

Step 5. Analysing the economic, environmental and social impacts

From Step Five onwards, the process enters a more technical stage. Steps Five, Six and Seven form the “backbone” of the SIA process. Although presented in a sequence, the steps are not linear, but often feedback loops are needed to connect together elements of these steps for the best possible outcome. The core of an SIA is the analysis of the short, long-term and cross-cutting economic, environmental and social effects of the proposed policy. The aim is to identify the intensity and direction of the potential impacts in the different domains. Baseline data should reflect the assessment objectives and criteria identified in the screening and scoping. The types of checklist questions used during the screening and scoping steps can also be used for identifying the most *significant* impacts. However, the analysis will need to be more detailed, and the questions will often be specific to the sector or domain.

As we have outlined in the previous chapter, several tools can be used for impact analysis. It is not appropriate to use a single evaluation method or tool, since part of the SIA process involves searching for the best possible relationship between the object of the evaluation and the method and process to be used. SIAs can build on domain-specific assessment processes (*e.g.* EIAs, RIAs, see Box 1.1), whose results can be incorporated into the given impact area. The separate partial assessments of the different domains can then be integrated into a comprehensive qualitative assessment.

The differences between criteria and indicators

Specific sets of criteria and indicators are used for assessing sustainability impacts. The use of the words criteria and indicators, however, is not always consistent. Whilst explaining the methodological differences between criteria and indicators is beyond the scope of this document, it is important to be clear about their broad differences:

- Criteria are more generic and mostly used in the *ex ante* assessment process. Criteria are often formulated as questions, *e.g.* “Does the option affect prices consumers pay?”
- Indicators are more specific and mostly used for *ex post* assessments and evaluations of policies and strategies, *e.g.* “The net price difference for consumers of product type A.”

A wide variety of sustainable criteria has been developed by different governments and institutions. These criteria range from the generic to the very detailed. Moreover, additional sets of criteria for specific policy areas have been developed, such as for transport or trade.

Indicators are crucial to measure the outcomes and results of formulated sustainable development policy targets or goals, *e.g.* a country aims to reduce its CO₂ emissions by 20% by the year 2015. In the process of developing a policy, strategy or action plan, the initial SIA criteria can evolve into concrete indicators. To monitor the EU Sustainable Development Strategy, the European Commission has developed a set of indicators containing three levels within each of the three sustainable dimensions (EC, 2005a). Another example is the Austrian Government, which uses as the starting point for its indicator set the “2-sphere model”: the man/society sphere and the environment sphere. This allows for a more systematic and integrated view of the socioeconomic system, as the man/society sphere covers all the central theme areas or values that are required for successful human life in the context of a liberal, democratic constitutional state (Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, 2006). These different approaches are examples of the evolutions in sustainable development thinking that we touched on in Chapter 1.

The main purposes of the development and use of sustainability criteria in an SIA are to support effective policy choices, improve the quality of proposals, and reduce as much as possible uncertainties around often complex societal issues and impacts. The composition of assessment criteria can vary according to needs and consensus on purpose, scope, time investment, the existence of national sustainable development strategies (NSDS), etc.³ Such choices include, among other aspects, deciding whether or not a full SIA is needed, whether an impact is significant, whether one mitigating option is better than another, etc. The Swiss example (Box 2.2) uses criteria based on the three pillars, expanded with cross-cutting sustainable aspects. On the other hand, the Belgian Federal Government conducts an SIA quick scan, which includes criteria for the three pillars plus some effects on government (Belgium Federal Administration for Sustainable Development, 2007). The European Commission uses a more elaborate set of criteria around key sustainable impact topics, subdivided by a set of key questions, also based on the three pillars. It also incorporates elements from the RIA. The EC's approach is generally considered to be the most integrated form of SIA currently existing (Table 6.1).

The capital approach

The development of criteria and indicators can also be based on the capital approach. In this approach, total national wealth is broadly defined to include: (i) financial capital such as stocks, bonds and currency deposits; (ii) produced capital such as machinery, buildings, telecommunications and other types of infrastructure; (iii) natural capital in the form of natural resources, land and ecosystems; (iv) human capital in the form of an educated and healthy workforce; and (v) social capital such as functioning social networks and institutions. The indicators or criteria are either linked to foundational well-being, which is essential to society, or to economic well-being, which is derived from market activity.

Impact analysis using this type of indicator set could assess whether a proposed policy would contribute to the increase or decrease over time (in terms of stocks and flows) of financial, natural and social capital. Trade-offs can also be identified, *e.g.* increases in use of energy resources *vs.* declines in human capital stock. This indicator framework also underlines the need to maintain certain critical forms of capital (foundational) and the limited substitutability among different forms of capital (economic *vs.* foundational).

Using this approach, each criterion or indicator can be given a quantitative and/or qualitative rating or score. The complexity of the analysis will largely depend on the type of tools selected. In the case of quantitative data a weighing process (calculation models) will be applied. The purpose of this analysis is to gain insight into the possible impacts in all the sustainable dimensions. This helps to develop more specific and operational objectives in the policy or programme and forms a basis for Step Six (identifying synergies, conflicts and trade-offs).

3. "Governments first agreed to prepare national sustainable development strategies as part of Agenda 21 [...]. The purpose of these strategies was to translate the Summit's ideas and commitments into concrete policies and actions. Governments agreed to 'adopt national strategies for sustainable development [which should] build upon and harmonise the various sectoral, economic, social and environmental policies and plans that are operating in the country. Its goals should be to ensure socially responsible economic development for the benefit of future generations'." (OECD, 2006b)

Table 6.1. A summary of the criteria and questions for main impact topics used in the European Commission's Impact Assessment

Economic impacts	Social impacts	Environmental impacts
<p>Functioning of the internal market and competition</p> <p><i>Example: What impact (positive or negative) does the option have on the free movement of goods, services, capital and workers?</i></p>	<p>Employment and labour markets</p> <p><i>Example: Does it lead directly or indirectly to a loss of jobs?</i></p>	<p>The climate</p> <p><i>Example: Does the option affect the emission of greenhouse gases (e.g. carbon dioxide, methane etc) into the atmosphere?</i></p>
<p>Competitiveness, trade, and investment flows</p> <p><i>Example: What impact does the option have on trade barriers?</i></p>	<p>Standards and rights related to job quality</p> <p><i>Example: Does the option affect the access of workers or job-seekers to vocational or continuous training?</i></p>	<p>Transport and the use of energy</p> <p><i>Example: Does the option affect the energy intensity of the economy?</i></p>
<p>Operating costs and conduct of business /small and medium-sized enterprises</p> <p><i>Example: Will the option impose additional adjustment, compliance or transaction costs on businesses?</i></p>	<p>Social inclusion and protection of particular groups</p> <p><i>Example: Does it lead directly or indirectly to greater equality or inequality?</i></p>	<p>Air quality</p> <p><i>Example: Does it have an effect on emissions of acidifying, eutrophying, photochemical or harmful air pollutants that might affect human health, damage crops or buildings or lead to deterioration in the environment (soil or rivers etc)?</i></p>
<p>Administrative burdens on business</p> <p><i>Example: What is the impact of these burdens on SMEs in particular?</i></p>	<p>Gender equality, equality treatment and opportunities, non-discrimination</p> <p><i>Example: Does the option have a different impact on women and men?</i></p>	<p>Biodiversity, flora, fauna and landscapes</p> <p><i>Example: Does it affect protected or endangered species or their habitats or ecologically sensitive areas?</i></p>
<p>Public authorities</p> <p><i>Example: Does the option require the creation of new, or the restructuring of existing, public authorities?</i></p>	<p>Individuals, private and family life, personal data</p> <p><i>Example: Does it affect the right to liberty of individuals?</i></p>	<p>Water quality and resources</p> <p><i>Example: Does the option decrease or increase the quality or quantity of freshwater and groundwater?</i></p>
<p>Property rights</p> <p><i>Example: Are property rights affected (land, movable property, tangible/intangible assets)? Is acquisition, sale or use of property rights limited?</i></p>	<p>Governance, participation, good administration, access to justice, media and ethics</p> <p><i>Example: Does it affect the individual's access to justice?</i></p>	<p>Soil quality or resources</p> <p><i>Example: Does the option affect the acidification, contamination or salinity of soil, and soil erosion rates?</i></p>
<p>Innovation and research</p> <p><i>Example: Does it facilitate the introduction and dissemination of new production methods, technologies and products?</i></p>	<p>Public health and safety</p> <p><i>Example: Will it affect health due to changes in energy use and/or waste disposal?</i></p>	<p>Land use</p> <p><i>Example: Does it affect land designated as sensitive for ecological reasons? Does it lead to a change in land use (for example, the divide between rural and urban, or change in type of agriculture)?</i></p>

Table 6.1. A summary of the criteria and questions for main impact topics used in the European Commission's Impact Assessment (*continued*)

Economic impacts	Social impacts	Environmental impacts
Consumers and households <i>Example: Does the option affect the prices consumers pay?</i>	Crime, terrorism and security <i>Example: Does the option improve or hinder security, crime or terrorism?</i>	Renewable or non-renewable resources <i>Example: Does it reduce or increase use of non-renewable resources (groundwater, minerals etc)?</i>
Specific regions or sectors <i>Example: Will it have a specific impact on certain regions, for instance in terms of jobs created or lost?</i>	Access to and effects on social protection, health and educational systems <i>Example: Does the option affect the financing / organisation / access to social, health and care services?</i>	The environmental consequences of firms and consumers <i>Example: Does the option lead to more sustainable production and consumption?</i>
Third countries and international relations <i>Example: Does the option affect developing countries at different stages of development (least developed and other low-income and middle income countries) in a different manner?</i>	Culture <i>Example: Does the proposal have an impact on cultural diversity?</i>	Waste production /generation /recycling <i>Example: Does the option affect waste production (solid, urban, agricultural, industrial, mining, radioactive or toxic waste) or how waste is treated, disposed of or recycled?</i>
Macroeconomic environment <i>Example: Does the option have overall consequences for economic growth and employment?</i>	Social impacts in third countries <i>Does it increase poverty in developing countries or have an impact on the income of the poorest populations?</i>	The likelihood or scale of environmental risks <i>Example: Does the option affect the likelihood or prevention of fire, explosions, breakdowns, accidents and accidental emissions?</i> Animal welfare <i>Example: Does the option have an impact on the health of animals?</i> International environmental impacts <i>Example: Does the option have an impact on the environment in third countries that would be relevant for overarching EU policies, such as development policy?</i>

Source: Adapted from EC (2009), *Impact Assessment Guidelines*, European Commission, Brussels, available at http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf