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Mapping Essential Life Support Areas to Achieve the Sustainable Development Goals

by Veronica Recondo, Lea Phillips, Christina Supples and Marion Marigo¹

The United Nations 2030 Agenda for Sustainable Development (Agenda 2030) is a guiding star for countries, establishing a common vision for human and planetary well-being. However, approximately half of the Sustainable Development Goal (SDG) targets are severely or moderately off track for achievement by 2030,² in part because decision-making around the SDGs is often undertaken by just a few governmental ministries. While the Agenda 2030 declares that the SDGs are "integrated and indivisible",³ goals related to the environment often take a back seat to economic goals during national implementation.⁴⁵ The UNDP-led project 'Mapping Nature for People and Planet'⁶ demonstrates how countries can apply integrated spatial planning to facilitate inclusive decision-making for policy targets around the SDGs, the Kunming-Montreal Global Biodiversity Framework, the UN Framework Convention on Climate Change and other global conventions and frameworks. The project supports countries in developing a singular map of Essential Life Support Areas (ELSAs) that shows pathways for action to achieve multiple targets at once, including those at the nexus of nature, climate and sustainable development. At the base of the map are the country's most pressing policy targets and current spatial data layers, hand-selected by national experts. This policy brief captures insights from this project to help policymakers use integrated spatial planning to support the achievement of SDGs, with a focus on those that are the most dependent on nature.⁷

Implementation of the United Nations 2030 Agenda for Sustainable Development remains limited and fragmented around the globe, as revealed in an assessment of 3,000 studies on the 17 Sustainable

Development Goals (SDGs).⁸ Progress is often siloed across ministries that have disconnected policy agendas and lack communication. Furthermore, although the achievement of half of the SDG targets is dependent on nature,⁹ progress towards economic SDGs can come at the expense of the environment if these interlinkages are not recognized.

Integrated spatial planning is an approach to landuse planning that helps policymakers determine how and where to take action to make the most progress towards diverse goals while minimizing trade-offs.

Integrated spatial planning can identify areas where multiple conservation actions can be implemented, such as creating protected areas, sustainable land management and ecosystem restoration. This type of analysis can help decisionmakers more effectively determine how and where to act to advance the achievement of the SDGs, given the role that nature has in providing food, water and shelter, mitigating climate change, maintaining human health and well-being, reducing disaster risk and sustaining livelihoods.

The United Nations Development Programme (UNDP) supports countries in applying integrated spatial planning to develop more comprehensive and inclusive sustainable development strategies that better account for the 17 diverse global goals. The result of this integrated spatial planning methodology is maps of Essential Life Support Areas (ELSA) that indicate where the protection, management, and restoration of nature could support countries to more cohesively deliver on multiple national policy targets, including around sustainable management of terrestrial and inland water ecosystems, climate change adaptation and mitigation, disaster risk reduction, sustainable food production and other nature-dependent themes.¹⁰ Working with 13 countries,¹¹ the project 'Mapping Nature for People and Planet' successfully demonstrates how stakeholders can become more unified for people and the planet. Using integrated spatial planning, countries can build consensus on the most critical national policy targets related to nature, climate and human well-being, such as a country's Nationally Determined Contributions to the Paris Agreement and National Biodiversity Strategies and Action Plans (NBSAPs) and pathways to achieving them. The results from this project can help policymakers envision how they can apply integrated spatial planning to streamline action towards the achievement of the SDGs and related national goals.

Overview of the ELSA process

In each country supported by the project, the ministry of the environment or equivalent and the UNDP Country Office co-lead the process to develop the ELSA map with stakeholders, using technical support from the UNDP Global Programme on Nature for Development. This process follows three phases: generating a national vision for the analysis; co-creating the ELSA map; and mainstreaming project results (Figure 1). Stakeholders play a critical role in shaping the resulting map and are meaningfully engaged through a series of formal consultations and meetings, which can take between nine months and a year¹² and include the diverse representation of groups who may be impacted by its potential use. The groups can include women, Indigenous Peoples and local communities, academic institutions and government ministries with a focus on nature, climate, energy, natural resources, tourism, mining and other sectors. Governments are also responsible for attaining free, prior, and informed consent from Indigenous groups on applications that may impact them or their territories.¹³

Figure 1: The ELSA process



Source: Integrated Spatial Planning Workbook, United Nations Development Programme, 2023

Phase 1: Generating a national vision for the analysis

Before countries can begin to build the ELSA map, they must first clarify the policy targets they are trying to achieve. Stakeholders come together to select approximately 10 national policy targets that will form the basis of the analysis. These targets come from national leading plans, including national development plans, NBSAPs, Nationally Determined Contributions to the Paris Agreement and other multilateral environmental agreements. Stakeholders then collect national and global spatial datasets that can represent these priority policy targets on the ELSA map. For example, a target of improving the conservation status of threatened species could be mapped through data on threatened species richness, key biodiversity areas, threatened ecosystems and important wildlife corridors (Figure 2). National data sets are preferred as they tend to have finer resolution and are validated by national experts. When countries want to use their ELSA map for planning on a smaller scale, high-resolution regional or locallevel data sets can be the most useful. If there are gaps in available data, countries can use global data sets, including those available from the UN Biodiversity Lab, a free spatial data platform with over 400 of the world's best data layers on nature,

climate change and sustainable development.¹⁴ These data are then screened for accuracy, resolution, currentness and consistency and are processed to have the correct format and scale. The final ELSA map will show where nations can protect, manage or restore terrestrial ecosystems to achieve synergistic national targets for nature, climate and sustainable development.

Stakeholders also agree on the parameters of their ELSA map. Most maps identify areas appropriate for three types of nature-based actions, in line with the prioritized policy targets for a given country: protection, sustainable management and restoration. However, given the flexibility of integrated spatial planning, countries can also set up the analysis to identify areas for additional types of actions, including urban greening. Countries also need to define the percentage of land area they would like the final map to identify for each naturebased action. For example, Costa Rica decided to set up the analysis so that its map identified that protecting 30 percent of national land area, sustainably managing 8 percent and restoring 5 percent could help the country make simultaneous progress towards its priority targets.

Phase 2: Co-creating the ELSA map

The ELSA webtool, a customized spatial optimization program, is used to analyse the spatial data layers to assess where actions, such as protecting, managing and restoring nature, could result in the greatest positive impact across all selected policy targets. Using the webtool, stakeholders oversee the creation of a preliminary ELSA map, which can be developed in as little as 10 minutes using the information generated in Phase 1. Then, they work together to refine the map by weighing the relative importance of the various priority policy targets and assessing trade-offs that result from potentially conflicting targets. The result of this analysis is a final ELSA map that shows where countries can prioritize specific actions, such as protecting, managing and restoring nature, to achieve their national development goals (Figure 3). The final ELSA map and the underlying global and national data layers are also made available via a secure UN Biodiversity Lab workspace. Countries also receive full access to the ELSA webtool so that they may rerun the analysis with adjusted parameters whenever they choose.

Phase 3: Mainstreaming project results

Finally, stakeholders identify opportunities to embed the results of the ELSA analysis into national nature, climate and sustainable development policies. The maps can be a useful visualization tool for policymakers to consider at key junctures, for example, during the NBSAP update process. Applications often include supporting plans and processes around disaster risk reduction, water and food security, green growth and climate change adaptation. Below, case studies from the Integrated Spatial Planning Workbook¹⁵ illustrate the diverse applications and concrete impacts of this approach.

SDG 6:16 ELSA for water provision in Colombia

In Bogota, water provision is largely dependent on páramos, fragile moorlands located in the Andes. In fact, 80 percent of drinking water in the capital city comes from a single ecosystem, the Chingaza páramo.¹⁷ Colombia has created a regional ELSA map to take action for water security for 15 million people in the central region around Bogota and five departments. During the formulation and implementation of the Regional Water Security Plan,¹⁸ the Special Administrative and Planning Region (RAP-E in Spanish) for the Central Region used the areas identified by the ELSA map to propose scenarios for protection, restoration and sustainable land use. Action in these areas could improve the ecological conditions while also contributing to water security in the central region. The ELSA map and the Nature-Based Solutions—SBN—strategy have been strategic for the planning of territorial actions, especially in terms of protection and restoration of 18 critical páramos in the RAP-E Central Region, as seen in the Strategy for the Integrated Management of Páramo Complexes of the Central Region of Colombia (Figure 2).19

Figure 2: ELSA map featured in the Strategy for the Integrated Management of Páramo Complexes of the Central Region of Colombia



The Strategy for the Integrated Management of Páramo Complexes of the Central Region of Colombia includes the ELSA map of the Central Region of Colombia, indicating possible areas of intervention for water security. Dark green represents areas already under protection, light green represents new areas recommended for protection, blue represents areas recommended for restoration and orange represents areas recommended for management. Sources: Strategy for the Integrated Management of Páramo Complexes of the Central Region of Colombia, Administrative and Planning Region Special, and United Nations Development Programme, 2022.

SDG 11:20 ELSA for disaster risk reduction in Uganda

Uganda faces a high degree of land degradation, including the loss of valuable wetlands and forests, the conversion of grasslands and the degradation of agricultural soils. As a result, many areas in Uganda suffer from natural disasters, including flooding, droughts and landslides. To reduce these risks, national policymakers are calling for a paradigm shift to place nature-based solutions at the center of the country's development framework. Uganda's National Environment Management Authority is using its ELSA map to fast-track the implementation and review of the country's Third National Development Plan, showing how safeguarding and restoring nature can have ripple effects for human safety and well-being. The plan will support afforestation and wetland restoration, among other activities that strengthen nature's capacity to mitigate the risk of disasters. The country's ELSA map (Figure 3) is also seen as a critical tool to support the economic evaluation of nature, national capital accounting, biodiversity offsets and other techniques to conserve biodiversity.

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Figure 3: ELSA map of Uganda



Source: Integrated Spatial Planning Workbook, United Nations Development Programme, 2023.

SDG 13:21 ELSA for climate change adaptation in Costa Rica

Flanked by two oceans, Costa Rica is gravely aware of its vulnerability to climate change. Healthy ecosystems are central to the country's resilience against the many threats of climate change, including natural disasters, food shortages and water scarcity. For example, the nation's forests and urban treed landscapes are helping to prevent urban heat islands. Coral reefs and mangroves are buffering against sea-level rise and flooding in coastal areas.

Costa Rica has leveraged the flexibility of the ELSA approach to help develop its National Climate Adaptation Plan.²² Created by UNDP Costa Rica and the Ministry of Environment through a collaborative process with key climate adaptation stakeholders, the ELSA map focuses specifically on adaptation, indicating where the country can use ecosystem protection, management and restoration, in addition to urban greening, to achieve its ecosystem-based climate adaptation policy priorities. It supported stakeholders in visually representing climate adaptation targets for the country to identify actions to reduce climate vulnerabilities and to incorporate these recommendations as an integral part of the plan. The country is confident that the National Adaptation Plan, supported by ELSA, will reduce vulnerability to climate-related hazards, secure ecosystem services for human populations and promote ecosystem adaptation to climate change.

SDG 1:²³ ELSA for a sustainable economy in the Dominican Republic

In the mountainous regions of the Dominican Republic, cocoa and coffee provide an economic backbone for many families. The ELSA project presents an opportunity to mainstream the

protection of ecosystem services into public policies for a triple positive impact—social, economic and environmental. After the country developed its ELSA map, stakeholder meetings helped to refine potential

applications for the map in support of specific policies. The Dominican Republic intends to use the ELSA map to take action to implement the Kunming-Montreal Global Biodiversity Framework (GBF) in the country and its Nationally Determined Contribution (NDC) to the Paris Agreement. The analysis also supports policymakers in planning and implementing a suite of public policies and projects that require high-quality and easily accessible geospatial data. These potential applications include identifying

Conclusion

The SDGs are a uniting force between and within countries, providing a shared framework that recognizes the dependencies between nature, climate, our economies and human well-being. Action towards the SDGs must also reflect these intersections and be undertaken across sectors and society using the best data and tools available. Integrated spatial planning builds on advances in spatial technology to support countries in overcoming silos and discovering synergies among actions to achieve the SDGs across national priorities. The methodology also enables stakeholders to build consensus on the most critical national policy targets related to nature, climate and human well-being and pathways to achieving them. While the ELSA tool is not yet available for all countries, key insights from the project's methodology can be independently applied to support better decision-making:

- Value of applying spatial planning tools to a whole-of-society planning approach: By engaging diverse stakeholders and government agencies in SDG decision-making, countries strengthen cross-sectoral collaboration and support the development of a community of practice around sustainable development. Spatial data can bring together stakeholders that do not normally interact to come to a conclusion on pathways for achieving the best outcomes across society and nature. When these groups are not convened or do not have data as a foundation for discussions, it can be easier to miss opportunities for coordinated action.
- Policy prioritization exercises as a catalyst for action that overcomes silos across government sectors: Countries often have a myriad of policies and targets pertinent to the SDGs spread across multiple sectoral agencies. Stakeholders need support to identify policies and targets that have the potential to be synergistic across a range of commitments

areas for climate-resilient coffee and cocoa production, implementing women-led agriculture projects to support the country's Gender and Climate Change Plan and promoting reforestation of native endemic forest and fruit species. The Dominican Republic is committed to leading the revolution towards more sustainable business models, and the ELSA project is helping guide decision-makers in harmonizing the country's national resources and its people at the center of development.

to goals for nature, climate and sustainable development. The ELSA process simplifies the identification of shared targets for their country to attain simultaneously, such as those within their Nationally Determined Contributions to the Paris Agreement, NBSAPs, National Development Plans and other sources. By doing so, countries gain a clearer picture of their own policy landscape and develop better mechanisms to jointly implement them.

- Importance of increasing data access and support for policymakers: The project reveals the value of strengthening connections between policymakers and national spatial data holders. Even countries with rich repositories of spatial data still report the need for additional support in overcoming barriers around data sharing, access and application. Often, data layers are scattered across many agencies and are in incompatible formats. Countries also appreciate having a common data repository on the UN Biodiversity Lab, where they can visualize and run analysis on their spatial data in a secure, easy-to-use workspace²⁴ to support new projects. In addition, policymakers increased their understanding of the value of spatial data and discovered gaps where monitoring systems could be improved.
- Opportunities for flexible, stakeholder-led tools to respond to rapidly changing national priorities: Natural systems and human societies are marked by unique diversity and everchanging conditions. Additionally, no one is better equipped to speak to the specific needs of an ecosystem, community or country than those who call it home. Therefore, decisionmaking tools for action towards the SDGs cannot be "one-size-fits-all" but must be shaped by national decision-makers based on their interests. In the ELSA project, we find that some of the most impactful applications occur when countries innovate with the methodology, piloting new uses of integrated

spatial planning based on their specific planning needs. Supporting country ownership of the methodology also helps to ensure that countries can continue to use the ELSA webtool long after the project duration to develop new ELSA maps based on changing priorities.

If current trends persist, in 2030, 574 million people²⁵ will still be living in extreme poverty and we will be 25 years of action away from halting deforestation.²⁶ Failure to achieve the SDGs will have an outsized effect on poor and marginalized communities, exacerbating existing inequalities.²⁷ For example, 89 percent of the 1.8 billion people who are threatened by extreme flooding live in low- or middle-income countries.²⁸ Without urgent intervention, more and more people will be forced to choose between protecting their homes from flooding or investing in education, health and other forms of personal and economic development. We believe that collective progress in advancing the SDGs could be made if policymakers had access to the best available technology and tools to envision how to address multiple goals at the same time. However, our real message is not about tools or data—it is about how we can bring more voices into decision-making for a bold, inclusive approach that leaves no one behind.

Annex 1: Relationship between the priority policy targets and the spatial data sets used to create the ELSA map for Uganda

This figure shows the connection between the priority policy targets selected by national stakeholders (middle column), the national policy documents where those come from (left column) and the national and global spatial data sets that represent these targets on the ELSA map (right column). The colours indicate how each policy target and spatial data set relate to each one of the three main themes covered by the ELSA map: nature (green), climate (blue) and human well-being (orange).



Source: Adapted from Integrated Spatial Planning Workbook, United Nations Development Programme, 2023.

Endnotes

- Veronica Recondo is an Environmental Technical Analyst at the UNDP Global Programme on Nature for Development, veronica.recondo@ undp.org; Lea Phillips is a Senior Biodiversity Policy Coordinator at the UNDP Global Programme on Nature for Development, lea.phillips@ ndp.org; Christina Supples is a Senior Project Manager at the UNDP Global Programme on Nature for Development, email christina. supples@undp.org; and Marion Marigo is a Capacity Building and Biodiversity Senior Officer at the UNDP Global Programme on Nature for Development, email: marion.marigo@undp.org. Acknowledgements: The authors would like to thank Jamison Ervin, Federick Mugisha, Tanya Pederson, Kim Todd, Di Zhang and Nicole Igloi, for their review of and helpful comments on this brief. The authors would also like to thank partners that have piloted this methodology in countries including Cambodia, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Haiti, Kazakhstan, Liberia, Nepal, Peru, South Africa and Uganda. Additionally, the following organizations supported the development of the case studies in the brief, including, from Colombia, UNDP Colombia and the Special Planning Administrative Region (RAP-E Central Región in Spanish); from Costa Rica, Ivan Ávila, PRIAS Lab at the National Center for High Technology (CeNAT), Carlos Cordero, Ministry of Environment and Energy (MINAE), Cornelia Miller, PRIAS Lab, CeNAT, Rafael Monge (previously with MINAE), and Kifah Sasa, UNDP Costa Rica; from the Dominican Republic, Federico Franco, Ministerio de Medio Ambiente y Recursos Naturales (MMARN), Mariana Pérez, MMARN, Melibea Gallo, Consultora PNUD, Isabela Hernández, MMARN, Marina Hernández, MMARN, Luis Omar Martínez, PNUD República Dominicana, María Eugenia Morales, PNUD República Dominicana, and Georgina de Moya, PNUD; from Uganda, Monique Akullo, National Environment Management Authority of Uganda (NEMA), Daniel Omodo, UNDP Uganda, Francis Ogwal, NEMA, Fred Onyai, previously with NEMA, and Daniel Waisa, UNDP consultant. The authors would also like to thank the following partners for their support on the ELSA project: the Global Environment Facility (GEF), the Gordan and Betty Moore Foundation, Impact Observatory, Microsoft, One Earth and the Swedish International Development Cooperation Agency (SIDA).
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