CP/RAC National Focal Points Meeting on
“Enhancing the integration of Sustainable Consumption and Production (SCP) in the Governance Framework of the Barcelona Convention and MAP”

Barcelona (Spain), 18-20 June 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

Participants are kindly requested to bring their documents to the meeting
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

Mediterranean SCP Expert Group (MSEG)

June 2013
Baseline report – SCP Roadmap for the Mediterranean

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The CP/RAC, based in Barcelona-Spain, was established in 1996. Its mission is to promote sustainable consumption and production in Mediterranean countries. The CP/RAC activities are approved by the Contracting Parties to the Barcelona Convention and by the Bilateral Monitoring Commission made up of representatives from the Spanish and Catalan Governments.

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Coordination:
Magali OUTTERS – SWITCH-Med Team Leader
Enrique de VILLAMORE – CP/RAC Director
Christine HAFFNER – International expert

SWITCH-Med MSEG experts (Alphabetic Order):
- Hussein ABAZA (Egypt)
- Spyros KOUVELIS (Greece)
- Rida LAMRINI (Morocco)
- Lamia MANSOUR (Lebanon)
- Alessio SATTA (Italy)
- Roland WEBER (Germany)

The SWITCH-Med Regional Policy component is leaded by UNEP/MAP with CP/RAC as key implementing body.

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Regional Activity Centre for Cleaner Production (CAR/PL)
C/ Dr. Roux, 80
08017 Barcelona (Spain)
Tel +34 93 553 8790 Fax +34 93 553 8795
www.cprac.org
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List of abbreviations

10 YFP  10 Years Framework of Programme on SCP  
BAT  Best Available Techniques  
BEP  Best Environmental Practices  
BOD₅  Biochemical Oxygen Demand (in 5 days)  
C&C  Cradle to Cradle  
CAMRE  Council of Arab Ministers Responsible for Environment  
COP  Conference of Parties  
CP  Cleaner Production  
CP/RAC  Regional Activity Centre for Cleaner Production  
CSD  Commission for Sustainable Development  
CSR  Corporate Social Responsibility  
DESD  Decade of Education for Sustainable Development  
EcAP  Ecosystem Approach  
ESCWA  Economic and Social Commission for West Asia  
EEA  European Environmental Agency  
EL  Eco-Label  
EPS  Expanded Polystyrene  
FAO  Food and Agriculture Organization of the United Nations  
GPP  Green Public Procurement  
HBB  Hexabromobiphenyl  
HBCD  Hexabromocyclododecane  
ICZM  Integrated Coastal Zone Management  
IPEN  International POPs Elimination Network  
IPP  Integrated Product Policy  
LBS  Land Based Source  
LCA  Life Cycle Assessment  
LCM  Life Cycle Management  
MAP  Mediterranean Action Plan  
MEDPOL  marine pollution assessment and control component of MAP  
MFA  Material Flow Analysis  
MSEG  Mediterranean SCP Expert Group  
MSC  Marine Stewardship Council  
NCPCs  National Cleaner Production Centers  
NGOs  Non-Governmental Organizations  
PAP/RAC  Priority Actions Programme Regional Activity Centre  
PBDEs  Polybrominated diphenyl ethers  
PCBs  Polychlorinated Biphenyls  
PFOS  Perfluorooctane Sulfonic Acid; Perfluorooctane Sulfonate  
POPs  Persistent Organic Pollutants  
PPP  Public Private Partnership  
PoPP  Polluter Pays Principle  
RAC  Regional Activity Centre  
REACH  Registration, Evaluation, Authorisation and Restriction of Chemical substances  
RECP  Resource Efficient and Cleaner Production  
REMPEC  Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea  
SCP  Sustainable Consumption and Production  
SDS  Sustainable Development Strategy
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>SETAC</td>
<td>Society of Environmental Toxicology and Chemistry</td>
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<tr>
<td>SFA</td>
<td>Substance Flow Analysis</td>
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<tr>
<td>SIP</td>
<td>Sustainable Industrial Policy</td>
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<td>SME</td>
<td>Small and Medium Enterprises</td>
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<tr>
<td>SPA/RAC</td>
<td>Regional Activity Centre for Specially Protected Areas</td>
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<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
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<tr>
<td>UN</td>
<td>United Nation</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environmental Program</td>
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<td>UNDESA</td>
<td>United Nations Department of Economic and Social Affairs</td>
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<td>UNDP</td>
<td>United Nations Development Program</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
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<tr>
<td>VISIT</td>
<td>Voluntary Initiative for Sustainability in Tourism</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<td>WWF</td>
<td>World Wildlife Fund for Nature</td>
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</table>
1. Historical overview of the evolution of SCP

1.1. SCP in the Global Policy Agenda

The Evolution of the SCP Concept

There are several definitions for Sustainable Consumption Production. One such definition is “the use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emission of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations” (ISSD, 1994).

Another definition by UNEP is “SCP is a holistic approach to minimizing the negative environmental impacts from consumption and production for all” (UNEP 2011).

Even though there are still many other definitions, the overarching principles that guide SCP are:

- Achieving a better quality of life without increasing environmental degradation and with sustainable use of resources\(^1\).
- Achieving economic growth without being at the cost of the environment.
- Increasing efficiency and reducing waste from extraction, production, consumption and disposal.
- An approach that considers the impacts of all lifecycles of production and consumption.
- The substitution principle which aim that hazardous processes, services, products and chemicals\(^2\) should, wherever possible, be replaced with alternatives which have a lower environmental impact.
- An approach that guards against the offsetting of efficiency gains in the production process by increases in the consumption process also known as the re-bound effect.

These principles can also apply to the concepts of ‘Green Growth” and “Green Economy”, which are concepts or approaches aiming at achieving sustainable development.

The general premise behind SCP is to keep human activities within the carrying capacity of the planet. Green Growth and Green Economy have to operate within this boundary. A measure of these boundaries is the ecological footprint which has already been surpassed by humanity, globally and also in the Mediterranean region (Ecological Footprint Network 2013).

Resource efficiency emphasizes the need for the efficient use of natural resources by individuals, companies, sectors, and economies at large. While increasing productivity of resources, efficiency can still be achieved, it is important to ensure that no rebound effects would compensate or even over-compensate the achievements of reaching efficiency of resources, and that more efficient trends allow the economic footprint to decrease and reach a scale of “1” over time.

Moreover, it is important to ensure that resources are maintained and made available for future generations, since some resources are limited e.g. metals and minerals. As such, SCP allows to finally evolving towards a circular economy through which resources are kept in the economic system by recycling and recovery. In order to reach such a stage, a crucial change is needed in the way we produce our goods and how we manage them in the end-of-life.

\(^1\) The ecological footprint is a measure defining the boundary of SCP and human activities.
\(^2\) Also the REACH Regulation calls for the progressive substitution of the most dangerous chemicals when suitable alternatives have been identified (http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm)
The Evolution of SCP in the International Policy

The publication of "The Limits to Growth" has raised international awareness for the need of SCP at the global scale (Meadows et al., 1972). At the UN Conference on Environment and Development held in Rio de Janeiro in 1992, the notion of unsustainable patterns of production and consumption first came to the fore. World leaders acknowledged that “the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production” (UN, 1992). The final declaration of the Rio conference proclaims that in order to achieve sustainable development, SCP needs to be adopted.

The introduction of SCP in mainstream sustainable development talks did not end but start at Rio. At the World Summit for Sustainable Development (Johannesburg) in 2002, SCP was reaffirmed as a central concept for achieving sustainable development (UN, 2003). The Johannesburg Plan of Implementation called for the creation of a 10-years framework 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 2003). This principle constituted the main basis for the Marrakech Process.

The Marrakech Process, a global and informal multi-stakeholder process, was launched in 2003 in response to the global challenge on SCP. Ever since its creation, it played an important role in implementing SCP on the global, regional, and national levels. The framework of the process operates under two objectives; the first objective is to advocate for the development of sound policies and the implementation of support projects and programmes on SCP that assist the private sector, governments and other actors in implementing SCP at the national and regional levels; the second objective is to provide inputs for the elaboration of the 10 Years Framework Programme (10 YFP) on SCP (UNEP, 2010).

As part of the Marrakech Process, UNEP produced guidelines for national SCP programmes and action plans and has supported the mainstreaming of SCP in national development strategies. SCP strategies were also developed at city level in Maputo (Mozambique) and in Cairo (Egypt) (UNEP, 2010).

Reviews of the 10 YFP were undertaken by the Commission for Sustainable Development (CSD) in 2010. The barriers and constraints for implementation, as well as lessons learned and best practices were examined. The 10 YFP served as a means to analyze how issues such as extremes of wealth, i.e. over-consumption on one hand and under-consumption on the other, can be addressed. By the 19th cycle (CSD 19), a text was agreed upon for the 10 YFP, which included a coordinating secretariat, a financing mechanism and an indicative set of programmes.

Although the initial adoption of the 10 YFP was informal, it presented an opportunity to seek endorsement and allowed for it to be tabled at the Rio+20 conference, where it was formally adopted. The Rio+20 Conference saw a reiteration of the messages emanating from Agenda 21 and the Johannesburg Plan of Implementation. Governments agreed on the following: “We recognize that fundamental changes in the way societies consume and produce are indispensable for achieving global sustainable development” (UN, 2012).
1.2. SCP in Europe and in the Mediterranean

SCP within the European Union

In the European Union, the Marrakech process led to a renewed European Sustainable Development Strategy (SDS-2009), which identifies Sustainable Consumption and Production (SCP) as one of the key objectives to be achieved in the context of the European Union's commitment to sustainable development.

The European Commission presented in July 2008 the Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan\(^3\). It includes a series of proposals on sustainable consumption and production which will contribute to improving the environmental performance of products and increase the demand for more sustainable goods and production technologies. It is planned to help identify and overcome barriers to SCP, to ensure coherence between the different policy areas and to raise awareness among citizens and alter unsustainable consumption habits. In addition, it seeks to help European industry take advantage of opportunities for innovation.

The SCP Action Plan in Europe was adopted by the European Council on 4 December 2008 and is based on two key pillars:

1. Integrated Product Policy (IPP)
2. Green Public Procurement (GPP)

The Action Plan integrates and complements a number of existing EU and Member State actions to foster resource efficiency and the use of eco-friendly products. In addition to the specific policies and programs, the Action Plan builds on the EU's Integrated Product Policy, Thematic Strategy on the Use of Natural Resources, and Thematic Strategy on Waste Prevention and Recycling. Along with the Action Plan, these initiatives provide strategic direction for the EU in achieving sustainability goals.

It builds upon and complements on-going initiatives and instruments utilized both at the European and international level such as:

- The Energy Star Regulation [Regulation (EC) No 106/2008]
- The Eco-label Regulation [Regulation (EC) No 1980/2000]

In September 2011, the Roadmap to Resource Efficient Europe was proposed by the European Commission and opened a consultation to collect the views of businesses, other stakeholders and the public at large. It is one of seven flagship initiatives as part of the Europe 2020 strategy aiming to deliver smart, sustainable and inclusive growth. The Roadmap affirms that increased resource efficiency will be a key to securing growth and jobs for Europe, by bringing major economic opportunities, improving productivity, driving down costs and boosting competitiveness.

The Roadmap’s Vision is: “By 2050 the EU’s economy has grown in a way that respects resource constraints and planetary boundaries, thus contributing to global economic transformation. Our economy is competitive, inclusive and provides a high standard of living with much lower environmental impacts. All resources are managed in a sustainable way, from raw materials to energy, water, air, land and soil. Climate change milestones have been reached, while biodiversity and the ecosystem services it underpins have been protected, valued and substantially restored”.

The Roadmap sets the milestones which illustrate what will be needed to follow a path to resource efficient and sustainable growth, and it provides a framework explaining how policies interrelate and build on each other in which future actions can be designed and implemented coherently.

**SCP in the Arab countries**

Arab countries realized the importance of sustainable consumption and production patterns as a means to achieve sustainable development and organized a first roundtable meeting in Al Ain (UAE) in March 2008. The meeting was organized and convened by the Council of Arab Ministers Responsible for Environment (CAMRE), UNEP’s Regional Office for West Asia (UNEP/ROWA) and the Economic and Social Commission for West Asia (ESCWA), in collaboration with United Nation Department of Economic and Social Affairs (UNDESA) and UAE Federal Environmental Authority. The joint secretariat of the Joint Committee on Environment and Development in the Arab Region (JCEDAR) was requested to prepare a regional SCP strategy in the Arab region in accordance with the Arab experts as a contribution into the 10 Years Framework Programme (10YFP) of the Marrakech process. Priorities identified in the Arab countries requiring immediate attention are water, energy, tourism, rural development, waste, poverty eradication, education, and sustainable lifestyles.

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The main recommendations of the Roundtable were the following:

- Develop an Action Plan for SCP under the umbrella of the Sustainable Development Initiative in the Arab Region (SDIAR) and presented to CAMRE.
- Establish a network of National Cleaner Production Centers (NCPCs) in close cooperation with UNEP and UNIDO.
- Create, under the leadership of Brazil and the UAE a Marrakech Task Force on SME and technology transfer.
- Further examine the notion of sustainable lifestyles, with particular focus on women and youth.
- Promote and bring to the attention of policy and decision makers the importance of sustainable public procurement.

The main priorities of the Action Plan are to enhance energy access and efficiency, promote the efficient use of oil and natural gas, increase the share of renewable energy in the total production and consumption, encourage access to renewable energy, particularly in rural areas, improve air quality, and encourage the development of carbon sinks through afforestation.

A number of countries in the Arab region have started in adopting a green economy strategy like the UAE, or has channeled investments in green sectors, such as Egypt, Morocco and Saudi Arabia where large investments, for example, have gone into the production of solar energy. Egypt has also taken the lead in the region in investing in wind energy, Egypt’s plan is to reach 20% share of renewable energy by 2020 out of which 12% from wind. Masdar city in Abu Dhabi is another example of introducing sustainable and green cities and building concepts in the region. (ESCWA, LAS, UNEP, 2011).

In 2013, several regional meetings related to SCP have taken place in the Arab region; these included the Arab Regional Implementation Meeting for the Twentieth Session of the United Nations Commission on Sustainable Development (CSD-20) as a Follow-up on Rio+20 in Dubai in May 2013. Another important meeting is the Multi-stakeholder meeting on SCP in the Arab region: the 4th Roundtable Meeting on Sustainable Consumption and Production Cairo which was held in Egypt in June 2013 and emphasized the importance of transition toward a green economy as a means to enhance resource efficiency, and altering consumption and production patterns towards more sustainable practices.
1.3. SCP in the Barcelona Convention and MAP

The 21 Contracting Parties of the Barcelona Convention have recognized the importance of switching to more sustainable patterns of production and consumption in order to achieve sustainable development which was translated through a series of informal and formal events. The main milestones of this process include:

- **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 organized by CP/RAC in Barcelona
- **2009**: The 16th Conference of the Parties of the Barcelona Convention (COP) held in Marrakech identifies SCP as one of the six thematic priorities of MAP’s Five-Year Programme 2010-2014 and the second SCP Programme of Work 2010-2011. Likewise the Contracting parties endorsed the CP/RAC mandate on SCP in the Mediterranean.
- **2011**: The 14th Meeting of the Mediterranean Commission for Sustainable Development (MCSD) held in Budva requested the Contracting Parties of the Barcelona Convention to strengthen SCP action to advance towards sustainable development
- **2012**: The COP 17th held in Paris approved the third biennial Programme of Work on SCP for the years 2012-2013. Likewise, the Paris Declaration reaffirmed 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”

The above mentioned milestones clearly reflect the world’s forefront position of the Mediterranean region in addressing SCP. Since 2005 many actions have been developed through the main programmes for regional cooperation (e.g. MAP, Horizon 2020, MedPartnership, Union for the Mediterranean) to raise awareness on SCP and to provide capacity building and technical assistance to the countries of the region.

SCP constitutes a top priority in the Mediterranean and is to be fully addressed by the MAP system. In that respect, all MAP components own a unique environmental and developmental expertise in different fields of work, which provides an added and complementary value for the integration of SCP in the Mediterranean:

- **Blue Plan’s** studies and research on Mediterranean Environment and Development trends are valuable tools to understand the links between economic, environmental and social challenges faced by the region and to help countries and decision-makers in reorienting policies towards SCP. Likewise, the Center performs a leading task in the redefinition and adaptation of priority Mediterranean sectors, e.g. Tourism, Transport, etc, to SCP models driving them to sustainable patterns of development.

- **CP/RAC** mandate focus on providing capacities and training on SCP tools like eco-products and services design, sustainable public procurement, sustainable consumption and lifestyles. The Center’s work also focus on boosting Green Entrepreneurship, the creation of new business models providing economic, environmental and social value and supporting Civil Society as drivers for SCP. In that task, the center is strongly working in creating awareness and promoting education among Mediterranean population on their role and responsibility as citizens and consumers in driving changes towards sustainable development.
• **PAP/RAC**’s task on a sustainable coastal management provides the Center with an integrated focus to the environmental and socio-economic development of the Mediterranean littoral. That integrated focus is a cornerstone for the identification of SCP priorities in human activities developed in coastal regions.

• **MEDPOL** coordinates the drafting of the main legally binding measures to address Pollution from Land-Based Sources and that identify concrete pollution reduction targets to which address SCP measures.

• **SPA/RAC** mandate of promoting protected areas, implementing action plans and building national capacities for the conservation of natural sites and threatened species is an essential contribution to the sustainable management of marine and coastal natural resources, a main component for SCP and sustainable management of resources. Likewise, the Center’s work on marine resources alteration in relation to human exploitation and climate change constitutes valuable information to raise population’s consciousness on how their consumption and production patterns and an unsustainable management of resources influence the vulnerability of marine fauna.

• **REMPEC**, whose mandate relates to the preservation of the marine environment, contributes significantly to SCP by promoting sustainable shipping, which could be defined as the application of best practices recognized by industries and governments at international level, starting from the ship’s design, continuing with its management and operation, to final recycling. By encouraging Contracting Parties to the Barcelona Convention to comply with international standards, the Centre helps create a consistent system that reduces the risk of maritime incidents. By enhancing the capability of the Mediterranean Coastal States to prepare for and react to a spill, the Center contributes to protect the livelihoods of local communities.

• **EcAP Programme**, lead by **MAP Coordinating Unit**, with the involvement of all the MAP centers, for the application of the Ecosystem Approach in the Mediterranean will provide a set of indicators identifying the carrying capacity of the region’s ecosystems according to which human activities must adapt and therefore change unsustainable patterns of consumption and production.

As such, the Mediterranean Action Plan offers a unique regional framework for the implementation of SCP tools given that SCP is an integral part of the mandate of the different MAP centers and activities.

### 2. The SCP tools and their interactive universe

#### 2.1. SCP tools: Evolving from End of Pipe to Cleaner Production

Within recent decades, the world has witnessed a paradigm shift from pollution control through End of Pipe (EoP) solutions to pollution prevention strategies, based on the concept of Cleaner Production (CP).

The “End of Pipe” approach has developed in the 70’s with the set up of environmental legislations. It is based on the collection of the pollution outputs (wastewater, solid wastes, air pollution) of the industrial process and their treatment to respond to the standards of discharge fixed by the regulation.
This approach allowed the reduction of pollution loads from industrial activities into the environment, however, the treatment technologies adopted by the industrial plants had a number of limitations including:

- Transfer of pollution, as by-products of the treatment process have posed additional concerns;
- Increasing the total cost of the production, as the investment and operational costs of the treatment technologies can be very high;
- Halting technological innovation of the industrial processes, as EoP technologies refrained enterprises from investing in research and development of new and less polluting technologies.

Cleaner Production programmes emerged in the 1980s as a commitment towards prevention of pollution rather than its control and which can be adopted within all sectors, whether it is a household or a large industrial complex. As such, CP has seen a number of shifts in pollution prevention approaches as presented in Figure 1 below (UNEP, 2012), including:

- From reactive to preventative measures
- From acute to chronic problems and sources of impacts
- From single-pollutant or single-media to multimedia and multi-impact pollutants
- From site-specific to supply chains
- From throughput to material cycles

Despite this major progress in addressing environmental pollution, cleaner production has directed its focus towards production aspects, particularly within the manufacturing sector. The adoption of CP has typically involved improving maintenance, technology or entire production processes and could generate economic savings for companies by improving efficiency of production processes.

At the UN Conference on Environment and Development held in Rio de Janeiro in 1992, the notion of unsustainable patterns of consumption and production first came to the fore. World leaders acknowledged that “the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production” (UN, 1992). The final declaration of the Rio conference proclaimed that in order to achieve sustainable development, SCP needed to be adopted.

As such, a paradigm shift in environmental policy saw increasing attention paid to the subject of ‘sustainable consumption and production’, emphasizing a shift toward a more systemic approach for sustainable development based on the concepts and tools for SCP as presented in the section below.
2.2. Definition of concepts and tools for SCP

SCP is most appropriately implemented in an integrated way involving all key stakeholders/target groups empowering them to participate with their respective SCP tools and approaches. The individual sectors/target groups in society responsible for eventually making SCP work are: i) Government/Policy makers, ii) Producers/Service Providers, iii) Citizens, and iv) Civil Society and Research Organizations. Each stakeholder group has its individual field of action with a wide range of SCP tools. Table 1 below and Figure 2 below provide an overview of SCP tools and approaches at the level of the different groups; these are described in detail in the sections below.
For **government and policy makers**, SCP policies and instruments cover crosscutting economy-wide SCP related strategies, programmes and action plans, targets and indicators as well as the institutional framework supporting SCP, as well as specific SCP policy instruments.

For **producers and service providers**, SCP is based on sustainable products/goods produced by resource efficient and cleaner production processes, distributed in an efficient and sustainable manner with the final aim of a circular economy. As a step towards this, the European Commission published a Manifesto for a Resource Efficient Europe which confirms "In a world with growing pressures on resources and the environment, the EU has no choice but to go for the transition to a resource-efficient and ultimately regenerative circular economy" (European Commission, 2012). In addition the current job situation in South European countries has highlighted the important role of responsible production and sustainable job creation.

For **consumers and the civil society**, SCP is a crucial step for the final success of efforts made at all levels. The most sustainable products from industry will not survive on the market if consumers prefer the (possibly slightly cheaper) unsustainable products. Vice versa eco-informed consumers can trigger a switch in consumption and consequently on production. Therefore only through an integrated SCP-approach based on informed consumers choice sustainable development will become a reality.

**Table 1: Classification of SCP according to target groups, categories and tools/approaches**

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>SCP categories/strategies, programmes and action plans</th>
<th>SCP Tools/Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Thematic strategies, programmes and action plans</td>
<td>• National strategy and action plan for SCP; • Related strategic policy documents (e.g. waste management) • Mainstreaming SCP into existing strategies • Indicators for SCP monitoring Environmental footprint of country/nation,</td>
<td>• Sustainable Urban Development strategies • ICZM • Sustainable tourism strategies and programmes</td>
</tr>
<tr>
<td>2. Regulatory instruments, standards</td>
<td>• Legislative command and control approaches (incl. Bans and Restriction) • Targets (e.g. recycling) • Limits (e.g. energy use) • Negotiated target setting • Polluter pays principle</td>
<td></td>
</tr>
<tr>
<td>3. Economic Instruments</td>
<td>• Green tax reform • Environmental/Ecological taxation and charges • Removal of environmentally harmful subsidies • Green certificate markets/ emissions trading (EU ETS and Kyoto Protocol) • Green Public Procurement (GPP) • Trade policy • Ethical Investment / Socially Responsible Investment (SRI)</td>
<td></td>
</tr>
<tr>
<td>4. Voluntary agreements</td>
<td>• Voluntary reporting initiatives; • Voluntary targets for product improvements and emissions reductions, • Voluntary certification schemes</td>
<td></td>
</tr>
<tr>
<td>5. Information based instruments</td>
<td>• Consumer guidelines • Consumer campaigns • Websites and portals • Education on SCP • Capacity building for authorities and/or the private sector</td>
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</tbody>
</table>
### 6. Design for sustainable products and goods
- Ecodesign
- Design for sustainability D4S
- Dematerialization
- Cradle to Cradle design (or regenerative design)

### 7. Sustainable resources management
- Circular Economy
- Reduce - Reuse – Recycle (3Rs)
- Zero Waste
- Life cycle thinking (LCA – ISO 14044; LCM and LCC)
- Material/Substance Flow Analysis (MFA)
- Product environmental footprint
- Environmental Management: ISO 14001 & EMAS
- Environmental Labelling and Certification (EU Ecolabel – ISO 14024)
- Environmental Product Declaration (EPD – ISO 14025)
- Energy-Efficient Buildings (zero-energy buildings)
- Renewable energy
- Product service system
- Green Servicing (GSS)
- Chemical leasing
- Green and Sustainable procurement
- Sustainable agriculture (e.g. SAN)
- Sustainable forestry (e.g. FSC)
- Sustainable catering for workers

### 8. Cleaner and Responsible Production
- Use of indicators and controlling (to identify losses from poor planning, poor education and training, mistakes)
- Substitution principle (substitution of raw materials and auxiliary materials, hazardous chemicals, …)
- Increase of useful life of auxiliary materials and process liquids (by avoiding drag in, drag out, contamination)
- Improved control and automation
- Reuse of waste (internal or external)
- Clean and efficient technologies
- Low waste processes and technologies
- ISO 14064 - greenhouse gas (GHG) accounting and verification
- BATs/BEPs
- Green Chemistry
- Risk management
- CSR- ISO 26000
- Internalization of Environmental and Social Costs
- Extended Producer Responsibility
- Green Entrepreneurship
- Ethical and fair Trade
- Ethical Investment / Socially Responsible/Green Investment (SRI).
- Green jobs and decent work

### 9. Sustainable Packaging and Distribution
**Sustainable Packaging**
- Use of minimal materials
- Logistics efficiency (through complete life cycle)
- Energy efficiency.
- Use of recycled materials
- Recyclability and Reusability of packaging
- Use of biodegradable materials
- Substitution of materials toxic to humans or the environment

**Sustainable Distribution**
- Vehicle development
- Engine specifications/trailer design/greater capacity vehicles
- Use of alternative fuels
- Vehicle telematics/driver training/vehicle maintenance
- Logistics system redesign

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5 Availability of employment in conditions of freedom, equity, human security and dignity


10. Sustainable consumer behaviours / Sustainable Lifestyles

- Sustainable food and drink consumption choices (e.g. Fair trade products, Eco labelled products, etc.) for healthy lifestyles
- Sustainable housing consumption choices : (e.g. through energy-efficient refrigerator and energy saving bulbs)
- Sustainable mobility and travel behaviour (e.g. ecotourism and responsible tourism holidays)
- Sustainable fashion
- Socially responsible investment (SRI), also known as sustainable, socially conscious, "green" or ethical investing, is any investment strategy which seeks to consider both financial return and social good;
- Ecological footprint; eco-sufficiency
- Responsible care for goods (including waste)

11. Education and awareness raising

- Education Programmes for Sustainable Consumption
- Environmental education and awareness programmes
- Research on education for sustainable and healthy lifestyles

12. Actions to create a driving force for switching private companies and public policies to SCP

- Public Awareness Campaigns
- Social networks
- Communication/ Media
- Research on the SCP drivers

2.3. SCP and Governmental policies and institutions

The supporting overall national policy framework and their individual tools (as indicated in Table 1 above) for encouraging and supporting implementation of SCP are: i) regulatory instruments and standards, ii) economic instruments, iii) information-based instruments and iv) voluntary agreements.

**Regulatory instruments** include elements such as product and substance bans, emissions limits, production process standards, minimum product standards and building codes aimed at determining which products, services, substances and production methods should be allowed. The application of SCP related regulation may be of high importance to businesses since they could potentially destroy and create markets (e.g. bans of certain products will often create new markets) (SwitchAsia Network Facility, 2010).

**Economic Instruments** are monetary incentives or disincentives to act in a manner supportive of policy objectives. Such a policy can complement or avert the need for regulatory (command and control) approaches. Examples in relation to SCP include green tax reform including environmental taxes (e.g. Energy and fuel taxes) and charges, full-cost pricing, the removal of environmentally harmful subsidies and shift to subsidies for ecologically preferred systems (e.g. renewable energy systems and energy-saving in buildings). Environmental/Ecological taxation refers to taxes intended to promote ecologically sustainable activities via economic incentives (Mortensen et al, 2001).

**The voluntary agreements** might be used as policy instruments to some extent for supporting regulatory instruments in particular in countries with limited regulatory and enforcement capacity. These can be developed by partnership between government and business and are aimed at achieving environmental benefits in an efficient manner by involving business directly (SwitchAsia Network Facility 2010).

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As indicated in Figure 3 below, Governmental policies and institutions play a major role in the promotion of SCP through the establishment of crosscutting economy-wide SCP related strategies, programmes and action plans, targets and indicators as well as the institutional framework supporting SCP.

Figure 3: The overall national policy framework encouraging SCP
(Source: SwitchAsia Network Facility, 2010)

One way in which governments have promoted SCP has been through the negotiation and implementation of multilateral environmental agreements (MEAs). Although most MEAs do not explicitly refer to SCP, in practice, treaties impact and alter many stages of a product’s life cycle. The Barcelona Convention and its related protocols constitute a major asset for engaging Governmental action in SCP given the commitment of Mediterranean Governments and institutions to the various agreements under the Barcelona convention and the direct provisions which have been made with regards to SCP within the Barcelona Convention.

Governments can also ensure that relevant institutions are providing the support needed for SCP related policy design and capacity building activities, as well as SCP-related demonstration projects such as sustainable public procurement, sustainable tourism, sustainable buildings and construction, etc,

National level SCP planning is largely part of existing national strategies for sustainable development or other short- and medium-term development plans. More recently, National Green Growth strategies have also been initiated in several countries and constitute a solid entry point for anchoring SCP planning given that these strategies address SCP-related issues such as investments in sustainable infrastructure, raising revenue and improving eco-efficiency while reducing poverty.

As such, the supporting overall national policy framework and plans allow an enabling environment for encouraging and supporting the development and implementation of SCP policy instruments which are needed for the adoption of SCP principles.

2.4. SCP and the private sector

For producers/service providers, the categories of field of action with their individual tools (as in indicated in Table 1 above) are: i) Sustainable resource management/Circular Economy; ii) Cleaner production; iii) Responsible production and sustainable jobs; iv) Sustainable products & goods; and v) Sustainable packaging & distribution.

While these action fields are closely interlinked and partly overlap the systematic provides a useful structure of the production/service provider sector for further actions of addressing the individual sectors and to utilize them towards sustainable production.
Responsible production incorporates innovation and the creation of new sustainable business models and jobs generating economic, environmental and social values without compromising the environment. The additional benefits of these green and decent jobs include a better quality of life and, in particular, the relative reduction of poverty. Production areas of particular interest in this respect include organic farming, renewable energies, sustainable housing, sustainable transport and tourism and green chemistry. Similarly the recycling and repair, restoration or the recovery of materials are the foundations of sustainable waste management in a society moving towards a circular economy. Some of these working areas are highly labour intensive and green entrepreneurship has the potential to create large numbers of green and decent jobs. A further important service area is education - for all ages - which has a low ecological footprint and is the basis of a knowledge based sustainable society.

Making SCP work will not happen only through the role of the public sector and international bodies, which will shift the “invisible hand” of economies towards sustainability through procurement, regulation and market-based tools.

For SCP to take root and reach results, the private sector, which governs most of the production processes and consumption patterns, must find a win-win basis for engaging in SCP:

- SCP must be financially viable, in a way it is more viable than non-sustainable practices,
- SCP must be socially rewarding, in a way that is understood, accepted and supported by the public at large, giving an additional incentive to business to become part of it.

This is why designing and implementing an SCP roadmap and action plan needs to be done in close consultation and with the involvement of the private sector, ranging all the way from industry and production (from raw materials extraction to specialized products), to the commercial and consumption networks and actors, including large and small retail operations, advertising, media, consumer unions, not excluding the finance and insurance sectors.

### 2.5. SCP and the civil society

Citizens constitute an important pillar for the success of SCP principles and actions. Priority areas for personal action include sustainable food & drink choices, sustainable energy use; eco-efficient housing; low impact transport and mobility including greener tourism; and purchase of sustainable clothing (as indicated in Table 1 above). Personal choices of ethical banking and investment schemes is another important tool available to individuals and families which can give positive support for greener and more sustainable industries and entrepreneurs whilst diverting investment and funding from unsustainable production and services.

<table>
<thead>
<tr>
<th>Sustainable consumption should be considered within a framework of overall sustainability and a healthy lifestyle.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A sustainable lifestyle</strong> includes: respect and care for one’s own body (healthy life style), responsible care for the community and respect for the environment and ecological system (ecological footprint)</td>
</tr>
<tr>
<td>Sustainable lifestyles also include the responsible care for goods through their entire life-cycle and particularly their end of life phase. Taking responsibility in this way ensures a mechanism for separation of waste/resources at source which is a pre-condition of effective waste management and efficient recycling/recovery of materials within a circular economy.</td>
</tr>
</tbody>
</table>

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8 Decent work involves opportunities that are productive and deliver a fair income, security in the workplace, social protection for families, better prospects for personal development and social integration.
Such a switch in purchasing habits can be considered a mean for greening the economy and supporting a green growth. While for the right choice eco-labels can play an important role, it needs an initial awareness and appropriate information which in addition to governmental education and awareness programs is complemented by civil society groups. They are often uniquely capable of linking civil society with the sustainability agenda. The roles that may be played by civil society and NGOs are wide and varied – from the promotion of sustainable consumption by organizing farmer’s markets through training and education in, for example, composting and recycling to lobbying in multilateral environmental agreements. Some NGOs and community based organisations collaborate closely with relevant governmental bodies to deliver national and international programmes such as the UN Decade of Education for Sustainable Development (DESD) for UNESCO to support its national implementation or the United Nations Convention to Combat Desertification (UNCCD) implementation processes.

Governments should encourage and empower Civil Society to be partners rather than “enemy” in the promotion and implementation of SCP programs. Governments have a key role in raising awareness and educating citizens about the positive effects of sustainable consumption and production. Educating citizens about the nature and the positive impact of SCP will allow them to recognize how SCP can improve their lifestyle.

The Research Community is another civil society group which can support education of the consumers, the industry and the policy makers on specific challenging and complex topics (e.g. climate change, chemical pollution, (environmental) health).

Decoupling of environmental degradation growth from economic development is a core objective of UNEP and European Union in the context of sustainable consumption and production. Decoupling is achieved when a quantum of economic growth does not cause a similar level of growth in environmental pressure (resource use and/or emissions). According to Doran (2007), two forms of decoupling are generally acknowledged: 1) relative decoupling when the environmental impacts grow at a slower rate than the economy; 2) absolute decoupling when the environmental impact diminishes while economic activity continues to grow. In both forms, SCP can provide concrete tools to empower the Civil Society and achieve “decoupling” of multi-stakeholder cooperation.

Businesses, consumers, workers and policy makers cannot bring about this change by themselves and Civil Society can play an effective role in the whole SCP process coordinating actors, encouraging them to work together, consolidating and extending partnerships where they exists and creating new ones such as between workers and consumers. Moreover, new actors need to become more actively engaged, such as scientists, teachers and educators, retailers, media, and development cooperation agencies, among others. Last but not least, formal and informal SCP education and awareness has a large role to play to empower Civil Society.

2.6. SCP as a transversal approach

The experience gained through the pursuit of sustainable development, since the 1992 UN Conference on Environment and Development, has shown that is it clearly not enough to regulate environmental protection on pollution, waste, biodiversity and other fields, while at the same time providing market-based incentives to businesses and to consumers. To get there, the sum must be greater than the addition of the parts, and this can only happen if the building blocks are interlinked.

SCP is aiming at doing exactly that: through the establishment of circular economies, in which resources are reused rather than used and dumped, and a lifecycle approach that takes into
account the environmental and resource utilization footprint of all materials (and services), running through the entire cycle. This includes the impact on ecosystems and biodiversity, emissions and pollution, and the effect on critical resources such as water, energy and soil. In this way it builds a level playing field for governments, business and citizens to assess whether a product or a service weigh too heavy on society to be good enough.

However, this is not only about environmental protection. It is more so about development. By encouraging innovative solutions, that limit negative effects of the production process, and by limiting wasteful and harmful resource use, both as raw material sources and in their role as global sinks, economies of scale emerge in the production and consumption patterns, allowing the development process to channel wealth towards employment, social services, and to invest in producing more, with less. Coupled with increased awareness and voluntary tools, such as labelling, it can make an enormous difference.

In a region such as the Mediterranean, the entire concept comes under a magnifying lens: Burdened by pressures including severe climate change impacts, water shortage, marine pollution, unsustainable footprints (Global Footprint Network 2013) and increased pressures on the coastline, and at the same time in great need of reviving economic development both on the North and South coasts, SCP seems to be much more than just a “good idea”. It seems to be the only way to secure a viable, social and economic future for the region.

3. Added value of the SCP tools for the implementation of the Barcelona Convention, its protocol and Regional Plans

To strive for a more sustainable Mediterranean is a general requirement and aim of the Barcelona Convention:

*The Contracting Parties shall individually or jointly take all appropriate measures in accordance with the provisions of this Convention and those Protocols in force to which they are party to prevent, abate, combat and to the fullest possible extent eliminate pollution of the Mediterranean Sea Area and to protect and enhance the marine environment in that Area so as to contribute towards its sustainable development (art 4.1, General Obligations, Barcelona Convention).*

As elaborated above, SCP has been formally acknowledged by the MAP as a key objective to attain sustainable development in the Mediterranean. It therefore directly entailed the integration of SCP in the regulatory framework of the Barcelona Convention as Art. 4 of the Convention expressly refer to sustainable development as objective.

This section will highlight how the regulatory framework of the Barcelona Convention includes a range of requirements and measures for which the application of the many SCP tools already available, detailed in the previous section, are needed to achieve the objectives pursued by the Convention, its protocols and their corresponding legally binding plans for action.

CP/RAC, with the support of the Mediterranean SCP Expert Group (MSEG), analyzed the Barcelona Convention, its protocols and Regional Plans and identified a number of relevant articles for which SCP tools can offer an added value for their implementation.
Thus, the next chapters detail the specific SCP tools relevant for the identified articles and argument, with specific examples, how they can be used to support the implementation of the:

- Protocol for the Protection of the Mediterranean Sea against Pollution form Land-Based Sources and Activities (hereinafter LBS Protocol) and its legally binding Regional Plans:
  - Regional Plan on the elimination of POPs
  - Regional Plan on the reduction of BOD₅ in the food sector
  - Regional Plan on Marine Litter Management in the Mediterranean
- Protocol on Integrated Coastal Zone Management in the Mediterranean (hereinafter ICZM Protocol),

The Governments representing the Contracting Parties of the Barcelona Convention have the main responsibility for the implementation of the Convention, its strategies, protocols and regional plans. To that end they are developing and implementing national action plans.

However from an SCP point of view, the active involvement of producers, service providers, civil society organizations and the individual consumers is absolutely essential to translate plans and programmes into real actions and activities creating impacts on the ground.

As mentioned in the previous section, only through an integrated SCP-approach by Governments, producers and consumers, sustainable development will become a reality.

Therefore the next chapters will suggest the measures to be developed by the Governments and their policy-makers to encourage and create an enabling framework for the development of SCP in their countries. But it will also detail the responsibilities to be taken by the private sector as well as the individual and collectives actions to be develop by the civil society.

### 3.1. SCP tools for the implementation of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities (LBS Protocol)

Today with approximately 100,000 chemicals used in the market; according to a recent screening more than 2900 are potential persistent, toxic and bioaccumulative substances (Strempel et al. 2012). Most of those substances are land-based generated, through the production, use and release of toxic substances and the release of unintentionally produced persistent organic pollutants (POPs) from industries.

The LBS protocol provides the framework for addressing major sources of pollution and the development of best practices to prevent, reduce and control pollution.

The LBS protocol requires the Contracting Parties to elaborate national and regional action plans and programmes in those areas deemed to be of particular significance because of their link to the production of substances that are toxic, persistent and bio-accumulate (art. 5 of the Protocol).

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9 1996 of Alpha hexachlorocyclohexane, Beta hexachlorocyclohexane, Hexabromobiphenyl, Chlordcone, Pentachlorobenzene, Tetrabromodiphenyl ether and Pentabromodiphenyl ether, Hexabromodiphenyl ether and Heptabromodiphenyl ether, Lindane, Endosulfan, Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfone fluoride.
In the development of those plans, Best Available Techniques (BAT), Best Environmental Practices (BEP) and cleaner production are identified as key tools to effectively address pollution reduction. (Art 5.4 of the protocol). Likewise, Art.9 of the Protocol states that countries shall promote access to, and transfer of cleaner production technologies.

According to the updated joint UNEP/UNIDO definition of Cleaner Production (2012), resource efficiency is also included as a key element of the transitions towards Green Industry and Green Economy. Instead of “Cleaner Production”, they now refer to “Resource Efficiency and Cleaner Production (RECP)” (RECP) continuously applies integrated and preventive strategies to processes, products and services. This increases efficiency and reduces risks to humans and the environment. RECP specifically works to advance:

- **Production Efficiency** – through optimization of productive use of natural resources (materials, energy, water) at all stages of the production cycle;
- **Environmental Management** - through minimization of the adverse impacts of industrial production systems on nature and the environment;
- **Human development** – through minimization of risks to people and communities, and support to their development.”

RECP tools include, among others, Life Cycle Thinking, Material/Substance Flow Analysis, Life Cycle Analysis (LCA), Eco-Design, Cradle to Cradle, Substitution Approach, and so on.

UNEP/UNIDO invariably refers to those tools as RECP and SCP tools as they go beyond the implementation of traditional environmental technologies in industrial processes and cover the overall consumption and production cycle of products and services.

Likewise SCP tools are covered in the definition of BAT and BEP established by Annex IV of the LBS protocol. The table next page lists these BEP measures and suggests specific SCP tools for the effective implementation of each of these measures by the different target groups.
<table>
<thead>
<tr>
<th>BEP measures (Annex IV)</th>
<th>SCP tools for the different target groups</th>
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<tbody>
<tr>
<td>(a) the provision of information and education to the public and to users about the environmental consequences of choice of particular activities and choice of products, their use and ultimate disposal</td>
<td>Government/Policy Makers</td>
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<tr>
<td></td>
<td>Awareness raising designed to target different stakeholders on SCP and lifestyles</td>
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<td></td>
<td>Development of Eco-labels</td>
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<td></td>
<td>Pollutant Release and Transfer Register (PRTR)</td>
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<tr>
<td>(b) the development and application of codes of good environmental practice which cover all aspects of the activity in the product’s life;</td>
<td>Government/Policy Makers</td>
</tr>
<tr>
<td></td>
<td>Development of Eco-labels</td>
</tr>
<tr>
<td></td>
<td>Extended Producer Responsibility (EPR)</td>
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<td></td>
<td>Polluter Pay Principle</td>
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<tr>
<td>(d) saving resources, including energy</td>
<td>Government/Policy Makers</td>
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<tr>
<td></td>
<td>Ecological taxation</td>
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<tr>
<td></td>
<td>Energy Tax</td>
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<td></td>
<td>Energy efficiency criteria in eco-labels and Green Public Procurement</td>
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<tr>
<td></td>
<td>Trading schemes</td>
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<tr>
<td></td>
<td>Subsidies / removal of harmful subsidies</td>
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<tr>
<td>(e) making collection and disposal systems available to the public;</td>
<td>Government/Policy Makers</td>
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<td></td>
<td>3R’s concept (Reduce, Reuse and Recycle)</td>
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<td></td>
<td>Recycling targets</td>
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<tr>
<td></td>
<td>Collection fee</td>
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<tr>
<td>(f) avoiding the use of hazardous substances or products and the generation of hazardous waste;</td>
<td>Government/Policy Makers</td>
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<tr>
<td></td>
<td>Restrictions/bans;</td>
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<td></td>
<td>Polluter pays principle ;</td>
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<td></td>
<td>Extended Producer Responsibility</td>
</tr>
<tr>
<td>(g) recycling, recovery and re-use;</td>
<td>Government/Policy Makers</td>
</tr>
<tr>
<td></td>
<td>Recycling target</td>
</tr>
<tr>
<td></td>
<td>Ecological taxation;</td>
</tr>
<tr>
<td>(h) the application of economic instruments to activities, products or groups of products;</td>
<td>Government/Policy Makers</td>
</tr>
<tr>
<td></td>
<td>Green tax reform;</td>
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<tr>
<td></td>
<td>Ecological taxation / Removal of environmental harmful subsidies</td>
</tr>
<tr>
<td>(i) establishing a system of licensing, involving a range of restrictions or a ban.</td>
<td>Government/Policy Makers</td>
</tr>
<tr>
<td></td>
<td>Bans and restrictions;</td>
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<td></td>
<td>Targets (e.g recycling)</td>
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<td></td>
<td>Limits (energy use);</td>
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<td></td>
<td>Polluter pays principle</td>
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</tbody>
</table>
In the following paragraphs, the main findings of the previous table are further explained and selected case studies illustrate SCP tools and initiatives.

**SCP Tools to be used by policy-makers to facilitate the implementation of the BEP measures (h), (i), (e) and (a) of the annex IV of the LBS protocol**

In order to implement the BEP measure (h) "application of economic instruments to activities, products or groups of products", the SCP approach offers a wide range of possibilities for policy-makers. Reforming the incentive system, including the tax and subsidy system is essential if consumption and production is shift into a more sustainable path. Economic instruments include taxes, credits, subsidies and tariffs.

- Subsidy systems need to be designed to discourage the uses of hazardous substances and encourage sustainable investments and the use of sustainable materials and energy. Perverse subsidies include subsidies for energy, agriculture, water, and roads. It is estimated that energy subsidies alone amounted to US$ 523 billion in 2011 (International Energy Agency, 2013). It is also estimated that phasing out subsidies on water would reduce water consumption by 20-30% (UNDP Human development Report, 1998). Trade policies can also be instrumental in promoting environmentally positive practice. The greening of the Indian textile industry in response to a German ban on azo dyes is one typical example (IIED, Unlocking Trade Opportunities, 1997).
- The tax system needs to be designed to also tax environmentally harmful activities. It is necessary to avoid a system which attempts to introduce minor corrective measures such as green taxes, while mainstream incentive measures such as conventional tax and subsidy systems are dominating, thus creating market distortions.
- Tax cut and exemptions can also be used to encourage environmentally positive production processes and practices.
- Other measures include the development of eco-labels, which is a combination between a regulatory and a market incentive scheme.

As for the BEP measure (i) "establishing a system of licensing, involving a range of restrictions or a ban", it could be addressed by:

- **Regulatory instruments** such as bans/restrictions or targets/limits.
- SCP related targets are e.g. recycling quota. Appropriate recycling quota can generate green jobs, a more sustainable resource use and also lead to more sustainable products (i.e. Eco-design considering also the end-of-life phase).
- Tools like **eco-labels** (see case study next page) and Green Public Procurement (GPP).

In combination with restrictions of energy demanding or toxic chemical containing products these SCP tools can stimulate innovation in the industrial sector, generate new market and business opportunities, create green jobs and thus stimulate a greener economy.
The BEP measure (e) “making collection and disposal system available to the public” is the basis for establishing proper recycling and material recovery, improve the control of material/substance flows and therefore is the basis for life cycle management and the development of a circular economy.

Last but not least the BEP measure (a) on “the provision of information and education to the public and to users about the environmental consequences of choice of particular activities and choice of products, their use and ultimate disposal” is best addressed by Education and Awareness programs on SCP. Formal and informal education on SCP is essential to create a critical mass of citizens aware of the environmental and social impact of products and services and with the potential to switch to sustainable lifestyles.

Government can introduce SCP in the education curricula starting from kindergarten to high schools or in “life long learning” concepts. Tools like the ecological footprint10 or the ecosystem indicator (UNEP 2005)11 could be really useful to raise awareness on the need to switch to sustainable patterns of consumption and production.

To sum up, SCP tools for the implementation of the LBS protocol have to be addressed within a SCP National Action Plan or mainstreamed into existing strategies. Such plans could serve as overarching programme and should serve the implementation of the LBS protocol.

**SCP tools to be used for the reduction of hazardous chemical in production processes in order to facilitate the implementation of the BEP measure (f) of Annex IV of the LBS protocol**

The BEP measure (f) “avoiding the use of hazardous substances or products and the generation of hazardous waste” constitutes one of the most crucial measures for the implementation of the LBS protocol. It can only be appropriately addressed by an integrated approach using SCP tools and involving different stakeholders.

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The government/policy-makers need to set the frame and can reduce the consumption of hazardous chemicals using tools like Eco-labels\(^\text{12}\), Polluter-Pays-Principle, ban and restriction of the most hazardous chemicals within an appropriate chemical regulation scheme. In Europe, despite the REACH regulation approx. 2900 persistent, toxic chemicals are potentially in current use (Stremper et al. 2012).

These chemicals are finally ending up in products and the waste flow. Taking into account the current waste management situation in most Mediterranean countries, it represents a threat for human health, the environment and the Mediterranean Sea as a whole (see also chapter 3.3 related to the hazardous waste protocol).

Therefore in addition to a governmental set regulative framework, producers/industry play a key role in eliminating toxic chemicals in production and products. A key SCP tool is here the Substitution Approach of critical chemicals (see case study SUBSPORT below) which is one base for other tools like Eco-design, Cradle to Cradle or chemical leasing.

However only if a critical mass of consumers is aware on the threats of chemicals, and decides to consume ecological and low toxic products, the private sector will be further stimulated to adopt sustainable practices and a change will be effective.

In addition to education and awareness raising actions led by governments, civil society organizations could play a crucial role to inform consumers and develop SCP materials and films (e.g. www.IPEN.org) on the impact of hazardous waste. Furthermore cooperation between Civil Society groups and producers/industry can lead to the development of voluntary agreements like The DeTox campaign of Greenpeace (see case study below).

\begin{center}
\begin{tabular}{|l|
\hline
\textbf{SUBSPORT project} \\
\textbf{The goal of the SUBSPORT project is to develop an internet portal that constitutes a state-of-the-art resource on safer alternatives to the use of hazardous chemicals. It is a source of not just information on alternative substances and technologies, but also of tools and guidance for substance evaluation and substitution management.} \\
\textbf{The portal is intended to support companies in fulfilling substitution requirements of EU legislation, such as those specified under the REACH authorisation procedure, the Water Framework Directive or the Chemical Agents Directive. More than 300 case studies have been compiled, benefiting to industries, authorities, environmental, consumer organizations and scientific institutions.} \\
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\begin{center}
\begin{tabular}{|l|
\hline
\textbf{Greenpeace DeTox Campaign} \\
\textbf{With a range of large textile brands Greenpeace has signed a DeTox Agreement for reduction of hazardous chemicals. Brands include Nike, Adidas, Puma, H&M, M&S, C&A, Li-Ning, Zara, Mango, Esprit, Levi’s, Uniqlo, Benetton, Victoria’s Secret, G-Star Raw and Valentino. This agreement includes also the de-pollution of the supply chain in particular the de-pollution of release water. This is an example of cooperation of civil society groups with industrial stakeholders with Voluntary Agreements going beyond national legislation (in particular in factories in developing countries) but having in mind prevention and the precautionary principle.} \\
\hline
\end{tabular}
\end{center}

\(^{12}\) Currently the EU Eco-label is establishing an approach for a more systematic restriction of hazardous chemicals. Up to now attempts failed to restrict e.g. entire problematic chemical groups like brominated flame retardants in EU eco-label scheme although more sustainable solutions are available (Shaw et al. 2011).
Additional SCP tools to be used by Industry for implementation of the BEP measures (d), (b) and (g) of the Annex IV of LBS protocol

Producers/service providers\textsuperscript{13} represent a key stakeholder group for the implementation of the LBS protocol. In addition to their above mentioned role for the sound management, reduction and phase out of hazardous chemicals, they are key actors for the waste management, therefore the adoption of sustainable practices by this group of actors could positively affect the implementation of the LBS protocol. Furthermore producers/service providers are key stakeholders for implementing the BEP measure (d) “saving resources, including energy” which is the core of sustainable production and is a main working area of Resource Efficiency and Cleaner Production (RECP).

Alike, the BEP measure (b) “the development and application of codes of good environmental practice which cover all aspects of the activity in the product’s life” is adequately addressed by SCP tools like Eco-design, Life Cycle Analysis, Life Cycle Management, or Cradle to Cradle. All these innovative approaches provide an opportunity for green entrepreneurs and the creation of green jobs.

Furthermore, applying these SCP tools and approaches in the product design phase highly facilitate the implementation of the BEP measure (g) “recycling, recovery and re-use”. Eco-design ensures that products are easily recyclable, or that some part of the products can be reused or repaired. The labor intensive “repair, reuse and recycle” activities represent a huge opportunity for green job creation and for greening the economy. The Zabbaleen in Cairo are a prime example having optimized recycling, recovery and repair from the waste flow generating a living for several 10,000 people and sustainable resource management with recycling quota superior to many recycling schemes in industrial countries. But it is essential to ensure that the new green jobs are also decent jobs.

Informed consumers as drivers for the implementation of the LBS protocol

According to UNEP and other international agencies like the European Environmental Agency (EEA), the areas of consumption with the largest environmental impacts and pressures are food and drink, housing, mobility and tourism. Achieving the main objective of the LBS Protocol “to eliminate pollution deriving from land-based sources and activities, in particular to phase out inputs of the substances that are toxic, persistent and liable to bio accumulate” unavoidably requires changing consumption patterns and lifestyles towards more sustainable ones.

Improving education and awareness raising on SCP

As specified in annex IV the term “best environmental practice” means the application of the most appropriate combination of environmental control measures and strategies. In this sense the SCP tools related to education and awareness raising within the civil society (e.g. education and awareness programmes for SCP, Public Campaigns…) guarantee the provision of information to the consumers about the environmental, social and economic consequences of the purchase of particular services and products, their use and ultimate disposal (annex IV- ART.6a).

Likewise, it is essential to improve the way environmental issues are communicated. Indeed talking and educating about healthy lifestyles could be more effective than using the “indirect” argument of environmental protection. Awareness campaigns should be designed to target different stakeholders with emphasis on the health, economic and social benefits resulting from adopting a more sustainable pattern of consumption (and production).

\textsuperscript{13} Waste management including hazardous waste management and recycling are often provided by service provided (e.g. in public private partnerships).
Awareness programmes launched by the Governments could be complemented by civil society groups working on chemicals, protection of health for stakeholder groups (children or women) including the research community (e.g. SETAC – Society of Environmental Toxicology and Chemistry).

**Challenging the “consumption” of persistent toxic chemicals**

Informed and sustainable consumption of ecological or at least non-toxic products is essential for consumer’s health, the health of the next generation and a necessity for the protection of the Mediterranean environment.

As mentioned previously, a large amount of persistent toxic chemicals in current use (Strempel et al 2012) are finally included in consumer products (electronics, batteries, textiles, synthetic carpets, performance paper, food packaging etc.). The current chemical legislation, even in industrial countries (including REACH\(^{14}\)), may not sufficiently protect consumer exposure in particular when considering the chemical mixture challenge (Kortenkamp et al. 2009, Prüss-Ustün et al 2011). Consumers are exposed to a mixture of thousands of chemicals and several hundred are currently detected e.g. in blood and human milk of ordinary population (Cameron and Smolka 2005; CDC 2009). In addition to toxic and bioaccumulative chemicals, endocrine chemicals are of particular concern (WHO 2013) as they could result in a low sperm quality of men (Joensen et al 2009; Sharpe R 2009, WHO & FAO 2011, EEA 2012) and in endocrine effects to fishes or other wildlife (Colborn et al. 1993, EEA 2012). Due to the current difficulties to establish a proper legislation for certain chemicals consumers should prevent chemical exposure for their own sake in daily life by switching to more healthy and sustainable products.

Such a switch to more healthy/sustainable products reduces toxic, persistent and bioaccumulative substance release into the environment\(^{15}\) and supports the implementation of the general objective of the LBS protocol (Article 5) and the Barcelona Convention. At the same time sustainable/healthy consumption supports the development of green businesses producing organic food, organic textiles, ecological cleaners, eco-tourism and thus facilitate the move towards a green economy.

**Reducing the energy consumption**

Today a large share of energy is consumed by private households (in particular air conditioners and other electronics). A significant reduction of energy can be achieved by education, awareness and the commitment of the consumer to switch to low energy products (energy efficiency is a key eco-label criteria of electronics) and to the implementation of energy saving measures in households. This could support the implementation of the BEP measure (d) “saving resources, including energy.

The short lifetime of many electronics products constitutes a major pressure on today’s resources. In most cases these products represent an important share of energy consumption in household. Sustainable practices could significantly reduce resources consumption and hazardous waste production.

**Good practices in waste management**

While for the measure (e) “making collection and disposal system available to the public “, once governments/local authorities will have developed the appropriated structures for the recycling and separation at source of waste, the success of these measures will depends on the good practices of citizens. In most countries, one of the largest bottlenecks in today’s waste management is the low level of separation at source (at consumer level). Sustainable and responsible consumption by educated consumers considering also the end-of-life phase of products could bring here a significant change and improvement.

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\(^{14}\) REACH is assessing exposure risk for single chemicals and does not consider the effect of the 100ds of chemicals with the same effect or endpoint.
3.2. **SCP tools for the implementation of the Regional Plans in the framework of the implementation of Article 15 the LBS protocol**

3.2.1. **SCP tools supporting for implementation of the Regional Plan on Food**

The objective of the Regional Plan on Food is to prevent pollution and to protect the coastal and marine environment from the adverse effects of discharges of organic load (BOD5) from food sectors (art. II), in the framework of the implementation of Article 15 of the LBS Protocol.

As complementary to this commitment the Regional Plan asks the Parties and the Secretariat to develop capacity building programmes for the Contracting Parties in need of assistance (art.VII of the protocol). Within this context SCP could offer an interesting input.

The table below details, for each measure of the regional plan, the corresponding SCP tools and their added value:

<table>
<thead>
<tr>
<th>Measures contemplated in the RP - reduction of BOD5 in the food sector</th>
<th>SCP Tools</th>
<th>Added value provided by SCP tools</th>
</tr>
</thead>
</table>
| Reduction of pollution load from food sector by the application of Best Environmental Practices (BEP) and Best Available Techniques (BAT) (Art. 4.1. of the Regional Plan) | • Resource efficiency and Cleaner Production (RECP) in the production of goods and services  
• Integration of life cycle development in products and services (Life Cycle Analysis, Cradle to Cradle);  
• Citizens Awareness  
• Economic instruments | Introducing BEP and BAT in the full life cycle of their products implies that food sector industries adopt Green/Sustainable Production Processes and consider aspects concerning eco-design, life cycle thinking, ecosystem service preservation, green Chemistry, risk-cycle, Material/Substance Flow Analysis (MFA).  
Corporate sustainability reporting could be used by companies to inform consumers of their social and environmental values and practices beyond the sustainability characteristics of individual products, which are usually covered by labelling. Such information disclosure is now one of the main mechanisms by which consumers are informed of the environmental and social conditions under which products have been produced. Reporting topics include corporate governance, environmental performance, health and safety of employees, community contributions, and supply chain management.  
Information and awareness-raising among consumers through public communications campaigns to promote environment-friendly purchases in food sector is crucial to promote a cleaner production by the concerned food sectors.  
Economic instruments too can help food sector industries to adopt BEP and BAT. Economic incentives in fact could facilitate the switch towards less pollutant forms of production. These include monetary grants, donations of goods and fiscal incentives in the form of tax reductions. |
| Monitoring of discharges into water by national competent authorities or appropriate bodies (Art. 4.2. of the Regional Plan) | • Regulatory instruments, standards and policy | Monitoring systems by SCP observatory could ensure a correct production of discharges. |
| Enforcing measures in accordance with national regulations (Art. 4.3. of the Regional Plan) | • Regulatory instruments, standards and policy | Sustainable consumption programmes can promote coherence and realise synergies across a range of policies. |
| Development of capacity-building programmes for the implementation of the Regional Plan (Art. 7. of the Regional Plan) | • Capacity building and technical assistance to implement RECP in the food industry  
• Citizens Awareness and education on the impact of our patterns of consumption and production in order to switch to sustainable and healthier lifestyles; | Campaign awareness among consumers can help switching consumers choices towards sustainable and healthier lifestyles in all branches of food economies considered (Fruit and vegetable processing, Breweries, Winery and Distilleries, Fish processing industry, Sugar manufacturing, Vegetable oil processing, Canning and preserving and Meat processing and slaughtering).  
Technical assistance to companies willing to implement RECP should be be also considered. |
3.2.2. SCP tools supporting for implementation of the Regional Plan on POPs

Persistent organic pollutants (POPs), the most critical chemicals in respect to pollution of the aquatic systems (sediments and the aquatic food chain) are a particular threat for the Mediterranean Sea. Due to the recent listing of the first fluorinated POPs (PFOS and related substances) and brominated flame retardants (PBDEs, HBB and HBCD) still being used and/or present in consumer articles, POPs became even more closely linked to sustainable consumption and production. Furthermore PFOS and related substances are the first highly water soluble POPs with the final sink in the water phase but highly bioaccumulative in the aquatic food chain. The use of SCP tools is essential for the implementation of the regional plan on POPs including the newly listed POPs. Furthermore several hundred POPs (Scheringer et al. 2012) and up to 2900 POPs (Strempel et al. 2012) are estimated to be currently in use within the approximately 100,000 chemicals produced.

The table below details, for each measure of the regional plan, the corresponding SCP tools and their added value:

<table>
<thead>
<tr>
<th>Measures contemplated in RP on POPs</th>
<th>SCP Tools</th>
<th>Added value provided by SCP tools</th>
</tr>
</thead>
</table>
| **Legal and administrative measures necessary to eliminate production/use/import/export of POPs (Art. 3.1. the Regional Plan)** | • Regulatory instruments, standards and policy  
• Economic instruments  
• Eco-labels | Mandatory government actions to prohibit POPs and reduce POPs-like chemicals include performance standards and mandatory labels to limit production and/or use of organic compounds from anthropogenic origin that possess toxic properties, resist physical, chemical and biological degradation, bioaccumulate in high concentrations through the food web and are transported through air, water and migratory species, reaching regions where they have never been produced or used; their high persistence pose a risk of causing adverse effects to the environment and human health.  
Economic instruments can also help food sector industries to adopt correct measures. Economic incentives in fact could facilitate the switch towards less pollutant forms of production. These include monetary grants, donations of goods and fiscal incentives in the form of tax reductions.  
Ecolabels can prohibit the use of persistent toxic chemicals beyond the small number of POPs currently listed in the Convention. |
| Apply BEPs for environmentally sound management of POPs (Art. 3.4. of the Regional Plan) | Sustainable Products and Goods  
Regulatory instruments, standards and policy  
Substitution approach.  
Green Chemistry | Introducing BAT and BEP in the full life cycle of their products implies that industries adopt Green/Sustainable Production Processes and consider aspects concerning eco-design, life cycle thinking, green chemistry, substitution approach Risk-Cycle, Material/Substance Flow Analysis (MFA/SFA). 
Corporate sustainability reporting could be used by companies to inform consumers of their social and environmental values and practices beyond the sustainability characteristics of individual products, which are usually covered by labelling. Such information disclosure is now one of the main mechanisms by which consumers are informed of the environmental and social conditions under which products have been produced. Reporting topics include corporate governance, environmental performance, health and safety of employees, community contributions, and supply chain management. |
|---|---|---|
| Monitor the implementation of the measures (Art. 3.5. of the Regional Plan) | Regulatory instruments, standards and policy  
3 R concept (in combination with RiskCycle)  
Life Cycle Analysis (LCA)  
Substance Flow Analysis (SFA) | Monitoring can be facilitated through the indicators, targets and monitoring systems of SCP specialized centres. With the inclusion of brominated and fluorinated POPs this also include a range of consumer products. 
Monitoring should be put in place too by NGOs in behalf of those who are directly exposed to the risks of a non appropriate implementation of these measures: namely civil society organizations and in particular the research community. This should include the “environmentally sound management” of POPs wastes (POPs pesticides, PCBs, brominated and fluorinated POPs). As specified by the Regional Plan this means all practical steps to ensure that wastes are collected, transported, and disposed of (including after-care of disposal sites) in a manner which will protect human health and the environment against the adverse effects which may result from such wastes. For POPs/POPs-like chemicals in consumer goods this includes in particular also the recycling flows (RiskCycle). |
| Capacity building including transfer of know-how and technology would be provided by the Parties and the Secretariat to the Contracting Parties in need of assistance (Art. 6. of the Regional Plan) | Education, training and awareness raising | Knowledge transfer, and in particular to research groups in developing countries, allows the recognition of POPs and potential POPs in industrial processes and products. 
Industries can learn to assess chemicals in respect to their PBT properties and substitute with more sustainable products. 
Awareness raising allows citizens to take an active role also in recognize to some extent the presence of POPs and other toxic chemicals in consumer goods and food. 
Public Campaigns could help to activate an informed purchased of organic food and eco-labels products in this respect. |
### 3.2.3. SCP tools supporting for implementation of the Regional Plan on Marine Litter

Marine litter is an environmental, economic, human health and aesthetic problem. It poses a complex and multi-dimensional challenge with significant implications for the marine and coastal environment and human activities all over the world. These impacts are environmental, cultural and multi-sectoral, rooted primarily in poor practices of solid waste management, a lack of infrastructure, various human activities, and inadequate understanding on the part of the public of the potential consequences of their actions, the lack of adequate legal and enforcement systems and a lack of financial resources.

SCP offers a unique opportunity to address the marine litter challenge by involving all stakeholders by improved awareness and awareness raising strategies as well as better product designs and respective incentives and legislation.

The Regional Plan on Marine Litter is to be endorsed by the Contracting Parties of the Barcelona Convention at the end of 2013. Therefore the measures listed below are the one included in the draft of Regional Plan distributed in March 2013.

<table>
<thead>
<tr>
<th>Measures contemplated in RP-Prevention of ML input to the marine and coastal environment</th>
<th>SCP Tools</th>
<th>Added value provided by SCP tools</th>
</tr>
</thead>
</table>
| To base urban solid waste management on reduction at source, separate collection, recycling, composting of the organic fraction and environmentally sound disposal (SAP) (Art. 9.1. of the draft Regional Plan) | • Awareness raising campaigns (civil society & government)  
• Sustainable consumption  
• Responsible care | By separating at source the organic fraction in the household waste, the compost produced can be used in agriculture and the fraction of plastic waste can be recycled                                                   |
| Implement adequate waste reducing/reusing/recycling measures in order to reduce the fraction of plastic packaging waste that goes to landfill or incineration (Art. 9.2. of the draft Regional Plan) | • Eco-design  
• Ecological taxation  
• Recycling quota;  
• Extended producer responsibility (EPR)  
• 3 R  
• Awareness raising | By implementing adequate measures, Plastic Packagers Producers shall consider aspects concerning eco-design, prevention, re-use and recyclability in the full life cycle of their products. |
| Apply measures related to Extended Producer Responsibility (EPR) (Art. 9.3a. of the draft Regional Plan) | • EPR  
• Polluter Pays Principle | Packaging EPR programs can cover costs through fees applied per packaging unit and fees are commonly differentiated based on the costs to recycle particular packaging materials. In this way, EPR facilitates reduction, reuse and recycling of packaging materials as a way to reduce costs for the Producers. |
| Apply measures related to Sustainable Procurement Policies contributing to the promotion of the consumption of recycled plastic-made products (Art. 9.3b. of the draft Regional Plan) | • Green Public Procurement  
• Eco-labelling  
• Eco-design  
• Cleaner and responsible production /RECP | To introduce objectives of recycled plastic composition in the products purchased by the public administrations is crucial to facilitate the creation of markets in the country for the recovered plastic, which in turn boost the interest to recover plastic packaging, the main component of marine litter. |
<table>
<thead>
<tr>
<th>Activity</th>
<th>Measures/Strategies</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply measures related to establishment as appropriate of agreements with Plastic Packaging Products producers, first importers, retailers, take-away restaurants and fast food chains regarding Deposits, Return and Restoration Systems and/or to introduce mandatory integrated management systems (Art. 9.3c. of the draft Regional Plan)</td>
<td>• Awareness campaigns (Industry and Civil Society); Sustainable Consumption; Extended Producer Responsibility (EPR); Corporate Social Responsibility (CSR)</td>
<td>This system has demonstrated high rates of recovery. It is very suitable for example to fast food chains and take-away restaurants, services that tend to generate problems of littering when located near the beach. As this system is not always easily applicable, it is recommended to be established on a voluntary basis with the sectors involved.</td>
</tr>
<tr>
<td>Apply measures related to establishment as appropriate of agreement with retailers and supermarkets to set an objective of reduction of plastic carrier bags consumption (Art. 9.3d. of the draft Regional Plan)</td>
<td>• Awareness campaigns; Sustainable Consumption; EPR; CSR</td>
<td>This point is of special interest because plastic carrier bags are one of the major wastes at sea. The measure was introduced on a voluntary basis with retailers by the Catalan Waste Agency 4 years ago and has accomplished a reduction of 45% in plastic carrier bags consumption, although some initial public opposition.</td>
</tr>
<tr>
<td>Apply measures related to establishment of mandatory Deposits, Return and Restoration System for expanded polystyrene (EPS) boxes in the fishing sector (Art. 9.3e. of the draft Regional Plan)</td>
<td>• Green tax reform; Eco-design; Awareness Campaigns; EPR</td>
<td>Due to its volume and light weight, Life cycle analysis of EPS shows that the cost of collection, cleaning, and recycling post-consumer EPS is greater than the value of the recycled product. EPS is of environmental concern in the marine medium, as Polystyrene is very brittle and it quickly breaks into small pieces.</td>
</tr>
<tr>
<td>Apply measures related to establishment of municipal plastic bag taxes and ban of the single use plastic bags, in particular during the touristic seasons (Art. 9.3. of the draft Regional Plan)</td>
<td>• Green tax reform; Awareness Campaigns; EPR</td>
<td>This measure is very effective, as the Irish experience shows (+90% reduction of bags in 2 years). The tax collected can be used to promote, for example, anti-litter initiatives.</td>
</tr>
<tr>
<td>Enhancement of Port reception facilities around the Mediterranean (Art. 9.5. of the draft Regional Plan)</td>
<td>• Awareness Campaigns;</td>
<td>Related capacity building and awareness activities</td>
</tr>
<tr>
<td>Apply “Gear marking to indicate ownership” concept and “Reduced ghost catches through the use of biodegradable nets, pots and traps” concept, in consultation with the competent international and regional organisations, in the fishing sector (Art. 9.7. of the draft Regional Plan)</td>
<td>• Life Cycle Analysis (LCA); Eco-design; EPR</td>
<td>Integration of Life Cycle in the design of fishing gear. It is very important to have cooperation from the fishing sector for a practical output.</td>
</tr>
<tr>
<td>Undertaking public awareness and education activities with regard to marine litter management (Art. 16. of the draft Regional Plan)</td>
<td>• Awareness campaigns (civil society, government, and industry)</td>
<td>Capacity Building and awareness activities especially with children, families and schools.</td>
</tr>
<tr>
<td>Establishment of partnerships with NGOs for the purpose of implementation of the Regional Plan (Art. 18. of the draft Regional Plan)</td>
<td>National strategy; common awareness campaigns</td>
<td>Involvement of NGOs in marine litter campaigns may help to increase efficiency of the measures</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>Apply as appropriate Adopt-a-Beach or similar practices and enhance public participation role with regards to marine litter management (Art. 10. of the draft Regional Plan)</td>
<td>Awareness campaigns; Education</td>
<td>A school, or local community, or an NGO, or a group of volunteers “adopt” a beach and takes care of that beach by regular cleanup events</td>
</tr>
</tbody>
</table>
3.3. SCP tools for implementation of the Hazardous Waste Protocol

With regards to the Hazardous Waste Protocol, according to its article 5.2. “the Parties shall take all appropriate measures to reduce to a minimum, and where possible eliminate, the generation of hazardous wastes”.

In this sense, the implementation of the SCP tools is critical to achieve that aim. European and Mediterranean countries are facing challenges with chemical management and waste management (Wagner et al. 2013).

The identification of hazardous waste is becoming more challenging than ever. For example, with the addition of the first brominated POPs in the Stockholm Convention (TetraBDE, PentaBDE, HexaBDE, HeptaBDE, HBB and recently HBCD) a range of treated consumer goods (e.g. impacted plastic in electronics, treated textiles or mattresses, impacted building insulation foam) need to be classified as POPs waste. The same is true with the listing of the first fluorinated POPs in the Convention (PFOS and related substances). Also here consumer goods are affected (treated synthetic carpets, textiles and paper). Some are large waste flows and it is challenging to discern between contaminated and non-contaminated materials (Stockholm Convention 2012). Considering that several thousand chemicals have persistent and toxic properties (containing a share of fluorinated and brominated chemicals) the PFOS and PBDE/HBCD is just the tip of the iceberg (Strempel et al 2012, Lindstrom et al. 2012, Shaw et al. 2010). Therefore in addition to the “ordinary” hazardous waste from industry, POPs and other hazardous waste is increasingly becoming a management challenge.

For e-waste and related PBDE treated plastic, transboundary shipment is a priority for the Basel Convention. With the listing of PBDEs and PFOS in the Rotterdam Convention controlled shipments of other waste will emerge. Currently it is unclear what management options in particular in Southern Mediterranean countries - often without environmentally sound destruction capacity - will be used for end of life treatment. The fact that the Southern Mediterranean countries have not developed destruction capacity will mean that most waste finally end up in landfills or dumpsites. Wastes containing e.g. per/polyfluorinated chemicals show a particular risk for the Mediterranean Sea since water is the final sink for PFOS, PFOA and most of the more than 1000 perfluorinated chemicals in use. The PFCs disposed to landfills are/will be released over time (Oliaei et al. 2012, Weber et al. 2011). Due to their extreme persistence they are a particular threat to the Mediterranean Sea with a water exchange rate of approx. 100 years and the PFC concentrations found already in some Mediterranean sea food (Nania et al. 2009; Pulkrahova et al. 2011) and in inflowing rivers (Sánchez-Avila et al. 2010).

Therefore the implementation of the hazardous waste protocol urgently needs SCP approaches reducing and eliminating persistent and toxic chemicals during the exploitation of resource for production (e.g. mine tails), during the production process and by consumption.

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16 Here the PCB or Pesticide stockpile management challenge for most Southern Mediterranean countries is not solved including the high cost of potential export to and destruction in industrial countries.

17 A range of PFCs are semivolatile compounds in the application phase (e.g. amides or telomere alcohols). The environmental degradation to e.g. carboxy acids finally result that water is also their final sink.
SCP covers specific instruments to reduce and particularly avoid hazardous waste in the conception phase (Eco-design, Cradle to Cradle), in the production phase (Material/Substance flow analysis, substitution approach (see case study SubSport), RECP, LCA, chemical leasing, circular economy) and in the consumption phase (Eco-labelling, green consumption).

During the production phase, highly persistent performance chemicals such as per/polyfluorinated organics might be used in closed cycles in certain (industrial) processes. Here the chemical leasing is a very innovative tool that would perfectly support this practice.

By applying those tools, materials/products which generate hazardous waste and releases are phase out/minimized both in the production phase an in the end of life of product. But to make this happen, an effective legislative and policy framework set up by the Government is essential (Economic instruments, extended producer responsibility, bans and restrictions, green public procurement).

<table>
<thead>
<tr>
<th>Case Study: Responsible E-waste recyclers (e-Stewards®)</th>
</tr>
</thead>
<tbody>
<tr>
<td>After a governmental initiative failed to develop a sustainable E-waste recycling standard in the US, the Basel Action Network was subsequently asked by leaders in the recycling and asset recovery industries to create a truly rigorous, internationally compliant certification program that would assure full conformance to a comprehensive suite of e-recycling best practices. The e-Stewards® Initiative is a market-based solution to help individuals and organizations identify and promote those electronics recyclers that ensure that used electronics are managed with the highest standards of environmental and social responsibility. e-Stewards Certified Recyclers are audited and certified to ensure highest levels of responsibility and e-Stewards Enterprises are major corporations, municipalities or institutions that agree to make best efforts to make use of e-Stewards Certified Recyclers.</td>
</tr>
</tbody>
</table>

### 3.4. SCP tools for the implementation of the Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM Protocol)

The Integrated Coastal Zone Management (ICZM) in the Mediterranean is recognised as the way forward for the sustainable development of coastal zones since the 1992 Rio Conference (the United Nations Conference on Environment and Development) and is characterised by a distinctive integrated approach to providing solutions to the complex environmental, social, economic and institutional problems of the coastal zones.

As defined by Article 2 of the ICZM Protocol, “Integrated coastal zone management means a dynamic process for 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”. In fact the interdependence of activities and resources in the coastal zone explains why a sectoral approach to coastal zone management has not been able to achieve satisfactory results.

Within this framework SCP tools integrate and support the implementation of the ICZM Protocol by highlighting its economic component and proposing a switching towards green economy. SCP tools in fact allow to achieve a system where production and consumption patterns are fully integrated with the coastal ecosystems and where the ecological benefits and natural capital the environment have an economic value. SCP patterns help in changing the classic economic sectors’ view on the environment, promoting new sectors and businesses that have a positive impact on the coastal areas. Production and consumption approaches are in fact drivers that could have serious impacts on the coastal environment that if corrected could help to address several end of pipe environmental problems.
**Government/Policy makers related SCP tools for ICZM protocol implementation**

Switching to sustainable production and consumption patterns involves a large set of actors, from consumers to entrepreneurs, but the role of national government is to enable the change. In fact sustainable consumption programmes can promote coherence and realise synergies across a range of policies.

Indeed, the Government constitutes an important client for companies so its wishes in terms of sustainable products and quality/environmental standards can create an impact through the implementation of Green Public Procurement (GPP). As policy-makers, Governments can push the market tendency in one way or another depending on its strategy, thanks to fiscal incentives and market based tools (art. 21 of the protocol).

The following series of measures can help to enable the change towards SCP patterns in the coastal areas:

- Establishing sound regulatory framework to promote the change (art. 9 of the protocol),
- Promote sustainable consumer behaviours thanks to market based instruments (art. 9 of the protocol),
- Promote green investment, green innovation and green entrepreneurship in tourism, fishing, aquaculture, agricultural and industrial activities (art. 9.2 of the protocol),
- Promote education and raise awareness for more sustainable lifestyles among consumers (art. 15.1 of the protocol),
- Strengthening international governance (art. 15.2 of the protocol).

Consultation with all relevant stakeholders groups, included consumers and producers, could be promoted by national governments as well as local authorities (art. 14 of the protocol). Monitoring and evaluating sustainable production/consumption initiatives can also be included in the coastal management indicators, targets and monitoring systems put in place within the framework of the ICZM (art. 27 of the protocol). This contributes to accountability and public transparency in national programme implementation. Last, governments have a key role in raising awareness and educating citizens about the positive effects of sustainable consumption and production (art. 15 of the protocol). Educating citizens about the nature and the positive impact of SCP will allow them to recognize how SCP can improve their lifestyle.

**Producer/Service provider related SCP tools for ICZM protocol implementation**

The ICZM protocol targets the economic sectors that have an impact on the coasts and their surroundings, namely:

- Agriculture and industry,
- Fishing,
- Aquaculture,
- Tourism, sporting and recreational activities,
- Utilization of specific natural resources,
- Infrastructure and energy facilities, ports and maritime works and structures,
- Maritime activities.

High level of environmental protection in the location and operation of agricultural and industrial activities are requested so as to preserve coastal ecosystems and landscapes and prevent pollution of the sea, water, air and soil. Industrial and agricultural production need a switch towards more sustainable patterns by resource efficiency and cleaner production (RECP), green and sustainable processes, responsible production, green and decent jobs and sustainable resources management for a circular economy (art. 9.2a of the protocol).
Corporate sustainability reporting could be used by companies to inform consumers of their social and environmental values and practices beyond the sustainability characteristics of individual products, which are usually covered by labelling. Such information disclosure is now one of the main mechanisms by which consumers are informed of the environmental and social conditions under which products have been produced.

Fishing and aquaculture are considered too: Parties commit themselves to ensure that fishing practices are compatible with sustainable use of natural marine resources (art.9.2 b of the protocol). To achieve sustainable fishing and aquaculture practice, it is crucial to valorise traditional techniques and more ethical consumption (as for example by learning to the purchaser to consume the fish depending on the season).

Art. 9.2 of the protocol d) invites Parties (i) to encourage sustainable coastal tourism that preserves coastal ecosystems, natural resources, cultural heritage and landscapes; (ii) to promote specific forms of coastal tourism, including cultural, rural and ecotourism, while respecting the traditions of local populations. For this purpose “customer-oriented” marketing techniques and other advertising tools can be used for promoting SCP tools in the tourism sector.

Consumer and Civil Society related SCP tools in the ICZM protocol supporting implementation

To implement the ICZM protocol, the Parties shall establish a common framework for the integrated management of the Mediterranean coastal zone and shall take the necessary measures to strengthen regional cooperation for this purpose (art.1 of the protocol). In this framework a propulsive role of the civil society and, especially of the consumers, could undoubtedly facilitate the sustainable development of coastal zones by ensuring that the environment and landscapes are taken into account as a necessary requirement to support economic, social and cultural development (art. 5a of the protocol).

Raising the level of education and awareness of citizens on the impacts of the current consumption and production patterns is without any doubt the way to switch to sustainable and healthier lifestyles, in line with the general objectives of the ICZM Protocol. Article 15 of the protocol clearly mentioned that “The Parties undertake to carry out, at the national, regional or local level, awareness-raising activities on integrated coastal zone management and to develop educational programmes, training and public education on this subject”.

Awareness campaigns should be designed to target different stakeholders with emphasis on the economic and social benefits resulting from adopting a more sustainable pattern of production and consumption (improved health conditions, improved human welfare and reduced costs).

Likewise the empowerment and participation of civil society in promoting sustainable lifestyles would ensure the sustainable use of natural resources, particularly with regard to water use; preservation of the integrity of coastal ecosystems, landscapes and geomorphology; and achieve coherence between public and private initiatives and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone (Art. 5 c, d, and f of the protocols).
The importance of the role of the consumers is in fact confirmed by art. 8 of the protocol as it expressly affirm the need to ensure the “sustainable use” of coastal zones. For this purpose Education Programmes for Sustainable Consumption, Environmental education, awareness programmes, Public Campaigns are of extreme relevance.

In addition to this, ICZM specifies the concept of “sustainable use” by referring also to tourism, sporting and recreational activities. Massive flows of tourists, often to a relatively small area, have a huge impact. Tourism can create great pressure on local resources such as energy, food, land and water that may already be in short supply. Sound and efficient environmental management of tourism facilities and especially hotels (e.g. water and energy saving measures, waste minimization, use of environmentally friendly material) can decrease the environmental impact of tourism.

Sustainable planning tools help to make choices to solve conflicts of interest between industry and tourism and to find ways to make them not only compatible but also supportive. The use of SCP tools for tourism development could prevent damages and costly mistakes; it creates jobs and increases economic returns. This is in addition to avoiding the gradual deterioration of the quality of environmental goods and services significant to tourism.

The next tables suggest, for each relevant article of the ICZM protocol, the relevant SCP measures to be implemented and their respective target groups. The proposed measures are illustrated with concrete examples.
### Article 9 f): “Promotion of codes of good practice among public authorities, economic actors and non-governmental organizations”

<table>
<thead>
<tr>
<th><strong>Target groups</strong></th>
<th>All stakeholders with activities are related to coastal issues: public authorities (national and local level), economic actors (producers, consumers, service providers), NGOs (engaged in the protection of environment, in defense of flora/fauna, in sustainable development etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCP categories</strong></td>
<td>Information based instruments, Economic, financial and fiscal instruments</td>
</tr>
<tr>
<td><strong>SCP added value</strong></td>
<td>Codes of good practices should be developed through the inputs of all actors working on issues related to management of coastal zones in order to ensure clear goals and targets, integrated decision-making, stakeholder involvement, links to localities, indicators and monitoring.</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>ChangeLAB: Learning for Sustainable Living is an online database of successful approaches in promoting sustainable consumption which cross-references techniques (regulations, taxes, incentives, information) with other factors (predisposing factors, enabling factors, reinforcing factors). <a href="http://www.changelabproject.org">www.changelabproject.org</a></td>
</tr>
</tbody>
</table>

### Article 9.2 a): “Agriculture and industry, high level of protection of the environment in the location and operation of agricultural and industrial activities so as to preserve coastal ecosystems and landscapes and prevent pollution of the sea, water, air and soil”

<table>
<thead>
<tr>
<th><strong>Target groups</strong></th>
<th>All stakeholders but the most relevant role is played by agricultural and industrial producers as they are called to activate a high level of environmental protection in the location and operation of production activities. SCP is involved mainly in the “operation” phase of agricultural and industrial activities where specific SCP tools can be employed for the production sector. Also the role of consumers must be taken into account as more ethical consumption is crucial to push producers to switch towards environmental-friendly forms of production.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCP categories</strong></td>
<td>Design for sustainable products and goods, Sustainable resources management, Cleaner and Responsible Production, Sustainable Packaging and Distribution</td>
</tr>
<tr>
<td><strong>SCP added value</strong></td>
<td>Preservation of coastal ecosystems and prevention from pollution need a switch towards more sustainable patterns of production by RECP policies, green and sustainable processes, responsible production and sustainable jobs, circular economy and sustainable resources management.</td>
</tr>
</tbody>
</table>
| **Example**       | The Slow Food Foundation for Biodiversity was founded in 2003 to develop projects and new economic models to support the Terra Madre food communities. The Foundation’s activities are focused on protecting food biodiversity and traditions, and promoting sustainable agriculture and food sovereignty. Projects are being put into practice all around the world, with an increasing focus on supporting initiatives in developing nations.  

The **Presidia project** support groups of small-scale producers who sustain quality production at risk of extinction, protect unique regions and ecosystems, recover traditional processing methods and safeguard native breeds and local plant varieties. To date, more than 400 Presidia have been created around the world, involving over 12,000 producers. |
**Article 9.2 b): “Fishing, taking into account the need to protect fishing areas in development projects and ensuring that fishing practices are compatible with sustainable use of natural marine resources”**

<table>
<thead>
<tr>
<th>Target groups</th>
<th>All stakeholders but the most relevant role is played by fishermen as they are called to ensure that fishing practices are compatible with sustainable use of natural marine resources. The role of consumers must be taken into account too as conscious and sustainable fish consumption is crucial to push fishermen to switch towards more sustainable fishing practices. Civil society is included too in order to promote sustainable fishing strategies, educate the public and stakeholders, and lobby for conservation law and policy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP categories</td>
<td>Sustainable resources management, Cleaner and Responsible Production, Sustainable Packaging and Distribution, Sustainable consumer behaviours / Sustainable Lifestyles.</td>
</tr>
</tbody>
</table>
| SCP added value | SCP can be employed to promote fair fishing practices as those based on traditional techniques or as zero-miles fishing in order to reduce CO2 emissions ad to protect fish stocks.  

However fishing is only one part of the fishing industry. The entire chain of custody includes everything from transporting, trading, processing, and packaging, to selling and retailing, including in the restaurant and food service sectors. SCP involves too techniques for sustainable packaging and distribution. Specific tools exist for this purpose as for example the sustainable packaging (Ex. Sustainable Packaging Coalition), the use of minimal materials and the use of biodegradable materials. Sustainable distribution pattern include alternative fuels (e.g. Natural gas/biofuel/electricity/hybrid/parallel hybrid) and modal shift, inter-modality, out-of-hours deliveries.  

To achieve sustainable fishing practice is crucial to switch consumer demand towards more ethical consumption as for example by learning to the purchaser to consume the fish depending on the season. |
| Example | An interesting example of fair, organic and local purchase comes from Fish Box (www.fishbox.it): a "community supported fishery ' based on the alliance between producers and consumers. The Fish Box initiative was created with the aim of spreading a fish consumption more conscious and sustainable, shortening the supply chain and, therefore, helping to reduce CO2 emissions. The Fish Box, offer only Adriatic local and seasonal fish, fished with traditional techniques (never fish at risk of extinction, marine organisms and small fish).  

WWF promotes economic incentives, trade management measures and consumer initiatives that encourage sustainable fisheries that are transparent and traceable. WWF provides producers of wild-caught seafood with the technical assistance to assess and adjust their operations and policy so that they can strive towards sustainability and, where appropriate, enter a certification programme such as the Marine Stewardship Council (MSC). WWF and its partners are working to increase the profile of sustainable seafood products along the entire 'chain of custody' - from the ocean all the way to the consumers’ plate.  

The ethical dimensions of food consumption are also featured in government communications campaigns. The Austrian Environment Ministry in partnership with other ministries, retailers and NGOs, sponsors the annual Sustainability Weeks event to promote organic, locally-produced and fair trade goods under the theme “That’s the Way to do It: Sustainably”. Evaluations found that the campaign increased consumer awareness, particularly among women, and prompted greater numbers of retailers to join in successive years. Similarly, the German Development Co-operation Ministry mounted a large scale campaign (€3.3 million) to promote consumption of fair trade goods under the theme Fair Feels Good. |
### Article 9.2 c): “Aquaculture, Taking into account the need to protect aquaculture and shellfish areas in development projects and regulating aquaculture by controlling the use of inputs and waste treatment”

<table>
<thead>
<tr>
<th>Target groups</th>
<th>All stakeholders but the most relevant role is played by fishermen and shellfish producers as they are called to ensure that fishing practices are compatible with sustainable use of natural marine resources. The role of consumers must be taken into account too as conscious and sustainable seafood consumption is crucial to push fishermen to switch towards more sustainable aquaculture practices. Restricted access licensing is an important element of aquaculture regulation that needs an active role of local authorities. Civil society is included too to promote sustainable aquaculture strategies, educate the public and stakeholders, and lobby for conservation law and policy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP added value</td>
<td>Unsustainable aquaculture can devastate our oceans and the environment and impact on local people’s food and security. Examples of a dangerous aquaculture include among others: fishmeal and so-called ‘trash fish’ used for feed production - often the main food for local people - taken for use in aquaculture ponds; the release of organic wastes (that, for instance, act as plant nutrients for harmful algal blooms) and toxic effluents into the oceans; the destruction of coastal ecosystems, displacement of coastal communities and depletion of fresh water sources to build aquaculture ponds. SCP tools can be employed to develop aquaculture practices based on sustainable feeding techniques that allow fish to be bred in open waters such as lakes, estuaries or coastal bays, where they feed on naturally available nutrients, or in farm ponds, where they can be fed with by-products from the farm. SCP can be used too in the intertidal operations by promoting off-bottom and near bottom oyster/mussel culture techniques that offer an opportunity to reduce environmental impacts. Driving on beaches introduces oil and gasoline to the sensitive intertidal ecosystem, compact the sand and gravel, and can disrupt the overall form or shape of a beach. SCP tools can help to avoid damage from vehicle or other heavy equipment use on the beach. Finally by raising prices of aquaculture products in development project areas by taxes and charges can be effective in influencing consumer behaviour towards sustainability. These tools help internalize negative externalities and let the market play the critical role of changing purchasing patterns. Taxes and charges can be more cost effective than regulations, which may require intensive monitoring efforts, in terms of enforcement and control.</td>
</tr>
<tr>
<td>Example</td>
<td>Forms of integrated aquaculture: Integrated aquaculture has a variety of benefits for farmers in addition to the production of fish for consumption or sale. In Asia, for example, rice farmers use certain species of fish to fight rice pests such as the golden snail. With rice-fish farming, they boost their rice yields and harvest the fish. Under FAO's Special Programme for Food Security (SPFS), farmers in Zambia are introducing small ponds into their home gardens for irrigation and aquaculture. Mud from the bottom of fish ponds is also an organic mineral-rich fertilizer.</td>
</tr>
</tbody>
</table>
**Article 9.2 d): “Tourism, sporting and recreational activities, encouraging sustainable coastal tourism and promoting specific forms of coastal tourism, including cultural, rural and ecotourism, while respecting the traditions of local populations”**

| **Target groups** | All the stakeholders those activities are related to coastal issues: public authorities (national and local level), economic actors (producers, consumers, service providers), NGOs (engaged in the protection of environment, in the defense of flora/fauna, in sustainable development etc...). A special attention should be dedicated to tourism service providers (hotels, restaurants, shops etc...) and to consumers. |
| **SCP categories** | Design for sustainable products and goods, Sustainable resources management, Cleaner and Responsible Production, Sustainable Packaging and Distribution, Sustainable consumer behaviours / Sustainable Lifestyles. |
| **SCP added value** | Sound and efficient environmental management of tourism facilities and especially hotels (e.g. water and energy saving measures, waste minimization, use of environmentally friendly material) can decrease the environmental impact of tourism. |
| **Example** | The Life+ project DESTINATIONS (Development of Strategies for Sustainable Tourism Investments in the Mediterranean Nations) aimed to raise awareness for sustainable tourism practice in southern Mediterranean countries. For this purpose it promoted the introduction of decision making tools for an effective management of tourism destinations in three demonstration areas in Morocco, Tunisia and Algeria. In addition were produced guidelines for tourism investors that would help assess the sustainability of their investments in the coastal areas in terms of environmental risks and added value for the local communities. Tourism is moving towards information disclosure and sustainability certification. The Marrakech Task Force on Development of Sustainable Tourism, led by France, aims to develop a more coherent approach for informing consumers of tourism sustainability including standards, certification, and reporting. Several European organizations have created the Voluntary Initiative for Sustainability in Tourism (VISIT) to inform consumers about the impacts of tourism-related services based on certificates awarded to endeavours which meet certain economic, environmental and social criteria. VISIT aims to promote mutual co-operation and recognition among international, national and regional certification schemes for sustainable tourism, including the tourism quality mark initiatives of Austria, the Netherlands and Switzerland. The Milieu barometer (Environmental Barometer) was introduced in 2003 to grant a quality mark to tourist and leisure companies (camping sites, holiday parks, hotels, restaurants) which meet certain environmental standards verified every year by an independent audit. |
### Article 14: “Participation, Involvement in the phases of the various stakeholders (the territorial communities and public entities concerned, economic operators, NGOs, social actors, the public concerned)”

<table>
<thead>
<tr>
<th>Target groups</th>
<th>All stakeholders but the most relevant role is played by civil society that is due to participate by promoting sustainable production strategies, educating the public and stakeholders, and lobby for sustainable production and consumption law and policy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP categories</td>
<td>Education and awareness raising, actions to create a driving force for switching private companies and public policies to SCP</td>
</tr>
<tr>
<td>SCP added value</td>
<td>Civil society is asked to take part in the phases of the formulation and implementation of coastal and marine strategies. Involvement of NGOs engaged in promotion of SCP patterns may help to switch towards coastal and marine strategies that keep in consideration the links between cleaner production patterns and protection of coastal ecosystems.</td>
</tr>
<tr>
<td>Example</td>
<td>Sustainable Development in France, a civil society body and watchdog, proposes sustainable consumption issues and actions. In Germany, the Federal Environment Ministry (BMU) started a national process on sustainable consumption and production in 2004 which involves all relevant stakeholders. In this context, consumer policy agencies are particularly important. Understanding the social and economic aspects of consumer behaviour is central to designing effective approaches. Consumer agencies have direct links to market behaviour in dealing with regulations, standardisation and codes of conduct as well as maintaining basic access to goods and services. A national body responsible for the implementation and co-ordination of sustainable consumption initiatives may be warranted.</td>
</tr>
</tbody>
</table>

### Article 15: “Awareness-raising activities: (1) The Parties undertake to carry out, at the national, regional or local level, awareness-raising activities on integrated coastal zone management and to develop educational programmes, training and public education on this subject. (2) The Parties shall organize, directly, multilaterally or bilaterally, or with the assistance of the Organization, the Centre or the international organizations concerned, educational programmes, training and public education on integrated management of coastal zones with a view to ensuring their sustainable development”

<table>
<thead>
<tr>
<th>Target groups</th>
<th>All stakeholders but the most relevant role is played by civil society that is due to participate by promoting sustainable production strategies, educating the public and stakeholders, and lobby for sustainable production and consumption law and policy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP categories</td>
<td>Education and awareness raising, actions to create a driving force for switching private companies and public policies to SCP</td>
</tr>
<tr>
<td>SCP added value</td>
<td>Involvement of NGOs or international organizations engaged in promotion of SCP patterns may help to switch towards coastal and marine strategies that keep in consideration the links between cleaner production patterns and protection of coastal ecosystems. Capacity Building and awareness activities should be promoted especially with children, families and schools.</td>
</tr>
<tr>
<td>Example</td>
<td>The Mediterranean Coast Day is a successful example of initiative able to increase environmental awareness among policy makers, academia, media, NGOs and the locals. It was designed to effectively raise awareness of the importance of the coast, as well as of the ICZM as the optimal policy framework for achieving sustainable development of coastal areas <a href="http://www.coastday.org">www.coastday.org</a>. Another example is green loyalty point system called Nu Spaarpas, introduced by the Dutch local government and NGOs, which gives green points for sustainable consumer behaviour and allows points to be redeemed for sustainable products and services. <a href="http://www.nuspaarpas.nl/www_en/">www.nuspaarpas.nl/www_en/</a></td>
</tr>
</tbody>
</table>
### Article 16: “Strengthening or creation of appropriate mechanisms for monitoring and observation”

<table>
<thead>
<tr>
<th>Target groups</th>
<th>National governments and local authorities that should develop monitoring systems specialized on SCP, able to ensure the appropriate implementation of coastal and marine strategies by focusing on aspects related to effects of non-sustainable production on coastal ecosystems.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP categories</td>
<td>Information based instruments</td>
</tr>
<tr>
<td>SCP added value</td>
<td>Monitoring and evaluating sustainable production/consumption initiatives contributes not only to accountability and public transparency in national programme implementation but also to evaluate the effectiveness and sustainability of the policies adopted by the local authorities. Local authorities could support the development of indicators for SCP monitoring and the data-collection.</td>
</tr>
<tr>
<td>Example</td>
<td>The Sardinian Coastal Observatory evaluates the effectiveness and sustainability of the policies adopted by the local authorities for the local socio-economic development in coastal areas of the Region of Sardinia, in order to promote strategies and interventions aimed at the integrated management of coastal areas. <a href="http://www.sardegnaambiente.it/index.php?xsl=1809&amp;s=23&amp;v=9&amp;c=9513&amp;es=4272&amp;na=1&amp;n=10&amp;l=2">http://www.sardegnaambiente.it/index.php?xsl=1809&amp;s=23&amp;v=9&amp;c=9513&amp;es=4272&amp;na=1&amp;n=10&amp;l=2</a></td>
</tr>
</tbody>
</table>

### Article 21: “Economic, financial and fiscal instruments: Measures to adopt relevant economic, financial and/or fiscal instruments intended to support local, regional and national initiatives for the integrated management of coastal zones”

<table>
<thead>
<tr>
<th>Target groups</th>
<th>National governments to adopt relevant economic, financial and/or fiscal instruments intended to support local, regional and national initiatives for the integrated management of coastal zones.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP categories</td>
<td>Economic, financial and fiscal instruments</td>
</tr>
<tr>
<td>SCP added value</td>
<td>SCP includes a range of economic and financial instruments that should support sustainable production patterns as for example: Green tax reform, Environmental/Ecological taxation and charges, Removal of environmentally harmful subsidies, Green certificate markets/emissions trading (EU ETS and Kyoto Protocol), Green Public Procurement (GPP), Ethical Investment / Socially Responsible Investment (SRI). For achieving these measures it is also crucial to develop an overall strategy and action plan for SCP considering aspects as the waste management and the Ecological footprint of country/nation. Thus mandatory government actions to promote sustainable consumption could include performance standards and mandatory labels to limit damages on coasts from products when they are consumed or used.</td>
</tr>
<tr>
<td>Example</td>
<td>The Sardinian Coastal Observatory evaluate the effectiveness and sustainability of the policies adopted by the local authorities for the local socio-economic development in coastal areas of the Region of Sardinia, in order to promote strategies and interventions aimed at the integrated management of coastal areas. <a href="http://www.sardegnaambiente.it/index.php?xsl=1809&amp;s=23&amp;v=9&amp;c=9513&amp;es=4272&amp;na=1&amp;n=10&amp;l=2">http://www.sardegnaambiente.it/index.php?xsl=1809&amp;s=23&amp;v=9&amp;c=9513&amp;es=4272&amp;na=1&amp;n=10&amp;l=2</a></td>
</tr>
</tbody>
</table>
**Article 27: “Exchange of information and activities of common interest: (i) Coastal management indicators, (ii) Up-to-date assessments of the use and management of coastal zones, (iii) Demonstration projects of ICZM”**

<table>
<thead>
<tr>
<th>Target groups</th>
<th>National governments and to civil society too that can cooperate in the exchange of information on the use of the best environmental practices.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP categories</td>
<td>Information based instruments</td>
</tr>
<tr>
<td>SCP added value</td>
<td>National governments and Civil Society play a strategic role for the exchange of information both for the producers and the consumers. Specific information based SCP tools exist to support these actors in raising awareness on the use of best environmental practices:</td>
</tr>
<tr>
<td></td>
<td>• consumer guidelines</td>
</tr>
<tr>
<td></td>
<td>• consumer campaigns</td>
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<tr>
<td></td>
<td>• websites and portals</td>
</tr>
<tr>
<td></td>
<td>• education on SCP</td>
</tr>
<tr>
<td></td>
<td>• training seminars for authorities and/or the private sector</td>
</tr>
<tr>
<td>Example</td>
<td>The Sardinian Coastal Observatory evaluate the effectiveness and sustainability of the policies adopted by the local authorities for the local socio-economic development in coastal areas of the Region of Sardinia, in order to promote strategies and interventions aimed at the integrated management of coastal areas. <a href="http://www.sardegnaambiente.it/index.php?xsl=1809&amp;s=23&amp;v=9&amp;c=9513&amp;es=4272&amp;na=1&amp;n=10&amp;l=2">http://www.sardegnaambiente.it/index.php?xsl=1809&amp;s=23&amp;v=9&amp;c=9513&amp;es=4272&amp;na=1&amp;n=10&amp;l=2</a></td>
</tr>
</tbody>
</table>
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