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Promoting Sustainable Consumption and Production in the Mediterranean

SWITCH-Med SCP Policy Toolkit:

Mainstreaming Sustainable Consumption and Production into Key Economic Sectors in the Mediterranean

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Acronyms and Abbreviations

ADENE Portuguese Energy Agency

APA Portuguese Environment Agency

BAT Best available techniques

BEP Best environmental practices

BOD Biochemical oxygen demand

CAD Canadian dollars

CEDRO Country Energy Efficiency and Renewable Energy

CNTPP Centre National des Technologies de Production plus Propre

CO2 Carbon dioxide

CO2e Carbon dioxide equivalent

CSR Corporate social responsibility

CSO Civil society organisation

DTIE Division of technology, industry and economics

EC European Commission

EEA European Environment Agency

EF Ecological footprint

EMS Environmental management scheme/ system

ENCPC Egypt National Cleaner Production Centre

EPBD European Directive on Energy Performance of Buildings

EU European Union

EUR Euros

FAO Food and Agriculture Organization

GEF Global Environment Facility

GHG Greenhouse gas

GIS Geographic information system

GIZ German Organisation for Technical Cooperation

GPP Green public procurement

ICZM Integrated coastal zone management

IGES Institute for Global Environmental Strategies

ILO International Labour Organization

IPEN International POPs Elimination Network

IPP Integrated product policy

ISO International Standardization Organization

LCA Life cycle assessment

LCC Life cycle costing

MAP Mediterranean Action Plan for the Barcelona Convention

MENA Middle East and North Africa

MSC Marine Stewardship Council

MSSD Mediterranean Strategy for Sustainable Development

NAP National action plan

NCOA National Commission on Organic Agriculture

NEEREA National Energy Efficiency and Renewable Energy Action

NGO Non-governmental organisation

NISP National Industrial Symbiosis Programme

OECD Organisation for Economic Co-operation and Development

PACT Protected Area Conservation Trust

PNNS National Nutrition and Health Programme (France)

POP Persistent organic pollutant

RE Resource efficiency

RECP Resource efficient and cleaner production

RSCN Royal Society for the Conservation of Nature

SCP Sustainable Consumption and Production

SCP/RAC Sustainable Consumption and Production Regional Activity Centre

SDS Sustainable development strategy

SME Small and medium-size enterprise

SPP Sustainable public procurement

UN United Nations

UNEP United Nations Environment Programme

UNDP United Nations Development Programme

UNIDO United Nations Industrial Development Organisation

USD United States dollar

WEEE Waste electrical and electronic equipment

WTO World Trade Organisation

10YFP 10 Year Framework of Programmes

"The fundamental objective of SCP is to decouple economic growth from environmental degradation. Achieving SCP patterns will sustain improvements in economic development and human welfare that we depend on, including improvements in health and education. In other words, SCP aims at doing more and better with less – across the entire life cycle of products, while increasing quality of life for all. 'More' delivered in terms of goods and services, with 'less' impact in terms of resource use, environmental degradation, waste and pollution."

UNEP 2012: Global Outlook on SCP Policies

INTRODUCTION. A framework for the SCP toolkit

The Mediterranean Region has seen rapid economic development in recent decades. However, this has been accompanied by a serious depletion in natural resources and a widespread degradation of the natural environment. Unless a better balance is found the situation will continue to degrade and economic development will go into reverse. A resource-efficient, green economy must and can be developed. Development can be decoupled from environmental degradation and **'sustainable consumption and production'** (SCP) provides many of the tools to do so – including those affecting the leverage points of policy formulation and enforcement.

In line with this approach, the **SWITCH-Med Programme, financed by the European Union** (EU), has been designed as a multi-component programme to facilitate the shift toward SCP in the Southern Mediterranean Region. The programme is about changing the way goods and services are produced and consumed so that human development, and the satisfaction of human needs, is decoupled from environmental degradation. It supports industry, emerging green entrepreneurs, civil society and policy makers through policy development, demonstration activities and networking.

SWITCH-Med is implemented through collaborative efforts of the EU, United Nations Industrial Development Organization (UNIDO), UNEP/MAP[1] -SCP/RAC[2] and UNEP-DTIE[3]. It is made up of three interlinked components: a policy component, a demonstration component, and a networking component.

The SWITCH-Med Policy component aims at strengthening relevant environmental governance and policy frameworks. With broad stakeholder participation, it will develop/refine national SCP policy action plans in the beneficiary countries and develop a regional SCP action plan and roadmap under the Barcelona Convention[4].

The **SWITCH-Med Demonstration component** aims at implementing concrete actions tackling the barriers faced by key players responsible for the shift towards SCP patterns. It consists of three sub-components:

- **Sustainable production - MED TEST II**[5]– to stimulate the demand and supply of sustainable production services to industry;
- **Green entrepreneurship and civil society empowerment** – to promote the adoption of new green and socially inclusive business models, targeting start-ups and advocating sustainable consumption patterns and values among consumers and civil society at broad;
- **SCP National Action Plans demo** – to implement demonstration activities in each country drawn from the SCP National Action Plans (NAPs) developed with governments under the SWITCH-Med policy component.

The **SWITCH-Med Networking Facility** aims at supporting the visibility, effectiveness, long-term sustainability and impact of the components of the SWITCH-Med Programme. The Facility enables extensive communication, networking, exchange of lessons learned and encourages scaling-up of activities, while minding synergies with the sister programmes, namely Switch-Asia and Switch-Africa Green.

[1] United Nations Environment Programme/Mediterranean Action Plan for the Barcelona Convention
[2] Regional Activity Centre for Sustainable Consumption and Production (implementing actions related to the Barcelona Convention) – linked to UNEP/MAP
[3] Division of technology, industry and economics
[4] Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean
[5] MED TEST: Transfer of Environmental Sound Technology in the South Mediterranean Region. It is a UNIDO green industry initiative supported by the GEF, the Italian Government and the "Strategic Partnership for the Mediterranean Large Marine Ecosystem" of UNEP/MAP. The Programme addresses land-based sources of pollution within priority industrial hot-spots of the Mediterranean Strategic Action Plan (SAP-MED).

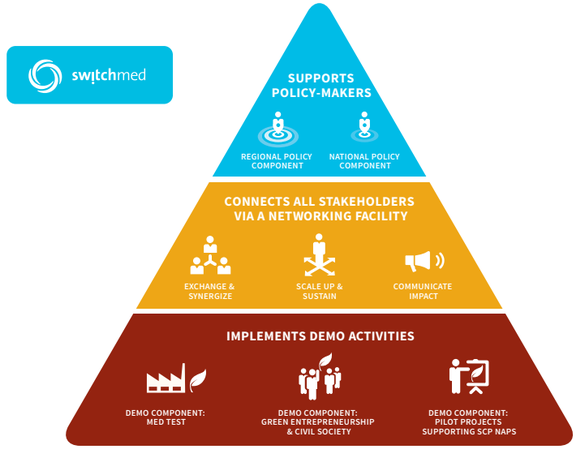
Why was the toolkit developed?

As mentioned above, one of the SWITCH-Med Programme's main assignments is under the Policy Component which is mainstreaming SCP into key areas for sustainable development in the Mediterranean Region. This component includes:

- a **Regional Policy Component** aiming at integrating SCP in the regional Mediterranean policy and governance framework, and particularly in the Barcelona Convention for the protection of the Mediterranean environment, through the development of an

Figure 1

Structure of the SWITCH-Med Programme



SCP Action Plan for the Mediterranean, and an accompanying roadmap; and

- a **National Policy Component** aiming at supporting countries in the development of SCP National Action Plans (SCP NAPs) in nine Mediterranean countries (Algeria, Morocco, Tunisia, Egypt, Libya, Lebanon, Jordan, Israel and Palestine), or mainstreaming SCP in national plans and strategies (sustainable development strategies, green economy strategies, etc.).

The general objective of the SCP toolkit is to support those policy makers and representatives of local and national administrations in Mediterranean countries, as well as all other interested stakeholders, willing to learn more about the SCP approach and its implementation in the region. It provides a set of effective tools and instruments, case studies and lessons learned which can help build national SCP frameworks and integrate them into national and sectoral policies.

This publication, adapted to the context and priorities of the region complements the **'Planning for Change (P4C)'** methodology developed by UNEP to guide countries towards the development of national programmes on sustainable consumption and production.

How can the toolkit be used?

This publication is divided into the following chapters:

KEY MESSAGES

The initial chapter summarises the main messages that should be kept in mind at the start of any process seeking to mainstream SCP into national policies and strategies.

CHAPTER 1

Understanding sustainable consumption and production. This chapter helps the reader understand why and how SCP has been gaining importance in the international agenda. It also shows how SCP is integrated into the Mediterranean policy agenda for environmental protection and sustainable development, and how the approach could support a better implementation of existing commitments in the region. The chapter then provides a closer look at SCP, revealing its key principles and underlining its contribution to topical issues such as climate change mitigation, poverty alleviation, resource efficiency, and the promotion of sustainable lifestyles.

CHAPTER 2

Policy framework for SCP. This chapter reveals the main reasons for developing national SCP programmes and provides guidance on how it can be mainstreamed within an organisation's planning process and activities (for policies already in place, under development and/or being reviewed).

The importance of communicating the SCP approach, measuring and communicating results is underlined, together with some hints for creating the necessary SCP indicators. The main categories of policy instruments used to integrate SCP in national planning processes are presented to help raise understanding and to provide inspiration by showing what is already at the disposal of government departments. The chapter introduces the 'life cycle' perspective, explaining how SCP policy instruments need to cover each stage to really create an impact and to reverse unsustainable consumption and production trends.

CHAPTER 3

Mainstreaming SCP in key economic sectors of the Mediterranean Region. This chapter focuses on food and agriculture, consumer goods manufacturing, tourism, and housing and construction. It presents the following information for each sector:

- main reasons for mainstreaming SCP
- the environmental impact created along the sector's life cycle
- policies and instruments available for mainstreaming SCP, distinguishing the instruments by type, and by the life cycle stage they target. It is important to remember that this section puts forward certain instruments partly to inspire readers. The instruments do not need to be implemented all at the same time; every country can select those most appropriate to its own priorities, and then implement them step by step
- key policy areas and stakeholders for mainstreaming SCP
- how the instruments link to, and support, the implementation of the Barcelona Convention, its protocols and regional plans

The chapter ends by highlighting the importance of **coordinating stakeholders** to enhance the effectiveness of the policies and instruments being implemented.

CASE STUDIES are provided throughout all chapters of the toolkit. Being examples of successful instruments, initiatives or projects from the Mediterranean Region or further afield, the aim is to inspire and facilitate an understanding of both concepts and tools. The 'cases' were selected though a thorough mapping process which had to leave out some good examples just to keep the document to a manageable length, however they are available at the SWITCH-Med online platform (www.switchmed.eu) where more examples of good practice will be continually uploaded.

RESOURCES are provided at the end of the toolkit for readers to further their knowledge on mainstreaming SCP within country planning processes.

The SCP toolkit is not intended to be the only method for mainstreaming SCP but rather to propose the flexible set of specific instruments that an SCP framework needs, and that can tackle all stages of the production-consumption life cycle. Each country can adapt the framework according to its own priorities and socio-economic situation.

KEY MESSAGES

- Over the last two decades **sustainable consumption and production (SCP) policies have gained a central role** on the road towards sustainable development, as recognised by world leaders in the World Summits in Rio (1992), Johannesburg (2002), and Rio +20 (2012) where the 10-Year Framework of Programmes (10YFP) on Sustainable Consumption and Production Patterns was adopted.

- In the Mediterranean Region, the Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention), adopted in 1976, constitutes a unique regional policy umbrella for environmental protection and sustainable development. Its 22 Contracting Parties recognise the importance of switching to more sustainable patterns and since 2005 many actions have been developed to strengthen SCP in the region. In 2013, the Contracting Parties **requested the preparation of a specific Mediterranean SCP Action Plan** to address the region's common priorities for sustainable development, and to identify SCP tools to effectively implement the obligations under the Barcelona Convention and its protocols.

- Acknowledging the importance of SCP, several countries both on the northern and southern shores of the Mediterranean Sea have **already developed strategies and policies to promote SCP** either as dedicated SCP programmes or in synergy with sustainable development, green growth or green economy strategies.

- **Mainstreaming SCP** refers to the systematic integration of the SCP perspective into all levels of policy planning and implementation, both for policies already in place as well as those under revision or in development. The inclusion of SCP goals in economic development and growth strategies is especially important for ensuring high-level support.

- **Key SCP principles** are: (i) the need to address not only environmental concerns but also key economic and social challenges; (ii) the decoupling of economic growth from environmental degradation (improving resource efficiency); (iii) the improvement of quality of life and well-being (alleviating poverty and promoting sustainable lifestyles); (iv) the application of life cycle thinking to minimise impacts in all stages of the production and consumption process (reducing the use, or promoting sound alternatives to, harmful chemicals and improving waste management and recycling); (v) the active involvement of stakeholders at all levels of government, the private sector, academia and civil society organisations; and (vi) guarding against the re-bound effect, where efficiency gains are offset by the resulting increases in unsustainable consumption.

- **A broad range of policies and instruments can be used to implement SCP.** Policies, strategies, programmes or action plans, set the strategic vision for SCP in priority sectors. Policy instruments are the practical tools used to achieve policy goals. They can be grouped into four categories: regulatory instruments (command and control mechanisms), economic instruments (financial incentives) communicative instruments (enabling informed choices) and voluntary or procedural instruments (action through societal self-regulation). SCP policies and instruments must target different stages of the production-consumption life cycle.

- The most effective way to implement SCP policies is to deploy a **well-coordinated package of instruments** that support and complement each other. **Multi-stakeholder involvement and coordination with other policy** areas, under the responsibility of different ministries, is necessary to make policies more effective.

- **Multi-stakeholder involvement,** i.e. the active participation and collaboration of all relevant stakeholders in SCP policy development and implementation, requires: the identification of win-win situations, particularly for the private sector, with a special emphasis on the crucial role of SMEs; and the empowerment of civil society in one form or another as a partner for raising awareness about adopting more sustainable lifestyles and consumption patterns at societal and individual levels.

- Food and agriculture, tourism, housing and construction, and goods manufacturing are all **important sectors of economic activity that particularly influence sustainable development in the region.** SCP policies in these areas should therefore be prioritised to ensure development is sustainable and within the carrying capacity of the region, the planet and its population.

- To **measure and communicate SCP issues,** governments can use a wide variety of indicators, according to their own SCP-related commitments in priority areas.

- The **"ecological footprint"** can be used as an overarching SCP indicator. It can help to identify the size of the biologically productive area needed to produce all resources and services for economic activity and consumption of a given population, and to absorb the waste generated, compared to the 'biocapacity' of the country or region.

- There is a **broad range of good practices and lessons learned in SCP** policy implementation, both inside and out of the Mediterranean Region, which can become a source of inspiration and be adapted or scaled-up to local and national contexts.

Notes

Chapter 1. Understanding sustainable consumption and production

SWITCH-Med SCP Toolkit

1.1. Why should policy makers integrate an SCP approach when designing national and sectoral policies?

SCP – an approach recognised by world leaders

In 1992, during the first World Summit for the Environment and Development in Rio de Janeiro, Brazil, world leaders from all societal sectors acknowledged that: *"[…] the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialised countries, which is a matter of grave concern, aggravating poverty and imbalances"* (UN,1992a). They proclaimed that: *"To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies"* (UN, 1992b).

Ten years later, in the World Summit for Sustainable Development in Johannesburg (2002), leaders from all nations and sectors reaffirmed the central role of SCP and identified it as one of the three *"overarching objectives of, and essential requirements for, sustainable development"* (UN, 2002). The Johannesburg Plan of Implementation encourages nations to develop *"a 10-year framework of programmes […] to accelerate the shift towards sustainable consumption and production to promote social and economic development within the carrying capacity of ecosystems by addressing and, where appropriate, delinking economic growth and environmental degradation through improving efficiency and sustainability in the use of resources and production processes and reducing resource degradation, pollution and waste"* (UN, 2002). To inform and support the development of those 10-year programmes, a global consultation, exchange and action process was launched, the Marrakech Process.

At the World Summit Rio +20 of 2012, the need to change the unsustainable way societies consume and produce was reaffirmed as one of the three overarching objectives for sustainable development. It was also acknowledged that governments should renew their commitment to shift towards SCP patterns with the adoption of the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP) (UN, 2012a). The 10YFP builds on the experience gained through the Marrakech Process and provides the basis for developing SCP programmes with an initial indicative list of five programmes, and should by no means be limited or confined to that list.

Initial programmes within the 10YFP

- Consumer information
- Sustainable lifestyles and education
- Sustainable public procurement
- Sustainable buildings and construction
- Sustainable tourism, including ecotourism

Source: UN, 2012b.

These global measures and commitments have further reinforced the importance of SCP as a necessary step toward achieving sustainable development. They stress the need to shift emphasis from end-of-pipe actions to holistic SCP approaches, where not only clean production strategies are encouraged but special focus is put on the importance of encouraging different stakeholders, including the public sector, private organisations, civil society organisations and individuals, to adopt more sustainable production and consumption practices and solutions.

The growing global consumer class having ever higher levels of income makes sustainable lifestyles and consumption patterns even more relevant. Sectors such as food and agriculture, consumer goods manufacturing, tourism, and housing and construction are of particular significance from an SCP perspective. These sectors have also been identified as priority sectors in the Mediterranean Region and are covered in Chapter 3.

The EU identified SCP as a key objective in its renewed European Sustainable Development Strategy ('SDS-2009'). The European Commission presented its Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan in 2008, which was adopted by the European Council that same year.

In 2008, Arab countries, aware of the importance of SCP, organised a first roundtable on SCP. In 2012 they adopted the Arab 10YFP on SCP with the aim: "to promote the concept of sustainable consumption and production in the Arab region through encouraging the utilisation of products and services that ensure environmental protection, conserve water and energy as well as other natural resources, while contributing to poverty eradication and sustainable lifestyles".

Source: http://www.scpclearinghouse.org/fr/c/14-scp-west-asia/d/scp-west-asia/24-arab-regional-strategy-for-scp.html

SCP, an approach integrated into the Mediterranean policy framework for sustainable development

The main policy umbrella for environmental protection and sustainable development in the Mediterranean Region is the **MAP (Mediterranean Action Plan)** adopted in 1975 and whose legal framework comprises: the **Barcelona Convention** adopted in 1976 and revised in 1995, and six Protocols to ensure its application (SCP/RAC, no date). The primary objective of the MAP and Barcelona Convention is to prevent, abate and combat pollution of the Mediterranean Sea and to protect and improve the marine environment in the area, contributing to its sustainable development.

The **22 Contracting Parties[6] of the Convention** recognise the importance of switching to more sustainable patterns of production and consumption in order to achieve sustainable development. They are progressively integrating SCP within the regular implementation programmes of the Convention, the Mediterranean Action Plan (MAP), and defining biannual SCP programmes of work. Since 2005, many actions have been developed through the main programmes for regional cooperation to raise awareness about SCP and to provide capacity building and technical assistance to the countries of the region (SCP/RAC, 2013).

[6] The Contracting Parties are: Albania, Algeria, Bosnia & Herzegovina, Croatia, Cyprus, European Union, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, and Turkey.

Milestones for the recognition of SCP by the Barcelona Convention Contracting Parties

2005

Approval of the Mediterranean Strategy for Sustainable Development (MSSD) which establishes SCP as a major cross-cutting objective to attain sustainable development

2008

1st Mediterranean Roundtable on SCP organised by SCP/RAC

2009

SCP identified as one of the six thematic priorities of MAP's Five-Year Programme 2010-2014 and the 2nd Programme of Work on SCP 2010-2011

2011

Strengthening SCP actions is requested in the 14th meeting of the Mediterranean Commission for Sustainable Development

2012

Approval of the 3rd Programme of Work on SCP 2012-2013 and reaffirmation of the commitment of the Barcelona Convention to "support, at Mediterranean level, capacity building and other activities associated with green economy as means to achieve sustainable development, such as the promotion of sustainable production and consumption patterns"

2013

The Contracting Parties requested the preparation of a specific Mediterranean SCP Action Plan addressing the region's common priorities for sustainable development, and identifying SCP tools to effectively implement the obligations under the Barcelona Convention and its Protocols.
The Istanbul Declaration adopted at the 18th Conference of Parties states the need for the Contracting Parties to "strengthen their commitment to accelerate the shift towards sustainable consumption and production patterns by adopting an Action Plan on SCP, which is in line with the commitments adopted at Rio+20 and which aims to reduce the impacts of human activities in the marine and coastal ecosystems".

Source: SCP/RAC, 2013.

The Barcelona Convention, protocols and regional plans, include many commitments, objectives and measures, which require the application of SCP instruments to achieve them. Chapter 3 provides more information on how SCP instruments, used in key economic sectors, contribute to the achievement of these commitments.

For example, the ICZM (Integrated Coastal Zone Management) Protocol aims to ensure *"the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts"* (ICZM Protocol – 2008).

Given the diversity and interdependence of economic activities influencing the sustainability of coastal zones and the commitment in the Protocol (Article 9) to minimise the use of natural resources, to prevent pollution and coastal zones degradation or to promote good practices among all relevant stakeholders (public authorities, economic actors and non-governmental organizations) among others, the SCP approach is a better approach for tackling coastal zone sustainability than a more conventional sectoral approach (SCP/RAC, 2013).

At the national level, several countries, both in the northern and southern shore of the Mediterranean Sea, had already developed strategies or policies to promote SCP, either dedicated policies (like Croatia), within sustainable development strategies (in Cyprus, Italy, Malta, Spain), or within green growth/ green economy strategies (as in Israel - see Case 3, Section 2.1).

1.2. Is SCP linked to global environmental challenges?

SCP tackling climate change

Due to its specific characteristics, the Mediterranean basin is considered a climate change 'hot spot'. Changes in its climate – with an estimated rise in temperature of 2-4°C, a decline in rainfall of 4-30%, and an increase in sea level of 18-59cm (Plan Bleu, 2012a) – are foreseen to affect, for example, the water cycle with associated effects on soil (salinisation, desertification, erosion), and the availability of quality water which will lead to conflicts among users (agriculture, tourism, etc.). There may also be an increase in extreme events (floods, heat waves, droughts, etc.) with their associated economic risks and loss in human lives (Plan Bleu, 2012a; World Bank/IBRD, 2012). SCP offers the potential and necessary tools to create a sustainable low-carbon economy that cannot only mitigate climate change but is also economically viable, socially just, and based on the principles of global equity (SWITCH-Asia Network Facility, 2009).

As far as manufacturing is concerned, businesses can reduce emissions by increasing efficiency, adopting less polluting solutions (cleaner technologies and green chemistry), applying more sustainable agriculture and forestry practices, using more renewable materials and energy and recycled materials, like plastic and steel, and can reduce greenhouse gas (GHG) emissions by 80-95% compared to using virgin material, for example. On the consumption side, some SCP options include better energy conservation applications in commercial and residential buildings, zero- or low-emission buildings, energy efficient appliances, standards and labelling, low-carbon transport alternatives, and improvement in separated waste collections to increase recycling rates (SWITCH-Asia Network Facility, 2009).

SCP towards alleviating poverty

Elements that characterise poverty include, among others, limited economic resources, reduced access to healthcare, illiteracy and under-education or sub-standard living conditions due to a lack of basic services (running water, sewage systems, transport, etc.), unfavourable working conditions and/or habitation in fragile and/or polluted environments. SCP cannot tackle all poverty factors but can help to alleviate some of them as it aims to improve both the environment and the quality of life.

For example, many SCP measures promote access to clean water, improve waste management, and reduce exposure to harmful substances (for example by regulating the use and disposal of chemicals, or by substituting hazardous chemicals with more benign substances), reducing health risks for the most exposed populations. SCP actions will contribute to the sustainable management and restoration of ecosystems which is crucial to guarantee the availability of, and access to, natural resources, on which the livelihoods of the poor often depend. 'Ecosystems resilience' plays a role in minimising the effects of natural disasters such as floods or droughts which cause greater damage in poor communities. SCP can also contribute to better and safer working conditions especially in sectors with high labour intensity (UNEP, 2009; UNEP, 2012a).

SCP increasing resource efficiency

One of SCP's objectives is to decouple economic growth from negative environmental effects in terms of ecosystems degradation and pollution (to do more, while polluting less) and also in terms of the use of resources (to do more, while using less). Resource efficiency is therefore inherent to the SCP approach.

By using SCP instruments, governments can encourage companies to devise and produce products and services that require a lower input of natural resources and energy. For example:

- **waste management** regulations can make recycling more advantageous for companies, promoting closed-loop models and thus reducing the need for natural resources;
- **grants and soft credits** to encourage industry to adapt to stricter environmental regulations, adopt cleaner technologies, etc., and make them more resource-efficient and competitive;
- **the substitution of hazardous chemicals** reduces the risks during the use and recycling phases and facilitates the design of products made from recycled materials;
- **carbon taxes** can foster the implementation of measures that lead to the consumption of less energy, stimulate the use of renewable energy and therefore decrease the use of non-renewable energy; and
- **market incentives**, including subsidies and public awareness campaigns can, for example, be used to encourage households, the public sector and the private sector to replace faucets and toilets with alternatives that consume less water.

Efficiency in energy and natural resources use supports both the green growth and the green economy agendas.

SCP promoting sustainable lifestyles

Growth in material wealth and global population leads to rising consumption levels which, in turn, lead to the decline in global resources and increase in CO_2 emissions. Climate change is expected to result in a further increase in social inequality within and between countries. However, global economic and insured losses due to natural catastrophes have already increased rapidly over the last decade (Rijnhout and Lorek, 2012) and have destroyed property on a large scale. Therefore rich and poor should have a mutual interest in together combatting climate change and the degradation of other ecosystem services.

SCP instruments can help to shift social norms towards the promotion of sustainable and healthy lifestyles both at individual and at community level, by promoting good practices, scaling-up successful local initiatives, social innovation and entrepreneurship. This can be seen as the most humanistic and probably also the most promising approach in combatting the degradation of ecosystem services (including climate) which will eventually also destroy the wealth of societies that has been generated over centuries. Institutional frameworks that promote long-term decision-making, sound management of the commons, and civil society participation, both at local and national levels, is crucial for changing behaviour towards healthier lifestyles and shifting societal norms from a focus on material wealth towards one on well-being (Rijnhout and Lorek, 2012).

1.3. What are the key aspects of SCP?

The importance of the SCP approach stems from its holistic perspective and cross-cutting character. Conventional approaches dealing with environmental and social problems focusing on single sustainability aspects (e.g. water use, waste production, labour conditions, etc.) and/or on individual sectors or stakeholders, have not managed to achieve the desired change.

In order to be more successful in attaining sustainable development, the SCP approach integrates the following key principles (adapted from UNEP, 2008 and EIONET, 2010):

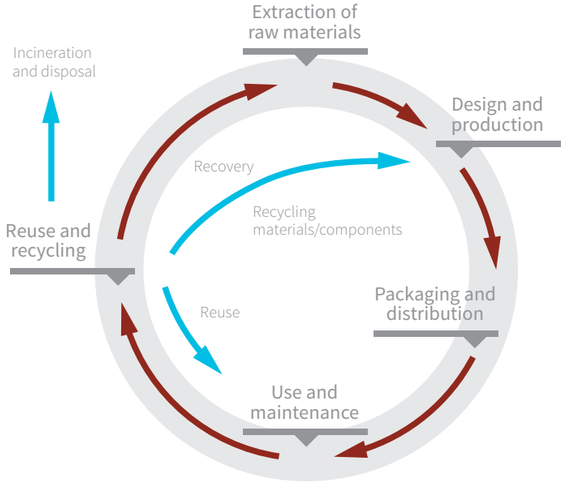
- **addressing key economic and social challenges** including meeting basic needs, unemployment, improving the quality of life and human well-being (alleviating poverty and promoting sustainable lifestyles);
- **decoupling economic development from environmental pressure**, to avoid increasing environmental degradation or compromising opportunities for future generations;
- **applying life cycle thinking – considering all the impacts that occur during the life cycle of the consumption-production chain.** As we live and operate in inter-connected systems, what happens in one system affects the others and vice versa;
- **actively involving all stakeholders from public bodies to the private sector, research institutions and society at large** to influence the supply and demand for goods and services and to reduce the negative impacts of both production and consumption in an integrated manner; and
- **guarding against the re-bound effect**, where efficiency gains are offset by resulting increases in unsustainable consumption.

Life cycle thinking at the core

The SCP approach holds 'life cycle thinking' at its core. It involves considering and understanding the environmental and social impacts that a product, service or solution causes at each stage of its life cycle, from the extraction of raw materials, to their processing, design and production/manufacture, through distribution, use/re-use or delivery to end-of-life disposal (*see* Figure 2).

Figure 2

Stages in the life cycle of a product



Source: UNEP/SETAC, 2007.

Using a life cycle perspective can broaden the analysis of consumption and production, providing greater understanding of the inter-linkages of any activity or decision beyond the immediate field or activity in question. At policy level it is crucial to ensure that policies in one area do not stress or have other negative implications in another.

Life cycle thinking helps to identify which stage requires intervention to achieve the greatest improvement in sustainability without causing a shift of social and environmental problems between the life cycle stages (e.g. from production to use or disposal), between impact categories (e.g. if an energy improvement increases water consumption), or between geographic areas.

At policy level, the life cycle perspective goes beyond defining policies and instruments to improve, both from an environmental and social point of view, the value chain of existing products and services. It includes defining measures that encourage a change in the solutions provided for people and organisations, as well as a change in societal values towards more sustainable lifestyles. In that way, the mistakes industrial countries made (and which are the cause of many sustainability challenges) can be avoided elsewhere, enabling a 'leapfrog' to better solutions and attitudes and ultimately ensuring a better quality of life.

"Life cycle thinking is increasingly fundamental in the development of key environmental policies around the world. In the European Union, life cycle thinking is at the heart of a growing number of policies and instruments in areas such as:

- *Integrated Product Policy, the Sustainable Consumption and Production, and Sustainable Industrial Policy Action Plan, Green Public Procurement, EU Ecolabel, EU Eco-Management and Audit Scheme, Ecodesign, Retail Forum*
- *Waste –life cycle thinking is now a term in the Waste Framework Directive, used to help determine the benefits of different prevention or management options. Life cycle thinking is also central to the Thematic Strategy on the Prevention and Recycling of Waste, and the Thematic Strategy on the Sustainable Use of Natural Resources.*
- *Eco-innovation and the EU Environmental Technologies Action Plan (ETAP)*

Outside of the European Union, Canada is among the growing number of countries that has also applied this approach where life cycle thinking has helped develop policies on ecolabelling, packaging, waste reduction and toxic substance management. It has also been used in both New Zealand and Japan, including for ecolabelling, and in Australia for public procurement. In the United States, the Low-Carbon Fuel Standard of California and the Environmental Protection Agency's Regulation of Fuels and Fuel Additives builds on life cycle assessment. The Norwegian Ministry of the Environment has used life cycle thinking in setting up Green in Practice , a foundation promoting SCP."

Source: JRC, 2010.

The importance of multi-stakeholder involvement

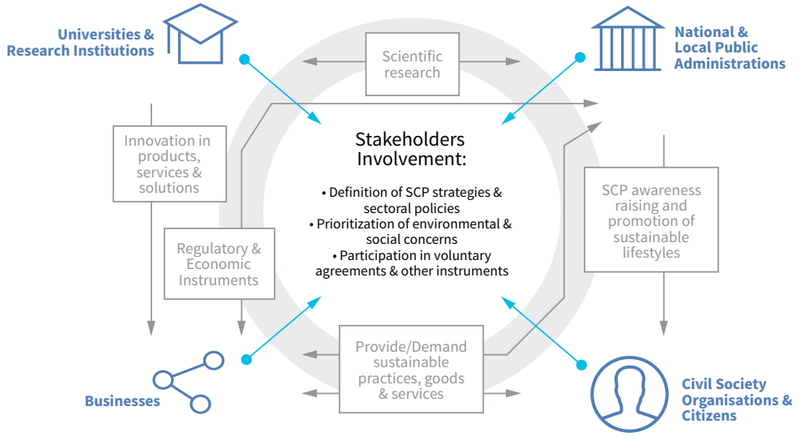
For the successful implementation of the SCP perspective, governments cannot act on their own but need the active participation and collaboration of all relevant stakeholders (across government departments and agencies at all levels, including businesses and society in general) both in policy development and its implementation (*see* Figure 3).

For SCP to take root and achieve results, different stakeholders, including the private sector, should see the benefits making a shift towards more sustainable patterns. SCP must be financially viable as well as socially rewarding by means of social recognition (SCP/RAC, 2013). In many developing countries this implies also involving small and medium-size enterprises (SMEs) as they are a crucial part of the productive sector and an important contributor to economic development.

Society, either organised through civil society organisations (CSOs) or as individual citizens should also be involved as they can play an important role in increasing awareness, and adopting and promoting instruments for sustainable consumption and lifestyles. Governments should encourage and empower citizens as partners in the promotion and implementation of SCP policies.

Figure 3

Inter-linkages between SCP stakeholders



R+D+I / PRODUCERS OF PRODUCTS AND SERVICES:
Life Cycle Analysis, Eco-Design, environmental certification

CONSUMERS OF PRODUCTS AND SERVICES:
Sustainable Public and Private Procurement, Supply chain

Source: Adapted from Ecoinstitut 2014.

Case 1:

‘Le Grenelle Environnement’, an extensive multi-party consultation process for ecological sustainable development action in France

The Grenelle Environment was a multi-party consultation process launched in July 2007 with the objective to collectively define public policy actions for ecological and sustainable development in France. The process brought together representatives from five stakeholder groups, namely, the central government, local public authorities, the private sector, unions and NGOs, in order to agree on actions to be taken forward by the central government towards a more sustainable France.

First, six working groups (sometimes with more than 50 members from the five stakeholder groups) were established to discuss and elaborate possible actions – one of these groups focused on “Adopting sustainable consumption and production patterns”. After two months of intense exchange the results of the working groups were published and an open, nationwide consultation process began through regional meetings, internet fora and Parliamentary debates, in which more than 30 000 representatives participated. In order to find consensus on actions and commitments, a two-and-a-half day negotiation meeting was held in October, resulting in more than 250 proposals. Afterwards, 34 operational committees (with more than 1 200 people) were launched for the operability of the commitments. As a result a first law, named ’Grenelle 1’, was approved by almost unanimity in October 2008, which transformed the commitments into operational programmes within a juridical framework. In 2010, a second law known as ’Grenelle 2’ was passed, which further specified the programmes with objectives, fields and sectors.

Furthermore, in order to follow up and contribute to the implementation of the results of the process a council was established from the beginning of the Grenelle which was institutionalised in 2010 as a permanent consultative body. The National Committee of Sustainable Development and Grenelle Environment consists of 41 members from the five stakeholder groups, as in the Grenelle, but with additional participation from civil society with representatives covering the issues of family, consumer protection, solidarity, social inclusion, youth and development aid, and public chambers of commerce.

Source: http://www.developpement-durable.gouv.fr/-Le-Grenelle-de-l-environnement-de-.html

Case 2:

Stakeholder involvement for the definition of a Sustainable Public Procurement action plan in Lebanon

In 2010, the Lebanese Government joined the project Capacity Building for Sustainable Public Procurement (SPP) in Developing Countries, led by the Marrakech Task Force on SPP, and UNEP, whose main objective was to support governments in the definition of an SPP Action Plan (a key SCP instrument).

The Ministry of Finance requested UNEP to join the project given the priority it had to modernise the country’s public procurement framework, the importance of SPP in support of that, and the Ministry’s previous experience in a project of the Lebanese Centre for Energy Conservation on sustainable consumption of energy (the CEDRO project).

In order to have a clear picture of the situation in the country (current status of SPP in the government, legal framework, market readiness, etc.) and to be able to plan appropriate and coordinated actions, the Ministry of Finance did not act in isolation but set up a steering committee. The committee was in charge of providing support to the Ministry of Finance for the preliminary analysis and for prioritising actions.

At the beginning, the committee comprised a small group consisting of the Ministry of Finance, the Ministry of the Environment, the Ministry of Social Affairs, UNDP, the Chamber of Commerce and Industry, and the Council for Development and Reconstruction. As the project evolved, other members were invited to participate, such as the Office of the Minister of State for Administrative Reform, Libnor (the national organism for norms and standards), and the Lebanese Centre for Energy Conservation.

The participation of all these different stakeholders from the beginning of the project was very important in order to: 1) include the environmental and socio-economic dimension of sustainability; 2) be able to coordinate the government demands for more sustainable products and services (the consumption in SCP) with the ability to produce or supply them (the production in SCP); and 3) promote synergies and coordination with existing initiatives and labelling instruments.

Source: Ecoinstitut, 2011.

Notes

CHAPTER 2. Policy framework for SCP

SWITCH-Med SCP Toolkit

2.1. How can SCP programmes be developed?

Governments have already put in place a range of policies, instruments and initiatives to make consumption and production patterns more sustainable, covering: recycling, eco-labelling, awareness-raising campaigns, eco-taxation, etc. However, these actions are often not well coordinated nor sufficiently coherent, as they are promoted separately by different governmental agencies based on their own sectoral policies. Also, the global impact of those policies is often not enough to really reverse the national trends related to the over consumption of natural resources.

To acknowledge the importance of SCP in achieving sustainability and involving all stakeholders, especially within the government, many countries have decided to develop dedicated SCP programmes or to explicitly address SCP within sustainable development or growth strategies.

Top reasons for developing a national SCP programme

- SCP is essential for sustainable development
- SCP integrates supply (production) and demand-side (consumption) activities in coherent market strategies
- SCP uses life cycle thinking to ensure that problems are not pushed into other phases of the life cycle
- SCP seeks 'win-win' outcomes through a multi-stakeholder setting
- SCP can help attract funds from donors for projects (e.g. development organisations)
- SCP targets business and industry – key players in achieving sustainable development
- SCP initiatives can create jobs and investment and encourage social and business innovation

Source: Adapted from UNEP, 2008.

Case 3:

National Green Growth Plan, 2012-2020 for Israel

In 2011, the Government of Israel launched a process to develop a National Green Growth Strategy for the years 2012-2020. The decision was made after signing the OECD Declaration on Green Growth in 2009 and becoming a full OECD member in 2010.

The process was put forward by two ministries, the Ministry of Environmental Protection and the Ministry of Industry, Trade and Labour, and organised through roundtable discussions. The objectives of the roundtables were to: 1) formulate recommendations for a national plan for green growth; 2) cooperate on the implementation of the national plan; 3) serve as a forum for the transfer of information and updates among the different partners; and 4) develop indicators for green growth in coordination with the OECD.

Consultation also took place on-line through a dedicated website. In total about 500 stakeholders participated in the discussions (either in the roundtables or via the website).

A first roundtable was held in 2011 and, as a result, participants agreed to present a policy proposal based on regulatory, economic, information and implementation instruments in three areas: green production, green consumption and green innovation. In 2012, a second meeting took place at Israel's first National Conference on Green Growth. The conference helped to broaden the public discourse on green growth and highlighted its inherent economic, social and environmental advantages. Afterwards, the **National Green Growth Action Plan** was consolidated.

The six main levers of the plan are:

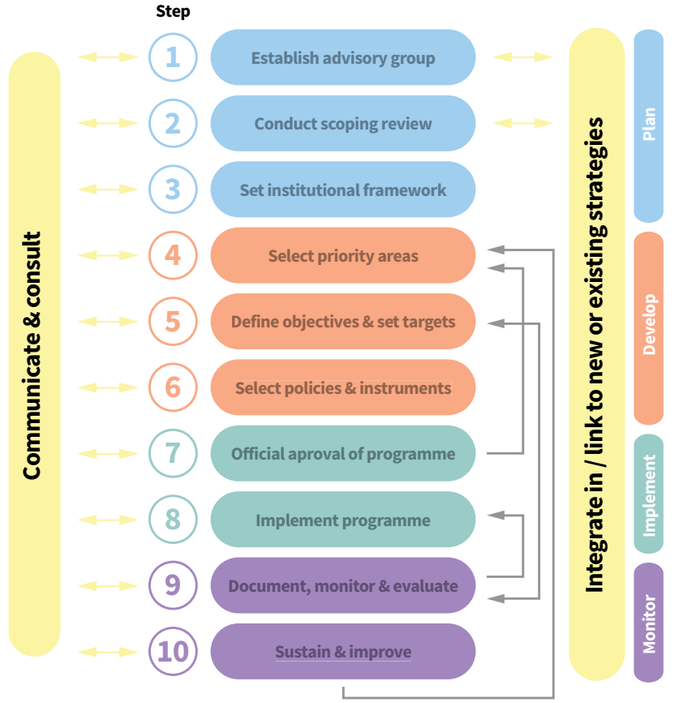
For green production	Integrated green licensing
	Green growth knowledge centre
	Green innovation
	Green employment
For green consumption	Green consumption
	Green procurement

Source: http://www.sviva.gov.il/English/env_topics/GreenGrowth/

To develop SCP programmes, UNEP proposes an **SCP programme development process** (detailed in the 'Planning for Change' methodology) that is flexible and can be adapted to the context of each country interested in developing such integrated SCP programmes. The step-by-step process is summarised in Figure 4 and follows the common: **Plan, Do, Act, Check approach.** SCP should be embedded or integrated in the planning and decision-making process and not developed as a separate exercise.

Figure 4

SCP programme development process ('Planning for Change' methodology).



Source: UNEP, 2008.

Case 4:

SCP programme for Cairo (Egypt)

cc by: Ernie Reyes

In 2008, the city of Cairo published the SCP Programme for Cairo, a document produced within the framework of the African 10YFP on SCP through a cooperative effort of different stakeholders at National and local level.

The SCP programme was prepared following the development process proposed by UNEP and built on an existing political and strategic framework in order to enhance ongoing efforts and bridge existing gaps.

The main objectives of the SCP programme were to:

- raise awareness on SCP by involving key actors
- prepare a local SCP programme focusing on applicable activities in four priority areas (solid waste management, industrial development, urban development (with focus on slums) and transport)
- implement a number of pilot projects through consultation with different stakeholders

The aim was also to support the preparation of a national programme on SCP.

Source: ENCPC, 2008. http://www.unep.org/roa/docs/pdf/SCPProgramme-Egypt.pdf

2.2. How can SCP be mainstreamed in key policies and plans

What is mainstreaming?

Mainstreaming SCP means to systematically integrate the SCP perspective and measures into all levels of policy planning and implementation to ensure that SCP is within the organisation's practices and culture (adapted from UNEP, 2009).

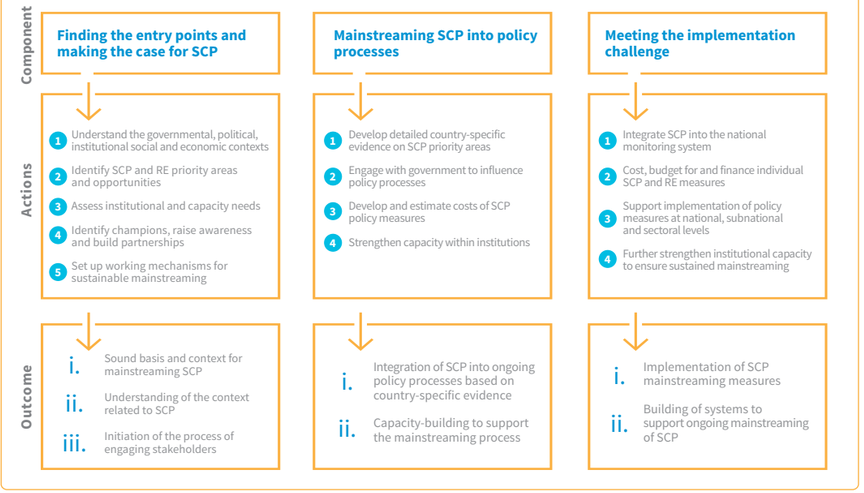
To actually mainstream SCP, governments need to consider how the SCP perspective can be integrated into regular planning and implementation activities, either with policies already in place, with policies under development, and/or when policies are being reviewed. Especially important is to make sure that SCP goals are included in development strategies (including economic and growth strategies) to ensure high-level support (UNEP, 2012b).

At the micro level, projects and initiatives can also be designed and deployed fully integrating the SCP approach in a participatory way, actively engaging all relevant stakeholders including both private sector and civil society. An example is presented in Case 29.

In order to mainstream SCP there is no one-size-fit-all solution which is why UNEP proposes a framework based on three pillars as illustrated in Figure 5 below.

Figure 5

Components, actions and outcomes to mainstream SCP



Source: Adapted from Cohen *et al.* 2009.

SCP mainstreaming and integration within the national policy framework can be strengthened by (UNEP, 2012b):

- **minimising message fragmentation** caused by the proliferation of diverse action plans that could blur the focus of attention and weaken the momentum

- having in place **monitoring mechanisms** in order to enable evidence-based policy review for the consolidation of SCP and removal of conflicting regulations and instruments

- defining adequate **communication strategies** for all stakeholders to strengthen the momentum and interest

- **resourcing and building capacity** (human resources, skills, tools, networks) to sustain policy implementation

But also:

- **promoting integrated policy-making** for sustainable development

- **assessing implementation** and **proposing corrective measures**

Having a dedicated SCP programme is not per se a guarantee that SCP is going to be mainstreamed in the government and society. The same is true for the opposite, not having a dedicated policy does not mean that SCP cannot be mainstreamed in the organisation's planning and activities. The SCP approach needs to be an integral part of the planning and decision-making process.

2.3. How can SCP be measured and communicated?

To be able to communicate the SCP approach and achieved results to support mainstreaming SCP, countries need to have **monitoring mechanisms** in place. These mechanisms serve not only to track progress and results, but also to evaluate the effectiveness of a policy or programme, to improve accountability and to identify areas that need improvement.

Among the different tools for monitoring and evaluating policies and programmes (peer review, external auditing, etc.), **performance indicators** are among the most useful ones to measure the impact, or lack thereof, of these programmes and communicate the achieved sustainability improvements.

As governments have in place a wide range of policies with SCP-related commitments, an efficient approach to establish a set of SCP indicators is to choose indicators already in place or select new ones that are also useful to measure results from existing policies (be they overarching sustainable development, poverty eradication and/or growth strategies or sectorial policies on waste, coastal zone management, deforestation, etc.) and integrate them within existing monitoring activities.

To select and communicate SCP-related results, countries need to understand what SCP means in practice in different contexts. If the country counts with dedicated SCP programmes, the definition of indicators will be done within that framework and based on national priorities. If no overarching SCP strategy exists, the establishment of a set of SCP performance indicators will help mainstreaming SCP as mentioned in the previous section (2.2).

Case 5:

Set of SCP indicators from Thailand

The Government of Thailand includes a set of SCP indicators within its Environmental Quality Plan 2012-2016, that are as follows (and which include some indicators already in place in the country):

Indicators in EQM Plan 2012-2016		
1. Increased amount of annual government budget allocated for green procurement	%	↑
2. A fiscal reform to promote better environmental management	√	√
3. Increased number of certified farms achieving environmental standards	#	↑
4. Increased ratio of sustainable agricultural land to all agricultural land by 5% per year	%	↑
5. Increased number of business enterprises certified as green industry	#	↑
6. Increased number of products and services certified in the green label and other environmental label schemes	#	↑
7. Increased number of environmental-friendly tourism products and services	#	↑
8. Increased ratio of passenger travel by public transport	%	↑
9. Increased ratio of renewable energy in final energy consumption	%	↑
10. Decreased ratio of energy consumption per unit of GDP	%	↓

Source: SWITCH-Asia Network Facility, 2012.

Case 6:

The ecological footprint as an overarching SCP indicator

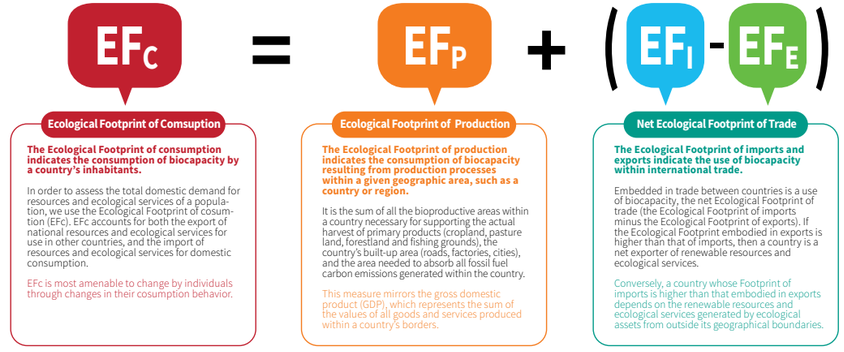
The ecological footprint (EF) is an indicator that helps to understand the environmental consequences of production, trade and consumption activities on the planet. It does this by: 1) tracking a wide range of activities and impacts that are more typically evaluated independently, such as CO_2 emissions, fish consumption, land-use change, etc. (Borucke *et al.*, 2013), and 2) integrating them into a simple, easy to communicate indicator.

The ecological footprint measures how much biologically productive land and sea area an individual, population or activity requires to produce all the resources and services it consumes, and to absorb the 'waste' it generates. It then compares it to the natural capacity of the country or region to provide those resources and absorb the waste produced (it's biocapacity).

As trade is global, the ecological footprint includes the productive land and sea from all over the world as illustrated in the ecological footprint associated with a country's total consumption is calculated by summing the footprint of its production and imports and subtracting the footprint of its exports. This means that the resource use and emissions associated with producing a car that is manufactured in Spain, but sold and used in Syria, will contribute to Syria's, rather than Spain's, ecological footprint of consumption.

Figure 6

Tracking production, consumption and net trade with the ecological footprint



Source: Galli *et al.*, 2012.
http://www.footprintnetwork.org/images/article_uploads/Mediterranean_report_FINAL.pdf

2.4. What types of policies and instruments can promote SCP?

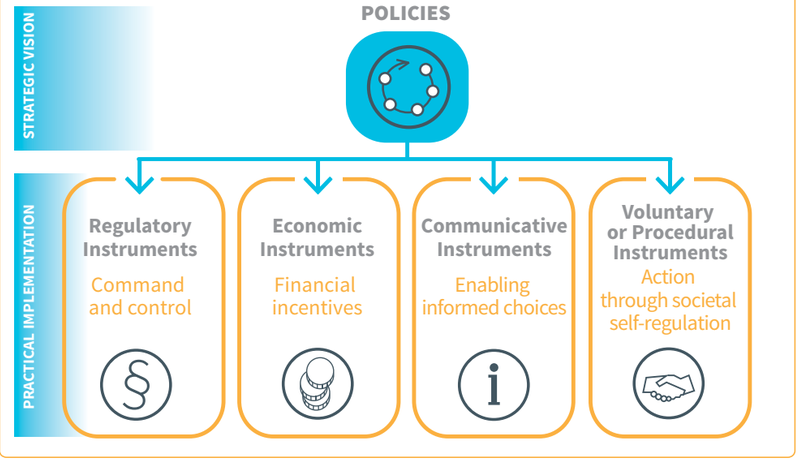
Governments have at their disposal a range of policy instruments that can be used in order to influence consumption and production patterns (*see* Figure 7). The private sector, research and development bodies, universities, schools and the society (including civil society organisations and citizens) are also instrumental in promoting a shift towards more sustainable alternatives and practices.

'Policies' is the generic term to refer to different levels of policy making – including strategies, programmes, action plans – that set the main lines of action or strategic vision along with objectives, targets, performance indicators and monitoring requirements and that include the instruments that will be deployed to deliver the policy and achieve the set goals (SWITCH-Asia Network Facility, 2011; Heiskanen, 2009).

'Instruments' are the set of practical techniques by which governmental authorities support and create the necessary changes to achieve policy goals (Heiskanen, 2009). Thus policies are implemented through different types of instruments. Policy instruments can be grouped in different categories. Taking the governance approach, the most widely applied categories are (Heiskanen, 2009):

Figure 7

Type of SCP Policy Instruments



Regulatory instruments: command and control, force change and oblige the addressees (citizens or organisations) to comply with the government rules, in most cases under threat of sanctions. Therefore, they need to be set together with enforcement, monitoring and sanctioning mechanisms to ensure compliance. For SCP, examples include substance bans, emissions limits, production process standards, minimum product standards and building codes, etc.

Economic instruments: incentives and disincentive tools make certain behaviours or practices more or less financially attractive by means of rewarding or penalising economic activities. These policy instruments can encourage consumers and firms to behave both in their own interest and in the interest of the environment by, for example internalising external costs or promoting specific technologies. Examples include energy taxes, tax exemptions for green technologies, subsidies or loans, pollution levies or charges, feed-in tariffs for renewable energies, CO_2 tradable permits, deposit-refund systems for packaging, etc. Economic instruments need to be selected and designed to support command and control mechanisms.

Communicative instruments: enabling informed choices, aim to influence the target audience via the transfer of knowledge, information and persuasion so that they can make better informed choices – avoiding less sustainable options in favour of more sustainable ones. In general, information-based tools cannot be expected to function as substitutes for other policy tools, but should rather be regarded as supplements. Examples include environmental and social labelling, consumer guides, communication campaigns, disclosure of information about product or producer performance, etc. Communication campaigns need to be specifically designed to address the concerns, interests and priorities of different target groups.

Voluntary or procedural instruments: action through societal self-regulation and participation. OECD distinguishes four types of voluntary, self-regulation agreements: unilateral commitments, private agreements, negotiated agreements and voluntary programmes (UNEP, 2012b). Examples for SCP include voluntary reporting initiatives, corporate social responsibility, setting of voluntary targets for product improvements and emissions reductions, etc.

Case 7:

Regulation for the procurement of healthy and organic food in schools in Italy

The improvement of school meals in Italy began in 1987 when the National Institute of Nutrition together with the Ministry of Agriculture and Forestry set out the first guidelines for a healthy diet. Regarding the inclusion of organic products in school meals, the determining factor was the inclusion in the National Budget Law for 2000 (Law nº 488 of December 1999 on the Provisions for the preparation of the annual and pluriannual budget of the State) of Article 59.4. This article states: "*To guarantee the promotion of organic and of quality agricultural production, public institutions that operate school and hospital canteens will provide in the daily diet the use of organic, typical and traditional products as well as those from denominated areas, taking into account the guidelines and other recommendations of the National Institute of Nutrition*".

Other regulations for quality food for children, together with regional laws for the promotion of organic school canteens (which included economic instruments), and pioneer experiences in many local authorities in Italy, have been key for the extension of organic food in the school system throughout Italy. From the first annual survey in 1996, which was repeated until 2008, the number of school canteens and meals including (entirely or partly) organic products increased remarkably, as presented in Figure 8. Thus in 2008 about 50% of all school meals delivered in the country included organic products (including in nurseries, kindergartens, primary schools and partially junior high schools).

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
School canteens (n)	69	97	103	110	199	342	522	561	608	647	658	683	791
Meals (n*000)	24	33	141	146	267	443	654	785	806	839	896	924	983

Figure 8. Organic school canteens and organic daily school meals in Italy, 1996-2008

The school meal information service of the Region of Emilia Romagna calculated that organic school meals cost an extra 7-10% on the basic cost of a meal (considering that organic food may cost 25-30% more than conventional foods, and that the cost of food represents about 25-33% of the entire cost of a meal).

Given that in Italy receiving a meal at school is considered a child's right and school lunch is part of the educational programme, some municipalities subsidise school meals. In Rome, for example families pay only 40% of the cost of the meal which is further reduced for low-income families.

Source: Grandi *et al.*, 2009. ftp://ftp.fao.org/docrep/fao/011/aj994e/aj994e00.pdf

Case 8:

Carbon tax in British Colombia (Canada)

In 2008, the Province of British Colombia in Canada implemented the first carbon tax shift in North America designed to be 'revenue neutral', i.e. all the revenues obtained with the carbon tax are used to reduce other taxes – mainly income taxes (personal and corporate), as well as targeted tax relief for vulnerable households and communities – so that there is no overall increase in taxation.

The carbon tax, or tax on the use of carbon-based fuels, imposes a fee to the price of each fossil fuel depending on the carbon dioxide equivalent (CO_2e) per tonne of each type of fossil fuel. The tax covers almost all fossil fuels used in the province – gasoline, diesel, propane, natural gas, and coal – excluding certain uses.

The tax was initially set at Canadian $10/tonne of CO_2e and rise annually by $ 5 until it reached $ 30/tonne (roughly 7 cents/litre of gas) in 2012.

In the four years since the tax was introduced, British Colombia's per capita consumption of fuels subject to the tax has declined by 19% compared to the rest of Canada. From 2000 to 2008 the province's annual average per capita fuel consumption reduction was only 0.1% more than in the rest of Canada. Since the introduction of the tax, from 2008 to 2012 the annual reduction was 5% higher than in the rest of Canada. On the other hand, from 2008 to 2011, per capita GHG emissions associated with carbon taxed fuels declined by 10% (compared to the 1% in the rest of Canada). Despite the initial fear that the carbon tax would harm the province's economy, data after four years of implementation of the tax show that British Colombia's economy has kept pace with the rest of Canada's.

Based on a review of the available evidence, British Colombia's experience mirrors previous European experiences with carbon tax shifting and it can be concluded that the province's carbon tax shift has been a highly effective policy instrument to date. It has contributed to a significant reduction in fossil fuel use per capita, with no increase in overall taxation and no overall adverse economic impacts.

Source: Elgie and McClay, 2013.
http://www.sustainableprosperity.ca/dl1026&display?utm_source=Sustainable+Prosperity+Newsletter+List&utm_campaign=082e2d78bf-BC_Carbon_Tax_Five_Years_Report7_24_2013&utm_medium=email&utm_term=0_49bc3191df-082e2d78bf-413698581

Case 9:

Communication instruments to manage water scarcity in Catalonia (Spain)

Water scarcity is a reality in most Mediterranean countries. Motivated by two severe drought periods in 2005 and 2007, the Catalan Government (Catalonia, Spain) approved the drought decrees 93/2005 and 84/2007, and a Parliamentary motion 21/VIII which included several water saving communication campaigns and instruments targeted at citizens in order to mobilise the whole society, especially households. Citizens needed to be aware of the environmental effects of their own actions.

The **Decree 84/2007** strengthened the previous decree in terms of communication instruments and additional measures to preserve the household water supply. The communication instruments foreseen included:

– **edicts and local announcements by municipalities banning activities and imposing penalties** during the drought period (including water cleaning the streets, filling pools, watering gardens or washing vehicles by hosepipe), to cut most water using activities;

– fortnightly or weekly **press conferences by the government about water reserves and rainfall levels** (and dissemination via the water agency website) in order to make society aware of the actual situation.

The **Parliamentary motion** included:

– several **informative campaigns** from February 2007 to July 2008 consisting of announcements on the press, radio, TV and public transport (metro, buses, etc.) to generate general awareness on the need to save water;

– **several announcements on the activities carried out** during that period by the Government to manage water, to maximise transparency and legitimise demands by leading by example;

– a **water-saving campaign, Install Me! Each Drop Counts**, designed by the Department of the Presidency, the Department of Environment and the Catalan Government's Water Agency in collaboration with the NGO, the Association of Ironmonger and Hardware Stores. It consisted of a free distribution through the main daily newspapers of 1.3 million water-saving devices for taps, together with a leaflet explaining the severity of the water problem, the actions developed by public bodies, and instructions on how to install the devices and how to identify hardware stores participating in the campaign. The goal was to make the population more aware of the need to preserve scarce water.

The **transparency of government actions** through regular press conferences (including the need to bring water from France by cargo ship), and the **response from the media** covering the situation as prime news during the whole drought period, were key to the success of the communication measures.

All the efforts since 2005 made an impact on the behaviour of citizens in the region, and their daily household water consumption. The average water consumption per inhabitant in the Barcelona Metropolitan Area was reduced from nearly 133 litres/day in 2000 to 107 litres/day in 2010.

Source: Alcantud and Mazo, 2011.

Case 10:

National Industrial Symbiosis Programme, United Kingdom

The National Industry Symbiosis Programme (NISP) of the UK is a voluntary initiative which brings together traditionally separate industries and organisations from all business sectors with the aim of improving cross industry resource efficiency and sustainability; involving the physical exchange of materials, energy, water and/or by-products together with the shared use of assets, logistics and expertise.

The programme started in 2003 as a pilot scheme in three UK regions and their proven success convinced the Government of the need to roll it out across all nine English regions, by providing £ 27 million pounds over three years.

NISP is a business-led programme with over 15 000 industrial members who form part of a network. Through the network, it identifies mutually profitable transactions between companies so that underused or undervalued resources (including energy, waste, water and logistics) are brought into productive use. The industry symbiosis programme is able to identify potential synergies leading to business, social and environmental benefit.

NISP members comprise micro, small and medium-size businesses and multinational/corporate companies from every industrial sector. They pay a membership fee of £300-2000 depending on their size. In exchange, companies have access, for example, to exclusive workshops, expert support or an on-line platform for resource matching ("wants" and "haves").

One of the reasons for the programme's success is that even though it is a national programme, its implementation is conducted and supported by a local delivery structure that is knowledgeable and with clear insight into specific local environmental and economic agendas that enables the programme to have such a positive impact.

Overall NISP has provided a robust evidence base to support the role of industrial symbiosis in helping businesses improve profitability, commercial competitiveness and environmental performance. Apart from creating or safeguarding 10.000 jobs the NISP Network has provided very positive results, as shown in the figure.

Source: http://www.nispnetwork.com/

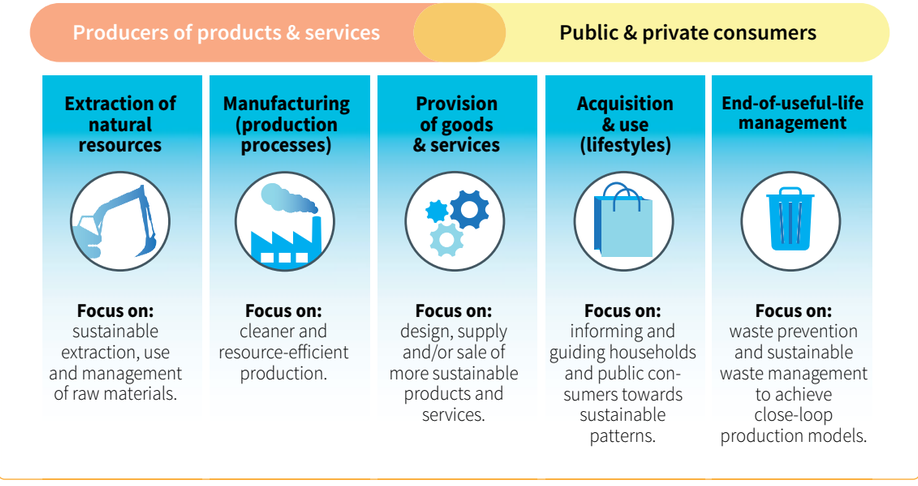
2.5. What life cycle stages are covered by SCP policies and instruments?

From an SCP perspective, policies and instruments may target different stages of a product/service life cycle in order to promote more sustainable production and consumption patterns. Depending on the specific life cycle stage, the type of stakeholders and their degree of involvement will vary. This includes the private sector as producers of products and providers of services (direct and indirect supply chain), or all actors (public sector, private sector and citizens) as potential consumers.

The stages and main targeted actors are summarised and further described in Figure 9 below.

Figure 9

Life cycle stages of production-consumption



Source: Adapted from SWITCH-Asia Network Facility.

Extraction of natural resources: Policies and instruments relevant to this life cycle stage are those focused on minimising environmental and social impacts from the extraction, use and management of raw materials. Examples of such policies include national raw material strategies, renewable material strategies, water management strategies and taxes on raw materials.

Manufacturing: Policies aimed at greening production processes and promoting environmental technologies, it includes policies to promote the application of cleaner production, the use of environmental management systems in business, the greening of supply chains, corporate social responsibility, environmental accounting and reporting as well as environmental technologies, including renewable energy.

Provision of goods and services: Policies and related policy instruments focused on promoting the design, supply and sale of greener/more sustainable products and services. Examples include integrated product policy (IPP) strategies, eco-design policies, ecolabel programmes, policies addressing the retail sector and policies supporting fair trade.

Acquisition and use: Policies and related instruments having a direct influence on the decision-making of private consumers, policies aimed at changing or adjusting the framework conditions, as well as policies promoting sustainable procurement. Examples include consumer policies, green/sustainable public procurement (GPP/SPP) policies, consumer campaigns, and green taxes aimed at consumers.

End-of-useful-life management: Policies aimed at waste prevention and promoting sustainable waste management practices. Examples include waste management plans, landfill taxes and extended producer responsibility schemes. Regulatory and economic measures are commonly employed for this life cycle stage to ensure that different waste types are appropriately handled.

Examples of policy instruments to approach different life cycle stages: the case of fisheries

In order to conserve/restore the productive capacity of the sea, actions have to be taken along all the stages of the fish production-consumption cycle. National and local public administrations could ensure the sustainable management of fisheries by the actions listed below.

Passing regulations regarding the minimum fish size, catch quotas, closure periods, etc. to promote the regeneration of fisheries (regulatory instrument) and implement monitoring systems to ensure compliance.

Accompanying the regulation with fines to prevent infringements, and subsidies or tax exemptions especially for SMEs to promote the shift to more sustainable fishing practices (economic instrument).

Supporting more sustainable fishing practices by helping existing sustainable fishery standards and labelling schemes (like MSC) to adapt to the national context in order to promote that market (communication instrument).

Promoting respect for fishing regulations and the increase of certified eco-labelled products, which would encourage companies to implement those measures, by:

- conducting awareness-raising campaigns for the general public and targeting stakeholders (communication instrument)

- respecting regulations and promoting the purchase of sustainable fish products by government agencies – for schools, hospitals, government functions etc. (public procurement as an 'economic' instrument)

- establishing agreements with local markets and other retailers to encourage legally compliant and more sustainable fish products (voluntary agreements)

This way, a framework is established comprising a package of instruments and responsibilities that encourages more sustainable fishery practices by not only regulating them, but also by promoting demand for them thus encouraging private sector engagement.

The following chapter identifies SCP policies and instruments for four key sectors relevant for SCP in the Mediterranean: food, housing, tourism and manufacturing. SCP instruments and policies are presented according to different life cycle stages and instrument category.

CHAPTER 3. Mainstreaming SCP into key economic sectors for the Mediterranean Region

A recent application of the ecological footprint for the Mediterranean Region (Galli *et al.,* 2012) found that during the period 1961-2008, the per capita ecological footprint of an average resident grew by 52% (from 2.1 to 3.1 global hectares (gha[7]) while per capita biocapacity decreased by 16% (from 1.5 to 1.3 gha). While local biocapacity was able to meet about 73% of the region's demand (its ecological footprint of consumption for renewable resources and ecological services) in 1961, by 2008 only 40% of the region's footprint of consumption was met by local biocapacity. The remaining 60% was met by over-consumption of local resources and/or resources imported from outside Mediterranean boundaries (*see* Figure 10).

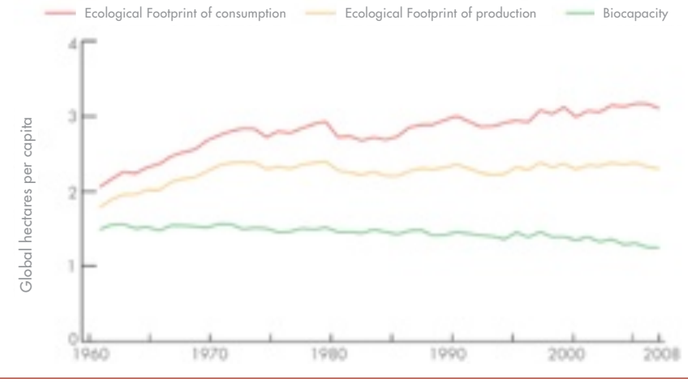
The analysis helped to identify the three areas contributing the most to the ecological footprint of Mediterranean residents, and they were 'food and non-alcoholic beverages', 'housing, water, electricity, gas and other fuels' and 'transportation'.

"The State of Environment and Development in the Mediterranean" 2009 report highlighted the food, tourism, transport and manufacturing sectors as being relevant areas of economic activity for the sustainable development of the region (UNEP/MAP/Plan Bleu, 2009). The 2012 MED report "Toward Green Growth in Mediterranean Countries. Implementing Policies to Enhance the Productivity of Natural Assets", from the World Bank, highlights agriculture, fisheries and tourism specially contributors to the vulnerability of Southern and Eastern Mediterranean Countries to environmental degradation (World Bank/IBRD, 2012).

SCP actions and policies in these areas should therefore be prioritised, to improve the efficient

Figure 10

The Mediterranean Region's ecological footprint of production and consumption compared to available biocapacity 1961-2008



Source: Galli *et al.* 2012.

[7] Global hectares.

use of Mediterranean resources and services and to start reversing ecological and social deficits to bring sustainable development within the carrying capacity of the region and the planet.

This chapter focuses on the following key sectors: **food and agriculture, consumer goods manufacturing, tourism, and housing and construction.** It introduces key instruments for mainstreaming SCP in the sectors to improve their sustainability and to help fulfil commitments under the Barcelona Convention for a Sustainable Development of the Mediterranean Coastal and Marine Environment.

For each of the four sectors the chapter includes:

- main reasons for mainstreaming SCP

- environmental impacts created along the life cycle

- policies and instruments for mainstreaming SCP

- key policy areas and stakeholders for mainstreaming SCP

- linkages between SCP policies and instruments and the Barcelona Convention

- examples of SCP policies and instruments being implemented

The list of SCP policies and instruments included for each key sector is neither exhaustive nor comprehensive. Each policy and instrument is there to provide inspiration for policy makers and their selection should be according to a country's specific priorities, major challenges and existing complementary instruments.

In the final chapter of this toolkit, on resources, specific materials for each sector are listed as further support for the development of sector-specific SCP policies.

3.1. How can SCP be mainstreamed in the food and agriculture sector?

Main reasons for mainstreaming SCP

There are four main justifications for mainstreaming SCP into the food and agriculture sectors.

Globally, agriculture, including croplands, pastures and forests, accounts for 60% of land, uses 70% of freshwater resources and has a significant influence on landscape and the environment (EEA, 2013a; FAO, 2012).

Agriculture, including fisheries and food processing, is vital for food security and employs a large segment of the population, especially in developing countries. For example, marine fisheries in the Mediterranean Region supports 458 000 direct and indirect jobs.

To satisfy the demand of a growing and richer population with changing dietary habits (as exhibited by a decline of the traditional Mediterranean diet or a rise in meat consumption), it has been estimated that food production will have to increase by 60% until 2050 (FAO, 2012).

It is estimated that one third of food produced globally is being wasted either through poor storage and packaging or through unsustainable consumption patterns. Measures should be introduced to reduce and eventually prevent such wastage.

Environmental impacts created along the life cycle

Agriculture is the main cause for non-point source pollution[8] in the Mediterranean (UNEP/MAP, 2012). The way agriculture and the food industry affect resource consumption is explained, at least in part, by the issues listed below.

- Predominant agricultural irrigation practices are drawing heavily on existing water resources in the region. They reduce the amount of fresh water in rivers and therefore also of the **freshwater flow into the Mediterranean** which has decreased by 20 % during the last 40 years (Ludwig, 2009). Plan Bleu estimates that by the year 2025, 8 of the 12 southern and eastern Mediterranean countries could be consuming more water than they have available in their renewable sources. The over-exploitation of coastal aquifers is also leading to **seawater intrusion** and **water and land salinisation** (UNEP/MAP/MED POL, 2005).

- The overuse of chemical fertilisation is a major factor in **soil and water, with nutrient 'over-enrichment'** (of nitrates and phosphates) leading to nitrate polluted aquifers and to eutrophication of bodies of water due to harmful algae blooms (UNEP/MAP, 2012).

- Pesticides are inherently **toxic to living organisms** including humans (Sanborn *et al.*, 2004; 2007; Bassil *et al.*, 2007). Hence, the use of pesticides in agriculture (and homes/gardens) is likely to have negative impacts on human health and the environment. Humans are primarily exposed to residues in food and drinking water (Fantke *et al.*, 2012; Hamilton and Crossley, 2004), via occupational, by-stander, and residential exposure (Vida *et al.*, 2007). The environment is exposed to pesticides primarily by reaching non-target organisms via wind drift, leaching, and runoff (Stenersen, 2004; Coats and Yamamoto, 2003).

- In the eastern Mediterranean Region 19 - 25 % of diseases are linked to environmental factors like water or air pollution. The **cost of damage to health and quality of life** due to environmental degradation is estimated to be 1.8 - 3.4 % of gross domestic product (WHO EMRO, 2013).

- Key environmental impacts from the food processing industry include a **high freshwater demand** both as an input and for cleaning purposes; the generation of **wastewater with an excessive organic load**; and **excessive plastic packaging** (UNIDO, no date).

- Changes in food consumption patterns in the southern and eastern Mediterranean Region have led to an increase in the intake of calories and fat by the local people and to a **shift from traditional foods to more 'western' types of foods** (Musaiger, 2011). The eastern Mediterranean Region exceeds European countries and has become the second most obese and overweight in the world, after the USA (Kosti, 2006).

- Overexploitation of fishery resources in the Mediterranean has increased from 15 % in 1991 to 60 % in 2006, **affecting the most valuable species and top predators** with key roles in the trophic chain control, leading to changes in the species' structure, the food chain and the whole ecosystem (Sauzade and Rousset, 2013; UNEP/MAP, 2012).

- The importation and consumption of manufactured food and beverages has **increased the amount of plastics** and **non-biodegradable types** of municipal waste (Plan Bleu, 2012c).

[8] Non-point source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification.

Policies and instruments for mainstreaming SCP in the food and agriculture sectors

The most important SCP policy instruments in the field of agriculture and food include integrated strategies for sustainable agriculture like integrated pest management (IPM), organic farming, and waste prevention, with a special focus on agricultural residues (including organic waste) and food packaging. Within these strategies, regulatory instruments regarding food hygiene or organic production standards are priority tools which need to be complemented by public awareness raising campaigns.

The food industry can be encouraged to clean up its production processes by the availability of investment loans and a dissemination of good practices, accompanied by sectoral voluntary agreements.

Consumer policies for food rely on product information related to voluntary standards concerning content or quality.

Health policies related to food should strongly promote sustainable diets with increased consumption of fresh vegetables, fruits and cereals in front of meat consumption.

Initiatives focusing on the separate municipal collection of organic waste, composting and energy production, can be clearly incorporated into life cycle thinking especially if they are promoted at community level or in schools.

Table 1.

Examples of policies and instruments for mainstreaming SCP in the fields of **food and agriculture**

		Life cycle stage				
		Extraction of natural resources	**Manufacturing and production processes**	**Provision of sustainable products, services and works**	**Procurement and use**	**End-of-life management**
STRATEGIC VISION	**Policies** (strategies, programmes and action plans)	• Environmentally sound and sustainable agriculture strategy and action plan	• National organic and sustainable farming strategy and action plan	• National sustainable food industry strategy and action plan	• National sustainable procurement strategy	• National waste prevention and management strategies (focus on: separate colletion and composting of municipal and agricultural waste, management of packaging waste)
PRACTICAL IMPLEMENTATION	**Regulatory instruments**	• Organic production standards • Regulations for sustainable farming practices • Labour and health regulations	• Food processing regulations concerning: the wastewater nutrient load, CO_2 emissions and the use of chemicals, energy and water • Labour and health regulations	• National food hygiene regulations	• Compulsory sustainable public procurement requirements	• Package marking for easy separation • Eco-design to reduce packaging waste
	Economic instruments	• Subsidies for organic and sustainable farming • Water and energy pricing to influence consumption and use	• Green investment loans, including micro finance tax systems that promote water and energy efficiency and reduce the use of chemical pesticides and fertilisers • Trade policies that encourage and facilitate trade in organic and sustainably grown agricultural products	• Subsidies for organic products • Tax exemption/reduction for green entrepreneurs • Trade policies encouraging trade in organic and sustainably grown products	• Rebates on organic and sustainably grown agricultural products • Charges on health and environmentally damaging products such as chemicals and plastic packaging • Use of deposit-refund systems	• Charges to reduce and eventually avoid waste subsidies to encourage recycling of waste
	Communication instruments	• Awareness-raising campaigns on sustainable production and standards for farmers	• Guidelines and manuals for cleaner production	• Labelling schemes: organic and fair trade, labels on nutrition issues	• Sustainable product information portals	• Campaigns and training on organic waste separation, collection and composting
	Voluntary/ procedural instruments	• Voluntary standards (such as the Marine Stewardship Council for fisheries)	• Platform on nutrition and exercise for sustainable lifestyles	• Retailer forums on sustainable products and services	• Forum for encouraging procurement of organic and sustainably grown products • Platform for local providers of organic food	• Agreements on waste prevention, e.g. food waste or packaging

Key policy areas and stakeholders for mainstreaming SCP in the food and agriculture sectors

When tackling each life cycle stage of production and consumption associated with agriculture and food, government actions cannot focus exclusively on these two sectors. They must make sure there is coordination between the different ministries responsible for different policies (*see* Figure 11). Relevant stakeholders from business, local public entities and civil society organisations should also be involved in policy development and implementation, to increase synergies and achieve better results. As presented in Figure 12, this may include farmer or producer associations, the retail sector, consumer protection associations, environmentalists or schools, among others.

Figure 11

Main policy areas related to the implementation of SCP in the food and agriculture sector

Figure 12

Stakeholder involvement to mainstream SCP in the food sector

Linkages between SCP policies and instruments and the Barcelona Convention

Mainstreaming SCP in food and agriculture will undoubtedly contribute to the achievement of several regional commitments under the Barcelona Convention in the area of food, agriculture and fisheries. The related protocols and regional plans are listed below.

The **LBS Protocol** addresses pollution of the Mediterranean Sea from land-based sources and activities and prioritises the phasing out of toxic, persistent bioaccumulative substances (mainly pesticides), using best available techniques (BAT) and best environmental practices (BEP), especially those restricted by the Stockholm Convention on POPs. Sectors of activity include, for example, fertiliser production, agriculture, animal husbandry, aquaculture and food processing. Sustainable production in the agricultural sector uses two approaches: IPM for a rational use of pesticides and organic farming that eliminates the use of chemical pesticides and fertilisers. Likewise, organic livestock farming reduces the use of pharmaceuticals and pesticides in feed production and takes into account the necessities and well-being of the animals.

The **Regional Plan on Marine Litter Management**[9] in the Mediterranean identifies SCP as one of the guiding principles (Art 4(g)). It proposes certain measures that can be taken to prevent marine litter, for example:

- basing municipal solid waste management on reduction at source and prioritising valorisation and recycling

- implementing mandatory deposits, return and restoration systems for expandable polystyrene boxes in the fishing sector and for packaging in the beverages sector

- reducing accidental 'ghost' catches through environmentally neutral degrading nets, pots and traps

The **Regional Plan for the Reduction of Organic Load BOD_5 in the Food Sector**[10] defines measures to reduce the release of organic loaded waste water by applying BEP and BAT for industrial food plants and includes guidelines to reduce waste water load and volume.

Based on the objectives and principles of integrated coastal zone management, the **ICZM Protocol** defines specific measures for food-related economic activities (Art.9.2) with respect to:

- **agriculture and industry** – to guarantee a high level of protection of the environment in the location and operation of agricultural and industrial activities so as to preserve agricultural biodiversity, coastal ecosystems and landscapes and prevent pollution of the sea, water, air and soil;

- **fishing** – to take into account the need to protect fishing areas in development sites; to ensure that fishing practices are compatible with sustainable use of natural marine resources;

- **aquaculture** – to take into account the need to protect aquaculture and shellfish in development areas; to regulate aquaculture by controlling the use of inputs and waste treatment.

[9] in the framework of Article 15 of the Land-based Sources Protocol.
[10] in the framework of Article 15 of the Land-based Sources Protocol.

Examples of SCP policy being implemented in the food and agriculture sectors

Case 11:

Organic farming in Tunisia

In 1999, Tunisia developed a national strategy to reform agriculture and maximise the benefits of organic farming by adopting legislation on organic agriculture which, in turn, was based on internationally recognised standards. These included basic standards of the International Federation of Organic Agriculture Movements (IFOAM), and legislation from the European Union and France on organic agriculture. In this way, the Tunisian Government intended to increase credibility and international recognition of Tunisian products for export and to maintain and increase access to international markets.

The National Agriculture Strategy supports organic agriculture specifically because of the benefits it provides in addition to promoting exports: food security, the preservation of natural resources, improved revenues for farmers, and social objectives in rural areas.

At the policy level, different ministries were involved in the development of the legislative framework lead by the National Commission on Organic Agriculture (NCOA): the ministries of Commerce, Industry, Health, Environment, Finance, Customs, the National Agency for Agricultural Investment, and the Ministry of Agriculture and Hydraulic Resources which was responsible for implementation. The National Bureau of Organic Agriculture manages organic certification (organic certifiers, certificates, and monitoring market developments). Certification bodies must be registered and approved by the NCOA.

The Technical Centre of Organic Agriculture, within the Ministry of Agriculture, also provides applied research, training and technical advice to farmers, researchers and the regional network of provinces. Other stakeholders include the National Union of Tunisian Farmers, the Tunisian Association of Marketing and Industry, and some international NGOs and research organisations.

Financial incentives include, for example, tax deductions for investments in organic agriculture, investment subsidies for specific equipment, or subsidies of up to 70 % of the costs of certification.

As result, Tunisia has the largest area of certified organic land in Africa covering 220,475 hectares. Certified organic farms have grown from 10 in 1997 to 862 in 2006. The country's organic exports have increased by 21 % in export value over five years: from € 7.3 million (3 018 tons in 2003/2004) to € 34 million (9 000 tons in 2006/2007).

Source: Carey, 2008. www.isealalliance.org/sites/default/files/E054_Tunisia_Organic.pdf

Case 12:

Organic waste collection in municipal markets in Barcelona (Spain)

The City of Barcelona has a network of 39 municipal markets which together are one of the most important singular producers of organic waste of the city. In 2008, the Municipal Markets Institute and the Environmental Department of the city council started a pilot project to improve selective waste collection in eight markets. In the first phase, a waste management system and supporting infrastructure were established for the separate collection of organic and paper waste. As a result, 203 tonnes of cardboard were separately collected for recycling, the level of impurities in organic waste fell by more than 50 % , and overall organic waste production fell by nearly 30%, and the production of unsorted waste fell by 40 %.

Based on that pilot experience, the separate waste collection scheme has since been installed in all municipal markets, with the support of the Catalan Waste Agency, providing each with exclusive space for waste collection which incorporates air-conditioning to avoid smells.

The waste management scheme includes containers for separate collection of: organic waste, cardboard, ice and unsorted waste. Special containers are installed in order to avoid contamination of the organic fraction. Many markets are also providing space for collecting batteries from citizens, they also have specific containers for used cloths from households, and in collaboration with third sector foundations are working on social projects.

Examples of information materials used during the implementation phase of the selective waste collection initiative in Barcelona's municipal markets

Communication and awareness-raising materials were produced and distributed. During the implementation phase each market had the support of an environmental educator in charge of promotion and dissemination of the new collection scheme.

According to a study by the Catalan Waste Agency, **Barcelona's municipal markets reduced waste generation by 66 % over five years**. In 2010, the municipal markets collected 5 985 tonnes of high quality organic material to produce compost.

Source: http://w110.bcn.cat/portal/site/Mercats

Case 13:

National green reporting for food and beverages in Sri Lanka

The Ceylon Chamber of Commerce led a project with the food and beverage sector in Sri Lanka, aiming to improve compliance with international food safety standards and being able to use raw materials, energy and water more efficiently. The target audience comprised 500 SMEs in the food and beverage sector, together with policy makers and consumers. Capacity building activities included training for 519 SMEs in adopting good SCP practices, with hands-on support to implement them, and training 191 SMEs to enable their compliance with International Food Safety Standards. As a result, by 2014, 22 SMEs had been certified with ISO 22000:2005, and 53 were en route towards certification.

Environmental assessments were conducted and a best practice database established. Figures showed that, by adopting best practices, companies in the sector, were able to save around 4% in materials, 20 % in energy and 15% in water.

At the political level, new policy instruments on SCP were identified and recommendations were passed to the Minister of Environment.

Source: SWITCH-Asia Network Facility, 2013a.
http://www.switch-asia.eu/projects/food-beverages-industry/

Case 14:

French National Nutrition and Health Programme

Established in 2001, the French National Nutrition and Health Programme (PNNS) is a government sponsored public-private collaboration with a goal of improving the health of the French population by focussing on nutrition. The programme is structured around six strategies, including informing consumers about healthy food choices, and involving multiple stakeholders from the food industry and consumer organisations and related public health initiatives. Specific actions targeted the French youth, like banning vending machines in schools, adapting the PNNS national food guide specifically for parents and adolescents, and distributing free weekly fruit in some schools.

The tools available included eight different nutrition guides, educational materials, and seasonal vegetable calendars or recipes. The French Ministry of Environment and Energy also provides nutritional advice for citizens, focussing on local food, eco-labelling of food, reducing food waste and other environmental aspects related to nutrition.

The plan's achieved objectives included reducing the incidence of overweight and obesity among children, reducing the consumption of sugar and salt, and encouraging adults to eat more fruit.

Given the results, a new programme for the period 2011-2015 was adopted using experiences of numerous professionals and partner organisations.

Source: http://www.mangerbouger.fr/pnns/

3.2. How can SCP be mainstreamed in the consumer goods manufacturing sector?

Main reasons for mainstreaming SCP in consumer goods manufacturing

Mainstreaming SCP could leverage significant change when directed at manufacturing as a sector, due to:

- manufacturing accounting for 23 % of global employment

- 35 % of global electricity and 25 % of extracted primary resources used by manufacturing (UNEP, 2011)

- some of the most polluting industries in the Mediterranean Region being energy production, metal producing industries, oil refining, the chemical industry, and fertiliser manufacture (UNEP/MAP, 2012)

- a shift in consumption patterns being able to support and trigger the production of sustainable products and eliminate non-sustainable products from the market by reducing demand

Consumption at an individual level can be classified in to **12 consumption categories** (EEA, 2013b), including:

- **food and non-alcoholic beverages**
- **alcoholic beverages, tobacco and narcotics**
- **clothing and footwear**
- **furnishings, household equipment and routine maintenance in the house**
- **transport**
- **recreation and culture**
- **restaurants and hotels**
- **housing (including water, electricity, gas and other fuels)**
- **health**
- **communications**
- **education**
- **miscellaneous**

Environmental Impact along the life cycle of a manufactured product

- The manufacture and consumption of goods widely consume **natural resources in an inefficient way**. This sector is also creating a broad range of negative impacts on the environment such as those outlined below.

- The most common impact is the **pollution of both air and water** (UNEP/MAP, 2012). It is estimated that manufacturing accounts for 17 % of global health problems related to air pollution (UNEP, 2011).

- A large portion of **persistent and toxic chemicals** are used in the manufacture of goods and are often in the outputs (e.g. brominated flame retardants in plastics, textiles; PFOS and PFOA – perfluorooctane sulfonate and perfluorooctanoic acid- used as surface active agents, water and lipids repellents, coating additives, etc; fluorinated tensides, softeners with endocrine properties) being released during the product's life cycle.

- Due to the frequent location of industry in coastal areas and near to dense population centres, the environmental impacts related to the manufacturing goods are interacting with other impacts due to tourism and agriculture, so **increasing the pressure on the coastal ecosystem** (UNEP/MAP, 2012).

- Five consumption categories dominate at the level of an individual's consumption and its pressure on the environment (such as through emissions or the need for natural resources): food and beverages; housing; water electricity and gas; transport; and furnishings and household equipment (EEA, 2013b).

- The generation of waste creates an environmental impact, both from the production and the consumption perspective. Waste production in the Middle East and North Africa Region (MENA) is expected to more than double by 2025, growing much faster than the number of town dwellers (Plan Bleu, 2012c). **Electronic waste** is one of the fastest growing segments of municipal waste.

- Marine litter, composed mainly of plastic packaging, wood and metal, arising from households, tourist sites and waste facilities is a common problem across the Mediterranean Region. Most marine litter is plastic and has a significant **impact on marine ecosystems and wildlife**. Globally, it has been estimated to kill more than a million seabirds and 100 000 marine mammals and turtles a year (UNEP/MAP, 2012).

Policies and instruments for mainstreaming SCP in goods manufacturing and consumption

SCP policy instruments relating to the manufacture and consumption of goods tackle resource scarcity (limited oil reserves, metal ores or water scarcity) by promoting integrated raw material or resource efficiency strategies, cleaner production strategies with life cycle approaches focused on important economic sectors, environmental technology action plans, or more consumer oriented sustainable consumption and waste prevention plans. Through sustainable public procurement action plans, governments play a role as major consumer and market actor.

Regulatory and economic instruments mostly seek to exclude, limit or substitute toxic and harmful substances, to encourage eco-design, life cycle analysis and improve product performance standards or extended producer responsibility like take-back systems for certain products that enhance the efficient use of resources, reduce emissions and minimise waste. They also relate to permitting procedures which could be used as a screening process to ensure that SCP practices are in place upstream (especially through the use of Best Environmental Techniques and Best Environmental Practices).

Encouraging the creation of new green business models (i) selling services instead of products,

and (ii) proposing consumer goods (in particular textiles and plastic products) exempt of persistent organic pollutants and toxic chemicals, constitutes also a key field of action.

The most important communication instruments are: product sustainability information and labelling schemes oriented towards private consumers; environmental certification schemes for the manufacturing and service sectors; and guidelines and awareness-raising campaigns addressing private and corporate sustainable consumption options, waste prevention and recycling.

Public-private partnerships and voluntary sector agreements reinforce such instruments in specific productive sectors.

Table 2.

Examples of policies and instruments for mainstreaming SCP in the field of **consumer goods manufacturing**

		Life cycle stage				
		Extraction of natural resources	**Manufacturing and production processes**	**Provision of sustainable products, services and works**	**Use and consumption**	**End-of-life management**
STRATEGIC VISION	**Policies** (strategies, programmes and action plans)	• Renewable materials strategy • Action Plans for the sustainable and efficient management of natural resources including water, energy, and minerals	• Cleaner and sustainable production strategy • Environmental Technology action plans • Sectoral environmental and sustainable production strategies	• National integrated sustainable product policy • National chemical use policy	• National consumer policy/strategy • Sustainable public procurement action plans	• National waste strategy on waste prevention, reuse and recycling
PRACTICAL IMPLEMENTATION	**Regulatory instruments**	• Sustainable environmental and safety standards for extraction of natural resources	• Sustainability reporting obligations for public and private institutions • Permitting procedures • Environmental permits and audits	• Product performance standards • Harmful substance and product bans, phase-out and substitution programmes • Eco-design requirements for products	• Obligatory SPP goals • Product advertising regulations	• Ban of untreated waste going to 'landfill' • Ban of specific substance in products, e.g. mercury in batteries • Extended Producer Responsibility schemes (take-back obligations, deposit-refund schemes, electronic waste,..)
	Economic instruments	• Taxes and charges on minerals, fossil fuels • Charges on water and energy use • Feed-in tariffs for solar and biogas facilities	• Feed-in tariffs and subsidies for green technologies and sustainable products • Eco-innovation fund • Multi-sectoral or sectoral specific charges • Ecological tax reform targeted at industry • Phasing out of environmental harmful subsidies for industry • White certificates	• Facilitate finance, including microfinance for sustainable products • Charges on products, e.g. plastic packaging and bags • Tax/fee differentiation or allowances according to environmental performance of products	• Ecological tax reform aimed at consumers • Charges on water, energy and fuels • Co-financing of green technologies including vehicles	• Waste tax on landfill and/or incineration • Deposit and return systems • Take-back systems for certain products • Subsidies for composting of biodegradable waste
	Communication instruments	• Development of educational material and public awareness campaigns for different stakeholders	• Guidelines for corporate green purchasing • Environmental Certification schemes (ISO 14001, eco-label)	• Eco-label programmes for products and services • Energy labelling for vehicles • Guidelines on sustainable product design	• Consumer campaigns • Guides to environmentally friendly purchasing for private and public consumers • Tools for calculation of environmental impacts of private consumption • Education and awareness-raising to public officials • Online platform for sustainable consumption of goods	• Guides and education on waste prevention, separation and recycling
	Voluntary/ procedural instruments	• Public-private partnerships, e.g. on development of biogas facilities	• Sectoral voluntary agreements • Eco-innovation knowledge networks • Awards for cleaner production	• Product-oriented sectoral agreements and sustainability awards • Environmental performance agreements with retailers • Knowledge centres on sustainable product design	• Public-private partnerships on green corporate procurement • Voluntary industry commitments for green corporate procurement	• Voluntary agreements with industry on waste prevention and extended producer responsibility

Key policy areas and stakeholders for mainstreaming SCP in consumer goods manufacturing

In order to tackle each life cycle stage associated with the production and consumption of goods, government actions cannot focus exclusively on the manufacturing sector, but coordination and synergies is needed with other policy areas, falling under the responsibility of different ministries, as presented in Figure 13.

Additionally, relevant stakeholders from business, local public entities and the civil society should be involved in policy development and implementation, like sectoral industrial associations, social and environmental entrepreneurs, the retail sector or NGOs promoting sustainable consumption to name a few (*see* Figure 14).

Figure 13

Main policy areas related to the implementation of SCP in the consumer goods manufacturing

Figure 14

Stakeholder involvement for mainstreaming SCP in the consumer goods manufacturing sector

Linkages between SCP policies and instruments and the Barcelona Convention

Adopting an SCP perspective and mainstreaming SCP when planning action in this field will help to achieve several policy objectives of the Barcelona Convention and related plans, including priority interventions as outlined below.

The **LBS Protocol** addresses pollution in the Mediterranean Sea from land-based sources and activities and prioritises phasing out toxic, persistent bioaccumulative substances, based on the application of BAT and BEP. The sectors of activity include, among others: paper and paper-pulp industry, textile industry, electronic industry and other sectors of chemical industry.

The Regional Plans on POPs in the Mediterranean, following those of the Stockholm Convention on POPs, establish measures to phase out the production and consumption of, among other things, toxic chemicals, brominated flame retardants (used mainly in plastics and textiles), PFOS and PFOA (used mainly as water and lipids repelents in textiles, coating additives, etc).

The **Regional Plan on Marine Litter Management**[11] in the Mediterranean establishes SCP as one of the guiding principles (Art 4(g)). Measures for the prevention of marine litter from land-based sources include, for example:

- reducing plastic packaging waste through the introduction of alternatives, promoting reuse and recycling policies, reducing the consumption of plastic bags through voluntary agreements and taxes

- encouraging companies to design products for reuse, recycling and materials reduction by applying the extended producer responsibility (EPR) concept

- encouraging the reuse of recycled plastic products through the use of sustainable procurement policies

To help prevent marine litter from sea-based sources the plan includes measures such as:

- developing, implementing and participating in communication campaigns such as Marine Litter Clean up, Coastal Clean Up or Adopt-a-Beach

The **Hazardous Waste Protocol** commits its signatories to *"take all appropriate measures to reduce to a minimum, and where possible eliminate, the generation of hazardous waste"* (Art 5.2). The substitution of hazardous chemicals in the manufacturing sector through sustainable production results in an overall reduction of hazardous waste.

[11] in the framework of Article 15 of the Land-based Sources Protocol.

Examples of SCP policy implementation in the consumer goods manufacturing sector

Case 15:

Link between eco-labels and green procurement in Korea

In 2004, the Ministry of Environment (MoE) in Korea passed Act 1125 to encourage the purchase of green products through, for example, the promotion of green public procurement. The objective of the Act is to *"prevent wasteful use of resources and environmental pollution, and to contribute to sustainable development in the domestic economy by encouraging environment-friendly product purchasing"*. And through it, public agencies have to purchase environmentally sustainable products directly as well as through service contracts for, for example, cleaning, building repairs and maintenance. The Act defines green products as those that are:

– certified or meet the criteria set by Korea Eco-label

– certified or meet the criteria of the quality certificate for recycled products (Good Recycled Mark) or

– in compliance with other environmental criteria set by MoE in consultation with the heads of relevant ministries

Before the Act (2003), about 750 products were certified by Korea Eco-label. In 2005, with the enactment of the Act, the number had increased to more than 2 700 products, and has been progressing steadily since then, with almost 7 800 products certified in 2011. Thus the Act has had a significant impact in the market.

In terms of environmental benefits, public procurement of eco-labelled products has saved the generation of about 545 tons of $CO_{2eq.}$ emissions.

Source: Ecoinstitut, 2013 and Kim, 2012.

Case 16:

Electronic waste recycling in India

In India, 95 % of electronic waste from computers, mobile phones or televisions is actually disposed of under conditions harmful to health and environment. The WEEE-Recycle Project, led by GIZ, focuses on working specifically with the informal sector of recyclers in order to formalise and mainstream environmentally sound e-waste management, in line with India's National Environmental Policy, and based on the 3Rs and the polluter pays principle. Project objectives are to reduce pollution related to e-waste recycling through the collective effort of all relevant stakeholders in the value chain, involving informal sector SMEs and improving technology for e-waste management and recycling.

To do so, a strong regulatory framework was created through the definition of E-Waste (Management and Handling) Rules in 2011, which entered into force in 2012. The law defines stakeholder roles and responsibilities for the safe collection and disposal of e-waste; and guidelines for implementation of the rules were prepared. The process involved three central ministries and four state governments.

In four Indian cities, informal sector associations were established together with e-waste collection channels by identifying strategic locations and installing collection bins for individual and bulk generators of e-waste. For example, the Pune Municipal Corporation allocated space for collecting e-waste and members of the association can now collect e-waste from more than 400 000 households.

Capacity building activities served more than 100 trainers. Training materials were produced, train-the-trainer workshops held, and technology transfer and awareness-raising activities undertaken. In parallel, were research and development activities, including mapping of e-waste activities, a study on carbon footprints of e-waste recycling, and green product reports.

With additional dissemination activities, all target groups, including consumers, producers and manufacturers, policy makers and government, were reached.

Environmental success factors of the project include a 25 % increase in formal e-waste recycling in four urban areas and a 50 % reduction in acid baths and open burning of e-waste amongst members of informal sector associations in Delhi and Bangalore.

Source: SWITCH-Asia Network Facility , 2013b.
http://www.switch-asia.eu/projects/weee-recycle/

Case 17:

The Industrial Council for Technology and Innovation, Egypt

The Industrial Council for Technology and Innovation is an affiliate to the Egyptian Ministry of Industry and Foreign Trade and runs 13 technology transfer and innovation centres that provide a broad range of services to Egypt's industrial sectors. Besides technical support, product development testing, funding and networking, the Council provides incubation services for young entrepreneurs. The main objective of the centres is to enhance the transfer of new technologies and innovations to Egyptian industry to help create the value-added products it needs, while also adding to national income and boosting job opportunities.

The centres host five technology incubators, providing support to innovative start-ups in the fashion and design, jewellery, leather, plastic and engineering sectors. During 2012/2013, the incubators project offered technical support to 36 entrepreneurs to develop their products and start their own businesses, including:

- a programme to support the Egyptian Technology Transfer and Innovation Centres and the Technological Development in the leather and leather tanning, furniture, and food industries sector
- pro-poor horticulture value chains in Upper Egypt (Salasel)
- upgrading the medicinal and aromatic plants value chain - access to export markets

A strong monitoring mechanism evaluates the activities of the technology centres through key performance indicators. During the period July 2012 to June 2013 the following results were achieved:

- 1 758 companies received services
- 2 061 people were trained
- 5 388 product quality tests were carried out
- 1 860 technical consultations were delivered

The impact of the centres' services on the industrial companies included: 40% productivity improvement by Egyptian enterprises; creation of new job opportunities; enhancement of local product manufacturing; decrease in material costs and increase in exports.

Source: Egyptian National Cleaner Production Centre (Ministry of Industry and Foreign Trade) (personal communication)

Case 18:

The European Innovation Project REMake: Recycling and Resource Efficiency in Manufacturing

The REMake project is a public-private partnership co-funded by the EU that brings together national and regional agencies and technical centres, together with industrial associations and innovation experts. The aim of the project is to design and test policy instruments and practical tools to support eco-innovation in manufacturing in Germany, Spain, France, UK and Italy. The core of the project is a new funding scheme, 'Innovation Voucher', which supports eco-innovation in SMEs by unlocking growth and increasing profitability, through recycling and resource efficiency.

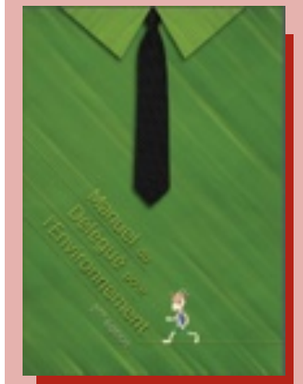
Three hundred innovation vouchers worth 10 000 -15 000 euros gave companies access to REMake experts for assessing their saving potential through resource efficiency measures and through other company operations. They also had access to additional training and guidebooks on Ecodesign, life cycle analysis and environmental standards. Individual resource flow analysis showed savings in material and energy consumption of between 7 and 10 %.

Detailed case studies can be found at the project web page.

Source: http://www.ecomanufacturing.eu/

Case 19:

‘Manuel du Délégué pour l’Environnement’ in Algeria



In Algeria, the Ministry for Spatial Planning and the Environment, together with GIZ, published a Manual for Environmental Management. It also organised training sessions for environmental delegates nominated by Algerian enterprises, in order to present regulatory requirements for pollution prevention and to strengthen their technical capacities, so they can assume certain tasks as required by national regulations.

More than 2 000 environmental delegates were trained in more than 80 workshops, using the first and second edition of the manual.

As a consequence, more than 150 companies decided to also appoint environmental delegates, and 20 said they intended to set up an environmental management scheme. All participants had the opportunity to share their experience in implementing best practices and cleaner production techniques.

The content of the manual is constantly updated with new national environmental legislation, and a third edition will be published in 2014, including new topics like SCP, emissions calculation methodologies or regulations on health and safety in the workplace. The Algerian National Cleaner Production Centre is planning to train 1 500-2 000 environmental delegates between 2014 and 2017.

Source: Information provided by the Centre National des Technologies de Production plus Propre (CNTPP), Algérie.
http://www.cntppdz.com/index.php?page=delegue-pour-lenvironnement

3.3. How can SCP be mainstreamed in the tourism sector?

Main reasons for mainstreaming SCP in tourism

The most important reason for mainstreaming SCP in tourism is that the sector is one of the most important sources of employment and income in the Mediterranean Region.

Attracting nearly a third of international tourism, the Mediterranean has been the largest global destination for more than 40 years. International arrivals have grown from 58 million in 1970 to 306 million in 2012, with a forecast 500 million international arrivals by 2030 (UNEP/MAP, 2012).

Coastal tourism concentrates high numbers of tourists in relatively small areas, generating both a high percentage of economic benefits and increased pressure on coastal ecosystems (UNEP/MAP 2012).

International tourism generates receipts of € 738 billion worldwide from which more than a quarter belong to the Mediterranean (UNEP/MAP, 2012), 40 times more than in 1970 (Plan Bleu, 2012b).

Environmental impacts created along the life cycle of tourism activities, services and infrastructure

Activities, services and infrastructures related to tourism can have the following impacts on the environment as presented below.

- Tourism accounts for 5 % of global **greenhouse gas emissions** (GHG). Of this, transport makes up 75 % due to growth in domestic and international, especially air, travel; and air-conditioning and heating in tourist accommodation accounts for 21 % (adapted from UNEP, 2011).

- Coastal tourism development leads to **urbanisation along the coastline** and the construction of infrastructure, including marinas. This results in the **destruction of natural soil** and changes of the state of sensitive habitats like sand dunes and wetlands. Overuse leads to degradation or **loss of fragile natural habitats** (EEA/UNEP, 1999; UNEP/MAP/MED POL, 2005).

- Large-scale tourism has often had negative **effects on biological diversity**. Impacts on ecosystems can both lead to increased conflicts with local communities and to a loss of value-creation at tourism destinations (UNEP, 2011).

- With 100 to 2 000 litres of **water consumed** per guest/night, tourist consumption of water is excessive compared to that of local residents. The sector includes other activities with high water consumption, like golf courses, irrigated gardens, swimming pools and wellness facilities (Gössling, 2002). Seasonal peaks in water consumption can also put additional **pressure on scarce resources.** ‘Luxury’ tourism tends to have higher water and energy consumption than normal tourism (UNEP, 2011).

- Seasonally concentrated mass tourism leads to major challenges not only in the availability of fresh water, but also in **waste and wastewater management.**

- Pressure from visitors can lead to major **disruptions in local communities,** affecting the quality of life of the residents and displacing traditional societies. This happens especially in cultural heritage sites, historical town centres or fragile natural environments (UNEP/WTO, 2005; UNEP, 2011).

Policies and instruments for mainstreaming SCP in tourism

SCP policy instruments for tourism should be bundled with overarching strategies like National Sustainable Tourism Action Plans and other plans to avoid the over-exploitation of natural and cultural resources, as in the protection of cultural heritage and biodiversity or infrastructure planning.

Regulatory instruments might be used to limit access to fragile ecosystems, to increase resource efficiency (especially for water and energy use and waste management) and to guarantee healthy and sustainable environments both for workers and visitors.

Effective tourism planning should deny new tourism construction in sensitive areas (e.g. natural protected sites) and avoid the development of high water consuming activities. Planning for tourism activities is the crucial issue for the sustainability of fragile ecosystems, especially in coastal areas.

Economic instruments may include fees and taxes for tourists (which should be earmarked for environmental infrastructures and services) on the one hand, and grants and loans for sustainable tourism enterprises on the other hand. Eco-hotels significantly reduce emissions of critical chemicals (biocides, cleaners, detergents) and of waste water.

Communication and voluntary instruments are essential for influencing both private sector enterprises such as those for tours or accommodation, and visitors who should be able to choose services and activities which maximise benefits for local communities and minimise environmental impacts (UNEP/WTO, 2005).

Table 3.

Examples of policies and instruments for mainstreaming SCP in the field of **tourism**

		Life cycle stage				
		Extraction of natural resources	**Manufacturing and production processes**	**Provision of sustainable products, services and works**	**Use and consumption**	**End-of-life management**
STRATEGIC VISION	**Policies** (strategies, programmes and action plans)	• National Sustainable Tourism Action Plan • National plans on protection of cultural heritage • Biodiversity plans • Spatial planning strategies/plans (master plans, landscape plans, etc.) • Codes of conduct • Guide for carrying capacity assessment	• National plans for water, energy, and integrated solid waste management in tourism areas • Planning for tourism developments and infrastructures including benefits for local communities (transport, energy, water, protected areas...)	• Guidelines for setting tourist facilities (hotels) • Architectural guidelines (e.g. to respect local architectural traditions and environmental integrity)	• Policies to avoid degradation of the environment (over-use of potentially damaging leisure activities) • Guidelines for management of beaches, natural habitats, and protected areas (etc.)	• National plans and infrastructures regarding discharge of sewage to the environment, marine ecosystems, and waterways
PRACTICAL IMPLEMENTATION	**Regulatory instruments**	• Visitor management and limiting access to especially vulnerable areas, cultural and natural heritage sites • Ban of touristic construction in sensitive areas	• Labour regulations (ILO) • Safety and health standards for employees • Regulations on water efficient technologies, reuse and recycling of water • Regulations on the use of renewable energy and energy efficient technologies	• Labour regulations, employment quality • Regulations on qualifications of tour operators • Regulations regarding construction and building material involved in hotel construction and products of the tourism industry	• Regulations on minimum standards for products (hazardous substances) • Mutual use of facilities and services by residents and tourists	• Regulations on discharge of sewage and solid waste • Regulations on impacts of short-term events with high number of participants (festivals, etc.)
	Economic instruments	• Fees for national parks and natural reserves, and protected areas for nature conservation as well as for other attractions	• Grants, soft loans or tax credits for investments in technologies (water, energy,..) or eco-friendly hotels • Effluent charges for emissions and solid waste reduction through adequate planning of tourist facilities	• Taxation on tourism enterprises for social and community programmes • Product taxes on packaging • Funding schemes for sustainable business development	• Tourism tax in hotels earmarked for environmental policies (beach cleaning, waste infrastructure, awareness raising) • User charges for water, energy, and solid waste management	• Promotion of carbon emission offset schemes linked to investments in local community projects for tourist/tour operators • Economic incentives for recycling and creation of markets for compost, recycling of paper, glass, plastics.
	Communication instruments	• Awareness raising for visitors on biodiversity, cultural heritage • Awareness raising on water and energy scarcity • Information on clean beaches, e.g. Blue Flag	• Encouraging Tour Operators to use local suppliers, benefits for local communities • Encouraging vocational training in the tourism sector	• Eco-labelling schemes for hotels, campsites, restaurants • Promotion of sustainable purchasing policies	• Strategic marketing and awareness raising for tourists, influencing spending (local + regional products) • Information about local traditions, cultural heritage • Promotion of good practice • Online information platform with sustainable tourist providers	• Capacity building on waste management, influencing of visitors behaviour
	Voluntary/ procedural instruments	• Public-private partnerships for sustainable tourism or eco-tourism • Creation of networks for engagement and empowerment of local communities in policy development	• Corporate social responsibility in the tourism sector • Sponsorship of tourists for local initiatives	• Promotion of environmental management systems for the accommodation sector • Codes of conduct for supplier of tourism services	• Local prosperity through local suppliers (food, transport, tourist guides)	• Promotion of low impact tourist activities (walking tours, cycling)

Key policy areas and stakeholders for mainstreaming SCP in tourism

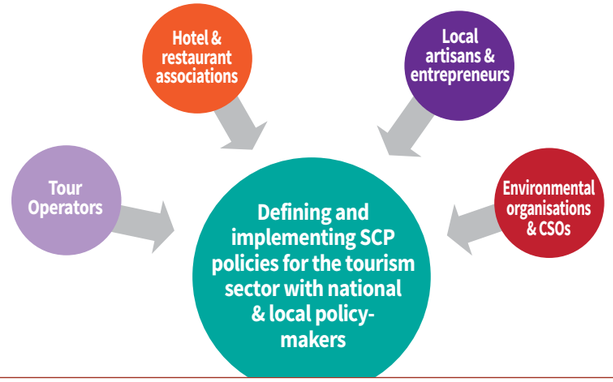
In order to tackle each life cycle stage of production and consumption associated with the tourism sector, government actions cannot focus exclusively on the tourism industry should coordinate and seek synergies with other sectors which fall under the responsibility of different ministries, as presented in Figure 15. Additionally, relevant stakeholders from business, local public entities and civil society organisations should be involved in policy development and implementation to maximise results. These include tour operators, hotel and restaurant associations, environmental organisations working for the protection of natural areas; local artisans, etc. (*see* Figure 16).

Figure 15

Main policy areas related to the implementation of SCP in the tourism sector

Figure 16

Stakeholder involvement to mainstream SCP in the tourism sector



Linkages between SCP policies and instruments and the Barcelona Convention

Adopting an SCP perspective and incorporating it in planning actions in the tourism sector helps to fulfil certain policy requirements of the Barcelona Convention and related plans. These include priority areas as presented below.

The **LBS Protocol**, addressing pollution of the Mediterranean Sea from land-based sources, prioritises the phasing out of toxic, persistent bioaccumulative substances, based on application of BAT and BEP. Sectors of activity include, among others: works causing physical alteration of the natural state of the coastline, treatment and disposal of domestic waste-water, waste management industry, transport, and tourism.

The **Regional Plan on Marine Litter Management**[12] in the Mediterranean establishes SCP as one of the guiding principles (Art 4(g)). Measures for the prevention of marine litter from land-based sources are included in the plan, for example, the establishment of adequate urban sewerage, wastewater treatment plants, and waste management systems. Addressing sea-based litter sources the plan includes charges for the use of port reception facilities, for example. Ecotourism reduces the overall use of plastic and other materials critical in respect to marine litter. The management of these wastes is also improved by informed eco-tourists and eco-hotels being more aware and having appropriate policies.

Based on the objectives and principles of integrated coastal zone management, the **ICZM Protocol** establishes additional priorities for economic activities, like the minimisation of the use of natural resources taking into account the needs of future generations (9.b); and the promotion of codes of good practice among public authorities, economic actors and non-governmental organizations (9.f).

It also prioritises, for the tourism sector, sporting and recreational activities (Art 9.2) in a manner that:

- *"encourages sustainable coastal tourism that preserves coastal ecosystems, natural resources, cultural heritage and landscapes*

- *promotes specific forms of coastal tourism, including cultural, rural and ecotourism, while respecting the traditions of local populations*

- *regulates or, where necessary, prohibit the practice of various sporting and recreational activities, including recreational fishing and shellfish extraction"*

The establishment of relevant economic, financial and fiscal instruments is addressed in Article 21 of the ICZM Protocol. Communication-based instruments are included in Article 15, citing awareness-raising, training, education and research. Regulatory instruments like the creation of specific protected areas are listed in Articles 10 to 13 (specific coastal ecosystems and coastal landscapes, island, cultural heritage).

[12] in the framework of Article 15 of the Land-based Sources Protocol.

Examples of SCP policy implementation in the tourism sector

Case 20:

Integrated coastal zone development within the Gökova Specially Protected Area, Turkey

The SMAP III project funded by the EU has been running since 2006 in the Inner Gulf of Gökova and Sedir Island area. The aim is to stage, for the first time in Turkey, the development and implementation of an Integrated Management Plan for Coastal Areas (Inner Gökova Bay and the Sedir Island) located within the boundaries of a Specially Protected Area. These areas are under the joint responsibility of three different administrative bodies: the Authority for Specially Protected Areas (national), the Governorate of Mugla (regional) and the Municipality of Akyaka (local).

The main objective was to demonstrate the real process of integrated coastal management by coordinating the three administrative bodies, using existing laws and regulations, and by bringing together all actors and stakeholders (national, regional and local public institutions, universities, private sector, coastal/marine users, NGOs and interested people). This was the first demonstrative action of its kind in Turkey.

The project implements the overriding ICZM principles accepted by the European Parliament and Council, such as looking into land-sea interactions as part of a broader ecosystem; paying attention to natural processes and the area's carrying capacity; involving all interested parties; sharing coordination and responsibility among local, regional and national bodies; basing management actions on precautionary principle; having a long-term vision including the needs of future generations; and building up an evolving and adaptive management system. The associated objectives are:

- to enhance the 'culture' and capabilities of the administrative institutions at national, regional and local levels for integrated coastal management;
- to achieve a reasonable management system by utilising the legal and institutional arrangements;
- to find out the deficiencies of the present administrative system for effective implementation of integrated coastal management;
- to formulate improvements in the legal and institutional systems for more effective management if the present systems are proven to be insufficient;
- to achieve a well prepared comprehensive coastal management action plan for the project area, which may be used as an example for guiding similar actions elsewhere;
- to provide examples of thematic management plans for important coastal issues that may also be used as good examples for similar areas elsewhere;
- to enhance the awareness and education of the project partners and associates as well as the local community groups and the general public;
- to demonstrate the use of modern tools and instruments for supporting successful coastal management.

The main activities were the preparation and implementation of an Integrated Coastal Management Action Plan with thematic components, development of a GIS database, and public awareness and education campaigns.

The project successfully fulfilled its goal of producing an Inner Gulf of Gökova and Sedir Island ICZM Action Plan with the participation of several local and national organisations. It teaches certain lessons and contains important results for the production of other ICZM Action Plans. With applications that set examples for both the coasts of Turkey and other countries in the Mediterranean basin, it has succeeded in drawing the attention of the public.

Source: Bann and Başak, 2011.

Case 21:

Protected Areas Conservation Trust, Belize

The Protected Area Conservation Trust (PACT) was established in 1995 after a large stakeholder consultation process, which included government departments, national and international NGOs, and private sector entities, with the aim of contributing *"to sustainable management and development of Belize's natural and cultural heritage by providing effective funding support to protected areas"*. PACT is financed by a conservation fee of US$ 3.75 to be paid by all visitors on departure from Belize, and by 20% of cruise ship passenger fees.

In 1997, the first grant was awarded to the Friends of Five Blues Lake National Park. Until 2011, PACT had invested more than $20 million in more than 400 projects for conservation and management of protected areas and 27 % of Belize's territory is under some form of conservation.

Source: www.pactbelize.org

Case 22:

Ecolabel for hotel and campsite accommodation services and web-portal for sustainable and responsible tourism in Croatia

Stirred by interest coming from local tourism associations, the Ministry of Environmental and Nature Protection of the Republic of Croatia started a process to establish a standard within the national eco-labelling scheme for hotel and campsite accommodation services. In the process of defining and creating these new criteria a wide range of government bodies, expert NGOs, tourism companies and other interested stakeholders were involved and consulted. The final criteria were approved by the Croatian Environmental Label Commission and formally adopted in 2010 by the Ministry for a period of two years (probationary period).

The requirements are divided into obligatory core criteria and advanced requirements for the fulfilment of which extra points are awarded. Core requirements include energy conservation (heating, air conditioning, insulation and lighting), water-saving measures, waste water and waste management, and general management criteria related to maintenance, data collection, staff training or information about public transport. Advanced requirements include the use of renewable energy sources or rainwater and recycled water, bioclimatic architecture, individual metering of energy and water consumption, composting of waste and selective collection of waste oils and fats, exclusion of single packaging for breakfast food , or the offer of environmentally friendly products like organic and local food or alternative transport options like bicycles.

In 2011, the Croatian Eco-label was awarded for the first time to 10 hotels and 5 campsites, giving a clear indication to guests and visitors that high environmental standards above the legal minimum are applied. And in 2013 new criteria have been established after a review process that will be valid for the next five years.

The Croatian Ministry of Tourism also established a national portal for sustainable and responsible tourism (www.odrzivi.turizam.hr) in collaboration with key stakeholders from the sector which, among others, include hotels and campsites certified by the Croatian Ecolabel.

Source: www.mzoip.hr; www.odrzivi.turizam.hr

Costs and benefits of environmental certification for hotels

The Rainforest Alliance evaluated the impact of implementing environmental and social certification standards in a group of 14 hotels from five Latin American countries. They found that 93% of hotels decreased their energy consumption and saved, on average, US$ 5 255/year. They decreased their water consumption by 71% saving an average of US$ 2 718/year. The hotels also reduced their production of waste and collaborated with local businesses and micro-enterprises. Investment costs for implementing environmental best practices were 1 - 3% of annual operating costs; in the case of solar energy installations, natural cooling systems, or insulation, the costs ranged between 1 and 10% of the annual operating costs.

Source: UNEP, 2012.

Case 23:

Eco-tourism in Jordan: Dana Biosphere Reserve and Wild Jordan Initiative

In 1994, funded by the Global Environmental Fund, the Royal Society for the Conservation of Nature (RSCN) started to implement the **first protected area management plan** in Jordan for the Dana Biosphere Reserve, establishing a model of integrated conservation and socioeconomic development based on the concept of zoning - called Special Conservation Areas - cordoned-off areas free from hunting and overgrazing, with compensation for the agrarian economy through the introduction of alternative livelihoods. The approach provided job opportunities and a market for local products by promoting eco-tourism.

RSCN has received several awards for the successful combination of nature conservation, poverty alleviation and job creation for local communities. The approach has been replicated in all protected areas, and in 2003 Wild Jordan was created as a business unit of RSCN to develop socioeconomic programmes in all Jordan's nature reserves. The development of nature-based businesses brings tangible economic and social benefits to local communities, and has contributed to the creation of jobs as eco-tourism thrives.

Source: http://www.rscn.org.jo/

3.4. How can SCP be mainstreamed in the housing and construction sector?

Main reasons for mainstreaming SCP in housing and construction

There are several reasons for mainstreaming SCP in this sector, related to the burgeoning population, especially at the coast, continuing urbanisation and employment opportunities.

The population in the Mediterranean Region grew from 276 million in 1970 to 466 million in 2010. It is expected to be about 529 million people by 2025, with more than 75% of them living in southern Mediterranean countries (UNEP/MAP/MED POL, 2005).

More than a third of the population is concentrated in coastal areas (Benoit and Comeau, 2005).

The urban population of cities and towns with more than 10 000 inhabitants increased from 152 million to 315 million during 2007-2010 and is expected to reach 385 million in 2025.

Urbanisation in southern and eastern Mediterranean countries is the most rapid in the world (UNEP, 2012).

The construction, renovation and maintenance of buildings contribute between 10 and 40% to GDP; approximately 10% of jobs are in the building sector (UNEP SBCI, 2009).

Environmental impacts created along the construction life cycle

The environmental impacts of housing and urban development are manifold, and include:

- Urbanisation and urban sprawl, related to both housing and tourism is mostly concentrated in coastal areas and leads to **landscape degradation, erosion,** shoreline destabilisation and loss of habitats. Biodiversity and habitats with commercial and cultural importance are affected by cumulative pressures caused by economic and human activity (UNEP/MAP, 2012).

- Buildings account for more than 40% of global **energy consumption**, a third of global greenhouse gas emissions and 25% of global **water consumption**. More than 80% of energy consumption and greenhouse gas emissions are related to the **use phase of buildings** (heating, cooling, lighting and appliances) (UNEP SBCI, 2009). More than a third of global resource consumption takes part in the building sector (UNEP SBCI, 2010).

- In developed countries, **building construction and demolition waste** accounts for 30% of solid waste streams and will further increase in future (UNEP SBCI, 2010).

- The Mediterranean Region hosts 60% of the world's "water poor" (with less than 1000 m^3 of **water availability** per year); 47 million inhabitants do not have access to adequate sanitation, and 20 million are without access to drinking water. It is expected that by 2025, 80 million of Mediterranean inhabitants will experience water **shortage**, having less than 500 m^3 per person (UNEP/MAP/Plan Bleu, 2013).

- In European countries, overall electricity consumption is growing despite significant improvements in energy efficiency of household appliances (the **rebound effect**). This is due to the growing number of households, increasing income and ownership of multiple appliances per household, and a rising demand for air conditioning in Mediterranean countries (Maxwell, 2011).

- Planning for housing development creates important secondary impacts with regard to the development of the necessary infrastructure networks, including roads, electricity grid, water distribution, wastewater management, etc. Appropriate planning can significantly limit the widespread pressure to the environment and landscape due to housing sprawl (David Suzuki Foundation, 2003; UN Habitat, 2009 and UN Habitat, 2010).

- Housing and construction is a resource and chemical intensive sector. The use of hazardous chemicals such as PCB, HBCD or asbestos result in human exposure indoors (Roosens et al 2009; Meyer *et al.* 2013) and in releases to the environment and contamination of recycling streams (US EPA, 2005; DEC, 2012; Norwegian Climate and Pollution Agency, 2010).

Policies and instruments for mainstreaming SCP

'Sustainable housing and urban planning' is a key policy area closely connected to the areas previously discussed i.e. tourism, manufacturing, and to a lesser degree food and agriculture). Sustainable housing policy instruments are also interlinked to the provision of social and affordable housing and basic infrastructure and services, aiming to create liveable and habitable neighbourhoods and cities.

The top two priorities for action in sustainable housing are to increase energy efficiency and to reduce water consumption during the use phase of buildings (about 80% of energy is consumed in this phase due to their long lifespan). The energy efficiency of buildings must be guaranteed during the design and construction phase, and the most common regulatory and economic instruments should focus on promoting minimum energy standards both in new construction and renovation of buildings, together with training initiatives for the construction sector.

Certification schemes for energy efficiency and/or sustainable construction for construction materials, household appliances and buildings themselves are the most important communicative instrument used in this policy area.

The use of hazardous chemicals in construction including POPs, such as PCB in sealants and paints or hexabromocyclododecane (HBCD) in polystyrene insulation, can be managed by regulated and well organised deconstruction (life cycle thinking).

Regulatory instruments should support the substitution of these and other hazardous chemicals with more benign chemicals making construction materials and building elements

more environmentally friendly (i.e. so that paints, wood and floor coverings, for example, meet environmental requirements) thus reducing emissions and improving recyclability at the end of building lifetime.

Finally, the prevention and reduction of construction and demolition waste is tackled through action plans at the national level, voluntary agreements (e.g. use of aggregates or steel with a minimum proportion of recycled material), laws and quality norms.

SWITCH-Med SCP Toolkit

Table 4.

Examples of policies and instruments to mainstream SCP in the field of **housing and construction**

		Life cycle stage				
		Extraction of natural resources	**Planning and design process**	**Construction process**	**Use and maintenance**	**Renovation, demolition and re-use**
STRATEGIC VISION	**Policies** (strategies, programmes and action plans)	• Sustainable construction, land use and urban planning strategies (taking into account protected areas for nature conservation and biodiversity aspects and use of brownfield areas) • Mobility and transport policies • Urban planning policies • Spatial planning (master plans, landscape plans)	• Housing and urban planning strategies • Energy and water efficiency • Integrated solid waste management action plans	• National building codes including: energy and water efficiency,integrated solid waste management, renewable energy and sustainable construction	• Energy, water efficiency and solid waste management action plans for households	• National action plan on construction and demolition waste • National action plan on municipal waste • Policy on re-use/recycling of waste from construction and deconstruction
PRACTICAL IMPLEMENTATION	**Regulatory instruments**	• Integration of environmental and sustainability criteria in land use planning policies • Product specific legislation, e.g. for timber-based materials	• Minimum energy, water and environmental performance requirements for new buildings • Eco-design requirements and environmentally friendly and sustainable construction materials	• Harmful substances and product bans, phase out and substitution programmes (e.g. incandescent lights; insulation with HBCD) • Labour and employment quality regulations • Energy, water, waste avoidance, reduction and reuse performance certificates for buildings	• Obligatory use of solar thermal energy for domestic energy use including hot water production • Requirements on individual metering for water and energy	• Minimum energy, water and environmental performance requirements for renovation
	Economic instruments	• Taxes for extraction of materials • Citizen-based investment schemes for renewable energy and water	• Preferential credit conditions or tax reductions for sustainable buildings and incentives for environmentally sound and sustainable buildings and construction • Green procurement for construction services	• Financial funds for energy efficient and sustainable and green buildings • Grants for training building professionals	• Environmental charges on water and energy • Rebates and investment aids offered by energy and water utilities for financing efficiency investments	• Grants for insulation, energy and water efficiency investments and in renewable energy and water saving equipment
	Communication instruments	• Education and public awareness campaigns on sustainable planning and construction for urban planners, architects and engineers (transversal for all life cycle stages)	• Energy and water efficiency and sustainable construction certification schemes	• Eco-label for construction materials and design	• Energy labelling of appliances • Behaviour change campaigns to promote energy and water savings and solid waste avoidance, reduction, and reuse	• Guidelines and education on construction and demolition waste • Technical guidelines for separation and treatment of hazardous wastes from construction
	Voluntary/ procedural instruments	• Voluntary agreements e.g. on sustainable timber or stone extraction and use of environmentally friendly building materials	• Networks on eco-buildings, green building and energy and water efficiency • Public-private partnerships for reduced energy consumption in buildings	• Private certification schemes for sustainable construction and green buildings • Promotion of corporate social responsibility in the construction sector	• Voluntary industry agreements on efficiency standards for household appliances and similar commitments • Agreements for the use of environmentally friendly cleaning agents (e.g. with EU Ecolabel, Blue Angel or other eco-labels)	• Voluntary agreements with the construction sector industry to reduce construction and demolition waste and improve energy and water efficiency

Key policy areas and stakeholders for mainstreaming SCP in housing and construction

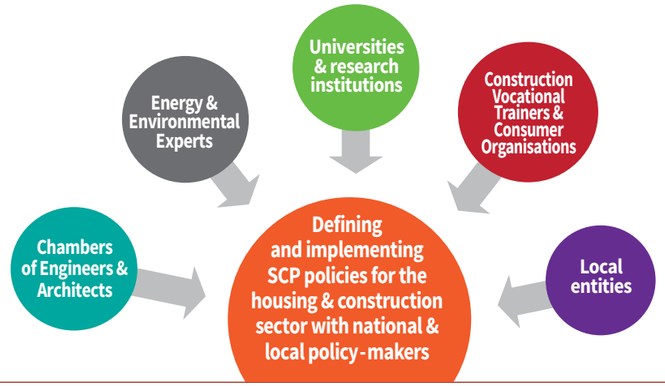
In order to tackle each life cycle stage of production and consumption associated with the housing and construction sector, actions by the government cannot focus exclusively on the construction industry, coordination and synergies are required with other sectors, falling under the responsibility of different ministries, as presented in the Figure 17. Additionally, relevant stakeholders from business, local public entities and the civil society should be involved in policy development and implementation. This includes chambers of engineers and architects, universities, energy and environmental experts, construction vocational training programmes, consumer organisations or community groups, to mention just a few (*see* Figure 18).

Figure 17

Main policy areas related to the implementation of SCP in the housing and construction sector

Figure 18

Stakeholder involvement in mainstreaming SCP in the housing and construction sector



Linkages between SCP policies and instruments with the Barcelona Convention

Adopting an SCP perspective and mainstreaming SCP when planning actions in this field help to fulfil several policy requirements of the Barcelona Convention and related plans, including the priority interventions given below.

The **LBS Protocol** addresses pollution in the Mediterranean Sea from land-based sources and activities and prioritises the phasing out of toxic, persistent bioaccumulative substances, based on application of BAT and BEP. Sectors of activity can be: energy production, cement production, metal industry, works which cause physical alteration of the natural state of the coastline, treatment and disposal of domestic waste water, waste management industry. Hazardous chemicals including POPs (e.g. PCB, HBCD, PBDE) and heavy metals were and are used in housing and other construction.

The **Hazardous Waste Protocol** commits its signatories to "take all appropriate measures to reduce to a minimum, and where possible eliminate, the generation of hazardous waste" (Art 5.2). Green building initiatives in the housing/construction sector are substituting hazardous chemicals creating an overall reduction of hazardous waste. The construction sector uses large volumes of polymers for insulation and sealing which may contain POPs and other critical chemicals, like flame retardants. Appropriate waste management of hazardous materials (like expanded and extruded polystyrene treated with flame retardant hexabromocyclododecane) once they become waste, reduces the release of waste into the environment, including what becomes marine litter.

The use of alternative and recyclable materials, avoiding the use of harmful chemicals, and the promotion of sustainable construction techniques also reduce the volume of waste. Such construction materials can possibly be used for land reclamation without a negative effect on the environment.

The **ICZM Protocol** has amongst its priorities the minimisation of the use of natural resources while taking into account the needs of future generations (9.b), and integrated water resources management and environmentally sound waste management (9.c).

The protocol also includes regulatory instruments for specific natural resources:

- the excavation and extraction of minerals, including the use of seawater in desalination plants and stone exploitation;

- the extraction of sand, including on the seabed and river sediments or prohibit it where it is likely to adversely affect the equilibrium of coastal ecosystems; and

- the evaluation of impacts on the coastal ecosystem for infrastructure, energy facilities, ports and maritime works and structures, and compensatory non-financial measures.

Applying the SCP approach in housing and construction means a wide range of measures will be supporting the implementation of the ICZM. Overall protection of the coastal area can be guaranteed by sustainable spatial planning (master plans, landscape plans, urban planning policies). Individual measures for sustainable construction/housing include, for example, building in brown fields, minimising the space between buildings, refurbishing unused buildings, adding floors, and improving the quality of land use, to avoid urban sprawl, reduce soil sealing and avoid undesired impacts over natural spaces situated in coastal zones.

Examples of SCP policy implementation in the housing and construction sector

Case 24:

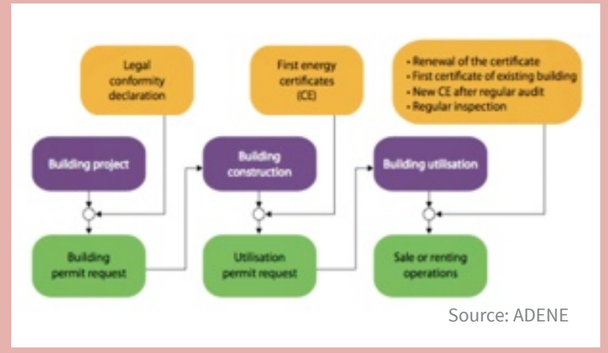
Energy certification scheme for buildings in Portugal

In Europe, the energy certification of buildings is regulated through the European Directive on Energy Performance of Buildings (EPBD). Starting in 2006, Portugal has transposed this directive through three decrees amending specific building regulations and through four ordinances defining the timescale for implementation, the certification process, the energy performance certificate model and methodologies for calculating the energy rating for buildings. The process involved different ministries, the Ministry of Economy, Innovation and Development, the Ministry for Environment and Spatial Planning, and the Ministry of Public Works and Transport.

ADENE, the Portuguese Energy Agency, and APA, the Portuguese Agency of Environment, are responsible for energy certification and indoor air quality in buildings.

An expert committee comprising research organisations, professional associations and public institutes supported the whole exercise.

ADENE established a timescale for implementing the Directive and undertook research on energy efficiency calculation methodologies. It then set up a web-based information system for energy assessors, property developers, owners and users which included a registry of assessors and certificates, quality assurance procedures, and an administration and finance system for energy certification. The certificate registration fee helps to finance the management of the system, quality control, and the promotion of the certification scheme.



Administrative process

Energy Label from Portugal

Other key elements of the implementation strategy are:

- compulsory training and accreditation of trainers and assessors, relevant pre-qualifications and training modules, regular checks and supervision of assessors;

- a consultation, promotion and information campaign with mass media coverage at national level;

- close contact with all key actors like municipalities, real estate agencies, banks, consumers associations, property owner associations and notaries.

Up to March 2010, approximately 248 000 certificates had been issued.

Source: IEA, 2010. www.iea.org/publications/freepublications/publication/buildings_certification.pdf

Case 25:

Eliminating Lead paint in Asia

The project, led by the International POP Elimination Network, focuses on significantly reducing or eliminating lead decorative paints on the market of seven Asian countries (Bangladesh, India, Indonesia, Philippines, Nepal, Sri Lanka and Thailand), thus promoting SCP, contributing to the global efforts to phase out the production and use of decorative lead paints, and improving conditions for child health by reducing the risks of lead poisoning.

The project targets civil society, industry and governments, with specific actions addressed to each of them, including:

- raising public awareness of the hazards of low level lead exposure to children and that many decorative paints for sale on the market contain lead;
- establishing national third-party paint certification and labelling programmes;
- providing technical assistance to SME paint manufacturers since they tend to lack full and ready access to the information to reformulate their products;
- establishing policy dialogues aims at promoting the enactment and/or enforcement of national policy instruments to prohibit or restrict the manufacture, sale and use of led decorative paints.

The stakeholder-based communication campaign provides active support in forming national alliances among stakeholders such as health professionals, academics and paint associations and had a good response from the media with more than 30 newspaper articles published and five TV-broadcasts related to the dangers of lead paint.

Activities with industry include creating an inventory of paint manufacturers and brands available on the national markets, analysis of 1 000 paints for for lead content (300 in India, 150 in Indonesia, 150 in Philippines), and the identification of SMEs working at a national level and their need for information and advice to cost-effectively reformulate their products. At the end of 2012, five of the seven project partner countries received a positive response from the paint manufacturers for engaging in a third-party certification scheme.

There is an active dialogue with government representatives in all seven countries which aims to help enact and/or enforce national policy instruments. Early results are showing that new legislation is already limiting the amount of lead allowed in household paints in Sri Lanka; new mandatory lead standards are being developed in India and the Philippines; and governments in Nepal and Bangladesh have given a positive response to the work for lead paint elimination.

Source: SWITCH-Asia Network Facility 2013, c. http://www.switch-asia.eu/projects/lead-paint-elimination/

Case 26:

Loan incentives to finance environmental energy-related projects in Lebanon

Lebanon's National Energy Efficiency Action Plan, approved in 2011, includes **financing mechanisms and incentives for environmental energy-related projects**. NEEREA, the **National Energy Efficiency and Renewable Energy Action**, is the national financing mechanism initiated by the Central Bank of Lebanon in collaboration with the Government, UNDP, the EU and the Lebanese Centre for Energy Conservation. It offers loans and **credits and grants for private sector investment in energy efficiency, renewable energy and certified green buildings** with a 0.6% interest rate and a repayment period up to 14 years. Up to the end of 2013, more than 100 loans had been approved totalling more than US$ 100 million. Loan size depends on the project, ranging from as low as US$ 5 000 - 24 000 for residential building, up to more than US$ 10 million for large projects.

The Ministry of Energy is also offering US$ 200 grants to citizens installing solar thermal systems, together with interest-free loans. In 2011, 3 557 citizens benefitted from the programme, and solar installations in 2011 reached 43 500 m^2 exceeding the initial target of 38 000 m^2. The market continued to increase in 2012 and 2013 with similar targets reached. One of the success factors of the programme is the **combining of legislation and financial support schemes with awareness-raising activities** for the private sector, and capacity building activities for professionals in the field of energy efficiency and renewable energy.

Source: El Khoury, 2013.
http://www.iea.org/media/workshops/2013/semedmenaroundtable/Session2ElKhoury.pdf

Case 27:

Improving the eco-efficiency of the stone and marble industry in Jordan

To stop the dumping of waste and improve the recovery of water, the Jordan Business Alliance on Water conducted a study to evaluate the effectiveness of implementing a treatment and re-use system for slurry from the stone and marble industry, in different locations. Pilot projects were set up with clusters of more than 400 micro-enterprises in Amman, Irbed and Mafraq, to identify actual practises of water and waste treatment and evaluate alternative technical solutions.

It was discovered that implementing the solutions proposed, could save 350 000 m^3/year of water, and savings in transport could reduce CO_2 emissions by 280 tons annually. The net financial benefit for the industry would be about US$ 1.1 million/year, making water recovery economically viable.

Social benefits were also potential through an improved household water supply, and a fall in the amount of slurry water being dumped, improving the quality of life in the communities where stone enterprises are located.

Source: Hayek, no date.
http://www.acwua.org/sites/default/files/bassam_hayek.pdf

3.5. Building coordination mechanisms to ensure the success of SCP policies and instruments

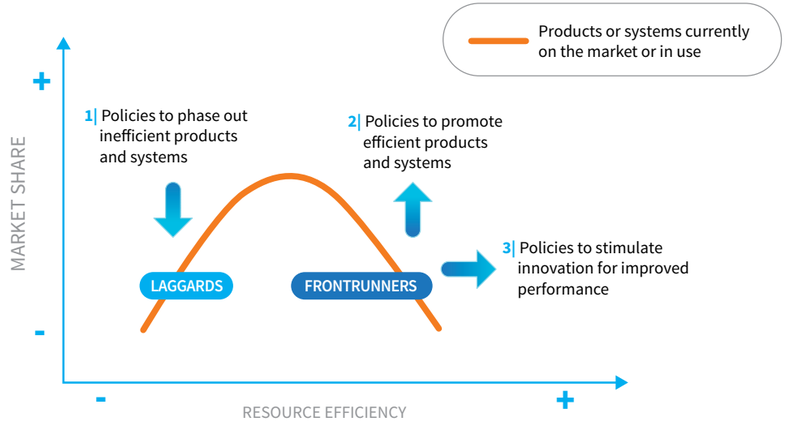
All policies and instruments discussed in this report can be implemented on their own, as most currently are. However, in the search for sustainability, the **most effective way** would be to adopt a **well-coordinated mix of instruments that support and complement each other.** The SCP approach brings such a way, as it requires analysing problems from a life cycle perspective and foreseeing actions in different phases and for different stakeholders (who may each need a different package of instruments).

Special attention has to be paid to coordinating efforts within government (between different agencies) to ensure that diverse policies and instruments do not have a negative effect on each another but rather enhance their impacts and outcomes.

Figure 19 shows how policies and instruments can be combined and coordinated in order to encourage a shift of products on the market towards a more sustainable direction, by phasing out less efficient products or systems (laggards) through regulatory instruments, and by promoting more efficient and innovative solutions (front runners) through communication instruments, voluntary agreements and sustainable consumption policies.

Figure 19

Three types of policy interventions aiming at improving the resource efficiency of products and systems



Source: UNEP, 2012b.

Case 28:

Policy coordination to enhance energy efficiency in products in the European Union

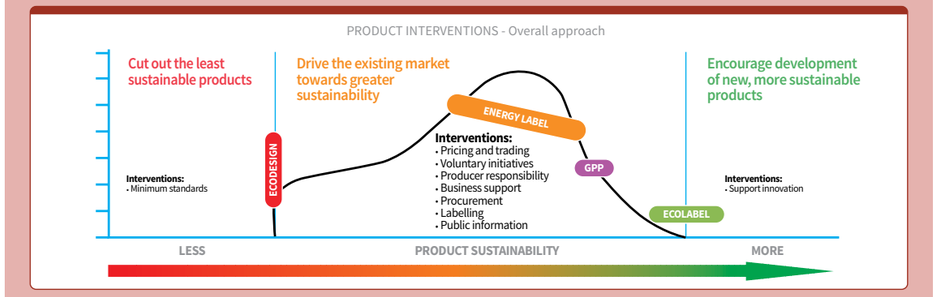
The European Commission applies an SCP approach to its environmental products policy and has established a well-coordinated mix of instruments.

On the one hand, in the framework of the Directive on Energy Using Products, the Commission conducted a life cycle analysis for several products affecting energy use. As a result, the Commission set minimum energy requirements(using a regulatory instrument) which is, for example, forcing the phasing out of incandescent bulbs from the EU market.

On the other hand, in order to not only phase out inefficient products but to promote the uptake of more efficient ones, the Commission has also put a compulsory energy efficiency label in place for several energy related products (using a communication instrument) to help consumers choose the more efficient and thus contribute to lower consumption rates. To go even further, the Commission has also established the EU Ecolabel for certain product groups (communication instrument) that identifies, for consumers, the greener products in the market.

To catalyse and stimulate innovation, the Commission also encourages public authorities to use their purchasing power to push for the most energy efficient and greenest products so that they are available and at affordable prices for consumers (sustainable public procurement (SPP) in this case is an economic instrument).

Coordinating regulations, eco-labelling and SPP improves both the production and consumption sides of the market, by enhancing effectiveness and generating synergies, and is expected to increase the market share of the more efficient products.



Source: JRC, 2012a.

Case 29:

Higher efficiency power and distribution transformers promotion project in China

The SWITCH-Asia funded project China Higher Efficiency Power and Distribution Transformers Promotion seeks to increase the market availability and share of higher efficiency electricity transformers in China following and SCP approach. Project activities sought to improve transformer energy efficiency (production) and its procurement by end-users (consumption).

On the production side the project actions are:

- the upgrading of the Energy Efficiency National Standards for Distribution Transformers;

- the development of a guide for Chinese manufacturers (mainly SMEs) on eco-design for transformers to reduce their environmental impact; and

- capacity building workshops and seminars for manufacturers on eco-design for transformers.

On the consumption side the project activities are:

- product energy efficiency labelling, linked to the standards mentioned above;

- awareness-raising among end-users (power transmission and distribution utilities and energy-intensive industries) on the need to change their procurement policies in favour of higher efficiency transformers; and

- the development of tools to demonstrate the potential energy and costs savings from higher efficiency transformers and promote their procurement (i.e. a life cycle costing (LCC) tool and a product selection database).

National Energy Efficiency Standard

Energy efficiency label

Eco-design guide

LCC software

The project is implemented by the International Copper Association China in partnership with the China National Institute of Standardisation, the China Electrical Equipment Industrial Association, the China Electricity Council, and Action Sustainable Development (France). The Electricity Council is a key partner as it is influential and has technical capabilities to promote higher efficiency transformers, having the legal right to influence its members (factories and distribution utilities) regarding their purchasing choices by requiring them to meet certain performance criteria.

To ensure the success of outreach activities, the project collaborates with the network of local Energy Conservation and Supervision Centres, established by local governments to coordinate, facilitate and monitor the implementation of China's policies on energy efficiency and conservation. They hold a strategic position for creating awareness and building capacity among end-users on higher efficiency transformers.

Estimates on the project impact foresee that, if there is a replacement level of 20% of the least efficient transformers with medium-level efficient ones in the five provinces targeted in the project, the annual electricity savings would be of almost 900 million kWh per year (which would cut CO_2 and SO_2 emissions by about 850 000 tons and 47 000 tons respectively).

The total budget of the project is about € 780 000 (80% financed by the European Union).

Source: SWITCH-Asia Network Facility , 2013d.
http://www.switch-asia.eu/projects/eseec/

Resources

Resources for understanding SCP

- **Global Outlook on Sustainable Consumption and Production Policies - Taking Action Together (Chapter 1 & 2)**, exposes the interlinked crises that the world is facing with the current unsustainable patterns of production and consumption; explores the evolution of the SCP concept and its approach, with the life cycle perspective at its core; and provides an outline of international efforts to promote SCP, including intergovernmental policies and business and civil society initiatives.

UNEP (2012), Global Outlook on SCP Policies: Taking Action Together. Paris: United Nations Environment Programme.

http://www.unep.fr/shared/publications/pdf/DTIx1498xPA-GlobalOutlookonSCPPolicies.pdf

- **SWITCH-Asia SCP Manual for Policy Makers (Chapters 1 & 2)** presents a detailed introduction to SCP, its evolution, importance in the Asia-Pacific region as well as the fundamentals of SCP illustrated with examples and case studies.

UNEP (2012b). Sustainable Consumption and Production: A Handbook for Policy Makers. With Cases from Asia and the Pacific. Paris: United Nations Environment Programme.

http://archive.switch-asia.eu/fileadmin/content/PSC/Publication/SCP-Manual_low-resolution_.pdf

- **SCP for Poverty Alleviation (Chapter 4 & 5)** highlights in its conclusions the economic and social gains for developing countries from the shift to SCP, which also sustains nature's productive ecosystem and in selected case studies identifies and where possible quantifies the combination of economic, social and environmental gains secured by shifting towards SCP patterns in different sectors (food and agriculture, energy, housing and other sectors, transport, water and waste, tourism, manufacturing).

UNEP,(2012a). Sustainable Consumption and Production for Poverty Alleviation. Paris : United National Environment Programme.

http://www.unep.org/pdf/SCP_Poverty_full_final.pdf

- **ABC OF SCP. Clarifying concepts on sustainable consumption and production (whole document)** clarifies the main terms and concepts related to sustainable consumption and production, and other terms associated with sustainable development. It does not present globally agreed definitions but in most cases it offers working definitions that may continue to evolve.

UNEP (2010). ABC OF SCP. Clarifying concepts on sustainable consumption and production. Paris: United Nations Environment Programme.

http://www.uneptie.org/scp/marrakech/pdf/ABC%20of%20SCP%20-%20Clarifying%20Concepts%20on%20SCP.pdf

Resources for planning and mainstreaming SCP

- **Planning for Change. Guidelines for National Programmes on Sustainable Consumption and Production (Chapters 3, 4 & 5)** provides a framework for designing and developing SCP programmes, including indicators through the policy cycle and elaborates on the importance of coordination and high level support.

UNEP (2008). Planning for Change. Guidelines for National Programmes on Sustainable Consumption and Production. Paris: United Nations Environment Programme.

http://www.unep.org/pdf/UNEP_Planning_for_change_2008.pdf

- **SCP Indicators for Developing Countries (Chapters 4, Appendix 1 & 3)** provides guidance for policy makers in developing countries on selecting indicators that measure progress towards more sustainable patterns of consumption and production.

Hanks, J., Robins, N., Davies, H., Jebens, F., and Lopez, A. (2008). SCP Indicators for Developing Countries. *Paris: United Nations Environment Programme.*

http://www.unep.fr/shared/publications/pdf/DTIx1085xPA-SCPindicatorsEN.pdf

- **Mainstreaming Sustainable Consumption and Production and Resource Efficiency into Development Planning (Chapters 4, 5 & 6)** presents an approach to mainstream SCP into national development/sectoral strategies. It is designed for officials involved in policy making and SCP practitioners. It covers the design of SCP policy measures and strategies to reflect them in mainstream development frameworks.

Cohen, B. (2009). Mainstreaming Sustainable Consumption and Production and Resource Efficiency into Development Planning. Paris: United Nations Environment Programme.

http://www.unep.fr/shared/publications/pdf/DTIx1235xPA-MainstreamingSCPintoDevPlanning.pdf

- **Global Outlook on Sustainable Consumption and Production Policies - Taking Action Together (whole document)**, identifies examples of effective policies and initiatives being implemented worldwide. It reviews 56 case studies ranging from global multilateral agreements and regional strategies to specific policies and initiatives and shows progress achieved in promoting SCP, highlighting best practices and offering recommendations to scale up and replicate these important efforts worldwide.

UNEP (2012), Global Outlook on SCP Policies: Taking Action Together. *Paris: United Nations Environment Programme.*

http://www.unep.fr/shared/publications/pdf/DTIx1498xPA-GlobalOutlookonSCPPolicies.pdf

- **SWITCH-Asia SCP Manual for Policy Makers (Part A: Chapters 2, 3 & 4),** presents recommendations, examples and resources to develop, implement, monitor and evaluate SCP policies especially in the Asia-Pacific context. The manual includes case studies highlighting SCP opportunities and successful initiatives within the region and details opportunities in cleaner and safer production, sustainable lifestyles, sustainable cities, sustainable public procurement and sustainable tourism.

UNEP (2012b). Sustainable Consumption and Production: A Handbook for Policy Makers. With Cases from Asia and the Pacific. Paris: United Nations Environment Programme.

http://archive.switch-asia.eu/fileadmin/content/PSC/Publication/SCP-Manual_low-resolution_.pdf

- **First draft of the SCP Road Map for the Mediterranean** provides a first selection of strategic objectives, priority areas and outputs to implement the SCP perspective and tools to support the implementation of the Barcelona Convention and protocols (SWITCH-Med programme)

SCP/RAC (2013). SCP Roadmap for the Mediterranean: A Strategic Process to Consolidate the Mediterranean's Leading Role in the Shift to Sustainable Patterns of Consumption and Production. SCP/RAC: Barcelona (unpublished).

Resources to Understand and Identify Policy Instruments

- **SWITCH-Med Baseline report (Chapter 3)** highlights how SCP tools add value and are needed to achieve the objectives of the Barcelona Convention, its protocol and regional plans and compiles different instruments and policies relevant for the different protocols and plans in the region.

SCP/RAC (2013). SCP, a Cornerstone in the Implementation of the Barcelona Convention and its Protocols. Draft Baseline Report for the Preparation of the SCP Roadmap for the Mediterranean. SCP/RAC: Barcelona (unpublished).

- **EEA-OECD Environmental policy instruments database**, is a database that provide information mainly on environmentally related economic and voluntary instruments in various countries, mainly OECD member and accession countries and European Environment Agency member countries, although it also includes information for other countries.

http://www2.oecd.org/ecoinst/queries/

- **Policy Instruments for Resource Efficiency: Towards Sustainable Consumption and Production (whole document)** is a good starting point to understanding different types of policy tools, based on real examples, their advantages, disadvantages and where they can be applied towards SCP objectives.

GTZ (2006). Policy Instruments for Resource Efficiency: Towards Sustainable Consumption and Production. GTZ: Germany.

http://www.uns.ethz.ch/edu/teach/bachelor/autumn/energmob/GTZ_et_al_2006_policy-instruments_resource_efficiency.pdf

- **SWITCH Asia SCP Policy Toolbox for Practical Use (whole document, especially the case studies)** provides practical explanations of SCP policies and policy instruments. It further recommends instruments

that could be applied to increase the positive environmental and social impacts of specific projects. Special attention is paid to small and SMEs, which form the majority of business operations in Asia.

SWITCH Asia Network Facility (no date). Sustainable Consumption and Production Policies: A Policy Toolbox for Practical Use. Paris: United Nations Environment Programme.

http://www.scp-centre.org/fileadmin/content/files/6_Resources/1_Publications_pdfs/40_CSCP_WI__2010__SCP_Policies_-_Toolbox_en.pdf

- **SWITCH Asia SCP Manual for Policy Makers (Part B)** includes case studies highlighting SCP opportunities and successful initiatives within the region and details opportunities in cleaner and safer production, sustainable lifestyles, sustainable cities, sustainable public procurement and sustainable tourism.

UNEP (2012b). Sustainable Consumption and Production: A Handbook for Policy Makers. With Cases from Asia and the Pacific. Paris: United Nations Environment Programme.

http://archive.switch-asia.eu/fileadmin/content/PSC/Publication/SCP-Manual_low-resolution_.pdf

- **SWITCH Asia projects database,** compiles the most relevant information on the projects financed by the SWITCH-Asia programme that show how to apply the SCP perspective to the definition of projects and use different instruments to maximise impact.

http://www.switch-asia.eu/projects/

Resources for food and agriculture

- **Knowledge Access for Rural Inter-connected Areas Network** (KariaNet) is a regional network for the management and sharing of knowledge, information and experience in agriculture and rural development in the Middle East and North Africa (MENA) region.

http://karianet.org

- **UNCTAD Sustainable Claims Portal** gives a comprehensive overview of sustainability claims for food products (environmental issues, geographical indications, organic standards, fair trade requirements):

http://www.unctad.info/en/Sustainability-Claims-Portal/

- FAO **SAVE FOOD: Global Initiative on Food Losses and Waste Reduction,** published the Food Wastage Footprint, which analyses impacts of global food wastage from the environmental point of view. The Food Wastage Toolkit includes recommendations and case studies for reducing waste in the food chain.

FAO (2013). Toolkit Reducing the Food Wastage Footprint. Food and Agriculture Organization of the United Nations.

http://www.fao.org/docrep/018/i3342e/i3342e.pdf

- **Sustainable Food: A Recipe for Food Security and Environmental Protection?** This Science for Environment Policy In-depth Report looks at how 'sustainable food' production can offer new possibilities to meet the food security and nutritional challenges facing the global community. The report summarises the vast range of solutions that researchers and agricultural experts have suggested to ensure that the nutritional needs of the world's population are met, while reducing environmental damage.

European Commission (2013). In-Depth Report. Sustainable Food A Recipe for Food Security and Environmental Protection (under revision)

- **A Guide to Developing a Sustainable Food Purchasing Policy** is a guide intended to help universities, colleges, hospitals, and other institutions – as well as those advocating for food system change – create, promote and implement practical sustainable food purchasing policies. The document offers a framework to develop policies that will be meaningful and achievable for any institution.

Food Alliance (2013). A Guide to Developing a Sustainable Food Purchasing Policy.

http://www.aashe.org/resources/pdf/food_policy_guide.pdf

- **Sustainable Seafood Coalition** (SSC) is the first ever cross-industry group in the UK to tackle seafood sustainability using their influence as a seafood business. The SSC helps making informed seafood buying decisions in order to help transform the oceans back to thriving, healthy ecosystems with plentiful fish for all. They provide six different approaches to achieve this goal.

http://sustainableseafoodcoalition.org/

Resources for goods manufacturing and consumption

- The **International Sustainable Public Procurement Initiative** led by UNEP (UNEP SPPI) is a multi-stakeholder platform for actors working on the promotion and implementation of sustainable public procurement worldwide.

http://www.unep.org/resourceefficiency/Consumption/SustainableProcurement/SustainablePublicProcurementInitiative/tabid/130242/Default.aspx

- **Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication**. The Chapter **Manufacturing: Investing in energy and resource efficiency** gives a good overview of challenges, opportunities and policy priorities and instruments for greening of manufacturing.

UNEP (2011) Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. United Nations Environment Programme www.unep.org/greeneconomy pp 239 - 282.

http://www.unep.org/greeneconomy/portals/88/documents/ger/GER_synthesis_en.pdf

- **SweepNet** is the regional solid waste exchange of information and expertise network in Mashreq and Maghreb countries, the web page includes country reports and the D-Waste Atlas, an open source map with municipal solid waste management data from across the world.

www.sweep-net.org

Resources for tourism

- **Making Tourism More Sustainable. A Guide for Policy Makers** is a comprehensive guide for implementation of sustainable tourism policies, including policy instruments, resources, indicators for sustainable tourism and Best Practice cases.

UNEP/WTO (2005). Making Tourism More Sustainable. A Guide for Policy Makers. United Nations Environment Programme, World Tourism Organisation.

http://www.unep.fr/shared/publications/pdf/DTIx0592xPA-TourismPolicyEN.pdf

- The **Global Partnership for Sustainable Tourism**, coordinated by UNEP, is a multi-stakeholder initiative designed to help its members develop sustainable tourism policy and programmes. The homepage includes a series of Strategic Partnership projects:

http://globalsustainabletourism.com/en/

- The **Tour Operators' Initiative** is a voluntary network of tour operators committed to integrating sustainable development in their operations. Their homepage includes resources like good practice cases and publications.

http://www.toinitiative.org

- **Reference Document on Best Environmental Management Practice in the Tourism Sector** is intended to support environmental improvement efforts of all actors in the sector and it is aimed at all actors in the tourism sector with or without a certified or registered environmental management system. The document covers the whole value chain of the tourism sector, from land planning to building end-of-life, and from sustainable sourcing to waste recycling and re-use.

JRC (2012c). Reference Document on Best Environmental Management Practice in the Tourism Sector. Final Draft June 2012.European Commission Joint Research Centre.

http://susproc.jrc.ec.europa.eu/activities/emas/documents/TOURISM_BP_REF_DOC_2012j.pdf

- **Teaching and Learning for a Sustainable Future** is a multimedia teacher education programme published by UNESCO that contains 100 hours of professional development for use in pre-service teacher courses as well as the in-service education of teachers, curriculum developers, education policy makers, and autors of educational materials. Teaching and Learning for a Sustainable Future will enable teachers to plan learning experiences that empower their students to develop and evaluate alternative visions of a sustainable future and to work creatively with others to help bring their visions of a better world into effect. It will also enhance the computer literacy of teachers and build their skills in using multimedia-based resources and strategies in their teaching. Sustainable tourism is one of the curriculum themes.

UNESCO (2013). Teaching and Learning for a Sustainable Future – Sustainable Tourism

http://www.unesco.org/education/tlsf/mods/theme_c/mod16.html

Resources for housing and construction

- The **Sustainable Buildings and Climate Initiative** led by UNEP (UNEP SBCI) is a multi-stakeholder platform for the building sector, working on the promotion of sustainable building policies and practices worldwide.

www.unep.org/sbci/

- The guide **Sustainable Housing for Sustainable Cities** gives a good overview of the key concepts related to sustainable housing and neighbourhoods and provides an overview of sustainable housing policies and best practices.

UN Habitat (2012). Sustainable Housing for Sustainable Cities: A Policy Framework for Developing Countries. Nairobi: United Nations Human Settlements Programme.

http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3365

- The project **European Policies to Promote Sustainable Consumption Patterns EUPOPP** analysed sustainable consumption policy instruments for food and housing and its impacts. The **CORPUS** project wants to promote evidence based policy making in the area of sustainable household consumption. Both project homepages include case studies and project reports: www.eupopp.net and www.scp-knowledge.eu

- **Reference Document on Best Environmental Management Practice in the Building and Construction Sector** is intended to support environmental improvement efforts of all actors in the sector and it is aimed at all actors in the building and construction sector with or without a certified or registered environmental management system. The document covers the whole value chain of the sector, from land planning to the building end of life and from selection of best environmentally friendly materials to waste treatment and recycling and reuse cycles.

JRC (2012b). Reference Document on Best Environmental Management Practice in the Building and Construction Sector. Final Report, September 2012.European Commission Joint Research Centre.

http://susproc.jrc.ec.europa.eu/activities/emas/documents/ConstructionSector.pdf

- **Whole Building Design Guide** has the goal of creating a successful high-performance building by applying an integrated design and team approach to the project during the planning and programming phases.

National Institute of Building Science (2013) Whole Building Design Guide

http://www.wbdg.org/

- **Health Hazards in Construction** intended as training material for the purpose of informing employers and employees of best practices in construction safety and health.

Construction Safety Council (2012). Health Hazards in Construction. Illinois: Construction Safety Council.

https://www.osha.gov/dte/grant_materials/fy09/sh-19495-09/health_hazards_workbook.pdf

Resources for the Barcelona Convention, its Protocols and Regional Plans

The official documents relating to the Barcelona Convention can be downloaded from the following links:

- **Mediterranean Action Plan**: Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean

http://www.unepmap.org/index.php?module=content2&catid=001001002

- **Barcelona Convention:** Convention for the Protection Of The Mediterranean Sea Against Pollution Signed 16 February 1976, in force 12 February 1978 (revised in Barcelona, Spain, on 10 June 1995 as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean)

http://www.unep.ch/regionalseas/regions/med/t_barcel.htm

- **LBS Protocol:** Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities

http://www.unep.ch/regionalseas/main/med/mlbspii.html

- **ICZM Protocol:** Protocol on Integrated Coastal Zone Management (ICZM) in the Mediterranean

http://www.pap-thecoastcentre.org/razno/PROTOCOL%20ENG%20IN%20FINAL%20FORMAT.pdf

- **Hazardous waste protocol:** Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal

http://195.97.36.231/dbases/webdocs/BCP/ProtocolHazardousWastes96_eng.pdf

- **Regional Plan on the elimination of POPs:** Regional Plan on the elimination in the framework of the implementation of Article 15 of the LBS Protocol, 1996 of Alpha hexachlorocyclohexane; Beta hexachlorocyclohexane; Hexabromobiphenyl; Chlordecone; Pentachlorobenzene; Tetrabromodiphenyl ether and Pentabromodiphenyl ether; Hexabromodiphenyl ether and Heptabromodiphenyl ether; Lindane; Endosulfan, Perfluorooctane sulfonic acid, its salts and perfluorooactane sulfonyl fluoride

http://195.97.36.231/acrobatfiles/12IG20_8_Eng.pdf (pp. 93-118)

- **Regional Plan on the reduction of BOD_5 in the food sector:** Regional Plan on the reduction of BOD_5 in the food sector in the framework of the implementation of Article 15 of the LBS Protocol

http://195.97.36.231/acrobatfiles/12IG20_8_Eng.pdf (pp. 85-92)

- **Regional Plan on Marine Litter Management in the Mediterranean:** Regional Plan on Marine Litter Management, in the Mediterranean in the framework of Article 15 of the Land-based Sources Protocol

http://195.97.36.231/dbases/acrobatfiles/13IG21_9_Eng.pdf (pp. 143 - 174)

Resources for the Stockholm Convention

- **Stockholm Convention** (Protecting Human Health and the Environment from Persistent Organic Pollutants): Adopted at a Conference of Plenipotentiaries on 22nd May 2001 in Stockholm, Sweden, the Convention entered into force on 17 May 2004. It is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment.

http://www.pops.int/

http://www.pops.int/documents/convtext/convtext_en.pdf

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Notes

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