

# STRATEGIC ENVIRONMENTAL ASSESSMENT IN SPATIAL PLANNING

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**Introduction.** As is known, any military conflicts undermine the prosperity, economic and social outcomes achieved as the result of joint efforts of all peace-loving countries. Russia's invasion of Ukraine sent shock waves round the world. Russia's destructive military aggression has sparked a humanitarian crisis for the Ukrainian people, and has jeopardized a global environmental and energy security. It is understandable that two years of bitter fighting on the territory of Ukraine exhausted the country, have shifted policy attention and priorities away from important global programs on climate and nature, pollution and more.

At the time of this writing in early 2024, the end date of the Russia's bloody war remained highly uncertain. Yet, despite these difficult times, the SDGs remain the roadmap for achieving sustainable development for Ukraine by 2030 and beyond. In the aftermath of the Russian withdrawal from Ukrainian areas, we have to restore and promote sustainable use of terrestrial and aquatic ecosystems, sustainably manage forests and land, and halt biodiversity loss. In particular, we are mindful of our commitments under the Convention on Biological Diversity (CBD) and the Paris Climate Agreement. Throughout the recovery planning process, it will be essential to ensure alignment with the European environmental standards at all levels of management. Our task today is to continue to implement, as far as possible, progressive tools for sustainable development, which include strategic environmental assessment (SEA).

This paper reflects upon the origins and current state of the strategic environmental assessment, based on a review of existing literature, international initiatives and practical experience. It provides a brief overview of how SEA has evolved, the role of SEA in planning and decision-making processes, and raises the question about the application of this institution in the context of the tasks of post-war Ukraine.

**Presentation of the main research.** Currently, the world has developed a whole spectrum of instruments to promote sustainable development. Of these, in Ukraine, in particular, environmental certification of products, environmental management systems, environmental audits, environmental monitoring etc. are adapted and widely used. Among instruments used for planning and managing sustainable development, a one of the leading places can be given to the institution of environmental assessment.

The application of environmental assessment instruments must “provide a solid bases for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environment and development systems” (UN 1993, p. 473). The purpose of environmental assessment is to prevent environmental degradation by providing decision-makers with relevant information about the environmental implications of a proposed activity to allow for a rational decision on whether or not to authorise the development. There has already been general agreement in world practice that the modern institute of environmental assessment includes two fully developed processes: project-level Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA).

It should be noted that the Plan of Implementation of the Sustainable Development Goals adopted at the World Summit on Sustainable Development (WSSD) includes explicit reference to the Institute for Environmental Assessment (see paragraphs 19, 36, 62 and 135 of the WSSD Implementation Plan). Implicit reference to strategic environmental assessment (for example, para 136) aims to further develop methodologies for sustainable decision-making at policy and strategy levels.

Let us remember that only at the end of the seventies did the most progressive states began to transition from policies of mitigating the consequences of environmental damage to the policies of prevention of adverse impacts. The EIA process was applied for the first time on a regular basis in the USA after the US National Environmental Policy Act – NEPA was released in 1969. Based on USA experience, EIA systems were established throughout the world, for instance Canada in 1973, Australia in 1974, West Germany in 1975, France in 1976 and others (Glasson et al., 2005). The Council Directive 85/337/EEC on the assessment of the effects of certain

public and private projects on the environment unified the EIA procedure and made it mandatory for all member states of the European Communities – now European Union.

Later, the Espoo Convention (1991) set forth the requirements for EIA procedure, which reflected the new format of regulating social and economic development, namely:

- Impacts on the natural environment are studied with other elements of the environment – social factors and population health;

- Public participation is an obligatory element of EIA procedure;

- Process of environmental assessment includes adequate informing of the public about the proposed activity and its potential impacts on the environment including human health.

In response to ideas of sustainable development, it was eventually realised that it is necessary to incorporate environmental considerations at a more strategic level, when the major decisions concerning development activities are not yet taken. This procedure was eventually named ‘strategic environmental assessment’ or SEA (Thérivel & Partidário, 1996).

However, it took many years until SEA became a viable tool for environmentally sustainable development planning. On the 21st of July 2001 the European Parliament and the European Council jointly adopted the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, providing a unified legal format for SEA procedure in states - EU member. The objectives of the SEA Directive (Art. 1) support the environmental policy of the European Union through strengthening the integration of environmental considerations and sustainable development principles in the preparation and adoption of development strategies.

An important event for Ukraine and other non-EU countries was the adoption of the Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context. The above Protocol was adopted on 21 May 2003 by the Extraordinary Meeting of the Parties to the Convention of 25 February 1991 on Environmental Impact Assessment in a Transboundary Context held in Kiev, from 21 to 23 May 2003.

On 20 March 2018, the Ukrainian Parliament adopted Law “On Strategic Environmental Assessment”, which was based on the Protocol on SEA and the Directive 2001/42/EC<sup>1</sup>. The Law indicated that SEA is part of the work on state spatial planning documents: urban planning documentation, plans or schemes of projects that are subject to an environmental impact assessment (EIA) procedure or that may affect protected areas and objects. SEA applies to all areas, from urban planning and energy to agricultural and water planning. In particular, the Law contains a provision requiring mandatory public consultations on draft urban planning documents at the local level, such as general urban plans, zoning plans, and detailed territory plans, with respect to matters of strategic environmental assessment.

Conceptually, SEO forms strategic frameworks at every level of spatial planning that contribute to improving the sustainability of complex social-ecological systems. The SEA procedure is considered as a tool for integrating environmental concerns into the strategic planning at all levels of public administration.

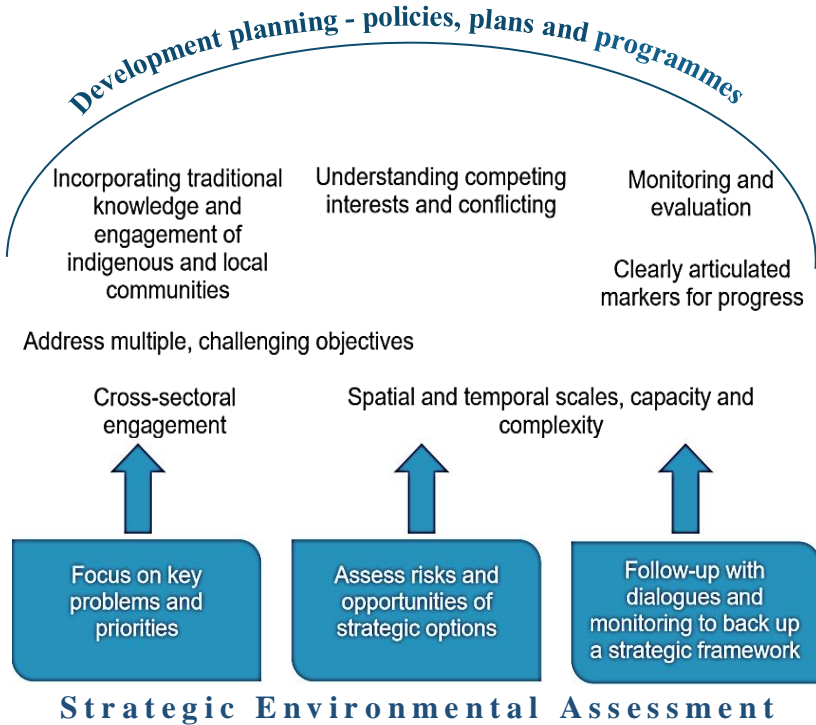
Figure 1 shows that integration of SEO procedure into spatial planning process contributes to the pursuit of self-regulating sustainability (see also Partidario, 2007-2012; Fischer, 2007). Figure 2.2 displays the basic steps of SEA and how they can be integrated into the strategic decision-making process, while providing necessary information at all relevant stages.

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<sup>1</sup>In general, although the SEA Directive served as foundation for the SEA Protocol, there are some major differences between these two documents, including differences in provisions for assessing the environmental impacts and preparing the environmental report (see Palekhov, 2014 for details). In particular, in addition to the provisions of the SEA Directive, the SEA Protocol adds two more aspects that should be taken into account while preparing the environmental report: the interests of the public (Art. 7 para 2c) and the information needs of the decision-making body (Art. 7 para 2d). At the same time, the SEA Protocol does not establish direct links to the protected areas, while the SEA Directive contains explicit provisions requiring that “any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance”, are identified, described and evaluated (Annex I of the SEA Directive).

**Figure 1**

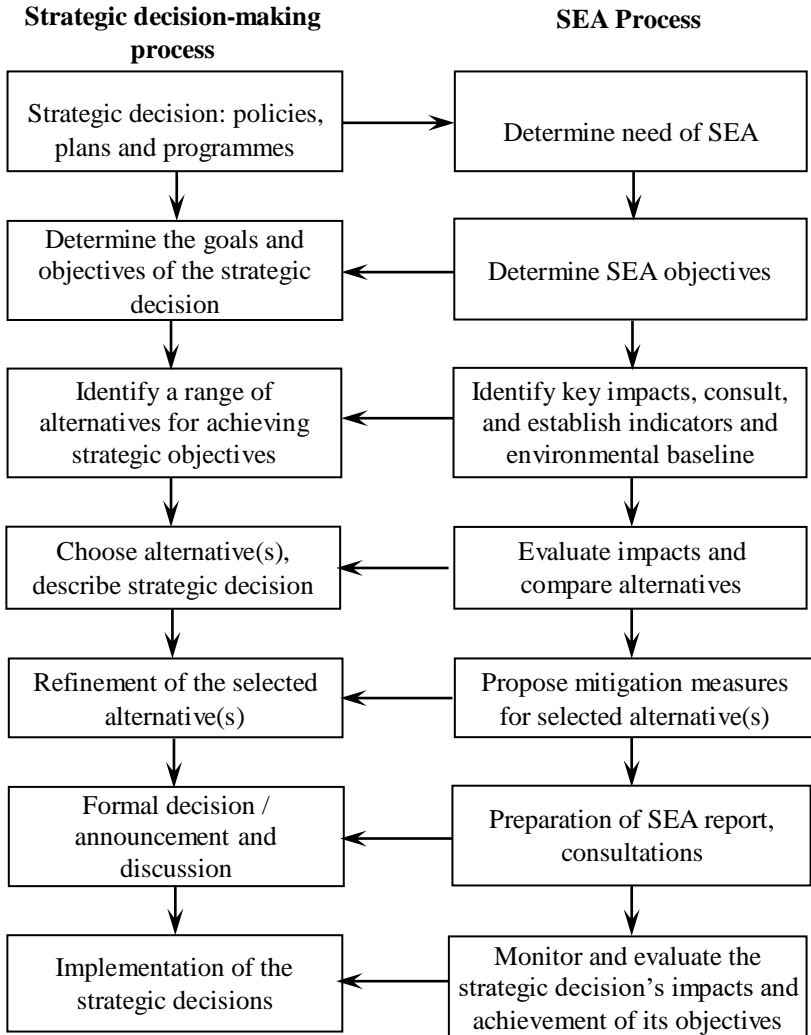
*SEO principles in spatial planning (based on Partidario, 2007-2012)*



It has been studied that warfare ecology covers all three stages of warfare – preparations, war, and postwar activities. Each stage affects biophysical and socioeconomic systems as coupled systems (Machlis & Hanson, 2008). Russia's military actions have led to large-scale environmental changes over a large territory of Ukraine. Pollution from the war has already affected 70% of surface water and soil, has directly harm wildlife and biodiversity. Studies have confirmed the cascading effects of warfare on ecosystems, biodiversity and social values (Chumachenko et al., 2023).

**Figure 2**

*Integration SEA into the strategic decision-making process  
(modified from Palekhov, 2014)*



Although much is understood about the negative impact of war, historical examples of post-war reconstruction in different countries suggest that underestimating the severity of wartime damages to ecosystems and natural resources reduces the effectiveness of recovery plans and programs. An integrated approach in restoring the environment after military-technogenic activities remains an important challenge for Ukraine. The concept of SEA provides the key to reconceptualise planning for post-war reconstruction.

However, despite the awareness of the importance of environmental aspects for decision-making in public development management, integration of SEA into the territorial restoration planning process is still very weak, more often it remains as a tool to argue for the usefulness of some approach. As a result, the policy decision model may be consistent with government guidelines, but at the same time it may focus only on resource supply and rely on subjective expert assessments without a clear consumption threshold.

In this regard, in May 2023, amendments to the Law on SEA came into force. The main changes include: 1) creation and administration of the Unified Register of Strategic Environmental Assessment; 2) liability for offenses in the field of SEA. The amendments aim to make the post-war reconstruction process in Ukraine more environmentally sustainable, socially responsible and transparent to the public.

**Conclusions.** The mission of SEA in spatial planning for post-war reconstruction is to provide systematic, on-going process for evaluating, at the earliest appropriate stages of decision-making, relating to the reconstruction and sequential development of territories (districts, cities, regions, countries, etc.), ensuring full integration of relevant biophysical, economic, social and political considerations to promote the concept of sustainable development.

Through application of a range of suitable, situation specific methods and techniques, SEA is supposed to add environmental sustainability to policies, plans and programmes, relating to territorial development. SEA obligates the responsible authority (i.e. the proponent or initiator of the strategic action, legislative body or executive power) to systematically adjust the targets of strategic decisions, their contents and implementation methods to the objectives of environmental policy and environmental targets, including health aspects, and restoring opportunities for future generations.

## References

Chumachenko, S.M., Dudkin, O.V., and Honcharenko, I.O. (2023). Development of a scientific and methodological approach to assessing losses from warfare in natural ecosystems on the territory of Ukraine. *4th International Conference on Sustainable Futures: Environmental, Technological, Social and Economic Matters (ICSF-2023) 22/05/2023 - 26/05/2023 Kryvyi Rih, Ukraine.* <https://doi.org/10.1088/1755-1315/1254/1/012107>.

Fischer, T.B. (2007). Strategic Environmental Assessment – An Introduction. *Project Promotion of European Education on Environmental Assessment for third Country Audience.*

Glasson, J., Therivel, R., Chadwick, A. (2005). Introduction to environmental impact assessment: 3rd Edition. Routledge, London.

Machlis, Gary E., Hanson, T. Warfare Ecology, *BioScience*, Volume 58, Issue 8, September 2008, Pages 729–736, <https://doi.org/10.1641/B580809>.

Palekhov, D. (2014). Potential for Strategic Environmental Assessment (SEA) as a Regional Planning Instrument in Ukraine. *Umweltrecht in Forschung und Praxis*, Band 66. Hamburg : Dr. Kovač.

Partidário, M.R. (2007). Strategic Environmental Assessment Good Practices Guide – Methodological Guidance. *Agência Portuguesa do Ambiente.*

Partidário, M.R. (2012). Strategic Environmental Assessment Better Practice Guide – Methodological Guidance for Strategic Thinking in SEA. *APA and REN*

Ronchi, S., Arcidiacono, A., Pogliani, L. (2020). Integrating green infrastructure into spatial planning regulations to improve the performance of urban ecosystems. Insights from an Italian case study. *Sustainable Cities and Society*. Vol. 53. <https://doi.org/10.1016/j.scs.2019.101907>

Thérivel, R., Partidário, M.R. (1996). The practice of strategic environmental assessment. Earthscan, London.

UN (1993). Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992. *Resolutions adopted by the conference. A/CONF.151/26/Rev.1.*