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**10-YEAR FRAMEWORK OF PROGRAMMES ON
SUSTAINABLE CONSUMPTION AND PRODUCTION**

(Item 4(e) of the provisional agenda)

This paper was prepared by Professor Anthony Shun Fung CHIU, for the Regional Implementation Meeting for Asia and the Pacific ahead of the eighteenth session of the Commission on Sustainable

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List of Abbreviations and Acronyms

10YFP	10-Year Framework of Programmes
ADB	Asian Development Bank
AECEN	Asian Environmental Compliance and Enforcement Network
AIT	Asian Institute of Technology
APRSCP	Asia-Pacific Roundtable for Sustainable Consumption and Production
CA	Central Asia
CE	Circular Economy
CFC	Chloroflourocarbon
CFL	Compact Fluorescent Lamps
CNG	Compressed Natural Gas
CP	Cleaner Production
CPC	Cleaner Production Center
CPP	Cleaner Production Program
CSD	Commission on Sustainable Development
DECC	Department of Environment and Climate Change
DOE	Department of Energy
DTIE	Division of Technology, Industry, and Economics
EE	Energy Efficiency
EI	Eco-Efficiency Indicators
EPR	Extended Producer Responsibility
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ETR	Eco-tax Reform
ETV	Environmental Technology Verification
EU	European Union
GDP	Gross Domestic Product

GEI	Green Economy Initiative
GRI	Global Reporting Initiative
GWP	Global Warming Potential
HDI	Human Development Index
ICD	Information and Communications Drive
IETC	International Environmental Technology Centre
IGES	Institute for Global Environmental Strategies
IGPN	International Green Purchasing Network
ISO	International Organization for Standardization
ISWM	Integrated Solid Waste Management
JPOI	Johannesburg Plan of Implementation
KPI	Key Performance Indicator
LCA	Life Cycle Assessment or Analysis
LCI	Life Cycle Inventory
MCED 2005	Ministerial Conference on Environment and Development in Asia and the Pacific 2005
MDG	Millennium Development Goal
MTF	Marrakech Task Force
NCPC	National Cleaner Production Centre
NGO	Non-Government Organization
PRO	Producer Responsibility Organizations
PSS	Product Service System
R&D	Research and Development
SA	South Asia
SAG	Society in Action Group
SCP	Sustainable Consumption and Production
SD	Sustainable Development
SeA	South East Asia

SEPA	Sino Environmental Production Agency
SINGG	Seoul Initiative on Green Growth Network
SME	Small and Medium Enterprise
SP	South Pacific
TEEB	The Economics of Ecosystems and Biodiversity
UN	United Nations
UNDESA	United Nations- Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESC	United Nations Economic and Social Council
VNCPC	Vietnam National Cleaner Production Centre
WEEE	Waste Electrical and Electronic Equipment

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1 SCP in the Asia-Pacific Region: Current status and main challenges

1.1 Economic Growth and Resource Use

1. In Asia and the Pacific, there has been a concurrence of rapidly expanding economies, poverty and substantial consumption pressures, as well as a natural resource base that is more limited than any other in per capita terms. Thus, a focus on meeting human needs and improving well-being with the lowest possible ecological cost is especially relevant in Asia and the Pacific (ESCAP, 2008).

2. The speed of economic growth in Asia-Pacific developing countries has been surpassing global growth rate for years. The rapid pace of economic growth has been fuelled by the region's rising status as a global production centre (Figure 1.1-1.2 for trends in production). However, commodities produced for export put increasing environmental pressures in the producing countries (ESCAP, 2005). Thus, Asia and Pacific region's rapid industrialization and urbanization in many of the developing countries leave a mark with unresolved resource-use challenges and unsustainable consumption patterns (ESCAP, 2008). In line with this, based on the data on Municipal Solid Waste (Figure 1.3), there is a significant increase expected in South Asia (200%) and partly in China (50%). Therefore, the Asia and Pacific region, needs more than ever to revive cultural values and traditions fostering efficient, cleaner and more thoughtful use of scarce natural wealth for the well-being of all (ESCAP, 2008).

1.2 SCP Challenges in the Asia-Pacific Region

3. As a vision and overriding goal, sustainable consumption and production is easy to embrace as the only acceptable long-term strategy for the human survival. Figuring out how to get there is quite difficult. Obstacles (Rachagan & Kanniah, 2001) include:

Knowledge Gaps

4. Sustainable society is still a vague concept. Critical questions need to be answered: Sustainable for how large a global population? At what standard of living? And even if the economic questions could be answered, ecological ones such as per capita worldwide energy use, food production or consumption. We can only guess how much time humanity has to solve its environmental problems before an irreversible global catastrophe occurs.

Poverty and Overpopulation

5. Despite the region achieving rapid economic growth, 2/3 of the world's poor are based in Asia and the Pacific. As such, poverty goals are main priority. The widening income gap as well as the problem of overpopulation presents the challenge of instilling in our consciousness the merits of attaining and maintaining a sustainable lifestyle (Figure 1.11 for population information).

Consumption and Resource Efficiency

6. Despite the region's high poverty level, consumption – measured by ecological footprint (Table 1.1 and Figure 1.3), exceeds the available bio-productive area per capita in at least 18 countries. The region has been experiencing high intensity of energy use leading to different pollution concerns as well. Transportation for example has been a contribution to this; hence, the importance of policies on public transport has been stressed as well as promotion of clean transport technologies (ESCAP, 2005).

7. Water-related concerns are rampant in the region (Figure 1.10 for water quality and availability graph). Water use of India is expected to quadruple by 2050. In China, water shortages have caused an

annual loss of about US\$28 billion in industrial output in recent years. Threat in water resource distribution introduces the need for new infrastructures which cannot be met by urban centres. The challenge therefore is to improve water-related disaster mitigation and preparedness (ESCAP, 2003; ESCAP, 2005).

Inequality

8. The gross inequities in current consumption of resources, both within nations and among nations, will need to be restored if humanity is to build the kind of world partnership among North and South required to solve the global environmental problems. Taking for instance Asia's steel consumption, from 1994-2004, data in Table 1.2 shows that there has been about 40% discrepancies between the highest and lowest consuming subregions (ADB & IGES, 2008).

Institutional

9. Most countries in the region face institutional challenges such as lacking political will, clarification of roles among government agencies, optimization of budget allocations (according to recent estimates, government spending on environmental protections amounts to less than 1% of GDP in Asia and the Pacific) and enhancing access to justice (AECEN, 2005). The global economy over the next 50 years will need to respond to the challenges of both the inner limit of sustainability (inequality) and the outer limit of sustainability (environmental stress).

Capacity Building

10. There is a need to invest in people who are dedicated and willing to commit themselves to environmental governance. This is a common challenge in Asia, perhaps the most urgent – budget can be sourced as economies grow, but skilled personnel can't be bought off the shelf. (AECEN, 2006).

Regional Trading Networks

11. The trading of secondary materials in the Asia-Pacific region is one concern that entails development of environmental and legal issues. While importing second-hand materials is an alternative to using virgin materials for production, it is also a means of transferring the responsibility of final disposal to lower-income countries that may not have the capacity to do so (ADB & IGES, 2008).

Other Challenges

12. With the fast growing population of China, reaching 1.8 billion by 2050 (Figure 1.11 for population trend and projection graph), the pressing need for sustainable development has become a high priority on the agenda of the central government. While China has enjoyed an average annual growth rate of 8.7 per cent, the country's economic achievements have been largely gained through a high consumption of resources and ecological degradation. To meet the needs for development while restoring the health of ecosystems, China must follow a development different from the industrialization model of the West - the Circular Economy is one response to this situation (UNEP (DTIE)).

13. In addition, it has been estimated that world unemployment could increase by 15 million to 20 million by 2009, with the number of unemployed in the Asia-Pacific region potentially rising by 8 million. Again, unemployment affects the poor and marginalized populations first, because they have less

to cushion the impact of shocks, such as real assets and savings. These negative impacts last much longer than the actual crisis.

14. On a macroeconomic scale, the current financial crisis is likely to impact development efforts at the time they are needed most. Foreign direct investment, which is often considered a more stable source of financing during crisis periods, is expected to decrease, primarily because the crisis first hit the home countries of the investors, where massive stimulus programmes are taking away financial resources that could otherwise flow to developing countries. This may lead to slower growth and infrastructure development within the Asia-Pacific region as potential investors delay decisions to consolidate finances.

2. International Commitments on SCP and their Regional Relevance

15. The Rio Summit in 1992, the Johannesburg Plan of Implementation (JPOI), and the Marrakech Process launched in 2003 have all stressed the importance of ‘Sustainable Consumption and Production’ (SCP) to promote social and economic development within the carrying capacity of ecosystems by addressing and, where appropriate, delinking economic growth and environmental degradation through improving efficiency and sustainability in the use of resources and production processes and reducing resource degradation, pollution and waste. (UNDESA - Division for Sustainable Development, p. 13 Par.

15)

2.1 Regional Concerns

16. In the recent years, it has been observed that issues such as global financial crisis in 1997 and 2008, fuel crisis in 2008, food crises in 2008, and climate change in the 21st century; have visibly illustrated the unsustainable consumption and production patterns in the region.

17. Seen in Table 2.1 are the most important challenges faced by the different regions. Bearing in mind the target of halving the number of people who live in poverty by the year 2015, as provided in the Millennium Declaration, the Phnom Penh Regional Platform on Sustainable Development for Asia and the Pacific recognized that the region contains over half of the world's population and the largest number of the world's people living in poverty. Hence, sustainable development in the region is critical to achieving sustainable development at the global level (UNDESA - Div for Sustainable Development, pp.14 Par. 75-76).

18. The development for a 10YFP builds upon the regional and national needs and priorities identified under the Marrakech Process consultations and the work of the Marrakech Task Forces and other relevant stakeholders. Common priorities have been identified across regions. For instance, most regions have identified some key sectoral priorities such as energy, waste management, water, mobility, housing, agriculture and tourism. Most regions also identified key policies and tools to promote SCP, such as developing national SCP programmes or action plans, utilizing economic instruments, promoting sustainable procurement, and integrating SCP into formal and informal education.

2.2 Fostering Implementation

19. Only seven years ago, in 2002, at the World Summit on Sustainable Development, the world's Governments reaffirmed their commitment to safeguarding the environment for future generations. The UN Family has been working together to co implement several action programs, as well as co-supporting many governments' initiatives, including the following:

Green Growth (ESCAP, 2005) at the MCED5

20. With the vision of achieving an environmentally sustainable economic growth in the Asia and Pacific region by promoting effective environmental policies, Green Growth was proposed at the fifth Ministerial Conference on Environment and Development in Asia and the Pacific 2005 (MECD 2005) and endorsed by the 61st Commission Session of ESCAP, held in May 2005. It aims to address major policy issues for Green Growth highlighted by the Ministerial Declaration of MCED 2005 and the Regional Implementation Plan for Sustainable Development in Asia and the Pacific, 2006-2010.

21. Green Growth is a policy focus for Asia and the Pacific that emphasizes environmentally sustainable economic progress to foster low-carbon, socially inclusive development. Some of the paths to green growth, as promoted by ESCAP include:

1. Green Tax and Budget Reform is a revenue-neutral eco-tax reform, which looks into revenue recycling through a budget reform using pollution or emission levels and resource use intensity as a basis for taxes while reducing income tax. Use of GTBR instruments allows governments to generate necessary resources for investment in human capital.

2. Development of sustainable infrastructure – provides increased transport, energy and water services, but with less consumption of material and other resources.
3. Demand-Side Management - regulates and simulates sustainable consumption because growth pattern is defined by the sum of production and consumption patterns, while underlining that sustainable consumption can be an opportunity to improve eco-efficiency of economic growth.
4. Greening the Market and Green Business – provides mechanism and tools to turn protection of the environment into a business opportunity through enhancing the eco-efficiency of their production, while strengthening the role of the government as a driver for greening of the market.
5. Eco-Efficiency Indicators (EEI) – are being developed to better explain the linkages between economic activity, resource usage, and environmental impact in order to evaluate economic policies more effectively and assist policy makers in improving the eco-efficiency of economic growth.
6. Investment into Natural Capital - Natural capital in the form of ‘green’ infrastructure underpins human well-being and socio-economic progress. Ecosystem services represent a critical component of natural capital, and can be broadly defined as the benefits that people receive from ecosystems (Millennium Ecosystem Assessment 2005, 49).

Regional Green Growth Policy Dialogues and Forums and Seoul Initiative on Green Growth

Network (SINGG)

22. Regional Green Growth Policy Dialogues and Forums are happening since 2005. The three Regional Policy Dialogues focused on (a) Green Tax and Budget Reform, (b) Public Policy and Resources Saving Society; and (c) Greening of Business and the Environment as a Business Opportunity. Moreover, four Meetings of the Seoul Initiative on Green Growth Network (SINGG) were held to discuss Economic Instruments, Green Industry and Climate Change Concerns, with a highlight on the third one held in cooperation with the Asia Pacific Roundtable for SCP in 2008 at Cebu, Philippines.

Green Economy (UNEP and Partners)

23. Mobilizing and re-focusing the global economy towards investments in clean technologies and 'natural' infrastructure such as forests and soils is the best bet for real growth, combating climate change and triggering an employment boom in the 21st century.

24. On 22 October 2008, UNEP and leading economists launched the Green Economy Initiative (GEI). The GEI, which will initially run for a period of two years, has three key elements: the Green Economy report, that will provide an overview, analysis and synthesis of how public policy can help markets accelerate the transition towards a green economy; The Economics of Ecosystems and Biodiversity (TEEB), a partnership project focusing on valuation issues; and finally the Green Jobs report, published in September 2008, that looked at employment trends. By definition, Green Economy refers to the process of reconfiguring businesses and infrastructure to deliver better returns on natural, human and

economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using less natural resources, creating less waste and reducing social disparities (UNEP, 2008).

25. In the Asia and the Pacific Region UNEP is currently working with China and Korea on the development of national reports on Green Economy. Capacity building activities are also under implementation and discussions with Asia countries for the development of country-studies are ongoing.

Circular Economy

26. A Circular Economy is an economy which balances economic development with environmental and resources protection. It puts emphasis on the most efficient use of and recycling of its resources and environmental protection. A Circular Economy features low consumption of energy, low emission of pollutants and high efficiency. It involves applying Cleaner Production in companies, eco-industrial park development and in integrated resource-based planning for development in industry, agriculture and urban areas. The Circular Economy was adopted by the Chinese Government in the last five-year plan as the development model for China to follow.

3R Platform

27. The 3R Initiative was proposed by the Japanese Government aiming to build a sound material-cycle society through the effective use of resources and materials and agreed upon as a new initiative of the G8 during the Sea Island Summit in June 2004. The 3R Ministerial Conference hosted by the Government of Japan in April 2005 and the Senior Officials Meeting on 3R in March 2006. The 3R Platform is an implementing mechanism for activities in developing countries of the Asia-Pacific region.

UNEP/ESCAP SCP Helpdesk

28. ESCAP / UNEP SCP Helpdesk was established in 2006, its mission is to foster innovative practices of sustainable consumption and production in Asia and the Pacific. The Helpdesk has evolved the SCP role and acted as an information hub, co-organized and hosted meetings, and developed specific partnerships with other agencies on SCP. From June 2009, the Helpdesk hosts a regional Training of Trainers Facility for development and application of Green Growth Policy Tools.

Global Green New Deal (UNEP)

29. Global green recovery strategies include the Global Green New Deal proposed by the United Nations, with the United Nations Environment Programme (UNEP) in the lead, which was referred to recently by the Secretary-General at the World Economic Forum entitled “The Global Compact: Creating Sustainable Markets”. The plan calls on world leaders to promote a massive redirection of investment away from unsustainable production and consumption patterns into job creating programs that restore the natural systems supporting the global economy. Some of the recovery strategies include Green Recovery that of which is pioneered by the United States of America, while a think tank in the United Kingdom has proposed the Green New Deal. Within the ESCAP region, the Republic of Korea has announced a Green New Deal policy and initiatives, and in Australia, a multi-stakeholder group has released a strategy for a green new deal for Australia (ACF; ACTU; ACOSS; AGIC; TCI; AIST; PCA, 2008).

30. Recovery strategies that focus on economic growth without sufficiently considering the implications for social development or environmental sustainability tend to cost more over the long term,

thus the green recovery strategies should lead to long-term sustainable development. For example, environmental degradation not only costs millions to clean up, but it can also lead to chronic health impacts, which indirectly reduce the labour force due to extended illness and result in more social and health-related costs. The impacts of climate change are also of considerable concern. (United Nations Economic and Social Council (UNESCO), 2009).

31. These global recovery strategies signal weakness, key opportunities, key threats and for countries in the region:

Weakness

32. Financial institutions are likely to be more hesitant to provide loans in order to implement these strategies. This would be particularly detrimental to small and medium-sized businesses, which are often seen as more risky. Since income generation for poverty reduction frequently relies on some kind of seed funding, the reluctance of financial institutions to grant loans could restrict opportunities for low-income households.

Opportunity

33. An opportunity would be changing basis for competitiveness in new sectors. Countries such as China are already global industry leaders in solar panel and wind energy production, while countries that are agricultural producers can find growth opportunities in organic agriculture and, at the same time, reduce the environmental impacts and costs of agricultural inputs.

Threat

34. Economic stimulus programmes that are unjust and not well thought of or that promote investments in the wrong sectors could establish the existing economic development patterns, which would make economies vulnerable in two important ways: first, they would be vulnerable if similar crises were to occur in the future and, second, they would be increasingly vulnerable as the rules of the global economic game change.

35. A number of policies exist that could support economic growth and poverty reduction while seeking to minimize environmental impacts. Some of these, such as energy efficiency, are already economically feasible and are being implemented in many countries, as seen in this example (located at the right – MAS Holdings and the Grameen Global Network). As the global economy recovers and evolves from the financial crisis, it is an ideal time to shift policies to incorporate the cost to the environment and to pay

MAS HOLDINGS (Sri Lanka)

MAS Holdings is one of the largest intimate apparel manufacturer in South Asia (over 44,000 employees at 28 facilities). It is “committed to ethical and sustainable practices” in the process of striving for balance between “social and environmental spheres and operational excellence”. It has American and European apparel brands as its partners (e.g. supplies Marks and Spencer). As a supplier to Mark and Spencer, MAS practices sustainable manufacturing, social responsibility and the championing of sustainability; hence, gaining a competitive advantage through a whole-system approach to social responsibility that includes the empowerment of women. According to Ravi Fernando, Director of Corporate Branding and Strategic CSR of MAS Holdings, government should help in education consumers of sustainable lifestyle so that businesses can drive environmentally sustainable economic growth (ESCAP, 2008).

GRAMEEN GLOBAL NETWORK (Bangladesh)

The Grameen Bank has been a source of funding for the poor people in the in Bangladesh. In 2007, the total number of borrowers reached 7.34 million, of whom 97% were women. With his colleagues such as Mr. Dipal Chandra Barua, Dr. Muhammad Yunus of Grameen Global Network are globally known for social entrepreneurship. Also, Mr. Barua leads one of the companies under the Grameen Global Network, Grameen Shakti which provides rural people access to green energy and income. In line with this, Grameen Shakti has supported installation of 100,000 solar home systems and 1,000 biogas plants that, together, generate 20 megawatts hours per day (ESCAP, 2008).

Source: Greening Growth in Asia-Pacific, ESCAP, 2008

for these environmental services. Investments in ecosystem services can improve rural livelihoods and, at the same time, support economic activity in all sectors. Innovative policies to support payment for ecosystem services have been established, or are under consideration, in some countries in the region, including Viet Nam, Indonesia, the Philippines and Sri Lanka (United Nations Economic and Social Council (UNESCO), 2009).

36. Unlike new investment in water supply, sanitation and irrigation, some proposed policy measures do not require significant financial resources. The crisis presents an opportunity to restore adequate legal, regulatory and institutional frameworks that encourage sound water management and help increase land and water productivity. A new approach to agriculture would eliminate distortive policies that damage the environment, such as pollution and excessive groundwater withdrawal. Governments can also start by securing water and land rights and introducing payment for ecosystem services, targeting the poor. An example of an innovative policy to support payment for ecosystem services is the ecosystem service fee collected from water users by the district water utility on the island of Lombok, Indonesia, as prescribed by local government regulations. The fee is paid to targeted land users who then have a contractual obligation to sustainably manage their land, and payments are targeted to areas which can impact water quality and supply. The payment for ecosystem services mechanism was seen as a way to address escalating conflicts over water use (United Nations Economic and Social Council (UNESCO), 2009).

37. In summary, the global financial crisis is expected to create an opportunity to introduce innovative financial mechanisms and policies to support the development of eco-efficient infrastructures

for safe water and sanitation, renewable energy and sustainable agricultural practices. All of these will contribute to achieving the goals of SCP. Political leadership and integrated development policies will be a key factor in seizing the potential opportunities to achieve long-term sustainable development.

3. Overview of SCP Progress in the Asia-Pacific Region

3.1 An overview of main stakeholders and initiatives in the regional level

38. In North-East Asia, national policy is mandated through national development agencies where various laws are already in place. Meanwhile, there is high involvement from the private sector.

39. South Asia is connected to international benchmarks. Because of the maturity of the industry, various laws are already in place and there are already several programs for sustainable development. There have been advancements in CNG and there is also strong micro-financing. The challenges for this sub-continent are the huge geographical nature for in-depth implementation of these programs.

40. The national policies of the countries are resource oriented in Oceania and relatively generic where its focus is on the preservation of the resources currently available. Climate issues are well addressed. Australia and New Zealand policies are well supported. National Laws are more advanced in Australia as compared to other countries in the region. In Australia, different multi stakeholders at companies and governments are involved in energy efficiency and reduction of green house gas emission.

(DECC, 2009)

41. Victorian government allocates appropriate financial resources for energy efficiency program, solid waste management and awareness drive tool, amounting to more than A\$150 million from 2008-2011 (See Table 3.1).

42. In Fiji, there has already been an introduction on sustainable tourism development as well as stringent environmental laws in place. There is high regional cooperation due to similarities in economic status in the countries of SEA along the generic SD issues.

43. There is high government commitment and high participation of the industries in national programs in most Asia-Pacific countries. Annual roundtables held at national and regional level reveal strong participation of government partners, industry, NGOs, and research institutions. Lead agencies are also identified for better managing of these programs, and sometimes NGOs were named to facilitate inter-agency panels in some countries. Marrakech Process, in its proposed input to CSD on a 10YFP on SCP Apr 30 2009 draft outlined a structure that offers clear entry points for all stakeholders to engage in SCP (figure 3.1).

44. The Asia Pacific Roundtable for Sustainable Consumption and Production (APRSCP) has held eight regional roundtables since 1990s on the CP and SCP themes. Table 3.6 showed the scope of stakeholders who participated in the series, and the balanced distribution of the various sectors throughout the first five roundtables. The last Roundtable has extensively involved government officials in partnership with the ESCAP Green Growth forum.

3.2 Outcomes of regional consultations on SCP

45. Marrakech Process was launched in 2003 to support implementation of SCP along with the 10YFP of SCP. UNEP & UNDESA are serving as the Secretariat to coordinate this global process, with an active participation of national governments, development agencies, UN-Inter Agency Network, and major groups. The process uses bottom up approach aided by the International Panel for Sustainable Resource Management: regional consultations for awareness, programmes to develop SCP tools & methodologies

46. For Asia-Pacific, many issues were identified as priorities. These are energy (priority arising at international meeting), transport / mobility (issue discussed under urban development), waste, and water.

Priority SCP Programme/Tools are also identified, these are:

- National SCP action plans/programmes
- Finance and economic framework for SCP
- Sustainable procurement
- Sustainable products and services
- Education, information on SCP and sustainable lifestyles
- Enhancing business competitiveness through SCP
- Urban and rural development
- Poverty alleviation (cross-cutting issue)

47. APRSCP in the years of regional roundtables also received several key concerns on the SCP issue, some priorities include:

- Demand for green consumerism dependent on economic stage of the Asia-Pacific country, wherein majority are in developing stages; as well as the awareness program in each country;
- Technical tool and knowhow on handling life cycle studies of product and services are limited;
- SCP financing and proper national policies should be in place to support a favorable business working environment to provide SCP business model and its competitiveness

3.3 The National Cleaner Production Centres

48. Currently, there are national cleaner production centres and provincial cleaner production centres positioned in most countries in Asia and the Pacific. These centres contribute to the national policies on sustainable production and implement sustainable production operations, and in some countries CP centres shape the financial initiative, management system, and corporate social responsibilities in industry.

49. For North-East Asia, all countries have various CP programs and laws that promote resource use efficiency. Circular economy (CE) that covers an even bigger scope of the system boundary than factory walls is also in place for Japan, the Republic of Korea and China.

50. Compared to Sustainable Consumption, tools and initiatives related to Sustainable Production are found in most countries to be more advanced. Especially CP tools and initiatives, including case studies, human capacity, legislation and CP networks, receive a significantly higher rating across the region. This is most likely the result of a concerted international effort to build CP capacity in the region over the last two decades, e.g. UNEP-UNIDO NCPC Network. The National Cleaner Production Centres are playing an important role in this regard. Countries with National Cleaner Production Centres have progressed further in the adoption of CP. The CP concept has also achieved a level of maturity in the region where lessons learned from earlier efforts have been taken into account, thereby adapting the approach to the local context. General status of the sustainable production is also presented in Table 3.4 in the annex, showing a list of policies and tools necessary to operationalize CP in the country.

51. Concerning resource use and efficiency; there is an emphasis on renewable energy in the countries in South Asia. The Bangladesh Advance in CNG is also in place. There are major programs for energy development while the significance of resource efficiency has already been recognized and acknowledged. Meanwhile, the Cleaner Production Demonstration Project has already been put into practice in this EE/CP area. In Sri Lanka, the apparel factory setting a global benchmark for low energy consumption (-46%), water conservation (-58%), solid waste management (0) and low carbon emissions (-80%). Another is the completion of the Matale Integrated Solid Waste Management (ISWM) leads to the recovery and recycling of around 32 tons of Solid Waste which will be a considerable reduction in the solid waste being disposed. In India, they used the low global warming potential (GWP) leading to a

substantial reduction of greenhouse emissions. In the subregion of Oceania-Pacific, there is prominent focus on energy projects, climate change issues, green house gases & waste. While in the Southeast Asia, majority of the economies in the subregion have existing NCPC/CPC. Subregional cooperation is also very strong among Southeast Asian CPCs, such as India, Laos, Vietnam, Thailand, and Cambodia. NCPCs have also gone beyond their industry advice, and had strengthened the management capability as well as inviting participation from the financial sector of the society to support the implementing firms.

52. In some subregions, there is a strong national push and a strong civil society pull for resource efficiency. As for SA, there are initiatives further into WEEE and Hazardous Waste Management. There have also been major developments in 3R. SA also has strong baseline in Technology and R&D Institution. In Korea NCPC, technologies of recovering acid and recycling process-water from wastewaters were developing. For Oceania, there is high promotion of alternative and renewable energy.

53. On the issue of resource management tools, in NEA, tools such as regional and national LCA/LCI data have already been developed. Korea as well as Japan has websites on these data readily accessible for public access by the industry and somewhat co-developed with the industries in other economies. In China, the NCPC and regional CPCs are in coordination with SEPA on CP, formulate policy and management methods and conduct several pilot projects of cleaner production audit, e.g. pulp and paper making industry. Also several pilot institutions were distributed in the cities for development of environmental tourism using environmental impact assessment and thus established 100 training courses for national cleaner production auditors. In SA, consumers' awareness on the health effects of

residual pesticides and fertilizers is increasing. Textile, leather and other industries are switching to cleaner technologies. Also, there is promotion of green financing and sustainable investments. Oceania is able to use the LCA in identifying impacts and creating a resource management tool. In SeA, there is already an existence of LCA practice using mostly the data gathered and developed in the West or from Japan. In 2002, the VNCPC was certified to ISO 9001 and ISO 14001 for its Integrated Management System. The Cambodian Cleaner Production Center realized at the end of the year 2007, 8 CP awareness raising seminars, 11 presentations on CP, 23 information dissemination. Lastly, the training courses, the key activities realized included 1709 number of persons trained, 64 national experts and enterprise staff trained, and a special CP training conducted for university lecturers. Awareness program of Lao CPP resulted to a total of 10 CP seminars having 429 participants, 7 CP presentations, mass media coverage showing 13 TV contribution and 25 printout media. For training programs a total of 12 CP intensive trainings having 434 participants and CP+ Trainings having 450 participants were held for the 1946 total training days were realized.

54. In line with the eco-product and eco-services, many countries in the region use eco-label, LCA thinking, and environmental technology verification (ETV) to justify the recognition of product, service, and technology achievements.

55. Ecolabeling in Japan, China, and Korea are quite advanced in the Northeastern Asian subregion. Wasteful packaging has been reduced in Japan and South Korea and China has enacted laws on it. Eco-procurement is also on-going in Oceania island states with data gathering effort. Most countries in the

SEA fall under the Type I Eco Labelling scheme. Benchmarking programmes are on-going through many collaborative projects with Japan, China, and Korea from this subregion. In SA, the greening of hotel, real estate and airline industries has been in place. In Oceania, Eco labelling in terms of energy efficiency is highly imposed. The 3R initiative is well implemented. CFCs and other green house contributing gases are strictly monitored. Hazardous chemicals and heavy metals, especially mercury, are also taken into consideration. Oceania also employs eco-packaging and ensures that the end life disposal of a product is recognizable (Table 3.5 for the summary of Ecolabels in Asia).

3.4 National SCP Roundtables

56. National roundtables were held in some Asian countries such as China and India, and in cooperation with the Asia Pacific Roundtable for Sustainable Consumption and Production in the Philippines in 2008. The two Indian national roundtables on SCP in 2006 (Mumbai) and 2007 (New Delhi) were organized by the Society in Action Group (SAG), an all-volunteer Indian NGO involved in SCP since 2003. The December 2007 Roundtable in New Delhi came up with the following findings:

- The top three priorities identified for the region are integrated waste management, water resource efficiency and consumer demand
- Develop key sector action plans and SCP programs based on Marrakech for India
- Promoting SCP at national & community level
- Other Issues (India):
 - Sustainable water management, with respect to water utilization

- Improvement of water utilization
- Projections of scarcity of water in 2050; exploited groundwater sources
- 8th 5Y Plan (1992-1997) – rural areas were settled even at smaller quota

57. SAG organized the Marrakech Task Force (MTF) meeting in New Delhi in February 2009 to further the remit of MTFs in documenting best practices, initiate project collaboration and encourage intra and inter-regional information exchange. The discussion focused on green growth, and sustainable lifestyles/education, tourism, public procurement, buildings and construction and products.

58. The Marrakech Process in China on the other hand, was held in 2006 and has the following objectives:

- Increase China's active involvement in the Marrakech process on SCP and establish links with the promotion of circular economy in China;
- Enrich stakeholders' knowledge;
- Identify needs, gaps and implementation means of Marrakech process in China;
- Exchange SCP information between China and other regions, particularly Europe.

59. Issues covered in this Process are SCP - international and national opportunities, Life-cycle thinking and Waste Management; and Sustainable Procurement and Sustainable Buildings. Policy recommendations that came out of this Process were identified as:

- Establish an adequate and applicable set of legal, economic, voluntary instruments and environmental management tools to improve eco-efficiency
- Identifying appropriate policies and tools
- Creation of standards and criteria for certification and labelling
- Improve awareness and knowledge on SCP
- Develop and implement relevant policies and tools for effective reform
- Consider market instruments
- Fortify cooperation between Chinese, European and international experts (North-South and South-South)
- Push for technology development, transfer, adaptation, acquisition and diffusion.
- Encourage the establishment of public-private partnerships.

3.5 National SCP Strategies/Plans

60. In East Asia, A Fundamental Law for establishing a sound material society in Japan was formed, containing basic principles for the creation of a recycle-oriented society and the plan for achieving it. This law targets a resource productivity of 40% improvement and cyclical use rate of 40% improvement (EcoTrack, 2005).

61. A national framework under the Second Comprehensive National Waste Management Plan (2002-2011) in Korea, established a sustainable and resource circulating socioeconomic foundation.

Also set-up an extended producer responsibility delegation called producer responsibility organizations (PROs). Japan's Extended Producer Responsibility and Take-Back Provisions resulted to about 500,000 computers (about 9,000 tons) are recovered for recycling each year. Developing countries such as India and China are beginning to implement WEEE regulations (AIT, 2007). See table 3.7 for the current situation of national policies, legislative measures and other initiatives in promoting the 3R in waste management. This is further enhanced by the holistic 2009 Circular Economy Promotion Law and 2003 Cleaner Production Promotion Law enacted in China. In 2007-2009, Chinese government implemented many new sustainability indicators to assess the progress of these national and local programmes, such as the eco-industrial park indicators. Similarly, Japanese government has moved from technological focus of the eco-town program to its management and indicator system for assessment of its achievements.

62. In Southeast Asia, Fuji Xerox Co., Ltd, a multinational company initiated efforts to establish global recycling systems becoming the first case in Asia. They developed a take-back system, drawing on their lease-based business model that has proven effective in both developed and developing countries. The factory which is located in Thailand recycles end-of-life copy machines that are collected from the company's nine operation sites in Asia and the Pacific (Figure 3.2). As a result, Fuji Xerox achieved a 99.6% waste recycling ratio (in terms of weight) based on its system of separating the collected materials into 64 different categories. Small and Medium Enterprises (SMEs) in India are being targeted by central and state pollution control boards as they are responsible for 70% of the total industrial pollution load nationwide. To increase its compliance a whole regulatory package should include a comprehensive

inventory, simplified monitoring procedures, environmental awareness, and technical and financial assistance programs (ADB & IGES, 2008).

63. Some countries in the region have passed new legislation that provides targets, policies, regulations, and support frameworks for EE actions. The government of Hong Kong, China has been implementing energy audit programs in its buildings since 1993 and had been performed in 224 major government energy-consuming (AECEN 2006). Table 3.8 gives an overview of building energy efficiency policies in Asia. Giving more priorities to renewable energy, energy efficiency, and energy management have also been the focus in many Southeast Asian and South Asian countries, in response to the fuel crisis and the global climate change.

64. China's household energy consumption has been increasing from the 80s until the mid-90s. However, during the late 90s China has decreased its household energy consumption almost equaling its consumption during the late 80s (ESCAP, 2001).

65. In South-East Asia, Malaysia established the efficiency improvement project (MIEEIP) targeting over 700 industrial sites in eight industrial sectors (PTM, 2003). In Puerto Princesa, Philippines, energy savings features are incorporated into a socialized housing project called the Green Homes Project. Moreover, Cebu, Philippines, converted 700 mercury vapor lamps to high-pressure sodium resulting in a carbon dioxide reduction of 150 tons per year.

66. Bhopal, India, reduced energy bills for water pumping, and in Ahmedabad, India, they created a special Energy Cell, with assistance from the Alliance to Save Energy, devoted to preparing proposals for

EE. Please see the table 3.9 for the financial mechanisms to promote energy efficiency in selected countries

67. In Australia , the Australia's 2009 Energy Efficiency General Information update, (April, 2009)

The Council of Australian Governments (COAG) announced that it would request the Australian Building Codes Board(ABCB) to increase the energy efficiency provisions in 2010 edition of the Building Code of Australia (BCA). In the Council of Australian Government Meeting (July 2009), a 10-year strategy to accelerate energy efficiency improvements have agreed for householders and businesses across all sectors of the economy. Also a Sustainability Advantage Program have been joined by 220 companies that worked to use resources more efficiently, to integrate environmental strategies with business planning and measure their carbon footprint and manage their emissions. The Government also set goals for sustainable water: In Melbourne metropolitan area, 25% (per capita) by 2015 and 30% by 2020 compared to 1990 levels; In the Central Region, 1%.

68. Ecolabel and green (public) procurement are increasingly receiving priority attention by many national governments. China and Japan, in mid-2000s, have conducted series of workshops in Tokyo and Beijing to deliberate ecolabel types (I and III), LCA databank, and green (public) procurement. Recent development is highlighted in a series of international eco-product expo, both supported and attended by high level government officials, multi-stakeholders, private corporations, etc. International and regional institutions and networks such as IGPN, GEN, and the APO played the key role on this development.

3.6 Progress Review

69. The Southeast Asia subregion has exemplified good involvement of stakeholders in the SCP consultation. The strong presence of the NCPCs in the subregion also highly supports knowledge transfer and capacity building of the human resources for SCP. Cooperation among NCPCs in Thailand, Lao, Cambodia, Vietnam, and India has formed a strong network and smooth knowledge sharing of CP practices and technologies. The economic stage of several developing countries in this subregion, however, has caused the slow down of investment in technological advances, and full disbursement of CP tools to the SMEs, which are the major business players in the subregion. Also, the impacts due to the lack of technological advances in terms of full fledged eco-label and life cycle assessment have been compounded by the lack of green consumerism. The lack of the dual market pull and technological push placed the subregion in a less competitive position in the greening of their industries. There is also a need for further improvement in the areas of resource use intensity and pollution abatement. In Southeast Asia, both government and industry share almost equal roles in the greening of the industry and SCP efforts.

70. The North-East Asia subregion, together with the Australia and New Zealand, has been leading in the Asia-Pacific region in many ways. Stakeholder involvement in China, Japan, and the Republic of Korea has progressed in the years as these economies implement the circular economy at national level, provincial level (as in the case of China), city level, zonal level, and local level. Consultation with the stakeholders has significantly enveloped the main concerns of the government programs and found

necessary responsive policies to tackle the main issues. However, with China's target to increase its economic growth rate, intensive use of resources is required. Despite efficiency in energy, and resource use has recorded excellent performance, the consumption pattern of such a huge population creates a strong impact on its ecosystem.

71. Important SCP tools such as life cycle assessment, eco-label, and programs such as green public procurement, are very strong and leading in Northeast Asia. Continuous efforts to allow knowledge transfer, public-private partnership, and market instruments instituted are necessary for the sustainability of economic growth in this subregion. In Northeast Asia, government capability in policy formulation leads the greening of economy and SCP-related themes, while many lead private industries proactively formulate tools to perfect the greening process. Sustainability reporting and Sustainability Investment are two significant contributions seen from the private sector.

72. The South Pacific subregion, composed of Australia, New Zealand, and many island states, has each delivered progress in different ways. Much noted here is the impact of sea level rise due to climate change, and adaptation strategy would very much call for more subregional cooperation, comparability of social system, and convergence of subregional interests. Climate change impacts were not only visible in the island states, such as Samoa's tsunami of 2009, but also the mainland Australian drought of 2006–2007. This would be naturally followed by many governments' strategy on energy efficiency, support for renewable energy development, and the development of strong ecotourism.

73. The presence of strong NCPC and special SCP attention by the Marrakech Process reveals that the South Asia subregion had significantly progressed in the planning and operational domains. Stakeholders are also extraordinarily proactive, as in the Marrakech follow-up events. The great economic potential in this subregion would be a great opportunity for South Asia to leapfrog to several green growth status given holistic SCP directions. On the microlevel, resource management subject to technological constraints has been efficient in this subregion. Bangladesh and India, together with other Asia-Pacific neighbors (i.e., Indonesia, Malaysia, PRC, Philippines, Thailand, and Viet Nam) form the group of developing Asian countries systematically planning to achieve better waste management through progressive policies and plans.

74. According to recent estimates, government spending on environmental protection amounts to less than 1% of GDP in Asia and the Pacific. Viet Nam spends only about 0.1–0.3% of GDP, and PRC, Indonesia, and Philippines, 0.5–0.7%. Malaysia and Thailand both invest almost 1% of GDP on the environment. India's expenditure is not fully documented because of the fragmented structure of government, but is believed to be less than 1% of GDP. This also explains the lack of indigenous resource use in the Asia-Pacific region.

4. Outlining Policy Options for SCP in the Asia-Pacific Region

4.1 Creating an Enabling Framework for SCP in Asia and the Pacific

- Green public procurement as the main driver for SCP and green growth

Strategic SCP programmes, such as public green procurement, can be launched as both regulatory and market-based instruments in many economies, wherein the public procurement dominates the entire commodity market. With the public sector taking the lead, it will generate a strong follower effect by the private sector and make responsible purchasing mandatory for all public authorities.

- Clear sustainability targets

Clear sustainability targets with indicators (e.g., resource use intensity, emissions, green public procurement, and products) should be identified at both at the national and local levels. Enforced with models and examples, these targets should be properly communicated and identified to the stakeholders.

- Focus on investments towards Green Economies

There is a need to translate the policies, programmes, and initiatives of the public and private sector into public and private investments in green technology. The objective is to create a momentum for investors and to emphasize to them that investments in green technology are the most viable option for sustainable economic growth in Asia and the Pacific.

- Facilitate a behavioral change of consumption patterns

Although sustainable production patterns are often presented as the most important need for economies in the Asia and the Pacific, there is an equal need to promote sustainable

consumption patterns. This is relevant both for individual consumption decision of citizens but also for corporate and public consumption decisions.

- Appropriate timing on resource pricing

Concrete steps should be made to ‘get the prices right’ at the right time under the Asia-Pacific developing countries’ scenario by developing and implementing a range of economic instruments to ensure that the ecological consequences of using natural resources and pollution are reflected in the prices.

- Capacity Building

The need for capacity building in terms of human capability, technology knowhow, leapfrogging options should be prioritized.

- Subregional cooperation and benchmarking

In view of the similarities and interdependence of many economies belonging to the same subregion, simplification and benchmarking benefits could be easily harvested through strengthened subregional cooperation in the area of SCP.

- More SCP-focused strategies

Many of the regional efforts have been initiated at the earlier stage of Rio wherein sustainable development as an umbrella program was defined. The evolved SCP concepts still need to be streamlined into the main focus of many economies in the AP region. A comprehensive strategic and policy approach to achieve greater resource efficiency is necessary and urgent. It is also important to integrate industrial firms, networks or chains of

firms, eco-industrial parks, and regional infrastructure in a broad system to support resource optimization.

There is a need to incorporate long-term sustainable development principles into short-term interventions. In this way, infrastructure investment and economic stimulus policies would avoid locking economies into a wasteful consumption pattern in the future. (65th Session of Economic and Social Commission for Asia And The Pacific, Apr 2009)

- Empower the civil society

Developing countries dominate majority of the AP economies, and these countries have a strong civil society and industry to be tapped for realization of the SCP programmes. Government should encourage and empower these valuable resources as partners in the promotion and implementation of SCP programs.

- Operationalization of database and clearing house for indigenous technology

Both UN ESCAP and UNEP IETC have spearheaded data gathering of EST and indigenous technology documentation. Such knowledge-sharing could be the prime asset of the region.

There is a need to expedite the dissemination and operationalization of these strategic initiatives.

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2.1 Figures and Tables for Section 1

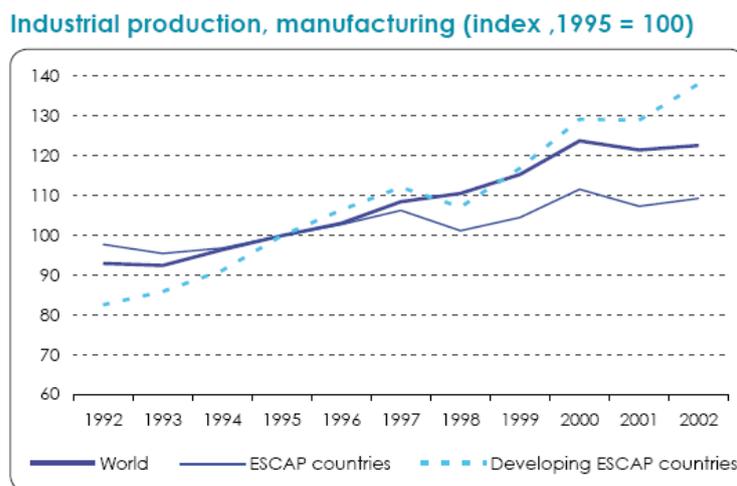


Figure 2.1.1: Industrial Production from 1992-2002

Source: ESCAP (2005). Statistical Yearbook for Asia and the Pacific, 2003, United Nations publication Sales No. 04.II.F.1 (New York, United Nations).

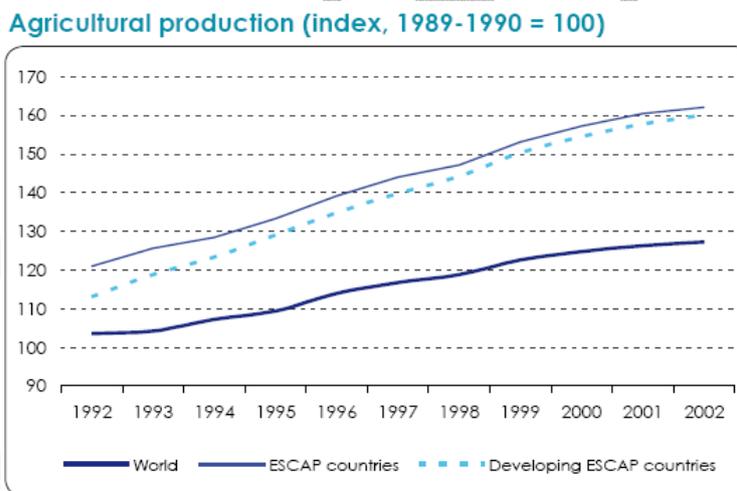


Figure 2.1.2: Agricultural Production from 1992-2002

Source: ESCAP (2005). Statistical Yearbook for Asia and the Pacific, 2003, United Nations publication Sales No. 04.II.F.1 (New York, United Nations).

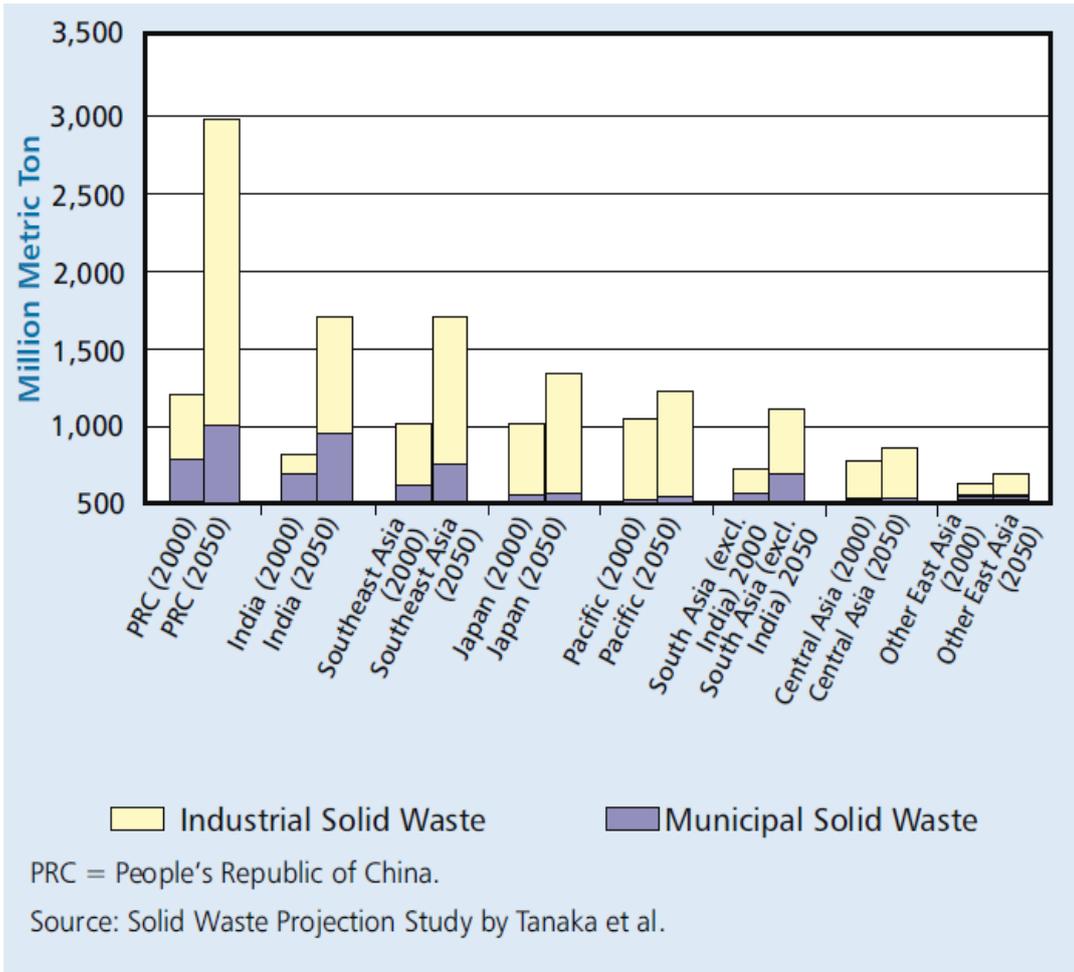
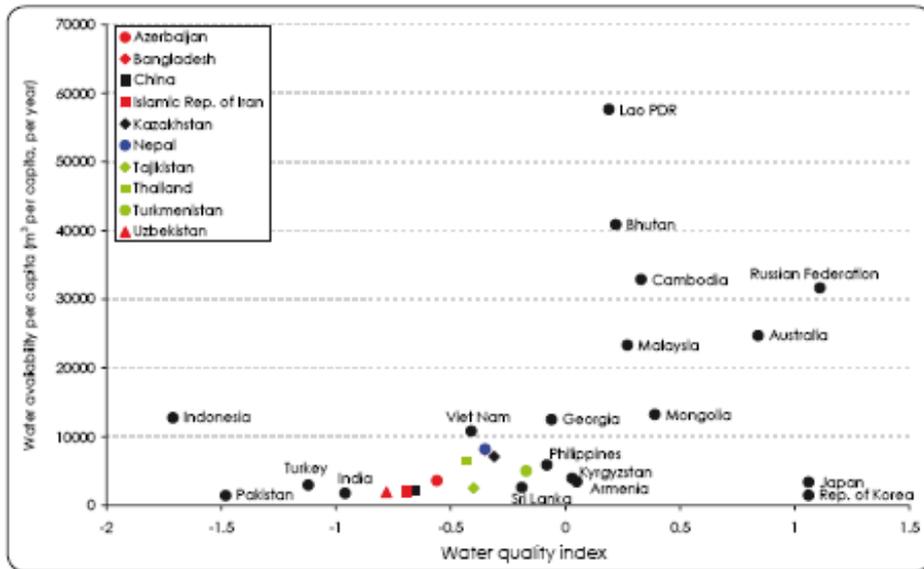


Figure 2.1.3: Projected Solid Waste Generation in Asia (2000-2050)

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Sources: FAO AQUASTAT online database, accessed on 18 August 2005 from <<http://www.fao.org/ag/agl/aglw/aquastat/main/index.stm>>; Esty, Daniel C., Mark Levy, Tanja Srebotnjak and Alexander de Sherbrin (2005). Environmental Sustainability Index: Benchmarking National Environmental Stewardship (New Haven, Yale Center for Environmental Law and Policy). Water quality index based on dissolved oxygen concentrations (1993-2002), electrical conductivity (1994-2002) and phosphorus concentrations (1994-2003). The lower the indicator value, the lower the assessment of overall freshwater quality. Based on data for the latest year available in the time period indicated.

Figure 2.1.4: Water Quality vs Water Availability

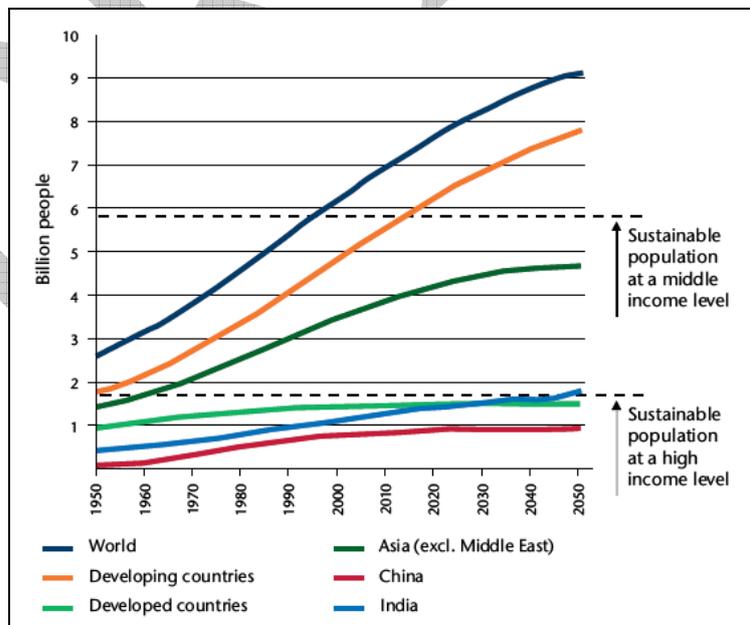


Figure 2.1.5: World Population Trend and Projection

Source: World Resources Institute (WRI)/Earthtrends, 2008

Table 2.1.1: Ecological Footprint by Region (World)

Source: WWF Study 2006	Biocapacity (global ha/person)	Ecological Footprint (global ha/person)	Ecological Deficit (global ha/person)
Asia and Pacific	0.7	1.3	-0.6
Africa*	1.3	1.1	+0.2
Latin America	5.4	2.0	+3.4
North America	5.7	9.4	-3.7
EU (25)**	2.2	4.8	-2.6
World	1.8	2.2	-0.5

* Excluding Central Asia and Caucasus
 ** Excluding the latest accession countries

2.2 Figure for Section 2

Table 2.2.1: Priorities Identified for each Region

PRIORITIES IDENTIFIED UNDER THE REGIONAL MARRAKECH PROCESS CONSULTATIONS						
PRIORITIES	REGION	AFRICA	ASIA & THE PACIFIC	EUROPE	LATIN AMERICA & THE CARIB-BEAN	ARAB REGION (WEST ASIA)
PRIORITY SECTORS						
ENERGY		●	○	●	●	●
AGRICULTURE—FOOD		●		●		
HOUSING (BUILDINGS & CONSTRUCTION)		*		●		●
TRANSPORT / MOBILITY		*	*	●	*	●
TOURISM		*		*	*	●
WASTE		*	●		*	●
WATER		●	●		●	●
PRIORITY SCP PROGRAMMES/TOOLS						
NATIONAL SCP ACTION PLANS/ PROGRAMMES		●	●	●	●	
FINANCE AND ECONOMIC FRAMEWORK FOR SCP		●	●	●	●	●
SUSTAINABLE PROCUREMENT		●	●	●	●	●
SUSTAINABLE PRODUCTS & SERVICES (Labelling & Standards)		●	●	●	●	
EDUCATION, INFORMATION ON SCP & SUSTAINABLE LIFESTYLES		●	●		●	●
ENHANCING BUSINESS COMPETITIVENESS THROUGH SCP (SMEs)		●	●	●	●	●
URBAN & RURAL DEVELOPMENT (SUSTAINABLE CITIES)		●	●	●	●	●
CROSS-CUTTING ISSUE						
POVERTY ALLEVIATION		●	●		●	●

○ Priority arising at international meeting. * Issue discussed under Urban Development

2.3 Figures and Tables for Section3

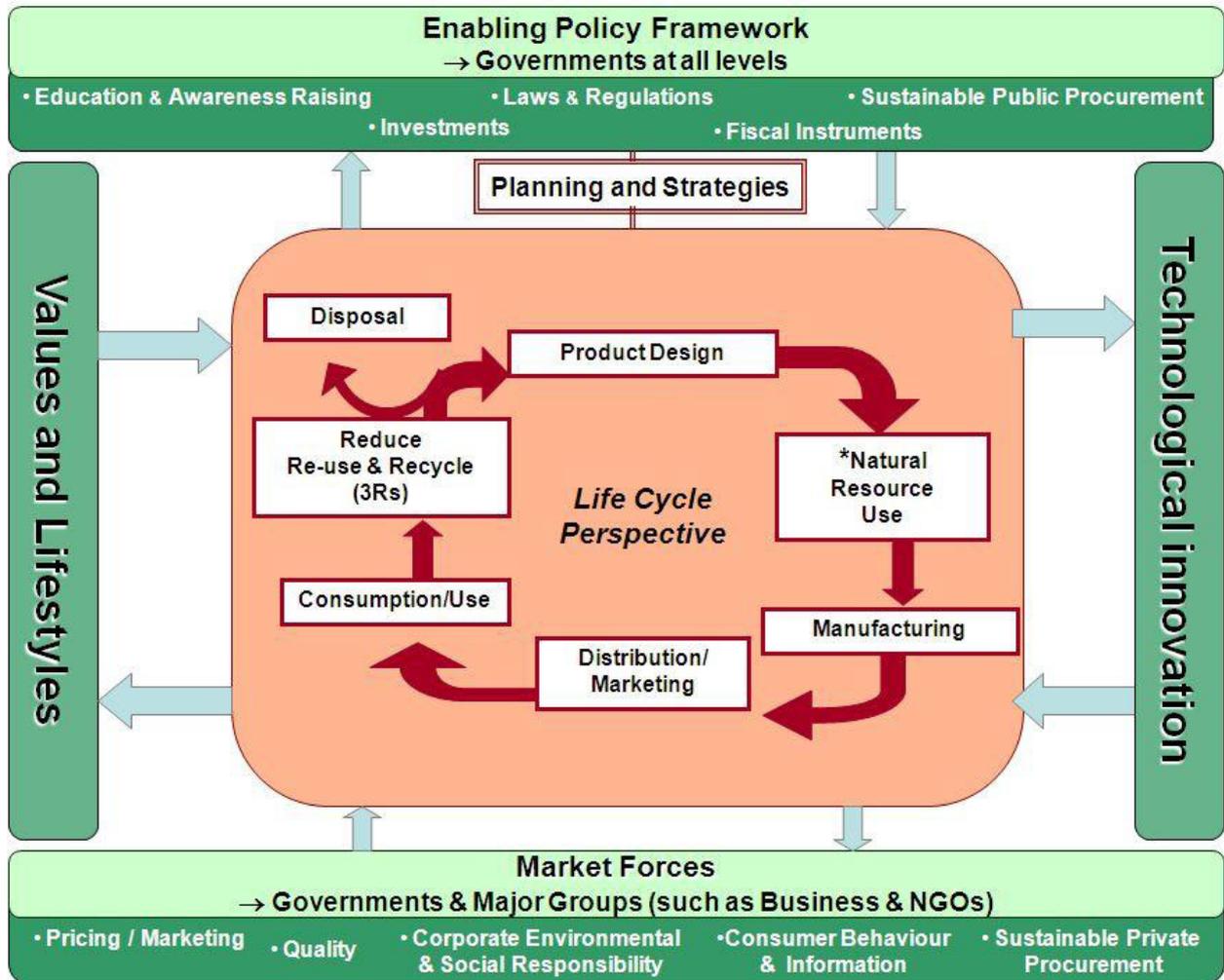


Figure 2.3.1: 10YFP on SCP

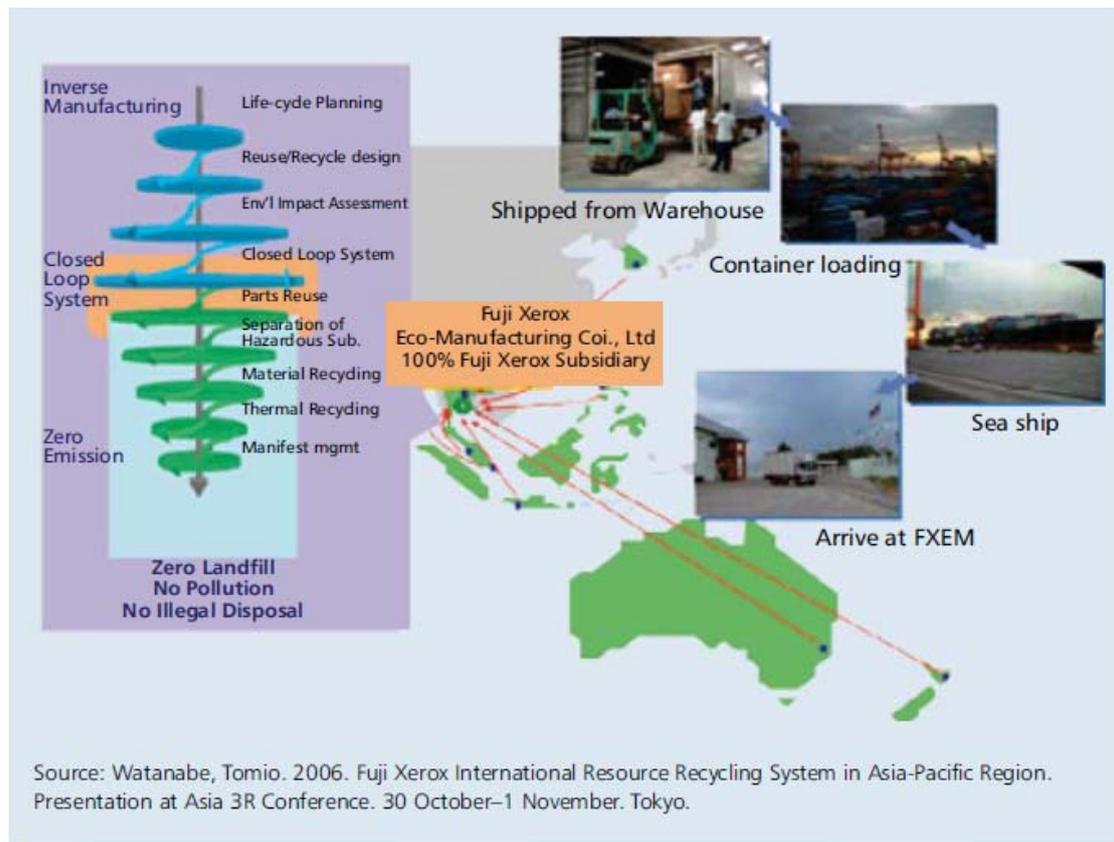


Figure 2.3.2: Transnational Recycling Mechanism by Fuji Xerox

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Table 2.3.1: Budget Allocation of Victoria Government (Australia) for Sustainability Projects

Budget Allocation	Objectives	Full-time employees 2008-09	Total Budget 2008-09	Total Budget 2009-10	Total Budget 2010-11
	Reducing Victoria's carbon footprint to contribute to climate change outcomes.	54.9	\$36,589,332	\$33,519,265	\$21,772,931
	Achieving the Towards Zero Waste targets for 2008/09.	46.0	\$16,453,639	\$13,169,605	\$10,895,848
	Engaging Victorians in new behaviours and ideas to support sustainability in everyday actions.	29.8	\$8,831,679	\$7,287,252	\$5,118,743
	Total	130.7	\$61,874,650	\$53,976,122	\$37,787,522

The total budgets projected for 2009-10 and 2010-11 are an estimate based on balancing the program budgets against future revenue projections. The projected revenue is based on the following assumptions: that no additional revenue is assumed for 2008-09 and beyond, except for the Regional Solar Hot Water rebate; and that a gradual reduction in revenue from the landfill levy will occur over the period.

Source: <http://www.resourcesmart.vic.gov.au/>



Table 2.3.2: National and Regional Status of Sustainable Production in Asia and the Pacific

	OCEANIA			SOUTH ASIA					EAST ASIA					SOUTH EAST ASIA					Asia-Pacific Average				
	Australia	New Zealand	Papua New Guinea	Bangladesh	Bhutan	India	Nepal	Pakistan	Sri Lanka	China	Hong Kong, China	Taiwan, Province of China	Japan	Republic of Korea	Mongolia	Indonesia	Malaysia	Philippines		Singapore	Thailand	Viet Nam	
Cleaner Production																							
National CP Policy	●	○	–	–	–	●	○	–	○	●	●	●	●	●	–	●	○	○	○	○	○	○	1.3
Environmental Legislation/Standards	●	●	○	○	●	●	○	○	●	●	●	●	●	●	○	●	●	●	●	●	○	○	2.0
CP Demonstration Projects	●	○	○	○	○	●	○	○	●	●	●	●	●	●	○	○	○	●	●	●	●	●	1.7
Case Studies	●	●	–	–	–	●	○	○	●	●	●	●	●	●	○	○	○	●	●	●	●	●	1.7
Technical Training	○	●	–	○	–	○	○	○	○	○	○	○	○	○	–	○	○	○	○	○	○	○	1.6
Human Resource Development	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.7
CP Networks	●	●	–	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.4
Advisory Service	○	○	–	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.3
Good Housekeeping Programmes	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–	○	○	○	○	○	○	○	1.6
Internal Waste Management	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.8
CP Information																							
– Technical Manuals	○	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.5
– Promotional Booklets	○	○	–	–	○	○	○	○	○	○	○	○	○	○	–	○	○	○	○	○	○	○	1.4
– Newsletters	○	○	–	–	–	○	○	○	○	○	○	○	○	○	–	○	○	○	○	○	○	○	1.3
– Seminars/Workshops	○	○	–	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.3
CP Centres	○	○	–	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.0
Government/Industry Partnerships	●	●	○	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.4
Financial Incentives for CP Investments																							
– Favourable Loans	○	–	–	–	–	○	○	–	○	○	○	○	○	○	–	–	–	○	○	○	○	○	0.8
– Tax Incentives	○	–	–	–	–	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.9
– SME Support Programmes	●	●	–	○	–	○	○	○	○	○	○	○	○	○	–	–	○	○	○	○	○	○	1.2
– Grant Programmes	●	○	–	–	–	○	–	–	○	○	○	○	○	○	–	–	○	○	○	○	○	○	0.9
Industry Support for CP Activities	○	○	–	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.2
Environmental Management Systems																							
ISO 14001	●	○	○	○	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.6
Non-Certified EMS	○	○	–	–	–	○	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	1.1
EIA (company level)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.7
Environmental Technology Assessment	–	○	–	–	–	○	○	–	–	○	○	○	○	○	–	–	–	○	○	○	○	○	0.6
Corporate Governance																							
Global Compact	○	○	–	–	–	○	–	–	○	○	○	○	○	○	–	–	○	○	○	○	○	○	0.6
Public Reporting	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.0
EIA (public level)	○	○	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.6
Codes of Conduct	○	○	○	–	–	○	○	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.0
Labour Standards	●	●	○	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.8
Life Cycle Approach																							
Supply Chain Management	○	○	–	○	–	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.0
Eco-Design	○	○	–	–	–	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.0
Environmental Accounting	○	○	–	–	–	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.8
Product Service Systems	○	○	–	–	–	○	○	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.9
In-Office – Company “Green Schemes”	○	○	–	–	–	○	–	–	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.9

Note: –: No/Not aware, ○: Low status, ●: Medium status, ●: High status, Average Asia-Pacific: No (0) Low (1) Medium (2) High (3).

Table 2.3.3: Ecolabels in Asia

Country	Organization	Ecolabel	Summary
Australia	The Australian Environmental Labelling Association Inc.	The Australian Eco-label	<ul style="list-style-type: none"> • Launched in November 2001 • 26 companies certified; standards developed for 30 types of product categories^a
China, People's Republic of	China Certification Committee for Environmental Labeling Products ^b	Ten-ring Mark	<ul style="list-style-type: none"> • Established in May 1994 • As of May 2003, 527 Chinese enterprises and a total of 3,426 products had been certified^c
Hong Kong, China	Green Council and Hong Kong Productivity Council	Green Label Scheme	<ul style="list-style-type: none"> • Green Council formed in 2000 • 9 categories comprising 37 products open for application^d
India	Central Pollution Control Board	Ecomark Scheme	<ul style="list-style-type: none"> • Launched in 1991 • 16 product categories
Japan	Japan Environment Association	Eco Mark	<ul style="list-style-type: none"> • Second oldest program, established in 1989
Republic of Korea	Korea Environmental Labeling Association, Korean Ministry of Environment	Environmental Labeling Program	<ul style="list-style-type: none"> • Launched in June 1992 • 2,041 certified products (506 companies) in over 100 product categories
Malaysia	Product Certification Program	SIRIM ^e Quality Assurance Services	<ul style="list-style-type: none"> • Launched in 1996
New Zealand	Environmental Choice New Zealand	Environmental Choice New Zealand	<ul style="list-style-type: none"> • Over 200 products in 29 product categories^f
Singapore	Singapore Environment Council	Singapore Green Labeling Scheme	<ul style="list-style-type: none"> • Launched in May 1982 • About 300 products in 32 categories^g
Taipei, China	Environment and Development Foundation	Green Mark Program	<ul style="list-style-type: none"> • Launched in August 1992 • Nearly 1,400 products certified in 87 product categories^h
Thailand	Thailand Environment Institute	Green Label Program	<ul style="list-style-type: none"> • Launched in August 1994 • About 144 products (and 29 companies) in 16 categoriesⁱ

^a Australia Environmental Choice. Australian Environmental Labelling Association, Inc. Canberra. Available: <http://www.aela.org.au/homefront.htm>

^b Third-party certification program under the direction of the China State Bureau of Technology Supervision and the National Environmental Protection Agency.

^c Qing, Xia and Yu Jie. 2003. China's Environmental Labeling Program. Presentation at Challenges Ahead on the Road to Cancun, World Trade Organization, 16–18 June.

^d Law, Ir Nelson. 2003, August. Green Label : HK Green Label - A Product Certification Scheme using Green Criteria. N. Law and Associates Management Consultancy. Available: http://www.nlaw.com.hk/articles_detail.asp?Article_id=35

^e Standards and Industrial Research Institute of Malaysia.

^f Environmental Choice New Zealand. Available: <http://www.enviro-choice.org.nz/>

^g United Nations Environment Programme. 2004. *Regional Sustainable Consumption and Production Report: Asia and the Pacific*. Paris.

^h Greenmark. Environmental Protection Administration. Hsinchu, Taipei, China. Available: <http://greenmark.epa.gov.tw/english/index.asp>

ⁱ Buryagidji, Chaiyod. 2004. Presentation on Green Procurement in Thailand: Challenges and Opportunities for APO Workshop on Green Procurement. Kuala Lumpur, Malaysia. 3 September.

Table 2.3.4: Percentage of Stakeholders Participated in the Asia Pacific Roundtable for Sustainable Consumption and Production (APRSCP) Regional Roundtable

Sector	%					
	1st	2nd	3rd	4th	5th	6th
Industry / Business	15	7	18	21	23	22
Government	21	36	27	32	38	63
Academic/ NGO	18	23	19	27	17	8
Finance	4	4	3	3	2	1
Consultant / Donor	42	30	32	17	20	3

Table 2.3.5: The Current Situation of National Policies, Legislative Measures and other Initiatives in Promoting the 3R in Waste Management.

3R Management Aspects		Countries												
		Bangladesh	Bhutan	Cambodia	PRC	India	Indonesia	Japan	Malaysia	Philippines	Republic of Korea	Singapore	Thailand	Viet Nam
Systems for Integrating Environmental Considerations into Socioeconomic Activities	Framework	○	◇	○	○	○	○	●	○	○	○	○	○	○
	Direct Regulatory	○	○	○	○	○	○	●	○	○	●	●	○	○
	Economic	◇	◇	○	○	○	○	○	◇	○	○	○	○	○
	Voluntary	○	◇	N.I.	○	○	●	○	○	●	○	○	○	○
	Information	○	●	◇	○	◇	○	○	○	◇	○	○	○	○
	Procedural	○	◇	◇	◇	◇	◇	○	◇	◇	○	◇	◇	○
Support for 3R-related Activities		○	○	●	○	◇	○	○	○	○	○	○	○	●
Environmental Education		◇	◇	◇	○	◇	●	○	◇	◇	◇	◇	◇	◇
Science and Technology		○	◇	○	○	○	○	●	◇	◇	○	○	◇	○
Reduction of Barriers to International Flow		○	○	○	○	○	○	●	○	○	○	○	○	●
International Cooperation		○	○	○	●	○	●	●	○	○	○	○	●	●
Cooperation of Stakeholders		○	◇	●	◇	◇	●	○	○	●	◇	○	○	○
Promotion of Science and Technology		N.I.	○	◇	○	◇	○	○	○	○	○	○	○	○

● – Sufficient: for example, in the Philippines, the reported voluntary initiatives were found to be sufficient to affect the shift toward the 3Rs.
 ○ – Insufficient: denotes that the particular aspect partially addresses 3Rs, but may not be enough to initiate 3R-oriented activities. In Malaysia, for example, the prevailing management measures were found to be inadequate to implement 3Rs.
 ◇ – Gap: denotes a missing aspect that is considered essential to initiate 3R-oriented activities.
 3Rs = reduce, reuse, recycle; N.I. = No information; PRC = People's Republic of China.
 Source: 3R Knowledge Hub Secretariat. 2007. *Gap Analysis in Selected Asian Countries*. Bangkok: Asian Institute of Technology.

Table 2.3.6: Overview of Building Energy Efficiency Policies in Asia

	People's Republic of China	Hong Kong, China	India	Indonesia	Japan	Malaysia	Philippines	Singapore	Republic of Korea	Taipei, China	Thailand
Minimum Energy Performance Standards/Codes											
Appliances/Equipment	●(23) ²	–	○(3)	●(10)	●(2)& ○(21)	●(5)& ○(1)	●(8)	●(1)	●(16)	●(12)	●(9)
Buildings	●	●	●(p) ³	○	○ ⁴	○	●	●	●	●	●
Labeling of Energy Performance											
Appliances/Equipment	●(2)& ○(36)	○(20)	○(9)	○(5)	○(30)	○(7)	●(11)& ○(1)	○(20)	●(15)& ○(17)	○(28)	●(2)& ○(18)
Buildings	○	○	○	–	○	–	?	○	○	○	?
Green Building Rating and Certification	○	○	○	–	○	–	P	○	○	○	–
Financial Incentives											
To Stimulate Performance-plus Supply	P	–	–	?	✓	✓	?	✓	✓	?	✓
To Stimulate Demand	P	✓	–	?	✓	✓	?	–	✓	✓	?
Industry Capacity Building											
Centers of Excellence	✓	✓	✓	?	?	✓	–	✓	✓	?	✓
Energy Performance Benchmarking	–	✓	–	–	?	✓	–	✓	?	✓	?
Skills Enhancement	✓	?	✓	?	✓	✓	✓	✓	?	?	✓
Sponsored Research and Development	?	?	–	?	?	?	?	✓	?	?	?
Building Audit Programs	?	–	✓	–	✓	✓	–	✓	✓	✓	✓
Leading-by-example Programs											
Government Modeling	✓	✓	✓	–	✓	?	✓	✓	✓	✓	?
Demonstration Buildings	✓	✓	✓	?	✓	✓	–	✓	?	✓	✓
Consumer Awareness Raising											
Public Advertising	?	✓	✓	?	✓	?	✓	✓	?	✓	✓
School Education Programs	?	✓	?	?	✓	✓	✓	✓	?	?	?
Policy Implementation											
Enforcement Infrastructure	P	✓	–	–	✓	–	–	✓	✓	✓	–

● = Mandatory, ○ = Voluntary, ✓ = Have Program, P = Planned, ? = Unknown, – = None/Limited

Source: Hong, Wen, 2007. Trends in Asia's Building Energy Efficiency Policies. Presentation at International Conference on Climate Change, Hong Kong, China; 29–31 May. Available: <http://www.hkie.org.hk/icc2007/docs/PPT/5A%20-%20Energy%20Efficiency%20Policies.ppt>

Table 2.3.7: Financial Mechanisms to Promote Energy Efficiency in Selected Countries

Country	Tax Incentives	Subsidies	Lending Programs			Energy Service Companies
			Loan Funds	Guarantee Funds	Bank Windows	
Bangladesh						
People's Republic of China			0	0		0
India	0		0		0	0
Indonesia						
Mongolia				0		0
Philippines	0		0			0
Sri Lanka		0	0	0		0
Thailand	0		0			0
Viet Nam		0				0

Source: UNEP. 2006, June. *Improving Energy Efficiency in Asia: A Review of Financial Mechanisms*. Bangkok.

DRAFT