of infrastructure for local markets and programmes that encourage local produce, a policy shift from taxing labour to taxing resource consumption and pollution, and the subsidizing of traditional food production and distribution systems. There is now recognition of the need for broader socio-technical approaches with core elements of social well-being and ecological integrity. In Asia, this would tap into rich Asian and Pacific traditions, centuries-old cultural practices, sustainable local communities, and a positive sense of contribution by the people—those who on a day-to-day basis undertake activities of consumption and production in society.



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