Integrating Sustainable Consumption and Production into Poverty Reduction Strategy Papers

A Guidelines Manual

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Commissioned by United Nations Environment Programme (UNEP)

30 September 2006

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10YFP	Ten-year Framework of Programmes for Sustainable Consumption and Production
APR	Annual Progress Report
APWU	Autonomous Potable Water Unit
CDM	Clean Development Mechanism
CSCP	UNEP / Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production
DAC	Development Aid Committee (of the OECD)
DFID	UK Department for International Development
EBRD	European Bank for Reconstruction and Development
ECCA	Environmental Camps for Conservation Awareness
EDF	European Development Fund
EEA	European Environment Agency
EIB	European Investment Bank
EOF	Environmental Opportunities Facility
FDI	Foreign direct investment
GEF	Global Environment Facility
GDP	Gross Domestic Product
GHG	Greenhouse gas
GSB	Growing Sustainable Business initiative
GTZ	Deutsche Gesellschaft für technische Zusammenarbeit (German Society for technical co-operation)
HDI	Human Development Index
HDR	Human Development Report
ICLEI	International Council for Local Environmental Initiatives
IDA	International Development Association
IETC	International Environmental Technology Centre
IFC	International Finance Corporation
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
IUCN	World Conservation Union
KfW	German Development Bank
LDCs	Least Developed Countries

LED	Light Emitting Diode
LMMA	Locally Managed Marine Area
LUTW	Light Up the World Foundation
MDG	Millennium Development Goals
NCPC	National Cleaner Production Centre
NGO	Non-Governmental Organisation
NIB	Nordic Investment Bank
ODA	Official development assistance
OECD	Organization for Economic Co-operation and Development
POP	Persistent organic pollutant
PPP	Public Private Partnership
PREMA®	Profitable Environmental Management
PRSP	Poverty Reduction Strategy Paper
SCP	Sustainable Consumption and Production
SEPA	State Environmental Protection Administration
Sida	Swedish International Development Agency
SMEs	Small and Medium Sized Enterprises
TOI	Tour Operators Initiative
UN	United Nations
UN-DESA	UN Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP-DTIE	UNEP Division of Technology, Industry and Economics
UNEP-FI	UNEP Finance Initiative
UNIDO	United Nations International Development Organisation
UNISDR	UN International Strategy for Disaster Reduction
UNWTO	UN World Tourism Organisation
WBGU	German Advisory Council on Global Change
WDR	World Development Report
WHO	World Health Organisation
WRI	World Resources Institute
WTO	World Tourism Organisation

Introduction to the Manual

What is this Manual's aim?

The aim of this Manual is to provide conceptual and practical guidance for integrating sustainable consumption and production (SCP) in Poverty Reduction Strategy Papers (PRSPs). This Manual represents a way to formalise and implement synergies in the processes of promoting SCP and poverty reduction, both necessary for sustainable development.

Over the last years, various programmes and instruments have been developed and applied to coordinate development, as well as environmental policies in developing countries. For development policies, the development of PRSPs has been one of the most prominent activities[1]. In the environmental field, in some countries National Environmental Action Plans (NEAPs) have been developed.

This Manual aims to support national governments in the process of integrating SCP into the PRSPs. It provides the guidelines to promote coherence among the different policy planning processes. This will ensure that national strategic policy planning processes are more efficient and mutually supportive, as well as reduce poverty more effectively. This manual will also aid in the implementation of SCP as envisioned in the Marrakech Process, a major UN-led international process to implement SCP as was decided upon at the World Summit on Sustainable Development in 2002.

Targeting policy makers involved in PRSP process

This publication is primarily focused on aiding government officials involved in the development and implementation of Poverty Reduction Strategies (PRSs) within developing countries. However, development practitioners and those who are working to promote SCP, can also benefit from the Manual when viewed as a guide designed to improve their understanding of SCP as a framework and a tool to reduce poverty.

Providing conceptual and methodological guidance: from background to action in two parts

This Manual is divided in two parts: Part I intends to provide relevant background information with concrete examples of existing synergies between SCP and poverty reduction policies in different economic sectors, whereas Part II constitutes the guidelines and steps for specifically integrating SCP into PRSPs.

The objective of Part I is to lay a foundation where the need for and benefits of including SCP objectives and policies in poverty reduction strategies is understood, and where the links between SCP, poverty reduction and the mutual benefits arising from addressing them jointly is coherently explained.

Part I is divided into chapters that explore different concepts addressed throughout the manual. Chapter 1 describes the concepts of poverty reduction and sustainable consumption and production (SCP). They are introduced separately in this chapter to provide a conceptual background for understanding their multiple linkages. Chapter 2 shows the tangible benefits of addressing SCP and poverty reduction in an integrated manner, and provides some mechanisms and policies that enable governments to take this approach.

[1] For a description of Poverty Reduction Strategy Papers see Sub-Section 1.1.3

Chapter 3 illustrates how SCP links to poverty reduction by providing concrete examples of what SCP means in key economic sectors, how it contributes to poverty reduction, what measures exist for taking action and which public policies can be applied to progress further towards SCP and human development. The text is supplemented by recommendations for further reading offering opportunities for deeper insight into a specific sector or particular aspect of SCP.

Part II provides methodological guidance for the governments willing to mainstream SCP in their Poverty Reduction Strategy Papers (PRSPs). It provides procedural steps and content information in a ready-to-use manner, allowing the transfer of ideas illustrated in Part I into the specific texts to be included in their PRSPs or Annual Progress Reports (APRs).

This Manual was developed as part of an on-going UNEP project that promotes the integration of SCP into PRSPs and other implementation policies in selected pilot countries. In addition to these pilot countries, the project is hoping to stimulate the replication of such policy integration in other countries. Appendix I explains this UNEP project in brief.

PART I

SCP and poverty reduction:

Background information and opportunities

1 Introducing Poverty and SCP

This chapter provides an introduction to the concepts of poverty, including the aim of reducing poverty, and sustainable consumption and production (SCP). These concepts and the philosophies behind addressing them have arisen as distinct responses to two of the world's most pressing and immediate challenges, those of human deprivation and environmental degradation. Each of these concepts will be separately introduced in this chapter to provide the conceptual background necessary to understand the multiple linkage points between poverty reduction and SCP that will be introduced in Chapter 2.

1.1 About Poverty

1.1.1 What does poverty mean?

Multi-dimensionality of poverty

Reducing poverty is widely regarded as one of the main global challenges and has increasingly appeared on the agenda for many international debates, as well as being a political priority in many countries around the world. The discussions on how poverty is defined and how it can best be reduced are ongoing and have been developing over the last decades.

Conventional definitions of poverty focus on income and consumption levels, and are measured in monetary terms. However, the understanding about the nature and origins of poverty has been evolving in the recent years. The 'multi-dimensional' approach defines poverty as being comprised of different dimensions of deprivation. According to this approach, poverty means the inability of people to meet economic, social and other standards of well-being. Amartya Sen (1999), a Nobel Prize laureate, lists various living conditions in which people can or cannot achieve their "functionings" which provide people with the ability to achieve their ("capabilities"). According to Sen, poverty should be understood as "capability deprivation" that constrains people's ability to fulfil their basic needs, thereby impending on their ability to achieve what is ultimately identified as well-being.

The characteristics of each individual, their household and their social circumstances determine how they can provide for their basic needs on a given income level. While income remains an important determinant of how well individuals can satisfy their needs, other dimensions of poverty also exist. These include levels of health, education, access to goods and services, empowerment, community integration, gender equality and human rights.

Poverty assessments using participatory methodologies have revealed that these different dimensions matter immensely to the poor and affect how they set priorities to support their livelihoods. Different groups among the poor consider different dimensions of poverty to be relevant, depending on the social and environmental circumstances in which they live (see Box 1).

Box 1: Voices of the poor – poverty depends on contexts

The World Bank's *Voices of the Poor* series identifies the poor's perception of poverty based on interviews with 60,000 poor people in 60 countries (Robb, 1999; Narayan et al., 2000a; Narayan et al., 2000b; Narayan and Petesch, 2002).

Definitions of poverty and its causes vary by gender, age, culture and other social and economic contexts. In Ghana, for example, men in both rural and urban areas associate poverty with a lack of material assets and income; whereas for women, poverty is about food insecurity. The causes of poverty may also be perceived differently according to an individual's status and location. Farmers may link poverty to drought, degradation of soil fertility and lack of access to market places. While the poor in cities may experience rising prices, fewer employment opportunities and lack of secure tenure which may force them to live in densely populated informal settlements lacking proper sanitation. For those more wealthy, poverty is connected to deterioration in domestic and international terms of trade, lack of motivation to work among certain groups of people, price liberalisation and devaluation, lack of education and absence of governance.

Rural and urban poverty

The characteristics of the poor living in urban or rural areas are quite distinct.[2] When developing and applying adequate measures for poverty reduction, these different characteristics also need to be properly assessed and addressed. The following table provides a generic overview listing a few key characteristics of rural and urban poor people in developing countries. This Manual, especially Chapters 2 and 3, explores concrete means and feasible measures for poverty reductions in rural and urban areas differently.

Aspects	Rural Poor	Urban Poor
Economic activities	The rural poor are mainly engaged in mixed economic activities – based primarily on agriculture, but increasingly combined with non-farming activities through periodic migration. They generally have limited opportunities for cash income and are significantly dependent on self-provision.	Their activities are mainly based on the formal and informal urban labour markets, including the making and selling of goods and services. The urban poor obtain incomes primarily from semi-permanent wage labour, informal sector activities and petty trading.
Dependence on resources	The rural poor are highly dependent on access to common property resources, including water, land and forests.	The urban poor are highly dependent on cash to pay for essential items such as food, rent, school, energy, transport, water and sanitation.
Location and housing	Due to distance from urban centres and poor road and transport conditions, the rural poor are often isolated from economic infrastructure. Access to housing is rarely a problem *per se*, but land tenure may be insecure.	The urban poor have only limited access to adequate and affordable housing. Huge numbers live in slums with insecure tenure. New informal settlements are rapidly growing on the outskirts of urban areas because the poor cannot afford for the land needed for secure tenure or adequate housing.
Access to services	The rural poor often face limited access to basic services such as health care and education – mainly due to distance from these serv-	The urban poor often face limited access to basic services – mainly due to lack of income. They suffer from increasing environmental health

[2] For more information on the distinguishing characteristics of urban and rural poverty, see the World Bank's Poverty Reduction Strategy Paper Sourcebook.

	ices.	risks caused by increased population density and expansion of industrial activities.
Governance	Since rural areas often face limited government presence, the poor are largely removed from formal structures of political power. Traditional structures and rules play an important local role.	The urban poor have limited access to political power making them vulnerable to corruption and the misapplication of bureaucratic rules (e.g. mass evictions from slums).

Table 1: Generic characteristics of rural and urban areas (adopted from DFID, 2004)

Box 2: Facts and trends on poverty

- The proportion of people living on less than $1 a day worldwide dropped from 27.9 to 21.3 percent from 1990 to 2001.
- The number of people living on less than $1 a day rose from 227 to 313 million in Sub-Saharan Africa from 1990 to 2001. In Asia, it dropped from 936 to 703 million in the same period.
- The proportion of people living with insufficient food globally fell from 20 to 17 percent in one decade. All regions, but Western Asia have experienced progress.
- Eight of ten children not attending school live in Sub-Saharan Africa (42 percent) or Southern Asia (36 percent).
- 39 percent of wage and salary workers are women worldwide, while women also represent 62 percent of unpaid family workers.
- The percentage of women in national parliaments has risen, but is still at 21 percent in developed regions and 16 percent worldwide.
- From 1990 to 2004, the prevalence of HIV/AIDS has increased in all regions. It is estimated that 39 million people are living with HIV at the end of 2004.
- Malaria affects 350 to 500 million people worldwide each year. 90 percent of Malaria-related deaths occur in Sub-Saharan Africa.
- 1.1 billion people were still using water from unimproved sources in 2002.[3]
- The number of urban slum dwellers increased in all regions between 1990 and 2001 except Northern Africa. In Sub-Saharan Africa, the number rose from 101 to 166 million.
- Youth unemployment declined in Africa between 1993 and 2003 but remain the highest in the world.

(Compiled from UN, 2005a)

[3] 'Unimproved sources' refer to unprotected wells, springs, rivers or ponds, vendor-provided water, bottled water and tanker truck water (WHO and UNICEF, 2004: 4). For more information, see the water sector profile in Chapter 3.

1.1.2 International efforts for poverty reduction

UN Millennium Goals

In 2000, leaders from 189 governments agreed on the UN Millennium Development Goals (MDGs). These development goals present clear targets for worldwide poverty reduction to be achieved by 2015. The MDGs refocused the international commitments on poverty reduction from the past several decades, by addressing the different dimensions of poverty including hunger, disease, lack of adequate shelter, gender equality, education and environmental sustainability. The MDGs' quantifiable, time-bound targets and measurable indicators are expected to contribute by increasing the accountability of the international community towards improving global human well-being.

In the last years, progress towards achieving the MDGs has been made in a number of regions and sectors. However, this progress may be slower than what is required for the targets to be achieved within the defined timeline. In addition, this progress is not even dispersed and does not occur in all regions and sectors. If current trends persist, the poorest countries will be unable to meet many of the MDGs by 2015 (UN, 2005a). Regional differences are apparent: Asia has been able to reduce income poverty significantly, and some countries in this region have already met the target of halving income poverty. On the other hand, Sub-Saharan Africa most likely will be unable to achieve all goals, with ten out of sixteen targets showing no progress, while some have even experienced deterioration (UN, 2005b).

World Summit on Sustainable Development

The goal of reducing global poverty was taken up in the Johannesburg Plan of Implementation (JPOI), agreed upon at the World Summit of Sustainable Development (WSSD) in 2002. Eradicating poverty is seen as "the greatest global challenge facing the world today and an indispensable requirement for sustainable development, particularly for developing countries" (JPOI Chapter 2, p.3). The JPOI's Chapter 2 explicitly addresses several dimensions of poverty including basic health, access to knowledge and natural resources, sanitation, energy services and the protection of biodiversity and eco-systems.

Development needs national and local policies

The implementation of actions aimed at achieving the MDGs should occur at the country level, through country-owned development strategies that respond to local conditions and priorities. The JPOI assumes that each country is primarily responsible for its own sustainable development and poverty eradication, emphasising the role of sound national policies.

To achieve the MDGs countries need coherent strategies and procedures aimed at poverty reduction. Poverty Reduction Strategy Papers (PRSPs) provide a vehicle through which a country's policies, programmes and resource requirements can be coordinated and linked to the MDGs and the JPOI. The following section elaborates on the role of PRSPs in the promotion of growth focused on reducing poverty.

1.1.3 Poverty Reduction Strategy Papers – promoting broad-based growth and poverty reduction

1.1.3.1 Introducing Poverty Reduction Strategy Papers

Comprehensive country strategies for reducing poverty

Since 1999, developing countries seeking debt relief and concessional loans from the World Bank and the International Monetary Fund (IMF) have been asked to prepare a Poverty Reduction Strategy Paper (PRSP) through a participatory process involving civil society and a number of development partners (see Box 3: Core principles and key elements of PRSPs). While there is no required set of goals or indicators that need to be included in

PRSPs, governments are encouraged to frame the foreseen policies and specified activities against the background of the MDGs.

A PRSP should outline the steps the government intends to undertake in order to reduce poverty. To do this, the government has a number of policy instruments (e.g. regulatory, market-based, informational, voluntary instruments) at hand that need to be appropriately evaluated and selected, so as to design an optimal policy mix that promotes 'pro-poor' growth and reduces poverty. PRSPs describe a country's economic situation and set out the macro-economic, structural and social policies that together constitute a comprehensive strategy to reduce poverty. Besides the macro-economic and social policies, a number of countries have also begun to include environmental policies. In addition, it is important to take into account that the means to achieve the goal of poverty reduction should also formulated by taking into account the multi-dimensional nature of poverty, for example, the empowerment of the poor and marginalised communities (GTZ, 2003).

Box 3: Core principles and key elements of PRSPs

The World Bank sets out the following five core principles underpinning the development and implementation of PRSPs.

- **Country-driven and country-owned.** PRSPs should involve broad-based participation from civil society and the private sector during all stages, including formulation, implementation and outcome-based monitoring.
- **Results-oriented.** PRSPs should focus on outcomes that will benefit the poor.
- **Comprehensive.** PRSPs should recognise the multi-dimensional nature of poverty, and the scope of actions needed to reduce poverty effectively.
- **Partnership-oriented.** PRSPs should involve the coordinated participation of development partners, including bilateral and multilateral agencies and NGOs.
- **Based on medium and long-term perspectives.** PRSPs should recognise that sustained poverty reduction requires action over the medium and long term, as well as the short term.

The Bank also specifies four key areas of content for PRSPs:

- Macro-economic and structural policies to support sustainable growth from which the poor can benefit.
- Improvements in governance, including public sector financial management.
- Appropriate sectoral policies and programmes.
- Realistic costing and appropriate levels of funding for major programmes.

(Compiled from World Bank, 2002)

Improve aid coordination

Many governments have begun to use the PRSP process as a means to improve aid coordination. Many external development partners have been eager to work with governments in preparing strategies, and intend to adjust their own programmes to support these strategies. The international development community emphasises the potential of PRSPs to create clearer links between national public actions and international donor support to coordinate activities needed to successfully meet the MDGs.

1.1.3.2 The value of PRSPs – recent discussions

Mixed views on PRSPs

There have been debates over the value of PRSPs in national and international forums since the introduction of the concept. The PRSP approach has always been envisaged as evolving over time and with experience. Countries' first full PRSPs, while essential building blocks for the approach as a whole, represent only the initial step in this process.

A mixture of views exist over the effectiveness and efficiency of PRSPs among different stakeholders ranging from grass-roots civil society groups to the World Bank and the IMF (WRI, 2005). The Joint World Bank/IMF 2005 Poverty Reduction Strategy Review (World Bank and IMF, 2005) summarised the internal experience of these institutions, whilst a series of other contributions shows the need for continuous discussion and refinement of the PRSP approach (IISD, 2002; DFID et al., 2005; GTZ, 2005).

Among the positive aspects, it is recognised that PRSPs have improved transparency, by sharpening the focus on investment and institutions designed to reduce poverty, and by providing greater opportunities for civil society input and participation in a number of countries (Reed, 2004 cited in WRI, 2005). New policy dialogue spaces have been opened up and civil society representatives now have access to policy debates that were closed until recently (WRI, 2005). Some evidence suggests that there is an increase in expenditure on health, education and transport in countries that developed PRSPs, becoming catalysts for improvement in public financial management (World Bank and IMF, 2003 cited in WRI, 2005).

Despite these encouraging experiences, PRSPs have been subject to numerous critiques and discussions. Table 2 shows a summary of the main discussion points:

Participation	Every government is expected to engage a broad section of stakeholder groups in the development process of PRSPs. In reality, this participation has only been realised to a varying extent from country to country (Oxfam, 2004; South Bulletin, n.d), and ranges from hasty, superficial participation to enhanced and intensive participation. The existence of continuous information sharing through consultation, collaboration, empowerment and joint decision-making has not been the case in most PRSP processes (Oxfam, 2004).
Country Ownership	According to the World Bank and the IMF, PRSPs are supposed to be owned and controlled by individual governments implementing the process. Criticism of the PRSP processes has arisen from the lack of ownership by national governments and the strong influence of donors (ODI, 2004).
Balance within governments	Some PRSP processes are dominated by finance ministries in line with donors at the expense of other ministries, such as planning and line ministries (CIDSE/CI, 2004).
Gender	As poverty affects women and men differently, mainstreaming gender issues in PRSPs is considered detrimental (Oxfam, 2004). In almost all PRSPs, gender issues have been addressed rather weakly (Oxfam 2004), and in several countries poor women were excluded from participation in the development of PRSPs (Bread for the World, 2001).
Trade	Trade issues have received little attention in PRSPs. When the issues are discussed in PRSPs, the prominence tends to be given to trade liberalisation based on a simplistic view that liberalisation is good for the country. UNCTAD's analysis of 27 African countries notes that in only two instances (Mozambique and Rwanda) policies diverge from the conventional belief in trade liberalisation (Oxfam, 2004).

Table 2: Discussion points over PRSPs

Alignment to the MDGs

While early PRSPs often did not formulate targets in terms of the MDGs, most still had relatively good coverage of the MDG topics and the coverage has improved over time. Some recent PRSPs include an evaluation of pro-

gress toward each indicator of the MDGs, while others provide a qualitative assessment of the probability of their achievement and possible constraints. In some cases, the governments link the objectives of their PRSPs very closely to the MDGs. In other cases, although PRSPs include national development goals broadly consistent with the MDGs, the commitment to attain the MDGs is not linked directly to the specific policies and programmes defined in PRSPs. Countries need support for unifying their reporting on the outcomes against the MDGs and progress reporting on PRSs so as not to strain their limited capacity (World Bank and IMF, 2004).

Good practices have been emerging as country's customise their MDGs by relating them to country-specific goals. For example, Vietnam's Growth and Poverty Reduction Strategy articulates the government's commitment to the MDGs, but specifies its own goals and strategies (called the Vietnam Development Goals) adapted to local conditions. The targets and objectives included in Madagascar's PRS are consistent with the MDGs. The strategy uses the UN Millennium Declaration as one of its references and clearly links PRS's sub-programmes to specific MDGs. (ibid).

PRSPs on the Environment

The integration of environmental issues has been a big challenge for PRSPs. A consensus among stakeholders involved in PRSP processes is that relatively little attention has been given to environmental issues so far, particularly in their relation to poverty (IISD, 2002). PRSPs have not adequately "mainstreamed" environmental issues (WRI, 2005; Friends of the Earth International, 2004), and still focus heavily on economic growth and macroeconomic policies with little reference to environment and other cross-cutting issues (Bojö and Reddy, 2001; SDU, 2002 cited in Nunan et al., 2002). World Bank's reports affirm that final versions of PRSPs tend to show better mainstreaming of environmental issues than interim versions, pointing to a learning process with regards to the importance of the environment in poverty reduction (Bojö and Reddy, 2001).

Linkages between environmental issues and poverty

The linkages between environmental issues and poverty have been addressed to a varying degree across countries and environmental issues[4]:

- **Natural resources as a source of livelihood:** Although the poor depend on natural resources for their survival (see 2.2.1), this dependence is not explicitly highlighted in most PRSPs (Nunan et al., 2002; IISD, 2002).
- The multiple links between **health and the environment** are not consistently reflected in PRSPs. Some PRSPs link the challenge to improve sanitation to health issues, and only a few countries make a reference to indoor air pollution. The issues over water management and vector-borne diseases such as Malaria are not yet widely addressed (SDU, 2000 cited in Nunan et al., 2002).
- **Disaster preparedness** has been highlighted in a few countries, but its root causes are not addressed adequately (ibid). The inclusion of this issue has often been inspired by recently experienced natural catastrophes. For example, the encompassing treatment of the topic in the PRSP of Honduras can be attributed to the experience of Hurricane Mitch in 1998.
- **Access to products and services** is not linked to the environment, although functioning ecosystems play a key role in providing services to the poor, e.g. access to safe water. Access to improved sanitation could help

[4] These linkages between poverty and the environment are laid out in Chapter 2 in detail.

the poor to protect the water-based ecosystems they depend on, and therefore, needs to be identified as an environment-related priority (ibid).

Missing sectoral linkages

Industrial sectors can provide a starting point in the analysis of linkages between the environment and poverty, especially for the planning of adequate policy interventions. However, even if linkages between environment and poverty are provided, they are not specified for particular sectors. The main focus in most PRSPs has been agriculture (ibid), while forestry issues are seldom linked to poverty (WRI, 2005). Fisheries and coastal issues are ignored in most countries despite the fact that these issue affect the poor's livelihood and nutrition (ibid). In addition, water sector issues also have been 'inadequately and inconsistently' incorporated in many PRSPs (Slaymaker and Newborne, 2004 cited in WRI, 2005).

Problems of policy implementation

Even if the environmental issues are considered and corresponding priorities are set in the PRSPs, these "do not automatically translate into programmes for addressing environmental issues" (DFID et al., 2005: 27). Some countries that address environment issues in their PRSPs often fail to implement appropriate policy measures and show weak reporting on environmental issues (Bojö and Reddy, 2003: 16). These shortcomings in implementation might be attributed to a variety of reasons:

- **Funding of environmental measures:** The cost of environmental intervention and funding sources are not taken into account in most PRSPs, and many policy instruments for environmental measures require at least initial funding (IISD, 2002).
- **Indicators and monitoring:** Indicators for measuring the status of the environment are absent from many PRSPs, and very few countries include indicators to monitor poverty-environment impacts in their PRSPs (IISD, 2002). This creates lack of transparency since it is often unclear how much progress has been made towards environmental goals. In turn, this inhibits the implementation of targeted policies and corrective action in cases where the countries fail to reach the goals.
- **Institutional integration:** Legislative, institutional and regulatory integration needed for inducing poverty reduction through environmental management is not explicitly mentioned in most PRSPs (IISD, 2002). This can lead to isolated environmental policies which are not properly aligned to sectoral policy objectives and measures. The lack of policy coordination may reduce the effectiveness of environmental measures and unexpectedly increase their side effects.
- **Lacking participation of stakeholders:** Participation of stakeholders in regard to the environment has often been sporadic and unsystematic. Continuous interaction can create a climate of accountability, committing governments to take measures to actually tackle the issues set out in their PRSPs.

Beyond Environment mainstreaming

Therefore, it is important for governments to bear in mind the need to set concrete goals with clear indicators, to allocate the necessary budget and to ensure their PRSPs are developed through participatory decision-making process.

A number of institutions and international organisations currently undertaking activities that promote the integration of environmental and poverty reduction aspects (GTZ, DFID and CIDA 2005; UNEP and IISD, 2004). However, this publication aims to go a step further by promoting the concept of sustainable consumption and production (SCP) as a new approach that can significantly contribute to poverty reduction. It calls for policy makers to look beyond the task of just developing policies that address the linkages of environment and poverty alone, to

addressing environmental, social and economic aspects in an integrated manner through the adoption of a holistic thinking encompassing the entire production and consumption system from a life-cycle perspective.

Section 1.2 introduces the meaning and objectives of SCP. It also further outlines policy instruments that can help to set a framework for achieving sustainable consumption and production patterns, as well as pointing out the benefits of SCP with regard to alleviating poverty.

1.2 About Sustainable Consumption and Production

This section introduces the concept of sustainable consumption and production (SCP) and the political processes behind SCP ('Marrakech Process'). It first explains the need to change current consumption and production patterns, for which the concept of SCP is presented as a possible solution. Secondly, this section exhibits possible ways to operationalise the SCP concept and concretely implement these ideas through national policy-making efforts and strategic planning.

1.2.1 Unsustainable consumption and production patterns

In both developed and developing countries, the current consumption and production patterns are considerably 'unsustainable', albeit in different ways.

Emergence of a "global consumer class"

On the one hand, a 'consumption revolution' has been transforming the world. As stated by the World Watch Institute (2004), the consumption of goods and services has risen steadily in industrial nations for decades according to virtually all measurements, such as household expenditure, number of consumers and extraction of raw materials. These measurements also indicate rapid consumption growth in many developing countries. Private consumption expenditure, payments for goods and services at the household level, have increased fourfold between 1960 and 2000. This can partially be attributed to the increase in population, yet is due in greater part to prosperity advancement in many parts of the globe. In many parts of the world, the emergence of a 'global consumer class' can be observed as middle class, urban, well-educated and often young consumers are increasingly beginning to share similar consumption patterns around the world. This global consumer class now comprises more than 1.7 billion people who are increasingly oriented on the material satisfaction of their needs, partly influenced by advertising and new information technologies.

Low consumption levels in developing countries

On the other hand, a vast majority of the world's population, especially in developing countries, can hardly be called consumers, as they are unable to provide for even their daily basic needs. The overall numbers of economic activity display enormous disparities in consumption all over the world. While 12% of the world's population living in North America and Western Europe account for 60% of global private consumer spending, one third of the population living in South Asia and Sub-Saharan Africa account only for 3.2%. In 1999, 2.8 billion people, 2 out of every 5 humans on the planet, were living on less than $2 per day, and about 1.2 billion people were living below the extreme poverty line, with an average daily income of less than $1 (World Watch Institute, 2004). For all the world's poor, consumption expenditures are focused almost entirely on meeting their basic needs. Poor people struggle to survive on a daily basis, lacking access to clean drinking water and other basic services.

Current use of natural resources is beyond carrying capacity

In addition, concerns have arisen over the environmental and social impacts of current consumption and production patterns. Developed and emerging economies are characterised by the fact that the rate at which they use natural resources, in many cases, has gone far beyond the carrying capacities of ecosystems. This is causing a continuous deterioration of the global environment that poses concrete and severe hazards to our planet and to humanity as a whole. The level of production and consumption in a number of developing countries, let alone that of industrialised countries, has already exceeded what the earth can sustain. For example, WWF indicates that the countries in the Asia-Pacific region have already exceeded the earth's carrying capacity by seventy percent (2005: 8). According to the same report, only Cuba has achieved an adequate level of human development with-

out exceeding its carrying capacity.

Developing countries are facing the environmental consequences of global impacts caused by consumption and production outside their borders, as well as domestic pollution generated by obsolete technologies. Because the poor, more than the wealthy, rely on natural resources and sound environmental conditions for their well-being, the affects of environmental deterioration may further exacerbate their situation. It may undermine their livelihoods, making them vulnerable to health impacts from pollution to natural disasters, and hinder their access to essential services (WRI, 2005; World Bank, 2006; PEP, 2005a and 2005b; DFID et al., 2002). In addition, developing countries suffer profound social disparities, inequalities and inadequate public services that are barriers to human development.

Box 4: Trends and facts on SCP

The **global consumer class** (users of televisions, telephones and the Internet, along with the culture and ideals these products transmit) totals some 1.7 billion people – more than a quarter of the world. Almost half of this class now live in developing countries.

The **global ecological footprint** (measure of how much land and water is required to supply the resources that people demand, as well as to absorb the waste that they produce) was 13.5 billion hectares for all global population in 2001, or 2.2 hectares per person. In 2001, all humanity's ecological footprint was 2.5 times larger than that of 1961, and exceeded the earth's biological capacity by about 21 percent.

The **annual output of the world economy** grew from $31 trillion in 1990 to $42 trillion in 2000, compared to $6.2 trillion in 1950. This increase in economic activity created millions of new jobs, allowing people to consume more.

Private consumption expenditure – the amount spent on goods and services at the household level – topped $20 trillion in 2000, twice the level of 1975 and six times that of 1950.

The world's **energy production** rose by 42 percent between 1980 and 2000 and is projected to grow a further 150-230 percent by 2050 under current conditions.

The world's **energy consumption** has increased significantly since 1992 and is expected to grow at a rate of 2 percent per annum until 2020. The global consumption of fossil fuels increased by 10 percent between 1992 and 1999. Per capita use remains the highest in developed countries, where people consumed the equivalent of 6.4 tons of oil per year, about ten times the consumption in developing countries.

In the late 1990s, **agriculture** accounted for nearly a quarter of the GDP in low-income countries. Industrial wood products contributed $400 billion to the global economy in the early 1990s, and fisheries accounted for $55 billion in exports in 2000.

About 1.7 billion people, a third of the developing world's population, live in countries facing **water** stress (defined as countries that consume more than 20 percent of their renewable water supply each year). If current trends persist, this number could increase to 5.0 billion people by 2025.

Global wood consumption has increased by 64 percent since 1961. More than half of the 3.4 billion m^3 of annual **wood** consumption is burned for fuel; the rest is used for construction, paper and a variety of other wood products. Demand for lumber and pulp is expected to rise between 20 and 40 percent by 2010.

The world's **cereal** consumption has more than doubled in the last 30 years, and meat consumption has tripled since 1961. Some 34 percent of the world's grain crop is used to feed livestock raised for meat. A crucial factor in the rise in grain production has been the availability of fertiliser, which has increased more than fourfold since 1961. By 2020, demand for cereals is expected to increase by nearly 40 percent, and meat demand will surge by almost 60 percent.

The global **fish** catch has grown more than six-fold since 1950 to 122 million metric tons in 1997. Three quarters of the global catch is consumed directly by humans as fresh, frozen, dried or canned fish and shellfish. The remaining 25 percent is reduced to fishmeal and oil, which is used for both livestock and aquaculture fish feed. The demand for the direct consumption of fish is expected to grow some 20 percent by 2010.

Inequalities in consumption are drastic. Globally, 20 percent of the world's population in the highest-income countries accounts for 86 percent of total private consumption expenditure – the poorest 20 percent accounts for only around 1.5 percent. More specifically, the richest fifth of the global population:

- consumes 45 percent of all meat and fish; the poorest fifth 5 percent.
- consumes 58 percent of total energy; the poorest fifth less than 4 percent.
- has 74 percent of all telephone lines; the poorest fifth 1.5 percent.
- consumes 84 percent of all paper, the poorest fifth 1.1 percent.

The global **passenger car fleet** now exceeds 531 million, growing by about 11 million vehicles annually.

On average, someone living in a developed nation consumes twice as much grain, twice as much fish, three times as much meat, nine times as much paper, and eleven times as much gasoline as someone living in a developing nation.

(Compiled from UNDP et al., 2003; UNDP, 1998; WWF, 2004)

Taking into account the effects of the unsustainable patterns of consumption and production described above, the need for new approaches is apparent. In the past, policy efforts in developing countries have often aimed at raising the overall production and consumption levels by increasing investment in national and local industries. This has been done under the assumption that the rise in production will trickle down bringing economic and social benefits to the poor population in the medium to long run. However, such a 'trickle-down approach' does not necessarily guarantee the fulfilment of basic needs of the poor, and may lead to environmental and social consequences.

Achieving quality of life while reducing negative environmental and social impacts

Instead, sustainable patterns of consumption and production implies that development place its priorities on meeting the basic needs of the poor. Development should increase and protect the quality of life among the whole population, rather than simply increasing the volume of production and consumption. To achieve this, it is necessary to 'decouple' well-being from resource consumption. This means to reach the same well-being with fewer natural resources, by utilising resources more efficiently in less polluting ways. In this manner a better quality of life is coupled with economic, social and environmental benefits; and the long-term requirements for human development are taken into account. One example, would be the protection of the natural resource base in order to prevent today's achievement from compromising tomorrow's development. In the next section, the evolution and key elements of sustainable consumption and production (SCP) are explained.

1.2.2 Defining sustainable consumption and production

Two sides of the same coin

"Changing unsustainable patterns of consumption and production" is one of the major commitments of the Johannesburg Plan of Implementation (JPOI), which states that "[f]undamental changes in the way societies produce and consume are indispensable for achieving global sustainable development" (JPOI, Chapter 3). Sustainable consumption and production (SCP) has been described as a concept to achieve sustainable development, through the "use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations".

Consumption and production are two sides of the same coin. While sustainable production concerns the supply side, and focuses on the economic, social and environmental impacts of production processes, sustainable consumption addresses the demand side, and focuses on consumers' choices of goods and services, such as food, shelter, clothing, mobility and leisure.

Two separate spheres?

Looking into sustainable production, this concept aims at manufacturing and delivering goods and services by minimising their environmental impacts. Sustainable production can be promoted through different tools, ranging from policy-making and legislation, education and demonstration, to standards such as ISO 14001 certification and the promotion of pollution prevention, waste minimisation and cleaner technology. Besides environmental issues, it also deals with social aspects such as working conditions, health and safety at the workplace, gender and diversity.

Sustainable consumption, in conjunction, pursues the most efficient use of a product or service, combining consumer satisfaction with minimal environmental impacts (UNEP and CI, 2005; UNEP, 2005b; UN-DESA, 2003). Sustainable consumption does not necessarily translate into consuming less; rather defines a consumption that is more efficient and on that makes better-informed purchases by adopting less resource-intensive consumption and production patterns. Tools and strategies used for promoting sustainable consumption include consumer product information (e.g. certification and labelling), awareness raising (e.g. campaigns and information), consumer protection, sensible marketing and sustainable procurement in public and private institutions.

Definition of SCP

The concept of SCP aims at taking an integrated and coordinated approach towards consumption and production, by seeking positive synergies between different methodologies and tools. This will ensure that activities are mutually supportive. SCP has been described as:

> "…[a] holistic approach to minimizing negative environmental [and social] impacts from the production-consumption systems in society. SCP is the process of minimizing the direct and indirect impact on the environment [and society] of any action, investment, project, product or service, whether it is initiated in the production side, consumption side, or in any other part of society. SCP aims to maximize the efficiency and effectiveness of products, services, and investments along their entire life-cycles so that the needs of society are met without jeopardizing the ability of future generations to meet their needs." (UNEP, 2004).

With life-cycle thinking, SCP takes into account the impacts of goods, products or services in societies throughout the entire production-consumption system (See Figure 1). The production-consumption system itself is embedded in the environment, functioning both as source for all materials and energy inputs that are needed for production, and as a final repository for the emissions and waste outputs generated from production and consumption.

Box 5: The life-cycle approach: Different products, different impacts at different phases

The life-cycle approach takes into account the total impacts of goods, products and services throughout all phases of their life cycles, including raw material extraction, product design, production, marketing and distribution, consumption, recycling or reuse, and final disposal. It thereby integrates sustainable consumption and production strategies, preventing a piece-meal approach to the problems.

Different products have their main environmental impacts during different life cycle phases, making a thorough investigation necessary. Paper, for example, has large environmental impacts in the logging phase that depends on quality of forest management, as well as in the pulping and paper making stages that depends on the level of technologies used. Modest impacts also exist at the disposal stage, which depends on the types of recycling and disposal systems. Such products as vehicles, refrigerators, air conditioners and light bulbs make their greatest impact during the use phase due to energy consumption and emissions. This is also dependent on product design and consumer behaviour.

To measure and predict the environmental impacts of goods, product and services in the different phases of their entire existence, tools such as life cycle assessment (LCA) can be useful, allowing producers and policy makers to identify on which phases SCP policies should be focused. More information on life cycle approaches can be found on the website on UNEP's Life Cycle Initiative (http://lcinitiative.unep.fr/)

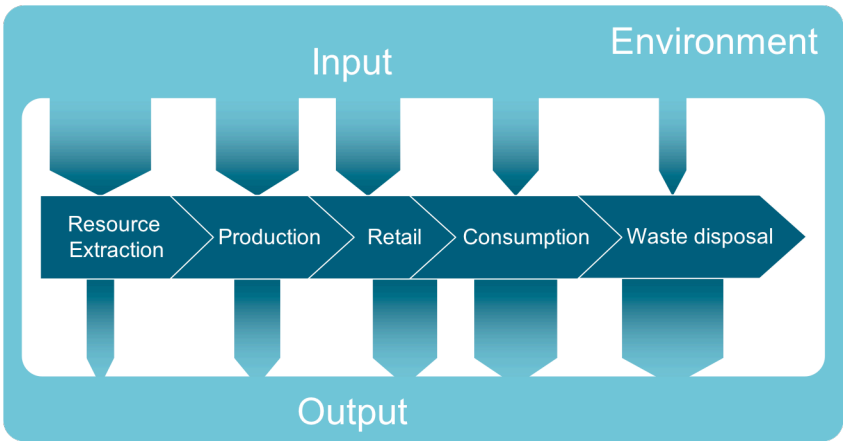

Figure 1: The production-consumption system in the environment (Source: CSCP)[5].

[5] The thickness of the arrows depicts a typical distribution of inputs and outputs in production-consumption systems, but may vary according to the type of product chain analysed.

1.2.3 International efforts on SCP – the Marrakech Process

The Marrakech Process – The political agenda behind SCP

At the World Summit on Sustainable Development in 2002, SCP became part of the international agenda. Chapter 3 of the Johannesburg Plan of Implementation (JPOI) is dedicated to changing unsustainable patterns of consumption and production. To achieve this governments have committed themselves to the "promotion of the development of a 10-year framework of programmes in support of regional and national initiatives to accelerate the shift towards sustainable consumption and production." At an International Expert Meeting on Sustainable Consumption and Production held in Marrakech in 2003, the so-called 'Marrakech Process' was brought to life. The UNEP together with the UN-DESA are the leading agencies supporting this international cooperation and development of regional strategies on SCP. The Marrakech Process consists mainly of four phases (see figure to the right).

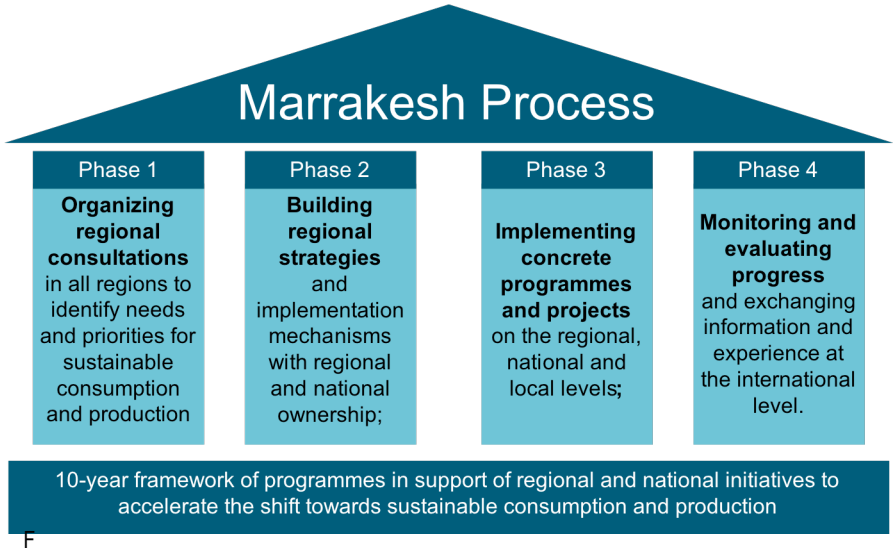

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Figure 2: The four phases of the Marrakech Process

Between 2003 and 2005, nine regional consultations (in Africa, Asia-Pacific, Europe, and Latin America and the Caribbean) were held, where each region identified its needs and priorities in terms of SCP. One of the most outstanding outcomes of these regional consultations was the development of the "African 10-Year Framework of Programmes on SCP" that was launched in May 2006 in Ethiopia. Latin America has also developed its Regional Strategy on SCP, and has set up the Regional Government Council on SCP supported by the Regional Forum of Environment Ministries. The EU is currently in the process of developing its Action Plan on Sustainable Consumption and Production within the Lisbon Strategy.

Box 6: Examples of SCP projects and activities identified in the Marrakech Process

Water and Sanitation: promotion of technology transfer, awareness raising and education programmes on water conserving techniques in agricultural and industrial use and implementation of integrated water resource management systems.

Energy: implementation of projects on renewable energy technologies in rural agriculture, promotion and development of decentralised power systems for small enterprises, campaigns on environmental education and information on sustainable use of energy through schools and in cooperation with NGOs and local communities.

Solid and Hazardous Waste: projects on solid waste collection and proper disposal mechanisms, awareness raising on waste reduction and recycling measures and the development of management programmes for sepa-

rating and disposing hazardous wastes.

Agricultural Products: development of new industrial uses and markets for sustainable goods and services, education and vocational trainings to overcome inefficiencies in production processes and the improvement in knowledge on alternative agricultural production methods.

Urban Planning and Mobility: development of integrative city development strategies and the upgrading of unplanned settlements, integration of urban and rural development strategies and the provision of affordable public mass transport and transit systems.

Economic development: promotion of sustainable goods and services, planning and set-up of industrial parks and the promotion of closed-loop material cycles.

Chapter 3 provides a more comprehensive list of SCP issues addressed by each industrial sector.

The Marrakech Task Forces

In order to support the implementation of concrete projects (Phase 3), the Marrakech Task Forces have been created. The Marrakech Task Forces are focused around voluntary initiatives led by countries that, in cooperation with other partners, commit themselves to carrying out a set of activities that support the implementation of specific areas of SCP. To date, the following Task Forces have been formed[6]:

- Cooperation with Africa (Germany)
- Sustainable Products (United Kingdom)
- Sustainable Lifestyles (Sweden)
- Sustainable Procurement (Switzerland)
- Sustainable Tourism (France)
- Sustainable Building and Construction (Finland)
- Education for sustainable consumption (Italy)

Cooperation Dialogue with Development Agencies

Another important mechanism is the 'Cooperation Dialogue Sessions' where development agencies and banks through collaboration implement SCP. The dialogue was initiated at the 2nd International Expert Meeting under the Marrakech Process, held in Costa Rica, September 2005. Its aim is to create better cooperation at the implementation phase of development projects which promote SCP while contributing to poverty reduction.

One of the activities of the Cooperation Dialogue was to conduct a survey on existing SCP-related projects supported by development agencies. The survey result showed that many agencies perceive the incorporation of SCP as helpful in reducing future costs, in contributing to poverty reduction and for resolving major environmental challenges. Half of the agencies believe SCP could improve access to basic services and enable more cost-effective practices, as well as provide new market opportunities while enabling the 'leapfrogging' of developing countries towards sustainability.[7]

The Marrakech Process emphasises the importance of linking work on SCP to poverty reduction and the attainment of the UN Millennium Development Goals (MDGs). It calls for the development and integration of SCP policies into national sustainable development strategies and other national plans when applicable, including Poverty Reduction Strategy Papers (PRSPs). The UN Millennium Development Goals most closely linked with SCP are:

6 For further information, visit www.unep.fr/sustain/10year/taskforce.htm
7 For further information please refer to http://www.unep.fr/pc/sustain/10year/Cooperation%20Dialogue.htm

Goal 1: Eradicate extreme poverty and hunger
Target 1. Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day
Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 7: Ensure environmental sustainability
Target 9. Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
Target 10. Halve, by 2015, the proportion of people without sustainable access to safe drinking water
Target 11. By 2020, have achieved a significant improvement in the lives of at least 100 million slum-dwellers
Goal 8: Develop a global partnership for development
Target 12. Further develop an open, rule-based, predictable, non-discriminatory trading and financial system that includes a commitment to good governance, development, and poverty reduction – both nationally and internationally
Target 13. Address the special needs of the least developed countries (LDC) that includes tariff and quota free access for LDC exports, enhanced programme of debt relief for HIPCs and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction
Target 14. Address the special needs of landlocked countries and small island developing states (through Barbados Programme and 22nd General Assembly provisions)
Target 15. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
Target 16. In cooperation with developing countries, develop and implement strategies for decent and productive work for youth
Target 17. In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries
Target 18. In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies

Table 3: Overview – UN Millennium Development Goals directly linked to SCP

1.2.4 Policy instruments for SCP implementation

1.2.4.1 Main stakeholders in SCP implementation

On the national and local level, a variety of stakeholders, including policy makers, businesses, civil society and consumers are involved in designing and implementing concrete SCP activities. Businesses, for example, have the ability to apply eco-design to their products, set up environmental management systems, innovate resource-efficient products and promote sustainable consumption through responsible advertising. The stakeholders indicated in the table below have been identified in the Marrakech Process as the key actors to promote and implement SCP:

Main stakeholders	Description
National and local governments	Government institutions are key actors, particularly in the development of a coherent strategic framework for SCP and in the implementation of policies on SCP. They accomplish this by combining well-designed regulations with economic incentives, information, training and cooperation policies.
Industry and business	Industry and business, including distributors and retailers as well as producers, play a key part in achieving SCP and sustainable development in their role as the providers of products and services required by society and sources of employment.
Civil society	Civil society, including NGOs, consumer organisations, trade unions and consumers in general, play a crucial role in promoting sustainable consumption and production patterns, through awareness raising activities and also everyday purchasing choices.

Media	The media, including advertising agencies, is a major driver in raising awareness of SCP among consumers.
Financial sector	The financial sector, including banks, financial institutions and donors, has a significant influence in the provision and assurance of financial flows towards the implementation of SCP activities.

Table 4: Main stakeholders for SCP (Compiled from UN-DESA et al., 2005).

1.2.4.2 Policy instruments for SCP

Instruments for a supportive policy framework

Among the stakeholders related to SCP, national and local governments play a key role in setting a supportive policy framework to promote the uptake of SCP activities on a national and local level. National and local governments have a variety of policy instruments at hand that can be used to promote SCP, many of which have already been successfully applied in both developed and developing countries. In all cases, the policy instruments should take into account the local socio-economic, environmental and cultural contexts.

Relationship to activities of other stakeholders

Policy instruments for SCP can also focus on promoting, supporting and guiding activities already undertaken by other stakeholders in society. Governments can take the lead in coordinating these activities and initiating new ones. Partnerships and joint implementation efforts form the basic foundation and strengthen many SCP activities, as explained in Section 2.2. Governments may join in these actions, e.g. by addressing their own consumption patterns through sustainable procurement or by implementing environmental management systems to consistently address impacts from their own internal operations.

Figure 3 provides an overview of selected policy instruments that governments and other stakeholders can use, many of which have already been successfully applied. They have been grouped below according to following five categories: regulatory, economic, education and research, informational, and cooperation and voluntary policy instruments. These categories are described below in more detail, offering concrete examples for each category.

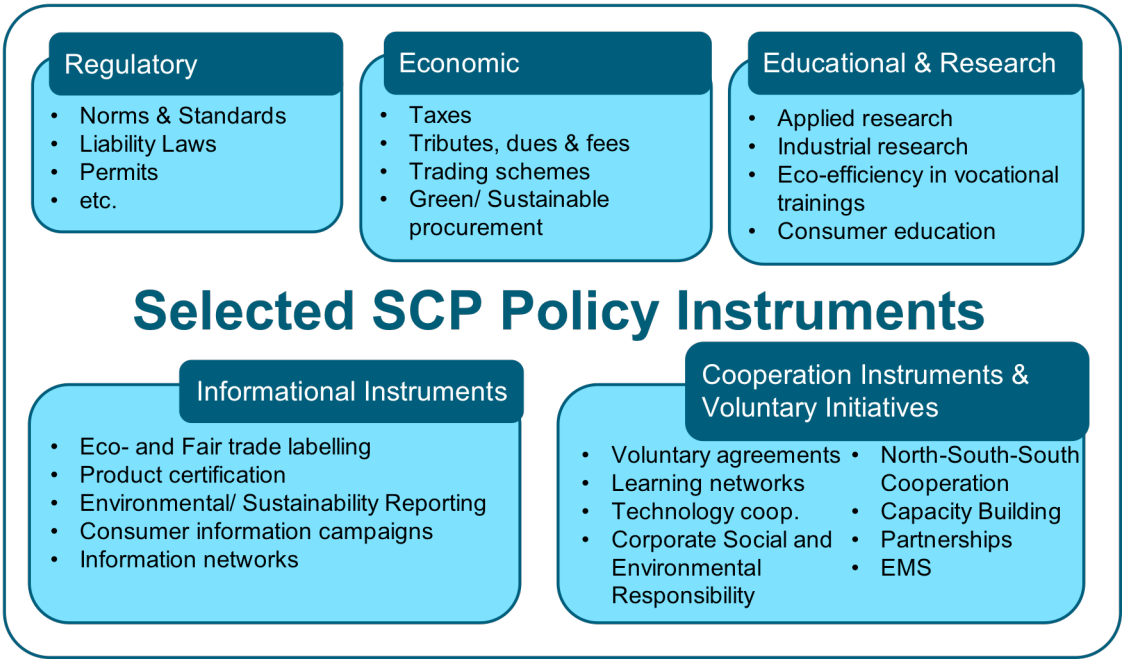


Figure 3: Examples of SCP policy instruments

Regulatory instruments

Regulatory instruments are instruments by which public authorities mandate a certain environmental performance or more efficient technologies. They prescribe specific behaviours for business, citizens and public institutions by determining binding requirements and limitations. They mainly address the supply side of SCP, but can also refer to the demand side, as is in the case in waste management legislation and procurement policies. An example is provided below:

Country	SCP instrument	Description	Source
Chile	Environmental standards for motor vehicles, both imported and those in operation.	To cope with high pollution levels, national and local policy makers in Chile have adopted a variety of regulatory instruments. Imported vehicles must comply with the government's standards, and the importing of second-hand vehicles is forbidden. On-street emission checks complement the stationary inspections to discover gaps in the system. Owing to those measures, most cars are now fitted with catalytic converters and the pollutants emitted have decreased by 10 to 45 percent in Santiago, despite a continuous growth of this metropolis.	Goedeking, 2004

Table 5: An example of regulatory instruments

Economic or market-based instruments

Economic or market-based instruments are incentive-based mechanisms that encourage better environmental and social performance. They include fees, taxes, subsidies, grants, price differentiation and market creation.

Prominent examples are environmental taxes such as energy taxes, transport taxes, pollution taxes and resource taxes. National and local governments can tax businesses or consumers on specific negative environmental impacts according to a physical unit (or a proxy of it). Similarly, emission-trading schemes aim at reducing emissions of certain pollutants by placing caps on these emissions. Another option is the removal of subsidies currently in place that have a harmful impact on the environment.

Moreover, as buyers of products and services, governments and the private sector can also help to shape market conditions by applying environmental and social criteria to procurement, service provision and administrative activities.

Country	SCP instruments	Description	Source
Indonesia	Combination of water charges and subsidies for nature conservation	In the Dumoka Bone National Park in Sulawesi, farmers were charged for their water usage as part of an extensive irrigation project. The charges were used to maintain and operate the irrigation systems, as well as fund nature and biodiversity conservation measures, which indirectly contributed to improved management of water catchment areas.	GTZ, 1995

Table 6: An example of economic or market-based instruments

Informational instruments

The lack of information often becomes a barrier preventing better environmental or social performance. To overcome this, a number of **informational instruments and schemes** are available. For instance, fair trade and eco-labelling schemes allow informed purchasing decisions for consumers. Coupled with suitable awareness raising campaigns, they can increase the demand for sustainable products and services and encourage environmentally friendly and socially responsible purchasing. The combination of information provision and fiscal measures may be effective as they reinforce each other. For example, graduated vehicle excise duty for cars can be linked with

the labelling of their environmental impact. The price signal reinforces the information on environmental performance, while clear information allows to take account of vehicle excise duty when making purchasing decisions.

Furthermore, consumer agencies and networks can provide support for pro-consumer legislation, advocate for access to financial and other consumer services (e.g. telephone services) and educate people about consumer issues.

Country	SCP instrument	Description	Source
Singapore	Green labelling scheme	Launched in 1982, the Singapore Green Labelling Scheme (SGLS) aims at helping the public identify environmentally friendly products – products that meet certain environmental standards specified by the scheme. The SGLS seeks to encourage the demand for 'greener' products in the market.	UNEP, 2004

Table 7: An example of informational instruments and schemes

Research and educational policies

Public funding and other support measures can stimulate public research bodies and businesses to direct resources toward the research and development of new sustainable products and services, as well as integrate SCP topics into school and vocational curricula.

Country	SCP instrument	Description	Source
Thailand	Environmental education	A Ministry of Education's project targeted students and teachers in more than 600 schools throughout the country to establish awareness about the advantages of saving energy in daily life. Consistent with its National Educational Reform, the main idea was to develop a learning process with a participatory approach and to encourage environmentally friendly behaviour among students, educators and local communities.	UNEP, 2004

Table 8: An example of research and educational policies

Cooperation Instruments and Voluntary Initiatives

As an alternative to direct intervention (e.g. regulations), governments can work with other stakeholders to develop voluntary measures. Through capacity building initiatives, voluntary agreements and learning networks involving public and private stakeholders, new innovative approaches to SCP can be explored. Cooperation between developing and developed countries can enhance technology transfer and support technology leapfrogging in developing countries. Furthermore, through innovative partnerships, businesses can understand society's demands about the need to consider the good of the wider community, enhancing ethical and philanthropic approaches.

Country	SCP instruments	Description	Source
Sri Lanka	Business support centre engaging stakeholders for promoting SCP	The Small and Medium Enterprise Developer (SMED) was initially set up as a project to strengthen the competitiveness of the Sri Lankan small and medium-sized enterprise (SME) sector. SMED has run a variety of programmes promoting cleaner production, i.e. by hosting the National Cleaner Production Centre or by cooperating with city and provincial councils, businesses and educational institutions. It has also raised consumer awareness and promoted green supply chain management and innovations.	UNEP, 2004

Mexico	Voluntary environmental audit programme	Mexican Environmental Enforcement Agency (PROFEPA) has an innovative programme for raising environmental compliance. Businesses sign a voluntary Environmental Action Plan committing them to comply with national legislation and international best practices. They have to allow the PROFEPA staff access to their sites and receive technical assistance from private consulting companies. In return, the business is allowed to bear the "Clear Industry" (Industria Limpia) seal approved by the government.	PROFEPA, 2000

Table 9: Examples of cooperation instruments

1.2.4.3 Designing coordinated SCP strategies

Combining SCP policies

It is important to keep in mind that there is no one-size-fits-all answer to effectively addressing and promoting SCP. Different policy instruments need to be used in various combinations to create wider programmes for SCP. Regulatory approaches focusing on the production processes have been the main tools for environmental and social protection historically. Regulations, however, are less easily applied to changing consumer behaviour, and may not be economically efficient or politically sound. Combining well-designed regulations with economic incentives, information and training, public-private partnerships and voluntary business initiatives can more effectively promote resource conservation, environmental protection and social development (UN-DESA et al., 2005).

The need for coordination

Given the broad scope of possible governmental activities, the consistency and coherency of public policies to ensure both the effectiveness and credibility of policy measures on SCP. Governmental actions at the local, national, regional and international level needs to be aligned in order to effectively promote SCP. Clear coordination is necessary among the policies applied by different governmental departments and between different economic sectors.

Dedicated SCP strategies

Countries around the world are starting to design dedicated SCP strategies to coordinate their activities. China, for instance, is currently developing plans for a 'Circular Economy', which features several SCP elements such as eco-efficiency and recycling schemes. In Europe, the UK government released a Framework for Sustainable Consumption and Production setting clear goals and required policy instruments.

Integrating SCP into national development plans

Another step could be the integration of SCP policies and activities into PRSPs, which offers new opportunities and benefits for developing countries, such as:

- **Setting the right priorities and choosing the best policy mix:** Analysis undertaken for strategic planning can help to set the right priorities, and to allocate scarce governmental resources to the most pressing issues or those with the greatest potential. Moreover, it enables policy makers to choose the best mixture of mutually supportive policies.
- **Aligning sustainability dimensions:** Various trade-offs and synergies exist between environmental, social and economic goals. Environmental objectives might conflict with the development of certain industries; in other cases they may actually be supportive. Integrated strategies can help to identify, evaluate and address these interdependencies in a very early stage of the process, developing potential synergies. These synergies are multiplied when production and consumption aspects are addressed in an integrated manner with the life-cycle approach.
- **Coordinating governmental actions:** Governmental actors on local, regional and national levels and in

different departments, together with industry and civil society stakeholders, need to take action on SCP. These actions should be coordinated to create mutually supportive measures and minimise negative side effects. Different public and private authorities need to agree on the priorities and actions to take, and integrated strategies can greatly facilitate this task.

- **Increasing support from society:** The vision created by taking a strategic approach can help to ensure support from society by enhancing transparency of goals and means by which they are achieved. This point bears special relevance in terms of how the mobilisation of different stakeholders is required to achieve SCP goals.
- **Exploring funding opportunities for SCP:** Taking a strategic approach to SCP implies constantly striving to find innovative funding opportunities and financial incentives to establish concrete programmes and activities. Therefore, the creation of partnerships for SCP between the government, business, financial institutions and international donor agencies is crucial for securing the establishment of a coherent SCP strategy.
- **Monitoring and corrective actions:** Strategic planning allows governments to set goals and assess their status of achievement. Corrective actions can in this way be better taken to maximise the effectiveness of policy instruments.

Next steps towards integration

To integrate and implement the concept of SCP more effectively in national development plans and programmes including PRSPs, it is crucial to demonstrate the direct, visible benefits and the means available to support the implementation of SCP in policy instruments. Chapter 2 therefore presents the linkages that exist between SCP and poverty reduction in more detail, and describes the tangible benefits arising when the promotion of SCP and poverty reduction are addressed in a strategic and coherent framework.

2 Policy opportunities for linking SCP to poverty reduction

In the previous chapter, the concepts of poverty and SCP were explained with a brief introduction on how the two concepts are connected. The role of policy makers working on PRSPs is to set the right frameworks and design sound policies that enable human development. Through the utilisation of SCP opportunities this can be accomplished without depleting the environment and by reducing poverty in their countries. How in practice this can be accomplished is the central theme of this chapter. Section 1.1 explains what tangible benefits can be realised when addressing SCP and poverty reduction in an integrated manner in developing countries. Section 1.2 provides a wide range of means that allow governments to implement poverty reduction projects based on the SCP concept through, for example, building effective partnerships or accessing diverse sources of finance.

2.1 How SCP can create tangible benefits for the poor

A number of tangible benefits for the poor in developing countries can be derived from properly targeted SCP policies and measures. Sub-Section 2.1.1 explains how SCP measures can secure and even improve the livelihoods of the poor living in the 'traditional economy', where people are subsistence-oriented and rely directly on nature to meet their basic needs. Sub-Section 2.1.2 further advocates that SCP can raise the income of the poor by creating market and employment opportunities in the 'money economy', from which the poor have been often excluded (Hart, 2005). Beyond income, SCP can also improve the health conditions of the poor (Sub-Section 2.1.3) and enhance their security by reducing their vulnerability to natural disasters (Sub-Section 2.1.4). Sub-Section 2.1.5 shows that SCP can be an innovative way to make products and services available to the poor to which they currently do not have access. Sub-Section 2.1.6 describes SCP's benefits in providing the poor with appropriate technologies to improve their living conditions. In this chapter, all these tangible benefits are described in generic terms. Chapter 3 shows more concrete information and examples of SCP measures according to the different economic sectors.

2.1.1 Protecting and improving sources of livelihoods

The poor's vulnerability to environmental degradation

The poor in developing countries, especially in rural areas, depend on the environment more than the wealthy to support their livelihoods. They often derive a significant amount of income, either in cash or for direct use, from local ecosystems (WRI, 2005). The resources extracted from nature can contribute to livelihoods in various ways: they can be directly consumed, be converted into durable household goods, serve as input for production activities, become part of household assets or be sold to generate cash income (Cavendish, 1999). Ecosystems also

reduce the vulnerability of the poor through 'regulating functions' such as purification, detoxification and mitigation of droughts and floods.

When livelihoods depend on the environment problems can arise when environmental degradation occurs, since it may reduce the income yielded from natural resources. This degradation may take numerous forms: soil erosion due to over-production and improper irrigation techniques, diminishing fish stocks due to over-catching, loss of biodiversity due to deforestation, changing weather conditions due to climate change, etc. The poor's higher dependency on the environment puts them in a particularly vulnerable position. This vulnerability has been further aggravated by the following factors:

- The poor often live on marginal lands where they are most likely to experience a decline in income resulting from environmental degradation. The World Bank estimates 1.3 billion people live on marginal lands worldwide (DFID et al., 2002).
- They have fewer opportunities to mitigate loss of income through adaptation such as switching to other crops, applying irrigation and using fertilisers. The poor living in rural areas also experience difficulties switching to non-agricultural activities.
- They often cannot accumulate sufficient stock and savings that can buffer the effects of environmental degradation and poor yields.

Income from protecting the environment

SCP policies aimed at decreasing environmental impacts can contribute to protecting ecosystems on which the poor depend for their livelihoods. Local resource management schemes, such as those listed in Table 10 which set an incentive for communities to protect natural resources, have the potential to lead to environmental improvements, increase the poor's income and secure their active contribution to communities (WRI, 2005). The below examples show how preservation and sensible use of natural resources can improve the livelihood of the poor through a rise in income and the creation of employment.

Location	Measure taken	Effect on income
Kalinga province, Philippines	Revived traditional irrigation and forest management techniques	Income of 1,000 poor families rose by an average of 27% in 6 years
Waiga village, Uttaranchal, India	Collective local agreement to restrict grazing and burning on the grasslands above the village	Fodder production rose 7-fold; surplus is sold
Fiji island	Establish 'taboo' zones where fishing and shellfish collection is limited to ensure ecosystem balance and help fish stock to recover	Income from marine resources increased by 35-43%

Table 10: Restoring ecosystems for higher local incomes (compiled from WRI, 2005)

2.1.2 Creating markets and employment opportunities

Employment through environmental activities

Protecting income derived from ecosystems is only one way in which the income of the poor can be increased through SCP. Another SCP opportunity is the creation of market and employment opportunities that enable the poor to sell their products and services, or to engage in paid employment.

Some activities with primary environmental and social aims can open up new employment opportunities. One key example is in the area of waste management, which requires significant labour input but can preserve natural

resources. The municipality office in Curitiba, Brazil set up recycling centres, at which the poor and the disadvantaged can exchange collected rubbish for bus tickets or staple food. The programme does not create additional costs for the local authority, as it saves landfill costs and creates revenue from the sales of recycled materials. In this way, the programme has helped a number of people by complementing their income while at the same time benefiting the environment (Klundert and Lardinoi, 1995). Sustainable tourism promotes sustainable utilisation of local ecosystems and workforce through the engagement of local communities. It can create a substantial number of qualified jobs if these tourism operations are appropriately managed (see the tourism sector profile in Chapter 3).

Strengthen local value chains

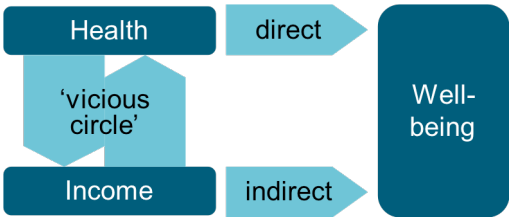
SCP can also strengthen local value chains. For example, the participation in one type of economic activity, such as agriculture for export markets, may create multiplier effects in local economies. This can be seen in the program initiated by the German Agency for Technical Cooperation (GTZ) where organic pest control and fertilisers were promoted, instead of spreading conventional chemical products. Organic pest control products can be produced locally, and in turn increases income opportunities for rural communities to their environmental advantages. Due to this project, the market of non-chemical pest control products has grown by approximately 10 percent per annum in several Central American countries (Guzmán, 2004).

New markets for the poor's products

The sales of organically produced[8] and 'fair trade'[9] products in developed countries have been increasing in the last decade. This reflects the trend that an increasing number of consumers in developed countries are concerned about the environmental and social impacts of the products they purchase on the other side of the planet. Through sustainable procurement, the public sector can also contribute to creating new markets for environmentally and socially friendly products[10]. Developing countries have the opportunity to capitalise on these trends. Fair trade provides better trading conditions for excluded and disadvantaged producers in poor communities through partnerships with NGOs, consumers or private groups in developed countries. Case studies of coffee producers suggest that engaging in fair trade yields "higher prices and better incomes" as well as "secure and stable employment" (Taylor, 2002).

2.1.3 Improving health conditions

Vicious circle of health deprivation and poverty



Having the ability to avoid preventable diseases is one of the determinants of well-being. Deprivations leading to deplorable health conditions increase the cost of medical treatment and lowers people's productivity, leading to a vicious circle that makes it even more difficult for the poor to break out of poverty (see the right figure). Many health issues are also closely related to environmental problems, particularly in the areas of water and air quality:

[8] Organic farming does not use chemicals and artificial fertilisers so that it reduces the resource input and protects farmers' health as well as conserves biodiversity. For more details, see the agriculture sector profile in chapter 3.
[9] The Fair Trade Foundation (UK) defines 'fair trade' as follows: "Fair trade is an alternative approach to conventional international trade. It is a trading partnership that aims at sustainable development for excluded and disadvantaged producers. It seeks to do this by providing better trading conditions, by awareness raising and by campaigning."
[10] The procurement spending certain cases accounts for a large proportion of a country's GDP (e.g. 16% of the GDP in the EU).

- **Water quality:** Approximately 3.1 percent of deaths worldwide (1.7 million) are attributed to unsafe drinking water and inadequate sanitation. 90 percent of these victims are children (WHO, 2002a). Food produced or cooked in an unhealthy environment can lead to serious health problems such as diarrhoea (WHO, 2002b).
- **Air quality:** It is estimated that 2.5 million deaths can be attributed to indoor air pollution caused by the lack of proper ventilation and use of inadequate fuels, such as firewood. Another 646,000 deaths yearly are attributed to air pollution in urban areas (WBGU, 2004). Abrupt changes in climate at global and local levels can have a negative impact on health through an increased spread of malaria and other vector-born diseases (WHO, 2003).

Solutions to environment-related health problems

In these areas, SCP thinking can also provide some tangible solutions. For example, the promotion of integrated water management through public-private partnerships, eco-efficient technologies and water efficiency practices can contribute to the improvement of the availability and quality of water, as well as increase access to safe drinking water (see the water sector profile in Chapter 3).

Similarly, air pollution can be reduced through the utilisation of available advanced technologies and practices and the improvement of sustainable public transport and energy production. There is great potential for improving the health and living conditions of the poor to be found in facilitation the access to renewable energy, cleaner energy sources and technologies. For example, introducing efficient cooking stoves and electric lamps can dramatically reduce the number of deaths caused by respiratory diseases, especially among women and children. Among popular projects in the area of renewable energy is the dissemination of solar-powered lamps. They are not only cleaner, but also once installed allow households to save money they would have spent on kerosene or firewood.

2.1.4 Decreasing vulnerability to natural and industrial disasters

Heavy cost of natural disasters

Natural disasters exert an enormous toll on development, and pose a significant threat to prospects for achieving the UN Millennium Development Goals (UNDP, 2004). Today, 85 percent of the people exposed to earthquakes, tropical cyclones, floods and droughts live in countries having either medium or low human development (UNDP, 2004). It is estimated that over 97 percent of natural disasters occur in developing countries, and from these countries 256 million people are affected by disruptive natural events each year (DFID et al., 2002). Natural disasters not only kill or injure people but enormously damage fragile developing economies. Annual economic losses associated with such disasters averaged US$ 75.5 billion in the 1960s, but increased worldwide in the 1990s to US$ 659.9 billion (UNDP, 2004). In 2000, Hurricane Mitch imposed costs consuming no less than 34 percent of the GDP for Belize, 38 percent in Honduras, and 50 percent in Nicaragua (UNISDR, 2005). The Indian Ocean Tsunami in 2004 took the lives of hundreds of thousands people, as well as inflicting enormous economic impact and recovery costs. The total economic damage to Indonesia alone is estimated at $4.5-5 billion – almost equal to the entire GDP of the devastated province, called Aceh Province. Environmental damages were also significant, costing $550 million (ADB, 2006).

Natural and industrial disasters further contribute to long-term social and economic problems. Immediate livelihood needs may force poor households to sell their assets, undermining future development (DFID et al., 2002). The number of refugees displaced due to environmental disasters is estimated to be higher than the number displaced by wars (ICRC, 1999 cited in DFID et al, 2002; World Bank, 2002). Climate change on a global scale is expected to aggravate and increase environmental disasters in the future. A number of climatologists believe that

climate change has contributed to the recent increase in the severity of tropical storms and extreme weather conditions (Hengeveld, 1998).

Factors making the poor vulnerable

Furthermore, poverty and disasters are intricately linked since natural and industrial disasters are likely to have the greatest impact on the poor because of the following factors:

- The poor often live in areas with a higher risk of natural and industrial disasters.
- They depend on houses and infrastructures that are of lower quality and less disaster proof (UNEP and IISD, 2004).
- They have less capacity to cope with the effects of natural disasters, because they are rarely able to relocate even in cases of foreseeable incidents.
- Ecosystems naturally in place to protect people from the damages caused by disasters may no longer exist having been exploited for short-term objectives, such as day-to-day survival (e.g. the collecting of firewood). This exploitation of forests and mangroves may cause deforestation, mudslides and increase flooding.
- A disaster pushes already vulnerable groups further into poverty. The loss of income earners through death or injury, the interruption of production or access to markets and the destruction of productive assets, such as home-based workshops, are all examples of ways in which disasters affect local and household economies.

Reducing vulnerability

There are various measures that can be taken to reduce the vulnerability of the poor[11]. For example, the sound management of ecosystems can preserve protective functions, therefore reducing vulnerability to natural and industrial disasters. In this way reducing disaster risks prevents the poor from becoming poorer. Building the capacity of the poor to cope with disasters would be also be key to reducing their vulnerability. This can be done by strengthening their knowledge, participation in managing local ecosystems and by improving social cohesion within communities. Community awareness and involvement are key factors in mitigating and limiting the impacts of disasters.

2.1.5 Meeting basic human needs by ensuring access

Lack of access to resources

In addition, the poor often lack adequate access to the resources necessary for satisfying their basic needs. They often lack access to basic services such as electricity and drinking water, postal service, information and communication media, and adequate road and transport systems. Women and children may need to spend many hours every day collecting water and firewood to survive. Another factor limiting their access to basic resources and services is the lack of secure tenure and insufficient land rights in farms and urban slums. The ownership of large-scale farming lands and mining sites may prevent poor and indigenous communities from obtaining access to natural resources necessary for sustaining their livelihoods and cultural heritage.

In regards to the purchasing of products and services, even when the poor are able to purchase they are often offered products inferior in performance at a higher price. It is reported that the poor tend to spend more money

[11] A variety of measures are introduced in a “community leader’s guide” on environmental protection and disaster reduction published by UNISDR (n.d.).

and time than those who are wealthier when purchasing the same types of goods and services. A case from India reveals high price differentials between those products obtained by the poor and the rich: fresh water was 37 times more expensive in poor communities; diarrhoea medication cost 10 times as much; even a basic staple food such as rice was 1.2 times more expensive. This resulted in the poor spending up to 10 percent of their income simply on purchasing clean drinking water (Prahalad and Hammond, 2002: see Figure 4).

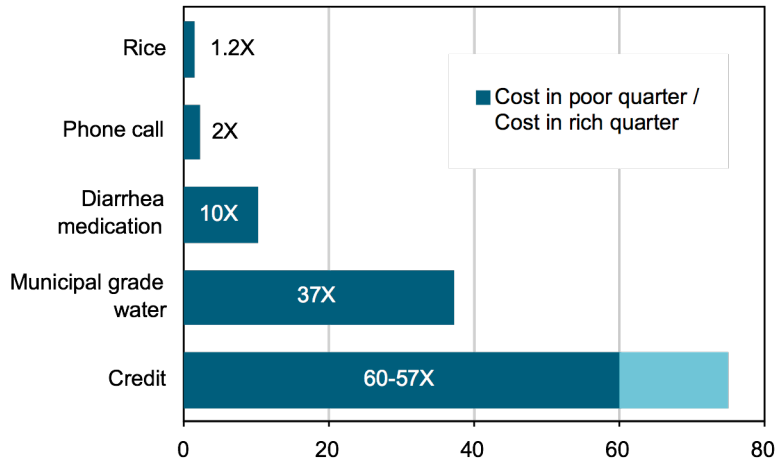


Figure 4: Price differential of common products and services in poor and rich areas (data from Prahalad and Hammond, 2002)

Role of the public and private sectors

As a result of these circumstances, governments in developing countries need to prioritise their policies around the improvement of access to the resources necessary to meet basic human needs. They can focus their development efforts on providing access to basic products and services through utilising the opportunities available with donor funding and public-private partnerships listed in the next section and Chapter 3. Governments can also encourage resource management in local communities to be conducted in a participatory manner, where the poor have the opportunity to voice their opinions. This community participation has the potential to improve their access to resources, as well as contributes to the alleviation of other non-economic poverties.

In recent years, the private sector has begun to recognise the poor as a potentially attractive market. Under the "Bottom of Pyramid" (BOP) model, Prahalad and Fruehauf (2004) advocate encouraging multinational companies and local business to take up the poverty reduction agenda by developing products and services catered to the poor. For example, some multinational drug manufacturers have started to lift restrictions related to the intellectual property rights of medicines essential for the poor. The lifting of these restrictions improves the access to medicine necessary for treating HIV/AIDS, malaria and tuberculosis. This measure has enabled local manufacturers to produce cheaper, generic medicine and has improved the poor's access to this treatment.

Micro-finance schemes around the world are another way to provide opportunities for the poor by enabling them to borrow small amounts of money with lower interest. This addresses the issue of the poor lacking access to the financial institutions necessary for the purchasing of initial inputs, starting their own business or filling the gaps if for various reasons their income declines. Governments can use such opportunities in partnership with the private sector or simply encourage more companies to take the pro-poor approach (explained in detail in the next section).

2.1.6 Enabling technology leapfrogging

Contribution of technologies to human development

Technology shapes patterns of consumption and production, thereby also exerting an influence on resource consumption, environmental impacts and the persistence of poverty. Appropriate technologies can enable societies to achieve social and economic progress, while at the same time help to minimise negative environmental and social impacts (UNDP, 2001). As an example, the contribution of technical progress towards solving some of the most pressing health challenges over the last decades proved larger than the contribution of education or the improvements in health due to gains in income. In some cases the contributions accounted for an improvement in health of up to 50 percent (see Figure 5: Technology as a source of mortality reduction, 1960–90).

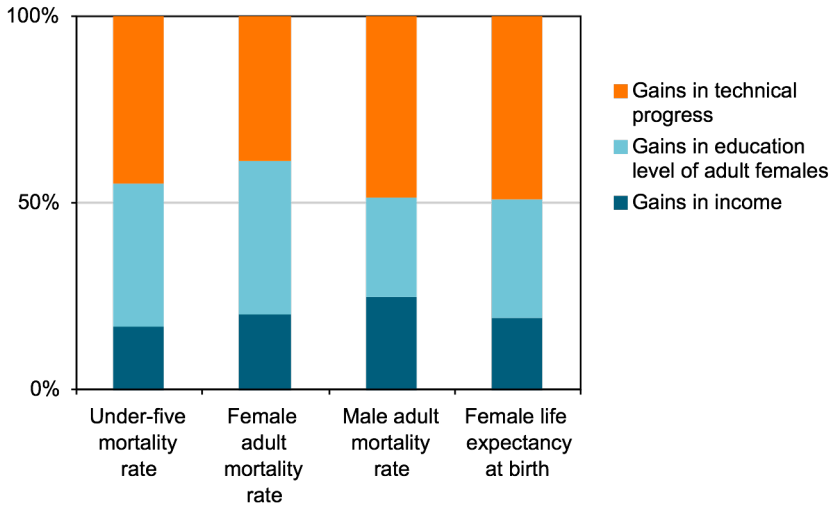


Figure 5: Technology as a source of mortality reduction, 1960–90 (Source: UNDP 2001)

The technologies applied in developing countries are often out-of-date or lagged behind those in developed countries, seriously inhibiting progress towards poverty reduction and sound environmental management. However, sound technological development in developing countries does not mean imitating developed countries; rather they should aim at leapfrogging over unsustainable stages of development. In order to avoid the serious environmental problems that developed countries struggle with and continue to face. Taking an alternative, sustainable path at an earlier stage of development can save considerable adaptation and remediation costs. This includes making the benefits of the latest technologies, especially information and communication technology (ICT), available to developing countries.

Appropriate technology available

For developing and promoting the application of appropriate technologies, SCP offers the following:

- **Promote environmental technology** for prevention, reduction, treatment and remediation in the areas of waste and emission (UNEP, 2005c), as well as for improving resource efficiency in production ("doing more with less"). It is critical for developing countries to avoid the mistakes made by developed countries during their course of development. This can be accomplished by passing along modern technologies that maximise resource efficiency and minimise environmental and social impacts, resulting in benefits for the poor. It is critical that such technology be applied to urban planning, already during construction, to maximise the ef-

fects of resource efficiency in houses and other buildings.

- **Clean energy technology:** The use of renewable and decentralised energy technology, such as solar, wind and hydropower, for example, can provide access to electricity among those in remote areas, not connected to the electricity grid.
- **Public infrastructure and shared use schemes** can improve access to basic services, while mitigating environmental impact associated with increasing consumption. Public transport, ICT kiosks, car sharing schemes and other opportunities allow the poor to access services delivered by up-to-date appliances and devices without creating the need to purchase them.
- **Promote equal access,** especially to technologies such as energy, transport and information and communication technology (ICT). The potential of applying ICT for a wide range of development goals depends on the existence of a 'level-playing field' where all societal groups have access to ICT with acceptable prices and minimal environmental impacts. Today, a large 'digital divide' persists within and between countries, and this may reinforce current patterns of unbalanced development if not addressed quickly and coherently (UNDP, 2001). One prominent example is the e-Choupals project in India, which enables farmers to market their products more efficiently and obtain better prices, thereby improving their income through communal use of computers in villages (WRI, 2005).

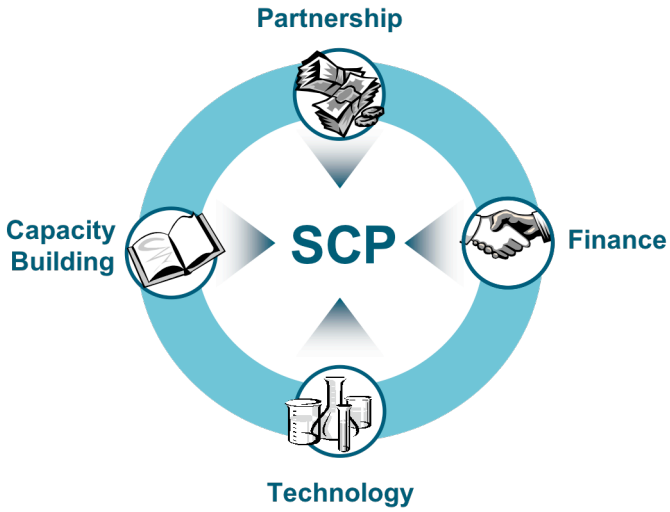
As technology patterns are connected to social structures, the solution lies in a "co-evolution between technical change and social adjustment" (UN Millennium Development Project, 2005b). The technological solutions proposed here should not be viewed in isolation, but are closely interwoven with other solutions envisioned by SCP.

This section has demonstrated how SCP can create tangible benefits through a variety of channels: by enhancing income, health, security, products and services accessibility, and technologies leapfrogging. Countries implementing SCP are already experiencing these opportunities; unfortunately, most are these solutions have not applied on the large scale. The next chapter examines the means available for enabling the implementation of policies to promote SCP aimed at benefiting the poor in developing countries.

2.2 Means enabling the implementation of SCP for poverty reduction

The previous section analysed a number of 'win-win' opportunities for reducing poverty by promoting SCP. These opportunities can be realised through a wide range of SCP policies and measures already being applied around the world, whilst further instruments will be identified and developed in coming years. In 2002, the Johannesburg Plan of Implementation (JPOI) called upon all governments to take further action to mobilise the provision of financial resources, technology transfer, capacity building and the diffusion of environmentally sound technologies (Chapter 3, paragraph 20). Most countries, however, have been cautious to take an advantage of SCP thinking until now.

To encourage policy makers in developing countries to embrace the opportunities presented by SCP, this section presents four major means available for introducing SCP measures for poverty reduction. These four means are: 1) awareness raising and capacity building, 2) engagement and partnership, 3) technology transfer and development and 4) funding and financing. In each of the sections describing the four means, the many opportunities already available for policy makers to utilise SCP measures to achieve strategic poverty reduction will be demonstrated. Secondly, it offers a list of concrete opportunities and best practice examples.



Four means enable developing countries to take up SCP.

2.2.1 Awareness raising and capacity building

The first barrier – lack of awareness

In the start-up of promoting SCP policies and measures, policy makers may first face the lack of awareness about this concept among consumers, NGOs and business leaders as well as their government. Awareness is needed in order for new policies, legislation, education and the creation of markets for sustainable products and services to be supported.

In the implementation of SCP policies, institutional and human capacities will be recognised as a major challenge. For instance, the UK Sustainable Development Strategy states that a "skills gap" needs to be addressed by the government, calling for further information and capacity building efforts for implementing the strategy. The regional SCP strategies for Africa and Latin America introduced in Chapter 1 reflect the need to strengthen the capacity of government institutions, personnel and decision makers so that they understand the concepts of SCP, in order to position the issues effectively within governmental structures and to improve capacity for policy development.

Focuses of awareness raising and capacity building activities

The key to the success of SCP implementation is cooperation among government agencies, as well as between governments and other actors in both the private sector and civil society. This cooperation should exist in both policy design and implementation. Awareness raising campaigns and training activities for SCP, therefore, need to target national and local governmental officials, as well as business and civil society. The focus of awareness raising and capacity building for each actor is listed below:

- **Governments:** First of all, it is critical for governmental officials to be aware of key SCP concepts and understand the value of taking the long-term benefits into account. They then need to become capable of developing and implementing suitable polices to promote SCP. They are encouraged to apply and promote the right policy-mix; including non-regulatory policy instruments (e.g. eco-labelling, voluntary business initiatives), the effective use of public-private partnerships and conventional financial and regulatory measures (see 2.2.4).
- **Business:** To capitalise on SCP, businesses need to obtain up-to-date technical knowledge about the possibilities available for using cleaner production technologies, sustainable design and life-cycle thinking. Businesses can be leaders of voluntary initiatives and partnerships that improve their environmental and social performance while increasing their economic yields. They are encouraged to be familiar with changing trends of consumer attitudes and behaviours over their products and services, as well as to create awareness in consumers about their sustainability performance.
- **Civil society:** Individual consumers, communities and NGOs need to be aware of the life-cycle impacts of products and services they consume, and educated on how to implement more sustainable consumption patterns into their lifestyles. Knowledge will empower them to make more informed purchases that will help to spread sustainable products, and collectively encourage behaviour that reduces the negative impacts during the consumption and disposal phases of good and services.

The opportunities for developing countries to participate in awareness raising and capacity building activities are rapidly increasing. Below is an overview of the existing opportunities:

Training

UN agencies and other institutions provide policy makers and business leaders with opportunities for raising awareness and training with regard to SCP. The following contacts can offer valuable experience and information:

Name	Services
National Cleaner Production Centres (NCPCs) www.uneptie.org/pc/cp/ncpc/home.htm	NCPCs were launched in 1994 in the framework of the **UNIDO/UNEP National Cleaner Production Centre (NCPC) programme.** Their function is to help achieve the adoption and further development of the "Cleaner Production" concept at national level. They provide six basic services: awareness-raising; demonstration projects; training of local experts; help in obtaining finance; dissemination of technical information; policy advice to national and local governments. The centres are in operation in 24 countries worldwide to date.
UNIDO International Technology Centres	UNIDO has set up 10 international and regional centres that aim to diffuse particular technologies, some of which relate to sustainable production, including the application of solar energy (Australia) and small hydropower (China and India).

UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP) www.scp-centre.org	Established in 2005, CSCP provides policy support for the Marrakech Process, as well as training on SCP measures with policy makers, business and civil society.

Table 11: Examples of SCP training providers

Guidebooks

UN agencies and other institutions have been providing guidebooks on SCP, including this publication, that promote among policy makers a better understanding of the SCP concept and available policy tools. In addition, these publications offer guidance on the practical implementations of SCP. There are also a number of reports and educational materials that target raising awareness of SCP among business and individual consumers.

Target group	Title	Contents
Policy makers	**Advancing Sustainable Consumption in Asia** UNEP, 2005.	This guidebook provides a general introduction to the SCP concept and the process of implementing SC measures, along with case studies from Asian countries. Although the book is targeted at Asian countries, the guidance provided is also relevant to countries in other regions.
	Sustainable Consumption: A global status report UNEP, 2002.	This report describes the changes in issues surrounding SCP since the Agenda 21 was published in 1992.
	Tracking Progress: Implementing sustainable consumption policies Consumer International and UNEP, 2004	This report presents the findings of a global governmental survey on the status of implementation of the sustainable consumption section in the UN Guidelines for Consumer Protection.
	Communicating Sustainability - How to produce effective public campaigns" UNEP and Futerra, 2005	This guide shows how the power of communication can be harnessed for achieving the goal of promoting more sustainable lifestyles. The guide is designed for local and national government authorities, or for anyone else everyone else wanting to develop and implement public awareness campaigns on these issues.
Business	**Talk the Walk: Advancing sustainable lifestyles through marketing and communications** UNEP, UN Global Compact and Utopies, 2005. www.talkthewalk.net	This report highlights the business case for SCP, and how marketing and communications can be conducted in a more responsible way.
Young consumers	**youthXchange** UNEP and UNESCO, 2004.	This guidebook aims to inform young people about the challenges of sustainable consumption and shows how they can make their own contribution.

Table 12: Examples of SCP guidebooks

Toolkits

There are some “toolkits” that introduce different tools for implementing particular aspects of SCP, particularly eco-efficiency and environmental management. Governments can guide business and civil society to the following toolkits when encouraging them to take actions for SCP.

Title	Contents
Efficient Entrepreneur Calendar (UNEP and Wuppertal Institute) www.efficient-entrepreneur.net	This programme targets small and medium-sized enterprises worldwide that are willing to reduce their resource use and operating costs in 12 steps. The "calendar" has been translated into several languages.
PREMA® – Profitable Environmental Management (GTZ) www.umweltschulen.de/audit/prema.html	The objective of the Profitable Environmental Management (PREMA) concept is to take the environment into account in operational processes at all levels. PREMA training modules have already been carried out successfully in more than 14 countries with representatives from many parts of the public and private sector. The accumulated savings achieved across all pilot projects totals some 4 million euros.

Table 13: Examples of SCP toolkits

Learning networks

The Marrakech Process has held a number of regional and national expert meetings to accelerate the shift towards SCP. Participation in those meetings allows countries to learn about state of the art SCP policies and measures. The implementation projects conducted under the Marrakech Process will offer the chance to develop new approaches in cooperation with leading actors worldwide.

Further information

For further information and consultations on awareness raising and capacity building opportunities, readers may contact UN-DESA, UNEP DTIE, or UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP).

Links	UNEP Division of Technology, Industry, and Economics (DTIE) Production and Consumption Branch	http://www.unep.fr/pc
	UN Division for Sustainable Development (UN-DESA) Marrakech Process page	http://www.un.org/esa/sustdev/sdissues/ consumption/Marrakech/conprod10Y.htm
	SANet: Sustainable Alternatives Network	www.sustainablealternatives.net

Box 7: Capacity building for policy makers in a local government in China

A capacity building project on SCP that directly targets policy makers is the PRODEV (Policy Reinforcement fOr Environmentally Sound and Socially Responsible Economic DEVelopment) project in China. The project is being conducted in partnership between UNEP and China's State Environmental Protection Administration (SEPA).

This project aims to improve the policy framework and promote a more integrated decision-making process in local governments based on the concept of 'Circular Economy' promoted by the Chinese government. The target group is local government policy makers in Guiyang, the capital of Guizhou Province. Chinese government trainers, mayors from other Chinese cities and various developing countries in Asia will also benefit from the project.

The project conducted a detailed policy framework study and a training workshop for Guiyang's policy makers. Policy gaps that inhibit the implementation of the Circular Economy programmes were identified, and action plans for policy modification and integration according to this concept will be developed. At the final stage, a large EU-Asia Mayors conference will be held to promote the replication of this approach in other cities.

2.2.2 Engagement and partnership

Partnership approach adopted by international communities

The World Bank defines, as one of its five core principles, that the Poverty Reduction Strategies Papers (PRSPs) must be "partnership-oriented", providing a basis for the active and coordinated participation of different stakeholders. As explained in Sub-section 1.1.4, poor countries need to gain ownership while at the same time ensuring participation of stakeholders in the development and implementation of their PRSPs.

In the last decade, UN agencies and donor governments have adopted participatory policies, encouraging counterpart governments to engage local communities and NGOs, identifying opportunities for public-private partnership. Some international and local NGOs have gradually moved away from having confrontational attitudes towards governments and businesses to a more collaborative style in order to find constructive solutions (Kuhndt el al., 2004). They are increasingly using market forces to achieve their goals. For example, by influencing consumer behaviour, holding governments and corporations more accountable and by developing sophisticated, market-based mechanisms to ensure that financial growth is not achieved at the expense of wider social or environmental well-being (SustainAbility et al., 2003). In the meantime, to avert potential criticism from NGOs about how their conduct may be leading to environmental and social degradation, businesses have approached NGOs to work with them as partners. These partnerships enable businesses to integrate social and environmental considerations into their operations, otherwise referred to as 'corporate social responsibility'. At the international level, this concept of partnership was 'institutionalised' at the World Summit for Sustainable Development (WSSD) in 2002. Voluntary, multi-stakeholder partnerships working towards sustainable development goals have, so far, proven to be an important complementary outcome of the WSSD.

Benefits of partnerships in realising SCP

The success of many SCP partnerships, as well as of many development policies and projects, relies on contributions and cooperation from various stakeholders including donors, businesses, NGOs and local communities. Governments desiring to promote SCP should actively engage stakeholders as partners and promote their participation in planning, implementing, monitoring and reviewing their policies and projects. Partnerships on SCP and development issues can provide the following benefits (Clayton-Dalal and Bass, 2002):

- **Obtain on-the-ground knowledge for sound policy formulation:** Stakeholder participation in the planning of SCP policies and projects facilitates the gathering of information and analytical insights previously not available to governments. In particular, local stakeholders, such as community groups, can provide on-the-ground knowledge about economic, environmental and social conditions in the various areas, as well as explaining the needs of poor people which is essential to the formation of sound and effective policies and planning.
- **Increase trust and ease building consensus:** Partnerships can foster trust between stakeholders who have different interests and priorities, resulting in greater transparency and credibility of the planned policy measures. It can also facilitate consensus and conflict resolution mechanisms needed at an early stage. This would enable governments to mobilise stakeholders towards effective implementation of SCP measures.
- **Encourage voluntary contributions:** Instead of applying 'hard' measures like regulatory or economic instruments, partnerships can mobilise voluntary contributions from different actors in society based on 'good will'.

- **Complement government resources:** Governments often do not have access to the financial, physical, human and organisational resources necessary to implement SCP policies. Therefore, partnerships have the potential to induce financial and in-kind contributions, as well as investments from businesses and NGOs that can complement government resources.

As stated in the WSSD, it is important to stress that these partnerships should not reduce government responsibilities and commitments. Instead, they are intended to strengthen implementation by involving those relevant stakeholders who can make a contribution to SCP (UN ECOSOC, 2006). Moreover, they can be a means for collaboration with international stakeholders, improving North-South and South-South cooperation.

For those who would like to utilise opportunities of engagement and partnerships, the below table provides a list of organisations helpful when searching for potential counterparts and ways to initiate the engagement process.

Organisation/Platform	Explanation
World Business Council for Sustainable Development (WBCSD) www.wbcsd.org	WBCSD brings together some 180 international companies in a shared commitment to sustainable development. The council works on a number of programmes to search for business solutions that support the Millennium Development Goals.
UNDP Growing Sustainable Business www.undp.org/business/gsb	This initiative facilitates business-led enterprise solutions to poverty. These enterprise solutions accelerate and sustain access to needed goods/services and livelihoods opportunities.
Supporting Entrepreneurs in Environment and Development (SEED) Initiative www.seedinit.org	This initiative aims to inspire, support and build the capacity of locally driven entrepreneurial partnerships. The core partners are UNDP, UNEP and the World Conservation Union (IUCN).
Partnerships for Sustainable Development http://webapps01.un.org/dsd/partnerships/public/	This database provides a list of over 300 partnership projects for sustainable development around the world.
US Government's Sustainable Development Partnerships www.sdp.gov	This website provides information about the US government's sustainable development partnership efforts to help countries create and implement their own development strategies.
Partnerships Central www.partnershipscentral.org	This is an online, one-stop shop of information, services, tools and networking facilities, based around an extensive multimedia showcase of partnership initiatives.
The Partnering Initiative www.thepartneringinitiative.org	This initiative is a collaboration between the International Business Leaders Forum and the University of Cambridge Programme for Industry. The initiative includes: learning programmes, professional skills development, action research and the development of complex partnership projects.
UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP) www.scp-centre.org	Under the programme “Human Development through Market”, CSCP facilitates business-NGO partnerships and entrepreneurial solutions towards poverty reduction in developing countries.

Table 14: Examples of organisation and platforms that facilitate engagement and partnerships

Box 8: Creating a sustainable value chain through a business-NGO partnership

Unilever, a British and Dutch multinational food and personal products company, identified that oil from the Allanblackia nuts widely grown in Eastern, Central and Western Africa could be more widely used than at present – for example, as a substitute for palm oil in spreads and soap manufacturing. However, no value chain existed to provide a high quantity and quality of Allanblackia oil, and farmers, transporters and crushers had not, so far, reaped the potential benefits from systematic harvesting. In addition, forest clearing in these areas had led to significant deforestation.

Instead of creating the value chain by themselves or with commercial partners, Unilever asked international and local NGOs for help to develop the chain in a responsible manner that would benefit local farmers and markets. The Netherlands Development Organisation (SNV) provided training for farmers in local villages and helped establish farmers' associations, while the World Conservation Union (IUCN) and the World Agroforestry Centre (ICRAF) offered scientific expertise and research for domestication and cultivation of Allanblackia trees, in order to ensure their sustainable use. Unilever guaranteed the market price for all Allanblackia oil produced, and invested in the establishment and strengthening of the value chain by supporting those NGOs.

This innovative business-NGO partnership has resulted in lowering the risks for farmers when trying new techniques and investing in equipment, while the increased and guaranteed value for the Allanblackia trees has encouraged them to conserve and assist in environmental preservation for the long term. Meanwhile, Unilever has reaped benefits by increasing its supply of hard-to-obtain raw materials and potentially creating a new global market for Allanblackia oil.

This initiative is now highly valued by donor agencies, as well as by the governments, in the regions where projects have been taking place. Supported by UNDP's Growing Sustainable Business initiative and the Swiss State Secretariat for Economic Affairs (SECO), the Allanblackia project has obtained further investment and expanded into several African countries including Tanzania, Ghana and Nigeria.

(Compiled from UNDP Growing Sustainable Business website)

Links	UN Global Compact	www.unglobalcompact.org/Issues/partnerships/index.html
	NextBillion.net – Development Through Enterprise	www.nextbillion.org
Further Reading	**Working with the Private Sector to Eliminate Poverty** DFID 2005	
	A Business Guide to Development Actors: Introducing company managers to the development community WBCSD and IBLF 2003	
	The 21st Century NGO: In the market for change SustainAbility, UN Global Compact and UNEP 2003	
	The Partnering Toolbook Tennyson, Ros 2004. The Partnering Initiative, Global Alliance for Improved Nutrition (GAIN), United Nations Development Programme (UNDP) and International Atomic Energy Agency (IAEA)	

2.2.3 Technology transfer and development

Roles of technology in development

Technology has played a major role in facilitating poverty reduction, and will be a key factor in achieving the Millennium Development Goals. As Lipton (2001) points out in reference to agriculture, technological advances can create a "virtuous circle" that leads to improvements in health and human productivity, a decline in mortality and fertility rates, increased investment in children's education and enhanced human capabilities to develop and use new techniques. However, it is unfortunate that today a large number of the poor still remain largely excluded from the benefits brought from these new technologies. Adopted by the UNEP in 2005, the 'Bali Strategic Plan for Technology Support and Capacity-building' lays out a strategy to apply a wide range of capacity-building activities in developing countries, as well as in countries with economies in transition on technology issues (UNEP, 2005c).

Get access to technology via technology transfer or local research and development

Generally, there are two major options to ensure access to technologies for developing countries:

- **Technology transfer**: Technology transfer refers to the process of introducing the technologies applied in one place to another. Development agencies have been working in technology cooperation in order to transfer successful technologies from their home countries to other countries in need. They have also exclusively developed new technologies that cater to the needs in developing countries. Companies investing in developing countries could also share their technologies with local industry, as well as their subsidiaries, in their invested regions. By utilising such opportunities, policy makers can actively help countries to obtain the latest technologies enabling SCP. Although technology transfer mostly means the export of technology from developed to developing countries ("North-South transfer"), the transfer among developing countries ("South-South transfer") is also increasing.
- **Local research and development (R&D):** Governments can induce technological innovations for SCP based on available knowledge and resources of local businesses, experts and communities. Locally developed technologies are more attuned to local conditions, since those involved in R&D are closer to users and can more easily identify their needs and capabilities. The Autonomous Potable Water Unit (APWU) described in Box 3 is one of such examples. Governments can set up an appropriate policy framework to help foster technological change that focuses on poverty reduction.

Organisations active in the field of technology transfer

In reality, the two means mentioned above cannot be clearly divided. Technology transfer programmes should take into account and foresee the necessity of adapting technology to address the priorities and abilities of users. As well, local conditions should be considered in order to make sure that the technologies bring benefits to the poor. Sometimes hybrid technologies, those that couple transferred and locally developed technologies, provide the best solutions. Moreover, technology transfer programmes should be coupled with sound capacity building activities. NGOs and entrepreneurs in developed countries can help local R&D by facilitating the engagement of the local community. Encouraging community members to come up with their own technological solutions to poverty in such areas as water, energy, construction and transport. The table below gives a list of organisations and platforms that provide information and opportunities for obtaining technologies that enable SCP.

Type	Organisation/Platform	Explanation
General	African Technology Development Forum www.atdforum.org	This Zambia-based platform facilitates the exchange and dissemination of information on inventions, technologies and business opportunities.

	Practical Action www.practicalaction.org	This UK-based NGO works with poor communities around the world to develop appropriate technologies in food production, agro-processing, energy, transport, small enterprise development, shelter and disaster mitigation.
	UNESCO Technology for Poverty Eradication (TAPE) http://portal.unesco.org/shs/en/ev.php-URL_ID=4945&URL_DO=DO_TOPIC&URL_SECTION=201.html	The objective of the TAPE projects is to inform, demonstrate, advocate and promote policy and activity relating to people living in poverty's access to technology.
Environmental technology	National Cleaner Production Centres (NCPCs) www.uneptie.org/pc/cp/ncpc/home.htm	See also Sub-section 2.2.1. Governments can set up a centre to facilitate the import of latest environmental technologies and encourage the dissemination of these technologies.
	International Environmental Technology Centre (IETC) http://www.unep.or.jp/	IETC promotes and implements environmentally sound technologies (ESTs), including management systems dealing with disaster prevention, production and consumption, water and sanitation.
Information and Communication Technology	TechBridgeWorld Initiative www.techbridgeworld.org	This initiative facilitates the collaboration between Camegie Mellon University (US) and developing countries around the world on designing and implementing creative technological solutions that will benefit development.
	Grameen Technology Center www.gfusa.org/technology_center	This is an initiative of the Grameen Foundation USA, and is working to eliminate poverty by leveraging the power of micro-credit and technology.
	UNDP Information and Communications Technology (ICT) for Development http://sdnhq.undp.org/it4dev/	UNDP helps countries to draw upon the expertise, including best practices, from around the world to develop strategies that expand access to and harness ICT for development.

Table 6: Examples of organisation and platforms for technology development

Empower the poor to apply technology

It is important to recognise that technological development alone cannot lead to the reduction of poverty. Many technologies designed to reduce poverty are already available, but are not accessible to the people who need them most. Currently, these people even lack access to the most basic technologies needed to support their livelihoods, including energy, water, shelter, sanitation and health. Under such circumstances, the best technologies for the poor may not necessarily be the latest high-tech solutions, but basic or 'intermediate' technologies developed based on local knowledge and resources. Therefore, the poor need to be enabled or empowered to make their own technical choices through the development of their capabilities. Governments need to provide the developers and users of appropriate technologies with more opportunities for capacity building and the necessary finances to enable a wider uptake of technology (ITDG, 2002).

Box 9: Local technology for satisfying basic needs

The Autonomous Potable Water Unit (APWU) is a low-cost, mobile, easy maintenance installation for providing potable water that works under adverse conditions. The technology was developed by the Uruguayan public water supply enterprise for Uruguayan soldiers on duty in Congo as UN peacekeepers. It provides an example of

innovative technology designed to serve basic needs in developing countries in a practical way. The system is easily installed, and does not require large infrastructure investments.

Following positive experience in Africa, the Uruguayan government installed 120 units in Uruguay, where the device has reduced water borne disease, especially cholera. It also provided units to Nicaragua, El Salvador and Venezuela when these countries experienced natural disasters. In 2002, a small unit was donated to the village of Talwandi Sabo, in Punjab, India, hoping India's demand for such units could reach 1,000 in five years. Hungary and South Africa have also expressed interest in this technology. As an export product, the technology is envisioned to provide local employment in metalworking industries.

(compiled from UN Millennium Development Project, 2005b).

Links	International Environmental Technology Centre (IETC) Link Collection	www.unep.or.jp/ietc/relatedlinks/
	UN Millennium Project Task Force on Science, Technology and Innovation	www.unmillenniumproject.org/ reports/tf_science.htm
	UNDP Information & Communication Technologies for Development	http://Sdnhq.undp.org/it4dev/
	UN Science & Technology for Development (StDev) portal	http://stdev.unctad.org/
	World Summit on the Information Society (WSIS)	www.itu.int/wsis/
	EU Environmental Technologies Action Plan	http://europa.eu.int/ comm/environment/etap/
	CADETT: Energy Efficiency and Renewable Energy at your fingertips	www.caddet.org
	GREENTIE: Supplier information at your fingertips	www.greentie.org
Further reading	**Innovation: applying knowledge in development.** UN Millennium Development Project, Report of the Task Force on Science, Technology and Innovation	
	Making new technologies work for human development UNDP 2001: Human Development Report 2001	
	Technology and Poverty Reduction in Asia and the Pacific Asian Development Bank and OECD Development Centre 2002	

2.2.4 Funding and financing

Finance as the most critical factor for enabling SCP

Regardless of the type or scale of SCP projects, financial resources critically determine the feasibility of these projects. Without financial resources, countries can merely produce a wish list of things that would be good to have, but are beyond their reach. Since the majority of poor countries have to stretch a limited budget between different priorities, hampered by a burden of external debt, ensuring finance for these projects can be a daunting task for policy makers who would like to promote SCP. The private sector also faces difficulties in attracting foreign direct investment (FDI) due to poor credit ratings caused by the lack of a stable social and political environment.

Increasing financing opportunities

However, diverse types of financial and funding opportunities have increasingly been made available for poor countries to make it possible for them to take up the SCP challenge. These include not only conventional development assistance, but also direct investment from the private sector and financial institutions, which can potentially offer much greater resources. Public and private investments tend to be complementary, and countries can maximise opportunities by utilising both sources. Each type of financial and funding opportunity has different characteristics, and hence different policies and mechanisms are applicable. The opportunities for SCP projects mainly exist as outlined below:

Environmental taxes and charges

One way for governments to self-finance SCP measures and projects, is the taxing or charging for national resource consumption or emissions. This enables governments to change the environmentally unsound behaviours of the private sector and consumers by making polluters and users of environmental services pay. In addition, phasing out 'perverse subsidies' that favour activities inflicting environmental damage can also free up financial resources. These resources can then be allocated to projects promoting SCP. Some countries have set aside certain revenues to fund SCP projects directly.

Type	Explanation
Carbon tax/fuel tax	Carbon tax is a tax on energy sources that emit carbon dioxide into the atmosphere. It can be implemented by placing a tax on gasoline and other types of energy production, such as coal-fired power plants. In the 1990s, Sweden, Finland, Norway and the Netherlands introduced carbon taxes. The European Union has been discussing a carbon tax covering its member states. The revenue from fuel tax (sales tax imposed on the sale of fuel) currently in place in many countries can also be diverted to fund SCP projects.
National environmental funds	Particularly in Eastern Europe, governments have earmarked revenue from pollution charges and fines for environmental funds. The funds can finance SCP projects through grants and soft loans. These can also operate at a regional or local level. For example, the Slovenian government uses a 10 percent sales tax on timber to finance a subsidy programme supporting forest management (Clayton-Dalal and Bass, 2002).

Table 15: Examples of environmental taxes and charges

Development grants

Bilateral and multilateral donors increasingly provide more grants for environmental and social development projects through official development assistance (ODA) or by means of cancelling debt owed to them. Through the 'Cooperation Dialogue', the UNEP has been promoting the SCP agenda among development agencies, and identifying mechanisms for cooperation that will integrate SCP into their programmes. According to a survey of 19 agencies, although most of them are not familiar with or do not use the SCP concept, 63 percent of the agencies perceive that SCP contributes to poverty reduction and the improvement of major environmental challenges. Many of the agencies have already integrated SCP issues at the sectoral project level, for example, 90 percent of them provide development assistance on eco-efficiency and cleaner production (UNEP-DTIE, 2006).

Type	Explanation
Increasing ODA for sustainable development	At the World Summit on Sustainable Development (WSSD) in 2002, many developed countries pledged to make an effort to reach the objective of giving 0.7 percent of their Gross National Income to ODA. The EU and its member states have undertaken efforts to raise the EU average from 0.31 percent to 0.39 percent by 2006. This will result in additional ODA of about EUR 22 billion between 2002 and 2006 and a further annual EUR 9 billion as of 2006.

Debt-for-nature swap	Originally introduced in the 1980s, this mechanism aims at cancelling the debt or currency claims against developing countries in exchange for environmental development commitments. For example, in 1994 the Canadian government cancelled 75 percent of the $22.7 Can million face value of debt owed to it by Peru. In return, the Peruvian Ministry of Economics and Finance paid 25 percent of the debt amount in local currency to a Poverty Fund, UNICEF and a Nature Fund (Clayton-Dalal and Bass, 2002).
The Global Environment Facility (GEF) www.gefweb.org	Established in 1991, the GEF has been promoting environmentally beneficial projects in developing countries. The GEF seeks to address environmental concerns in six broad areas: biological diversity, ozone depletion, climate change, international waters, land degradation and persistent organic pollutants (POPs). It provides concessional financing to cover the incremental costs necessary to allow projects in these areas to be implemented. The GEF is funded with US$ 7 billion commitments from the member countries, and mainly the World Bank, UNDP and UNEP implements these projects. Since its inception, over 1,300 projects in 140 countries have received support.

Table 16: Examples of bilateral and multilateral grants for SCP

Concessional loans

For innovative public or private ventures that offer major environmental or social benefits, there are a number of opportunities for obtaining concessional funding even though they may be unable to attract full commercial financing. This type of funding does not seek to maximise payback, leaving room for investment risk while offering interest below the market rate. It aims to accelerate the market's acceptance of business models and technologies that increasingly display environmental and social sustainability. However, this source is rather small compared to the needs that currently exist, and is only available on a highly selective basis. A better use of this source for poor countries' governments would therefore be a 'seed funding' to mobilise other sources of public and private funding, build capacity and stimulate political, regulatory and economic change. In this way, they can help financial institutions take a role in redirecting industry towards more sustainable production.

Type	Explanation
The Environmental Opportunities Facility (EOF) www.ifc.org/eof	The EOF was established by the International Finance Corporation (IFC) to support ventures that have a strong potential to increase environmental sustainability, but that must overcome the uncertainty associated with new markets, new technologies and new ways of doing business. It provides catalytic funding for innovative projects that produce goods and services with environmental benefits, such as clean drinking water. The EOF can also support eco-efficiency improvements. The EOF offers two types of support: a) project preparation grants, averaging $120,000 per project, and b) flexible investment funding, averaging $600,000 per project.
Loans from development financial institutions	For example, the German Development Bank (KfW) grants low-interest loans for investments that spread the use of renewable energies and improve energy efficiency to governments in developing countries, up to a total amount of €500 million under a special facility.

Table 17: Examples of concessional loans

Co-financing

The co-financing arrangements between the public and the private sector are able to increase risk taking and its rewards due to secured debt arranged by banks (World Economic Forum, 2005). Multilateral development banks and national development financing institutions such as IFC, the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Nordic Investment Bank (NIB), the Norwegian Investment Fund for Developing Countries (Norfund) are becoming active in encouraging co-financing. Government

guarantees can also form an important foundation for investment where there is inadequate collateral for loans.

Carbon financing

Carbon credits can be obtained when a project reduces or avoids the emission of greenhouse gases (GHGs), such as carbon dioxide and methane, relative to the levels that would have been emitted under a 'business as usual' scenario. For example, a new wind power plant that displaces the existing or expected coal-fired power generation would create a significant amount of credits. The new landfill technology that captures and utilises methane that previously would have escaped into the air could also earn carbon credits. Companies in developed countries, who would like to fulfil private commitments or have sector obligations to reduce GHG emissions, can obtain carbon credits that offset their emissions when they exceed the permitted level. This occurs when emission-saving projects in developing countries can be accomplished at a lower cost than reducing the company's own emissions. The governments and businesses of poor countries can utilise the carbon financing mechanism to fund SCP projects. The World Bank's Carbon Finance Division has been making concerted efforts with Africa's 23 least developed countries to source carbon credits from small-scale carbon reduction projects. Its pioneering work has paved the way for renewable energy and energy-efficiency projects in many Sub-Saharan countries.

Type	Explanation
The Clean Development Mechanism (CDM)	In the framework of the Kyoto Protocol, the clean development mechanism (CDM) provides opportunities for developed countries to implement project activities that reduce emissions in developing countries, in return for certified emission reductions (CERs). The CERs generated by such project activities can be used by developed countries to help meet their emissions targets under the Kyoto Protocol, as well as traded under existing emissions trading schemes. This provides a strong incentive for private companies to finance sustainable development investments in developing countries and to make technology transfer possible. Current market rates for carbon dioxide emissions are $6-9 per CO_2-tonne, and the total market for CDM projects is estimated to reach at least $ 3.35 billion by 2012 (Greene, 2005).
IFC Carbon Finance Facilities	The Facilities are arrangements under which IFC will purchase carbon credits for the benefit of the Dutch Government under the international emission reduction transfer rules of the Kyoto Protocol. IFC presently has about $80 million under management in two facilities to purchase credits: (a) the IFC - Netherlands Carbon Facility (INCaF) operating under the rules of the CDM; and (b) the Netherlands European Carbon Facility (NECaF) operating under the rules of the Joint Implementation (JI) mechanism and managed jointly with the World Bank. Payments for carbon credits purchased will be made to eligible projects in emerging markets and will provide them with additional revenue.
Carbon offset initiatives	These voluntary initiatives have been organised by NGOs or companies outside the Kyoto Mechanism. Any individuals or companies can participate by paying for the projects that offset their GHG emissions in developing countries, but they cannot earn carbon credits. The projects usually consist of forest preservation and energy-efficiency initiatives. Spurred on by the rising importance of corporate social responsibility, an increasing number of companies in developed countries have been participating in the initiatives.

Table 18: Examples of carbon financing schemes

Private investment

For developing countries as a whole, private capital flow amounted to more than four times the official flows in 2000 (World Bank, 2001), and thus potentially has a powerful influence on promoting SCP. Still, Sub-Saharan countries in Africa receive only 4.3 percent of the world's foreign direct investment (FDI) flows and the Least Developed Countries (LDCs) only 2.5 percent (UN Millennium Project, 2005c). Financial flows towards these coun-

tries need to be increased.

Some private investors have taken up the SCP agenda and fund SCP projects on a commercial basis. As an example, the Global Environment Fund is an international investment management firm established in 1990 to provide management support and investments to companies and projects that make positive contributions to environmental quality, human health and the sustainable management of natural resources. The firm's investments especially focus on companies whose business operations deliver measurable environmental improvements through the deployment of improved environmental infrastructure and 'clean' technologies. In Europe, there are already a number of financial institutions that invest exclusively in environmental and social projects in developing countries (e.g. Triodos Bank, ASN Bank, Henderson Global Investors). SCP projects can attract such investment from banks and private investors in developed countries. UNEP has been encouraging financial institutions to take environmental and social issues into account when making investment decisions through the UNEP Finance Initiative (UNEP-FI). The UNEP Sustainable Energy Finance Initiative (SEFI) is also provides financial institutions with the tools, support and networks needed to drive financial innovation that improves the environmental performance of the energy mix.

Micro-finance

Formal financial intermediaries, such as commercial banks, often do not serve poor households for reasons that include the lack of traditional collateral, high costs of small transactions and geographic isolation. Poor households' access to financial services is generally limited to informal transfers or loans. However, a diverse range of micro-enterprise credit programmes has emerged since the 1950s, enabling the poor to obtain financial resources by themselves. Micro-finance could provide the poor with the means of initiating SCP projects in a self-sufficient manner, such as the introduction of efficient water pumps and cooking stoves,. The institutions that provide micro-finance and credit services are becoming diverse, including NGOs, credit unions, non-bank financial intermediaries, commercial banks and community collectives. The governments can help micro-finance institutions by providing endowment and capacity building programmes, as well as sharing the risks involved in SCP projects.

NGO and foundation funding

Donor finance is often channelled through NGOs and does not pass through the government. Rather than regarding NGOs as competitors or watchdogs, governments can benefit by adopting a more positive approach to the contributions of NGOs, such as innovative policy proposals and SCP projects. Poor countries can also benefit from philanthropic activities and donations made by companies and foundations, in both developed and developing countries. Trust funds created and managed by NGOs or private organisations can provide a mechanism for financing the development and implementation of SCP measures and projects over a long-term period.

Box 10: A conservation trust fund in Peru

The National Fund for Natural State Protected Areas (PROFONANPE) is a private not-for-profit organisation in Peru, established in 1992 with the aim of supporting the conservation and management of the areas protected by the state. Its first activities were made possible through finance from German Agency for Technical Cooperation (GTZ). This contribution included financial assistance for the execution of three pilot projects, enabling the organisation to obtain its first experience in project financing and supervision. Additionally, the Coordination Office of the Peru-Canada Programme of the Forest Development granted the initial equipment necessary for the operation of the institution, and a grant from the MacArthur Foundation in the US also supported the first capital-raising campaign.

In 1995, $5.2 million was obtained from the Global Environment Facility (GEF) to operate as an endowment fund.

By 2000, PROFONANPE had attracted a total of $28.8 million from various sources, principally bilateral and multilateral donors such as Germany (KfW), Finland, and the Netherlands, as well as the MacArthur Foundation. Since 1996, the organisation has carried out six debt-for-nature swaps.

(Compiled from Clayton-Dalal and Bass, 2002; www.profonanpe.org.pe)

Box 11: SME investment funds that deploy local capital

Small and medium-sized enterprises (SMEs) in Africa are typically unable to secure commercial finance because local banks are reluctant to take on the risks associated with lending to entrepreneurs who lack business experience and collateral. The Shell Foundation in the UK is supporting the growth of SMEs that focus of supplying pro-poor energy sources and services in Africa, through the linked provision of both business development assistance and non-collateralised finance.

In partnership with local banks in Uganda and South Africa, the foundation has set up the $5 million Uganda Energy Fund and the $8 million Empowerment through Energy Fund in South Africa. In Uganda, DFCU Bank agreed to match the foundation's $2 million investment capital, while in South Africa the ABSA Bank and the Industrial Development Corporation contributed investment capital of $3.5 million each alongside the foundation's $1 million. The banks and the foundation share the risks.

By 2005, 345 pro-poor enterprises had received business development assistance, of which 170 are receiving finance and ongoing mentoring. Both funds are generating financial returns that are attractive to commercial investors. Currently, in the second stage of the project, $20 million is earmarked for each fund with the large majority of capital being provided by local banks. The foundation is planning to extend the investment partnership programme to other African countries.

(Compiled from Shell Foundation, 2005)

Links	Global Environment Facility (GEF)	www.gefweb.org
	IFC Carbon Finance Facilities	www.ifc.org/carbonfinance
	Carbon offset initiatives e.g. Climate Care (UK)	www.co2.org
	The Clean Development Mechanism (CDM)	http://cdm.unfccc.int
	UNEP Financing Cleaner Production	www.financingcp.org
	UNEP Risoe Centre on Energy, Climate and Sustainable Development (URC) – Capacity Building for CDM	www.uneprisoe.org/cdm
	Global Environment Fund	www.globalenvironmentfund.com
	UNEP Finance Initiative (UNEP-FI)	www.unepfi.org
	UNEP Sustainable Energy Finance Initiative (SEFI)	www.sefi.unep.org
	Triodos Bank (The Netherlands)	www.triodos.com
	ASN Bank (The Netherlands)	www.asnbank.nl
	Henderson Global Investors (UK)	www.henderson.com

	MacArthur Foundation (US)	www.macfound.org
	Shell Foundation (UK)	www.shellfoundation.org
Further reading	**Investing in Development: A Practical Plan to Achieve the Millennium Development Goals** UN Millennium Development Project 2005	
	Carbon Finance for Africa: An investor's guide Greene, W., Africa Practice, London, 2005. www.africapractice.com/case.html	
	World Development Report 2005: A Better Investment Climate For Everyone The World Bank, Washington DC, 2004. www.worldbank.org/wdr2005	

3 SCP issues and policies in selected sectors

3.1 Introduction

This chapter illustrates how implementation of SCP approaches in key economic sectors in developing countries can contribute through the market to poverty eradication, addressing aspects of poverty highlighted in Chapter 1. It moreover provides examples of SCP supporting policies and measures. Profiles of key economic sectors in developing countries cover issues and policy instruments during both consumption and production, thus taking a life-cycle approach to sector planning and policymaking.

3.1.1 Life-cycle thinking in sector planning and policy making

SCP is based on life-cycle thinking

As mentioned in Section 1.2.1 of Chapter 1, the SCP approach implies a focus on life-cycle thinking. In this respect SCP is about expanding the traditional focus on manufacturing facilities to a broader consideration of life-cycle impacts arising from raw material extraction, transport, production, use of products and end-of-life disposal. An expanded focus on life-cycle impacts can be justified through a consideration of overall impacts of consumption and production. Often the manufacturing phase, the traditional focus of environmental regulatory attention, indeed represents a minority of the overall impact with resource extraction and use-phases representing a greater source of impacts. Life-cycle thinking helps to make decisions in context with facts from all parts of the system or life-cycle (UNEP 2004, p. 8).

Life-cycle policies in developed countries

The majority of existing environmental legislation affects manufacturing production facilities. However, there trend in developed countries towards increasing the focus on products marketed by various sectors and the impacts associated to the different stages of their life-cycle from the cradle (the provision of resources and energy for their production) to the grave (their disposal or re-use and re-cycle after consumption phase) (Swedish Environmental Protection Agency 2005, p.66). One policy response to meet this new direction has been the development of the Extended Producer Responsibility (EPR) concept. EPR is the extension of the responsibility of producers for environmental impacts of products to the entire product life-cycle with a particular focus on product take-back, recycling, and disposal. Elements of EPR policy approaches are also being implemented or are under consideration in developing countries as a means to capitalise on the financial and management resources of the private sector to more effectively manage and recycle end-of-life products and generate employment opportunities.

Relevance in developing countries

Life-cycle and system thinking are of particular relevance in developing countries. To meet the – today partly unsatisfied – needs of growing populations, consumption levels need to increase and new consumption models are needed. In a situation where widespread environmental deterioration in developing countries already affects

income and living conditions of the poor, as outlined in chapter 2, achieving this increased consumption while avoiding ever more severe environmental disruption across product life-cycles will be paramount.

Policy making based on life-cycle thinking in developing countries should thus not only be concerned with minimising environmental impacts, but take into account benefits accruing to certain groups of the population, such as improved health through improved food and fresh water supplies. Extending access to products and services for the poor, increasing their quality and reducing unintended product related side-effects requires efforts that consider sector policies not limited only to the production phase, but consider how the sector can contribute to well-being in society during both consumption and production.

3.1.2 Scope of this Chapter

Five sectors in focus

Five economic sectors have been selected as examples – consumption and production activities in these tend to be of particular environmental, social and economic importance for developing countries and a clear relationship between SCP and poverty reduction can be demonstrated:

Sector	Description
Agriculture	Agricultural production, together with fishery and forestry, provides income to the majority of poor people, especially in rural areas and is also an essential source of nutrition.
Manufacturing	The production of goods, often for export, is a first important step in the development process of many countries, providing income and employment as well as products to satisfy needs of the poor in diverse areas.
Tourism	Includes all infrastructure and operations specifically serving persons travelling to, and staying in, places outside their usual place of residence for leisure, business and other purposes.
Energy	Energy services enable many activities essential for human well-being, however, energy production, especially when based on fossil fuels or unsustainably harvested biomass, can have severe environmental and social impacts.
Water	Access to water is considered a human right, but quantity & quality of water supply, growing demands in a variety of sectors as well as inequitable distribution of water excludes many from this essential resource.
Other sectors	Section 3.7 provides a brief summary of key issues and reading suggestions for forestry and hunting, fishing, construction, mining and quarrying, waste management and transport.

In each economic sector the following is described:

- **What does SCP mean in the sector:** This section includes an overview of the nature and magnitude of the most significant environmental, social and economic issues within the sector and finding the links with poverty.
- **Approaches for SCP in the sector:** This section provides important SCP concepts as well as a non-exhaustive list of policy instruments that can be applied to make consumption and production aspects of the sector more sustainable, addressing environmental, social and economic issues and contributing to poverty reduction. Where available, this section sketches broad sectoral sustainability strategies and relevant policy instruments.
- **Case study:** A concrete example of SCP policy implementation is provided in this section, describing the project and briefly evaluating its outcome. A succinct account will be given on how the case study made use

of the enabling opportunities described in Section 2.2.

- **Reading Material:** Key references used in the sector profiles and further recommendations for reading.

In addition to the five sector profiles, a brief summary of key issues and reading suggestions are provided for forestry and hunting, fishing, construction, mining and quarrying, waste management and transport. In addition to some key issues for these sectors an overview of key texts for further reading, guidelines and links is provided.

3.2 Agriculture

3.2.1 Introduction

Agriculture plays a crucial role in addressing the needs of growing populations. It is inextricably linked to poverty eradication, especially in developing countries and contributes substantially to millions of lives and to the economies of these nations: agriculture is vital to the poor as a source of living and expenditure (FAO, 2005a, DFID, 2005). The sector is especially central to the livelihoods of the rural poor who still constitute the majority (around 70%) of the world's poor in spite of rapid urbanisation in many regions (DFID, 2003, FAO, 2006:8).

3.2.2 What does SCP mean in the agricultural sector?

3.2.2.1 Environmental dimension

The multiple impacts from agriculture on the environment

Environmental impacts caused by agriculture are diverse. Intensive farming and the rapid expansion of production areas and volumes cause damage to eco-systems. Water and soil are among the main natural resources used by agricultural activities, while energy and chemical use remains a concern. An overview on the different environmental impacts along the agricultural value chain is provided in the following figure.

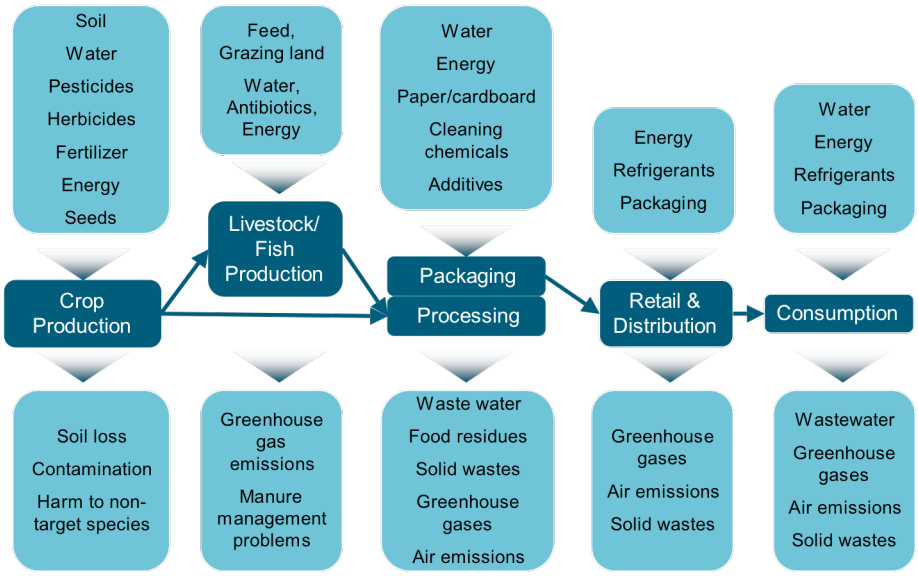


Figure 6: Environmental impacts on the agricultural value chain

The main environmental issues related to agriculture can be summarised as follows:

- **Water use:** Agriculture is the largest user of freshwater worldwide. The average amount of drinking water required for one person is about 4 litres per day, whereas water needed to produce food for one person for one day can exceed 2,000 litres. To produce one ton of grain, it takes 1,000 tons of water (UNEP, 2004: 2). Agricultural consumption of surface and groundwater can stress scarce water resources, especially in arid regions. Cultivation of food crops requiring artificial irrigation or construction of dams which divert important sources of water for neighbouring communities can impose significant demands on very scarce resources.
- **Energy use:** Energy is consumed at different stages of the agricultural life-cycle. This includes heating and ventilation for animals kept indoors, energy for transport and for food processing. As an example, coffee beans can require 750-1500 kg of wood per ton of dry coffee beans (FAO, 1987:11). Energy is also consumed during the consumption phase such as for motorised trips to shops and household food processing. With a trend to more 'convenience food' and increasing use of electric appliances this part of the life-cycle is increasing in importance (EEA 2005).
- **Soil degradation:** This includes the erosion of topsoil due to overuse and the resulting reduction in soil quality, deforestation and desertification. Erosion reduces soil productivity through the loss of nutrients, water storage capacity and organic matter (IISD, 1995). Today, roughly a third of the world's thin layer of topsoil is being lost through erosion faster than new soil is being formed with serious future impacts on productivity potential of agricultural land.
- **Chemical use:** Agricultural chemicals are widely applied, although less harmful and thus more sustainable alternatives exist. Global application of fertilisers increased from 14 million tons in 1959 to 137 million tons in 1998. The use of chemical fertilisers and pesticides creates movement of harmful substances that require control and monitoring to ensure ecosystems and human health arte not harmed through the spread of pesticide residues (see section on social issues in agriculture).
- **Biodiversity:** Monoculture agriculture can threaten biodiversity and thereby decrease the resilience of ecosystems. From the 7,000 species that have been used for food or animal feed since agriculture began, today some 30 species provide 95% of the food supply with wheat, rice and maize alone accounting for over 50% (UNEP, 2004). Monocultures in agriculture can also reduce wildlife biodiversity. Foreign species introduced for agriculture have invaded local ecosystems and displaced traditional species. Changing ecosystems can directly impact the poor, by reducing the opportunities for hunting or collecting plants, including the loss of traditional medical plants.
- **Climate change:** The contribution of agriculture to climate change is significant. FAO estimates that agriculture is the source of about one third of total greenhouse gas emissions mainly due to deforestation and the burning of biomass (FAO 2001b)[12]. Most of the methane in the atmosphere comes from domestic ruminants, forest fires, wetland rice cultivation and waste products, while conventional tillage and fertiliser use account for 70% of the nitrous oxides (FAO, 2001b).
- **Pollution of surface and underground waters:** Intensive agriculture using excessive nitrogen based fertilisers or animal manure can result in high nitrate content in ground and surface water; nitrates in water stimu-

[12] For measuring the contribution of agriculture to greenhouse gas emissions, it is important to consider the difference between direct emissions of agriculture and emissions or sequestration caused by changes in land use patterns, e.g. through reforestation.

late algae growth and eutrophication with associated loss of quality and biodiversity of freshwaters. Nitrates are moreover a hazard to human health as nitrate in drinking water can cause a serious blood condition in young babies. Animal livestock production, especially on large scales, leads to similar pollution problems. Phosphorus is another important plant nutrient, which is added to soils in chemical fertilisers and organic manures. Phosphate runoff from croplands enters surface water and degrades water quality in a similar manner to nitrate causing eutrophication problems. Moreover, erosion from conventional tillage causes the silting of reservoirs, ponds and lakes (UNEP, 2004).

- **Solid waste:** While waste occurs even during production steps (e.g. used pesticide cans as a source of hazardous waste is a growing problem in developing countries), but most markedly during the consumption phase. In the European Union, more than two thirds of packaging waste is related to food and packaging waste is expected to grow by 50% by 2020. Although food waste is expected to grow more slowly than GDP, about one quarter of food production presently ends up as waste (EEA 2005). With the emergence of a global consumer class, similar waste patterns connected to food production and consumption are likely to emerge in developing countries.

Repercussions on agricultural productivity

The pressures that agriculture exerts on the environment can, in return, decrease agricultural productivity, exacerbating the problems of poverty and food insecurity (FAO, 2006). High erosion in developing countries is increasingly turning productive land into wasteland or desert land, with an estimated 5 to 6 million hectares of cropland abandoned worldwide each year. Also, pollution in water, soil and the atmosphere from agriculture has a severe impact on the functioning of eco-systems in many areas. Climate change also has the potential to reduce cultivable rain fed land and consequently impact food production by as much as 11% in developing countries (according to estimations by FAO, 2005c). Declining agricultural productivity is an issue with significant social and economic implications.

3.2.2.2 Social dimension

Key to hunger

Hunger is one of the pressing social problems of our times for which agriculture is part of the solution. It is estimated that around 25,000 people (especially children) die as a result of lack of food or malnutrition daily. It is also estimated that one in seven of the world's population is short of food. The most recent estimates by FAO indicate that the number of people in the world who were undernourished in 2000-2002 was 852 million, of which 815 million were in developing countries (FAO, 2006:3).

Provide income for the poor

Agriculture is a major source of income for poor people: Small-scale agriculture provides a livelihood for at least one billion people worldwide with the majority of these being in Africa, Latin America & the Caribbean, and South East Asia (UNEP 2004c). Subsistence agriculture allows farmers to provide for their own nutritional needs, and sell surplus production to cover other expenses. Of growing importance is the farming of *cash crops*[13] for sale in domestic or export markets. While cash crops are not consumed directly by the local population, the revenue they generate presents an important source of income for many poor communities.

[13] **Cash crop** is a crop which is grown to be sold. The term is used to differentiate from subsistence crops, which are those fed to the producer's own livestock or grown as food for the producer's family.

Need to ensure equitable access to land and other resources

In order to fulfil the function of generating income, farmers require equitable access to land and other resources. A significant share of agriculture, especially when the poor are involved, takes place on small plots usually located on marginal land. Additionally, many small farmers receive only small fraction of the price at the point of sale. Reasons for this include dependence on middlemen to facilitate trade, a lack of information on agricultural prices and transaction costs that are necessary to overcome in order to access formal agricultural markets. Other social issues include child labour, low wages paid to farm workers, and poor working conditions such as long working hours on plantations.

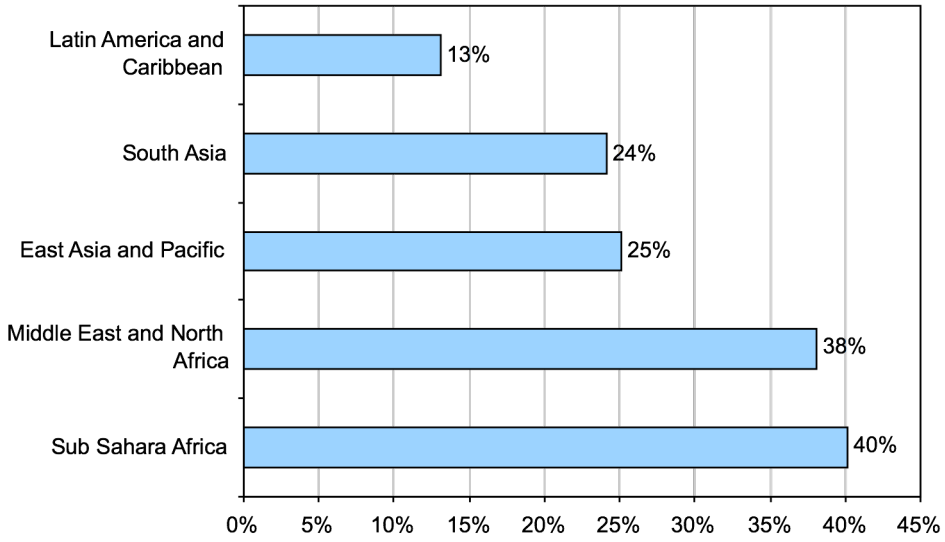


Figure 7: Percentage of population depending on marginal lands (Source: World Bank 2003).

Agriculture and health

Closely linked to several of the environmental problems discussed above, human health is affected throughout the life-cycle of agricultural products. Globally, pesticide use results in between 3.5 and 5 million acute poisonings annually and studies have shown higher rates of cancer among farmers who work with or near certain pesticides (UNEP, 2004). Safe, healthy and nutritious food without chemical residues or other contaminants is a prerequisite for improving the health situation of the general population. According to the WHO, food-borne disease poses a considerable threat to human health and the economic situation of individuals, families and nations. As diarrhoeal diseases persist in many developing countries, this suggests underlying food safety problems. Salmonellosis, cholera and other bacterial infections are widespread in developing countries due to unsafe water and food. Risks to consumer health also stems from the application of synthetic pesticides and fertiliser, leading to toxic residues.

3.2.2.3 Economic dimension

Agriculture as source of economic growth and employment

Agriculture is an important contributor to food security but equally to GDP, export earnings and employment. In Africa, for example, the agricultural sector accounts for approximately 60% of total employment, 20% of total exports and 15% of GDP (AU, 2005). In Asia, where economic growth and diversification are occurring, agriculture still provides jobs for 60% of the working population and generates 27% of Gross National Income (DFID, 2003). In Latin America and the Caribbean, agriculture employs a vast segment of the population with more than 30% of the labour force working in agriculture (IFAD, 2002).

Raising productivity for expanding benefits to the poor

As the basis of the economy in developing countries, agriculture is a critical source of poverty eradication. Agricultural growth plays an essential role in improving food security and reducing poverty in developing countries (FAO, 2006). The fastest rates of economic growth have occurred where agricultural productivity has risen the most (DFID, 2003:1). It is believed that improved agricultural growth productivity in the developing world would thus provide the greatest benefit to the poor. Recent research suggests that a 1% increase in agricultural yield would reduce the percentage of people living on less than one dollar a day to between 0.6% and 12%, with no single other economic activity generating the same advantages (Ize et al. 2001, in DFID, 2003).

Factors impeding rise in agricultural productivity

As mentioned in the discussion on the environmental dimension above, one factor affecting agricultural productivity in the developing world is the overstretched carrying capacity of local ecosystems. Bad governance and agricultural policies as well as poor trading systems that do not favour the poor further impede the potential of agriculture to foster growth and alleviate poverty. Efficient transport systems are an essential aspect of any rural activity and are key in reducing rural poverty with agriculture being no exception to this (DFID, 2003). Common price fluctuations in international commodity markets can put the income of agricultural producers at risk, especially those producing *cash crops* for export.

3.2.3 Approaches for SCP in the agricultural sector

Approaches for making agriculture more sustainable should recognise the importance of environmental, social and economic impacts related to production and consumption in the sector. Solutions should address these issues along the whole agricultural product life-cycle including production, transport, food processing & packaging, consumption and waste treatment. The vision of 'Sustainable Agriculture and Rural Development' (SARD) as put forward in Agenda 21 illustrates the objectives of a sustainably managed agricultural sector:

- stable supplies of nutritionally adequate food, access to those supplies by vulnerable groups, and production for markets;
- equitable employment and income generation to alleviate poverty; and
- natural resource management and environmental protection.

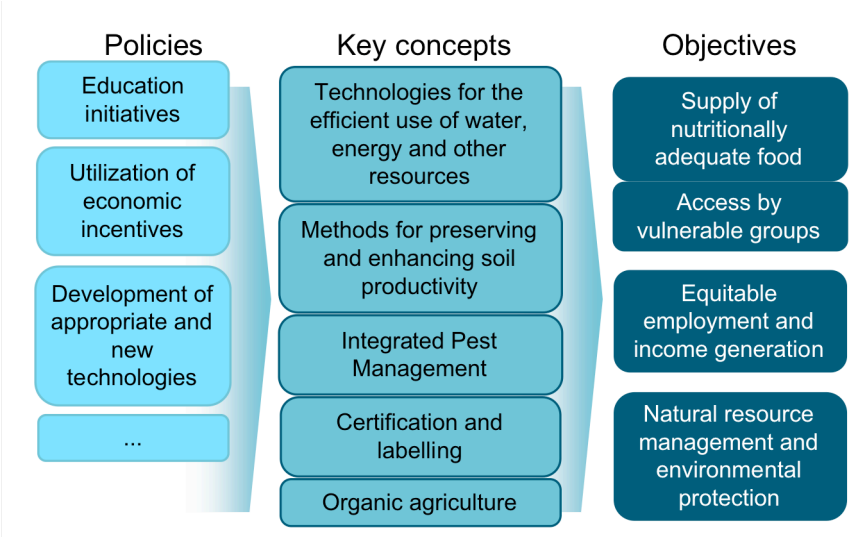


Figure 8: Policies, key concepts and objectives of sustainable agricultural and rural development (Adopted from Agenda 21, GTZ 2004, FAO website, UN ECOSOC 2005, Pretty 2001)

For reaching the SARD goals, key concepts with environmental, social and economic benefits, referred to as Good Agricultural Practices (GAP), have been developed and promoted by the FAO (see Box 12 below). Below is a summary of key concepts for sustainable agriculture that is provided as a background of readers prior to introducing policy instruments for influencing agricultural production and consumption patterns.

Technologies for the efficient use of water, energy and other resources

Technologies that enable farmers to use water, energy and other resources more efficiently can raise farm yields while reducing costs and unwanted environmental side effects. As water resources are under stress in many developing countries, measures for raising water efficiency are especially promising. Examples include application of improved irrigation techniques or water harvesting (the collection of rain and runoff water for irrigation) and mixed uses for agricultural land.

Methods for preserving and enhancing soil productivity

Healthy, nutrient rich soil is crucial for agricultural productivity. Land management techniques, such as applying cover crops or contour grass strips, can be used to reduce erosion and crop rotation and the use of grain legumes can restore natural nutrient levels (Pretty 2002).

Integrated Pest Management

Integrated Pest Management (IPM) and natural pest management methods aim to reduce the negative impact of crop protection measures on the environment and human health (UN ECOSOC 2005:11). Its pro-poor benefits include greater agricultural productivity and cost savings through, for example, reduced reliance on pesticides and other industrial inputs. In Bangladesh, projects to promote IPM in rice production have persuaded 150,000 farmers to adopt these methods – among the results are higher rice yields, reduced costs for pesticide use and further income from complementary agricultural activities promoted through IPM (Pretty 2002). IPM can also enhance the health of farmers and rural communities and enhance food safety for the wider population. Pesticide-free food is also found to be an advantage in certain markets (UN ECOSOC 2005: 11), if not a precondition for market entry in many instances. Other techniques such as Integrated Plant Nutrition Systems (IPNS), which aim for a balanced supply of plant nutrients from organic, biological and chemical sources, can lead to benefits similar to those described for IPM techniques.

Organic agriculture: the basis for sustainable agriculture

Organic agriculture seeks to make the best use of natural goods and services as inputs and does so by integrating natural and regenerative processes, such as nutrient cycling, nitrogen fixation, soil regeneration and taking advantage of natural predators to pest organisms in food production. It avoids the use of chemical inputs such as pesticides and fertilisers that damage the environment or harm the health of farmers and consumers. Organic agriculture has been shown to improve soil conditions and farm health for small farms.

Organic farming can also provide for a diversified income base through diversification of crops and the more labour intensive production relative to conventional agriculture can be a source of additional job creation. Furthermore, processing and marketing of organic agricultural products could also create new off-farm rural employment opportunities, especially when lucrative export markets can be accessed. It makes better use of the farmers' knowledge and skills in order to improve their self-reliance (Pretty and Hine, 2001).

Certification and labelling

Certification schemes exist for agricultural products can be certified, especially for 'organic' or 'fair trade' products. Until the early 1990s, certified organic agriculture remained a relatively rare phenomenon with less than 1% of farmers in most countries being involved. Still, the organic segment is one of the fastest growing in many saturated food markets and this is increasingly the case in many developing countries. Labelling for products can raise awareness among consumers about organic production and enable informed decision making as well as help farmers access new markets and increase incomes by obtaining premium prices for labelled produce. Concerns however do persist with regard to the cost involved for certification and the time lag between switching to organic methods and receiving certification. Production, marketing and consumption of or-

ganic agricultural produce depended heavily on private initiatives. Over the last decade, organic agriculture has seen a considerable boost particularly in developed countries. Also in many developing countries, small and medium scale initiatives have been undertaken to advance organic farming. However, government support for organic agriculture has thus far remained limited.

Social and economic benefits

Studies suggest that organic agricultural production yields equivalent net returns for farmers, without taking into account organic price premiums. The demand for organic food worldwide is rapidly growing, in some cases like the US in the 1990s, by as fast as 20% annually. The FAO (2001c) finds considerable market opportunities for developing countries to supply organic food products to the world market.

Box 12: The concept of Good Agricultural Practices (GAP)

The concept of Good Agricultural Practices (GAP) has evolved in recent years in the context of a rapidly changing and globalizing food economy. It is a result of the concerns and commitments of a wide range of stakeholders about food production and security, food safety and quality, and the environmental sustainability of agriculture. GAP applies recommendations and available knowledge to address environmental, economic and social sustainability for on-farm production and post-production processes with the aim of safe and healthy agricultural products.

A critical challenge is to ensure that the expanded use of GAP will take into account the interest of smaller-scale producers in developing countries both for the safety, economy and sustainability of domestic production and livelihoods security. A broadly accepted approach using GAP principles, generic indicators and practices will help guide debate on national policies and actions and on the preparation of strategies to ensure that all stakeholders participate in and benefit from the application of GAP in the food chain.

More information?

FAO website at www.fao.org/prods/GAP/ has a number of activities underway including consultations, workshops, and field studies that are contributing to the development of the approach. There is also a resource base that provides information on who is doing what in GAP and specific case studies.

Additional information is provided on the GAP website of Cornell university at http://www.gaps.cornell.edu/

(Source: FAO website www.fao.org/prods/GAP/)

3.2.3.1 Policies instruments for promoting sustainable agriculture

Policy instruments to support sustainable agriculture

National governments can play an important role in encouraging the sustainable agricultural practices and in particular the adoption of organic agriculture in developing countries. This is particularly so with respect to research and development, education, formal integration of certification of organic produce, pricing policies for agricultural inputs and outputs, land-tenure and export promotion.

The following policy instruments exist to support sustainable agricultural production:

Regulatory instruments	Operating standards to protect agricultural workers.
	Production standards to limit levels of contaminants of pesticide residues in farm produce (e.g. pesticide residues in foods).
	Emission standards to limit effluent discharges (e.g. silage effluents or slurry).

	Environmental quality standards to limit undesirable levels of pollutants to vulnerable environments (e.g. nitrates or pesticides in water).
	Regulations to limit or eliminate certain farm practices, such as the ban on spraying pesticides close to water sources.
	National or regional organic standards and regulations and a reliable independent accreditation and control system.
	Designation and legal protection of certain habitats and species.
Economic or market-based instruments	Measures such tax levies on pesticides, fertilisers and manure waste to reduce usage (increasingly the case in OECD countries: Sweden, Denmark and Norway have taxes on pesticide use).
	Market-based tools such as adequate pricing of agricultural products and inputs.
	Reduced tariff barriers for import and export of crops produced sustainably.
	Provide support for a transition period, when organic certification (which can be time consuming) has not yet been achieved by the producers
	Ruling out environmentally harmful subsidies[14]
Informational instruments	Better advice and information in the form of codes of conduct for good agricultural practices. Examples include recommendations on a maximum rate of application of pesticides and fertilisers and highlighting measures for erosion control.
Research and educational policies	Development and application of appropriate methods and technologies at the farm level is essential for sustainability. Such development would require finance, research and technical innovation policies and an extensive network that can reach individual farmers in all communities. Research in the pursuit of greater economies in production and introduction of new techniques is a key instrument.
Cooperation Policies	Define investment frameworks that encourage sustainable production and trade.
	Policies that address access to credit for smallholder farmers.
	Encourage banks to grant loans to smallholder farmers.
	Public-private sector partnerships.
	Support the establishment of trade networks that link local producers to importers, traders, wholesalers or large retailers for organic food in developed countries.

Table 19: Policy instruments for promoting sustainable agriculture (Adopted from University of Sussex Research Programme on Agricultural Policies and IISD, IIDD, 1995)

On the consumption side, the following policy instruments can be applied:

Regulatory-legal instruments	Take-back requirements for packaging waste, including deposit fund systems.
	Norms prescribing maximum residues of pesticides or other contaminants.
Economic or market-based instruments	Linking producers to the growing demand for sustainable agricultural products, and providing economic incentives for more sustainable agriculture.
	Pooling can be used to average returns from sales over time and also to average marketing charges. This instrument is widely adopted by marketing boards.
	Apply sustainability criteria (organic, fair-trade) in government cafeterias, schools and communal restaurants.
	Packaging tax, e.g. on non-reusable plastic shopping bags.

[14] This includes the sensitive issue of an adequate pricing of water and energy in developing countries, which is dealt with in more detail in the energy and water sector profiles respectively.

Informational instruments	Establish sustainability food labels, or support existing ones through information campaigns.
Research and educational policies	Support research on innovative, value added food products, e.g. for covering special nutritional needs of the population.
Cooperation Policies	Marketing cooperatives for sustainable agricultural products.

Table 20: Policy instruments for promoting sustainable agriculture (Adopted from University of Sussex Research Programme on Agricultural Policies and IISD, IIDD, 1995, UNEP, Swedish government)

Case Study: Organic Cotton and Vegetable Production in Benin

Cotton growth and vegetable production in Benin involves using large amounts of pesticides for pest and disease control. More than 80% of the country's chemicals are imported and chemical contamination among workers and consumers can cause dizziness, vomiting and even death. In the 1999/2000 growing season, some 70 people were reported dead from food poisoning resulting from chemicals (endosulfine). Cotton is one of Benin's cash crops representing approximately 24% of the Gross National Product. The growing and processing of cotton involves the use of increasingly large volumes of water and chemicals that pollute water bodies and soil, thus representing a hazard for human health and the environment.

To curb health problems in Benin's farming communities and reduce the high cost of importing chemicals, the "Organisation Beninoise pour la Promotion de la Agriculture Biologique" (OBEPAB) created a partnership with other NGOs and agricultural producers (cotton, cowpea and garden vegetable growers) to promote organic farming practices. The key objectives included the reduction or elimination of the use of highly toxic pesticides by converting conventional small-farmer production to farmer-centred agro-ecological systems.

The project was supported by the following enabling means:

Training	The project uses the farmer field school approach; an approach that combines education with field based, location-specific research, providing farmers with the skills and knowledge to make ecologically sound and cost-effective decisions. Extension agents visit farmers on a regular basis (once a week) to advise and train them to recognise pests and beneficial insects. Farmers are trained on the use of botanical chemicals such as neem and papaya leaves for pest control.
Finance	Activities in the field are financed by development assistance from the "Centre Beninois pour le Development Durable" and by Ecooperation, a Dutch based bilateral organisation. Financial support and training also comes from the UK's National Lottery Charity Board.
Technology	The technology in organic cotton and vegetable agriculture in Benin make use of the farmers' traditional knowledge, practices and ideas and encompass the use of botanical pesticides based on plant products. Local farmers' pest control techniques are used to identify sustainable and chemical-free crop protection systems. Alternative fertilisation practices involve using manure and crop rotation with vegetables based on the soil capacity. Traditional practices are employed such as the use of "tchochokpo", a residue from palm oil extraction, and wood ashes for soil fertilisation. The leaves and seeds of papaya and the neem tree are used as techniques for pest control.
Partnership	The cotton and vegetable project has benefited from the existing partnership and cooperation between Southern and Northern NGOs. These partners exchange and share information on better alternatives to toxic pesticides. Three southern NGOs: OBEPAB (Benin), Pesticide Action Network Africa (Senegal) and Ghana Organic Agriculture Network (Ghana) and two northern NGOs, Pesticide Action Network (UK) and Powerful Information (UK), constitute the network.

Table 21: Enabling factors for the project

The project has been successful on different dimensions:

- **Environment:** By using neem and papaya leaves instead of pesticides, the project has contributed greatly to decreased pressure on human health and the environment.
- **Social:** The project has led to the improved social status of farmers and their empowerment to make better choices for themselves. The project has not only led to increasing farm yields and better health of the farmers and their families, but to an overall better quality of life. This achievement is of such distinction that participating farmers are influencing their neighbours to convert to organic agriculture. Within the first four years of the project the number of farmers who joined the programme increased by 700%.
- **Economic:** In a field trial, a synthetic pesticide (decis) has proven to be superior in pest control compared to neem and papaya leaves. In spite of this, the farmers choose to apply neem and papaya leaves for two reasons. Firstly, neem and papaya leaves cost only half as much as decis. Secondly, farmers sell the products produced with the neem and papaya faster than those produced using the decis as the population has come to appreciate the vegetables free from chemicals, which subsequently increases the income of the farmers. (Compiled from UKFG 2001)

3.2.4 Reading Material

Links	Sustainable Agri-Food Production and Consumption Forum	http://www.agrifood-forum.net/
	Food and Agricultural Organisation	www.fao.org
	Sustainet - Sustainable Agriculture Information Network	http://www.sustainet.org/index.php?language=english
	University of Essex: Centre for Environment and Society	http://www2.essex.ac.uk/ces/ ResearchProgrammes/ListofSusag.htm
Further Reading	**Status of Food Security and Prosperity for Agricultural Development in Africa** African Union-AU (2005). AU Ministerial Conference of Ministers of Agriculture, Bamako Mali.	
	Growth and Poverty Reduction: the role of agriculture DFID (2005). A DFID policy paper.	
	Combating World Hunger through Sustainable Agriculture GTZ (2004). Paper commissioned by the Federal Ministry of Economic Cooperation and Development.	
	The Role of Agriculture in the Development of LDCs and their Integration into the World Economy FAO (2001a). Paper prepared for the Third United Nations Conference on the Least Developed Countries, Brussels. Available at www.fao.org/documents/show_cdr.asp?url_file=//docrep/003/y0491e/y0491e00.htm	
	Agriculture's role in climate change FAO (2001b). Rome. Available at http://www.fao.org/AG/magazine/0103sp2.htm	

World Markets for Organic Fruit and Vegetables - Opportunities for Developing Countries in the Production and Export of Organic Horticultural Products
FAO (2001c). International Trade Centre, Technical Centre For Agricultural And Rural Cooperation, Food And Agriculture Organization Of The United Nations, Rome, 2001

The State of Food and Agriculture
FAO (2005a). Rome.

The State of Food Insecurity in the World: Eradicating world hunger – key to achieving the Millennium Development Goals
FAO (2005b). Rome.

Impact of Climate Change, Pests and Diseases on Food Security and Poverty Reduction
FAO (2005c). Background Document for the 31st Session of the Committee on World Food Security, 23-26 May 2005, Special Event on Impact of Climate Change, Pests and Diseases on Food Security and Poverty Reduction. http://www.fao.org/clim/docs/CFS/CFS.pdf

Agriculture: Feeding the Millions
UNEP (2004). A background paper presented at the UNEP's 8th International High-Level Seminar on Sustainable Consumption and Production, Monterrey, Mexico.

Agriculture and poverty reduction: unlocking the potential
DFID (2003). A DFID policy paper.

Regional strategy paper for rural poverty reduction in Latin America and the Caribbean
IFAD (2002).

Agriculture and Sustainable Development: Policy Analysis on the Great Plains
IISD and IIDD (1995).

Reducing Food Poverty with Sustainable Agriculture: A Summary of New Evidence
Final report from the "Safe World" Research Project – The Potential of Sustainable Agriculture to Feed the World, J and R. Hine (2001) University of Sussex, UK Pretty.

Policies for a more Sustainable Agriculture,
University of Sussex, UK. Available at
http://www2.essex.ac.uk/ces/ResearchProgrammes/agripolicies/AgriPoliciesmoresusagri.htm

Choosing Sustainable Agriculture; Challenging Industrial Agriculture,
UKFG Conference Kew Gardens, February 2001.

Do Sustainable Livelihoods Approaches Have a Positive Impact on the Rural Poor? A look at twelve case studies
Neely, Constance; Sutherland, Kirsten; Johnson Jan 2004: Food and Agriculture Organisation of the United Nations

Current food consumption patterns and global sustainability
Discussion Paper, Stefania Massari. Online available at
http://www.agrifood-forum.net/issues/consumption/index.asp

Compendium of Land and SARD Cases:
Pretty, Jules 2001: Supporting Document to Task Managers' Report to CSD+10 on the Land and Agriculture Cluster for Chapters 10, 12 and 14 of Agenda 21, Online available at
http://www.fao.org/wssd/land/stories_en.htm

3.3 Manufacturing

3.3.1 Introduction

Manufacturing is a critical economic sector in most developed and developing country economies. It can be defined as the transformation of raw materials into finished goods by using tools and processing equipment. Manufactured products form the basis of life in modern societies and provide the foundation for the evolving knowledge and service-based economies in the advanced developed countries.

According to the World Bank, global manufacturing growth increased at an average annual rate of 3.2% between 1990 and 2003 (WBG, 2005). However, this growth has largely bypassed developing countries. UNIDO (2001) indicates that 48 of the world's least developed countries (LDCs), together comprising some 10.4 percent of global population, accounted for just 0.4 percent of global value added manufacturing. Among LDCs, the growth that has occurred has been concentrated largely in Asia, while many African LDCs have been experiencing industrial stagnation or in some cases even decline in recent decades.

There are significant differences in the structures of manufacturing between countries. For poorer countries, agriculture-related manufacturing is by far the most prominent. Of total manufactured goods produced in LDCs in 1998, food represented fully 23.3% by value, followed by textiles (15%), beverages (11.8%) and tobacco (10.6%). Other important manufactured products for LDCs are wearing apparel (4.8%), footwear (2.7%) and leather (1.7%) (UNESCO, 1998). Clothing and textile manufacturing and export are experiencing rapid growth in Asia, while agriculture remains predominant in Africa.

3.3.2 What does SCP mean in the manufacturing sector?

3.3.2.1 Environmental dimension

Resource use and impacts on the environment

The manufacturing sector includes a very diverse scope of activities. Specific environmental challenges will depend on the nature of the activities in question and on specific local conditions. When considering manufacturing it is important to take into account environmental impacts throughout the life-cycle of products produced. Manufacturing goods involves extraction, transport and processing of resources, assembly of products, transport to retailers, use by consumers and management of end-of-life products.

Some general environmental issues connected to manufacturing activities include:

- **Energy consumption:** All manufacturing activities depend on the use of energy in different forms[15]. In 2001, industrial activities accounted for 33.3% of energy consumption in developing countries. Since 1990 the total sum of industrial & manufacturing energy consumption in developing countries has grown by 40% (IEA, 2005).
- **Air pollution:** Emissions of many pollutants continue to increase in developing countries, this while emissions of some pollutants have begun to decrease in the advanced developed countries. In Asia, sulphur

[15] For more information on the environmental impacts of energy consumption, like greenhouse gas emissions, as well as for information on different modes of energy supply, please refer to the energy sector profile.

emissions are expected to increase from 18 million tonnes in 1990 to 48 million tonnes by 2020, coinciding with a major boost in manufacturing activities (WRI, 2002). Air pollution is consistently more serious in urban centres of developing countries, which is at least partially attributable to manufacturing activities[16].

- **Water use:** Some manufacturing activities are very water intensive. Common processes requiring water include cooling, food processing, chemical synthesis and cleaning (WBCSD, 2002). If water-intensive manufacturing is concentrated in a certain geographical area, the aggregated impact on local fresh water sources can be significant.
- **Wastewater:** Industrial discharges to surface waters can come from point sources, such as an outflow pipe, as well as from diffuse sources such as runoff from manufacturing sites where polluting substances may be present (e.g. on exposed storage lots). Discharges to ground water can come from underground liquid waste disposal practices as well as large spills to land and leaking underground storage tanks or pipes. Groundwater pollution is a particularly significant problem because of the difficulty and often great cost of restoration[17]. Groundwater contamination can present a significant barrier to poverty alleviation by damaging irrigation and drinking water resources both of which are in critically short supply in many developing regions.
- **Chemical use:** Environmentally harmful chemicals can be used during manufacturing processes (e.g. cleansing) but also can be included in final products (e.g. as flame retardants) or can be produced and sold as products. While regulations governing the production and use of hazardous chemical products are common in developed countries, chemical management and the scope and capacity of chemical regulation in developing countries can in many cases be inadequate to protect health and the environment.
- **Solid waste:** Inefficient manufacturing processes can generate significant amounts of solid and hazardous waste. In the 1990s, 100 million tons of hazardous waste was produced annually in developing countries, mainly stemming from chemical production, pulp and paper and leather industries (WRI, 2002).
- **Life-cycle impacts and overall increased product consumption levels:** The manufacturing phase of one product can influence material flows and environmental conditions in distant regions and sectors because of life-cycle impacts. For example, automobile manufacturers directly process steel, but engine and automobile design strongly influence petroleum consumption, which has influences on environmental conditions both in petroleum producing regions as well as air pollution during the use phase where automobiles are used. In both developed and developing countries, total material use and the associated environmental impacts are increasing due to growth in total output (WBCSD, 2002).

[16] The pollutants of particular concern include greenhouse gases, acidifying emissions including sulphur dioxide, nitrogen oxides and ammonia, stratospheric ozone depleting substances, and precursors of hazardous ground level ozone (e.g. solvents), benzene, carbon monoxide, and fine particulate matters which can cause serious health impacts.

[17] Common industrial water pollutants of particular concern include: petroleum products such as fuel and oil, nutrients such as nitrogen and phosphorus which cause eutrophication, toxic pesticides and herbicides, pathogens and oxygen depleting substances from activities such as food and dairy processing, caustic/acidic substances which alter water pH levels and toxic heavy metals such as lead, mercury and cadmium. Thermal water pollution from industrial cooling processes reduces the capacity of water to retain dissolved oxygen and can result in loss of aquatic life.

3.3.2.2 Social dimension

Manufacturing offers employment

Manufacturing activities have also social impacts both on employees and on surrounding communities. Manufacturing is important for social development as a source of employment and income as well as a producer of goods needed to satisfy basic needs and well-being of people.

Social issues that can put benefits at risk

However, there is risk that the benefits of increased employment and income can be offset by social problems caused by manufacturing. Even though legislation to protect social rights is common, there can be significant differences in how legislation is implemented and enforced in different countries. While it must be recognised that developing countries face different conditions and circumstances with respect to social issues, it remains important to consider the social dimension of sustainability and strive toward improvement over time.

Some important aspects of the social issues resulting from manufacturing activities include:

- **Human rights:** Forced labour and child labour[18] can still be witnessed in many manufacturing activities in developing countries. UNICEF indicates that some 246 million children are exploited, primarily in agriculture, and 171 million of them work under hazardous conditions (UNICEF, 2006). Furthermore, child labourers are often denied access to education, which is a critical precondition for long term poverty alleviation.
- **Labour conditions:** Long working hours, irregular breaks and unpaid overtime persist while freedom of association is not always guaranteed. Salaries are often too low to provide for healthy living and there can be little social security. This can be party attributed to external buyers who demand flexibility in the execution of short-term orders, but there are also shortcomings with regard to the implementation of national legislation and international agreements such as ILO conventions.
- **Health and safety:** Health and safety of employees are often ignored in the workplace. For example, there may be barred windows, lack of emergency exits, insufficient lighting and no protection against noise. Accidents can easily be deadly.
- **Discrimination:** Even if women widely participate in manufacturing as employees, they tend not to receive an equal share of the income and status. In comparable jobs, women are reported to earn about two thirds of men's salaries (WBCSD, 2002). Sexual harassment in the workplace and discrimination against the disabled, older people and minorities can also occur.
- **Impacts on communities:** People living near manufacturing facilities may suffer health problems from exposure to noise, emissions or dangerous substances, or risk of accidents at facilities, in addition to having their access to natural resources, land and cultural heritage restricted by manufacturing companies.

3.3.2.3 Economic dimension

Economic growth may benefit the poor, but not automatically

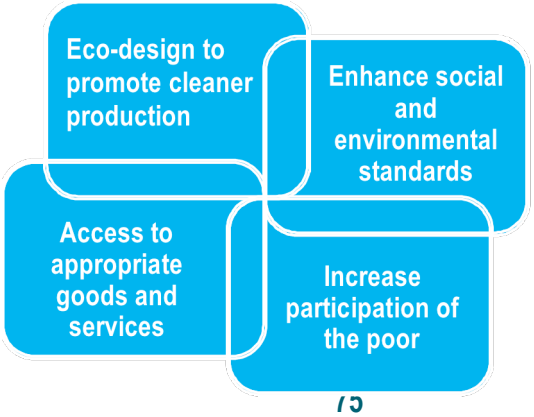
Manufacturing for domestic and export markets is an important source of employment and income. Therefore, attracting manufacturing activities and promoting the 'upgrading' of existing manufacturing patterns to higher value-added activities has been a priority for policy makers in both developed and developing countries. Economic challenges in the manufacturing sector for poor countries can be summarised as follows:

[18] Child labour is defined under the 1973 ILO Minimum Age Convention (minimum 15 years or 13 for light work or 14 and 12 years where educational and economic facilities are undeveloped)

- **Manufacturing output:** The LDCs' share in total manufacturing among all developing countries fell from 2.6% in 1980 to 1.6% in 1997, highlighting the widening gap between different classes of developing countries (UNIDO, 2001). Failure to expand the scale of manufacturing reduces employment opportunities and access to manufactured goods.
- **Development and upgrading of manufacturing activities:** Expanding the scale of manufacturing activities does not automatically lead to appropriate local economic development. The first phase of developing manufacturing businesses often involves activities that are low skilled, which can be observed in the LDCs today (UNIDO, 2001). Furthermore, these activities are often heavily dependent on imports, especially of equipment and skilled personnel, reducing the opportunities for sustained local value and employment creation.
- **Informal economy:** The International Labour Organisation (2002) indicates that between one half and three quarters of non-agricultural employment in developing countries was in the informal sector. Employment in the informal sector can pose challenges for workers in that they do not enjoy enforceable social rights, minimum wages or minimum health and safety standards. Informal firms are also unable to gain access to formal credit and are therefore limited in their capacity for growth while at the same time depriving governments of needed revenues because of the difficulty in collecting taxes from this sector.
- **International competitive pressure:** International competition for foreign direct investment in manufacturing activities can put developing economies in a vulnerable position. Concerns persist about a 'race to the bottom' by "lowering wages, disregarding labour and environmental standards and avoiding taxation" in order to increase the attractiveness as an investment location (UNIDO, 2001).
- **Terms of trade:** The terms of trade over primary manufactured goods are not generally favourable to poor countries. Between 1997 and 1999, non-oil commodity prices fell by over 30% (UNIDO, 2001), reducing the revenues of LDCs. Trade liberalisation and economic globalisation in the absence of enhanced local capacity can lead to the marginalisation of local small businesses, as they are not be able to effectively compete against imported goods.

3.3.3 Approaches for SCP in manufacturing

To alleviate poverty and provide sustainable livelihoods for the poor, clearly improvements regarding both consumption and production of manufactured goods are necessary. Advances regarding the scale and productivity of manufacturing activity will be essential. The challenge for developing countries is to make this improvement possible without compromising the economic, environmental and social issues listed in the previous section. Importantly, when evaluating measures to improve environmental conditions, policy makers should carefully consider overall life-cycle impacts rather than focus exclusively on manufacturing activities. While manufacturing enterprises present a relatively accessible target for regulatory efforts, in many cases a focus on other aspects of product life-cycles may offer more effective means to make meaningful progress.



SCP can provide new approaches to manufacturing – the broad agenda can be summarised in the following key concepts, which cover the most important issues during con-

sumption and production:

- **Ensuring access to appropriate goods and services to consumers:** Making much-needed goods widely available in developing countries at acceptable prices to meet basic needs, which remain unsatisfied. Government can play a role in both setting regulatory standards as well as providing information and advice to consumers to encourage more sustainable consumption patterns, which will stimulate improvements in manufacturing;
- **Eco-design and consideration of life-cycle impacts:** To genuinely address environmental challenges in manufacturing, it will be critical to view problems with a focus on life-cycle impacts and cleaner production techniques.. This will stimulate cleaner more efficient manufacturing processes which will both reduce environmental burdens while increasing the competitiveness of manufacturers;
- **Enhance social standards:** Guaranteeing that certain standards of social performance in manufacturing are maintained while at the same time recognising the unique conditions and circumstances of manufacturers and workers in developing countries;
- **Increase participation of the poor:** Increasing participation of the poor in the manufacturing value chain to offer sustainable employment and income. The participatory role of poor people should include not only participation at the production level as a labour force but also in their role in providing a potential market for manufactured goods.

The above concepts have to be emphasised as being interdependent: Promoting cleaner production can be a way to enhance environmental standards, while enhancing social and environmental standards can also ensure that the poor adequately participate in and benefit from manufacturing activities. Each of the four approaches will be briefly introduced below.

Ensuring access to appropriate goods and services to consumers:

Providing the poor access to appropriate goods and services that enable them to work more productively and live in a way that their basic needs are met is an important way to reduce poverty on various dimensions. Prahalad (Prahalad & Fruehauf 2004) has put forward the notion that products with a radically improved price-value performance can be profitably marketed to the poor when focusing innovation processes on real needs persisting at the so-called 'bottom of the pyramid'. When doing so, distribution and service concepts firmly rooted in current socio-economic, cultural and environmental conditions in poor communities are needed, to make manufactured goods available in the market and accessible for the poor. Often, these products also feature significant environmental improvement options through, for example, leapfrogging from outdated, polluting technology to state-of-the-art systems, and providing finance for the transition period. This could achieve added value through need satisfaction in the consumption phase without overstressing the environment. Addressing both issues in an integrated fashion when designing policies to influence product design and business models applied by manufacturing companies can thus bring double, mutual benefits.

Eco-design and consideration of life-cycle impacts

Cleaner production should be promoted as a concept that helps businesses to increase their production while minimising their resource consumption and environmental impacts.

Environmental impacts occur in all phases of a product's life-cycle. Some products have significant impacts during the resource extraction and processing phase but comparatively little in the use phase (e.g. paper). Others

may have more significant impacts during the use phase (e.g. cars) while some may have large impacts at their end of life if suitable infrastructure is not available (e.g. electronic appliances). By considering environmental problems from life-cycle viewpoints, policy makers and industry can avoid merely shifting environmental burdens to other regions or different phases of product life-cycles. Cleaner production and eco-design focuses on anticipating and preventing waste and pollution rather than treating wastes after they have been generated. They aim to realise efficiency gains via better process monitoring and improvements, waste prevention, waste reduction re-use and recycling, less material-intensive product design and remanufacturing using a variety of tools such as total cost assessment, environmental management systems and life-cycle assessment.

Experiences in many business sectors show that cleaner production approaches offer an opportunity to achieve significant efficiency gains in production while at least partly reconciling economic growth with environmental protection and resource conservation. Cleaner production approaches have been demonstrated as successful in many sectors and there is reason to believe that significant opportunities exist in developing countries for manufacturing activities to contribute toward sustainability objectives of increased wealth and reduced environmental impact.

Enhance social standards:

Social and environmental standards can provide guidance on best practice and assure clients of sound sustainability performance by producers. Standards can facilitate learning and innovation, serve as management and monitoring instruments for businesses and help communicate their commitments to stakeholders. Standards are the most effective when they "are defined in relation to measurable criteria, are recognisably derived from the sustainable development vision, and are combined with a corresponding monitoring system" (GTZ, 2003: 68). Different organisations, including government, non-governmental organisations and industry associations, can establish and certify compliance to environmental and social standards. They can particularly help suppliers in the global supply chain to improve their environmental and social performance and provide their customers and stakeholders with clear assurance.

Sample social and environmental standards include:

Name	Organisation	Description
AA1000 Assurance Standard	Institute of Social and Ethical Accountability	Standard to assist organisations across all sectors to improve sustainability performance. The standard enables consistent and systematic assurance of social and sustainability performance.
SA 8000	Social Accountability International	Standard and verification system for managing ethical workplace conditions in global supply chains.
ISO 26000 Guidelines for Social responsibility	International Organization for Standardization	ISO is currently developing an International Standard providing guidelines for social responsibility. The voluntary guideline standard (not certifiable) is anticipated in 2008 and aims to encourage voluntary commitment to social responsibility and provide common guidance on concepts, definitions and methods of evaluation.
ISO 14001	ISO - International Organisation for Standardisation	The ISO 14001 series of standards define how an organisation manages its environmental performance in a broad range of issues as well as how the organisation will work toward continuous improvement. It is the globally recognised environmental management standard.

EMAS Eco-Management and Audit Scheme	EU	The Eco-Management and Audit Scheme (EMAS) is the EU voluntary instrument which acknowledges organisations that improve their environmental performance on a continuous basis. EMAS registered organisations are legally compliant, run an environment management system and report on their environmental performance through the publication of an independently verified environmental statement. They are recognised by the EMAS logo, which guarantees the reliability of the information provided. The EMAS standard is used and recognised within the European Union.
Industrial Impia (Clean Industry) Seal	PROFEPA (Mexico)	Label granted by Mexican enforcement agency PROFEPA to national manufacturers certifying compliance with environmental legislation and international best practice.

Table 22: Examples of environmental and social standards

Increase participation of the poor

As described above, manufacturing activities are an important source of employment in many developing countries, but opportunities exist to improve the participation of the poor, empowering them to acquire better employment positions and receive a greater share of value created in manufacturing product chains. A UNIDO study (UNIDO 2001) examined key policies for poverty alleviation through building productive capacity in manufacturing sector. The study saw the "development of the skills and knowledge base as well as the physical assets of the poor" as critical to alleviating poverty (UNIDO 2001). The study provided a number of recommendations for building sustainable manufacturing capacity, which included:

- **Building industrial strategies and policies** by identifying existing and potential industries or clusters of firms with the greatest potential which can be promoted within existing government and industry resources. Strategies and/or policies should identify measures needed to support needed technological and human skill capabilities.
- **Promoting entrepreneurship and enterprise** noting that the overwhelming importance of SMEs in LDCs makes their growth a major opportunity for poverty alleviation. A major barrier was noted to be the scarcity and cost of credit, which can be overcome through measures such as providing access to micro-credit schemes.
- **Technology and management capacity upgrading and learning** through programs aimed at integrating LDC suppliers into global value chains by fostering strategic technological and commercial partnerships between firms within regional integration schemes and especially between firms in LDCs and the better performing developing countries. Further, support and assistance with technical standards accreditation procedures in industries such as food, textiles and leather manufacturing was noted as valuable as these sectors are major developing country sectors within which accreditation to various quality standards is becoming increasingly important.
- **Ensuring environmental protection** through provision of financial support for environmentally sound technologies and knowledge sharing via UNIDO and UNEP Cleaner Production Centres and by learning from best practices and approaches elsewhere, particularly in other developing countries.

3.3.3.1 Policy instruments for sustainable manufacturing

Governments have a key role to play in setting framework conditions and encouraging the uptake of SCP approaches to manufacturing to make advances on the four key concepts described above. An enabling policy

framework is of paramount importance for any new concept to become institutionalised and incorporated into routine business. The typology for policy instruments introduced in chapter 1 (see 1.2) can be applied for categorising policy instruments.

The manufacturing sector comprises diverse activities, from informal household enterprises up to multinational organisations operating from developed countries. Instead of presenting a comprehensive set of instruments, some best practice examples for policy instruments to promote sustainable consumption and production are provided. Importantly, policy makers need to select the right mix of policy instruments in consideration of the specific circumstances of each country and industry sector.

The table below provides examples for each of the instrument categories:

Category	Examples
Regulatory instruments	**Industrial Discharge Standards:** Specifying a defined level or amount of waste or material that firms are authorised to discharge to the environment. These can be tailored or negotiated with regulated parties.
	Substance or Product Bans: The imposition of a ban - or defined phase-out schedule - for a particular product or substance with negative impacts is an blunt means of promoting Cleaner Production and is usually reserved for very dangerous substances.
	Liability: Liability rules establishing responsibility for environmental damage can induce firms to minimise risk by preventive measures.
Economic or market-based instruments	**Economic incentives:** Taxes, charges or fees that discourage unwanted outputs or use of natural resources.
	Finance provisions: Grants, loans or other assistance to support SCP-supporting process and product development**.**
Informational instruments	**Technical Assistance:** Governments may stimulate Cleaner Production measures by supplying targeted technical assistance to relevant industrial enterprises (UNEP website).
	Training Programmes: Providing training programmes to small and medium-sized enterprises on eco-design and Cleaner Production principles and the use of information and communication technologies.
	Demonstration Projects: Undertaking demonstration projects to demonstrate cost saving opportunities and techniques.
	Award Schemes: Authorities issuing awards and recognition for firms implementing innovative approaches can bring profile to SCP methods.
	Public Disclosure: Requiring firms to disclose information regarding environmental performance to the public. Examples include Pollutant Release Inventories, encouraging greater corporate sustainability reporting under, for instance Global Reporting Initiative guidelines, and/or requiring provision of specified information to authorities.
Research and educational policies	**Curriculum Integration:** Encouraging educational institutions to incorporate sustainable consumption, cleaner production, eco-design and inclusive business models within their curricula, especially within schools, consumer associations, pre-graduate programs, engineering and business courses. As well, overall integration of sustainable consumption and production issues into general education curricula offers substantial opportunities to support more sustainable consumption patterns.
	Participative product development: Set up centres for interaction between business and community development groups to stimulate development and supply of appropriate products and services.

Cooperation policies	**Best Practice Exchange:** Collecting and disseminating information on cost-effective examples in cleaner production, eco-design and inclusive business models and promoting the exchange of best practices and know-how on environmentally sound technologies. This can be undertaken either in industry of government led forums.
	Industry Codes of Practice: Voluntary codes of practice adopted by manufacturers to assure achievement of environmental or social improvements. Examples include the International Chamber of Commerce Business Charter for Sustainable Development and the Responsible Care Program of the chemical industry.

Case Study: Eco-Efficiency in China

Since the start of the reforms and the opening-up policy in 1978, China has made a shift from agricultural production to embracing manufacturing and service sectors, particularly in the coastal areas of the eastern provinces. However, China's economic development is very resource-intensive and has led to severe environmental and social problems. To diminish industrial pollution and increase resource-use efficiency, the Chinese government enacted the 'Cleaner Production Promotion Law' in 2002 with the objective of establishing a national strategy for cleaner production promotion and implementation.

In support of this objective, the governments of Germany and China established jointly an organisation called 'Environment-Oriented Enterprise Consultancy Zhejiang'. This organisation aims to create a model hazardous waste management system and work toward implementation of cleaner and eco-efficient production in the Province of Zhejiang. Key activities include providing suggestions for improving legal and economic frameworks, offering advisory and consulting services to industry, piloting projects with companies and disseminating project results and information together with academic institutions.

The organisation also provides training on the concept of Environment-oriented Cost Management (EoCM). EoCM enables companies to systematically examine and reduce obvious and hidden costs and non-product outputs from processes. Using this tool, companies can identify opportunities for increasing efficiency and reduce consumption of raw materials, water and energy inputs used in the production process. In 2003, pilot companies from three key industrial sectors (textiles and dyeing, electroplating, and chemical and pharmaceutical production) were selected to participate in EoCM consultancy and training. Due to the success of this pilot, a plan for an "Eco-Province" was approved in 2004, which includes the target for implementing cleaner production in 500 pilot companies by 2007.

Key aspects of this project were:

Training	A Cleaner Production Information Platform hosted by the provincial Cleaner Production Centre was established. The Environment-oriented Enterprises Consultancy offers seminars, training and workshops on eco-efficiency and associated issues. These measures of capacity building address staff from governmental institutions (e.g. local and provincial Environment Protection Bureaus) as well as private consultancy agencies or companies. The training focuses on environmental management tools, especially Environment-oriented Cost Management (EoCM) but issues such as energy saving in industry and circular economy are also addressed.
Partnership	The programme is based on the efforts of various local actors: the Zhejiang provincial government, the Zhejiang Environmental Protection Bureau (ZEPB) and Zhejiang Economic and Trade Commission (ZETC), as well as the Zhejiang University and Zhejiang Cleaner Production Centre. In addition, international support from the German Technical Cooperation (GTZ), the KfW Banking Group and other institutions has proven indispensable.
Finance	The KfW Banking Group supported the programme and by 2004 the training had already resulted in total savings of about RMB 9 million (EUR 920,000). It is projected that future efficiency gains will save about 5% of the companies' total production costs.
Technology	The Environment-oriented Enterprises Consultancy and Cleaner Production Platform also provide support, recommendations and access to clean and appropriate technologies.

Table 23: Enabling means for the Eco-Efficiency project

The EoCM training brought meaningful environmental, economic and organisational benefits to the participating companies. The application of EoCM in pilot companies resulted in an average decrease of solid waste by 14%, of wastewater by 15%, and of electricity consumption by 9%. This translates into financial savings and improves the conditions of local residents. Employees benefited from transparent merit systems and improved internal communication. To ensure the proliferation of these successes, the organisation undertakes training programmes for consultants and companies who in turn work to provide training on this methodology.

Compiled from www.eecz.org

3.3.4 Reading Material

Links	UNEP: Governmental Strategies & Policies For Cleaner Production	http://www.uneptie.org/pc/cp/ understanding_cp/cp_policies.htm
	UNEP/SETAC The Life Cycle Initiative, in particular brochure: Why take a life cycle approach?	http://lcinitiative.unep.fr/
	Background report for a UNEP Guide to Life Cycle Management	http://www.uneptie.org/pc/sustain/reports/lcini/Background%20document%20Guide%20LIFE%20CYCLE%20MANAGEMENT%20rev%20final%20draft.pdf

	Topic Centre of European Environment Agency on Resource and Waste Management	http://waste.eionet.eu.int/etcwmf
	UNEP Cleaner Production Library	http://www.uneptie.org/pc/cp/library/home.htm
	UNEP Cleaner Production in Industrial Sectors	http://www.uneptie.org/pc/cp/library/ catalogue/industry_sectors.htm
	UNEP Finance Initiative	http://www.unepfi.org/
	UNEP Production and Consumption Branch – Cleaner Production	http://www.uneptie.org/pc/cp/ncpc/home.htm
	GTZ: Eco-Efficiency	http://www.gtz.de/en/themen/umwelt-infrastruktur/oekoeffizienz/1941.htm
	GTZ: Project on Social and Ecological Standards	http://www.gtz.de/en/themen/uebergreifende-themen/sozial-oekostandards/2204.htm
	International Social and Environmental Accreditation and Labelling (ISEAL) Alliance	http://www.isealalliance.org/
	Social Accountability International SAI	http://www.sa-intl.org/
	IDTG / Practical Action: Manufacturing enterprise	http://www.itdg.org/?id=manufacturing
	International Labour Organization (ILO)	http://www.ilo.org/
	Clean Clothes Campaign	http://www.cleanclothes.org
Further Reading	**Building Productive Capacity For Poverty Alleviation In Least Developed Countries (LDCs): The Role of Industry** UNIDO 2001, Vienna http://www.unido.org/userfiles/PuffK/LDCIII08.pdf	
	Eco-Efficiency Policies Compendium: 18 policy instruments for societies striving to do more with less. GTZ, CSCP, Wuppertal Institute, 2006 (upcoming)	
	The Role of Industrial Development in the Achievement of the Millennium Development Goals Proceedings of the Industrial Development Forum and Associated Round Tables Vienna, 1-3 December 2003 UNIDO 2004, Vienna, 466 pages http://www.unido.org/file-storage/download/?file%5fid=24717	
	Background Paper National Strategies for Cleaner Technology Transfer International Forum On Strategies And Priorities for Environmental Industries UNIDO, Ministry Of Environment Of The Slovak Republic 2002, Bratislava, 14 pages http://www.unido.org/userfiles/PuffK/ Slovak-Rep_Environment_Forum_Background_paper_VFeckova.pdf	

Tomorrow's Markets – Global Trends and Their Implications for Business
WRI, UNEP, WBCSD 2002, Washington
http://pdf.wri.org/tm_tomorrows_markets.pdf

Environmental Requirements and Market Access for Developing Countries, Report of the first Substantive Meeting on of the Consultative Taskforce
UNCTAD, 2004 Geneva 2004, 14 pages
http://www.unctad.org/en/docs/ditcted20052_en.pdf

Profiting From Green Consumerism In Germany, Opportunities for Developing Countries in three Sectors: Leather and Footwear, Textiles and Clothing, and Furniture
Analytical Studies on Trade, Environment and Development
UNCTAD 2000, United Nations Conference On Trade And Development, Geneva
http://r0.unctad.org/trade_env/test1/publications/germany1.pdf

ISEAL Code of Good Practice for Setting Social and Environmental Standards
ISEAL Alliance 2006, Oxford
http://www.isealalliance.org/documents/pdf/P005_PD4_Jan06.pdf

Making Sustainable Development a Reality: the Role of Social and Ecological Standards
GTZ 2003, Eschborn, 129 pages
http://www.gtz.de/de/dokumente/en-making-sustainable-development-a-reality-neu.pdf

Key Elements of Environment-Oriented Cost Management
GTZ, BMZ 2001, Bonn
http://www.gtz.de/de/dokumente/en-key-elements-environment-oriented-cost-management.pdf

Understanding and enhancing the opportunities of local producers in the global garment and footwear industry: What does the value chain approach offer?
GTZ 2005, Eschborn
http://www.gtz.de/de/dokumente/en-value-chain-garment-footwear-2005.pdf

Good Housekeeping Guide – Profitable Environmental Management
GTZ 2003, Gesellschaft für Technische Zusammenarbeit, Eschborn
http://www.gtz.de/de/dokumente/en-good-housekeeping-guide.pdf

SCP and alternative development models
UNEP 2004, in UNEP Industry and Environment, October – December 2004, p. 29-32

Investing in every child: An Economic Study on the Costs and Benefits of Eliminating Child Labour
ILO 2003. International Labour Organization, International Programme on the Elimination of Child Labour (IPEC)

Global Reporting Initiative Sustainability Reporting Guidelines
Global Reporting Initiative (GRI) Sustainability Reporting Guidelines
http://www.globalreporting.org/

3.4 Tourism

3.4.1 Introduction

Tourism is one of the largest and fastest growing economic sectors in the world.[19] In 2004 tourism accounted for 11% of global GDP and 8% of employment with 760 million international tourist arrivals. With a 5% annual growth rate in arrivals, the tourism sector represents a major challenge for concerned stakeholders. Numerous countries, among which, many developing and least developed countries, rely substantially on this sector as a major employer and contributor to Gross Domestic Product.

International arrivals are mostly concentrated in North America, Western Europe and Russia. Medium levels of arrivals are received by South America and Southeast Asia. However, if tourism is measured as a percentage of GDP, or as a ratio to resident populations, data shows that it is the Caribbean, the Mediterranean and countries throughout Africa where tourism makes up the greatest proportion of local GDP. Among these, many lie in regions with rich biodiversity with significant fractions of their population living in poverty.[20]

Recent trends and forecasts point to a spreading of tourism to new destinations. Proportionately, tourism will grow faster in less developed countries than in developed economies in the coming years, and there is a growing market interest in rural and activity tourism compared with staying in traditional resorts. Although this may bring opportunities for economic development and poverty alleviation, it will also introduce the environmental and social impacts of tourism to areas which may hitherto have been unaffected by tourism development. In 2005, growth in tourism was particularly strong in Africa. As an illustration of the potential for tourism in this region, international arrivals rose by 37 percent in Mozambique and by 26 percent in Kenya (UNWTO 2006).

[19] The World Tourism Organization reported over 700 million international tourists in 2003 (this figure does not include domestic tourism), and a forecast of 1.5 billion in 2020.
[20] Tourism and Biodiversity, UNEP and Conservation International, 2003, Chapter 2.

3.4.2 What does SCP mean in the tourism sector?

3.4.2.1 Environmental dimension

UNWTO calls to 'make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity."

Tourism has substantial environmental impacts, resulting from the construction of general infrastructure and tourist facilities as well as from tourism operations. One effect of tourism is the consumption of water, energy and other materials. As visitors are often willing, and able, to spend more money than the local population, this can result in competition for environmental resources that leaves communities in a vulnerable situation. In developing countries tourists use as much as 10 to 15 times more water than local inhabitants (UNEP & UNWTO 2005:44). Tourism often takes place in areas that have precious ecosystems where the environmental impacts are likely to be significant. Large numbers of visitors, land degradation, air pollution, noise, sewage and waste can damage local eco-systems, which in turn can undermine the basis for tourism.

Moreover, tourism is a biodiversity dependent industry and it is itself also affected by climate variability and environmental change. Tourism as a sector is particularly vulnerable to climate variability. Examples include heat waves (as experienced in the European summer of 2003), changes in storm intensity (such as Hurricane Katrina), degradation of key tourism resources (as with coral bleaching events in 1998), lack of snowfall, forest fires (as experienced in Portugal in 2005), and water shortages.

Despite the environmental problems described above, tourism has the potential to benefit the environment by contributing to environmental protection and conservation. Tourism can make a positive contribution to the environment as follows:

(a) **Providing a direct source of income for conservation.** In many countries, national parks and wildlife reserves do not receive nearly enough financial support from the State, and many rely on visitor-derived income to support conservation work. Donations from visitors and sponsorship from the tourism industry can also play a role;

(b) **Supplying a source of income for local communities** from tourism activities, such as catering, accommodation, guiding and handicraft sales that are less environmentally destructive than other sources of livelihood;

(c) **Raising awareness of environmental quality** and its social, cultural and economic value among visitors and host communities.

3.4.2.2 Social dimension

UNWTO calls to "Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance."

Tourism also has a social and cultural dimension. It can lead to a greater appreciation of indigenous culture and traditions, and can promote activities to preserve cultural heritage and traditional values. Peace and political stability are preconditions for tourism, which therefore provides a stabilising incentive.

On the negative side, it can damage the socio-cultural authenticity of host communities by turning local traditions into commodities for visitors and by the process of alienation that can result from contact with different cultures. Tourism can also induce inequality, either between those people employed in tourism and those who are not, or between poorly qualified people from local communities and highly qualified managers coming from urban areas and foreign countries. Cultural tensions may arise as people from different cultural and religious backgrounds share the same living space for a certain time. One of the most sensitive issues facing the tourism industry is the commercial sexual exploitation of children mainly in developing countries, by tourists often coming from developed countries.

3.4.2.3 Economic dimension

UNWTO calls to 'Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation."

Tourism in many countries fuels local economic growth and provides employment opportunities. According to a 2004 World Travel and Tourism Council estimate, about 8 percent of total worldwide employment was directly or indirectly connected to the tourism and travel industry (WTTC 2004: 9). Tourism also contributes to government revenue and helps countries earn needed foreign exchange.

However, in some situations these benefits might not occur. So-called 'enclave' tourism, which depends heavily on imports, draws a sharp line between the tourist resort and the surrounding communities. Local labour is utilised only to fulfil the 'lowest' quality jobs available. Available data supports this finding, showing that a substantial share of revenue 'leaks' from tourist destinations in small economies and, therefore, the local population does not benefit meaningfully from the tourism activity. Hemmati and Koehler (2000) found leakages of up to 78 percent for tourism in Kenya. Other negative aspects include seasonal fluctuation in employment and an increase in local prices that can negatively affect local people who do not benefit economically from tourism.

3.4.3 Approaches for SCP in the tourism sector

Sustainable tourism can be defined as:

> "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities." (UNEP & UNWTO 2005:12)

The UNEP & UNWTO publication "Making Tourism More Sustainable: a guide for policy makers" (2005) presents a comprehensive set of instruments for governments, ranging from planning regulations to economic instruments and the application of certification and indicators. It also describes the collaborative structures and strategies that are needed at a national and local level. The guide recognizes that tourism and environmental impacts should be addressed not in isolation, but within the wider context of sustainable development, paying equal attention to environmental, social and economic sustainability. These three dimensions are translated into 12 specific aims, which can provide the basis for formulating a policy on tourism development and management:

(a) **Economic viability:** To ensure the viability and competitiveness of tourism destinations and enterprises so that they are able to prosper and deliver benefits in the long term;

(b) **Local prosperity:** To maximize the contribution of tourism to the prosperity of host communities, including the proportion of visitor spending that is retained locally;

(c) **Employment quality:** To strengthen the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination on grounds of gender, race, disability or other such criteria;

(d) **Social equity:** To promote the widespread distribution of economic and social benefits from tourism throughout host communities, including improvement of opportunities, income and services available to the poor;

(e) **Visitor fulfilment:** To provide a safe, satisfying and fulfilling experience for visitors, available to all without discrimination on account of gender, race, disability or other such criteria;

(f) **Local control:** To engage and empower host communities in planning and decision-making about the management and future development of tourism in their area, in consultation with other stakeholders;

(g) **Community well-being:** To maintain and strengthen the quality of life in host communities, including social structures and access to resources, amenities and life support systems, avoiding any form of social degradation or exploitation;

(h) **Cultural richness:** To respect and enhance the historic heritage, authentic culture, traditions and distinctiveness of host communities;

(i) **Physical integrity:** To maintain and enhance the quality of landscapes, both urban and rural, and avoid physical and visual degradation of the environment;

(j) **Biological diversity:** To support the conservation of natural areas, habitats and wildlife, and minimize damage to them;

(k) **Resource efficiency:** To minimize the use of scarce and non-renewable resources in the development and operation of tourism facilities and services;

(l) **Environmental purity:** To minimize the pollution of air, water and land and the generation of waste by tourism enterprises and visitors.

As these principles integrate environmental and social issues, they already encompass direct and tangible pro-poor benefits, like local prosperity, social equity, community wellbeing and cultural richness. Still as described above, the environmental improvements envisioned might further benefit the poor: biological diversity, resource efficiency and environmental purity can secure livelihoods and reduce the vulnerability of the poor.

Table 24 provides an overview of the SCP policy instruments that might be applied in a sustainable tourism strategy. They include measures for determining the level and nature of tourism as well as influencing the operation of tourism enterprises and the behaviour of visitors. By addressing sustainable consumption and production simultaneously it can serve as an excellent example for an integrated SCP policy. Case studies are provided in the UNEP & World Tourism Organization (UNWTO) guide to highlight how these different instruments work together.

Developing a sustainable tourism strategy				
Determining the level and nature of tourism	Identifying priority markets			
	Considering the balance of products in a destination			
Influencing tourism development	Land-use planning and development control	Capacity Building, esp. small enterprises and communities	Sustainability indicators and monitoring	Investment in appropriate infrastructure
	Economic instruments			
Influencing the operation of tourism enterprises	Legislation, regulation and licensing			
	Issuing guidelines and encouraging reporting and auditing			
	Voluntary certification for stimulating best practice			
	Marketing linked to certification			
Influencing visitors — promoting sustainable consumption	Marketing and information services			
	Guidelines and codes of conduct			
	Enhancing transparency, enabling tourists to choose sustainable options			

Table 24: Elements of a sustainable tourism strategy, adapted from UNEP & UNWTO (2005)

Pro-poor tourism strategies (Ashley et al., 2001) aim at increasing the benefits of tourism for local people, and they share many elements with sustainable tourism strategies. However, they are more directly focused on delivering benefits to the poor, as well as targeted for implementation in developing countries. Environmental protection is also acknowledged in these strategies as playing a central role in sustaining the livelihoods of the poor.

Utilising SCP opportunities

The guidance documents on both sustainable and pro-poor tourism strategies address the enabling factors (i.e. *Capacity Building)* as a key component in both sustainable and pro-poor tourism strategies. Governments are acknowledged as playing a leading role to this end. In developing countries and countries with economies in transition, poverty reduction strategies increasingly dominate government action on the development of different sectors and also the funding priorities of international development assistance agencies. Ashley et al. (2001:35) recognise the crucial role of *financing* change, and the need to implement cost-effective instruments and strategies towards poverty alleviation.

UNEP & UNWTO (2005) provide a list of examples on successful funding schemes in sustainable tourism projects. *Partnership* is an important factor in many of the case studies presented: governments should "recognize that interest in the sustainability of tourism is growing amongst many private sector enterprises" (UNEP & UNWTO 2005:20) to leverage effective co-operation. It also considers that depending on the nature of the project implemented, *enabling technologies* could increase market access and transparency, at the same time that *eco-efficiency technologies* could minimize the environmental impacts of facilities and transport.

Box 13: Community-Based Ecotourism Project in Ghana

Ghana has many tourist attractions; these include numerous well-maintained fortresses along the coast, national parks, beaches and the Ashanti culture. Past development has been considered successful, with international

arrivals and tourist revenue increasing steadily throughout the last decade.

To better integrate local community development and environmental protection into the tourism sector Ghana implemented a Community-Based Ecotourism Project in 2002. It aimed at creating new tourism products based on sustainability principles at the local community level. The project led to the creation of 14 community-based enterprises in different locations. These include five sites where the attractions are based on particular wildlife species, village and cultural experiences and natural landscape features. Tourists are given access to these outstanding areas of natural and cultural importance, and interpretation is provided to enhance the appreciation of these attractions. The project has also strengthened local capacities for catering and accommodation.

The project was made possible by extensive national and international partnerships, which provided finance, capacity building and facilitation for implementation.

The project was made possible through application of a variety of the enabling factors:

Partnership	A whole range of actors co-operated in the planning and implementation of the project. Ghana Tourist Board (GTB) led the project. Implementing partners were the Nature Conservation Research Centre (NCRC), SNV Netherlands Development Organization and the US Peace Corps, together with local tourism management teams at different locations. National and local governmental bodies provided administrative support, e.g. permissions.
Training	SNV Netherlands Development Organization provided specific tourism capacity building support to all partners. Full time advisors were placed within two Ghanaian organisations carrying out the project. Peace Corps Ghana had volunteers working in the local communities to train them on business practices.
Finance	The project received initial funding from USAID, later becoming profitable and generating income for local communities. Due to this positive experience, the Ghana Ministry of Finance allocated national funds for tourism development in the coming years. After ecotourism was included in the PRSP, World Bank provided additional funding for the country's tourism development under the HIPC initiative.

The project results towards poverty reduction and benefits were felt throughout the community. In addition, natural and cultural heritage sites were preserved through actions taken by the community, supported by income received from tourism activities. The programme therefore demonstrates how preserving natural assets that serve as livelihoods can mobilise local community support for conservationist measures and can contribute to poverty reduction in a sustainable way. The project has also had a significant spill over effect on local entrepreneurial know-how and on local governance structures.

The positive experience has resulted in the Ministry of Finance of Ghana including tourism in its poverty reduction strategy – attracting additional World Bank funding. Integrating it into PRSP is also expected to resolve use conflicts, especially with the forestry and mining industries mentioned in the report. Co-operation with the Ministry of Land and Forestry might also be improved, as the Ministry currently does not link its management of protected areas to income-generating activities such as the ecotourism project implemented.

(Compiled from UNEP & UNWTO 2005)

3.4.4 Reading Material

Links	UNEP Tourism Programme	www.uneptie.org/tourism
	Tour Operators Initiative	www.toinitiative.org
	Pro-Poor Tourism (PPT) website	www.propoortourism.org.uk
	World Tourism Organisation	www.world-tourism.org
	Sustainable Tourism-Eliminating Poverty Initiative	www.world-tourism.org/step/menu.html
	Responsible Tourism Partnership	www.responsibletourismpartnership.org
	Sustainable Tourism Link Collection	www.gdrc.org/uem/eco-tour/eco-tour.html
	Sustainable Tourism Portal	www.sustainabletourism.net
Readings	**Making Tourism More Sustainable: A Guide for Policy Makers.** UNEP; UNWTO 2005. United Nations Environment Programme, Paris; World Tourism Organization, Madrid 2005	
	Tourism and Local Agenda 21 - The Role of Local Authorities in Sustainable Tourism: Case Studies and First Lessons UNEP 2003. In partnership with the International Council for Local Environmental Initiatives (ICLEI), United Nations Environment Programme, Paris 2005	
	Forging Links between Protected Areas and the Tourism Sector: How Tourism can Benefit Conservation UNEP 2005a. A UNEP/UNESCO/WHC/RARE/UNF publication, United Nations Environment Programme, Paris 2005	
	Pro-Poor Tourism Strategies: Making Tourism Work For The Poor – A Review of Experience Ashley; Caroline, Roe, Dilys; Goodwin, Harold (2001). Overseas Development Institute (ODI), the International Institute for Environment and Development (IIED) and the Centre for Responsible Tourism at the University of Greenwich (CRT), April 2001	
	World Travel & Tourism Forging Ahead: The 2004 Travel & Tourism Economic Research World Travel & Tourism Council 2004	
	Background paper on tourism and the environment UNEP 2006: Background papers for the ministerial-level consultations on energy and environment for development, chemicals management as well as tourism and the environment. Discussion papers presented by the Executive Director, Addendum 3: Background paper on tourism and the environment. http://www.unon.org/confss/doc/unep/unep_gc/gcss_09/gcss_09.htm	

3.5 Energy

3.5.1 Introduction

Balance benefits from energy services with drawbacks relating to supply

Energy is an intermediate good the consumption of which is a means to an end: to deliver benefits collectively described as "energy services." For households, such benefits include illumination, cooked food, comfortable indoor temperatures, refrigeration, telecommunications and transportation. Virtually every commercial and industrial activity also requires energy services such as motive power, heating and cooling for industrial and agricultural processes, and electricity for telecommunications and electronics. An adequate level of energy services is a precondition for sustainable development. No country "has substantially reduced poverty without a massive increase in its use of energy and/or a shift to efficient energy sources" (UNDP 2005, p. 6). Nevertheless, the benefits that energy provides for human development must be balanced against the drawbacks: production, distribution and use of electricity as well as the transformation, distribution and use of fuels have social and environmental implications, especially for the poor.

The energy sector is structured according to the energy chain depicted in Figure 9. It draws on energy from renewable and non-renewable sources that get transformed by means of a variety of conversion technologies to deliver energy services. All stages have social, environmental and economic consequences, the most important of which will be discussed below:

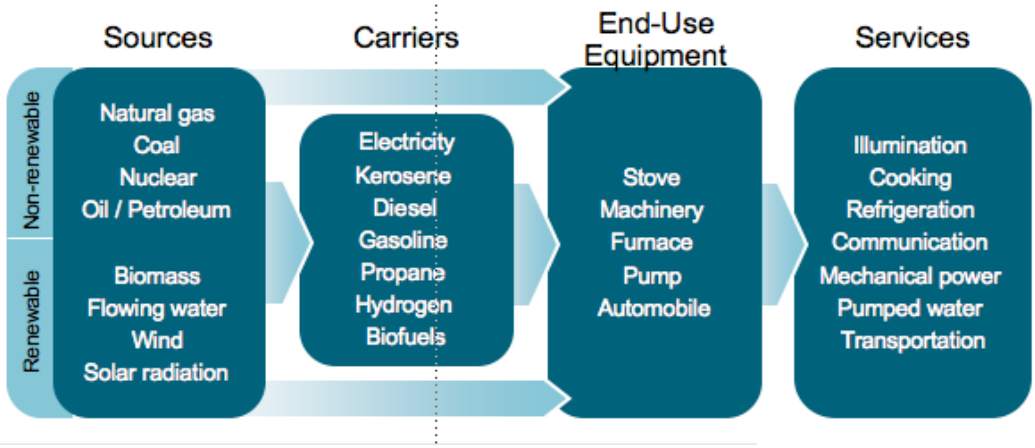


Figure 9: Energy chain, adopted from UNDP 2005, p. 2

3.5.2 What does SCP mean in the energy sector?

3.5.2.1 Environmental dimension

The environmental impacts resulting from energy services can occur at different phases of the energy supply chain. An important factor concerning the nature and location of environmental impacts from energy conversion and use is whether energy services are provided by a formalised energy sector using various energy carriers and multiple steps of transforming and distributing energy, or whether energy is used on a subsistence basis relying mainly on burning of biomass without the application of sophisticated technology. All in all, environmental impacts are determined not only by the source of energy but also by the means of using the energy (e.g. cooking by direct burning of fuel vs. use of electric ovens powered by conversion of the fuel to electricity in power plants) and how

efficiently energy services are produced, distributed and used at the point of consumption.

Environmental impacts of subsistence energy use

Poor people, especially in rural areas, often depend on subsistence energy and inefficient energy technologies that have serious impacts on the local environment. By this, they partly cause the environmental degradation from which they in turn suffer the most. The most important impacts in this context are:

- **Deforestation and land degradation:** The over use of fuel wood used for cooking purposes which is prevalent in many developing countries causes deforestation and land degradation, heightens the risk of landslides and destroys the existing ecosystem with the extinction of the species that live in that habitat. According to UNDP, land degradation is a substantial problem that affects nearly 2 billion hectares and threatening the lives of a billion people (UNDP 2005).
- **Emissions and pollution:** The emissions from the burning of energy carriers are major contributors to urban air pollution, acidification of water and land. The use of wood in traditional stoves produces harmful indoor air smoke and heightens the risk of respiratory diseases (see 2.1).

Impacts of the formal energy sector

In energy systems in the wealthy countries, the main impacts often occur not during consumption, but in earlier stages of the life-cycle, especially during the production and distribution of energy from fossil fuels and other non-renewable sources. Specific impacts include:

- **Climate change:** The burning of fossil fuels for the purpose of electricity production as well as burning fuels for space heating is a major source of greenhouse gas emissions, and developing countries "will bear the brunt of any change in climate patterns, and their people will suffer the most from them" (UNDP, GEF 2004, p. 1).
- **Spills and accidents:** Some modes of energy supply come with the danger of spills or accidents during production, distribution and consumption. Examples include oil spills during oil production or the distribution by tankers as well as nuclear accidents.
- **Land use and biodiversity:** Some forms of energy supply require changes in land use patterns, and can have impacts on ecosystems and biodiversity. Examples include dam projects, surface mining and pipeline projects.

While the main environmental impacts might occur during early stages in the life-cycle, it must be stressed that consumption behaviour and technology nonetheless determine these indirectly via the amount of energy consumed. Promoting energy efficiency in the consumption phase is thus a major strategy for reducing environmental impacts as will be shown below.

3.5.2.2 Social dimension

Lacking access to safe and reliable energy

The access to safe and reliable energy that is common in industrialised countries is a continual problem for millions of households in the developing world. Nowadays, 2.4 billion people still rely on the use of traditional biomass, non-commercial fuels and animal power as their primary source of energy and 1.6 billion people do not have access to electricity (UNDP 2005). It is estimated that four out of five people without electricity live in rural areas of the developing world. According to IEA, these figures will remain largely unchanged over the next years unless improvements in rural energy infrastructure are made (UNDP 2005).

Access to energy to promote social causes

Access to sustainable, safe, reliable and affordable energy services is irretrievably linked to progress towards human development. Energy services contribute to several of the MDGs, for example:

- **Hunger:** Use of mechanical power for agricultural purposes increases productivity, thereby increasing the amount of food available, and generates income for the rural poor. Access to energy also enables people to process, conserve and cook food, improving the nourishment of poor people (UNDP 2005, p. 21).
- **Education:** Access to safe energy can foster education through the use of lighting for evening studies and improved private and public transportation for schools, which is especially relevant in remote areas. Educational media and long distance teaching methods can be made possible by information and communication technology which also requires reliable energy services. Data reported in Saghir (2005, p. 7) shows that school attendance and literacy is higher in households with access to electricity across all regions in Nicaragua.
- **Gender:** Access to modern energy services improves the work of women and children by "taking over [the] tasks" they traditionally perform and could help them to take of new roles in their community. Access to electricity releases women from the time-consuming task of gathering firewood or other traditional forms of biomass, creating time that can be spent on income-generating activities or education. The corresponding reduction in indoor air pollution is also of great benefit to women's (and children's) health.

Unsafe energy sources put health at risk

Health impacts from unsafe energy sources are mainly concerned with the use of traditional fuels and inadequate combustion methods. Most of the environmental challenges mentioned above have social consequences. Urban and indoor air pollution cause environment-related health problems and increase mortality in developing countries, especially among the poor. Land degradation negatively affects the poor living on marginal land the most, and the impacts of both climate change and loss of biodiversity can create challenges for the poor in the long term.

Commercial supply and social consequences

Social consequences also result from the commercial production of energy. These include dam projects and oil production on the territories of local communities, both of which have serious implications for rural or indigenous communities.

3.5.2.3 Economic dimension

As the access to modern energy services is an issue that is irretrievably linked to all other economic sectors, the consequences of its absence have a very wide range as all aspects of human welfare are affected.

Financing energy-related investments

Financial resources are needed for infrastructure and operational expenses and developing countries face great challenges in raising this finance. IEA predicts that nearly 70% of the increase in global primary energy demand will occur in developing countries and countries in transition, with an according need to finance new infrastructure (IEA in UN-Energy 2005, p. 12). About 73% of this amount comes from the need to improve electricity supply. Both population growth and increased access to energy services contribute to this investment need, with the total amount of people with access to

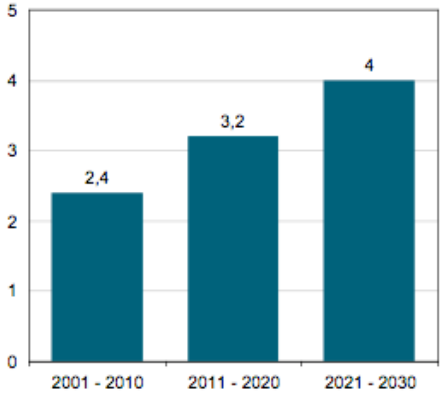


Figure 10: Cumulative investment requirements in their energy sectors, developing countries and countries in transition in trillion dollars (Source; UN-Energy 2005: 12).

electricity only slightly declining (IEA in UN-Energy 2005, p. 12).

Expenditure for 'unsafe' energy

People in poor countries have to spend much more of their monthly income on energy than the rich. In some countries, one third of the monthly expenditure is used to purchase energy, and women and young girls have to spend up to six hours per day gathering fuel wood and water, cooking and agro-processing (UNDP 2005).

A production factor in industrialising economies

All sectors of the economy demand modern energy services, and developing countries need to secure a reliable and adequate energy supply as a prerequisite for diversifying their industry structure, raising productivity and enabling local income generation (IAEA 2005). Electricity is especially relevant, as it is the dominant form of energy for those sectors that have particularly driven productivity in industrialised economies, including "communications, information technology, manufacturing and services" (IAEA 2005). Application of information and communications technologies is an especially important factor in providing less developed countries with opportunities to explore new income generating opportunities and enable application of best practices in industry and agriculture.

Creating income for the poor

Sustainable energy has the potential to substantially increase the income of the poor; primarily through increasing their productivity, helping them to access new markets by new modes of transportation and by enabling new economic activities (Saghir, 2005, p. 6). Renewable energy can also provide income to the poor, especially in rural areas. Improved biomass and biogas from agricultural by-products offer an additional income opportunity for farmers. Small-scale, decentralised renewable energy technologies with local ownership can create income both for the poor who own these systems as well as for local people trained in their maintenance.

Macro-economic implications of the energy sector

Many countries depend on energy imports, which can have implications for their balance of payments. Terms-of-trade changes in world energy markets can reduce the ability of developing countries to successfully participate in international trade or service their foreign debts.

3.5.3 Approaches for SCP in the energy sector

This section will look at three main strategies to promote the sustainable consumption and production of energy in developing countries, namely by

- securing access to energy services;
- promoting energy savings and energy efficiency during consumption;
- promoting renewable energy and more efficient energy production.

The text will also provide concrete policy options for each of these strategies. These policy options should however not be seen as restricted to the strategy where they are listed. Subsidy reform, as one example, serves to secure access to energy services while at the same time striving to increase energy efficiency. To allow the design of mutually supportive policy packages, institutional integration and strategic planning will therefore be introduced in the end.

3.5.3.1 Secure access to energy services

As seen above, the access to reliable, affordable, economically viable energy services contributes to a variety of dimensions of human development as embodied in the MDGs. Public energy policies should recognise these linkages and acknowledge the contribution of energy services to human development and, therefore, widen access to energy services for the poor (UN-Energy, 2005, p. 9). This will also entail mobilising further financial re-

sources to expand energy investments and services (UN-Energy, 2005, p. 9). The table below lists some concrete policy options:

Regulatory-legal instruments	Eliminating restrictions or bottlenecks on the import and distribution of modern fuels and electricity (UN-Energy 2005, p. 11).
	Sound regulation of energy markets with specific provisions for rural and off-grid areas (UN-Energy 2005, p. 11).
Economic or market-based instruments	Pricing energy to cover the cost of both operations and investments incurred in the delivery of energy services (UN-Energy 2005, p. 11).
	Subsidise access instead of consumption, in other words target ways to bring down the one-off fixed costs associated with energy use such as stoves, lanterns and other appliances, rather than the recurring costs of fuels and electricity. (UN-Energy 2005, p. 11, Saghir, 2005, p. 12).
	Subsidising capital costs for rural grid electrification (UN-Energy 2005, p. 10, Saghir, 2005, p. 12).
Research and educational policies	Developing off-grid solutions for providing energy services (UN-Energy 2005, p. 10).
	Accelerating the development, dissemination and deployment of affordable and cleaner energy efficiency and energy conservation technologies (Agenda 21).
	Promoting education to provide information for both men and women about available energy sources and technologies (Agenda 21).
Cooperation Policies	Supporting low cost technologies including improved cooking stoves, low cost electricity distribution, smaller gas cylinders, and promoting use of renewable energy for replacing kerosene for cooking in isolated areas including reliable biogas systems in rural areas rich in livestock (UN-Energy 2005, p. 10).

Table 25: Policy options for securing access to energy services.

Going beyond the issue of access to energy services, different strategies can be applied to minimise negative social and environmental impacts of energy production. In the following paragraphs, policies for promoting efficient energy use, as well as for promoting new modes and more efficient energy production, will be introduced.

3.5.3.2 Promote energy efficiency and energy savings during consumption

Demand-side energy efficiency (also termed energy end-use efficiency) relates to technical, organisational and individual measures to reduce the final energy needed for heating and cooling homes or produce goods. Public policies need to create a framework that stimulates energy efficiency programmes and services. This can be done, for example, by creating a special fund that finances energy efficiency programmes, or by setting an energy efficiency obligation for energy suppliers or network companies, coupled with the permission to finance programme costs via energy prices. Such an obligation could also be coupled with a system of tradable energy saving certificates ("white certificates"). Energy performance contracting (EPC) is also in need of public policy support and promotion (CSCP 2005).

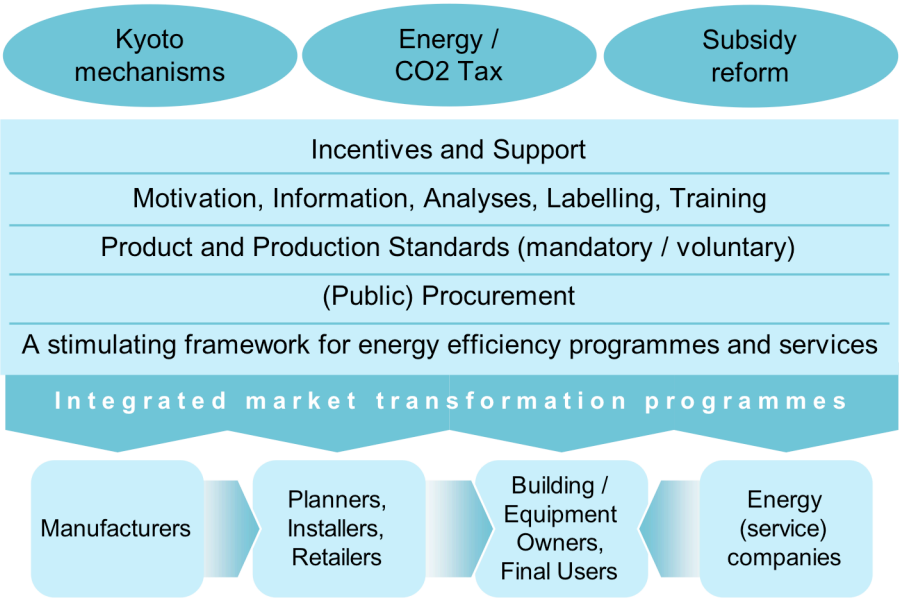


Figure 11: A basic policy package for promoting energy end-use efficiency (Source: CSCP 2005)

Keeping in mind the current energy use patterns of the poor, policies can also be targeted to practical improvement options such as improved stoves that have proven valuable in increasing the energy service delivered (e.g. heating or cooking) while reducing both resource use as well as adverse side effects on environment and health (UN-Energy 2005, p. 11). Consumer behaviour provides another opportunity to promote energy-efficiency, for example through proper maintenance and operation of equipment.

Regulatory-legal instruments	Promulgating regulatory standards for energy efficiency (UN-Energy 2005, p. 11).
Economic or market-based instruments	Pricing energy to cover the provision cost and environmental costs (UN-Energy 2005, p. 11).
	Removing subsidies that increase harmful emissions (UN-Energy 2005, p. 11, Saghir, 2005, p. 12).
	Increasing access to local sources of financing for energy efficiency (UNDP, GEF 2004, p. 2).
	Transforming market policies to promote energy efficient products and processes (UNDP, GEF 2004, p. 2).
Research and educational policies	Accelerating the development, dissemination and deployment of affordable and cleaner energy efficiency and energy conservation technologies (Agenda 21).
Cooperation Policies	Catalysing shifts in modes of urban transport and the use of 'clean' vehicles and fuel technologies (UNDP, GEF 2004, p. 2).
	Supporting low cost technologies including improved cooking stoves, low cost electricity distribution, smaller gas cylinders, and promoting use of renewable energy for replacing kerosene for cooking in isolated areas including reliable biogas systems in rural areas rich in livestock (UN-Energy 2005, p. 10).

Table 26: Policy options for promoting energy efficiency and energy savings during consumption.

3.5.3.3 Promote renewable energy and more efficient energy production

Renewable energy can reduce the environmental impacts of energy production and it is a viable option for widening access to energy services especially in rural, remote areas. Advanced, cleaner, more efficient and cost-effective energy technologies can be applied to diversify the energy supply. A focus on cost-effective solutions also helps to increase access to safe energy sources.

Regulatory-legal instruments	Eliminating restrictions or bottlenecks on the import and distribution of modern fuels and electricity (UN-Energy 2005, p. 11).
Economic or market-based instruments	Adopting incentives for beneficial new technologies during their market scale up stage (UN-Energy 2005, p. 11, Agenda 21).
	Increasing access to local sources of financing for renewable energy (UNDP, GEF 2004, p. 2).
Research and educational policies	Promoting education to provide information for both men and women about available energy sources and technologies (Agenda 21).

Table 27: Policy options for promoting renewable energy and more efficient energy production.

3.5.3.4 Institutional integration and strategic planning

The cross cutting nature of the energy sector, as well as the variety of instruments introduced above, call for coordination and integration of public policies. UN-Energy (2005, p. 9) proposes "linking energy planning to goals and priorities in other sectors and sustaining political commitment to sound energy sector management and governance". Including policy objectives and measures for sustainable energy in PRSPs is one option for bringing about this coordination and for properly aligning energy policies to wider development issues. It can also be valuable in addressing trade offs and highlighting ways of prioritising the use of public funds available

Case Study: Integrated Biogas System for Poverty Reduction and Nature Conservation in Baima Snow Mountain Nature Reserve, Deqin County, Yunnan Province-China

Villages around the Baima Snow Mountain Nature Reserve (China) lack access to electricity and impoverished households use large quantities of firewood for cooking and heating forage for raising livestock. This traditional way of raising animals is energy intensive; as it uses large amounts of animal feed and substantial quantities of firewood. This, however, creates enormous pressure on the nature reserve, which in turn leads to conflict between the Nature Reserve Conservancy authorities and local residents. Firewood utilisation for indoor cooking may cause respiratory health threats arising from smoke and poses a risk of fire or carbon monoxide poisoning.

Through partnership with local financial institutions and funds from the Beijing NGO, South-North Institute for Sustainable Development (SNISD), farmers were provided with interest free loans and training on how to set up biogas systems, grow vegetables and fruits and raise animals through advanced agricultural methods. The key objectives were:

- to protect the natural forest around the nature reserve and increase the income of local residents;
- to improve the health of families through provision of alternative sources of energy for daily use; and finally
- to teach locals advanced agricultural methods of growing vegetables and fruits and raising livestock.

The project is enabled by the following factors:

Training	Training was provided by the expertise of the Institute of Agricultural Science of Zhongdian, who trained local farmers on how to set up and use the biogas system. They equally trained farmers on advanced methods of growing fruits and vegetables and how to raise livestock efficiently with residues from biogas.
Finance	Farmers, received interest free loans from the local financial institution (agricultural bank), a local government subsidy and a project grant coordinated by SNISD. Local household labour was used to install biogas systems and this minimised costs and thus finance requirements.
Technology	Involved installing the "four-in-one" and "three-in-one" biogas technology. Biogas technology utilises agricultural residues and human and animal waste to provide an environmentally sound, high quality fuel in the form of methane that can be used for household cooking and lighting. A typical "four-in-one" biogas system consists of setting a biogas digester underground at one end of a greenhouse, with both a latrine and a pigsty above it, while a "three-in-one" system takes the same model but without a greenhouse. This forms a fine ecological mix between humans, animals and plants. Plants produce oxygen and absorb carbon dioxide while pigs breathe out CO2 and inhale oxygen. The sludge derived from the digester provides rich humus, nitrogen, phosphorus and potassium and becomes fertiliser for plants.
Partnership	The biogas project benefited from partnership and funding from a host of organisations. First, the South-North Institute for Sustainable Development (SNISD), a Chinese NGO, secured grants for the project to the tune of $180,00 from the Shell Foundation (UK), W. Alton Jones Foundation (USA) and the World Wide Fund for Nature (WWF). These have been used as a loan guarantee by the SNISD to attract poverty alleviation loans to farmers via the Deqin Agricultural Bank and Deqin Credit Co-operative Association. Other project partners included the Nature Reserve Conservancy (local administration of the reserve) and a university institute (Institute of Agricultural Science of Zhongdian).

This project has led to significant reductions in firewood consumption and curbed deforestation in the area. Six families who participated in the construction of "three in one" biogas systems in October 2000 have been able to reduce fuel wood consumption to two thirds their previous level, and there are estimates that it provides the equivalent of about five and six tonnes of firewood for a family with ten yaks and ten pigs. It has also led to reforestation as local residents are encouraged and trained to plant fruit trees such as peach saplings using residues of biogas to enrich the soil.

The biogas system has been instrumental in reducing poverty among farmers since it provides additional income from breeding pigs and growing vegetables. It has also provided significant health benefits and timesaving especially for women who spent hours for collecting firewood for cooking on energy inefficient stoves. Modern biogas stoves have been introduced and are faster in cooking and less polluting, thus reducing indoor air pollution. Secondly, inhabitants are able to use gas lamps for lighting, which leads to improvement in the quality of life as most children can learn conveniently under such conditions.

Due to the success of the demonstration project, more than 170 biogas systems were installed between 2000-2001.

(Compiled from Chuntao, Yin (2001). Using integrated biogas technology to help poor communities in Baima Snow Mountain Nature Reserve, Yunnan Province, China, Boiling Point N0. 47

CSCP, ForUM, Wuppertal Institute (2006): Energy efficiency - "Pick the low-hanging fruit" - Brochure for UN CSD-14. UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production, Norwegian Forum for Environment and Development, Wuppertal Institute.)

3.5.4 Reading Material

Links	UNDP; Energy for Sustainable Development	www.undp.org/energy/
	GTZ Themes: Energy	http://www.gtz.de/en/themen/umwelt-infrastruktur/energie/879.htm
	DFID: Energy for the poor	http://www.dfid.gov.uk/pubs/files/energyforthepoor.pdf
	UN-Energy	http://esa.un.org/un-energy/pdf/UN-ENRG%20paper.pdf
	IAEA: Energy indicators	http://www-pub.iaea.org/MTCD/publications/PDF/Pub1222_web.pdf
	UNDP: Energy Activities	http://www.undp.org/energy/activities/wea/drafts-frame.html
	IEA: Energy Information Centre	www.iea.org/Textbase/subjectqueries/index.asp
	EU: ManagEnergy	www.managenergy.net
Further Reading	**Achieving the Millennium Development Goals: The role of energy services** Case Studies from Brazil, Mali and the Philippines; UNDP 2005	
	The Energy Challenge for Achieving the Millennium Development Goals UN-Energy 2005.	
	Energy indicators for sustainable development: Guidelines and methodologies IAEA 2005, International Atomic Energy Agency, United Department of Economic and Social Affairs, International Energy Agency; Eurostat and European Environment Agency	
	Energizing the Millennium Development Goals: A guide to Energy's Role in Reducing Poverty UNDP 2005, United Nations Development Programme One United Nations Plaza New York	
	Energy and Poverty: Myths, Links, and Policy Issues Saghir, Jamal 2005. The World Bank Group, Energy Working Notes	
	Gender and Energy for Sustainable Development: A Toolkit and Resource Guide UNDP 2005, United Nations Development Programme, Bureau for Development Policy Energy and Environment, Group New York	
	UNDP & Energy for Sustainable Development UNDP 2004, United Nations Development Programme, Bureau for Development Policy, Energy and Environment Group, New York.	
	World Energy Assessment: Overview 2004 Update UNDP 2004, United Nations Development Programme, Bureau for Development Policy, One United Nations Plaza, New York	
	Sustainable Energy Consumption CSCP 2005. A Background Paper prepared for the European Conference under the Marrakech Process on Sustainable Consumption and Production (SCP), Berlin, 13-14 December 2005	
	Meeting the Climate Change Challenge: Sustaining Livelihoods UNDP, GEF 2004. Ed. Nations Development Programme, Global Environment Facility, New York	

3.6 Water

3.6.1 Introduction

Water and the water sector

Water is a scarce resource with multiple and interconnected uses by different sectors including agriculture, domestic activities (e.g. drinking, washing), industry, fisheries, navigation and recreation. The water sector itself comprises both upstream issues, such as impacts on water bodies due to extraction (e.g. minimum flows to support aquatic life), and downstream issues related to uses such as the purification and distribution of water, its use and finally wastewater collection and treatment.

Most pressing issue: safe water and adequate sanitation

Access to safe drinking water and basic sanitation are among the most pressing issues for reducing poverty - "No single measure would do more to reduce disease and save lives in the developing world than bringing safe water and adequate sanitation" (Kofi Annan in UNDP 2004: 7). Having access to and using sanitation facilities not only increases health, but also improves overall wellbeing and economic productivity (WHO, UNICEF 2005).

Good news	Bad news
There is a lot of fresh water in the world	It is not always where man needs it
Water is free from nature	Infrastructure needed to deliver water is expensive
In many areas, water is easily accessible at a low cost	People assume it will always be available & take it for granted
Nature is constantly recycling & purifying water in rivers & lakes	Man is polluting water faster than nature can recycle it
There is a huge amount of water underground	Man is using this water faster than nature can replace it
5 billion people have reasonable access to fresh water	Over 1 billion do not
3.8 billion people have at least basic sanitation	2.4 billion do not
Millions are working their way out of poverty	Affluent people use more water
The pace of industrialisation is increasing	Industry will require more fresh water
Industry is becoming more efficient in its water use	Many industries are still using water unsustainably/inefficiently
Awareness of water issues is increasing	Translating awareness into action can take a long time

Table 29: Stylised 'good' and 'bad' news on water (Source: WBCS 2005: 11)

Water on the international agenda

Corresponding to its importance, water ranks high on the international agenda. The United Nations affirmed the Right to Water in 2002, noting that such a right is "indispensable for leading a life in human dignity" (UNDP 2004:10), and declared the "International Decade for Action Water for Life" in December 2003 (WHO, UNICEF 2005). The tenth target of the MDGs aims to "halve, by 2015, the proportion of people without sustainable access to safe drinking water". To achieve this goal a Millennium Task Force on Water and Sanitation was established. The cross-sectoral nature of water issues makes access to water supply and sanitation a key basis for achieving overall development and meeting further MDGs such as poverty eradication, material health improvement and the combating of major diseases.

3.6.2 What does SCP mean in the water sector?

3.6.2.1 Environmental dimension

Ecosystem health crucial to ensure water supplies

While water exists in abundance, only 2.5% of water on earth is fresh water, and about 60% of that is locked up in glaciers and snow (UNDP 2004: 9). Nature has the capacity to clean fresh water through intact natural processes and ecosystems and this can help to provide an adequate supply of water in terms of both quality and quantity. Agenda 21, therefore, calls for the maintaining of the hydrological, biological and chemical functions of ecosystems.

Water availability and accessibility

Human activities can threaten ecosystem functions and diminish the supply of fresh water. Examples of these activities are:

- **Excessive water extraction** that can cause stress on water resources both in marginal rural regions and in large urban centres. The consequences of unregulated water use as well as inadequate irrigation practices include water shortages, salinisation of groundwater resources, erosion and desertification.
- **Land use:** Development of infrastructure, land modification of river flows e.g. for urban settlements, deforestation and changing patterns of agricultural use can threaten lakes and watersheds thus threatening water supplies in sensitive areas.
- **Climate change:** There is increasing evidence that global climate change and climate variability will affect the quality and quantity of water supplies (UNDP website). Changing and unstable rainfall patterns are likely to put water supplies in significant portions of the globe at risk.

Impacts and challenges related to water quality

Going beyond water availability, human activities can reduce the quality of fresh water:

- **Waste and effluents:** Humans unload 2 million tons of waste into lakes and rivers every day. This waste ranges from human excreta and agricultural waste such as pesticides, to chemical and industrial waste. Salinity, as well as contamination from arsenic, fluoride and other chemical toxins can seriously threaten ecosystems and drinking water quality (UNDP 2004: 9).
- **Inadequate agricultural practices:** Inadequate irrigation, as well as excess use of chemicals in agriculture can lead to the pollution of fresh- and ground-water with pesticides and fertilizers. Other inadequate practices include the use of flooding as an irrigation method which affects water quantity available for other uses as well as quality.
- **Lacking adequate sanitation:** Lacking access to wastewater treatment systems that mix domestic and industrial wastewater contributes to the pollution of water with organics, nutrients, hazardous substances, pharmaceutical residues or hormones. This can cause severe environmental damage, for example leading to eutrophication of the water cycle or impoverishment of agricultural soils.

Other functions of water-providing ecosystems

Water-providing ecosystems might not only provide fresh water, but could also contribute to other human need areas such as fishing, transport, cultural activities, recreation or tourism. Deterioration of these ecosystems can, therefore, have broad social and economic consequences.

3.6.2.2 Social dimension

Ensure access to water for all

As stated above, access to clean and safe water is a major goal on various development agendas. Even today, 42% of the world's population or, in other words, 2.6 billion people have no access to basic sanitation and 1.1

billion do not have access to improved drinking water (WHO, UNICEF 2005:11).

The results of this "silent humanitarian crisis" are disastrous and they include the death of some 3,900 children every day (SIWI, Millennium Task Force 2005: 11). The situation will become even more difficult in the coming years due to the increase in per capita water use that commonly accompanies development, population growth, increased concentration of the population in urban areas, and climate change (UNDP 2004: 9).

Drinking water sources		Sanitation facilities	
Improved	**Unimproved**	**Improved**	**Unimproved**
Household connection, public standpipe, borehole, protected dug well, protected spring, rainwater collection	Unprotected well, unprotected spring, rivers or ponds, vendor-provided water, bottled water, tanker truck water	Connection to a public sewer, connection to a septic system, pour-flush latrine, simple pit latrine, ventilated improved pit latrine	Public or shared latrine, open pit latrine, bucket latrine

Table 30: Examples of 'improved' vs. 'unimproved' drinking water and sanitation (WHO, UNICEF 2004: 4)

Improved nutrition

Water is crucial for drinking and food security; since water is needed for agriculture, tree crops, livestock, fishing, home gardens and cooking. Adequate Irrigation and drainage have contributed to doubling food production and reducing global food prices (UN Task Force on Water and Sanitation 2005: 17).

Safe water can curb health problems

Polluted water affects the health of 1.2 billion people every year, and contributes to the death of 15 million children under five every year. Vector-borne diseases, such as malaria, kill another 1.5 to 2.7 million people per year, although improved water and land management could reduce the breeding areas of mosquitoes and, thereby, the occurrence of malaria (UNDP website). Combining improved quality and quantity of drinking water with adequate sanitation and hygienic practices, such as hand washing, is a precondition for, and major step in, the reduction of diseases, especially among children (SIWI, UN Millennium Project 2005: 13). A recently published study estimates that improved water supply can reduce the incidence of diarrhoea by 25%. Improved sanitation reduces diarrhoea morbidity by 32% on average, depending on local conditions (WHO, UNICEF 2005:13)

Water and gender equality

In most developing countries women and girls are responsible for ensuring water supply. They transport up to 60 litres for daily use and in some regions walking for hours. As a consequence they may have no time or energy for education or economic activities and often suffer from chronic health problems (GTZ website). At home, also, the activities of women and girls depend heavily on water and sanitation because they are usually responsible for bathing, household hygiene, cooking and taking care of family members who become sick, which happens more frequently if there is a lack of water and sanitation. Overall, access to improved drinking water sources and sanitation is key in the promotion of gender equality and empowerment of women.

Water wastage

Despite its scarcity, water is often wasted. One reason is that it is often very cheap and sometimes free for those connected to the water grid, so there is no incentive for conservation and inefficient over-use occurs (BMZ 2001: 6). Other reasons include lack of knowledge on water management and inadequate institutional structures.

3.6.2.3 Economic dimension

Access to water is not only a human right but it also has various economic implications. These include financing water-related investments, water as an input for economic activities and the macro-economic benefits of im-

proved access to water. Finally, an adequate pricing of water needs to consider the affordability of water by poor people as well as setting the right incentives for its efficient and careful usage.

Financing water-related investments

Financial resources are needed for infrastructure and for the operational expenses of collecting, treating and distributing water. Chronic under-financing of water infrastructures hinders the widespread access to water and sanitation services. As a consequence, water utilities often lack the funds to employ well-qualified staff or to maintain water supply systems adequately. A significant gap exists between the financial resources needed to meet the MDGs and the levels that are currently provided by the public sector, the private sector and development assistance. The lack of adequate pricing of water aggravates the shortage of finance for water-related investments (see 3.6.3). Applying the 'cost recovery' principle could raise substantial and urgently needed funds.

Water as a production input

As can be seen from Table 31, water is a production input for a variety of sectors. Today, agriculture accounts for the vast amount of water consumption in developing countries, but the data from industrialised countries like France, the Netherlands and United Kingdom shows that with growing industrialisation water use in the industrial sector is likely to rise.

	Agriculture	Industrial	Domestic & Commercial
China	87 %	7 %	6 %
Egypt	88 %	5 %	7 %
India	93 %	3 %	4 %
France	12 %	71 %	17 %
Netherlands	32 %	63 %	5 %
United Kingdom	1 %	78 %	21 %

Table 31: Sectoral use of fresh water by selected countries (Source in WBCSD, UNEP 1998: 8)

A production factor in agriculture

Agriculture can be considered "both the largest consumer and often the largest waster of water" (BMZ 2001: 6). Irrigated agriculture accounts for almost 70% of the global fresh water use. Limited and unreliable access to water is a determining factor in agricultural productivity in many regions (UNDP 2004: 23). In the future, climate change is projected to increase rainfall variability and, thereby, decrease the reliability of water as an input to agriculture. Because of leakage and inefficient irrigation systems, on average 60% of the water used in agriculture is lost (UNDP 2004: 23). Simple but efficient irrigation technologies such as drip irrigation could lower the amount of water that is wasted and, by doing so, meet agricultural demands for water whilst still increasing yields (BMZ 2001: 6).

A production factor in industry and manufacturing

Water is an important input for various production processes such as cooling, food processing or cleaning and can be critical in supplying energy (see manufacturing sector description). WBCSD (2001: 8) claims "industry is using less water, recycling and cleaning it for reuse while producing more goods and services than before." Nevertheless, rising levels of manufacturing activity in developing countries can put stress on water resources and can spur competition for scarce supplies. Industry's current share of 20% of total water use is expected to rise dramatically over the next 50 years.

Macro-economic benefits of increasing access to water

Finally, lacking access to water can put a heavy financial burden on societies. This includes costs in the healthcare system for treating water related diseases, lost work time and lower productivity of ill workers, and reduced household income due to time spent collecting water from distant sources (WHO, UNICEF 2005:16). Investing in improved access to water could lower these costs; economic analyses estimate that, depending on

the region of the world, economic benefits might range from US $3 to US $34 for each dollar invested (WHO, UNICEF 2005: 4).

Adequate pricing of water

Adequate pricing of water should ensure efficient and equitable water allocation. Since most poor people are not linked to a water supply and sewage systems to begin with, subsidies for water consumption chiefly benefit the middle classes and the rich. Lack of funding prevents water providers from expanding their services to poor housing areas. Water delivery sellers step in to sell water that is often of poor quality and is expensive (BMZ 2001: 6). On the other hand, the private costs experienced by users connected to the grid are often way below the costs that society faces for providing the water, which leads to an over-use of water by these users, which generally tend to be more affluent than those not connected. The Dublin Conference on Water and the Environment in 1992 established the principle that water is an economic good to which realistic prices should be attached. However, in most cases, water markets still function poorly due to price distortions. The 'cost-recovery' principle is not applied. This is because the idea that water is something that one has to pay for often meets widespread resistance and because water is heavily subsidised by governments with political considerations hindering the necessary reforms. (UNDP 2004: 6.)

3.6.3 Approaches for SCP in the water sector

Sustainable water management aims at securing or increasing both quantity and quality of water available, making the benefits of improved water supply and sanitation available to all people in society. While government regulatory frameworks are critical in fostering the sustainable development of water resources (UNDP 2004: 10), other players contribution also have to acknowledged, e.g. by households and the private sector (see below).

Integrated Water Resources Management (IWRM)

Addressing water in a holistic way, i.e. ensuring that actions taken in one area, such as sanitation, do not worsen conditions in another, such as the environment, requires the capacity for cross-sector planning and policy making. Integrated Water Resources Management (IWRM), a cross-sector policy approach responding to the water crisis and addressing the environmental, social and economic challenges described above, shall facilitate this. It strives to match the growing demands for water in the context of finite supplies and is designed to replace the traditional, fragmented sectoral approach to water resources and management by integrating issues related to both water demand and supply (UNDP 2004: 10).

Integrating environmental, social and economic objectives

IWRM tries to capture the linkages between these important areas and realistically assess trade-offs. Water resources are understood on the one hand as an integral component of the ecosystem and as a natural resource, and on the other as a social and economic good. Watersheds, rivers, lakes, wetlands, coastal zones and oceans should be seen as part of an interdependent system; the ways in which the hydrological cycle affects and is affected by land use should be recognised (UNDP 2004: 12). It is also oriented on a variety of development objectives, including environmental health and sustainability, human wellbeing, and women's empowerment.

Common principles for sustainable water management

A set of common principles can be identified across the strategies proposed by different institutions, such as GTZ, UN-Institutions, World Bank etc, and most are also addressed by IWRM:

- **Participation**: Involvement of users, planners, and policy makers at all levels (Agenda 21). Examples include water parliaments in the area of water resource management, consumer associations in urban areas, and the water supply and self-management of wastewater, particularly in rural areas (GTZ website).
- **Decentralisation:** Decisions should be taken at the lowest appropriate level, i.e. in communities and villages as opposed to in capitals, and with public consultation and involvement of users in the planning and imple-

mentation of water projects (Agenda 21, UNDP 2004: 10) There is also a need to develop the capacity to construct and manage small, locally operated water and sanitation systems in cities, which are much less expensive and technologically complex than large, centralised systems, as well as to devise and implement a range of lower-cost technological options for both rural and urban areas (UNPD 2004: 7).

- **Capacity building:** Decentralisation creates the need to "empower local authorities and communities with the authority, resources, and professional capacity required" to manage water supply and deliver services (SIWI, MTF 2005: 12). Capacity building helps to realise reforms and alternative modes of service provision and to improve and decentralise water services. Besides long-term requirements for graduates and skilled personnel, close attention must be paid to the immediate capacity needs of government and civil society to support policy, legal and institutional reforms. This is an issue at all levels and relevant in both the public and private sectors (UNDP 2004: 9).
- **Global partnerships:** Water-based conflicts, due to increasing demands on available water supplies caused by development and population growths and also those over trans-boundary water resources, have to be prevented by cooperation, partnerships and international agreements. One example is the 'Global Water Partnership' that "seeks to support integrated approaches to sustainable water management by encouraging stakeholders at all levels to work together in more effective, efficient and collaborative ways" (UNDP web-site).
- **Appropriate pricing of water:** As emphasised above, appropriate water pricing that considers both the equitable allocation of water to poor people and the needs for financing the water infrastructure can be important. Carefully implemented pricing instruments can have both positive environmental and social outcomes since through more efficient water use and attention to production costs generally reduces water wastage. Water pricing can also generate necessary revenues for operating, maintaining, expanding or modernising the water system. While those who 'can pay do pay', it is essential to ensure that a "basic supply of safe water and adequate sanitation should be affordable for everyone" and that fees are "socially compatible, (i.e.) affordable for the poor" (BMZ 2001: 8, UNPD 2004: 7).
- **Promoting behavioural change:** How households treat, store and use water can make a great impact. There is a huge return in terms of lives saved and disease reduction from the adoption of simple techniques for disinfecting water used for drinking and cooking. Household treatment cuts the primary transmission route for diarrhoeal disease and can give a return of as much as US $60 for every US $1 invested. Awareness raising campaigns, e.g. to promote hand washing with soap and safe disposal of infants' stools, have been shown to deliver significant health gains (WHO, UNICEF 2005: 23). IWRM also calls for recognising and supporting women with respect to the central role they play in the provision, management and safeguarding of water (UNDP 2004: 10).
- **Involving the private sector:** Certain private sector activities, for example agriculture and textile industry, rely heavily on water, and there is significant potential for improving the efficiency of water use and minimising the impacts on water quality should be available (see 3.6.2.3). Involving the private sector and/or public-private partnerships in water resource management can provide positive results when appropriately implemented.

Institution building and policy planning

Governance systems, policies, institutions and instruments under IWRM should take into account the physical processes as well as the human needs to optimise economic and social welfare without threatening the long-term sustainability of environmental systems. This requires coordinating planning, decision-

making and implementation of policy and action in the management of water, land and related resources. Some examples of these practical water management instruments are water resources assessments and information dissemination, awareness raising, allocation and conflict resolution, regulatory instruments, technology and financing (UNDP 2004: 10).

Case Study: Cooperative Programme for water supply and sanitation in small and medium-sized towns in Bolivia

Although the Bolivian water sector received quite high investment, the percentage of the population with access to drinking water (72%) and wastewater disposal (61%) is low even by Latin American standards. Public water suppliers suffer from limited know-how and high staff turnover. A further challenge is that the Bolivian population expects water to be a "free gift", and does not want to pay cost-covering fees.

To improve the situation a “Cooperative Programme for water supply and sanitation in small and medium-sized towns in Bolivia” was initiated in 2001. The programme aims to enhance cooperation between the state and local authorities, the population and the water supply companies as well as to improve the water supply and sanitation services in certain towns.

The programme has four strategically linked components:

1. Advice on sector policies and strategies to strengthen national institutions such as the Vice Ministry for Basic Sanitation, the regulatory authority of the water sector and the umbrella organisation of water distribution companies ANESAPA.
2. Awareness-raising and education of the population is critical for the creation of the social and political background necessary to transform the sector and to empower local people. Issues identified as central themes are hygiene, conflict management and participation in the development of a functioning water supply and sanitation sector.
3. Training services not only offering seminars and consulting but also providing a network for water suppliers.
4. Fostering access to basic sanitation in selected small and medium-sized towns in economically weak regions with the help of technical assistance and financial resources. In this way, the supply situation for at least 600,000 inhabitants could be improved.

Several factors were crucial for the realisation of the programme:

Training	With support of the programme the umbrella organisation of the water suppliers ANESAPA has established an advisory unit. It offers management consultancy and training services for water suppliers nationwide.
Finance	The German development bank (KFW) offers investment credit to improve infrastructure. Although unusual, the capital was disseminated to the participating population in the form of shares to strengthen community control. Therefore, significantly, the ownership and scope of action lie in the hands of the users and not of local authorities. The foundation to support sustainability in basic sanitation services (FUNDASAB) was set up with an initial finance of 1 million Euros from Germany. Currently the Vice Ministry for Sanitation negotiates with other potential donors. Communities or companies accessing the services have to contribute partially to the costs, depending on the socio-economic potential. This helps to maintain the fund and enhances the motivation and ownership for the activities.
Partnership	The programme is based on an agreement between Germany and Bolivia. The lead executing agency is the Vice Ministry for Basic Sanitation Services. A further important Bolivian partner is the umbrella organisation of the water suppliers ANESAPA. To realise improvements the German Development Bank (KFW) and the German Technical Cooperation support the project with advice, training and finance.

Table 32 Enabling factors for the programme

The project is still ongoing, but already the practical experience obtained at local level is relevant and useful at national level. In this way, the Vice Ministry developed a national sector policy for Basic Sanitation Services and the regulatory board. This sector policy is designed not only to increase the percentage of people supplied with basic sanitation but also to meet poverty and sustainability challenges. The establishment of a foundation and advisory units builds the basis for continuing advice and long-term success even after the programme itself is phased out.

Further Information: http://www.gtz.de/en/themen/umwelt-infrastruktur/wasser/3789.htm
Website of this project: www.proapac.org/

3.6.4 Reading Material

Links	UNEP Water Policy and Strategy	http://www.unep.org/dpdl/water/index.asp
	World Bank Water Resource Management	http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTWRM/0,,menuPK:337246~pagePK:149018~piPK:149093~theSitePK:337240,00.htm
	World Water Forum 4, Mexico 2006	http://www.worldwaterforum4.org.mx/home/cuartowwf04_01.asp?resp=02
	Pacific Institute: Water and Sustainability	http://pacinst.org/topics/water_and_sustainability/
	World Water (Pacific Institute) – Information on the World's Freshwater Resources	www.worldwater.org
	World Water Council	http://www.worldwatercouncil.org/
	The Global Water Partnership	http://www.gwpforum.org/servlet/PSP
	The Water and Sanitation Program	http://www.wsp.org/index.asp
	Cap-Net Capacity Building for Integrated Water Resources Management	http://www.cap-net.org/showhtml.php?filename=rc_rc1

	Water Aid	www.wateraid.org.uk
Further Reading	**Water Governance for Poverty Reduction: Key Issues and the UNDP Response to the Millennium Development Goals** UNDP/BDP Energy and Environment Group 2004, New York. http://www.undp.org/water/pdfs/241456%20UNDP_Guide_Pages.pdf	
	Health, Dignity, and Development: What Will It Take? UN Millennium Project Task Force on Water and Sanitation, Final Report, Abridged Edition SIWI, Stockholm International Water Institute and United Nations Millennium Project, New York 2005. http://www.unmillenniumproject.org/documents/What_Will_It_Take.pdf	
	Meeting the MDG Drinking Water and Sanitation Target: A Mid-Term assessment of Progress World Health Organization, Geneva and United Nations Children's Fund, New York 2004. http://www.wssinfo.org/pdf/JMP_04_text.pdf	
	Water for Life – Making it happen WHO, UNICEF 2005 Geneva. http://www.wssinfo.org/pdf/JMP_05_text.pdf	
	Global Water Scoping Process – Is there a case for a multistakeholder review of private sector participation in water and sanitation? ASSEMAE (Brazilian Association of Municipal Water and Sanitation Public Operators). Consumers International, Environmental Monitoring Group, Public Services International, RWE Thames Water, and WaterAid, with support from German Technical Cooperation (GTZ), April 2004. http://www.wateraid.org/documents/scoping_report__complete_final_version.pdf	
	Water – Responses to the global crisis BMZ 2001 Federal Ministry for Economic Cooperation and Development http://www.bmz.de/en/service/infothek/fach/materialien/materialie115.pdf	
	Ensuring Sustained Beneficial Outcomes for Water and Sanitation Programmes in the Developing World IRC 2005, International Water and Sanitation Centre, Delft (The Netherlands) 2005. http://www.irc.nl/page/27612	
	Water for the Poor WBCSD 2002, World Business Council for Sustainable Development, Geneva, 2002. http://www.wbcsd.org/DocRoot/rb0fIAtRuPY7fCmLkPEB/20020821_water.pdf	
	Water – Facts and Trends WBCSD 2005, World Business Council for Sustainable Development, Geneva 2001. www.wbcsd.org/DocRoot/KJGCg0546U2Hwdl1SrGQ/Water_facts_and_trends.pdf	
	Partnerships in Practice: Industry, Fresh Water and Sustainable Development WBCSD 2001. World Business Council for Sustainable Development, Geneva 2001. http://www.wbcsd.org/DocRoot/mfdWkt9XATA93a4g56rB/Partnership.pdf	
	Industry, Fresh Water and Development WBCSD, UNEP 1998, World Business Council for Sustainable Development, Geneva and United Nations Environmental Programme 1998. http://www.wbcsd.org/DocRoot/FMsE51VQ4tLCaBGAAUIT/freshwater.pdf	

3.7 Further reading material

This section features resources for the sectors not already covered in depth above. For agriculture, manufacturing, tourism, energy and water, please consult the respective sector profiles.

3.7.1 Forestry and Hunting

Forestry and hunting provide both monetary and natural income to a wide range of poor people in developing countries. Forests also perform important ecosystem functions, especially with regards to the provision of water, but also for air regeneration and general recreation. In many countries, forests are currently not adequately managed, and over-exploitation, deforestation and conflicting uses can lead to severe economic and social consequences for the poor. Further, illegal hunting (poaching) activities can severely limit opportunities for legitimate use of wildlife resources such as tourism and legal game hunting. Intact forest areas are also a precondition for tourism in general and eco-tourism in particular.

Links	Forestry Department of the UN Food and Agriculture Organisation (FAO)	http://www.fao.org/forestry/index.jsp
	United Nations Forum on Forests (UNFF)	http://www.un.org/esa/forests/about.html
	GTZ – International Forest Policy, German Technical Cooperation	http://www.gtz.de/en/themen/laendliche-entwicklung/natuerliche-ressourcen/1822.htm
	Program on Forests	http://www.profor.info/
	Forest Stewardship Council (FSC)	http://www.fsc.org/en/
	Center for International Forestry Research (CIFOR)	http://www.cifor.cgiar.org/
Further Reading	**Global Forest Resource Assessment 2005 – Progress towards sustainable forest management** FAO 2006, United Nation Food and Agriculture Organisation, Rome 2006. ftp://ftp.fao.org/docrep/fao/008/A0400E/A0400E00.pdf	
	Transfer of Environmentally Sound Technologies for Sustainable Forest Management - Framework and Applications UNFF 2005, United Nations Forum on Forests Secretariat, New York 2005. http://www.un.org/esa/forests/pdf/publications/tests1205.pdf	
	Governance towards responsible forest business - Guidance on different types of forest business and the ethics to which they gravitate IIED 2006, International Institute for Environment and Development, Forestry and Land Use Programme (FLU), Edinburgh 2006. http://www.iied.org/NR/forestry/documents/Responsible_forest_business_001.pdf	
	Silver Bullet or Fools' Gold: A global review of markets for forest environmental services and their impact on the poor. IIED 2002, International Institute for Environment and Development, London 2002. http://www.iied.org/pubs/pdf/full/9066IIED.pdf	
	Certification's Impacts on Forests, Stakeholders and Supply Chains Instruments for sustainable private sector forestry IIED, 2001; International Institute for Environment and Development, London, Forestry Institute Oxford, 2001. http://www.iied.org/pubs/pdf/full/9013IIED.pdf	

3.7.2 Fishing

Near coasts, lakes and rivers, many poor traditionally rely on fishing and other water-based activities for securing income and nutrition. Over-use of fishing grounds through industrialised fishery, unsustainable fishing practices, deteriorated quality of waters and water-based ecosystems have led to income and employment losses for the poor. Sustainable fishing practices, protecting animal stocks, balancing the requirements of industrial and traditional fishery applying cleaner production technologies and improving the state of waters and water-based ecosystems can thus help to secure sustainable livelihoods for the poor.

Links	Fisheries Department of the UN Food and Agriculture Organisation (FAO)	http://www.fao.org/fi/default.asp
	GTZ Responsible Fisheries, German Technical Cooperation	http://www.gtz.de/en/themen/laendliche-entwicklung/natuerliche-ressourcen/3008.htm
	Marine Stewardship Council (MSC)	http://de.msc.org
	World Fish Center	http://www.worldfishcenter.org
	Onefish - A resource gateway for fisheries and aquatic research and development	www.onefish.org
Further Reading	**Toward Sustainable and Equitable Governance of the Global Fishing Sector** The World Bank 2004, Agriculture and Rural Development Department. http://siteresources.worldbank.org/INTARD/986366- 1113566763061/20550805/ SavingFishandFishers.pdf	
	Increasing the contribution of small-scale fisheries to poverty alleviation and food security FAO 2005, United Nations Food and Agriculture Organisation (FAO), Rome 2005. ftp://ftp.fao.org/docrep/fao/008/a0237e/a0237e00.pdf	
	Putting into practice the ecosystem approach to fisheries FAO 2005, United Nations Food and Agriculture Organisation (FAO), Rome 2005. ftp://ftp.fao.org/docrep/fao/008/a0191e/a0191e00.pdf	
	Fishing for Answers: Making sense of the global fish crisis WRI 2004, World Resource Institute, Washington 2004. http://pdf.wri.org/fishanswer_fulltext.pdf	
	Ecolabelling and Fisheries Management World Fish Center, Penang, Malaysia 2004. http://www.worldfishcenter.org/Pubs/Ecolablelling/pdf/Ecolablelling.pdf	
	FISH TO 2020 Supply and Demand in Changing Global Markets International Food Policy Research Institute, Washington, World Fish Center, Penang, Malaysia 2003. http://www.ifpri.org/pubs/books/fish2020/oc44.pdf	

3.7.3 Construction

Lack of adequate housing is common among the poor, which severely reduces quality of life, leads to serious health problems and increases the vulnerability of the poor to natural disasters. On the other hand, large-scale construction projects can severely affect the poor, e.g. through destroying eco-systems or changing settlement patterns. The official construction sector also relies on labour provided by the poor, raising questions of labour standards and the equitable sharing of benefits. Finally, both construction and usage require significant amounts of energy and resources and have considerable environmental and health impacts.

Links	UNEP Sustainable Building and Construction Forum	http://www.unep.or.jp/ietc/sbc/index.asp
	UNEP Sustainable Building and Construction Initiative (SBCI)	http://unepie.org/pc/
	Housing and Land Rights Network	http://www.hlrn.org/
	Habitat International Coalition	www.hic-mena.org
	Istanbul Declaration on Human Settlements and the Habitat Agenda	http://www.unchs.org/unchs/english/hagenda/index.htm
	Urban Management Programme	http://www.unhabitat.org/programmes/ump/
Further Reading	**Agenda 21: Promoting Sustainable Human Settlement Development (Chapter 7)** http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter7.htm#	

	Istanbul Declaration of Human Settlement Un-Habitat 1999 http://www.unhabitat.org/declarations/Istanbul_Declaration.pdf
	Declaration on Cities and Other Human Settlements in the New Millennium Un-Habitat 2001. http://www.unhabitat.org/declarations/declaration_cities.asp
	The UN-Habitat Strategic Vision UN-Habitat 2003, Nairobi. http://www.unhabitat.org/documents/HabVision030505Public.pdf
	Sustainable building and construction UNEP (2003): Industry and Environment, Volume 26, Nr 2-3 http://www.uneptie.org/media/review/vol26no2-3/voL26_no2-3.htm
	UMP 28: Implementing the Habitat Agenda: Urban Management Programme City Consultation Case Studies, UNDP, UNCHS, World Bank 2002. http://www.unhabitat.org/programmes/ump/documents/UMP28.pdf
	Human settlements: policy options and possible actions to expedite implementation UN Economic and Social Council 2005. Commission on Sustainable Development Thirteenth session. http://daccessdds.un.org/doc/UNDOC/GEN/N04/647/88/PDF/N0464788.pdf
	Human Settlements: The growing problem of urban slums United Nations Commission on Sustainable Development 2005. http://www.un.org/esa/sustdev/csd/csd13/backgrounder_hs.pdf
	Implementation Of The Habitat Agenda: Guide For Local Authorities And Their Associations World Association Of Cities And Local Authorities Coordination (Waclac), United Nations Centre For Human Settlements (Habitat). www.Unhabitat.Org/Unchs/English/Hagenda/Guide2.Htm
	Guide For Parliamentarians For The Implementation Of The Habitat Agenda United Nations Centre For Human Settlements - Habitat (Unchs) 1998. http://Www.Unhabitat.Org/Unchs/English/Hagenda/Parl.Htm
	Guide For Civil Society Organizations For The Implementation Of The Habitat Agenda United Nations Centre For Human Settlements - Habitat (UNCHS) 1998. http://www.unhabitat.org/unchs/english/hagenda/civil-so.htm
	Sustainability And Construction Chartered Institute of Building (CIOB), UK. http://www.ciob.org.uk/ciob/resources/downloads/information/sustainability.pdf
	Industry as a partner for sustainable development: Construction CICA 2002. Sector Report for the World Summit on Sustainable Development, Confederation of International Contractors' Associations, 2002

3.7.4 Mining & Quarrying

Some developing countries rely heavily on the extraction and on-site treatment of raw materials and energy carriers. Mining and quarrying does provide low-skilled employment and substantial export earnings for some countries. SCP issues are paramount in the sector, amongst them working conditions at the sites, impacts on ecosystem, community impacts, child labour and corruption.

Links	International Council on Mining and Metals (ICMM)	www.icmm.com

	International Petroleum Industry Environmental Conservation Association (IPIECA)	www.ipieca.org
	The Mining, Minerals and Sustainable Development (MMSD) Project	www.iied.org/mmsd
Further Reading	**Breaking New Ground: Mining, Minerals, and Sustainable Development.** Linda Starke (ed.) 2002, IIED	
	Industry as a partner for sustainable development: Oil and Gas. IPIECA / OPG 2002: Sector Report for the World Summit on Sustainable Development, International Association of Oil and Gas Producers, International Petroleum Industry Environmental Conservation Association, 2002	
	Striking A Better Balance: The final report of the Extractive Industries Review. The World Bank Extractive Industries Review, 2003	
	GRI Mining and Metals Sector Supplement Global Reporting Initiative, 2005. Pilot version 1.0	
	Extractive Sectors and the Poor: An Oxfam America report. Oxfam America 2001	
	Community Development Toolkit ICMM and the World Bank 2005, ICMM	
	Mainstreaming Mineral Wealth in Growth and Poverty Reduction Strategies Antonio M.A. Pedro, 2004, UN Economic Commission for Africa, ECA Policy Paper No. 1	

3.7.5 Waste management

Adequate waste management, including waste prevention and minimization, collecting, re-using, recycling or safely disposing waste, is a challenge in many developing countries, not only in urban regions but also in natural areas where due to the existence of fragile ecosystems, impacts are even worse. Failure can lead deterioration of eco-systems and health implications, e.g. through run-off from wild landfills. Furthermore, appropriate waste management can recover some of the energetic and material value contained in the waste, as well as providing a source of employment and income for the poor.

Link	UNEP Waste Management	http://unepie.org/pc/pc/waste/waste.htm
	International Solid Waste Association (ISWA)	www.iswa.org
	Collaborative Working Group on Solid Waste Management in Low-and Middle-Income Countries (CWG)	http://www.cwgnet.net/
	E-Waste Guide	http://www.e-waste.in/
Further Reading	**Waste Management Planning: An Environmentally Sound Approach for Sustainable Urban Waste Management: An Introductory Guide for Decision-makers** UNEP, ISWA 2004, United Nations Environment Programme, International Solid Waste Association 2004. http://iswa.org/components/com_docman/dl2.php?archive=0&file=SVNXQV9fVU5FUF3YXN0ZV9wbGFubmluZy5wZGY=	
	Integrated Waste Management Scoreboard: A tool to measure performance in municipal solid waste management UNEP 2005, United Nations Environment Programme, Nairobi 2005 http://www.unep.or.jp/Ietc/Publications/spc/IWM_scoreboard-binder.pdf	
	Assessment of information related to waste and material flows: A catalogue of methods and tools European Environment Agency, Copenhagen 2003. http://reports.eea.eu.int/technical_report_2003_96/en/tech_96	

	Improvement of Sanitation and Solid Waste Management in Urban Poor Settlements GTZ 2005, German Technical Cooperation, Environment and Infrastructure Division, Eschborn, 2005, Commissioned by Federal Ministry for Economic Cooperation and Development. http://www.gtz.de/de/dokumente/en-svabfall-infothek-is-download-vdeisasummary.pdf
	Private Sector Involvement in Solid Waste Management – Avoiding Problems and Building on Successes GTZ 2005, German Technical Cooperation, Environment and Infrastructure Division, Eschborn, 2005, Commissioned by Federal Ministry for Economic Cooperation and Development. http://www.gtz.de/de/dokumente/en-abfall-infothek-download-pspwastelong.pdf
	Embracing Not Displacing: Involving The Informal Sector In Improved Solid Waste Management – Solid waste, health and the Millennium Development Goals CWG 2006 Collaborative Working Group on Solid Waste Management in Low- and Middle-income Countries. http://www.cwgnet.net/prarticle.2006-01-27.9445210332/prarticle.2006-01-27.0949657238/prarticleblocklist.2006-01-27.1370579427/skatdocumentation.2006-01-27.9979710959/fil

3.7.6 Transport

Access to improved transport can bring great social and economic benefits to the poor, either by setting up or improving public transport systems or by providing them with affordable, sustainable private mobility options. Reducing the environmental and social impacts of today's unsustainable transport patterns should be part when aiming for SCP in the transport sector. A relative undeveloped state of private automobile infrastructure can be seen as an opportunity to 'leapfrog' toward more sustainable transportation systems rather than pursue a similar pathway as the industrialised northern countries which will bring with it all the environmental challenges witnessed in developed countries today.

Links	World Bank – Transport Group	http://web.worldbank.org/WBSITE/EXTERNAL/ TOPICS/ EXTTRANSPORT/0,,menuPK:337122~pagePK:149018~piPK:149093~theSitePK:337116,00.html
	World Business Council for Sustainable Development (WBCSD) – Sustainable Mobility	http://www.wbcsd.org/templates/TemplateWBCSD5/layout.asp?type=p&MenuId=ODE&doOpen=1&ClickMenu=LeftMenu
	AASHTO –The voice of Transportation	http://www.transportation.org/
Further Reading	**Poverty Reduction Strategies Papers Sourcebook, Chapter 22 : Transport** World Bank 2003, Washington. http://povlibrary.worldbank.org/files/4408_chap22.pdf	
	Improving Rural Mobility: Options for Developing Motorized and Nonmotorized Transport in Rural Areas World Bank 2002, Washington. http://iris37.worldbank.org/domdoc/PRD/Other/PRDDContainer.nsf/All+Documents/85256D2400766CC7852570400076EBB0/$File/twu-48.pdf	
	Cities on the Move - A World Bank Urban Transport Strategy Review World Bank 2002, Washington. http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/10/12 /000094946_02100204022071/Rendered/PDF/multi0page.pdf	
	Urban Transport and Poverty in Developing Countries: Analysis and Options for Transport Policy and Planning GTZ 2002, German Technical Cooperation, Environment and Infrastructure Division, Eschborn, 2002. http://www.gtz.de/de/dokumente/en-urban-transport-and-poverty.pdf	

Economic Instruments for Sustainable Road Transport
GTZ 2001, German Technical Cooperation, Environment and Infrastructure Division, Eschborn, 2005, Commissioned by Federal Ministry for Economic Cooperation and Development.
http://www.gtz.de/de/dokumente/en-gtz-2001-economic-instruments.pdf

PART II

Integrating SCP in Poverty Reduction Strategy Papers

A practical guidance

4 Integrating SCP into PRSPs: A practical Guidance

Introduction

The previous Part provided conceptual guidance and background related to the poverty and SCP agendas, policy opportunities for linking SCP to poverty reduction and examples of SCP policy instruments for some economic sectors. The Part explained how PRSPs[21] represent an excellent 'entry point' for SCP issues by giving a formal recognition to the interdependencies between SCP and poverty reduction. In addition to providing guidance on how to engage stakeholders involved in SCP with national and international actors involved in poverty alleviation and vice versa.

This is very important, since the development agencies, development banks, policymakers and NGOs working in the development field have for the most point been unengaged in the promotion of SCP, potentially missing important opportunities to reduce poverty and enable developing countries to leapfrog to SCP patterns.

Including SCP issues, objectives and policies in PRSPs is therefore a means of sowing the concepts, goals, and strategies that, in addition to creating awareness, will build the conceptual and hopefully also the financial basis for future implementation.

Countries are at different stages of the PRS process. Hence, integration of SCP can be done in many different ways. There is NO one single route or course of action.

The PRSP process is complex and involves a multitude of stakeholders. Therefore mainstreaming SCP in PRSPs is an exercise that could be undertaken throughout different phases of the process including the following: in the first PRSP for countries that still have yet to start the process, in one of the APRs for countries that have already finalized the PRSP without specifically integrating SCP items or for those intending to deepen the SCP issues already identified, and in the second PRSP for countries that have already moved forward in the process. The topic of integrating SCP into PRSPs is relatively new and due to this requires an institution that voluntarily takes the initiative and leads the process, as well as a team of experts to follow the process from implementation to completion. This process will be explained in depth in later sections of this paper, and will include the necessity of fostering awareness among different stakeholders in order to lead to the practical inclusion of SCP issues into texts of PRSPs

This Section aims at providing procedural guidance to countries which are at the point of undertaking the task of including SCP into their PRSPs. The specific aim is to support the main actors of this process, who may range from government officials of the Institutions that voluntarily lead the process to the Team of experts practically

[21] The term PRSP in this chapter refers to any official document within the PRSP process issued by the countries, i.e. interims and final PRSPs as well as their Annual Progress Reports (APRs).

working on implementing the documents. Moreover, given the importance of guaranteeing that the PRSPs integrated with SCP objectives move past rhetoric into the implemented phase, this Section also includes information on capacity building programmes. In addition, ideas on how to transfer SCP objectives into other programmatic instruments in a manner that assures coherence and how to mutually reinforce implementation to influence what occurs after the finalisation of the PRSP will be addressed.

1.1. What does integrating SCP into PRSP exactly mean?

Integrating SCP into PRSPs regards both the content and the procedure for developing PRSPs. It means integrating SCP issues, objectives and policies in PRSP documents, whenever the level of details permits this. At the same time integration means guaranteeing that the process of PRSP development, specifically the process of developing appropriate SCP text, is conducted in a sustainable manner involving all the concerned stakeholders in all phases of the process from dialogue to implementation.

4.1.1 Integrating SCP in PRSPs: the contents

As SCP is a cross-cutting issue, its integration into PRSPs should address horizontally different aspects within the document. These main aspects are listed below:

Poverty definition: It is pertinent that the poverty diagnostic and the related monitoring, evaluation and targeting be based on more than a one-dimensional perspective of poverty which defines poverty in economic terms related to income or extreme deprivation of basic services. Instead it should include the effects of social inequality, welfare and exclusion, with a multi-dimensional approach that encompasses a multitude of constituents and determinants of well-being, as described in Chapter 1 of this Manual.

SCP as (a) strategic objective: The promotion of SCP as a mean to contribute to poverty eradication in the country should be one of the major strategic objectives of the PRSP;

SCP as specific objectives: SCP specific objectives should be formulated for the main economic sectors taken into account in the PRSP.

SCP as cross-cutting objectives: cross-cutting SCP objectives should be included for activities such as creating awareness, building capacity and education, which can influence the achievement of the strategic and sector-specific objectives.

Financing and enabling means: adequate budget should be foreseen for SCP implementation; moreover, where relevant and possible, specific enabling means like capacity building, technology transfer and partnerships (see chapter 2.2) should be indicated in the text.

Monitoring: SCP should be taken into account in the monitoring process of the PRSP (i.e. ensuring that indicators measuring SCP achievements are included in the paper).

Linkages: Formal links should be established between the PRSP and other national strategic documents such as Action Plans on SCP or the National Sustainable Development Strategies, which can enable coordinated, effective and synergic implementation. Moreover links should be established with 'downstream' programmatic

instruments (like sectoral Plans) to guarantee effective implementation.

Participation: Integrating SCP in PRSPs is an exercise that requires strong participation and the endorsement of all concerned stakeholders in order to be successful. It is for this reason a description of the participatory process undertaken for the drafting of the PRSP should be included in the text.

To maximize the results, both a specific chapter on SCP, summarizing the SCP strategic and specific objectives with their linkages to poverty reduction, and specific paragraphs describing the concepts and indicators to be integrated into the other chapters of the PRSP document should be developed. Given the fact that each country is at a varying stage of the PRSP process it may not be possible for the country team to start working immediately on an advanced draft of the document.

Chapter 4.2 of this Section is dedicated to providing guidance on the development of the SCP contents (thereinafter referred to as the "SCP text") to be integrated in the PRSP document. It is divided in module A and B. Module A aims at providing guidance in the analysis of already existing PRSP documents, and can be used when a country has already started the PRSP process and at least one document is under development. Module B focuses on how to develop the SCP elements within the text.

4.1.2 Integrating SCP in PRSPs: the process

Poverty Reduction Strategy Papers are intended to be prepared through a country owned and driven participatory process involving domestic stakeholders, as well as external development partners, including the World Bank (WB) and the International Monetary Fund (IMF) (see 1.1). Stakeholder engagement is crucial to the raising of awareness on SCP issues and policy instruments, to solving conflicting interests, to achieving legitimacy, for the knowledge processes needed for collaborative decision-making, and in order to obtain commitment and support while implementing the SCP objectives and policies identified in the PRSP.

Promoting SCP means both guaranteeing that the PRSP document is developed trough a participatory process, and that specific stakeholders related to SCP issues are consulted in the process of drafting the specific text on SCP.

In the table below, the process of integrating SCP in PRSPs is summarized and categorized into different 'ideal steps'. Chapter 1.4 of this Section of the Manual intends to provide guidance on how to develop these ideal steps.

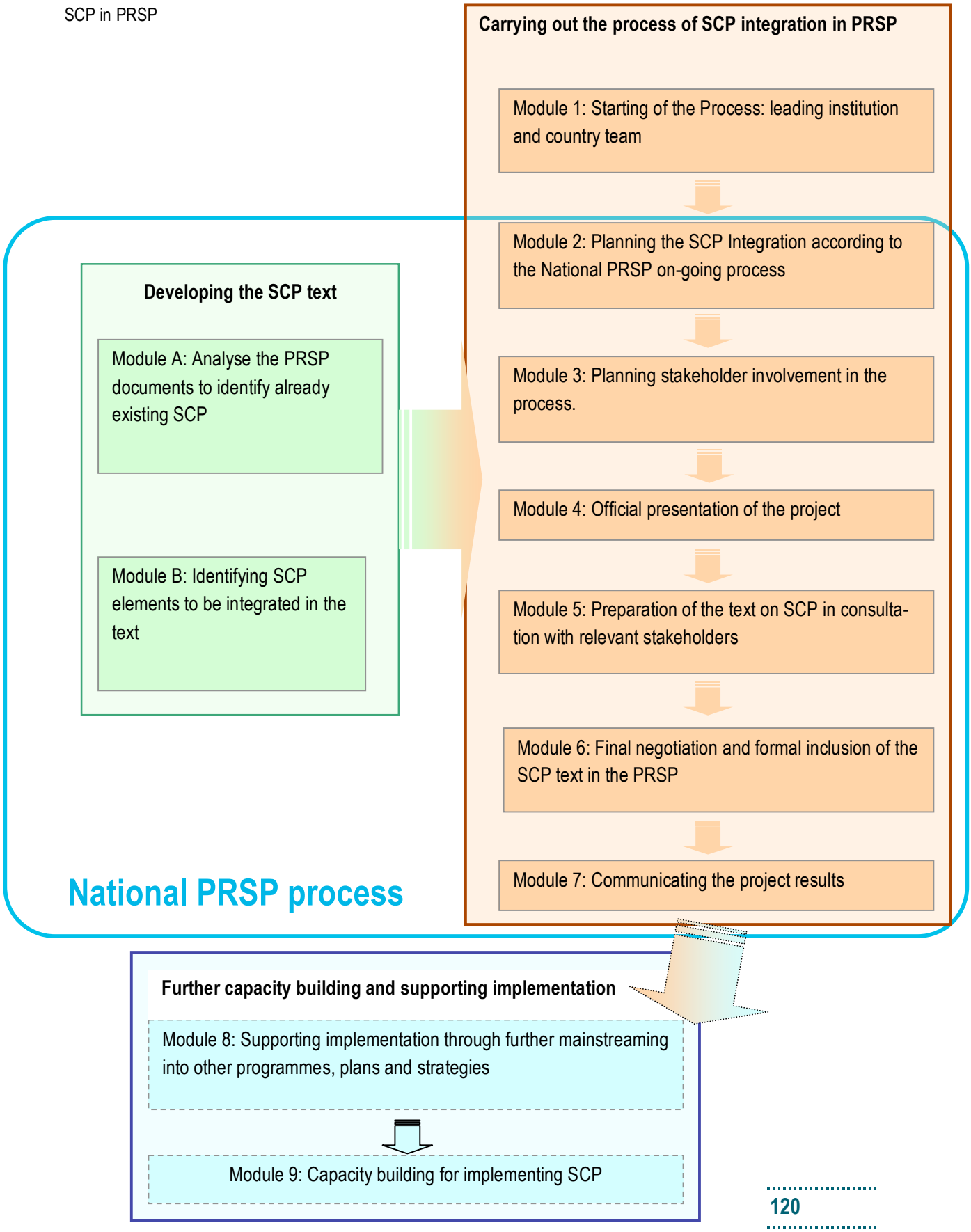
As the stage of the PRSP process varies considerably among countries and the SCP integration could take place in different documents (as discussed previously, Interim PRSP, first or subsequent PRSPs, or their annual APRs), this chapter of the Section is designed as a flexible instrument able to be adapted to each countries' own domestic circumstances.

It is composed of eight modules, each providing practical step-by-step suggestions to carryout the process. Wherever relevant, the modules contain a section titled 'Useful tool(s)' consisting of easy-to-use instruments such as tables and checklists for analysis and decision-making designed to simplify the implementation of the module. The modules have been designed in sequence, as they ideally constitute steps of a proposed process of SCP integration that has been designed by incorporating the experience gained during the project carried out by UNEP (see Appendix). Nevertheless, except for Module 1 which is designed to provide assistance at the beginning of the start-up process, all the other modules do not necessarily have to be implemented in sequence. A country can choose to implement some or all of them depending on its current needs and the stage of their PRSP proc-

ess

Module 8 and 9 go slightly further into the process, beyond the SCP integration in PRSP, by describing how specific capacity building on certain SCP issues can be designed and by providing ideas on how to integrate SCP in other programmes, plans and strategies to further support the SCP implementation process

Figure 1. Integrating SCP in PRSP



Modules	Useful Tools
Module A: Analyse the PRSP documents to identify already existing SCP	Table 34: Checklist to identify untapped SCP opportunities in the existing PRSP documents.
Module B: Identifying SCP elements to be integrated in the text	Table 35: Checklist to identify the priority sectors, SCP objectives and suggested policies. Table 36: Criteria for selecting SCP policy instruments (adopted from Clayton-Dalal and Bass, 2002, p. 287)
Module 1: Starting of the Process: leading institution and country team	___
Module 2: Planning the SCP Integration according to the National PRSP on-going process	___
Module 3: Planning stakeholder involvement in the process.	Table 37: Table to map stakeholders involved and to be involved in the process. Table 38: Table to identify means of involvement and format of contribution of stakeholders.
Module 4: Official presentation of the project	___
Module 5: Preparation of the text on SCP in consultation with relevant stakeholders	___
Module 6: Final negotiation and formal inclusion of the SCP text in the PRSP	Table 39: Checklist for final negotiation of the SCP text.
Module 7: Communicating the project results	Table 40: Checklist for planning communication (based on UNEP 2005: Communicating Sustainability, p.16) Table 41: Reflecting on lessons learned
Module 8: Supporting implementation through further mainstreaming into other programmes, plans and strategies	Table 42: Linking SCP issues to programmes, plans and strategies
Module 9: Capacity building for implementing SCP	Table 43: Elements for a capacity building programme (adopted from UNEP 2005: Communicating Sustainability)

Table 33: Modules, steps, and tools within the methodology

4.2 Procedural Guidance for developing the SCP text

As already denoted, this chapter is divided into two modules which respectively aim at guiding the process of analysing existing PRSP documents and the process of identifying SCP elements for integration in the SCP text.

4.2.1 Module A: Analyse the PRSP documents to identify already existing SCP elements

The starting point of the process should be the analysis of the PRSP document(s) already existing in the country, in order to identify the gaps needing to be filled. In particular, to assess if and to what extent the aspects related to SCP highlighted in Chapter 1.1 of this Manual have already been integrated or consideration in the text.. The analysis can start either from the latest officially published document or from the current draft version under development for the next round of submission whenever already existing.

When undertaking this analysis it is important to keep in mind that Sustainable Consumption and Production is a relatively new concept, and its uptake in PRSPs might be limited, as well it is also possible that SCP measures are already included without being identified as such.

4.2.1.1 Useful tool: Checklist to identify already existing SCP elements

Table 34 provides a useful checklist to aid in the identification of SCP elements already existing in the text of the PRSP documents. In order to undertake this analysis it will be very useful to have in mind the contents of the previous chapters of this Manual. For this reason linkages to other Chapters are given in parentheses in Column 3 of Table 2.

✔ Get hints from other Chapters of this document

This table takes up issues from all previous chapters. The chapter number is shown in brackets

SCP aspects	Examples of SCP integration (and related reference Chapter/Paragraph in this Manual)	Do you see any potential for integration? Please tick accordingly ☑
Poverty definition	Poverty situation in the country is described not only in economic terms relating to income or extreme deprivation of basic services, but also includes the description of inequality and social welfare taking into account access to state services, health, education, empowerment, gender equality, human rights, etc. (Chapter 1.1.1)	
	Different poverty groups with specific problems have been identified (e.g. urban poor/ rural poor). (Chapter 1.1.1)	
	The multi-dimensional perspective was taken up in the monitoring, evaluation and targeting of poverty levels in the Country. (Chapter 1.1.1)	
SCP as strategic objective	The promotion of more sustainable consumption and production patterns as a way to reduce poverty is one of the strategic objectives of the PRSP (Chapter 1.2)	

SCP aspects	Examples of SCP integration (and related reference Chapter/Paragraph in this Manual)	Do you see any potential for integration? Please tick accordingly ☑
SCP as specific objectives and policies	Objectives identified for economic sectors (e.g. agriculture, manufacturing, tourism, etc.) are oriented towards better SCP patterns (e.g. increased resource efficiency, better waste management, promotion of better access to basic services, promotion of environmentally and socially responsible products and services such as fair trade or organic agriculture, etc.) (Chapters 2.1 and 3)	
	Some of the benefits that the integration of SCP measures into the PRSP are intended to bring to the poor are the following: assuring eco-system services and improving health conditions, creating markets and employment opportunities, decreasing vulnerability to natural disasters, meeting basic needs by ensuring access to adequate products and services, and enabling technological leapfrogging. (Chapter 3)	
SCP as cross-cutting objectives	Crosscutting activities like awareness raising, building capacity and education considering SCP topics.	
	It is mentioned in the PRSP that SCP projects will make these cross-cutting activities more effective, i.e. by initiating new forms and distribution methods of education.	
Financing and enabling means	In the financial tables of the PRSP some of the budget is allocated to SCP activities. The PRSP refers to various options for acquiring further funding and financing for SCP activities.	
Monitoring	SCP is taken into account in the monitoring process of the PRSP.	
	Indicators for measuring SCP achievements are included in the paper.	
Linkages	Other national strategic documents such as the Action Plans on SCP or the National Sustainable Development Strategies are mentioned in the text, and common SCP objectives and implementation tools, as well as the relation/hierarchy between different documents are specified.	
	Reference is made to downstream programmatic instruments such as sectoral Plans, mentioning the need and the commitment to guarantee effective SCP implementation at their level.	
Participation	The description of the participatory process undertaken for the drafting of the PRSP was included in the text.	
	The SCP elements already existing in the text have been discussed and endorsed by all the concerned stakeholders.	

Table 34: Checklist to identify untapped SCP opportunities in the existing PRSP documents. (Please note that the table does not pretend to be exhaustive.)

4.2.2 Module B: Identifying SCP elements to be integrated in the text

The analysis of the existing PRSP documents (where existing) in a country, carried out with the help of the table above, it is a fundamental starting point for the task of integrating SCP.

It is pertinent that the PRSP document contains the elements described in sub-chapter 4.1.1. whether t starting from the gaps identified in the already existing PRSP documents (if already in place) or when structuring the contents of SCP text to be integrated in a newly developed PRSP document.

The following paragraphs will provide specific guidance for developing different SCP elements, referring to the relevant chapters of Section I of this Manual and providing specific tools for some of them.

Provide a multi-dimensional definition of poverty

In Chapter 1 of this Manual it has been explained that poverty can no longer be defined by solely focusing on income and consumption measured in monetary terms. On the contrary, it is mandatory to undertake a 'multi-dimensional' approach and define poverty as different dimensions of deprivation. Poverty means the inability of people to meet economic, social and other standards of well-being.

Chapter 2.1 has been dedicated to show how SCP can benefit to the poor, in particular by protecting and improving sources of livelihoods, creating markets and employment opportunities, improving health conditions, decreasing vulnerability to natural disasters, meeting basic human needs by ensuring access to institutions, knowledge and society and finally, by enabling technology leapfrogging.

In order to successfully integrate SCP elements in the PRSPs it is therefore fundamental that when assessing the poverty situation in the country the poverty aspects that can benefit most from SCP measures are taken into consideration. These key aspects will create a sound basis for the promotion and justification of SCP measures to national stakeholders and will provide elements for the prioritisation of SCP objectives.

SCP as strategic objective

PRSP often contain strategic objectives designed to guide the development of the document. If feasible, it will be important that the promotion of more sustainable consumption and production patterns as a way to reduce poverty is one of the strategic objectives of the PRSP. This will legitimate the integration of all further SCP objectives and elements within the document.

However, having SCP integrated at this high strategic level is not always feasible and could require long negotiations with the institution responsible for the PRSPs in the country.

SCP as specific objectives and cross-cutting objectives

Guaranteeing that SCP is among the specific and cross-cutting objectives of the PRPS, as already denoted in Table 34, means ensuring that:

- Objectives identified for economic sectors (e.g. agriculture, manufacturing, tourism, etc.) are oriented towards more SCP patterns (e.g. increased resource efficiency, better waste management, promotion of bet-

ter access to basic services, promotion of environmentally and socially responsible products and services such as fair trade or organic agriculture, etc.) (Chapter 3 provides useful references).

- Some of the benefits that the integration of SCP measures into the PRSP are intended to bring to the poor are the following: assuring eco-system services and improving health conditions, creating markets and employment opportunities, decreasing vulnerability to natural disasters, meeting basic needs by ensuring access to adequate products and services and enabling technological leapfrogging. (Chapter 2.1 ad Chapter 3 provides useful references).
- Crosscutting activities like awareness raising, building capacity and education consider SCP topics.
- It is mentioned in the PRSP that SCP projects will make these cross-cutting activities more effective, i.e. by initiating new forms and distribution methods of education.

Clearly defining priorities can help to channel limited resources to areas that possess high potential for improvement. Some economic sectors in a country might bear a special potential to put SCP strategies in place and would eventually contribute more to poverty eradication than others. It is therefore fundamental to first **detect priority sectors and cross-cutting issues with the highest potential for poverty reduction through SCP** and then to **identify SCP objectives for each priority sector and area**. For example, environmental improvements in the agriculture sector leading to the prevention of water resource contamination might yield immediate benefits in terms of access to clean water; while environmental or social improvements in the products and services of the ICT sector might not lead to direct benefits.

Finally, the SCP issues already included in the PRSP could highlight the government´s present interest and help to prioritize certain sectors. The description of poverty given in the PRSP can moreover be a useful tool in first identifying the major poverty aspects that need improvement, and then help to guide in the selection of priority sectors with the highest potential for poverty reduction through SCP.

Choose priority sectors, according to SCP-poverty linkages

Ideally, the best prioritization method would require a deep analysis of the sector policies aimed at reducing the environmental impacts of the consumption and production chain and the direct and indirect social and economic impacts these have on the poor. However, this approach may require intense data collection and scenario analysis that is not always feasible in the process of drafting PRSP. Hence, consultation with stakeholders, in particular with governmental officials dealing with various sectors in the Ministries, as will be described in the next Chapter, could provide important mechanism for prioritisation.

Stakeholder representatives can help identify key sectors of the economy with the highest negative environmental and social impacts, and where the promotion of SCP measures can at the same time provide a relevant contribution in improving the poverty aspects identified in Chapter 2.1.

Consider enabling means

Evidence on the potential for reducing poverty while decreasing the environmental impacts of a sector might not be a sufficient factor for the prioritization of sectors. In order to select a sector as a priority for a country, the major means for implementing SCP measures for poverty reduction should also be in place as described in 2.2. This section details enabling means such as training and capacity building for SCP, willingness for engagement, technology transfer possibilities, and how the funding and financing for SCP measures in a sector can facilitate the implementation of SCP policy instruments.

Setting SCP objectives

Selecting objectives for action is the next step following the identification of the major sectors. One or more objectives related to SCP can be identified for the priority sectors, as well as for crosscutting issues that are not attrib-

utable to any specific sector. The objectives might have an environmental, a social or an economic dimension, while preferably addressing several of these dimensions simultaneously. They should be SMART – i.e. Specific, Measurable, Attainable, Realistic and Timely.

Select SCP policy instruments

Select SCP policy instruments

In order to realise SCP objectives, sound policy instruments are needed. PRSPs documents are different from one country to another, and the level of details in terms of the policy development they include varies consistently among them.

In the case that the level of the country´s PRSP requires the identification of suitable policy instruments in order to reach the SCP objectives, it will be important to choose the most suitable policy or the best mixture that, while having positive environmental effects, will provide the most relevant social and economic benefits to the poor.

Consultations with stakeholders are important in this phase to identify possible policy instruments for each SCP objective identified. Chapter 3 can provide examples and suggestions for relevant economic sectors, while providing useful links and sources of information. In order to select the most suitable policy instruments among the possible ones identified (see Table 37), an assessment of each of them should be carried out, considering different dimensions and including their effectiveness, efficiency, administrative feasibility, acceptability and potential for replication, innovation and learning potential. Input from relevant stakeholders can facilitate this process and increase the relevance of the results obtained.

The arrangement of the policy mix chosen to reach the SCP objectives in priority sectors should aim at combining the most effective policies identified above in a mutually supportive manner. In this sense, Table 38 below can also be used to assess bundles of policy instruments.

Financing and enabling means

Adequate budget should be foreseen for implementation of the SCP objectives and/or policies identified (i.e. the level of details of budget, referred to objectives/policies depend from the specificity of the country document). This means that it will be necessary, in the budget table of the PRSP, to allocate funds to each SCP objective identified. In addition, if the budget available for the PRSP seem to be insufficient to cover the development of SCP objectives, it is essential from the beginning to identify additional potential sources of funding that can complement what is available. For more information about this refer to Chapter 2.2.4.3

Moreover, in order to increase the potential effectiveness and impact of SCP measures, specific enabling means like capacity building, technology transfer and partnerships (see chapter 2.2) should be indicated in the text when relevant and possible.

Monitoring

The implementation of the identified SCP issues has more probability to be effective if monitoring mechanisms are in place and specific **performance indicators**, measuring the results in terms of poverty reduction provided by the realization of SCP objectives, are included in the PRSP. There should be **output indicators** and **outcome**

and impact indicators.

Output indicators: It is important to identify the appropriate indicators needed to measure the quantity (and quality) of the goods or services provided by the achievement of the SCP objective indicated in the text. This should take into consideration the distributional affect on the conditions and quality of life of the poor.

Outcome and impact indicators: These measure the quantity and quality of the results achieved by the realization of SCP objectives through appropriate policies. It is important that impact indicators are linked to the general PRSP poverty reduction objectives.

For instance, in case one of the SCP objectives identified in the PRSP would be to *increase access to sustainable energy services in rural areas*, one output indicator can be the *number of houses not connected to the grid reached by electricity provided through renewable energies*. One outcome indicator could be the increase of the *number of people having access to energy from renewables in respect to the number of people who did not have access to the energy.* An impact indicator could be the *improvement of any of the poverty dimensions* (refer to Chapter 2.1 for more information) *of the people gaining access to electricity from renewable energies.*

Linkages

Formal links should be established between the PRSP and other national strategic documents, such as Action Plans on SCP or the National Sustainable Development Strategies, which can enable coordinated, effective and synergic implementation. This means that references to these documents should be placed in the text, establishing hierarchies wherever necessary for overlapping subjects.

In addition links should be established with 'downstream' programmatic instruments, such as sectoral Plans, to guarantee effective implementation. To the extent which is possible, this means that where downstream programmatic instruments are used as PRSP implementation instruments they should be mentioned in the text as a means to contribute and ensure to the realization of SCP objectives.

Participation

The description of the participatory process undertaken for the drafting of the PRSP should be included in the text. Section 4.3.3 provides practical guidance on how to develop this process.

4.2.2.1 Useful tools: Table for identifying SCP objectives and table for assessing SCP policies

Table 35 can be useful during the process of identifying strategic, sectoral, and crosscutting SCP objectives. Please refer to the example provided in the following table referring to the identification of sectoral objectives. The table might be applied various times for each respective sector, as well as for strategic and crosscutting issues. The suggested policy mix in the last column should be further assessed with the help of Table 36 that can be of help ascertaining the different policy options and bundles of policies available, such as an environmental charge used to fund SCP training for local SMEs. The identification of a viable policy mix will consider the factors of effectiveness, **efficiency**, administrative feasibility, acceptability, potential for replication, innovation and the learning potential.

Depending on the resources available and the depth required for policy assessment, the Team might concede to skip some of the aspects mentioned in the sectoral objectives table.

Issue/sector:	*Agriculture*					
Poverty Reduction Objective	**Environmental dimension**	**Social dimension**	**Economic dimension**	**SCP Objectives**	**Comments on feasibility / priority of the objective**	**Suggested policy mix**
Increased revenues for the poor coming from agriculture	Avoid water and soil contamination minimizing the use of pesticides	Minimize health problems deriving from the excessive use of pesticides	Exploit new market opportunities; decrease expenses in pesticides while possibly increasing the number of employees in the agriculture sector.	Promote sustainable agriculture and organic agriculture.	The promotion of organic agriculture should be prioritized for goods that have access to regional and international markets.	Establish agriculture certification schemes; Increase awareness on sustainable and organic agriculture throughout the supply chain; Increase awareness of organic agriculture among consumers.

Table 35: Checklist to identify the priority sectors, SCP objectives and suggested policies. (The text in the table is to be considered as an example and does not pretend to be exhaustive.)

Policy instrument:	*Establish agriculture certification schemes*	
	Aspects	**Comment**
Effectiveness	What are the expected environmental benefits?	
	What are the expected social benefits?	
	What are the expected economic benefits?	
	Does it adequately address synergies or trade-offs between environmental, social and economic issues?	
	How is it possible to maximise the economic and social benefits provided to the poor?	
	Does the policy instrument tackle root causes of SCP issues identified?	
	Does it have multiplier or spillover effects, i.e. also influencing key players beyond the initial scope?	
	Is the policy instrument consistent with others in the same sectors, e.g. between stages of a product or service life cycle?	
Efficiency	Does it achieve its goal at low (marginal) costs? Remember to consider financial, information, resource, transaction and administrative costs.	
	Does it provide incentives for innovation and improvement?	
	Is it easy for key stakeholders involved to understand?	
Administrative feasibility	Does the policy instrument build on what is currently functioning? Where there is good precedent, understanding and capacity already present?	
Equity	Are costs and benefits distributed in a fair manner at different levels and between all stakeholders involved?	
Acceptability	How strong is the potential degree of controversy within the groups who will be affected?	
Level of risk and uncertainty	Is the policy instrument designed to address major uncertainties or risk factors on which the success of the policy depends?	
	Is the policy instrument designed to avoid evasive behaviour that could undermine its objectives?	
Potential for replication	Is the policy instrument widely applicable across different groups and regions?	
Innovation and learning potential	Does the policy instrument allow for progress through tests and trials to be made? And then for this feedback to be incorporated into the policy process?	
Credibility	Do stakeholders consider objectives and measures related to the policy instrument as credible?	
Balance	Are the instruments applied to address a given need balanced and mutually supportive?	
Funding	Is a clear concept available to fund the activities needed to implement the policy instrument?	

Table 36: Criteria for selecting SCP policy instruments (adopted from Clayton-Dalal and Bass, 2002, p. 287)

4.3 Procedural Guidance for carrying the institutional process of SCP integration

As already anticipated, this chapter will focus on the process of integrating SCP in PRSPs. Modules listed below have to be considered as steps of a proposed process of integration, and have been developed through gained experience from the pilot process implemented by UNEP in pilot countries (see Appendix). Nevertheless, according to the specificity of the PRSP process in each country a decision should be reached as to the specific arrangement and compliation of Modules that should be implemented.

4.3.1 Module 1: Starting of the Process: leading institution and country team

An institution might voluntarily decide to lead and manage the process in its country. This should preferably be an institution with experience in SCP (or sustainable development) and already involved in the PRSP process, or in the case of new PRSPs an institution that intends to be involved in the process (i.e. the Ministry of Economic and/or Social Affairs, the Ministry of Environment or similar governmental agencies).

The leading institution will be formally responsible for the process of integration, and will facilitate all the negotiation dialogue on SCP issues with other institutions involved in the PRSP process in the country, including consultations with stakeholders. Moreover, if the leading institution differs from the institution primarily responsible for PRSP in the country it is indispensable that the leading institution have a good relationship involving excellent dialogue with the institution responsible for PRSP in the Country. In fact, the leading institution needs to guarantee that the process of mainstreaming SCP in the PRSPs is fully integrated with the on-going process of PRSP development in the Country. The leading institution could request support from a development agency/bank and/or an international organisation.

✔ To get hints from other Chapters of this document to find out which institutions might be working on SCP, refer to the "Section 1.2 About Sustainable Consumption and Production".

The process of mainstreaming SCP in PRSPs should be carried out by a team of experts compiled by the leading institution, and will later be referred to as the Country Team. It is crucial that a multidisciplinary Team be established composed of government officials from different ministries and/or institutional bodies already involved in the PRPS process (e.g. a sub-committee of officials involved in PRSP), and experts from different fields related to SCP representing the different 'categories of stakeholders' (e.g. private sector, civil society, NGOs, development agencies, etc) that may not already be involved in the process.

4.3.2 Module 2: Planning the SCP Integration according to the National PRSP ongoing process

As already noted, the integration of SCP in PRSPs is an exercise that could be undertaken during various phases of the PRSP process. In this regard, the Country Team must have a complete knowledge of the PRSP process in its country. In particular it needs to know:

- The PRSP documents already issued
- The timetable for the development of the new PRSP document.

This will allow the Country Team to decide on which document to prioritize (e.g. Interim PRSPs, full PRSPs or APRs), to understand at which point of the existing process they can intervene and to understand the magnitude of the contribution that can be provided (there is space for a full integration of SCP in the contents of the document as the national process is going to start or minor modifications are possible as the first draft of the text is

already been discussed).

The Country Team can decide based on the timetable of the existing process in the Country how to draft its own work-plan of activities for the integration of SCP in PRSPs. However, it should be stressed that the process of SCP integration should be as interlinked as possible to the national process of PRSP development in the Country.

4.3.3 Module 3: Planning stakeholder involvement in the process.

How and why involve stakeholders

Stakeholder involvement in the development of the PRSP is crucial. In order for stakeholder engagement to be successful the process first requires the identification of key and relevant stakeholders during the different stages of the process, and then the structured planning of how to simultaneously include these stakeholders in the different stages.

The primary focus here is not the involvement of stakeholders in the entire process of PRSP development, but rather the importance of involving specific stakeholders in the process of integrating SCP in PRSPs .

The involvement and type of stakeholder represented in the Country Team varies as follows: there should be stakeholders that are consulted in view of their expertise and interests, stakeholders that should be directly involved and kept well informed in view of their major powers, stakeholders to be considered as potentially affected by the new plan or policy which need to be consulted during the process and should participate in the designing of the document, and stakeholders that simply need to be informed about the PRSP process.

Stakeholders that should participate in the integration of SCP in PRSP include those usually involved in the PRSP process and specific stakeholders related to SCP issues that may previously not been involved in the process. We have already stressed how the process of integrating SCP in PRSPs is sometimes part of the PRSP while other times it runs parallel to the development of the PRSPs. In either case it is essential that the involvement of stakeholders for the benefit of mainstreaming SCP in the documents coincide as much as possible with the existing PRSP process. In this manner the integration of SCP will capitalise on the benefits of the already existing and overlapping moments of dialogue.

Identify, map and select stakeholders

Finding and selecting stakeholders

For a detailed description of potential stakeholders see paragraph 1.2.4.1, or consult Clayton-Dalal and Bass (2002, p. 86) for a more concise list. Identifying and selecting stakeholders can be based on:

- Existing PRSP consultations: If a country has already drafted its first PRSPs, it is fundamental to start by examining the 'participation' that took place in this process by first identifying the stakeholders that previously participated in the process and then the modalities of their participation. This list of already engaged stakeholders may contain gaps needing to be filled, especially in regards to SCP issues that are often not already involved in the process.
- SCP-specific stakeholders: These are people, groups or institutions with related powers, knowledge and skills that might have specific rights or interests in SCP issues. These can be identified by consulting various institutions active in the field, by reviewing conference attendance and by reviewing the membership of professional associations in the field. Wherever possible it is important to group these stakeholders according to their PRSP thematic sectors or by specific SCP objectives planning to be integrated in the text. Therefore, it is important that the planning of stakeholder involvement coincides with the development of the paper´s contents or at the very least it is important to have an idea on the thematic issues in which SCP has the potential

to be integrated.

- Established and trusted contacts: At the outset when representatives are identified, the Country Team might also consult with various agencies, organisations and businesses to develop a sense of whom is viewed as a credibility leader or an acceptable spokesperson accountable to the group or constituencies they represent.

Categorising stakeholders to form stakeholder clusters

It may be useful to group stakeholders in clusters and address them accordingly. The following classifications might be applied:

- **Primary and secondary stakeholders**: Primary stakeholders are those immediately affected by the issues analysed and policies proposed. They are the envisioned beneficiaries of SCP, and thus hold a direct and special interest. Especially included in this primary cluster are the different groups of poor people, yet also businesses fall into this category. Secondary stakeholders are the intermediaries in the process, who can exert a key influence on the outcome. They may include governmental agencies, donor countries and other institutional bodies whose actions influence consumption and production patterns.
- **Stakeholder relevance**: Based on criteria, such as the size of the constituency represented, their credibility and the extent and willingness of their possible contribution, stakeholders can be assigned the status of key stakeholders. They can be considered the key agents of change whose involvement is critical to bringing the process forward and planning effective actions.
- **Other criteria**: Clusters may be arranged according to geographic scope or in relation to the certain type of stakeholder (e.g. government, civil society and private sector, regional and international agencies).

It is important to understand the relationships between critical stakeholders and how they influence each other in order to gain insight on potential coalitions and conflicting interests.

Special attention must be paid to marginalized and minority groups whose direct involvement is in many cases difficult as they do not have sufficient capacities nor the means to participate actively. It is vital that their involvement be fostered in order to combat social exclusion, and to encourage participation that may be viewed as futile due to these groups' previous experiences with failed or inappropriate development and aid projects. In addition, it is important to note that this participation will have numerous synergic results, such as community empowerment, which will directly and indirectly improving the well-being of these specified groups.

Minority and Marginalized groups include, but are not limited to the following: forest dwellers, pastoralists in arid regions, farmers in remote areas, hunter-gatherers, certain ethnic groups, labourers, urban squatters, landless, women, woman's cooperatives, children, youth groups, outside communities and immigration hubs.

Define the extent of involvement and responsibilities of stakeholders

At which point to involve stakeholders

Depending on the document to be issued (interim PRSP, first or second PRSP, or one of the APR), the key moments of participation during the PRS process and the level of influence have to be determined. Ideally, participation should be ensured within each step of the process.

Engaging with PRSP Country Team

In any case, it is important to determine what level of influence you wish to provide to key stakeholders and other stakeholder groups. There are different possible levels of participation and levels of influence. The different moments of dialogue with stakeholders should be planned and arranged, in order to ensure an effective integration of SCP in PRSP.

With the help of the steps included to aid in the integration of SCP into the PRSP contained in the following subchapters the participation of the stakeholders should be structured and planned while keeping in mind whether

the PRSPs process is currently on-going or planned (see 4.3.2).

The final result should be the stakeholders' endorsement and the formal integration of the SCP text in the PRSP.

4.3.3.1 Useful tools: tables to identify, map and select stakeholders and table to identify suitable moments of dialogue

The following tools specifically focus on the identification, mapping and selection of stakeholders related to SCP issues, as well as on planning their participation in the process of integrating SCP in their PRSP. They do not cover the details of the whole participatory process that is supposed to accompany the drafting and development of the PRSP beyond the scope of SCP issues. Although, this national process should be seen as the baseline framework against which further moments of discussion should be planned, if needed.

Table 37 below provides for a 'standardised' assessment of stakeholders in one common format, safeguarding that the most relevant criteria are covered and that the information can be easily shared and discussed among the Country Team members. It is divided in two sub-tables (Table 37a and Table 37b). Table 37a is intended to be used to list stakeholders already involved or planning to be involved, and identifies their role in the SCP integration process by linking them to the thematic issues and objectives that the document is planning or is supposed to deal with.

Table 37b incorporates the identified PRSP thematic issues and objectives from Table 5a and provides the space for further stakeholders whose involvement is important to be identified. In addition, the table helps the Country Team analyse the institutional skills, capabilities and knowledge of stakeholders with regard to SCP and poverty linkages.

The information collected from these two tables will support the Country Team in their decision as to which stakeholder to involve during the different steps of the project and under what conditions they will included.

Table 38 supports the Country Team in identifying the key moments for dialogue with various groups of stakeholders. This table will assist the Country Team in allocating the stakeholders listed in Table 37 to their specific points of participation while adhering to the PRSP national process as the reference framework.

Stakeholders already involved in the PRSP process (Table 37 a)

Stakeholder Cluster	Stakeholder representative	Role in the process	Stage of the Process in which participation has occurred/ is planned	Link with already identified PRSP thematic issues/SCP Objectives	Specific interest in SCP & poverty issues	Stakeholder Status (primary/secondary/key)	Credibility Assessment (Positive, negative, neutral)
National Government	*Ministry of Finance*	*Institution responsible for PRSP*	*Consultation with other authorities in the national PRSP process; formal relations with World Bank and IMF and with international donors*	*Role in approving the final text on SCP and in allocating funds for SCP measures*		*Key/ secondary*	*Positive*
National Government	*Ministry of Agriculture*	*Responsible of the approval of the Chapter on agriculture*	*Reviser of the Chapter on Agriculture*	*Role in the promotion of sustainable / organic agriculture*		*Key/ secondary*	*Positive*

New SCP stakeholders to be involved in the process (Table 37 b)

PRSP thematic issues/ SCP Objectives	**Stakeholder Cluster**	**Stakeholder representative**	**Skills and capabilities regarding SCP & poverty linkage**	**Specific interest in SCP & poverty issues**	**Credibility Assessment** (Positive, negative, neutral)	**Stakeholder Status**	**Suggested role in the process**	**Level of influence in the process of integration**(High, medium, low)
Ensure access to water and sanitation	*Development NGO*	***Agua Pura***	*Supports small scale projects for better grid connection* *Runs projects on protecting ecosystem for improving water provision services*	*Key interest in improving sustainability performance of water sector*	***Positive:*** *Good track record, previously well collaborated with the Ministry of Environment*	*Secondary* *Key stakeholder*	*To be consulted in developing text on water and sanitation*	*High:*
Sustainable tourism	*Community Group*	***Mujeres Rurales***	*Projects for raising income of rural women through artisan activities linked to and alternative tourism.*	*Main target group for poverty reduction according to PRSP*	***Neutral:*** *Poor representation, limited involvement in earlier communications, capacity building required*	*Primary*	*To be informed on the opportunities raised by SCP implementation; capacity building needed*	*Low*

Table 37: Table to map stakeholders involved and to be involved in the process.
(Text in the table is to be considered as example and does not pretend to be exhaustive)

Steps of the process of SCP integration	Already planned event of the PRSP process the SCP consultation point can be coupled with.	Stakeholder Cluster (already involved/to be involved)	Stakeholder representatives (already involved/to be involved)	Means of involvement
Module 1: Starting of the Process: leading institution and country team				
Module 2: Planning the SCP Integration according to the National PRSP ongoing process			*Ministry responsible for PRSP*	*Meeting/call with the Country Team leader to learn about the national process*
Module 3: Planning stakeholder involvement in the process.				
Module 4: Official presentation of the project		*National Government* *Local Government:* *Industry* *NGOs/civil society* *Media*	*Ministry responsible for PRSP, Main Ministries involved in the PRSP process* *Regional administrations* *Representatives of the main industry sectors* *Main environmental and social NGOs* *TV, main newspaper*	*Workshop*

Module 5: Preparation of the text on SCP in consultation with relevant stakeholders				*First meeting for discussing the draft of the Chapter related to agriculture*
Module 6: Final negotiation and formal inclusion of the SCP text in the PRSP				
Module 7: Communicating the project results				*based on the tools given in Module 5*
Module 9: Capacity building for implementing SCP			*International research institutions and UNEP*	*Training session for government representatives* *Training session for industry representatives* *Training sessions for NGO representatives* *Joint training session*
Module 8: Supporting implementation through further mainstreaming into other programmes, plans and strategies			*Ministry to implement the policy instrument or local governmental authority to implement the policy instrument, target group companies from the private sector or representatives of target communities*	
		…		…

Table 38: Table to identify means of involvement and format of contribution of stakeholders. (text in the table is to be considered as example and does not pretend to be exhaustive)

4.3.4 Module 4: Official presentation of the project

It is essential in the beginning to establish good relations and opportunities for dialogue with the key stakeholders involved in the national PRSP process, especially with the institution responsible for PRSP in the country. It is advisable to organize a first launching workshop, in which the Country Team and the entire project of integrating SCP in PRSP is officially presented to all national and international stakeholders involved with the PRSP. This will be an opportunity to create awareness about the importance of developing synergies in poverty eradication and the promotion of SCP patterns, as well as encourage many stakeholders to commit to participating in the process of integrating SCP into PRSPs. In addition, it could provide the ideal opportunity to inform and involve in the process the World Bank, the International Monetary Funds and other international donors and international stakeholders.

This workshop is separate from the informal moments of dialogue occurring since the inception of the project between the leading institution, the institution responsible for PRSP in the country and the identified relevant stakeholders.

4.3.5 Module 5: Preparation of the text on SCP in consultation with relevant stakeholders

As previously mentioned, the text on SCP, should be developed with the participation of stakeholders, through a non-linear process that involves various rounds of discussion and feedback.

Developing the content for the PRSP can take different forms, depending on the state of the PRSP process and on the concrete issues that are to be included. As stated in paragraph 1.1.2, to maximize the results two specific chapters should be included. One chapter which summarizes how strategic and specific SCP objectives link with poverty reduction, and another chapter focusing on the development of concepts and indicators that need to be integrated into the other chapters of the document. It is important to note that given the different process stages for the various countries it may not be possible for a country team to start working on an advanced draft of the document. Therefore the inclusion of both chapters may not be feasible in the beginning.

Several consultations sessions with different clusters of SCP Stakeholders should be conducted to identify SCP priorities, objectives, and items that are particularly relevant for poverty reduction in the Country. These items will then be integrated into the text that ultimately will need to be negotiated and agreed upon by **all** the stakeholders involved in the PRSP and SCP process.

In regards to budgetary implications, the objectives and policy instruments will require a discussion and appraisal process involving the institution in charge and key concerned stakeholders, even if the Country Team is close to the institution in charge of the PRSP process. In this regard, the success of the SCP integration into the PRSPs will depend immensely on the process of participation with which the SCP contents have been developed. Therefore it is pivotal that how and why the proposed SCP content has strategic relevance for the PRSPs overall objective is communicated clearly. This will enable the institution responsible for the integration to evaluate the actual contribution made and weigh it against other policy proposals.

Stakeholder involvement

A facilitator, who could possibly be a member of the Country Team or not, should chair each consultation session. In principle, stakeholders who participate should not be paid. However, in some cases, it is important to consider reimbursing the travel expenses of stakeholders that cannot afford the travel cost to the place/city where the sessions take place. This is necessary to provide equal opportunities for participation among all stakeholders.

4.3.6 Module 6: Final negotiation and formal inclusion of the SCP text in the PRSP

The text on SCP after being discussed with relevant stakeholders, if not already part of the PRSP document under development in the national process, has to be formally integrated into the text.

The need for a further negotiation session with the national responsible institution for PRSPs may arise, and in that occasion in will be essential to present the benefits that SCP bring in reducing poverty. In addition, the text and the rational behind it may need defending or explained, including all the steps taken to arrive at the final text.

Before the final negotiation for the integration of the SCP text in the PRSP, the Country Team should review all the steps undertaken in the process of development of the text and ensure that:

Conduct a final check before conducting the integration of the SCP text!

- the key gaps concerning SCP in the existing (draft) PRSP are addressed, while not producing input on issues already well addressed (see Module A);
- relevant stakeholders were consulted on all key issues related to the content (see Modules 3, 4, 5);
- the content features the feasible SCP objectives, policy instruments and related indicators (see Module B).

4.3.6.1 Useful tool: checklist for final negotiation of the SCP text.

The table below is a checklist that can help to structure interactions between the Country Team and the institution in charge of the PRSP. This table can help before and during the final negotiation of which contents should be included in the PRSP, as well as during this subsequent discussion and decision-making phase. It provides broad guidance on how interactions might occur, and how the SCP text should be presented and defended. Teams may find it necessary to adapt the table to their local context and the state of their PRSP process.

Aspect	Question	Comment
Pre-Submission	Did the Team consult with members of the institution in charge of the PRSP process beforehand to see which kind of content would be feasible to include?	
	Is the content linked with the objectives of the PRSP, and is it clearly oriented on reducing poverty?	
	Do people deciding on the inclusion in the PRSP have basic knowledge and awareness on SCP?	
Submission	Is the contribution to reduce poverty in the specific issues identified clearly stated?	

Aspect	Question	Comment
	Are the participatory procedures underlying the development of the content sufficiently explained?	
	Does the content contain enough evidence drawn from the country's data and from stakeholder opinions?	
	Which indicators will be used to monitor the results? Have the indicators been included in the PRSP?	
Discussion phase	Are capacities capable of responding to requests for clarification of further evidence for SCP-poverty linkages?	
	Can requests for further discussion rounds and seminars be timely complied, while still allowing time for proper preparation of the events?	
	Does the Team possess detailed knowledge of the other parts of the PRSP to discuss the relevance of the content provided, also vis-à-vis these other contents?	
Decision phase	Do plans exist on how to proceed once the decision is taken on which content to integrate into the PRSP?	
	In the case of controversy or when pertinent SCP content not included in the PRSP document arises, what further actions will be undertaken by the Country Team?	
	Which institutions will oversee the implementation process of the objectives and policy instruments included in the PRSP?	

Table 39: Checklist for final negotiation of the SCP text.

4.3.7 Module 7: Communicating the project results

Why disseminate the project results?

National and international dissemination of project results can enhance stakeholders' commitment to mainstreaming SCP into policies and programmes, as well as support the implementation of measures agreed upon to reach objectives. It also maximises the possibilities of replicating the project and securing stakeholder support for these future efforts.

The need for targeted communication

To achieve maximum impact when communicating the results, communication efforts should be targeted at the appropriate stakeholders through the relevant channels. To achieve this objective, a clear definition of target groups and communication channels for all communication efforts is imperative.

What to communicate on?

Different aspects of the project can be communicated to the target groups. The content can be both related to the process of including SCP in PRSP per se, or focus on specific SCP projects and implementation issues as shown in Table 41. The leading institution can decide to communicate the process results of integrating SCP in PRSPs when the document is issued, or after further SCP mainstreaming into other programmes, plans and strategies or after capacity building programmes have been implemented (see Modules 8 and 9).

Typical target groups of communication could include:

- international donors, e.g. to disclose goals achieved and to acquire further funding;
- local stakeholders affected by the SCP measures, to increase support and ensure collaboration;

- other governmental agencies, e.g. to increase coordination between public policies;
- wider public audience and consumers, to foster behavioural change needed to support the policies.
- institutions responsible for national strategies, international community working on MDGs, SCP and the Marrakech process, in order to stimulate the replication of the experience.

Communicating on lessons learned about integrating SCP into PRSP

The last option concerns the spreading of the Team's experiences and the lessons learnt during the process of integrating SCP into PRSP to promote and support similar activities. This can target actors on the national level trying to integrate SCP in a strategy of their concern, e.g. a regional environmental agency, or other institutions internationally working on poverty and SCP in other countries. The international exchange can happen bilaterally while coupled to regional initiatives or during international conferences and roundtables. Presenting the project results in the international arena to those working on the achievement of MDGs and/or involved in the Marrakech process can also help the Team to reflect on the process. This reflection should involve discussing the experience from an external perspective, which will stimulate the replication of this experience in other countries.

4.3.7.1 Useful tool: checklists for planning communication and reflecting on lessons learned

For adequately planning communication on SCP, Table 40 below offers a checklist detailing the different steps of the communication process. The checklist should be seen as a flexible instrument: After selecting topics or sectors to communicate on, the team might repeat the steps 2 to 8, continuously learning from the evaluation. Depending on the means available for communication, as well as on the intended scale and impact, the different steps should be dealt with in corresponding depth.

The table is based on the 'Communicating Sustainability' guidebook from UNEP (2005)[22]. More specific guidance and international case studies can be consulted in the original publication.

	Step	Steps to take	Justification	Status
1	**Understanding the situation**	Review the steps undertaken so far and select the scope of your communication, e.g. which sectors, SCP issues or policies you want to communicate on.	An initial research phase will give you a better chance of success.	
2	**Selecting target groups**	Identify which of the stakeholders or stakeholder clusters, and which groups beyond these you want to reach with your communication in each of the identified areas. Identify knowledge, attitudes and practices of the stakeholders that are relevant to your communication.	Researching your audience helps to ensure your message gets to the right people and that they absorb and/or act on the information.	
3	**Setting key objectives**	Clearly define what you wish to achieve with your communication, i.e. raise awareness on a certain topic or to mobilise support for a policy measure. Try to formulate objectives	Setting key objectives makes communication more targeted and supports sound evaluation afterwards.	

[22] http://www.uneptie.org/pc/sustain/advertising/events_specifics/Communicating_Sustainability_EN.htm

		as clearly as possible.		
4	**Developing the message**	Select certain aspects from the content to be included in the PRSP, work out why the issue affects the stakeholders identified as target audience.	Careful thought needs to be given to message(s) that appeal to your audience; do not overload them with information!	
5	**Channels**	Select channels the stakeholders are familiar with to lower the barrier to interaction, combining different channels as appropriate.	The impact of your message will depend on the communication channels you use.	
6	**Methods**	Select appropriate methods and tools to apply during the events of the capacity building programme, taking into account current levels of knowledge and awareness on side of your target audience.	Activities tuned to the needs and capacities of the target audience have a higher effectiveness.	
7	**Management and implementation**	Carefully implement the activities you decided upon. Mobilise in-house resources and select partners to collaborate for the communication.	Your communication will succeed or fail depending on the quality of its implementation.	
8	**Evaluation**	Record whether the planned activities took place, and whether the objectives were achieved. You can also assess the contribution to the SCP objectives set in the PRSP.	Evaluating your communication can lead to increasing the effectiveness of communication in the future, e.g. in other sectors or policy fields.	

Table 40: Checklist for planning communication (based on UNEP 2005: Communicating Sustainability, p.16

Table 41 below provides some hints that can improve the dissemination of the information gathered on the experience of integrating SCP into PRSP. For those initiatives aiming to mainstream SCP the results as shown in the PRSP document issued, as well as the process of integration is of relevance.

	Aspects	**Comment**
Lessons Learned	Which country specific factors have proven valuable when developing an understanding of SCP on country level?	
	Which linkages between SCP and poverty have proven particularly relevant, in the fields of	
	- creating income and employment opportunities?	
	- improving health conditions by protecting the environment?	
	- decreasing vulnerability to natural disasters?	
	- meeting basic needs by ensuring access to adequate products and services?	
	- enabling technology leapfrogging?	
	Which major features of the project setup would you change when replicating the project?	
Success Factors	Whose support has proven valuable throughout the process?	
	Did the team face major obstacles? How were they overcome?	
Open Issues	Which issues would you have liked to address, but were unable to?	

	State the reasons for this (time, resources, knowledge, lacking political commitment)
	What kind of initiatives could be appropriate to take up these open issues?

Table 41: Reflecting on lessons learned

4.3.8 Module 8: Supporting implementation through further mainstreaming into other programmes, plans and strategies

Furthering SCP mainstreaming in programmes, plans and strategies

The process of integrating SCP text in PRSPs can be considered finished with Module 7. However to ensure SCP implementation once the PRSP has been issued, several stakeholders have developed downstream programmes or strategies in the country that are coherently reinforce the SCP elements included in the PRSP. These programmatic instruments include programmes, plans and strategies that exist in the country in the following domains:

- Local or regional: SCP can be mainstreamed into local or regional development plans.
- Sector-specific: SCP objectives and policies from the PRSP can be finalised on a sector level. One example could be national energy or agriculture plans with SCP as an integrated topic.
- Theme-specific: SCP might be mainstreamed into existing strategic plans on issues like sustainable development, environmental, trade, privatisation or corruption to show how these themes interact with or are part of the SCP agenda.
- Actor-specific: When negotiating strategic arrangements for interaction, e.g. between national governments and donors, SCP could be mainstreamed in a fashion similar to that employed for the PRSP.

These programmes, plans, and strategies could be tools used for implementing the PRSP objectives, thus directly taking up SCP objectives that were integrated in the PRSP. Including SCP issues will require the identification of further objectives and policy instruments specific to these issues, and the engagement of the related stakeholders. To guarantee effective implementation it will be essential that the different programmatic instruments be as coherent as possible.

All of the above can be one of the topics addressed in the capacity building programme (see Module 9). Otherwise it is something to be promoted in the different moments of dialogue with the different group of stakeholders.

4.3.8.1 Checklist for linking SCP issues to programmes, plans and strategies

This procedure serves to identify with each SCP objective a link with programmes, plans and strategies and how these can be used for mainstreaming SCP topics into these instruments. The following table can be presented during the capacity building programme (see Module 9) to the concerned stakeholders. The following steps can be followed, with steps 2 to 4 to be repeated for each programmatic instrument identified.

	Steps	Aspects	Comment
1	**Identify baseline situation**	Draw up a map of programmes, plans and strategies applied in your country – local or regional, sector-, theme- or actor specific. Focus on concise descriptions of the instrument and its content, and try to identify the institution in charge and their main motivations.	

2	**Identify links**	Taking the descriptions of programmatic instruments, list for each whether they a) have an (positive or negative) effect on achieving your SCP objectives; or if they b) are affected (positively or negatively) by the achievement of your SCP objectives; or if they c) deal with major issues dealt with by the PRSP.
3	**Approach integration**	When aiming for integration, try to focus on objectives and programmatic instruments that have shown strong linkages, whether positive or negative in the previous step. Clearly provide reasoning why SCP is relevant for the strategy, attuned to the motivations of the institutions behind the strategy. Try to get concrete commitments to funding projects and implementing policy instruments under the scope of the strategy.
4	**Follow-up**	Similar to PRSP, follow up by communication and capacity building efforts described in this chapter.

Table 42: Linking SCP issues to programmes, plans and strategies

4.3.9 Module 9: Capacity building for implementing SCP policies

Supporting the implementation of SCP policy instruments

In order to guarantee the effective implementation of the SCP objectives identified in the PRSP or in other programmatic instruments it may be appropriate to develop specific capacity building activities that target the different groups of stakeholders (national and local government, private sector and specifically SMEs, as well as NGOs and civil society representatives) jointly and separately.

The various levels of local and national government institutions need to be aware of SCP objectives and instruments in order to ensure consistency across governmental activities.

Large and small businesses, NGOs, development cooperation agencies etc. should be capacitated as far as their contribution is needed to successfully implement the policy instruments agreed on and to maximise long-term impacts.

Capacity building activities can be organized by the Team, eventually with the support of external organizations, alone or in partnership. Refer to Section 2.2 for lists of organisations relevant to capacity building and partnership.

4.3.9.1 Useful tool to design a capacity building programme to support SCP Implementation

The following table help design a capacity building programme to support the implementation of SCP policy instruments included in the PRSP or in other programmatic instruments that feature SCP-specific content.

Aspects		Done?
Defining areas and issues to work on	Select which sector and which specific policy instruments or group of policy instruments are needed to support a capacity building programme and then prioritise. Consider both programmatic instruments mentioned in the PRSPs and others.	
Defining Target Group(s)	Define groups of stakeholders to be addressed by the capacity building programme and develop an understanding of their situation and their motivation to address SCP.	

Setting specific objectives	Start to design your capacity building programme by setting key objectives for the capacity building programme. They should be SMART – i.e. Specific, Measurable, Attainable, Realistic and Timely.	
Designing separate and joint training sessions	Design the capacity building programme in order to target the different groups of stakeholders separately while including joint moments of training in order to establish moments of dialogues with possibilities of developing synergetic actions.	
Strategic approach and message	Go through the step of writing down exactly how you will achieve your objectives and with what kind of information you will approach the audience. Be careful to align your approach to the knowledge and resources already existent in your target group.	
Management and implementation	Select a proper venue and time that is accessible for the constituents of the target groups, and provide a professional surrounding for the capacity building sessions. Contact partners and funding for the capacity building. Certain partners, e.g. from abroad or local ones with special community experience, can add credibility to the capacity building efforts.	
Measurement and evaluation	Measure and evaluate the results of the capacity building programme, and whether the objectives were achieved. Try to actively collect feedback from the participants, and assess the outreach into the wider community.	

Table 43: Elements for a capacity building programme (adopted from UNEP 2005: Communicating Sustainability)

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Note: The references for the sector profiles in Chapter 3 are provided under each sector profile, and thus not included here.

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Appendix

4.4 Appendix A: The UNEP project – objectives and main steps

The CSCP has developed "Integrating SCP into PRSP" as the first stage of a pilot project on SCP and PRSPs undertaken by UNEP.

Part of a pilot project undertaken by UNEP

UNEP launched the pilot project in 2005. It aims at giving formal recognition to the links between SCP as understood under the 10YFP and PRSPs by integrating SCP objectives and policy tools in PRSPs (and their APRs). The overall objective of the project is to contribute to poverty reduction and human development through the promotion of SCP patterns in low-income countries. Working with the governments of a few selected low-income countries, this project helps them to draft country-specific texts on SCP containing examples of concrete public policies and private sector actions that can contribute to poverty reduction. The specific texts developed will then be included in the countries' respective PRSPs or APRs.

The project is carried out with local teams composed of representatives from the ministries for the environment or relevant environmental agencies of the selected countries, and through a consultative process, representatives from the relevant authorities and ministries for PRSPs. In addition, the World Bank and IMF staff, countries' major donors, other organisations working in the countries, and domestic stakeholders including non-governmental organisations and the private sector. The project, co-ordinated and linked with other UNEP and UNDP's initiatives, gains experience from and focuses on poverty and the environment, MDGs, and integrated assessment and planning for sustainable development, in order to avoid duplication and improve synergies.

The subsequent report on the project will include a proposal for UNEP activities that will support the implementation of identified SCP measures in each pilot country, and a proposal for the replication of certain measures in other countries, including capacity-building programmes.