

3rd International Expert Meeting on 10 Year Framework of Programmes on SCP (Marrakech Process)

Background paper 2:

Key Issues of Sustainable Consumption and Production

Intended to support discussions in Working Groups on 27 June 2007

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Introduction

This paper was prepared to facilitate the discussions of the working groups during the Third International Expert Meeting on the 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP), to be held 26-29 June 2007 in Stockholm, Sweden.

The following sections present the seven topics that will be discussed in the Session of 7 Parallel Working Groups that will take place on 27 June during the Stockholm Meeting. Each section includes a short overview of the SCP-related issues providing current status and best practices, as well as challenges and opportunities. Key questions are posed at the end of each section to guide the discussions of the working groups. It is recommended that this paper be read together with the Background Paper #1 on "Key Elements of a Proposed 10-Year Framework of Programmes on Sustainable Consumption and Production" (hereinafter 10YFP); since the main objective of these working groups is to provide recommendations and inputs to contribute to the further development of the 10YFP (Background Paper #1).

The main objectives of the working groups are to identify:

- a) What are the key aspects of the SCP-related issues (according to the subject of each working group) that should be reflected in the 10YFP?
- b) What are the key policies and actions needed to promote SCP-related issues?
- c) What are the tools, programmes and mechanisms of implementation?
- **d)** Which stakeholders are best placed to implement the various measures and how should implementation proceed? This includes the role of major groups in the Marrakech Process and how they can be actively engaged, with a particular focus on the private sector, NGOs and governments.
- e) How can the Marrakech Process develop and strengthen its current work on the SCP-related issue?

1 Chapter 1: SCP, Industrial Development and Energy

1.1 Introduction

Sustainable consumption and production requires a fundamental rethinking of the way societies produce, use and dispose of products. The resource-intensive consumption and production patterns of the developed countries cannot be replicated worldwide because, as some calculations suggest, it would require the resources of three planets to sustain these patterns.¹ Developing countries on average have far lower levels of per capita income and consumption than developed countries, but as a group they are growing rapidly. With existing technologies and consumption patterns, global energy demand could double by 2050 due to the combination of population growth and economic growth. As developing countries industrialize, they have the opportunity to avoid the worst pollution problems faced by earlier industrializers, but only if they are able to adopt cleaner and more efficient technologies. Energy and resource inefficiencies impose not just an environmental but an economic burden.

Industries, including energy industries, consume up to 50% of total primary energy, and this consumption is forecast to grow at 2.4-3.2% per year through 2030 in developing countries and 1.2% in developed countries.² Energy-intensive industries have greatly increased environmental pressure. Thus there is an urgent need for de-linking industrial production from environmental degradation through, among other things, investment in energy efficient technologies.

Supply chain management has been identified as a way to improve the environmental performance of industries, by requiring suppliers to provide products and services meeting certain environmental standards. Through their global and regional supply chains, multinational corporations can support small and medium sized enterprises (SMEs), particularly in developing countries, in accessing adequate information, advanced technologies, improved management techniques and finance, to help them in their transition to more sustainable production systems.

A number of national and regional sectoral SCP initiatives have been developed since the 1990s and many of them address issues related to industry and energy. Notably, European Union (EU) environmental directives encompass a wide range of policies and programmes, from regulatory frameworks, integrated pollution controls, product standards, and environmental management systems, to eco-design and energy efficiency. The European Commission will develop a Green Book on SCP by 2007 and a revised Action Plan on SCP by 2008; meanwhile, five EU countries have already developed national initiatives. Africa has identified energy and industrial development, together with water, sanitation and habitat as the regional priorities on SCP, and the African Roundtable on SCP (ARSCP) has launched

¹ Living Planet Report, WWF, 2004.

² International Energy Outlook 2006, U.S. Energy Information Administration.

pilot projects for the plastics industry and lifecycle assessment training. In Asia and Pacific, cleaner production initiatives have been promoted across many industrial sectors. In Latin America and the Caribbean, priorities include promotion of sustainable products and services and Corporate Social Responsibility (CSR). In North America, examples of programmes and initiatives include the ecoEnergy Efficiency Initiative, in Canada, and voluntary initiatives such as the "Energy Star" eco-labeling scheme in the United States.

1.2 Current status

Cleaner, more energy-efficient and more material-efficient industrial production

To encourage cleaner, more energy-efficient industrial production, governments have employed a variety of policies and market-based measures. Energy performance standards for industrial motors have been widely adopted in both developed and developing countries, and have proven to be one of the most cost-effective methods for increasing energy efficiency in industries and reducing GHG emissions. Cogeneration of electricity and process heat in industrial plants and parks can increase overall energy efficiency significantly by avoiding waste heat loss and transmission loss and improving power reliability, security and quality. Demand-side management (DSM) programmes have been implemented in many developed countries for over 25 years, but are still limited in developing countries due to the lack of regulatory and institutional support. Negotiated agreements between government and industry for energy efficiency and GHG emission reduction have typically resulted in small improvements on business-asusual. The participation and results vary according to the level of voluntariness. Another approach in many countries is the development of energy service companies (ESCOs). ESCOs are promoting energy efficiency through developing, financing and implementing performance-based projects, particularly in countries with more liberalized or privatized electric utilities.

To encourage more material-efficient industrial production, typical market-based measures have included taxes and fees to raise the cost of unwanted waste outputs; strict enforcement of liability rules related to pollution or hazardous materials; subsidies to stimulate cleaner technology development and adoption; renewable portfolio standards for energy sectors; and trading schemes, including of emission permits and renewable energy credits.

Other policy options include information strategies, such as public disclosure of industry environmental performance; eco-labeling schemes and other consumer information tools, which can provide clear guidance on sustainable products for consumers, such as the EU "flower" eco-label; organization of cleaner production competitions with high profile awards; and adoption of accounting methods which explicitly measure the environmental and social costs of production, in order to better inform managerial decision-making. For example, the Eco-Management and Audit Scheme (EMAS) in Europe is a management tool used by companies to evaluate, report and improve their environmental performance in production.

In terms of institutional capacity, 24 National Cleaner Production Centers (NCPCs) have been established since 1994 in developing countries and countries with economies in transition, supported through a network by UNIDO and UNEP. NCPCs promote and support cleaner production strategies in enterprises and government policies, aiming to transfer know-how as well as technology. In Africa, for example, NCPCs acting as a delivery mechanism have provided in-plant demonstrations and assessments, training, information dissemination and policy advice to governments, industries and NGOs.

Transfer of clean technology (including hardware, know-how and knowledge) to energy-intensive industrial sectors in developing countries is one key approach to facilitating their shift to SCP. In emerging economies, like China, India, Brazil, Mexico and South Africa, there exists high potential for sustainability improvements given their current low levels of energy-efficiency and the rapid growth in energy demand. Such a shift could be facilitated through international cooperation, foreign direct investment and global supply chains, which combined can widen the channels for those sectors to access up-to-date information, technology and investment opportunities. However, some barriers continue to impede this transfer, notably restrictive trade policies, other restrictions on competition which "lock in" obsolete technologies, and limited absorptive capacity of some recipients. Some sectors and companies are also less amenable to the influence of foreign technology and competitive pressures. Bilateral and multilateral collaboration between developed and developing countries are central to the R&D, demonstration and diffusion of clean technology in developing countries. More international support is needed to speed this process.

Corporate environmental and social responsibility and accountability (CSR)

To date, CSR has largely been framed in developed countries. Through global supply chains, international trade and investment, CSR practices are gradually being transferred to companies in developing countries. In many middle - and low-income countries, such as China, India, the Philippines and Brazil, CSR movements and initiatives have emerged. CSR commitments and reporting are largely the result of shareholder engagement. The main vehicles for CSR commitment and reporting are the UN Global Compact and the Global Reporting Initiative (GRI). The Global Compact today includes more than 3000 companies and stakeholders from approximately 100 countries, while nearly 1000 organizations from around the world are using the GRI Guidelines as the basis for reporting. In high income countries, CSR reporting is increasing rapidly and follows largely voluntary guidelines; but in middle and low-income countries, CSR reporting generally remains low so far.

Institutional investors and customers are a growing source of demand for strengthened corporate sustainability programmes. The former are increasingly active in pressing their portfolio companies to measure their carbon footprints and implement plans to shrink them through, e.g., the Institutional Investors Group on Climate Change.

In developing countries, the companies in the supply chains of multinational companies need more support to build capacity in sustainable business models and management approaches. In this respect, the main duty of government is to provide the enabling environment for CSR, including competition policy, basic investment, enterprise and regulatory frameworks, and provision of access to information and public participation in decision-making. A new guidance standard on Social Responsibility, designated as ISO 26000, is planned to be published in October 2008. It will reflect the needs of organizations in both private and public sectors, and take into account all stakeholders including industry, government, consumers, labor, NGOs, among others, with geographic and gender balance.

Small and medium sized enterprises (SMEs)

Most of the private sector entities in the world are SMEs and SMEs generally account for a sizeable share of private sector employment. SMEs can contribute significantly to pollution and industrial accidents, but typically have few incentives to reduce those impacts. Many SMEs face numerous barriers in transitioning to more sustainable business models, including lack of information, financial and technical resources and institutional bias from complex regulations. But at the same time it can be easier for small companies to change/convert to more sustainable activities than for large and quite complex companies.

Engaging SMEs in the SCP agenda is essential. Policy and institutional support can help SMEs to gain access to both domestic and international supply chains. Policy options include: design and creation of SME-supportive legal and regulatory frameworks; facilitation of SME access to bank credit for investment in productive capacity and working capital and, in particular, in more energy and resource efficient technologies; managerial capacity building and differentiation between needs of different types of SMEs, for example, by sectors and size (informal to formal sector - Micro Es, SEs and MEs); common provision of certification and testing facilities for SMEs, as well as market information and promotion services, such as through trade fairs and international trade missions. For example, Mexico's Programme of Industrial Integration (PII, since 1997), by establishing Centers for Suppliers Development, has help ed SMEs identify supply chain opportunities, upgrade their capabilities, and identify and access technical support, training and financing opportunities.³

SMEs in developing countries can also benefit from strengthened aid-for-trade initiatives with more access to information and technical assistance to facilitate the transition to cleaner production processes and improved product designs. Apart from reducing pollution, this will also ensure that their products are able to meet the quality standards and other environmental requirements for export to the markets governed by environmental directives or strong consumer preferences for "sustainable products".

Besides governmental support, industry associations, which understand specific needs of their members, can play important roles in favor of SMEs development. Extension programmes with outreach to women entrepreneurs should also be considered since they own and operate a significant proportion of SMEs particularly in informal sectors.

Policy and institutional support can assist SMEs in securing labels and certifications for sustainable products recognized in international markets. In the EU, for example, there are specific reductions for the SMEs in the fee structure for the application to use the "flower" eco-label.

³ SME Cluster and Network Development in Developing Countries: the Experience of UNIDO, 1999 http://www.intracen.org/execforum/ef1999/indust_1.pdf

1.3 Challenges

Related to cleaner, more energy-efficient and material-efficient industrial production, the challenges include:

- De-linking industrial development and environmental degradation by:
 - (i) promoting energy efficiency and switching to lower-emission energy sources,
 - (ii) reforming environmentally harmful subsidies, including those which favor inefficient industrial use of energy, notably fossil fuels, and
 - (iii) promoting technology transfer for technological leapfrogging;
- Maximizing cost-savings and competitiveness gains from material-efficient production;
- Finding the right mix of regulatory measures, market-based instruments and information sharing to realize significant energy efficiency improvements in industry.

Related to CSR, the challenges are:

- Ensuring that CSR is considered a means to help domestic enterprises gain access to international markets and not a cost burden which reduces their international competitiveness;
- Achieving greater consistency if not harmonization among international CSR standards and norms, to reduce compliance burdens, especially on SMEs;
- Ways to inform consumers better, helping them to make informed purchasing and lifestyle choices.

Related to SMEs, the main challenges are

- Establishing trade facilitation support systems, including for product certification and with particular attention to support for "sustainable products";
- Strengthening National Cleaner Production Centres to offer technical, managerial and marketing support to SMEs seeking to introduce sustainable production methods and to manufacture sustainable products that are competitive in international markets;
- Facilitating access to credit and encouraging public-private partnerships to support the shift to more sustainable production practices.

1.4 Key questions:

Based on the above discussion on achievements and challenges, some key questions to be discussed among the participants in the working group on SCP and industrial development (27 June, Group 1) are suggested below:

- 1. What are the key elements that industry would like to see reflected in the 10YFP?
- 2. What are the key priorities in integrating SCP policies into national and regional industrial development plans, and strengthening the dialogue between policy-makers, industries and the research community?
- 3. What are the key actions and policies needed in the short term to advance the SCP agenda in industry, especially with respect to energy use and conservation?
- 4. How to harmonize CSR practices and enhance technical and managerial know-how transfer along global supply chains? What measures can be taken to strengthen communications and partnerships on CSR issues between developed and developing economies?
- 5. How can business and industry support the development and implementation of the 10YFP? Which type of cooperation could be proposed to support SCP at the national and regional levels and or the Marrakech Task Forces?

2 Sustainable Products

2.1 Introduction

The environmental impacts of products and services depend on how they interact with the surrounding socio-economic and technical systems, sectors and actors along their lifecycles. However, the economic rationale and market forces are often ineffective for improving environmental performance of products.

In order to compensate for market failures that lead to environmental and social externalities, policy makers have to intervene by introducing measures that create a climate favourable to the environmental business innovation and that stimulate the demand for sustainable products. Thus, the role of governments is to create institutional structures and incentives that support innovation and competitiveness of environmentally superior products and services, to promote international harmonisation and cooperation, reduce trade barriers, prevent the flow of inferior products to developing countries and help developing countries leapfrog the high-polluting development phases. The challenge however is to find the optimal set of measures and the right actors in supply chains that are most capable to induce changes with the utmost economic efficiency and environmental effectiveness.

Businesses are often the most capable actors to make product changes, since many environmental aspects can be prevented at the product design stage. By using their position of power and through communication strategies they can affect behaviour of many actors and optimise products' lifecycle beyond manufacturing stages. Retailers too are an important actor who can exert pressure on suppliers, create greener market offerings, market SP and, most importantly, provide easily accessible product information to consumers. Consumers in turn can take a more responsible attitude towards their purchasing decisions and lifestyles. Awareness raising and education of children and youth are effective strategies that are often neglected. Here media and trendsetters play an important role.

Certain improvements in product innovation can already be noted in the area of energy efficiency, waste reduction, dematerialisation, toxics substitution, pollution prevention and eco-design. Proactive companies find benefits in strengthening brand names and managing future risks through green product innovation and lifecycle management. Examples of corporate and governmental initiatives for SP span from cutting edge innovations (solar cells, fuel cell, hybrid vehicles, composite materials, etc.) to organic agriculture, fair trade and corporate social responsibility in developing countries.

However, while examples of improvements can be found, we are still far from mainstreaming SPs and equalising the access to sustainable solutions across the world. Greener products are largely still perceived as niche markets, consumer awareness and readiness to act is still low, and innovation capacity is very fragmented and under-maintained.

2.2 Current status

2.2.1 Policy instruments and initiatives for sustainable products

Today governments have a range of administrative, economic and informational policy instruments to address SP. Examples include substance bans, performance standards, labelling schemes and producer responsibility regulations. Their success varies both geographically and sector-wise.

Polices targeting hazardous substances such as CFCs, POPs, heavy metals in electronics and others have already proven to be effective in reducing product toxicity. During the last decade, a range of new product policies have been developed based on the extended producer responsibility **(EPR)** principle aiming at improving end-of-life management and inducing product innovation. Positive effects of these polices can be seen worldwide in packaging, electronics, automotive and other sectors where examples of eco-design, material substitution and dematerialisation can be found. The spill-over effects of regional initiatives are significant due to globalisation and international trade. For instance, the EU's RoHs Directive led to elimination of six hazardous substances from many groups electronic products internationally. The **WEEE** Directive intends to increase recycling and facilitate product re-design by placing the responsibility of waste management on producers. The **EuP** Directive that sets energy efficiency requirements for energy using products is intended to affect the use phase.

Eco-labels are an effective tool to communicate the environmental properties of SP. Several ecolabelling schemes in Scandinavia, Germany and Japan have shown successful cases (e.g. the Nordic Swan, the Blue Angel). Their success is often linked to the level of consumer awareness and marketing efforts. Proactive approaches of the retail sector also contribute to eco-label success by active sourcing and marketing of eco-labelled products, by improving their visibility in shops and adequate pricing. An important issue for the globalising market is standardisation (e.g. ISO 14020 Type I, II and III frameworks) and internationalisation (e.g. the Energy Star) of eco-labels. For example, over the last decade Energy Star has been a significant driver of eco-innovation⁴ in energy using products and today is recognised in Europe too.

In order to optimise and prioritise actions it is important to understand what products have the highest environmental impacts. Several international initiatives have been taken to answer this question. E.g. the **EIRPO** project by IPTS analysed the lifecycles of 283 product groups, where food and drink, passenger transport, housing and utilities, healthcare, communication and recreation were top-ranked.

Some *national initiatives* are important learning sources. Examples of success could be electricity feed-in laws (e.g. Germany) promoting the development and diffusion of wind and solar power technologies. Danish innovation programmes ⁵ are praised not only for securing 20% of electricity from wind power, but also for giving enough innovation momentum to the Danish turbine industry to become the

⁴ Examples include IT and office equipment, residential appliances, lighting, heating and cooling equipment, as well as new buildings, etc.

⁵ Technology Scenarios (TES) research programme (Risø National Laboratory, DTU). URL: http://risoe-staged.risoe.dk/. See also Danish Wind Industry Association, URL: http://www.windpower.org/en/core.htm

front runner on the world market. The Top Runner Approach⁶ is effective in setting energy efficiency standards for electric appliances in 18 product groups in Japan. Remarkable results can already be noted in e.g. energy efficiency and stand-by reductions.

A number of initiatives exist also *in developing countries* in the areas of greening forestry, agricultural products and local community benefits. Examples⁽⁷⁾ of these are: sustainable forest management certification systems in Malaysia, Ghana and Brazil. A variety of initiatives exist in Latin America⁸: Brazil and Chile's sustainable forest management certification (Certflor&Certfor); Argentina and Costa Rica's α-ganic agriculture certification system; Uruguay's 'Natural Meat' system; Paraguayan Programme for Organic Production and Commercialisation; Costa Rica's eco-labelling for ecotourism, which has been adopted as a model for the development of the Sustainable Tourism Stewardship Council; the Green Markets Programme in Colombia.

Energy efficiency of products seems to be an active area for some *international initiatives*. For instance, the EU IEE-programme⁹ promotes the most energy efficient products in the EU (the Top Ten project) and assists developing countries with investments though structural and cohesion funds, pilot and demonstration projects, institutional strengthening and support with monitoring and evaluation. Asia-Pacific Economic Cooperation (APEC) has developed Energy Standards Information System¹⁰ (ESIS) providing information on different appliances and equipment in the region. It is also a platform for expert discussions on how to harmonise and rationalise the testing, labelling, and setting the minimum energy standards for specific appliances and equipment. EPIC-ICT¹¹ is the European Commission initiated project on the development of environmental performance indicators for ICT products in order to assist decision makers. The Marrakech Task Force for Sustainable Products (ITFSP) is focusing on i) raise awareness of product policy as means of achieving international development and environmental objectives; ii) seeking common priorities and opportunities for cooperation in encouraging more innovation on product eco-design; and iii) establish and participate in open and transparent processes for improving product performance. To do that, the TF has created 3 Global Sustainable Products Networks (GSPNs) one the following product groups: lighting, home entertainment, electric motors.

A relatively new trend is to address the *social dimension* of sustainability by labelling material origin or ethics of production. Examples can be Forest Stewardship Council and the Fair Trade labels.¹² Corpo-

⁶ URL: http://www.eccj.or.jp/top_runner

⁷ UNCTAD (2004), 'Trading Opportunities for Organic Food Products from Developing Countries –Strengthening research and policymaking capacity on trade and environment in developing countries' (New York and Geneva: United Nations, 2004).

⁸ Borregaard, N. and A. Dufey (2005). Challenging preconceptions about trade in sustainable products. Towards win-win-win for developing countries. London, International Institute for Environment and Development: 37.

⁹ URL: http://ec.europa.eu/energy/intelligent/index_en.html

¹⁰ URL: http://www.apec-esis.org/home.php

¹¹ URL: http://www.epic-ict.org/

¹² Fair Trade initiatives in 17 countries cover 50 products to date. URL: http://www.fairtrade.net/

rate Social Responsibility (CSR) is gaining momentum among businesses and there are attempts to develop international standard for CSR, e.g. ISO series.¹³

2.2.2 Business approaches for sustainable products

Businesses and other actors use a variety of *analytical tools* such as lifecycle assessment (LCA), lifecycle costing, risk assessment, environmental impact assessment, ecological footprint and MIPS for systematic evaluation of environmental impacts along the entire supply chain or product lifecycle.

Gradual improvements are being made in the quality of LCA databases¹⁴ and the development of simplified hybrid methodologies, e.g. combining traditional LCAs and macro-economic input-output assessments (I/O LCAs). The majority of initiatives are being taken by SETAC¹⁵, the Life Cycle Initiative (UNEP), Carnegie Mellon Green Design Inst. (USA), LCA Centres in Denmark and Japan, Leiden University in the Netherlands and other academic institutions and consultancies.

In the *managerial toolbox*, approaches such as eco-design, eco-innovation, lifecycle management (LCM), supply chain management (SCM), corporate social responsibility and product-oriented environmental management systems (POEMS) are being used to collect and analyse lifecycle information. Business concepts such as *Lifecycle Management* or Product Stewardship are important for bringing the lifecycle thinking into the corporate culture and structure in order to stimulate systematic product innovation from its conception, through design and manufacture, to service and disposal. The lifecycle thinking also includes communication with customers, product marketing, information and support. A number of businesses have realised that LCM, can help prevent some environmental and social problems with low costs leading to overall economic benefit. The joint programme of UNEP and the SETAC – the Life Cycle Initiative¹⁶ - is an important platform for knowledge exchange and the promotion of Life Cycle Management in business practice through partnerships with other international activities like the Sustainable Building and Construction Initiative.

Other *entrepreneurial approaches* promoting SPC are based on selling product's functionality rather than physical products and comprise newly emerging business models such as Product-Service Systems (PSS), Demand Side Management, Least Cost Planning and other. PSS as an innovation strategy can bring about not only the benefits of dematerialisation, but also open up new markets and improve competitiveness. The distinct feature and the core environmental rationale behind PSS is that producer retains product ownership and thus has more incentives to ensure lower costs of ownership per unit of product function. This may in effect translate into resource efficient product systems with mechanisms to recover the rest value from recycling of material and energy content. Properly designed PSS benefits consumers too since new and more flexible service packages are capable of providing more value

¹³ URL: http://www.iisd.org/standards/csr.asp

¹⁴ A number LCA related databases exist: Eco-invent, Bousted Model, ETH -ESU 96, BUWAL 250, Dutch I/O Database, IDEMAT 2001, Franklin US LCI database, IVAM, FEFCO and other.

¹⁵ The Society of Environmental Toxicology and Chemistry, URL: http://www.setac.org

¹⁶ See URL: http://www.uneptie.org/pc/sustain/lcinitiative/

added as compared to traditional models based on product ownership.

2.2.3 Success cases of demand and supply of SP

There are many *business initiatives* on dematerialisation based on the concept of product servicising, such as: integrated pest control services (Koppert), launderette services (Electrolux), copier leasing (Océ, Xerox), carpet leasing (Interface), industrial lubrication (SKF), electronics refurbishment programmes (Sony), network computing and application service provision (HP, Intel, ChipPC), flexible office (Gispen) and many others.¹⁷

There are also examples of business initiatives that address *social responsibility issues*, such as the use of child labour, poor working conditions and unfair wages. Companies such as American Apparel are active in marketing locally produced goods and socially responsible production methods. Initiatives such as *Fair Trade* direct efforts at ensuring a more fair distribution of revenues among the producers in the poor parts of the world. Examples of sustainable products and services include Freeplay Energy¹⁸ project - helps developing nations in Africa and other parts of the world to get access to modern world products and services. Important for developing countries are innovative solutions in organic agriculture, such SallyFox Natural Cotton¹⁹ (cultivating natural coloured cotton that does not need industrial dying) or the Sustainable Cotton⁽²⁰⁾ project (supporting fair trade and regional economies). Such projects are important in pioneering new markets for fair-trade, locally produced and sustainable products. Retail sector can also play a role in opening new markets for SP and shaping green consumerism. Companies such as Grupo Pao de Acucar (Brazil), Migros (Switzerland), Eroski (Spain) or Natura (Brazil) promote organic products and shape the demand by active green marketing campaigns and consumer information.²¹

For many companies marketing SP is still a matter of risk management, but nevertheless it increases the share of SP in mature (richer) markets. In developing countries the retailers seem to prefer locally produced products, which are cheaper than imports, but still contribute to local communities.

2.3 Challenges

Despite the high potential for innovation, companies often suffer from the lack of *adequate financing* as potential investors still perceive environmental innovation as risky investment. Thus there is a role for governments and venture capitalists to assist in financing innovations and R&D for SP. There is a need for governments to provide more support new innovation systems that could facilitate input from academia, better networking and easier access to information, which all together would reduce the transaction

¹⁷ For more, see the database of product-service system examples by: Goedkoop et. al (1999) Product Service systems, Ecological and Economic Basics.

¹⁸ The products are distributed throughout the developing world by The Freeplay Foundation (www.freeplayfoundation.org) and other AID and humanitarian organizations such as Unicef and other UN agencies.

¹⁹ See URL: http://www.foxfibre.com/

²⁰ See URL: http://www.sustainablecotton.org/

²¹ See UNEP (2005) Talk the Walk. http://www.uneptie.org/pc/sustain/reports/advertising/Talk_the_Walk.pdf

costs of innovations. An even more important issue is *financing product innovations in developing countries*, which is totally insufficient in addition to low innovation potential (due to lack of know-how and education). It is also challenging to make the already existing SP solutions *suitable for poor regions*, due to their costs, underdeveloped infrastructures and distribution channels or poor institutional capacity.

In the world of globalisation and international trade there is often too little room for niche products to enter. When an *international consensus* exists, strict regulations have proven to be a powerful tool to induce world-wide change. When a regulation concerns a large enough market (e.g. the RoHS example), it is more likely to have a global effect. Affluent societies (the EU, USA, Japan) may have a better potential to afford such market interventions than the emerging economies (India, China, Brazil). At the same time softer policy approaches may also be effective in inducing proactive responses by the industry. Clear and consistent policy trends (e.g. towards energy efficiency and climate change measures) often serve as drivers for companies to reduce their risks and impacts.

Using market forces to the largest degree possible, where the challenge is the implementation strategy - is find the right set of instruments to be applied to the right actors. Getting the prices right through tax/subsidy mechanisms (supply side) along with proper information to consumers about the environmental characteristics of SP (demand side) are the key strategies to develop.

It is also crucial to *address the demand-side* by consumer information and awareness raising with the ultimate aim to shift attitudes and perceptions towards green consumerism – not only consuming greener products and services, but consuming differently (sufficiency, needs vs. wants, etc.). Not only governments, but businesses, media, NGOs and consumer organisations have a role to play in making marketing SP more effective, e.g. by addressing the youth, following the role models and developing visions of new lifestyles). Generation of *knowledge about products' lifecycle related environmental impacts* is still a challenge, especially poor data quality and cumbersome methodologies of environmental assessments.

Finally, globalisation and international trade calls for *harmonized performance schemes* to measure the sustainability of products and services and for intensifying efforts for priority setting and measuring results. Harmonisation is relevant both for the environmental and social dimension through raising corporate social responsibility in the areas of fair trade, child labour, education and labour rights.

2.4 Key questions

Based on the above discussion on achievements and challenges, some key questions to be discussed among the participants in the working group on sustainable products (on 27 June, working group 2) are suggested below:

- 1. What are the key element in promoting sustainable products that should be reflected in the 10YFP?
- 2. What are the key policies and concrete actions needed to mainstream sustainable products in the market, and make them more available and affordable for consumers in both developed and developing countries?
- 3. What are the most effective mechanisms for financing sustainable products innovation? And how to ensure balanced engagement of different regions in the world, especially developing countries where capacity building and technology transfer is needed?
- 4. How to promote the harmonization of performance standards, test procedures, and eco-labelling schemes and avoid that low quality products are shifted to developing countries?
- 5. How to strengthen work of the Marrakech Process in the promotion of sustainable products, specially the related to the work of the Task Forces on: Sustainable Products, sustainable lifestyles and sustainable public procurement?

3 Integrated Waste and Resource Management

3.1 Introduction

Material efficiency can be defined as achieving the minimum material input per unit output of a particular product, given existing technologies. Material efficiency can be improved either by reducing the amount of the material contained in the final product ("lightweighting") or by reducing the amount of material that enters the production process but ends up in the waste stream. Besides industrial waste, household and other municipal waste also contribute to solid waste.

Solid waste is a growing problem in all countries, and a critical problem in many cities of the developing world. Developed countries have in recent years reduced the environmental impact of solid waste through sanitary landfills and high-temperature incineration, as well as conserving natural resources and energy through increased recycling, but the volume of waste generated is steadily growing. In the developing world, few cities have adequate solid waste collection and disposal systems, and the accumulating waste threatens health, damages the environment, and detracts from the quality of life.

Waste management has been identified as a regional and international priority for the Marrakech Process. As yet, there is no Task Force established to address waste issues, although a number of countries have expressed interest. To support consideration of the issue, this paper will consider solid waste issues, including waste collection and disposal, and waste reduction and recycling. It will focus on industrial and household solid waste, with attention to air and water pollution and climate change as they relate to such waste. The paper does not address sewage, agricultural waste, mining waste or industrial waste prevention (cleaner production), some of which are addressed in other sections.

3.2 Current Status

Total material consumption

From an economy-wide perspective, material intensity is measured and monitored through material flow accounting (MFA), a concept developed by the World Resources Institute and elaborated in detail by Eurostat, including the development of a statistical database (Eurostat, 2001).

According to the Eurostat database, overall material consumption, including fossil fuels but excluding water, in the EU-15 amounted to 15.7 tonnes per capita in 2002. In broad categories, this includes, per capita, 7.0 tonnes of construction minerals (sand, gravel, crushed stone), 4.0 tonnes of biomass (food, fodder and wood), 3.7 tonnes of fossil fuels, and 1.0 tonnes of industrial ores and metals. Over the period 1970-2000, this broad measure of material consumption grew closely with economic growth in the lower-income countries of the EU-15, keeping material intensity fairly constant relative to GDP, while in

the richer countries, economic growth has been largely "de-coupled" from total material consumption, leading to a steady reduction in material intensity per unit of GDP.

There have been few if any policy efforts focusing on reducing aggregate material flows as such, in part because no single policy could address this broad aggregate, and in part because the different material flows have very different impacts on sustainability and the environment, and policies generally focus on more specific problems.

Lightweighting

The simplest and most direct form of improving material efficiency is reducing the amount of material that goes into a product, or "lightweighting". The average weight of aluminium cans in the United States has decreased from 20.6g in 1972 to 15.6g today, a reduction of 24 per cent. Glass bottles are now about 25 per cent lighter than they were in 1984. Plastic soft drink bottles made of polyethylene terephthalate (PET) had an average weight of 67g in 1984 and 48g in 2000. Plastic milk jugs made of high density polyethylene (HDPE) weighed 120g in the mid-1960s and 65g in 2000. The thickness of the most common plastic grocery bag has been reduced from 30 microns to 18 microns (Rathje and Murphy, 2001, p.101). This lightweighting has contributed substantially to improving material efficiency in the last few decades and to stabilizing, but not reducing, total material requirements.

Municipal waste management

In OECD countries, municipal waste generation averages about 540 kg per person per year, ranging from 354 kg per person in Norway to about 800 kg per person in the United States. Most of the solid waste in OECD countries goes to landfills, but incineration with energy recovery is increasing. Incineration, generally with energy generation, is dominant in the Netherlands, Denmark, Switzerland, Sweden, Belgium, Germany, Japan and Singapore, while landfill disposal is dominant in most of the other European countries, as well as in the United States, Canada and Australia.²²

Modern sanitary landfills, with thick bottom liners and leachate (liquid run-off) collection systems to prevent water pollution, and daily coverage of waste to reduce smell, vermin and wind-blown debris, are costly and are most cost-effective when large. As a result, most small municipal or local "dumps" have been closed in recent years, with waste being transported longer distances to large sanitary landfills serving larger regions. Increasingly, methane gas generated within landfills by decomposition of organic material is being collected and used, mostly for generating electricity, thus reducing the release of this strong greenhouse gas.

²² UK Department for Environment, Food and Rural Affairs (DEFRA) (November 2006, e-Digest Statistics About: Waste and Recycling, www.defra.gov.uk/environment/statistics/index.htm; See also Soizick de Tilly, "Waste Generation and Related Policies", in The Economics of Waste, OECD 2004; and WorldWatch Institute, State of the World 2004, p. 16.

Incinerators that burn municipal solid waste substantially reduce the volume of waste (by about 90%) and can generate electricity and/or heat, while allowing metal recovery from the ash. Modern incinerators use high-temperature combustion to destroy toxic organic substances and emissions control systems to minimize hazardous emissions from others. Incinerator ash may contain heavy metals and other toxic materials that require special disposal procedures.²³

Solid waste generation is increasing rapidly in many developing countries, driven by population growth, urbanization, industrialization, and rising living standards. Industrial, electronic and medical waste, some of which is hazardous, is increasing rapidly in many countries. Most cities in developing countries do not have the financial resources to provide full-coverage municipal waste collection services, in particular in informal settlements and other low-income neighbourhoods, where limited access for large vehicles poses a problem.

Scavenging and informal recycling have long been the norm in developing countries, and governments have begun to consider how to make such systems work more effectively and safely, recognizing their importance not only to waste collection and recycling of useful materials, but also to employment of the unskilled. The World Bank estimated that, in 1995, scavenging – sometimes including door-to-door household waste collection with handcarts – employed 7000 workers in Manila, 8000 in Jakarta, and 10,000 in Mexico City. Support measures to promote informal recycling while improving safety include legalizing and regulating scavenging activities, encouraging formation of scavenger cooperatives, award-ing contracts for collection of mixed wastes and recyclables to organizations of scavengers, and establishing public-private partnerships between local authorities, businesses and scavengers.²⁴

Waste reduction and recycling

Recycling of waste reduces the amount going to landfill or incineration, generates revenue to cover some of the cost of waste collection, conserves natural resources and energy, and contributes to reducing greenhouse gas emissions. Recycling of metals is generally most cost-effective, particularly with the sharp rise in prices since 2004. Recycling scrap metal requires much less energy than refining metal from ore – up to 95% less for aluminium and 75% less for iron and steel – as well as avoiding the pollution and resource depletion associated with mining and smelting. Recycling of good quality paper and some plastics is also economic, particularly where disposal costs are high, in addition to conserving energy and natural esources. Sorting and composting of organic material, including yard and food waste and paper, produces compost for local farming and gardening, as well as reducing methane emis-

²³ OECD, Towards Sustainable Household Consumption: Trends and Policies in OECD Countries, 2002.

²⁴ Thomas Kinnaman and Don Fullerton, "The Economics of Residential Solid Waste Management", NBER Working Paper 7326 (1999), p. 19, www.nber.org/papers/w7326, and Soizick de Tilly, "Waste generation and related policies: Broad trends over the last ten years", in The Economics of Waste, OECD 2004.

sions from landfill. In the UK, increases in recycling since 2000 have more than offset increases in waste generation, reducing the volume of municipal waste for disposal by 15%.²⁵

Recycling is most cost-effective when large quantities of uniform waste material can be collected. Industrial and commercial wastes are therefore more economic to collect and process than household waste consisting of small volumes of mixed waste. In the United Kingdom, industrial and commercial recycling amounted to 30.7 million tonnes (45% of total industrial and commercial waste) in 2003, while recycling of household waste amounted to 6.3 million tonnes (22% of household waste).²⁶ Recycling is more economic when materials can be separated at the source, whether industry, offices or households, although complicated sorting requirements can reduce separation.

Most developed countries have been promoting recycling by both industry and households. In OECD countries, overall recycling rates are increasing and now average over 80% for metals, 40-55% for paper and cardboard, and 35-40% for glass.²⁷ Scrap metal recycling is increasingly important as a source of raw material for industry, driven by the high prices for metals resulting in large part from strong demand from emerging economies.

Household recycling has expanded dramatically in OECD countries. In the United States, some 9000 municipalities have introduced public collection of separated household waste for recycling since the 1970s, with some achieving municipal waste recovery rates of 50 per cent.²⁸ In the UK, household recycling increased from about 1.7 million tonnes in 1997 to almost 7 million tonnes in 2006, with paper and cardboard, and compost being the largest components. Among EU-15 countries, recycling of municipal solid waste varies from 4 per cent in Portugal to 64 per cent in the Netherlands.²⁹

Apart from metals, demand, and therefore prices, for many recycled materials have been low, in part because industries have been reluctant to invest in systems to process recycled material, which often differ from systems for virgin raw materials (e.g. recycled paper vs virgin wood pulp). Economic analyses of household waste recycling indicate that it usually does not pay for itself, particularly where inexpensive land is available for landfill disposal, although this does not take account of some of the social costs of resource depletion and environmental degradation.

The growth of recycling has been accompanied by an increase in international trade in recycled material (often called scrap or secondary material), particularly from developed countries to China and other rapidly industrializing Asian countries. This trade has been estimated at 135 million tonnes annually, includ-

²⁵ UK Department of Environment, Food and Rural Affairs, "Municipal Waste Management Statistics" at www.defra.gov.uk/environment/statistics/wastats/archive/mwb200611.xls

²⁶ UK Department for Environment, Food and Rural Affairs (DEFRA) (November 2006), Key Facts About Waste and Recycling. www.defra.gov.uk/environment/statistics/waste/kf/wrkf03.htm

²⁷ Soizick de Tilly, "Waste Generation and related policies: Broad Trends over the last ten years", in The Economics of Waste, OECD 2004.

²⁸ USEnvironmental Protection Agency (November 2006), Municipal Solid Waste: Recycling. www.epa.gov/msw/recycle.htm. See also Elizabeth Royte, *Garbage Land: On the Secret Trail of Trash.* Little Brown & Co., New York, 2005, p.264.

²⁹ UK Department for Environment, Food and Rural Affairs (DEFRA) (May 2007), Key Facts About Waste and Recycling. www.defra.gov.uk/environment/statistics/waste/kf/wrkf08.htm, and wrkf15.htm.

ing 78 million tonnes of iron and steel scrap, 35 million tonnes of paper and cardboard, 15 million tonnes of aluminium and other non-ferrous metals, and 4 million tonnes of plastics.³⁰

In developing countries, low labour costs can make recycling more economic, resulting in increasing imports of scrap material, higher international prices for those materials, and increased cost recovery for recycling programmes. In some cases, however, hazardous waste is exported as recyclable material to developing countries without the capability for ensuring that waste handling and recycling are performed under safe conditions. Efforts are being made under the Basel Convention to address these issues.

Computers and other electronic equipment, which contain lead, mercury, chromium, cadmium, barium, beryllium, PVCs, brominated flame retardants and other toxic materials as well as plastic, glass, copper, silver and gold, are of growing concern with respect to disposal. In the United States, electronic waste is estimated to amount to about 2.5 million tons per year, of which only about 10 per cent is recycled. It is estimated that about 70 per cent of the heavy metals in landfills come from electronic waste. A large quantity of discarded computers and other electronic products from the United States, Japan and the Republic of Korea is exported to China and other developing countries in Asia for recycling, often under unsafe conditions.³¹

To reduce electronic waste going to landfills and incinerators, the European Union in 2003 adopted a Waste Electrical and Electronic Equipment (WEEE) Directive requiring producers, starting in 2005, to take responsibility for recovering and recycling electronic waste without charge to consumers. This is intended not only to promote recycling and reduce landfill disposal and incineration, but also as an incentive to producers to design products so as to reduce waste and facilitate recycling.³²

The EU also adopted in 2003 a Directive on Restriction of Hazardous Substances (ROHS) in Electrical and Electronic Equipment (ROHS), banning, from 2006, the use of lead, mercury, cadmium, hexavalent chromium and two brominated flame retardants used in plastics. China has also adopted regulations banning the same six substances, beginning in 2006, thus ensuring that Chinese products meet EU requirements.

The building sector accounts for a large amount of waste (mostly concrete and bricks from demolition, but also wood and steel), accounting for 10-44% of total solid waste in various OECD countries. As it is difficult to reduce substantially the amount of material in buildings without reducing performance, the potential for waste reduction is mainly from recycling materials following demolition. Currently the estimated recycling rate ranges from 590% in various OECD countries, with much of the waste going to engineering fill or road foundation, where the quality of the material is less important than in the case of building materials.

³⁰ Veolia Environmental Services, "From Waste to Resource: An Abstract of 2006 World Waste Survey", www.veoliaenvironmentalservices.com/documents/From_waste_to_ressource_abstract_XP.pdf

³¹ WorldWatch Institute (2004), State of the World 2004, pp. 44-45. See also US Environmental Protection Agency (November 2006), eCycling. www.epa.gov/epaoswer/hazwaste/recycle/ecycling.

³² Europa, "Waste Electrical and Electronic Equipment", at europa.eu.int/scadplus/leg/en/lvb/l21210.htm

To reduce the volume of demolition waste going to landfill or incineration, some OECD countries require separation of demolition waste and restrict the disposal of recyclable construction material to landfills. In some countries, demolition contractors must get disposal plans approved before demolition can begin, which also helps protect against illegal dumping. These measures are often in addition to general landfill taxes and virgin material taxes (e.g. construction aggregate taxes), which increase the economic incentive for recycling. In Denmark and the Netherlands, 90% of demolition waste is recycled as a result of strict limitations on the disposal of recyclable demolition waste in landfills, landfill taxes, permission requirements for demolition, and other incentives for recycling.³³

To promote recycling, exchange networks for recycled material have been developed in a number of countries, including the Netherlands, Japan, the Philippines, the United States and the United Kingdom, as well as a regional Waste Exchange of Africa.³⁴ Businesses with waste of potential usefulness can advertise the material on an internet network for interested businesses. Such exchanges can eliminate or reduce the cost of disposal to the source company, while providing low-cost materials to the acquiring business, as well as reducing environmental damage from virgin material extraction and processing, and problems arising from landfill disposal or incineration. In some cases, as pioneered in Kalundborg, Denmark, businesses that can use the waste material of other businesses have been located near them in "eco-industrial parks", making waste exchange more economical, an approach known as "industrial ecology".³⁵

3.3 Challenges

- In order to enhance material efficiency of products and reduce the amount of waste that is not reused or recycled, extensive training and outreach are needed to further dsseminate eco-design principles and life-cycle analysis methods. This is particularly true for small and medium-size enterprises that make up the large majority of manufacturers globally. Efforts are required to develop policies that can promote and provide incentives for eco-design and product innovation.
- Most developing countries need more financial and technical resources to provide adequate municipal solid waste collection and disposal services. As informal waste collectors are at the heart of municipal waste collection in many developing countries, improved systems should as far as possible seek to build on this foundation, while protecting workers, especially children, from hazardous working conditions. A variety of ways to finance waste management need to be explored, including general tax revenues, property taxes, fee-for-service collection, extended producer responsibility, deposit-return schemes, product taxes or charges that reflect waste-related externalities, public-private partnerships, partnerships with community organizations and other NGOs, the Clean Development Mechanism, and others.

³³ Japan Ministry of the Environment (November 2006), www.env.go.jp/en/.

³⁴ Waste Exchange of Africa, at www.worldwaste.org (May 2007)

³⁵ For Asia, see Eco-Iindustrial Park Handbook for Asian Developing Countries, Asian Development Bank, 2001, http://indigodev.com/ADBHBdownloads.html

- To build markets and increase prices for recycled material, and to encourage the development of
 production systems that use recycled material, governments can pass laws requiring public agencies, and perhaps private entities, to buy products made from recycled material. Businesses and
 households can also be encouraged to purchase such products. National regulations and standards,
 in addition to collection programmes at the municipal level, can help build national markets for recycled material.
- Reducing the large amount of waste from construction and demolition requires separation and recycling of material within the sector. Regulation of debris disposal, landfill charges, and taxes on construction material extraction can promote this recycling.
- Governments and industry can promote and support networks for industrial waste exchange, including through use of the internet and establishment of eco-industrial parks, to allow suppliers with unwanted materials or wastes to find others who can use them.
- Further international efforts are needed to regulate international trade in recycled materials, particularly hazardous waste through the Basel Convention, in order b ensure safety and environmental protection, and to prevent recycling being used as a cover for hazardous waste disposal in developing countries without adequate technical capabilities or regulation.

3.4 Key Questions

Some key questions to be discussed among the participants in the working group on integrated resource and waste management (on 27 June, Group 3) are suggested below:

- 1. What are the priority issues relating to resource efficiency, waste management and recycling at the national and regional level that should be incorporated in the 10YFP on SCP?
- 2. How can financial and technical resources be mobilized to improve waste collection and disposal and recycling, particularly in the large cities of developing countries?
- 3. What measures can increase demand for recycled materials in order to make recycling more economic?
- 4. What measures can encourage manufacturers to adopt eco-design principles for new product development to prevent and reduce waste as well as improve recyclability?
- 5. How can the Marrakech Process build more partnerships and cooperation in the promotion of integrated resource and waste management, is there a need for a new task force or possibility for new partnerships with existing organisations or networks working in these areas?

4 Integrating SCP in Government Administration Policies

4.1 Introduction

Governments are expected to demonstrate leadership to support sustainability, not only through setting policies, but also by ensuring that their agencies embrace and pursue sustainable consumption patterns through managing their own impacts generated in the course of conducting government business. Governments have a dual role to play in optimizing sustainable consumption and production (SCP): 1) as the largest institutional resource consumer, governments can promote sustainable consumption patterns at a large scale through improving their own resource-efficiency; 2) as the most influential purchasers in a national economy, who spend typically 15-30 per cent of GDP on a diverse and wide range of goods and services, governments can drive the market for sustainable products through their procurement policies. Among the areas of government spending, the priorities with high impacts for integrating SCP into administration policies in many countries include: buildings and construction, food, energy, waste, office machinery and computers, paper and printing, furniture, transport (air travel and government fleets), clothing and uniforms. This paper deals with options available to governments wishing to integrate SCP into their administration policies, which are largely through policies for sustainable public procurement (SPP) and promoting resource efficiency.

To promote SCP, Agenda 21 calls for all governments to exercise leadership through public procurement. The Johannesburg Plan of Implementation (JPOI) also mandates the promotion of public procurement policies that encourage development and diffusion of environmentally sound goods and services³⁶.

Sustainable public procurement (SPP) is a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits, not only to the procuring organizations, but also to society and the economy, whilst minimizing damage to the environment. SPP takes into consideration the environmental, social and economic consequences of: design, non-renewable material use; manufacturing and production methods; logistics and service delivery; use; operation & maintenance; reuse and recycling options; disposal; and suppliers' capabilities to address these consequences through the supply chain. ³⁷

SPP has a number of benefits: it expands or creates broader markets for goods and services that support sustainable development; it serves as a model for other consumers; and it offers standards and information for use by other consumers. It is often politically attractive in that it responds to public demand for governments to be environmentally and socially responsible in their own operations. Research by the European Commission indicates that, if all European public authorities bought green electricity, 18

³⁶ Chapter III of JPOI, Para. 19 (c).

³⁷ The definition was developed by the UK, and adopted by the Marrakech Task Force on SPP.

per cent of the EU's Kyoto commitment could be met; and if they all bought organic food, that would offset the eutrophication impacts of intensive agriculture to feed over 3.5 million people.³⁸

The benefits of SPP include:

- Stimulating markets for sustainable products and services
- Influencing the behaviour of other socio -economic actors by setting an example.
- Support to eco-efficiency and technical innovation by encouraging solutions that create the maximum value with the minimum resource use, pollution and waste.
- Improvement of environmental performance, contributions to meeting national and international environmental policy objectives, and diffusion of life-cycle approaches.
- Advancement of economic performance by identifying efficiency opportunities and improving quality of public spending.
- Impacting positively the welfare and health of citizens (particularly when procuring for education, health care and other social programmes).
- Reducing negative impacts of meeting current government and societal needs on the lives of future generations.

Apart from SPP, another way for governments to integrate SCP in administration and operations is by promoting resource efficiency. Major policy practices regarding resource efficiency in government administration are energy management in governmental buildings and fleets, and waste management in public services. Notable areas of waste management in public services include reducing waste from food catering, recycling of office equipment and supplies (notably paper), and waste management from public infrastructure projects.

The benefits of promoting resource efficiency through government administration policies are numerous. This approach has the potential to reduce resource consumption on a large scale, to create significant opportunities for savings on operational costs, to shape government managerial culture on sustainable consumption, to improve institutional capacity through education and best practices, and to minimize environmental impacts through improved resource efficiency.

The drivers of resource efficiency include:

- Limited natural resource supplies and rising commodity prices for many raw materials due to growing demand.
- Growing demand for and supply of sustainable products in markets
- Market-based economic instruments and regulatory measures that signal clear preference for resource-efficient products
- Growing awareness of and enhanced capacity for resource efficiency and the required knowledge or skills, including improved access to information and technologies
- Accounting and auditing systems incorporating economic, environmental and social criteria
- Private sector and NGO involvement in partnerships for change.

³⁸ ICLEI, Local Government for Sustainability, 2005

4.2 Current Status

Sustainable Public Procurement

During the regional consultations under the Marrakech Process sustainable public procurement has been identified as a key priority in all regions: Africa, Asia, Latin America and Europe. In esponse, a Marrakech task force on Sustainable Public Procurement was established, led by the Swiss government, to promote and support the implementation of SPP by developing tools and supporting capacity building in both developed and developing countries. Thus far, four Task Force meetings have been held, and bilateral training programmes have been launched.

The activities of the Task Force on SPP include:

- Developing a practical Toolkit to provide different stakeholders in the procurement process an easy start to implement the concept of Sustainable Public Procurement;
- Carrying out research and prepare background documents in SPP;
- Promoting the implementation of SPP through pilot projects;
- Facilitating the dialogue and work among different countries and stakeholders interested in SPP

Details on progress achieved by the SPP Task Force will be provided during the Panel Discussion on the Marrakech Task Forces.

The scope of SPP policies covers utilities (water, gas and electricity), food, vehicles and machinery purchase/lease/maintenance, physical plant purchase and maintenance, business/office equipment and materials, travel, engineering, service, and development aid. SPP policies have been developed at regional, national and local levels. The EU is initiating activities to increase the level of Green Public Procurement (GPP) in all its member states, among which currently Austria, Denmark, Finland, Germany, Netherlands, Sweden and UK, known as the 'Green-7', have been recognized as the best performers. As indicated in the TAKE-5 study³⁹, more than 60% of the tender documents on public procurement in Germany and Sweden contain environmental criteria; among the 25 EU member states, however, environmental criteria are present in only 36% of all the tender documents. Japan, the United States and Canada have also developed national initiatives, programmes and guidelines on SPP. A number of developing countries from Africa, Asia and Latin America are making efforts in SPP, though most are still at a preliminary stage of development. China has issued a green products inventory for greening government procurement at the central and provincial level, and will implement this at all government levels from 2008. Brazil, Mexico and Argentina are currently developing projects on SPP.⁴⁰ South Africa and Malaysia have used public procurement as a tool for promoting social groups historically disadvantaged

 $^{\rm 40}$ For information on SPP in the State of São Paulo in Brazil see

³⁹ The TAKE-5 consortium was formed to measure Green Public Procurement (GPP) in all 25 countries of the EU in 2005. The report is available: http://ec.europa.eu/environment/gpp/pdf/take_5.pdf

www.cqgp.sp.gov.br/grupos%5Ftecnicos/gt%5Flicitacoes/publicacoes/publicacoes.htm (click on *Apresentação Licitações Sustentáveis*); for information on Mexico's pilot project for green cleaning products supported by the CEC (Commission for Environmental Cooperation) North American Green Purchasing Initiative (NAGPI), see www.cec.org/trio/stories/index.cfm?varlan=english&ed=21&ID=201.

by race, ethnic and other types of discrimination⁴¹. UNEP has supported Ghana and Morocco on capacity building to implement sustainable procurement practices.

Many international organisations are also moving towards larger inclusion of sustainability in their procurement and project definition practices. The multilateral development banks (World Bank, Inter-American Development Bank, Asian Development Bank, etc.) and several UN agencies are taking the issues related to Sustainable Procurement from different angles but all realise that implementing SPP is not only a way to show their engagement towards sustainable development but it also promotes more transparency vis-a vis the public and is a proof of good management practices⁴².

The most-commonly used tools for SPP include procurement guidelines, green product criteria or checklists, specifications and manuals, eco-labelling, codes of conduct and reporting initiatives.

Categories of SPP policy practices:

Policies/ programmes targeting specific products or resources with simple criteria for sustainability, which are relatively simple to define and implement. They can achieve substantial results with modest costs. For example, the United States government requires all Federal agencies to purchase paper having at least 30 percent post-consumer fiber content.

Policies establishing general criteria for sustainable procurement, rather than specific product specifications, or giving more specific recommendations for broad product groups, but not for specific products. These approaches allows for coverage of a broad range of products, but leave substantial work for procurement officers to develop specifications and select products meeting the guidelines.

Programmes that provide information on sustainably produced products and services. These programmes provide easy access to information on better products for procurement officers and the clear, specific guidelines they need for sustainable public procurement. The programmes also keep the product information updated in light of rapid technology change and changing environmental priorities. The International Green Purchasing Network (GPN) has a database that provides helpful information for practitioners covering most products produced by major manufactures for users to compare and make decisions.

In addition to tool-development, clear and supportive legal frameworks are also necessary in implementing SPP policies. Currently most well-documented SPP examples, even though from coordinated programmes such as Procura+⁴³, CARPE⁴⁴ and LEAP⁴⁵, seem to be active more at local level rather than having a national scope. Few countries have a governmental-wide, overarching policy on sustainable procurement. A number of countries are taking steps in integrating environmental criteria into their national procurement, yet inclusion of social aspects is included to a much less extent and is limited to organic food and fair trade products, such as clothing, construction and timber. Eco-labels are very popular in many countries, but only one country, Belgium, is actively promoting a social label, and so far

⁴¹ C. McCrudden (2004), "Using public procurement to achieve social outcomes", Natural Resources Forum 28, 257-267.

⁴² The UN and the multilateral banks periodically exchange information on the respective advancements on SP: www.sustainableprocurement.net

⁴³ http://www.procuraplus.org/

⁴⁴ http://www.eurocities.org/carpe-net/site/article.php?id_article=44

⁴⁵ http://www.iclei-europe.org/index.php?id=LEAP

only 5 items have been certified due to the complexity of the process. ⁴⁶ Staff incentives for SPP are still very limited. In very few countries do procurement staff have SPP as part of their performance objectives. Switzerland, on the other hand, provides regular sustainable procurement training to its procurement staff. In most governments, responsibility for SPP is assigned to lower levels of management and not to senior civil servants or Ministers.

Resource Efficiency

Resource Efficiency through Energy Management

While government administrative policies to promote resource efficiency might include water, raw materials and public space, among other things, administrative policies directed to achieve energy savings are the most widely employed and likely have the most impact. For that reason this paper will focus on energy management as a means of resource efficiency by government.

Government facilities and services are often the largest energy users within a country, and present a great potential for leading by example in energy-efficiency through relevant administration policies in energy management. Government energy management programmes mainly focus on the sectors of buildings and transport fleets.

Strategies vary from country to country, with some taking a comprehensive approach, including savings targets, efficiency standards, energy audits, energy management committees, improved operation & maintenance programmes, financing, information programs (e.g. efficiency guidelines and labeling), demonstration projects, training, etc. Other countries have chosen to focus on a limited set of the above activities. Some governments of industrialized countries have played an active coordinating role with systematic efforts to lead energy-efficiency programmes for the government sector. For instance, the Federal Energy Management Program (FEMP) in the U.S. provides guidelines, recommendations, information, specifications, training and energy audits to encourage energy efficiency in procurement and new construction and retrofit design to all federal agencies. It also promotes energy efficient technologies, life-cycle analysis, use of renewable energy, and other sustainable design principles. In developing countries, government efforts in energy management have escalated rapidly in recent years, at both national and local levels, including in public infrastructure services and government-owned enterprises.

Government efforts at energy management can go hand in hand with sustainable public procurement. Government commitment to purchasing of electricity from renewable energy sources can reduce the carbon emissions from government operations and create large markets for renewable energy companies, helping to drive down costs through economies of scale. Notable policy practices are the indicative targets on renewable energy in the EU, Renewable Portfolio Standards in the U.S., and Canadian government commitment to "green" electricity procurement. Environmental Management Audit Systems (EMAS) have been increasingly adopted in public and private sectors, in Europe, as a regulation tool for

⁴⁶ From the UK Sustainable Procurement Task Force Working Group Report. http://www.sustainable-development.gov.uk/government/task-forces/procurement/index.htm

promoting energy-efficiency, low-carbon consumption patterns and green procurement, notably with respect to chemicals, food and beverages, waste, metal product fabrication and energy supply. As of 2007, 189 public authorities have registered for EMAS, led by Germany, Sweden and other countries.⁴⁷

In addition, government fleets have become a policy focus in energy management. Governments have large fleets of vehicles, and therefore have a huge potential for influencing energy-efficiency by taking leadership to improve the performance of their fleets. One means to accomplish this is through sustainable procurement, which may include, for example, purchasing or leasing vehicles with high fuelefficiency ratings, choosing the vehicles that best-fit the transport needs, using environmentally-sound alternative fuels, etc.

Resource Efficiency through Waste Management

Resource efficiency in the public sector is addressed through policies that reduce the amount of waste generated and that implement reuse/recycling programmes. Typical activities geared to resource efficiency through waste management include: reducing packaging in public services, e.g. in food catering; reducing paper consumption through electronic storage, e-forms and electronic documents; encouraging double -sided printing; and sharing magazine/journal subscriptions.

Recycling and reuse programmes generally cover office furniture, office equipment, office supplies and paper, as well as the purchase of paper with recycled content. The European Commission has defined several specific "waste streams" for priority attention by the government sector: packaging waste, end-of-life vehicles, batteries, electrical and electronic waste.

The benefits are beyond the obvious financial savings due to recovering value from the waste stream. Efficiency efforts can minimize environmental impacts, demonstrate good practices to the public and enhance staff moral by encouraging them to make a difference through socially and environmentally responsible practices.

To counter the increasing volume of electronic waste that often contains toxic substances, governments would do well to integrate e-waste management into their administration policies. Such an effort would recognize the fact that they are big consumers of electronic products and therefore big e-waste generators as well. Some measures have been taken from enforcing standards in purchasing to policies on recycling and disposal. The EU Directives on Waste Electrical and Electronic Equipment (WEEE)⁴⁸ and on Restriction of Hazardous Substances (RoHS)⁴⁹, promote recycling and reporting on the implementation of waste management programmes. These also provide incentives for eco-design. Japan sets administrative and legal requirements on waste management and recycling, obliging recycling of used personal computers by law.

⁴⁷ EMAS News Letter Issue No. 5, April 7, European Commission.

⁴⁸ WEEE Website: http://ec.europa.eu/environment/waste/weee/index_en.htm

⁴⁹ RoSH website: http://ec.europa.eu/environment/waste/reporting/index.htm

4.3 Challenges

Related to SPP, the challenges are:

- Strengthening the long-term political commitment to sustainable public procurement. Many factors can contribute to influencing government decision-makers to take a short-term outlook, including: annual budgeting and reporting cycles; splits between capital and operational budgets; electoral cycles; and intangible benefits versus monetary costs.
- Introducing effective sustainable procurement management structure and improving accounting systems. Many public sectors, particularly in developing countries, lack tools and modern management culture to integrate sustainable development goals into their internal structure of accounting, performance targets and staff incentives.
- Creating an SCP culture, providing technical support and knowledge-transfer for procurement officials through capacity-building programmes. SCP issues need to be introduced in public administration curricula at universities in civil service training institutions, and in professional organizations, such as CIPFA Chartered Institute of Public Finance & Accountancy.
- Greening the supply chain and ensuring that SPP is compatible with legal and regulatory frameworks and trade policies. Regulatory frameworks for sustainable procurement are still missing in many public sectors. Trade issues may also arise in the context of the WTO and need to be examined and addressed.
- Promoting social criteria in procurement. As one of the three criteria of sustainability, social factors so
 far have not been widely taken into consideration in public procurement. In most countries, the focus
 up to now has mainly been on environmental impacts of public procurement, whilst far less attention
 has been paid to employment conditions, anti-discrimination and equality, transparency, integrity, responsiveness, consistency and accountability in public procurement. To accomplish this, socio-labels
 and standards need to be developed and integrated into SPP policies.
- SPP in developing countries. Many developing countries depend heavily on external donors for their management and for their public sector, economic and infrastructures development. A clear signal in favour of SPP from international donors including the multilateral development banks and various development agencies implementing or supporting projects locally is fundamental to diffuse SP in the various canals of development aid is fundamental.
- SPP capacity building (especially in developing countries)
- Lack of information, resources and technical support, such as product information, inhibits procurement officers from making informed sustainable procurement decisions, particularly in developing countries. Providing sufficient access to information on sustainable products, clearer procurement guidance and systematic SPP training are essential to improve the procurement quality among governmental agencies. Information updates and exchange of experiences are necessary to make SPP effective in all countries. Adequate funding for capacity building efforts on SPP is also needed

Related to improving resource-efficiency, the challenges are:

- Developing specific regulations and incentive programmes in priority areas, i.e. facilities management, fleet management and waste management. In public sectors, economic savings through resource

efficiency in many cases are not directly reflected as the practitioner's benefits. Also, the lack of mechanisms to demonstrate the economic value of social and environmental costs and benefits is also a major barrier. Appropriate regulations and incentives can motivate public-sectors to move beyond business-as-usual.

- Setting implementation mechanisms that are coherent with sustainable public procurement policies, treasury plans and accounting measures to improve resource efficiency through an integrated approach. Inability in offsetting the whole life-cycle cost savings against short-term budgetary limits is a problematic barrier in governments, and this can constrain decision-makers from investing in more resource-efficient options.
- Creating a culture within government of sustainable consumption through capacity building and staff training. Linking resource efficiency with government performance evaluations, and establishing reporting mechanism for resource-efficiency disclosure.
- Improving exchange of information and best practices across governmental agencies, and in particular, at all levels.

4.4 Key questions

Some key questions to be discussed among the participants in the working group on sustainable procurement (on 27 June, Group 4) are suggested below:

- 1. What national and regional goals for government administration policies could be proposed, with feasible targets in the context of the 10YFP on SCP?
- 2. What is needed to promote more rapid implementation of SPP, particularly in developing countries? How to overcome key barriers?
- 3. How can multilateral development banks and other actors in procurement reform be of support?
- 4. What is needed to promote more rapid implementation of government resource efficiency programmes? How can exchange of experiences be fostered?
- 5. What tools should be developed to measure and monitor SPP? How can internationally promoted tools and standards and capacity buildings be of help? What support can be given to these measures?

5 Sustainable Consumption and Production as a tool for poverty reduction

5.1 Introduction and overview

This section provides a brief introduction to how SCP can contribute to poverty reduction, fulfil basic needs for poor people and help achieve the Millennium Development Goals (MDGs).

SCP contribution to poverty reduction and the achievement of MDGs

The global effort to reduce poverty and achieve the MDGs needs to include a quest for sustainable consumption and production (SCP) as environmental degradation is linked to persisting problems of poverty, hunger, gender inequality, and health. The poor tend to rely more on the natural resource base for their livelihoods than the rich: While in low-income countries natural resources account for an estimated 28 percent of the capital stock, this figure drops to 2 percent for high-income countries (see Figure 1). In many developing countries today, unsustainable production patterns have resulted in significant social and environmental side effects that undermine the prospects for poverty reduction. And the unsustainable consumption patterns of the emerging 'global





Source: World Bank

consumer class' may further limit the 'ecological space' available to poor people to meet even basic needs.

Policies and actions supporting SCP can serve to bolster poverty reduction efforts and support sustainable long-term growth. Measures which reduce inefficient use of energy and other resources are particularly relevant in low-income countries where severe resource scarcities mean that wastage has high opportunity costs. By conserving natural resources and the revenues they generate and in particular avoiding degradation of soil and other ecosystems, SCP measures can protect the incomes of the poor and enhance food security (MDG 1). A more efficient and less polluting use of natural resources can improve quality of life by preserving the regulating functions of ecosystems and reducing environmental health problems (MDGs 4, 5 and 6). SCP also contributes directly to ensuring environmental sustainability (MDG 7) and global partnerships (MDG 8) can support the development of innovative products and services that help to meet basic needs in a more sustainable manner. In other words, SCP could help developing countries to 'leapfrog' to sustainable models of development⁵⁰.

SCP could also help countries to develop new markets for sustainable products and new sources of employment as well as to better position themselves as producers for export markets. More efficient use of resources would enable businesses to achieve cost savings for acquiring, processing and disposing materials. Sustainable products and services that meet basic needs in an efficient manner could present viable business models and create new local employment.

SCP action plans and the role of development agencies

Integration of SCP principles and practices into national development plans and strategies can facilitate the implementation of SCP and help to identify synergies between environmental, social and economic objectives.⁵¹ There is a critical role for development agencies and financing institutions to apply SCP as a tool for poverty reduction. Several development agencies are already undertaking practical development projects targeting current unsustainable patterns of production and consumption (see Background Paper 3).

The role of the private sector

Market-based mechanisms can both stimulate investments in sustainable livelihoods and infrastructure and mobilise knowledge and human capital for conducting research, development and marketing activities on sustainable products and services for the poor. Entrepreneurs and businesses that seek to promote 'human development through the market'⁵² (see the next section) can:

- Create and make accessible to the poor sustainable 'leapfrogging' products and services that combine traditional and modern knowledge;
- Help poor people to realise cost savings through efficient use of energy and other resources;
- Create local economic linkages and supply chains through use of local materials and recycling;
- Create employment opportunities and foster entrepreneurship among poor people; and
- Preserve environmental and social capital to secure long-term development opportunities.

SCP potential to reduce poverty in different economic sectors

Sectors such as food, water, energy, waste management and tourism represent opportunities to demonstrate the contribution of SCP to poverty reduction. Various models are available for governments to

⁵⁰ For more details see UNEP "SCP – how development cooperation agencies can make a difference", pp. 14-16,

www.uneptie.org/pc/sustain/reports/general/Review_Development_Agencies.pdf

⁵¹ For an extensive review on how developing countries address environment and the MDGs in their strategic documents, see the UNDP report 'Making Progress on Environmental Sustainability' at www.undp.org/fssd/report

⁵² See the background paper for SCP9: www.uneptie.org/pc/SCP9/paper.htm

implement SCP in these sectors through the active involvement of the private sector and other players.⁵³ The following discusses potential opportunities in a few sectors:

- Agriculture: FAO has linked organic agricultural production methods to increased food security and higher resilience and adaptability towards, for instance, climate change. Certified organic production could allow farmers to receive price premiums. Innovative management schemes can help farmers to protect soil quality and use inputs like water and energy more efficiently. Direct marketing of sustainable food products can assist small-hold farmers in reducing their reliance on middlemen (see Sambazon case in Box 1).
- Energy: SCP includes the promotion of reliable and clean energy services for the poor. Renewable energies such as water, wind, solar and advanced biomass systems look more attractive with high fossil fuel prices and with the cost reductions expected from further scaling up of renewable technologies. Operating and maintaining decentralised systems also offers local entrepreneurship and employment opportunities to poor communities. Energy efficiency can be facilitated through subsidies for energy-efficient products and services or reforming highly subsidised energy pricing schemes.
- Tourism: Tourism has the potential to make a major contribution to poverty reduction within the framework of the MDGs. In many Small Island Developing States, the tourism sector provides a large share of economic activity. The World Travel and Tourism Council (WTTC) indicates that travel and tourism in the Caribbean in 2005 generated a turnover of some \$45.5 billion directly and/or indirectly accounting for 15.4% of GDP and 2.4 million jobs representing 15.1% of total employment.⁵⁴ The Marrakech Task Force on Sustainable Tourism led by France aims to promote the development of models for sustainable tourism as a tool for local development and poverty reduction (see Background Paper 3).

5.2 Current status

SCP projects and programmes and integration into development strategies

Developing countries and countries with economies in transition are increasingly interested in SCP and it is clear that implementation of SCP must be undertaken in light of the challenge of reducing poverty and satisfying basic needs.⁵⁵ The Marrakech Task Force on Cooperation with Africa will assist the further elaboration and implementation of the African 10 Year Framework Programme on SCP (see Background Paper 3). Parallel to this, UNEP, with the support of the Government of Norway, is planning local level

⁵⁴ *Tourism investment as a tool for development and poverty reduction: The experience in Small Island Developing States (SIDS),* Dr John W Ashe, Permanent Representative, to the United Nations and Ambassador to the World Trade Organization, Antigua and Barbuda, Barbados, 18-20 September 2005.

⁵³ For more sector examples and profiles of concrete case studies, see www.uneptie.org/pc/SCP9/SCP9_bckgrdpaper_final.pdf

⁵⁵ For more details, please refer to the Tracking Progress reports at http://www.unep.fr/pc/sustain/policies/tracking.htm

demonstration projects on public policies, market-based incentives, sustainable technologies and information and awareness-raising tools to explore how SCP can contribute to poverty reduction.

As one example of efforts to incorporate SCP into national poverty alleviation strategies, UNEP launched a pilot project 'Integration of SCP into Poverty Reduction Strategy Papers (PRSPs)'. The purpose of this project is to provide guidance to governments in low income countries on integrating country-specific SCP policies into poverty reduction strategies. In addition to providing concrete examples of SCP measures for governments and the private sector, the document will assist pilot countries to identify linkages between SCP and poverty reduction in key economic sectors and provide guidance on drafting the text of PRSPs.

Capitalising on the potential of SCP in different economic sectors

Efforts to link SCP and poverty reduction have often been undertaken on a sector level:

- In the area of agriculture, under its *Technical Cooperation Projects (TCPs)*, FAO provides technical inputs by experts, practical training and in some cases equipment and supplies at the request of developing countries and when deemed essential for activities to promote and implement organic agriculture.⁵⁶ Under the theme of "Sustainable Livelihoods", FAO's Sustainable Development Department offers information and guid ance on shaping agricultural production in order to account for the dynamics of the natural resource base with the aim of reducing poverty and promoting human well-being.⁵⁷
- SCP in energy services is addressed by UNIDO and UNDP with the aim of "de-linking intensity of energy use from economic growth" and "reducing the environmental damage that occurs with energy use". Projects demonstrate how decentralised, renewable power generation together with modern information and communication technologies can increase incomes while reducing environmental impacts.⁵⁸ The GEF Small Grants Programme supports focused country-level projects on, for instance, consumer awareness of efficient energy consumption and sustainable technologies such as energy-efficient cook stoves and solar lanterns.
- In the tourism area, a number of pilot projects are being undertaken within the framework of the Sustainable Tourism Task Force. One example is a project led by UNEP, Costa Rica, SICA and France which aims to promote natural and cultural heritage as an asset for sustainable tourism development in Costa Rica.

Projects and programmes of development agencies

To assess how development agencies address consumption and production patterns in their work programmes, UNEP conducted a survey to identify SCP-related projects and mechanisms for cooperation

⁵⁶ A documentation of FAOs work on organic agriculture is available on www.fao.org/ORGANICAG/frame2-e.htm

⁵⁷ For outcomes and results, see www.fao.org/sd/pe4_en.htm

⁵⁸ See project description at www.unido.org/doc/24912

and means to achieve better integration of SCP into development programmes. The review revealed that while development agencies are carrying out many activities linked to SCP, they are not always identified as such (see Background Paper 3). An example is the adoption of a 'Sustainability Roadmap' by the Association of Development Financing Institutions in Asia and the Pacific (ADFIAP) which aims to implement 'Environmental Governance Standards' in its member institutions.⁵⁹ Development banks in donor countries have also taken up the SCP issue, an example being the financial support for renewable energy and protection of national resources provided by the German Development Bank (KfW).⁶⁰

Private sector activities for 'human development through the market'

Various private sector initiatives are already underway to promote 'human development through the market' by influencing consumption and production patterns in a way that contributes to poverty reduction. These initiatives demonstrate how businesses and entrepreneurs can contribute to environmental and social objectives through financially viable business models. Multinational companies and others have started to design and market sustainable, locally appropriate products and services to the poor who form the 'Bottom of the Pyramid' (see Prahalad C.K. 2005)

Sector	Company	Initiative	Source
Telecom- munication	HP	'Kuppam HP i-Community': Local run community tele- communication centres offering income opportunities, ca- pacity building and telecommunication services	kupnet.org
Construction	CEMEX	'Patrimonio hoy': Microfinance and community saving scheme, decentralised distribution model and capacity building to enable poor people to pay for services and building materials to upgrade their homes.	Prahalad C.K. 2005, pp. 207-239
Consumer Products	Unilever	Shakti: Decentralised distribution networks and capacity building to create local income opportunities and distribute products beneficial for the poor.	hllshakti.com
Food	Grameen Danone	'Grameen Danone Foods': Localised, low-capital supply chain to supply nutritional products to the low income households	NextBillion.net

Table 1: Indicative examples of Bottom-of-the-Pyramid (BoP) projects

Social entrepreneurs around the world develop social and environmental innovation through entrepreneurial solutions. Many bottom-up examples illustrate how innovative, locally developed and tested business concepts and products can reduce resource use and impacts on the environment while creating employment or entrepreneurship in marginalised communities. The **microfinance** concept has grown from small pilot projects into a major industry that has enabled many poor people to make investments into social and environmental progress. In addition, organisations engaged in **fair trade** serve the growing demand for sustainable products in developed countries by establishing direct commercial relations

⁵⁹ www.egs-asia.com

⁶⁰ www.kfw -entwicklungsbank.de/EN_Home/Topics/index.jsp

with producers in developing countries. These relations are based on a combination of fair (i.e. price premium, guaranteed payment and long-term contracts) payment, capacity building and local community investment.

Based on a benchmark of available best practices, the 'Human Development through the Market' (HDtM) approach aims to create social and environmental value in the marketplace by encouraging the development and sale of products produced with lower environmental impacts and which also help to meet the needs of poorer consumers. The HDtM approach integrates the initiatives describe ab ove into a common perspective and provides a framework to enable intermediaries to support broader application. Box 1 illustrates some examples of the HDtM approach.

- Drying fruit using Solar Power USISS (Mali): USISS seeks to generate income and create jobs for the local community through a commercial application of solar energy to meet local and national needs for dried meat, fruit and vegetables.
- Growing organic cotton LOCP (Uganda): The Lango Organic Cotton Project (LOCP) promotes organic cotton
 production techniques in Uganda and provides monitoring and documentation systems required for certification.
- Marketing Açaí berry Sambazon (Brazil): Sambazon cultivates, harvests and processes Açaí fruit in a sustainable manner that is mutually beneficial b local communities, the Amazon Rainforest, retailers and wholesalers.
- Eco-tourism to African wilderness CC Africa (throughout Africa): As one of the continent's largest ecotourism companies, CC Africa provides world-class holiday experiences for discerning travellers, and invests in conservation and community empowerment.
- Decentralised composting Waste Concern (Bangladesh): Waste Concern, an organisation in Dhaka, successfully applies a public-private partnership and decentralised composting models to promote community -based efforts for primary collection of waste as well as to encourage composting.

Box 1: Examples for the HDtM approach from the UNEP SCP 9 Background Paper

5.3 Support services for 'human development through the market'

The HDtM approach was introduced as a new work theme for National Cleaner Production Centres (NCPCs) during the UNEP's 9th International High-level Seminar on SCP.⁶¹ Another UNEP initiative, the SEED Initiative (Supporting Entrepreneurs in Environment and Development)⁶² aims to inspire, support and build the capacity of local entrepreneurial partnerships to contribute to the MDGs and the Johannesburg Plan of Implementation (JPOI). UNDP's Growing Sustainable Business⁶³ programme has built a "platform for companies to engage in pro-poor business activities in developing countries with a challenging business environment".

Market-based approaches to SCP and poverty rely on an enabling policy framework and often require external support services by governments, intermediaries or other stakeholders, at least during the startup phase. These support services might entail facilitated access to financing, capacity building and education on sustainability and entrepreneurship, personal counselling, technology transfer among other

⁶¹ www.unep.fr/pc/SCP9/index.htm

⁶² www.seedinit.org

⁶³ www.undp.org/business/gsb/

support services. The SCP9 meeting underscored the importance of enhanced understanding of the operation and needs of the private sector within the public sector as well as the importance of public policies and multi-stakeholder approaches to application of HDtM business models. The application of the HDtM approach will be explored in national level demonstration projects in a recently launched UNEP project on SCP for poverty alleviation.

5.4 Key challenges to address

Mainstreaming SCP contributions into existing strategies and programmes

The potential contribution of SCP toward the MDGs and other international development goals are not yet widely appreciated. This includes the direct contribution of SCP approaches to MDG 7 (environmental sustainability), but also to poverty reduction and food security, maternal and child health, and water and sanitation-related MDGs. Efforts to identify, assess and communicate of the role of SCP in achieving the MDGs will support broader uptake and mainstreaming of SCP policies.

Promoting SCP and poverty reduction models through the private sector

Although promising models for private sector initiatives on SCP and poverty reduction exist, their uptake has been limited to a few front-runner companies. Raising awareness of cost savings, new market potential, advertising and public relations benefits of sustainable products and services would help to spread the model. Public-private partnerships within pilot projects may be one implementation model to raise awareness among the business community with a view to building knowledge and mainstreaming best practice into standard business models.

Strengthening institutional and technical cooperation

Factors preventing developing countries from implementing SCP include financial barriers to switching to more sustainable production methods and concerns related to short-term costs in addition to a shortage of technology, technical information and policy-making skills. Institutional and technical cooperation mechanisms to leapfrog to sustainability include financing and technology transfer mechanisms like the Clean Development Mechanism (CDM) and partnership models such as public-private partnerships.

Strengthening education and capacity building for SCP and poverty

Integrating SCP into higher education will build capacity on the potential contributions of SCP to poverty reduction. This concerns curricula on development theories and politics but also on integrating SCP and poverty as cross-cutting issues in the general curriculum. Interactive educational methods are needed to enable students to not only analyse ecological and social challenges, but also to actively implement solutions to these challenges.⁶⁴

⁶⁴ See the South-East Asia Future Lab (SEALab), run by oikos Dhaka www.oikos-dhaka.org/sea/

Collaborating with development agencies

The potential of cooperation with development agencies to implement joint projects on SCP and poverty reduction has not been fully realised thus far. To promote the implementation of pilot projects and mainstream SCP into development efforts, the benefits of SCP with respect to poverty reduction both on a generic and at a project level should be better communicated. The Cooperation Dialogue and Cooperation with Africa Task Force could provide venues for a dialogue with development agencies.

Increasing exchange of experiences between developing countries

More implementation projects and programmes are needed to address the priorities identified during the regional consultations by developing countries. A more intensive exchange and discussion of specific best (and worst) experiences when implementing SCP for poverty reduction would support necessary learning that comes with information exchange. This includes the challenge for the Marrakech Task Forces to more systematically engage with governments, civil society organisations and businesses from developing countries.

Integrating poverty reduction in initiatives under the Marrakech Process

Mainstreaming poverty reduction across the Marrakech Process offers opportunities for innovative international partnerships. These might, for example, link lifestyles and procurement practices to SCP and poverty impacts, as the sustainability of products and services also depends on its impact on poor people. These linkages might be addressed in the Sustainable Lifestyles, Sustainable Public Procurement and Sustainable Products Task Forces. The MTF on sustainable tourism offers another forum for examining linkages between lifestyle choices of wealthy consumers and poverty reduction in developing countries.

5.5 Key questions:

Some key questions to be discussed among the participants in the working group on SCP as a tool for poverty reduction (on 27 June, Group 4) are suggested below:

- 1. What are the objectives related to poverty reduction that should be included in the 10 Year Framework of Programmes on SCP (10YFP)?
- 2. What are the key policies and concrete actions needed to mainstream SCP as a tool for poverty reduction?
- 3. How can the benefits of SCP for poverty reduction be better communicated and integrated into national development strategies and development projects?
- 4. How can cooperation with development agencies and regional development banks be enhanced to promote SCP in their development projects?
- 5. What are the key policy recommendations/actions that might be developed by the main Marrakech Process mechanisms, in particular the Cooperation Dialogue, the Task Force on Cooperation with Africa, but also with the business and industry?

6 SCP in Agriculture and Rural Development

6.1 Introduction

Achieving more sustainable consumption and production in the agricultural sector requires a coherent response to the intimate linkages between agricultural production, agro-ecosystems and the people who rely on them, and also the concerns and preferences of a growing number of consumers. Less input intensive and more resource efficient agriculture offers a means to strengthen the competitiveness of the agricultural sector. It can also improve living conditions and economic opportunities in rural areas, including for the poor, by reducing production costs and developing new markets for sustainable products.

There is a close relationship between agricultural development, agro-ecosystems and poverty. Poverty can force people to deplete natural resources and pollute the environment, leading to degradation of the ecosystems on which they rely for food production and income generation. The reverse is also true, i.e., a degraded natural resource base is often an underlying cause for rural poverty, hunger, rural-urban migration, health problems and water scarcity.⁶⁵ Achievement of the Millennium Development Goals 1 and 7 in particular - eradicating extreme poverty and hunger and securing environmental sustainability - are strongly linked to agricultural development and the conservation of the natural resource base in developing countries. While an increasing share of rural households in developing countries have their primary income source from off-farm activities, a dynamic non-farm sector is typically associated with sustained growth in the farm sector.

This section outlines the sustainability challenges, the changes in agricultural policies and practices required to meet these challenges, and the incentives and support that farmers need to make the shift to more sustainable agricultural practices. These can take the form of government policies, voluntary actions and new investments by business, and expression of consumer preferences for food produced from more sustainable agricultural production systems.

6.2 Current status & best practices in SCP policies in agricultural and rural development

Promoting good environmental practices in agricultural production for sustainable agricultural development and poverty reduction

⁶⁵ Hengsdijk, H., W. Guanghuo, M. M. Van den Berg, W. Jiangdi, J. Wolf, L. Changhe, R. P. Roetter and H. Van Keulen (2007), "Poverty and biodiversity trade-offs in rural development: A case study for Pujiang county, China", Agricultural Systems, In Press, Corrected Proof, Available online 17 January 2007.

In its role as Task Manager for Agenda21/Chapter 14, FAO facilitated the Sustainable Agriculture and Rural Development (SARD) Initiative, a multi-stakeholder umbrella framework launched at the 2002 World Summit on Sustainable Development. The Initiative seeks to build the capacity of rural communities and disadvantaged groups to improve access to resources, promote good practices for SARD, and foster fairer conditions of employment in agriculture. It also serves to raise public awareness of the importance of SARD for achievement of the Millennium Development Goals.

There are a wide range of negative impacts resulting from conventional agriculture which require an integrated, systems-based approach to sustainable agriculture and rural development, both with respect to farm management and the design and application of policies and market-based instruments.

Land degradation in all its forms (including depletion of soil nutrients, salinization, agrochemical pollution, soil erosion, vegetative degradation due to overgrazing, and deforestation) is a threat to food production and rural livelihoods, especially in the poorest areas of the developing world. The poor are more dependent on agriculture, and within agriculture, more dependent on annual crops and on common property which increase pressure on land relative to perennial crops and private property, respectively. The poor are proportionately more affected by land degradation, and also often lack the capacity to undertake land-improving investments. This increases poverty as all forms of land degradation reduce productive capacity and thus yields. In turn, this may force producers to resort to increasing fertilizer use to maintain yields, abandon some plots of land (temporarily or on a permanent basis), or convert land to lower value crops which can grow on poor soils or to grazing.⁶⁶

In the early nineties, 38% of cropland worldwide was estimated to be degraded to some extent. The cumulative impact of soil degradation on loss of cropland productivity over the second half of the twentieth century is estimated to be about 13% (4% for pasture lands). The reduction in crop yields between 1970 and 1990 due to water-induced soil erosion alone is estimated to be 8% in Africa. While effects on global food supplies are modest, due to the potential for compensation from non-degraded areas, land degradation could have serious effects in certain countries and sub-regions in the developing world.⁶⁷ In South and Southeast Asia, estimates for total annual economic loss from degradation vary between 1 to 7% of agricultural GDP, while estimates based on a sample of eight African countries range from 1% of GDP in Madagascar to 9% in Zimbabwe. Country models for Ghana and Nicaragua estimate that annual GDP growth is reduced by almost one percentage point by land degradation.⁶⁸

⁶⁶ Scherr, S.J. and S. Yadav (2001), "Land degradation in the developing world – Issues and policy options for 2020", Ch.21 in *The unfinished agenda – Perspectives on overcoming hunger, poverty, and environmental degradation*, eds. Pinstrup-Andersen, P. and R. Pandya-Lorch, IFPRI, 302 pp.

⁶⁷ For instance, salinization is a major problem in the irrigation systems of the Indus, Tigris and Euphrates river basins, in northeaster Thailand and China, in the Nile Delta, in Northern Mexico and in the Andean highlands, whereas soil erosion affects with special severity the Himalayan foothills, southern China, Southeast Asia and Central America.

⁶⁸ Scherr, S.J. and S. Yadav (2001), "Land degradation in the developing world – Issues and policy options for 2020", Ch.21 in *The unfinished agenda – Perspectives on overcoming hunger, poverty, and environmental degradation*, eds. Pinstrup-Andersen, P. and R. Pandya-Lorch, IFPRI, 302 pp.

It is thus important to create the incentives for producers to avert or reverse degradation by modifying farming practices and undertaking land improving investments on which long-term agricultural and rural development depend. Based on the lessons from past experience, the following policies should be considered: (a) Increased utilization of environmentally friendly ways of pest control and fertilizer use (e.g. integrated production and pest management⁶⁹); (b) Improved water management to reduce soil salinization and erosion; (c) Industrial treatment of organic waste (e.g. manure waste from large poultry and livestock operations); (d) Dynamic monitoring and warning systems to track soil quality; and (e) Conservation agriculture, which targets the maintenance of permanent or semi-permanent soil coverage (through practices such as conservation tillage, use of cover crops, extensive crop rotations, and straw mulching) to reduce soil erosion.⁷⁰ Research shows that conservation agriculture produces net benefits for adopters in both the developed and the developing world.⁷¹

In many cases, both technical and financial support will be required to enable farmers to shift to more sustainable agricultural practices, especially the poorest. FAO is actively involved in promoting conservation agriculture especially in developing and emerging economies. Integrated pest management (IPM) is notably being promoted through "farmer field schools", a group-based learning process initiated by FAO in 1989 in Indonesia to reduce farmer reliance on pesticides in rice cultivation. Such programmes are now being conducted in over 30 countries worldwide.⁷² More recently, a number of partnerships between businesses and NGOs and along supply chains have emerged, benefiting both producers and the environment in the area of IPM (e.g. partnerships between the Wisconsin Potato and Vegetable Growers and the World Wildlife Fund, and between Sysco and its suppliers with third-party validation by the Wisconsin IPM Institute⁷³).

At the same time, as global projections for water availability and the demand for water in agriculture point towards increasing scarcity and supply variability, more attention is being paid to the role that innovative policies can play in enhancing the efficient and sustainable management of water, in terms of both quantity and quality – including under the Integrated Water Resources Management (IWRM) concept. Institutional and market-based instruments must be combined with promoting dialogue between competing water users (farmers, municipalities, industry and eco-system custodians) in order to achieve successful results. Possible measures include the following: (a) Allocation of property rights to water consuming agents; (b) Water banking (to support economically beneficial re-allocations in times of water

⁶⁹ Integrated Pest Management (IPM) is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks.

⁷⁰ http://www.fao.org/ag/ca/

⁷¹ Knowler, D. and B. Bradshaw (2007), "Farmers' adoption of conservation agriculture: A review and synthesis of recent research", Food Policy, 32, 25-48.

⁷² Van der Berg, H. (2004), IPM Farmer Field Schools A synthesis of 25 impact evaluations Report prepared for the Global IPM facility (www.fao.org/docrep/006/ad487e/ad487e00.htm).

⁷³ Gunningham, N. 2007, "Incentives to improve farm management: EMS, supply-chains and civil society", *Journal of Environmental Management*, 82, 302-310; and SYSCO: http://www.sysco.com/aboutus/aboutus_pestm.html.

scarcity); (c) Tradable permits⁷⁴; and (d) Salinity control and drainage management (e.g. Re-use of drainage water on salt-tolerant crops; Drainage water treatment).⁷⁵

Finally, governments should consider promoting organic farming systems. Organic agriculture has a smaller footprint on the natural resource base, ecosystems and the health of agricultural workers than conventional agriculture. In addition, it provides for an environmentally sound and affordable way for smallholders to intensify production in marginal areas and offers promising export opportunities for developing countries which have in many cases an inherent comparative advantage due to relatively abundant labour supply and relatively low use of agro-chemicals. Several studies show that the use of organic methods of farming by small producers in developing countries can lead to an increase in yields and thus increase food security among the poor. The potential to reverse the bias against smallholders embedded in the model emphasizing purchased inputs as opposed to the assets that farmers already possess (low opportunity costs of labour) is another positive aspect associated with organic methods of farming.⁷⁶

The ability to enter such profitable markets presents however significant challenges for producers, especially those in developing countries, including the fact they are relatively small in terms of traded volumes and that they require substantial investments in developing certification bodies and securing recognition for that certification in developed country markets.⁷⁷ Organic agriculture is furthermore fairly knowledgeintensive. Governments should support medium and small-scale producers through institutional and technical support.

Promoting the protection of ecosystem services, including carbon mitigation, biodiversity, and landscape

A combination of regulations, charges and environmental taxes, incentive payments, standards, awareness-raising, research, and institution and capacity building have been deployed to promote the protection of the natural resource base while improving the living conditions of those living in rural areas. At the same time, agricultural support instruments, particularly subsidies in developed countries, continue to encourage intensive and unsustainable agricultural practices. Hence, while below we focus on different

⁷⁴ Pollution trading programmes have been very successful in other contexts, but less notable in water quality trading. There are however interesting lessons to be learned from several programmes in the United States, where most have been initiated (e.g. the Long Island Sound Nitrogen Credit Trading Programme ; the Minnesota River Basin trading system between point and non-point sources; and the Tar-Pamlico River Basin in North Carolina trading programme . Summary information on current trading efforts in the U.S. related to water can be found in http://www.epa.gov/owow/watershed/trading/tradingactivities.html).

⁷⁵ Msangi, S., C. Ringler and M. Rosegrant (2006), "The future of agriculture and water: Market and policy-based strategies for sustainability – What can the developing world learn from North America?", in *Water and agriculture: sustainability, markets and policies*, OECD.

⁷⁶ WTO (2006), "Environmental requirements and market access – recent work in OECD and UNCTAD", Note by the Secretariat, WT/CTE/W/244. See also Altieri, M.A., Rosset, P. and Thrupp, L.A. (2001), "The potential of agroecology to combat hunger in the developing world", Ch.19 in *The unfinished agenda – Perspectives on overcoming hunger, poverty, and environmental degradation*, eds. Pinstrup-Andersen, P. and R. Pandya-Lorch, IFPRI, 302 pp.

⁷⁷ Rodrigues, M. and M. Torres (2003), La competitividad agroalimentaria de los países de América Central y el Caribe en una perspectiva de liberalización comercial, Serie Desarrollo Productivo No. 139, 64 pp.

policy instruments used to promote the protection of ecosystem services, the need for policy reform leading to the removal of perverse subsidies must be part of any discussion in this context.

Taxes and charges to integrate directly the environmental costs of agricultural activities into farmers' production decisions have been less used in agriculture than in other sectors, reflecting logistical difficulties and poorly defined property rights. Direct payments for ecosystem services are more common, with some governments around the world paying rural landowners to steward their land in ways that will generate ecosystem services while at the same time promoting rural development. The Conservation Reserve Program in the United States, for instance, compensates farmers in exchange for their protection of endangered wildlife habitat, open space and/or wetlands. Colombia, Ecuador, Mexico and South Africa target their payments toward stewards of watershed services. Other examples include payments for protection of a wide range of eco-system services (biodiversity, watersheds, carbon sequestration) in Costa Rica, payments for preserving semi-natural pastures in Sweden, and ecological payments for extensive meadows and animal welfare in Switzerland.^{78 79}

In some rural areas in developing countries, households lack most types of assets and hold very small plots of land while operating in remote, inhospitable environments. Innovative approaches to reduce poverty in such environments require linking isolated communities with distant markets and communities, and include tapping into markets for ecosystem services, which the poor may be supplying in large amounts. Another option is tapping into specialty markets for identity-based goods and services, including sustainable tourism, and in particular ethnic/ecological tourism and fair trade.⁸⁰

Information and communication technologies can be important tools in realising these opportunities. High transaction costs are the single largest barrier to linking these remote, but culturally and/or biodiversity rich rural areas with the global community, and include costs that range from finding information about the market (Who and where are the potential buyers? What standards must be complied with?), to getting in touch with potential customers and negotiating contract terms, to name but a few. In the particular case of tapping into markets for ecosystem services, substantial technical expertise is required. Effective institutions that can establish ownership for the services, provide reliable information on their value, link supply and demand, and deliver payment to the rural communities, must be established. Information and communication technologies can substantially reduce the transaction costs associated with these activities.⁸¹

Climate change is likely to have severe effects in the agricultural sector, particularly in the developing world, e.g. by exacerbating water shortage and quality problems in many water-scarce regions.⁸² At the same time, agriculture is a major source of emissions of methane from animal production and nitrous oxide from fertilizer, which contribute to the greenhouse effect. Furthermore, methyl bromide has been

⁷⁸ OECD (2004), Agriculture and the environment: lessons learned from a decade of OECD work.

⁷⁹ http://ecosystemmarketplace.com/pages/static/about.conservation_backgrounder.php.

⁸⁰ Berdegué, J.A. (2005), "Pro-poor innovation systems", Background paper prepared for IFAD, December.

⁸¹ Berdegué, J.A. (2005), "Pro-poor innovation systems", Background paper prepared for IFAD, December.

⁸² United Nations (2006), "Policy options and possible actions to expedite implementation: climate change" Report of the Secretary-General, E/CN.17/2007/5.

used extensively and contributed to the depletion of the ozone layer⁸³ and the expansion of the agricultural frontier through deforestation is a major contributor to CO₂ emissions.⁸⁴

There is significant potential for GHG mitigation in agriculture through promotion of conservation tillage, reduction of nitrogen fertilizer use and of livestock methane emissions, and afforestation of agricultural land. Policies that should be considered include: (a) Promoting market-based trading systems such as the Clean Development Mechanism (CDM) (interestingly, although the CDM does not currently support soil carbon sequestration projects through conservation tillage practices, emerging carbon markets in Canada and the United States allow GHG offsets from such practices); (b) Supporting the transfer, diffusion and deployment of existing technologies (e.g. crop management, livestock feeding), new uses of existing technologies (e.g. the use of oils in feed as a methane suppressant rather than only as a way to increase the dietary energy content), and R&D (e.g. animal genetics; methane vaccines; precision farming);⁸⁵ (c) promoting organic farming (which has been shown to produce lower overall GHG emissions than conventional farms, i.e. from a life-cycle perspective, where indirect requirements from all upstream production stages are considered).⁸⁶

Finally, the agricultural sector can contribute to mitigate GHG emissions through the production of biofuels, although net effects are highly dependent on the type of the feedstock used, the methods of cultivation and conversion technologies. On the other hand, intensification of production may have serious local environmental impacts, including degradation of soils and deforestation.⁸⁷ There are also potential benefits for rural development which we discuss below.

Promoting sustainable agricultural & rural development through demand-side management

Governments, the private sector and consumers all have important roles to play in shaping demand for agricultural products derived from improved on-farm environmental practices. Multinational food supply chains and retailers have a major influence on all aspects of agriculture, including those related to agricultural practices. In addition to residue testing, major food retailers now require adoption of Hazard Analysis and Critical Control Point (HACCP)–based quality assurance measures that guarantee safe food production, in response to increasing consumer concerns with food safety and with the environ-

⁸³ European Commission (1999), *Directions towards sustainable agriculture*, Communication to the Council, the European Parliament, the Economic and Social Committee and the Committee of the regions, Brussels.

⁸⁴ Wakker, E. (2005), Greasy Palms - The social and ecological impacts of large-scale oil palm plantation development, a report prepared for Friends of the Earth, January 2005.

⁸⁵ Smith et al. (2007), "Policy and technological constraints to implementation of greenhouse gas mitigation options in agriculture", Agriculture, Ecosystems and Environment, 118, 6-28.

⁸⁶ Wood, R., M. Lenzen, C. Dey and S. Lundie (2006), "A comparative study of some environmental impacts of conventional and organic farming in Australia", Agricultural Systems, 89, 324-348.

⁸⁷ See e.g., Dufey, A. (2006), "Biofuels production, trade and sustainable development: emerging issues", Sustainable Markets Discussion Paper Number 2, IEED (http://www.iied.org/pubs/pdf/full/15504IIED.pdf

mental impacts of production processes. Some of the larger food retailers are also adopting protocols that emphasize the social impact of food production (e.g. the EUREPGAP standard).⁸⁸

Retailers in developed countries are showing an increasing interest in marketing products of more sustainable agriculture, including organic products sourced from developing countries given that current organic production in developed countries cannot match the growing demand. There is a potential to expand markets from such produce from developing countries by emphasising the combination of social and environmental benefits that these production systems deliver. Other forms of sustainable farming systems could be recognized (e.g. those based on the FAO model of Good Agricultural Practices -GAP).

Voluntary labelling and certification schemes are identifying and helping to increase demand for agricultural products derived from socially (e.g. fair trade) and environmentally friendly farming practices. NGOs and the business sector are increasingly collaborating in the development of labelling and certification schemes to this end (examples are the roundtables on sustainable commodity production, such as that on palm oil).

Government can and should play a role in harnessing leadership from food retailers. There are significant differences in consumption of organic products in countries with otherwise highly similar concerns with respect to sustainability and food risks, and similar public support to organic farming. In Denmark, the Coop retailer launched already in 1993 a campaign offering reduced prices on organic products. While 70% of organic food is sold through supermarkets, there are also successful alternative distribution channels and this diversity results in fewer than 10% of Danes never buying organic food. In contrast, in Norway, supermarkets have had little interest in promoting organic food, with only few, expensive and relatively low quality products being offered, and without any significant marketing activities to promote them until very recently. Most organic food is sold via sparsely located specialized shops. As a result, two-thirds of Norwegian households never buy organic food.⁸⁹

Differences in the regulatory framework can also be at the core of very different outcomes in terms of availability and consumption of organic food. In the US, the low penetration of organic foods up to recently was linked to consumer confusion as to what exactly constituted organic foods, given the profusion of labels, which led the Department of Agriculture to issue rational standards in 2001.⁹⁰ Within the EU, fast growth in the organic market was facilitated by the introduction of a common statutory frame-

⁸⁸ See box 2 in Gunningham, N. (2007), "Incentives to improve farm management: EMS, supply-chains and civil society", *Journal of Environmental Management*, 82, 302-310, which describes a partnership between the Wisconsin Potato Growers Association and the World Wildlife Fund. See also http://www.sustainablefood.org/article/view/14193/1/2371 for an example of a partnership between Sysco and its suppliers with third-party validation by the nonprofit IPM Institute in Wisconsin.

⁸⁹ Kjærnes, U. and L. Holm (2006), Environmentally sustainable food consumption – an institutional perspective, Conference Proceedings, Sustainable Consumption and Production: Opportunities and Threats, 23-25 November, 2006, Wuppertal, Germany. Launch conference of the SCORE! Network.

⁹⁰ OECD (2002), Towards sustainable consumption? Trends and policies in OECD countries.

work (Council Regulation (EEC) No. 2092/91, L198, 22 July 1991, pp. 1–15) to preserve the integrity of the organic claim.⁹¹

Government policies (a) regulating the distribution of food (e.g. regulatory measures explicitly favouring wholesale markets and small retailers in France, Italy and Spain, which indirectly benefit smaller producers⁹²), or (b) promoting innovations in public food procurement (e.g. School Meals Program in Rome, Italy;⁹³ NY Farm to School Legislation) can also play a role in stimulating demand for more sustainably produced agricultural products. These can be complemented with publicly funded generic advertising, which has been successful in e.g. raising fluid milk sales in the US by 6% between 1984 and 1997.⁹⁴

Increasing demand for sustainable products which currently only occupy niche markets can further help to alleviate the poverty impacts of low commodity prices in developing countries. Production of energy crops, especially sugar and palm oil for the biofuel industry, could also represent an alternative for African farmers and simultaneously help reduce dependence on imported fossil fuels. Governments have a major role to play in creating markets for modern biomass-derived energy sources, as the experiences of Brazil in the case of ethanol and Malaysia in the case of palm oil fuel blend have shown. Increasing attention is being paid to the sustainability of biofuel production methods and the overall impacts of its processing, transport and use. These considerations have to be factored in if expansion in the production and production in this sector.

6.3 Challenges

In light of the analysis in the previous section, the following challenges for future work emerge:

- Building partnerships between and within supply chains, harnessing pressure from civil society, and increasing demand from consumers generally for products from sustainable farming practices, which also contribute to poverty reduction;
- Developing the institutional support (such as trade facilitation and product certification centres) needed for developing country producers and exporters, notably in Africa, to meet consumer preferences for environmentally and/or socially sustainable agricultural products in international markets;
- Assessing the potential for policies and payments to sustain the provision of ecosystem services to
 provide simultaneous and tangible benefits in terms of environmental protection and poverty reduction. This will have to be placed in the context of other reforms of agricultural policies required to re-

- ⁹² Gibbon, P. (2003), "Value-chain governance, public regulation and entry barriers in the global fresh fruit and vegetable chain into the EU", Development Policy Review, Vol.21 (5-6).
- 93http://www.sustainablefoodlab.org/filemanager/filedownload/phpbglvxy/Briefing%20paper%20on%20Rome%20model.doc

⁹¹ Smith, E. and T. Marsden (2004), Exploring the 'limits to growth' in UK organics: beyond the statistical image, Journal of Rural Studies, 20, 345–357.

⁹⁴ OECD (2002), Towards sustainable consumption? Trends and policies in OECD countries.

duce the incentives to practice resource-inefficient or environmentally damaging agricultural practices;

- Determining which policies are most effective in increasing demand for more sustainably produced agricultural products, while weighing and addressing the implications of some such choices (e.g. those favouring locally-produced products) for developing country producers/exporters;
- Managing the expansion of energy crop production, which can offer an alternative income source for agricultural commodity producers, in such a way that it is balanced with the needs for adequate food production and for environmental protection;
- Introducing a holistic perspective in the way development agencies develop policy advice and decide how and which projects to support, i.e. one that is redirected to focus on the nexus of food production, sustainable use of natural resources, rural development and poverty, rather than approaching theses issues in an isolated manner.

6.4 Key questions

Some key questions to be discussed among the participants in the working group on sustainable agriculture and rural development (on 27 June, Group 6) are suggested below:

- 1) What are the key issues on agriculture (sustainable food) and rural development policies that could be reflected in the 10YF on SCP?
- 2) How can an SCP perspective on agricultural and rural development policy contribute to strengthening the competitiveness of the agricultural sector, improving the living conditions in rural areas, especially for the poor, and protecting the natural resource base?
- 3) What tools exist and which ones should be developed to measure and monitor the sustainability of agricultural and rural development? Who should be responsible for undertaking this activity?
- 4) who are the stakeholders that need to be involved in promoting more sustainable agriculture practices and supply of sustainable food, including those from different parts of the supply chain?
- 5) What scope is there for international co-operation in advancing SCP in the agricultural sector? Is there a case to establish a Task Force or other initiative on sustainable agriculture and food under the Marrakech Process?

7 Sustainable Lifestyles and Education for Sustainable Consumption

7.1 Introduction

Already in 1992, Agenda 21 called for 'new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependent on the Earth's finite resources'.⁹⁵ It paved the way for the emerging understanding that the sustainability challenge cannot be solved only by improving efficiency, but should also include behavioural changes that entail empowerment of individuals and a concerted action of all societal actors, including governments, businesses, NGO, media and education, which already effectively shape lifestyles. It requires changes at cultural, social, environmental and economic levels by using strategies that raise awareness and develop new values and visions for sustainable societies.

The purpose of this background paper is to present some of the existing knowledge on lifestyles and strategies for promoting sustainable consumption and lifestyles, including education, to identify challenges in the current efforts and to highlight future opportunities.

Defining lifestyles

Lifestyles serve as "social conversations", in which people differentiate themselves from other people, signal their social position and psychological aspirations. Since many of the signals are mediated by goods, lifestyles are closely linked to material and resource flows in the society.

"Sustainable lifestyles are patterns of action and consumption, used by people to affiliate and differentiate themselves from others, which: meet basic needs, provide a better quality of life, minimise the use of natural resources and emissions of waste and pollutants over the lifecycle, and do not jeopardise the needs of future generations".⁹⁶ Sustainable lifestyles should reflect specific cultural, natural, economic and social heritage of each society.

Sustainable consumption is related to the process of purchasing, consuming and disposing of products, while sustainable lifestyles comprise a broader set of activities and values, such as interactions and education, which include, but are not limited to material consumption.

 ⁹⁵ UNCED (1992). Agenda 21. The Earth Summit: the United Nations Conference on Environment and Development, Rio de Janeiro.
 ⁹⁶ CSD (2004). "Every little bit helps..." Overcoming the challenges to researching, promoting and implementing sustainable lifestyles. Westminster, Centre for Sustainable Development, University of Westminster: 48.

Approach on software – hardware

New sustainable consumption practices and lifestyles require integration of the ongoing efforts to consume efficiently with initiatives that shape consumer preferences and demands towards more sustainable choices ad lifestyles. This includes changes in the consumers' knowledge, attitudes and behaviours - societal "software" (all the non-material values and norms, institutions and cultures that govern our society in an informal way), and in the societal "hardware" (all the material basis of society: the infrastructure, technology, products and services, as well as regulatory and economic frameworks that enable or constrain consumer choice).

Addressing only hardware, through for example eco-efficiency improvements, may lead, as been already proven in many areas, to rebound effects from changed consumer behaviour and increasing consumption levels. Alternatively, merely providing information to consumers is not sufficient in absence of enabling infrastructure and products. For example, encouraging people to reduce their car dependency without providing high quality convenient alternatives (public transport, delivery services, car sharing and rental services, good bicycle paths, etc.) will not yield the desired result. The new societal hardware and software should encourage, enable, engage and exemplify more sustainable ways of living and herewith facilitate the shift towards more sustainable lifestyles. Only then will everyone feel the ownership of the better and more sustainable world.

7.2 Current status of consumption and lifestyles

Lifestyles are intricately interwoven with and are based on past and current consumption and production patterns. What are these patterns of consumption and what are the driving forces?

Consumption patterns and lifestyles across the globe

Peoples' needs and, to some extent, aspirations are perhaps quite similar across the globe: to maintain our lives, to nourish ourselves and our children, to have access to dwelling and cloth, to be healthy and happy. However, the way we meet these needs and the resource intensity involved dramatically differ among countries.⁹⁷ In many urban cities all over the globe, energy and resource intensity of meeting our needs through material consumption are escalating steadily. It can be seen in the rising number of cars on the roads, the growing frequency and distance of leisure and business trips, the escalating ownership of household appliances and the increasing size of housing per capita.⁹⁸ Electricity consumption from space and water heating, paper consumption and the amount of waste of all categories are on the rise.⁹⁹ At the global level, between 1960 and 2000, food consumption and production increased 2,5 times, water use has doubled, and wood consumption has tripled.¹⁰⁰ These Western lifestyles of consumerism are spreading all around the world through products and services, media and trade policies. Western type

⁹⁷ MEA (2005). Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.: 155.

⁹⁸ WWI (2004). State of the World 2004. Washington, Worldwatch Institute: 273.

⁹⁹ EEA (2005). Household consumption and the environment. Copenhagen, European Environmental Agency: 72.

¹⁰⁰ MEA (2005). Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.: 155.

restaurants and coffee shops are as common on the streets of Beijing, as international brands of clothing and other products. The global consumer class is reaching 1,7 billion people, with nearly half of them living in developing economies.¹⁰¹ Goods and services previously seen as luxuries - TVs, mobile phones and cars – have now become necessities. The supply of goods from exotic locations is increasing,¹⁰² as well as the consumption of processed food and meat.¹⁰³

In the aggregate, and for most countries, changes in consumption levels in recent decades have led to substantial benefits. However, the price is paid in the form of degradation of many ecosystem services and the exacerbation of inequities and disparities between people.¹⁰⁴ In some countries satisfaction of basic needs, such as access to clean water, food and proper health services, is still an unresolved issue. In 2002, 1.1 billion people still used unsafe sources of drinking water, not having access to 20-50 litres of clean water per day to ensure their basic needs.¹⁰⁵ 14% of the world population goes hungry every day and malnutrition claims every year 10 million lives.¹⁰⁶

Drivers for consumption patterns and lifestyles

Current consumption patterns and lifestyles have been formed in centuries by our civilisation and are driven by economic forces, technological progress, political settings, environmental issues, sociological



Figure 1 Drivers for consumption & lifestyles

and cultural contexts and psychological determinants (Figure 1).

Economic development leads to improved productivity that leads to reduced products prices. Incomes also increase (albeit not equally diffused), as well as purchasing power of individuals. Ideally, higher income together with the right information could lead to more sustainable purchasing choices.

Technological advances lead to supply of more efficient products and technologies (including eco-design and dematerialisation). They may, however, create new visions for lifestyles or conditions, which could stimulate people to adapt more

¹⁰¹ WWI (2004). State of the World 2004. Washington, Worldwatch Institute: 273.

- ¹⁰² Schor, J. B. (2005). "Prices and quantities: Unsustainable consumption and the global economy." *Ecological Economics* 55(3): 309-320.
- ¹⁰³ EEA (2005). *Household consumption and the environment*. Copenhagen, European Environmental Agency: 72. ¹⁰⁴ 20% of the world wealthiest people use 80% of resources, while 80% of the world poorest live on 20% (WWI 2004).
- ¹⁰⁵ UN (2006). The 2nd UN World Water Development Report: 'Water, a shared responsibility'. Paris, UNESCO: 601.
- ¹⁰⁶ FAO (2003). The state of food insecurity in the world 2003. Rome, Food and Agriculture Organisation of the United Nations: 40.

resource intensive lifestyles. For example, the development of air travel and aircraft technologies together with cheaper air fairs, have boosted the level of international air passengers in the period 1972-1994, from 88 million to 344 million people ¹⁰⁷ At the same time, technology, e.g. information technology, offers possibilities for dematerialisation, e.g. substituting business trips with videoconferences.

Policy actions influence lifestyles through regulatory tools, e.g. bans and rules; fiscal measure, e.g. taxes, or information provision, e.g. eco-labels, affecting practices of all actors. Despite some improvements, there are still many policy actions that send confusing signals to markets and consumers. In some countries, even basic policies on health and safety are lacking.

Socio-psychological drivers include personal motives and influences of the social environment. People purchase goods and services for their qualities and functions, as much as for their symbolic value that serves as a marker of social status. Material possessions are perceived as a measure of success, power and happiness, post-material values are also emerging. Some studies indicate that the link with happiness holds true only until certain income level, after which it de-links from economic welfare and instead other factors such as availability of time, possibility to enjoy family and friends define our quality of life.

Cultural and *historical* aspects also influence lifestyles and unspoken codes of conduct in each society. Understanding the underlying cultural and historical settings of each social group is important for realising how the visions of lifestyles can be changed, but still remain grounded on and embedded into cultural and social context.

7.3 Approaches and best practices towards sustainable lifestyles

In order to make sustainable lifestyles an easy choice, all stakeholders need to facilitate the integration of "sustainability" into existing socio-economic and value structures.

7.3.1 Examples of policy actions for sustainable lifestyles

Public authorities at all levels can facilitate the change towards sustainable lifestyles by **supporting and enabling the development of a new vision for sustainable societies** and by setting the regulatory, economic and institutional frameworks that encourage and enable sustainable lifestyles.

In many countries, policies have already been developed for greening the market by setting environmental demands on product design, use or final disposal. In the EU such policies stimulate innovation in businesses, create market for environmentally sound products and consumer demand.

Urban planning and land-use policies can enable and stimulate the development of more sustainable lifestyles. E.g., provision of parking lots at city outskirts encourages people to pool cars when they enter

¹⁰⁷ (ICAO 2007)ICAO (2007). *Homepage*, International Civil Aviation Organization.

¹⁰⁸ The World Value Survey demonstrates that until \$13,000 of annual income per person (in 1995 purchasing power parity) income and happiness tend to track well, but after this level they start delinking WVS (2006).

the city, reducing pollution and congestion on the streets. Shifting roadways from cars to bicycles and developing efficient public transportation is a successful measure in many cities, e.g. Bogotá, Colombia. Construction policies and governmental subsidies for sustainable housing, e.g. construction of passive houses or use of solar panels, are promising policy tools that help "normalise" new behaviours. Once infrastructure is in place, it becomes easier for consumers to change their habits. For example, in Sweden shared laundries are provided in the majority of multi-store houses, so people do not have to buy own washing machine. Those who want of course can install own washing machine at home.

Traditional economic instruments supporting sustainable lifestyles, such as taxes and charges, can be effective if combined with measures that ensure provision of alternatives. E.g., the London congestion charge is supported by information and improved access to public transport. Governmental grants for new business ideas supporting sustainable lifestyles, e.g. shifting from products to services or social enterprises, can also be very effective.

Education, communication and marketing sustainable consumption and lifestyles is a paramount task for governments and international initiatives, e.g. the UN Decade on Education for Sustainable Development, can greatly support national policy-makers. The on-going efforts of the Italian Task Force on Education for Sustainable Consumption and the Swedish Task Force on Sustainable Lifestyles and Education for Sustainable Consumption aim to increase awareness about sustainability issues by developing strategies for including sustainable consumption into the agenda of all stakeholders dealing with related issues, e.g. authorities, NGOs, and by introducing the concept into the formal educational curricular.

7.3.2 Examples of business actions towards sustainable lifestyles

Businesses have an important role to play in providing hardware and software for sustainable lifestyles by designing products and services, and by shaping preferences through media and advertising. Business strategies of eco-efficiency are well suited for reducing environmental impacts of products. It is important to create markets for sustainable products and services through direct advertising, education and eco-labelling; businesses could take a more proactive stance in supporting sustainable lifestyles, thereby developing and securing future markets and profits. Some companies have recognised the business opportunity in shifting from selling products to providing systems solutions through, e.g. energy-efficiency services or chemical management services, e.g. as practised by Dow Chemicals. Together with the business of selling cars and after-sales support, some large automotive producers, e.g. Volvo and Mercedes, heavily promote public transportation. Some hotels are starting to include in the selling packages of lodging and mobility services; encouraging tourists to come by train to the hotel. In less affluent societies, new service companies are emerging providing access to unaffordable or unavailable products and infrastructure, e.g. selling washing cycles or minutes of mobile phone use. Communicating environmental and social information to consumers proves to be a smart business strategy for develop-ing new markets. Some companies provide life cycle financial and environmental information to stimulate

purchase of their green products.¹⁰⁹ Few advertise sustainable products and services through TV, cinema and magazines.¹¹⁰ A number of retailers promote ecological, organic or fair trade products and have even developed own brand names for such products, e.g. Coop, ICA.¹¹¹ However, the potential of using the power of advertising, marketing and retailing in promoting sustainable lifestyles is still largely untapped.

7.3.3 Examples of actions of individuals towards sustainable lifestyles

In their role as consumers people can greatly influence the sustainability of their lifestyles by choosing more sustainable products and services. And there are already clear signs that the market for environmentally and socially sound products is growing.¹¹²

Large potential also exist in promoting services, community and grass-root initiatives supported by NGOs or organised by people themselves. Examples of worldwide movements include the Slow Food and Slow Cities movement and simplicity ideas,¹¹³ such as the New American Dream.¹¹⁴ Specific examples of such initiatives include, common practices of renting out cottages to several people throughout a year or hotel sharing programmes, book exchange networks and green consumer clubs.¹¹⁵ Car-sharing is also in many cases organised by people themselves.¹¹⁶ Co-housing communities, eco-villages and creative communities have all similar goal – to respond to the basic needs of today's households and provide childcare, social contact and economic efficiency by combining the autonomy of private dwellings with the advantages of communities for Sustainable Lifestyles" is run under auspices of the Swedish Task Force on Sustainable Lifestyles and Education for Sustainable Consumption. It discusses the potential of collaborative everyday life creativity in generating and diffusing new and more sustainable ways of living in the urban environments of emerging countries (with a focus on Brazil, India and China). Within the project various services are developed, including home nursery or "school train" on

¹⁰⁹ Electrolux provides life cycle cost information to promote its more environmentally sound products and service solutions, the initial price of which is higher than similar products of other producers, but the life cycle cost is lower due to more efficient technological solutions for use of electricity and water.

¹¹⁰ E.g. Kia's advertising: "Think before you drive: for long trips use the Sedona, for short ones use your loaf" or Coop Konsum': "We've stopped selling eggs from battery hens. Take 10 people with you in this telephone booth and you will understand why".

¹¹¹ In Europe, fair trade certified products are sold through over 64,800 points of sale (EFTA 2001) In 2002, international organic food market accounted for about US\$ 23 billion (IFOAM and FiBL 2006)

¹¹² The global market for organic products was estimated to be \$25 billion in 2004, and growth rates were between 5 and 40% in different countries. In Denmark, Sweden and Switzerland organic vegetables comprise over 6% of the total market share (Organic Monitor 2005) Fair trade products in the period of 1997-2003 increased in sales from 25,972 MT to 83,480 MT.

¹¹³ Segal, J. M. (2003). *Graceful Simplicity. Toward A Philosophy & Politics Of Simple Living.* New York, Henry Holt.

¹¹⁴ Center for a New American Dream (2007). Homepage of the Center for a New American Dream.

¹¹⁵ SCR (2006). *Sustainable Consumption Roundtable Briefing: Communities of Interest – and Action?* London, Sustainable Consumption Roundtable: 53.

¹¹⁶ The notion of car sharing might be very different in different countries, but provides similar results. E.g., in a Norwegian car cooperative one car is typically shared by 10 members. In Turkey a family of 10 people may share one car. The environmental results of sharing a car are the same in both countries, but the infrastructure and the social network behind are totally different.

foot, where parents collect children from the neighbourhood and walk them to school.¹¹⁷ Local Exchange Trading Schemes are local community-based networks, in which people exchange goods and services without using money. An important contribution to sustainable lifestyles are "grass roots" movements of schools and universities, including the eco-schools movement, the green campuses movement, greening conferences or parties, compensating travel with planting trees or buying carbon certificates. Many campuses have car pooling programmes and exchange networks for everything from student flats to clothes.

7.4 Challenges and opportunities

How to create, promote and mainstream **desirable visions of more** *sustainable living* for different *countries/regions* and for diverse cultural contexts.? This question remains one of the main challenges. It will be important, for example, to investigate what representations of *traditional and global lifestyles* people in developed and developing economies have and how images of more sustainable lifestyles can be built on cultural, historical, natural and social heritage of different countries.

Another challenge is how to **support and promote innovation for sustainable lifestyles** by *governments and businesses*. Strategies for *enabling infrastructures* require governmental policies, business initiatives and public-private partnerships. It is vital to understand how technology can help create new models of sustainable lifestyles and how business can use its communication power to deliver a different vision of society, aiming at improving quality of life and not only at increasing consumerism.

Perhaps the most profound challenge is **how public authorities can support and strengthen bottomup initiatives.** Here combination of the hardware (provision of physical spaces, grants and financial schemes) and the software (information dissemination, research and education) is clearly needed, as well as collaboration and support of NGOs, education institutions and communities.

The overarching challenge regards the role of **communication and education** in supporting and promoting and normalising visions of sustainable lifestyles. For that it is important that SCP ideas are introduced from pre-school to university education programmes, but professional and vocational training. In this way, the social capital – the awareness of the critical mass of population and the capacity for change can be created. The two Marrakech Task Forces led by Sweden and Italy play a very important role in this work.

A fundamental challenge is that the **right for more sustainable lifestyles and access to education for sustainable consumption** *should become a universal right*. Therefore, development of more sustainable societies should include devising visions of lifestyles for "non-consumer" class and developing innovative solutions and policy measures for less affluent parts of the world population.

¹¹⁷ Manzini, E. (2006). Creative communities and sustainable lifestyles: enabling platforms to support social innovation promising in terms of sustainability. SCORE, Wuppertal.

7.5 Key questions for the working group

Some key questions to be discussed among the participants in the working group on sustainable lifestyles and education for sustainable consumption (on 27 June, Group 7) are suggested below:

- 1. How are the key elements for promoting sustainable lifestyles and education for sustainable consumption that could be reflected in the key elements of the 10YFP on SCP?
- 2. What are the key priorities and actions needed in promoting a desirable vision for sustainable lifestyles in different countries and regions? or in other worlds, how to change the "software" of our societies?
- 3. What are the needed policy interventions to ensure the provision of the adequate infrastructure ("hardware") that enables the adoption of sustainable lifestyles?
- 4. What are the technological innovations (infrastructure, co-housing, sustainable product/services) needed to enable citizens to adopt sustainable lifestyles?
- 5. How to engage people in social actions and grass-root activities that promote sustainable lifestyles and work on education for sustainable consumption? How can governments support and replicate promising bottom-up initiatives?