# Sustainable Consumption and Production: an operational approach to sustainability

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Sustainable Consumption and Production (SCP) aims to minimize the negative environmental impacts from consumption and production systems, considering all stages of the life-cycle of products and services while promoting quality of life for all. It is a broad framework that encompasses many operational solutions that are key for designing and implementing policies and measures to achieve economic, social and environmental sustainability. These solutions include, but are not limited to: supply chain management, waste management and re-use, resource efficiency along the value chain, cleaner production, life-cycle thinking, eco-innovation and eco-labelling. Some of which are demonstrated in the figure below. UN Environment suggests four key SCP principles as a guiding framework for analysis and policy action:

1. Improving the quality of life without increasing environmental degradation and without compromising the resource needs of future generations.
2. Decoupling economic growth from environmental degradation by:
   - Reducing material/energy intensity of current economic activities and reducing emissions and waste from extraction, production, consumption and disposal;
   - Promoting a shift of consumption patterns towards groups of goods and services with lower energy and material intensity without compromising quality of life.
3. Applying life-cycle thinking which considers the impacts from all life-cycle stages of the production and consumption process.
4. Guarding against the re-bound effect, where efficiency gains are cancelled out by resulting in increased consumption.

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Aspects of SCP, *ABC of SCP*, UNEP, 2010

**Key publications and tools** for a general understanding of Sustainable Consumption and Production are available in the online resources of the toolkit, including:

- *ABC of SCP*, UNEP, 2010, available in 5 languages
- *Sustainable Consumption and Production: A Handbook for Policymakers Global Edition*, UNEP, 2015. See also www.switchasia.eu
- *Global Outlook on SCP policies*, UNEP, 2012.
- Sustainable Consumption and Production has also been explained by a number of organizations, including the International Institute for Environment and Development (IIED): *www.iisd.org/susprod/principles.htm*

# Resource efficiency and economic performance




## What do we mean by Resource Efficiency?

Resource efficiency refers to using less resource inputs to achieve the same or improved output. Resource efficiency can be achieved by increasing resource productivity or reducing resource intensity (resource use / value added)[1]. The sustainable use of resources must be considered at all the stages of the value chain, from sourcing and design, manufacturing, transportation and usage to the end of life/re-use.

**Resource Efficiency makes business sense:** for instance, the Mexican company *Grupo Bimbo* saved US$ 700,000 and 338,400m$^3$ of water in 3 years through its water reduction programme[2].

## Link to Sustainable Consumption and Production?

Resource efficiency is integral to the Sustainable Consumption and Production (SCP) approach. A key objective is to enhance resource efficiency throughout products' life cycle, emphasizing the role of businesses, supply chains and individual consumers as actors of sustainable development. The links are evident in the Sustainable Development Goals with many targets pointing to improving resource efficiency and decoupling economic growth from material use and pollution.

## Why resource efficiency?

Price volatility and rising demand for resources in the face of increasing scarcity is causing supply insecurity for a number of resources that are strategically important in modern production and consumption systems[3]. For example, **by 2030, global water demand is forecasted to surpass supply by 40 percent[4]**.

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Coupled with environmental degradation and growth in waste and emissions, these factors are causing increased pressure on business stability and society at large by contributing to climate change, undermining food security and increasing water scarcity and air pollution. By using SCP instruments, governments can encourage companies to design and produce goods and services that require a lower input of natural resources and energy through the value chain.

Transitioning to sustainable consumption and production patterns would improve resources management and support the creation of circular loops thereby reducing waste and inputs, putting in place more sustainable production processes and changing consumer behaviors.

**Key points** on positive effects for resource efficiency and economic performance:

- Minimizes waste and pollution.
- Reduces operational costs for business: material, water and energy use = increased competitiveness.
- Spurs innovation opportunities for re-use or upcycling and alternative business models, generates more employment from secondary markets.
- Boosts innovation and employment in fast developing sectors.
- Enables more sustainable management of resource flows.
- Opens new market opportunities through meeting sustainability criteria for market entry or certification.

1 *Sustainable Consumption and Production – A handbook for policy makers, UNEP 2015*

2 *Business Case for the Green Economy, UNEP 2012*

3 *"Material Use across World Regions. Inevitable Pasts and Possible Futures", Journal of Industrial Ecology, Weisz and Schandl, 2008*

4 *World Water Development Report, UN Water 2014*

**Key publications and tools** to find further information on resource efficiency and economic performance are available in the online resources of the toolkit, for example:

- *Resource Efficiency: Potential and Economic Implications*, International Resource Panel. Ekins, P., Hughes, N., *et al.* 2016
- *SCP - A Handbook for Policy makers Global Edition*, UNEP, 2015 (Pages 11-16): information on resource efficiency for achieving sustainable development.
- *Business Case for the Green Economy*, UNEP, 2012
- *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, UNEP, 2011
- *Roadmap for resource efficient Europe*, European Commission 2011
- *Promoting Resource Efficiency in Small & Medium Sized Enterprises (PRE-SME) Resource Kit*, UNEP, 2010 provides a comprehensive learning on resource efficiency for SMEs and business intermediaries.
- *Mainstreaming Sustainable Consumption and Production and Resource Efficiency into Development Planning*, UNEP, 2009 (presents detailed guidance on mainstreaming SCP into national planning).
- *Promoting entrepreneurship and innovative SMEs in a global economy*, OECD, 2004,
- *Policy Options for a Resource Efficient Economy* (POLFREE) provides analytical and resources, including publications, designed to support policy efforts and initiatives on resource efficiency (see www.polfree.eu).

# Poverty eradication


## Contributing to the fight against poverty

The effect of '*hazardous, inefficient and wasteful*' **consumption and production processes can intensify poverty, damage the health of populations and retard development**[1]. For instance, unsustainable patterns of consumption and production have accelerated the rate of GHG emissions into the atmosphere. This in turn has led to an increase in climate change induced extreme weather events, directly counteracting poverty and hunger eradication efforts.

The shift to sustainable consumption and production (SCP) has the potential to reduce GHG emissions and the accidental release of hazardous substances, consequently avoiding damages to ecosystems and reducing society's vulnerability to disasters in the long-term. Improving the resilience of socio-ecological systems in order to reduce exposure and vulnerability of the poor to disasters is essential to eradicate poverty[2].

The well-being of humanity, the environment, and the functioning of the economy ultimately depend upon the responsible management of the planet's finite natural resources. As the world population is set to reach over 9 billion by 2050, the 2030 Agenda for Sustainable Development recognizes the most pressing issue for developing and transition economies is poverty alleviation. SCP can enable the fulfilment of both needs and wants while minimizing the effect on nature. Transitioning to SCP can also lead to employment generation and stimulate innovation while simultaneously protecting existing sources of income[3].

It should be noted however, that there are multiple reasons for continued poverty including lack of education, poor healthcare and poor access to credit. SCP alone cannot address all the causes of poverty: the solution lies in a holistic programme which includes SCP as one of the more critical elements.

## Link to hunger

Three quarters of all hungry people live in rural areas. Many of these rural poor depend on smallholder-based agriculture to improve their livelihoods. Current projections indicate only a modest reduction in the number of undernourished people in the decades ahead[4]. The main reason for this is that many countries start with adverse initial conditions such as low national average food availability, high undernourishment, high population growth and also poor land and water resource endowments. **Improved utilization of these scarce land and water resources can therefore play a crucial role in poverty alleviation in rural areas of developing countries[5].**

## Link to the 10-Year Framework of Programmes

A number of 10YFP programmes support the implementation of development and sectoral policies that promote sustainable consumption and production, resource efficiency and reduce environmental degradation. Such policies, together with complementary actions and investments by business and civil society engaged in the Framework, have a huge potential to increase the net contribution of economic activities to human welfare and meeting basic needs.

**Key points** on SCP for poverty eradication:

- Reduced demand for depleting resources and therefore increased availability.
- Reduced effect on the world's climate - and therefore protection of the livelihoods of those dependent on nature and climate stability.
- Improved health - due to a reduction in aberrations in the climate, and also due to lower levels of pollution of air, water and the earth.
- Improved efficiency in the production of basic goods and services leads to improved affordability for the poor.
- Increased job creation due to newly created products and services and new methods of production.

**Key publications and tools** to find further information on sustainable consumption and production and poverty eradication can be found in the online resources of the toolkit, including:

- *SCP Handbook for Policy Makers- Global Edition*, UNEP, 2015 (pages 34 -36).
- *Sustainable Consumption and Production Indicators for the future SDGs*, UNEP, 2015
- *Sustainable Consumption and Production for Poverty Eradication*, UNEP, 2012 explores the linkages between the objective of achieving SCP patterns, and those of poverty alleviation.

1 *Sustainable Consumption and Production for Poverty Eradication, UNEP 2012*

2 *Sustainable Consumption and Production Indicators for the future SDGs, UNEP 2015*

3 *SCP Handbook for Policy Makers- Global Edition, UNEP 2015*

4 *World Agriculture Towards 2030/2050, FAO, 2012*

5 *Food Systems and Natural Resources. A Report of the Working Group on Food Systems of the International Resource Panel, UNEP, 2016*

# Innovation and new decent jobs

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## Creating opportunities

Innovation for sustainability, including technological and social, is a key component of Sustainable Consumption and Production (SCP). The shift towards SCP offers an opportunity for the private sector to innovate with alternative solutions and products that can help gain a competitive advantage for an increasingly aware and dynamic market.

As resource scarcity and environmental degradation are presenting growing challenges for business, innovation can help to create sustainable alternatives, and therefore transform these challenges into new market opportunities. Experience has shown that **the value-added created by eco-innovation can lead to an average of 15% annual growth for business** which in turn creates new employment**.** The resulting learnings and creative processes that come from supporting innovation in companies can lead to enhanced technical capacity in key competencies, a stronger skills base and increased employee engagement that contributes to productivity and profitability[1].

Developing and emerging countries in particular have the chance to meet their increasing consumption and production needs in a more sustainable manner than developed countries have done in the past by harnessing innovation, adapting or developing technologies and using more efficient and cleaner production processes. It is important to also focus innovation related policies towards Small and Medium Sized Enterprises (SMEs) given their key share of the business sector, subsequent contribution to employment generation and creation of more inclusive economies.

## Link to the 10-Year Framework of Programmes

There are strong linkages in Sustainable Consumption and Production for innovation and job creation with all 10YFP programmes. For example, sustainable public procurement (SPP) can drive innovation towards environmental and social improvements in markets by promoting new business models e.g. product service systems and leasing. Specific examples from national SPP programmes have demonstrated that increased sustainability in public procurement can lead to job creation, innovation and improved efficiency[2].

**Key points** on positive effects of Sustainable Consumption and Production (SCP) for innovation and job creation:

- Innovation for sustainability is a key component of SCP.
- SCP policies can spur companies to create new sources of value from waste, bi-products, redesigning products and new business models (such as servicing) which are all helped by innovation.
- Reducing operational costs and integrating innovation into business models and products can help to reach new markets through lower prices with higher sales volumes which can provide those at 'the bottom of the pyramid'[3] with affordable choices to meet their basic needs.
- Increased job creation can result from newly created products and services.
- SCP related regulation can benefit those innovative companies that are typically ahead of requirements.
- Innovation for sustainability can provide access to new and emerging markets due to a growing demand.
- Improved material or production efficiency, minimized waste to landfill result in a more resilient supply chain and knowledge-related advantages in terms of technologies and expertise. The sum of which leads to increased profitability along the value chain.
- Innovation for sustainability will increase the Research and Development and overall technical capacity of companies.

**Key publications and tools** to find further information on Sustainable Consumption and Production and innovation and job creation are available in the online resources of the toolkit, including:

- *Sustainable Consumption and Production. A Handbook for Policymakers. Global Edition*, UNEP, 2015
- *The Business Case for Eco-Innovation*, UNEP, 2014
- *Skills for Green Jobs – A Global View*, ILO, 2011. Also available here: www.ilo.org/global/publications
- *Policy brief on innovation policies*, Environmental Macro Indicators of Innovation (Emininn), 2016
- *Planning for change, Guidelines for National Programmes on Sustainable Consumption and Production*, UNEP 2008


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1 *Business Case for Eco-innovation, UNEP, 2014*

2 *Sustainable Consumption and Production. A Handbook for Policymakers. Global Edition, UNEP, 2015*

3 *C.K Prahalad 2009*

# Addressing climate change

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## Building low-carbon societies

Sustainable Consumption and Production (SCP) has a key role in the mitigation of climate change. SCP is an approach that enables the engagement of actors on both sides of the market: production activities on the supply side, and consumption activities on the demand side. Consideration of both aspects gives an integrated picture of the overall impact of economic activities on the environment and climate. It also provides a framework for addressing the inter-relationships between business activities, political decisions, and everyday consumer behavior[1].

SCP further offers the potential tools to help address climate change and create a sustainable low-carbon economy through its life cycle and value chain approach. Namely, the Intergovernmental Panel on Climate Change (IPCC) points to the need for technological solutions, based on innovation and resource efficiency along with complementary behavioral change to create cost-effective mitigation strategies, thereby tackling both consumption and production[2].

Reductions of energy use in production processes and in carbon-intensive sectors such as metals, non-metallic minerals and chemical production are also particularly important as a link between SCP and climate change mitigation. As well as natural resourced based sectors such as agriculture. In terms of manufacturing, businesses that adopt an SCP approach, supported by enabling policies - can significantly reduce greenhouse gases (GHG) emissions. For example, increasing resource efficiency along value chains and adopting solutions to reduce pollution and waste and applying more sustainable agriculture and forestry practices can achieve GHG emission reduction. In addition, substituting with renewables for energy and recycled materials such as plastic and steel can also dramatically reduce the carbon intensity of production activities. **This can reduce GHG emissions by 80-95% compared to using virgin material.**

On the consumption side, SCP options include energy conservation applications in commercial and residential buildings, zero- or low emission buildings, energy efficient appliances, standards and labelling, low carbon transport alternatives and improvement in separation of waste collections to increase recycling rates[3]. For example, UN Environment's en.lighten toolkit identifies changes in end user behavior leading to energy savings as high as 20 per cent[4] .

According to the latest report from the International Resource Panel, **improving resource efficiency will lead to a 63% GHG reduction by 2050 and is indispensable for meeting climate change targets cost effectively**. Resource efficiency combined with ambitious climate action can boost the value of economic activity by 1.5% in 2050 and contribute to job creation[5].

SCP related policies have an important role for setting standards and regulation, which in turn give the right signals for industry to reduce their GHG emissions.

**Key points** on positive effects of Sustainable Consumption and Production (SCP) for addressing climate change:

- SCP is a key operational approach, applicable to the actions of many stakeholders, for climate change mitigation.
- A life cycle and value chain based methodology can help identify and address energy intensive consumption and production processes, while assembling the full range of stakeholders necessary to address them.
- Businesses which reduce emissions by increasing efficiency, adopting less polluting solutions through cleaner technologies, applying more sustainable practices, and using more renewable materials and energy and recycled materials, can also reduce their costs and enhance their competitiveness.
- SCP policies have an important role to play in creating the necessary enabling framework for industry to achieve all these gains.

**Key publications and tools** to find further information on Sustainable Consumption and Production for addressing climate change can be found in the online resources of the toolkit, including:

- *International Resource Panel's 10 Key Messages on Climate Change*, International Resource Panel, 2016
- *Green Energy Choices: the Benefits, Risks and Trade-Offs of Low-Carbon Technologies for Electricity Production*, International Resource Panel, 2016
- *Resource Efficiency: Potential and Economic Implications. A report of the International Resource Panel*, Ekins, P., Hughes, N., et al., 2016
- *Achieving the Global Transition to Energy Efficient Lighting*, UNEP, 2012
- *A Key Solution to Climate Change: Sustainable Consumption and Production Making the Link*, the SWITCH-Asia Network Facility, 2009 (publication also available here: www.switch-asia.eu/publications).
- *En.lighten Toolkit: 'Achieving the Transition to Energy Efficient Lighting'*, UNEP, 2012 (provides guidance for countries to transform their markets to efficient lighting).

1 *http://www.scp-centre.org/fileadmin/content/files/publications/Switch_Asia_Booklet_SCP.pdf*

2 *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, IPCC, 2014*

3 *A Key Solution to Climate Change: Sustainable Consumption and Production Making the Link, the SWITCH-Asia Network Facility, 2009*

4 *Achieving the Global Transition to Energy Efficient Lighting, UNEP, 2012*

5 *Resource Efficiency: Potential and Economic Implications. A report of the International Resource Panel, Ekins, P., Hughes, N., et al., 2016*

# Human well-being and health


## Improving lifes

The prevalence of death from non-communicable diseases (NCDs) has strongly increased and evidence shows exposure to harmful chemicals play an important role in this[1]. According to the World Health Organization, **environmental factors contribute to 23% of all deaths worldwide**[2]. Inadequate waste management and pollution generally have widespread and serious impacts on people's health around the world. Untreated and inadequately disposed of waste (including hazardous chemical substances) is generating a negative impact on ecosystems and especially for people living in poverty, who are often more exposed to the effects of this pollution. In addition, lifestyles and consumption choices also play a role in this increase, such as unhealthy diets which have led to an increase of obesity, especially among youth.

Sustainable Consumption and Production (SCP) measures make an important contribution to better well-being and reduce health risks through promoting access to clean water, improving waste management and reducing exposure to pollution and a wide range of harmful substances (for example by regulating the use and disposal of chemicals, or by substituting hazardous chemicals with more benign substances)[3].

SCP patterns also contribute to human well-being by satisfying physical and other human needs such as food, transportation or shelter sustainably, within the boundaries of finite resource stocks and ecosystems which deliver a range of vital services. Historically many policy makers have overlooked the connections between resource use and environmental and social impacts, including human health[4] - SCP policies are based on a clearer understanding of these connections.

**Institutional frameworks** are crucial for changing behavior towards healthier lifestyles, and shifting societal norms from an exclusive focus on material wealth in the short-term towards one on sustaining prosperity and human well-being in the long term.

## Link to 10-Year Framework of Programmes?

Well-being and health are key transversal elements in at least four 10YFP programmes, namely *Sustainable Lifestyles and Education, Sustainable Food Systems, Sustainable Buildings and Construction and Consumer Information*.

National policies should further seek to implement the Sustainable Development Goals (SDGs), and specifically SCP-relevant targets such as 12.4 which is *'by 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment'.*

1 *Non-Communicable Diseases and Environmental Determinants, WECF, 2013*

2 *Preventing Disease through Healthy Environments, World Health Organization, 2016*

3 *Switch Med SCP Policy Toolkit, UNEP/MEP, 2014*

4 *Sustainable Consumption and Production. A Handbook for Policymakers. Global Edition, UNEP, 2015*

### Sharing experiences

Colombia has developed a set of post consumption strategies at the national level implementing the extended producer responsibility concept. Under some concrete regulations, the government has in place 7 strategies involving the following types of waste: pesticide containers, out-of-date medicines, lead-acid batteries, batteries, and fluorescent lamps, electronic waste and used tires. The implementation of these regulations is generating vital national progress towards minimizing important impacts on inhabitants' health and wellbeing.

➤ More information: https://www.minambiente.gov.co/index.php/ambientes-y-desarrollos-sostenibles/asuntos-ambientales-y-sectorial-y-urbana

**Key points** on positive effects of Sustainable Consumption and Production (SCP) for human health and well-being:

- Unsustainable consumption and production practices such as poor waste management or use of harmful chemicals have a significant impact on human health as well as the environment.
- Healthier populations generate less of a burden for governments in terms of public healthcare costs.
- Reductions in pollution and related positive impacts on public health systems.
- SCP measures ensure better well-being and reduce health risks along the life-cycle through promoting access to clean water, improving waste management and reducing exposure to harmful substances.

**Key publications** and tools to find further information on Sustainable Consumption and Production for human health and wellbeing can be found in the online resources of the toolkit, including:

- *Preventing Disease through Healthy Environments*, World Health Organization, 2016
- *Sustainable Consumption and Production for Poverty Eradication*, UNEP, (explores linkages between the objective of achieving SCP patterns, and those of poverty alleviation- including promoting health and well-being)

# Connecting the dots: Decoupling

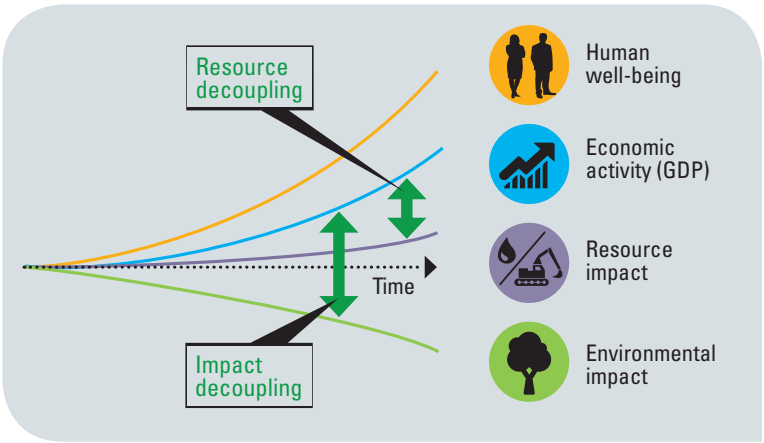


## A new paradigm

Sustainable Consumption and Production (SCP) is linked to a number of key concepts that are relevant for policy makers working to implement sustainable development plans or strategies.

SCP patterns and the protection and management of the natural resource base are two essential requirements for sustainable development. SCP entails reducing the depletion or degradation of natural resource by increasing efficiency, decreasing pollution and reducing resource waste and managing demand. The concept of 'decoupling' is applied to the challenge of making progress towards a more sustainable economy that requires an absolute reduction in resource use at a global level.

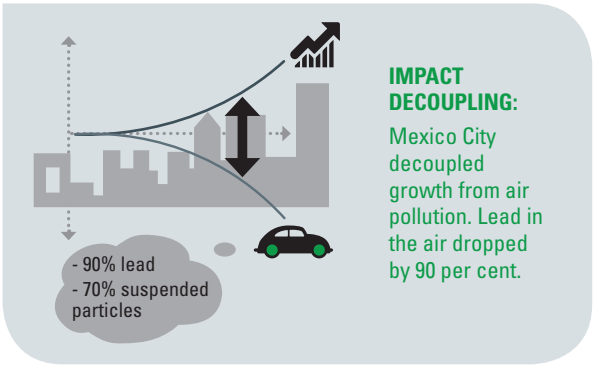
Economy-wide resource decoupling can be said to occur when resource productivity is improved at a rate that is faster that the economic growth rate. This means that **more economic value and a greater level of well-being can be created by using the same amount of, or less, resources**. Economy-wide impact decoupling refers to achieving more well-being and (if necessary) economic growth with fewer negative environmental impacts, or indeed, even restoration of eco-system services. Decoupling (a) growth in resource use and (b) environmental impacts, follow different dynamics and in many cases require different policy responses depending on each country's consumption and resource endowment levels. Each country is different: developed countries may require absolute decoupling (absolute resource use decline), while developing/emerging economies may require relative decoupling (rate of resource use is lower than economic growth rate).




There is great potential for efficiency gains in construction, transport, agriculture and heavy industry and integrated systems of production and services delivery. **These opportunities could lift resource efficiency by 80% in some economic sub-sectors**, through application of technologies that are readily available. Resource efficiency gains also translate directly into pollution reduction, so the gains from efficiency can be very high.

Considerations for future policy include:

- Use taxation or subsidy reduction to move resource prices upwards in line with documented increases in resource productivity;
- Shift revenue-raising onto resource prices through taxation of resources or in relation to product imports, with recycling of revenues back to the economy;
- Remove technological and institutional barriers to innovation in resource productivity. Create favorable conditions for investment in technology;
- Influence corporate behavior and public consumption patterns to reduce resource use.




**IMPACT DECOUPLING:**
Mexico City decoupled growth from air pollution. Lead in the air dropped by 90 per cent.

**Key publications and tools** to find further on decoupling are available in the online resources of the toolkit and the website of the International Resource Panel:

- *Policy Coherence of the SDGs – A Natural Resource Perspective*, International Resource Panel (UNEP), 2015
- *Decoupling 2: technological opportunities and policy options,* International Resource Panel (UNEP), 2014
- *Managing and Conserving the Natural Resource Base for Sustained Economic and Social Development*, International Resource Panel (UNEP), 2013
- *Decoupling natural resource use and environmental impacts from economic growth,* International Resource Panel (UNEP), 2011

# Connecting the dots: The Life Cycle Approach

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## System thinking

Life cycle thinking is integral to Sustainable Consumption and Production (SCP). It considers not only the environmental and socio-economic impacts of the product during its use phase, but also the resource consumption and pollution associated with all product life cycle stages from resource extraction to end-of-life management. *Life cycle assessment (LCA)* is a quantitative technique for compiling, analyzing and generating information regarding the life-cycle of products and services.

Applying the concept of life cycle thinking and taking a systems approach to SCP policy making helps policy makers assess and evaluate not only the environmental footprint of individual products and production processes, but also (more broadly) the environmental and socio-economic impacts from various goods and services through the entire value chain. **A life cycle perspective can reveal what stage of a product's life cycle is causing the largest environmental burden and thereby help in guiding and prioritizing improvement efforts**. For example, most of the environmental impacts of automobiles are caused during the use phase (e.g. consumption of fossil fuels, emissions of carbon dioxide, nitrous oxides, volatile organic compounds, particulates and other pollutants); while for many food products the highest environmental impacts are caused during the production stage and in the end-of-life stage as well (e.g. packaging and disposal of packaging, decomposition of wasted food).

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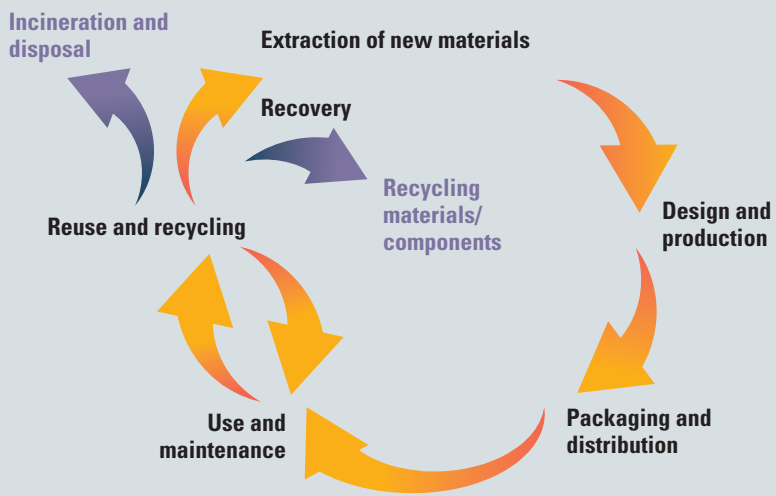
A key objective of the life cycle approach is to address the risk of **burden shifting**, which is when a solution to a problem at one stage of the life cycle can lead to an increased problem or negative impact at another stage. When designing policy instruments for SCP, it is necessary to consider the full life-cycle and address all stages, focusing on where the impacts are greatest and developing integrated solutions to reduce the overall impact of the life cycle.

**Life cycle Assessment (LCA)** is a tool that is based on compiling, analyzing and generating information regarding the life-cycle of products and services and consists of 4 main phases: Goal and Scope Definition, Inventory Analysis, Impact Assessment and Interpretation.

**Schematic product life cycle covering all major stages: from raw materials extraction to end-of-life management**




**Key publications and tools** to find further information on life cycle are available in the online resources of the toolkit and the website of the *Life Cycle Initiative website* (www.lifecycleinitiative.org) including success stories of using Life Cycle Thinking and the following key reports:

- *Greening the Economy through Life Cycle Thinking*, UNEP/SETAC Life Cycle Initiative (UNEP), 2012
- *Towards a Life Cycle Sustainability Assessment*, UNEP/SETAC Life Cycle Initiative (UNEP), 2011
- *How business uses it to decrease footprint, create opportunities and make value chains more sustainable*, UNEP/SETAC Life Cycle Initiative (UNEP), 2009
- *Why Take a Life Cycle Approach*, UNEP/SETAC Life Cycle Initiative (UNEP), 2004
- *Training materials on water footprint and carbon footprint*, UNEP/SETAC Life Cycle Initiative (UNEP), 2016 (http://www.lifecycleinitiative.org/resources/training)

# Connecting the dots: The Circular Economy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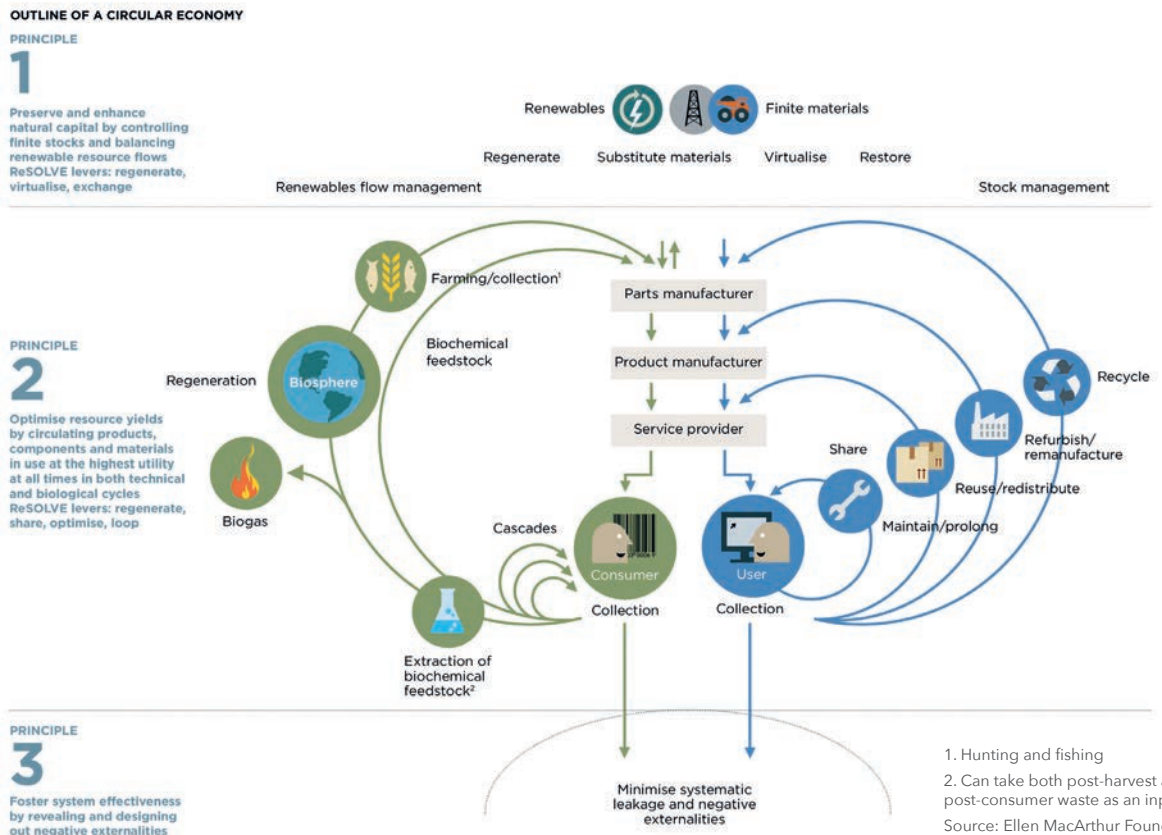
## New design for our economies

The concept of "circular economy" is one that is '***restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times, distinguishing between technical and biological cycles***'. A key factor in the circular economy is the reusability of products through lifespan extension activities along the value chain, such as repairing, reusing, refurbishing, reconditioning and remanufacturing as well as recyclability of raw materials.

In order for this to happen, manufacturers need to re-think their production strategies and redesign business models that allow for more durable, reparable and recyclable products. Moreover, raising consumer awareness and engagement will be essential to change consumption patterns and to increase demand for reused products and services. Creating a circular economy implies a strong shift towards SCP patterns. Policies for driving this shift that are currently in place at national and in some cases international levels, are already contributing to the creation of a circular economy.




1. Hunting and fishing

2. Can take both post-harvest and post-consumer waste as an input

Source: Ellen MacArthur Foundation, SUN, and McKinsey Center for Business and Environment; Drawing from Braungart & McDonough, Cradle to Cradle (C2C)

**Key publications and tools** to find further information on circular economy are available in the online resources of the toolkit as well as on various websites, including those of the European Commission (http://ec.europa.eu/environment/circular-economy) and the Ellen MacArthur Foundation (www.ellenmacarthurfoundation.org)

- VIDEO: *Re-thinking Progress: The Circular Economy by The Ellen MacArthur Foundation*
- IN FRENCH: *L'économie circulaire, une trajectoire clé pour la lutte contre le dérèglement climatique* http://www.institut-economie-circulaire.fr
- The European Commission website includes information on the Circular Economy along with an explanatory video

# Connecting the dots: The Inclusive Green Economy


## Preserving and enhancing our natural and human capitals

An Inclusive Green Economy (IGE) is an economy "*whose growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services*"[1]. Given the vital social elements of a green economy that focus on generating socio-economic co-benefits at the macro level (i.e. economic growth, job creation, equity and poverty reduction, improved human health), the concept is now referred to as an Inclusive Green Economy (IGE). As an approach to sustainable development, IGE involves **the use of quantitative and qualitative analysis to identify policies that will enable the investments required to meet specific Sustainable Development Goals (SDGs).**

Both the Sustainable Consumption and Production (SCP) and Inclusive Green Economy (IGE) concepts share a common vision of an economy that ensures human well-being within the physical limits of the planet. Both identify interventions that address unsustainable resource use and environmental issues, while also delivering socioeconomic gains. In other words, both IGE and SCP aim to change the structure of the economy, turning it from brown to green, and both approaches are therefore critical paths towards achieving sustainable development.

IGE seeks to change economic structures, primarily by promoting changes to the *foundation* of production: i.e. enhancement of natural capital, clean produced capital, healthy/educated/green-skilled labor force (human capital), and equitable social institutions (human capital), all of which are essential for producing environmentally-friendly and socially inclusive goods and services within planetary boundaries. While IGE has mainly a macro-level/investment focus, SCP deals primarily with changing the behavior of governments, businesses and consumers in order to promote shifts in consumption, investment, public spending, and trade[2] – thereby contributing to the implementation of the IGE on the ground.

IGE can subsequently be used as a basis for designing and supporting the implementation of national SCP action plans which integrate SCP into both national and sectoral policy areas. SCP is an indispensable component of an IGE (and vice versa). A combination of macro-level IGE policies and targeted interventions associated with the shift to SCP can create Collective Impact - wherein all involved stakeholders follow a common agenda and align their efforts towards sustainable development.

For example, the recently-endorsed Pan-European Strategic Framework for Greening the Economy acknowledges the value of SCP and related measures (such as green labels/standards, sustainable procurement, and changes in consumer behavior to minimize resource use and waste generation) for enhanced economic progress under a Green Economy[3].

A transition to IGE and SCP requires sufficient capacity of all actors, redirection of financial flows towards green and resource efficient activities, and the selection and application of appropriate technologies. The shift towards greener investment needs to be supported by research and policy design, particularly at the macroeconomic level in order to influence both private and public sectors (especially given the critical role of the former in change at scale). The use of cleaner, low-carbon and efficient technology is central to both SCP and IGE.

**Key publications and tools** to find further information on the IGE can be found on www.unep.org/greeneconomy

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*1 Sustainable Consumption and Production. A Handbook for Policymakers. Global Edition, UNEP, 2015*

*2 Note: Investment here means spending on fixed assets using environmentally friendly and socially inclusive goods and services that have been produced whereas public spending can be used for strengthening human and social capital, among others.*

*3 Endorsed at the Eight Environment for Europe Ministerial Conference, which took place in Batumi, Georgia on June 8-10, 2016. Full conference outcome documents can be found at: http://www.unece.org/environmental-policy/environment-for-europe/efe-conferences/batumi-conference/documents-and-materials.html*

# Connecting the dots: Sustainable Lifestyles and Education

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## Empowered and responsible citizens

Empowering youth and helping them to better understand the need to adopt more sustainable ways of living that are in harmony with nature is a priority, as youth are the next generation and key agents of change for the future. Education for sustainable consumption is also required across society more broadly, to inform the actions and choices of all members of civil society. However, while education is a fundamental objective of sustainable development, it is not sufficient on its own to change behaviors and choices. There is also a need for the development of enabling policies and infrastructures to support sustainable lifestyles.

The term 'sustainable lifestyles' regularly appears in the media - illustrating that citizens are weaving sustainability into daily decision-making. However, these efforts are rarely framed within a holistic sustainable lifestyle vision which covers mobility, housing, food and leisure. A better and more structured understanding of what is sustainable lifestyles and how it is communicated to everyone is the solution to bring social innovation for SCP.

**For individuals**, it means a better understanding of daily decision-making impacts and how to embrace more sustainable lifestyles.

**For governments**, it means setting a more conducive regulatory context, facilitating and inspiring better citizen decision-making, creating market demand through sustainable public procurement and supporting research and development and innovation.

10YFP Global Action for Sustainable Consumption and Production
UN environment

For the **private sector**, it means integrating sustainability into core business strategies to develop innovative ways to meet people's needs. These efforts require system thinking and integrated solutions to provide the "**hardware**" (regulatory frameworks, infrastructure, market signals, financial schemes, etc.) and "**software**" (information, values, beliefs).

**Key publications and tools** to find further information on sustainable lifestyles and education can be found in the online resources of the toolkit:

- *Here and Now! Education for Sustainable Consumption – Recommendations and Guidelines* (UNEP, 2010)
- *Talk the Walk: Advancing Sustainable Lifestyles through Marketing and Communication* (UNEP, 2005)
- YouthXchange Publications to help inform and educate young people on sustainable consumption and lifestyles. www.youthxchange.net

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