

NISMOD

Hands-On 10 – Using the SustainABLE tool to integrate NbS into infrastructure sectors for delivery on the Sustainable Development Goals (SDGs)

[Link to the tool](#) can be found [here](#)

This hands-on exercise provides an overview of the SustainABLE tool for nature-based solutions (NbS), which can be used as a framework for integrating NbS into infrastructure sectors to progress on the Sustainable Development Goals (SDGs) and related targets. The tool can be used to identify where nature can enhance core infrastructure services or achieve wider co-benefits.

Learning objectives

- Obtain an overview of the SustainABLE tool a framework for understanding how NbS can be strategically integrated into different infrastructure sectors for delivery on the targets of the SDGs
- Recall how different infrastructure sectors (e.g. energy, potable water, wastewater) can benefit from the services delivered by nature
- Identify specific actions across the project lifecycle for ensuring the successful implementation of NbS to achieve selected targets, and which stakeholders would need to be engaged.

Activity 1: Navigating the SustainABLE module on NbS

The SustainABLE module on nature-based solutions (NbS) is a free, easy-to-use, online tool that has been launched to help anyone involved in infrastructure and development projects to strategically integrate nature to support the achievement of the United Nation's Sustainable Development Goals (SDGs).

The NbS module has been developed based on research published by the United Nations Office for Project Services (UNOPS), the United Nations Environment Programme (UNEP) and the University of



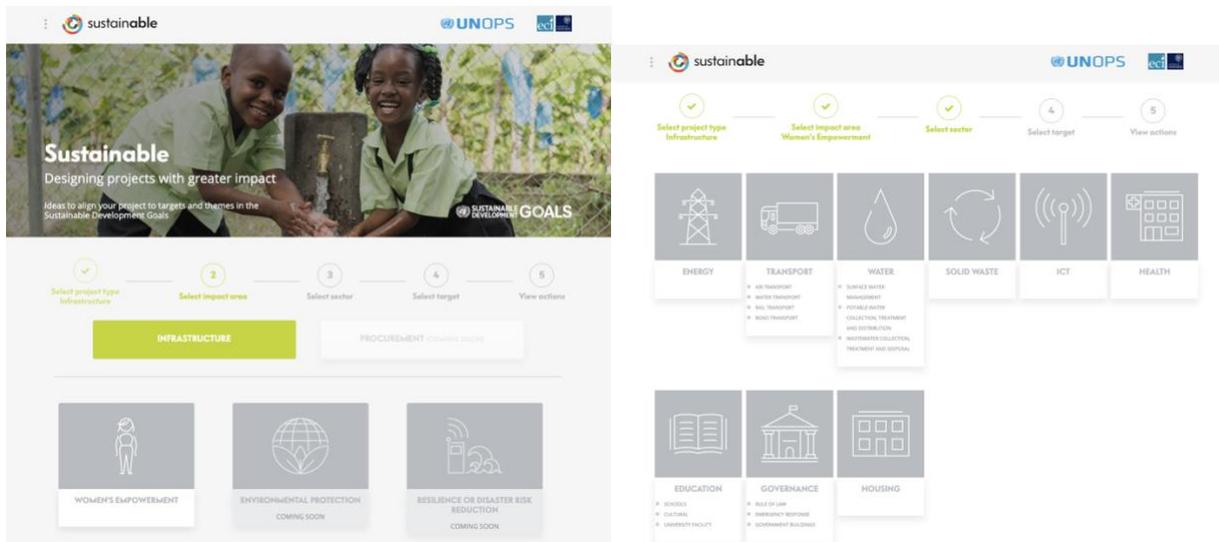
Oxford. The research explores the potential for strategically incorporating NbS into a broad range of infrastructure sectors in order to achieve progress on the SDGs and related targets.

Whilst previous research has identified the *potential* influences of nature on the SDG targets (Fuldauer et al. 2021) (which is discussed in mini-lecture 15.2 and Hands-On 9), this hands-on exercise for the first time shows specific actions on *how* to increase the potential influences across SDG targets. This research is based on a literature review to identify evidence for how the ecosystem services provided by nature can be harnessed to provide sector-related benefits or wider co-benefits across different infrastructure sectors.

The SustainABLE tool provides a step-by-step framework for understanding the influence of integrating NbS in each infrastructure sector on SDG targets, and provides tangible actions for ensuring that the influence is realised.

First, tool users will be able to navigate through the tool and understand the breadth of sectors it encompasses. Second, users can consider the various ways in which infrastructure sectors can leverage NbS to progress the SDG targets. Third, practitioners can use the tool to work backwards from the SDG targets and identify how nature can be leveraged to deliver on these specific targets. Fourth, users can use the tool to identify relevant actions, necessary stakeholders to engage, best practice resources and case studies to help them to plan for and implement NbS.

We will discuss each step in turn during this hands-on exercise. Figures 10.1 and 10.2 provide an overview of the SustainABLE tool navigation.



Figures 10.1 and 10.2: SustainABLE tool navigation and sector coverage

Try It:

1. Open the SustainABLE tool and navigate through each component.
2. See the broad range of sectors that are part of the tool.



Activity 2: Identify how infrastructure sectors can leverage NbS to influence the SDG targets

As introduced in mini-lecture 15.2 and Hands-On 9, ecosystems, through the provisioning of ecosystem services, underpin the achievement of the SDGs. Furthermore, as introduced in mini-lecture 15.4 and expanded upon in Lectures 16 and 17, the ecosystem services delivered by nature also underpin the functioning of infrastructure systems, for example through the provisioning of freshwater flows for hydropower and potable water supply and through the protection of infrastructure assets such as roads and railways from climate impacts. Therefore, by strategically integrating NbS into different infrastructure sectors, practitioners and other stakeholders in the development sector can harness the ecosystem services delivered by nature to deliver on the SDGs and their targets.

More specifically, infrastructure practitioners can leverage nature to enhance progress on the SDG targets by:

- (1) Integrating NbS for the provision of ecosystem services that benefit the chosen sector (by enhancing the core infrastructure service or benefitting the sector workforce); or
- (2) Integrating NbS for wider environmental, social and economic co-benefits that they can provide, beyond the sector.

Some targets may show both a sector-related influence and a wider co-benefit, due to the multiple benefits that NbS can provide simultaneously, both within and beyond the sector.

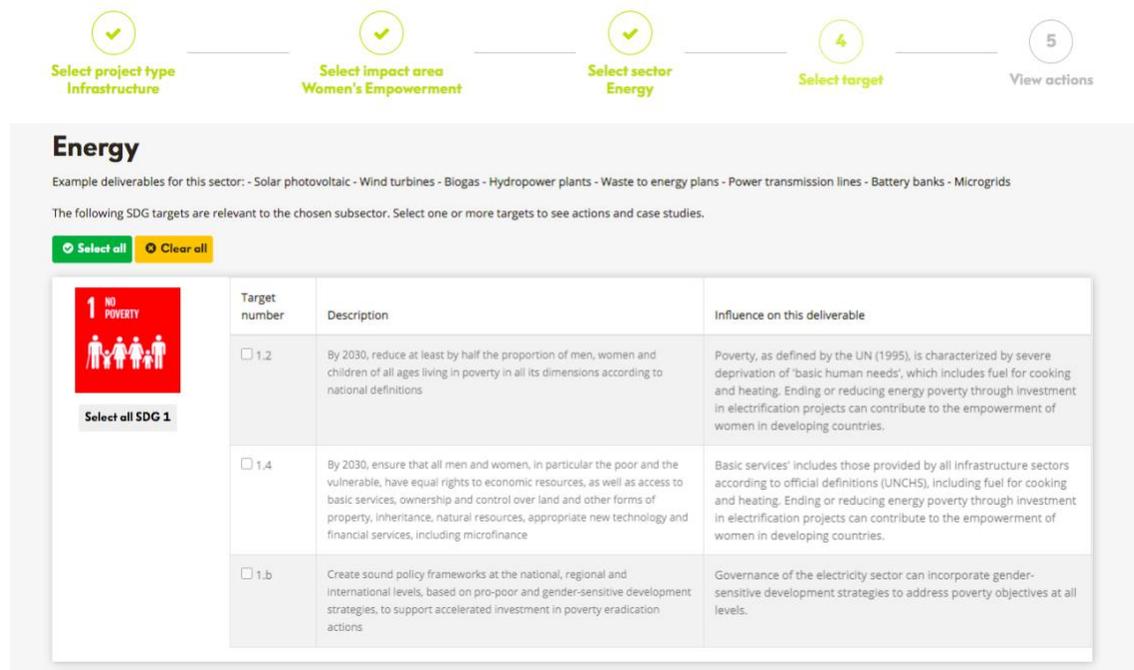
Table 10.1: Sector-specific benefits and wider co-benefits of leveraging nature for infrastructure development.

Sector-specific benefits: enhancing core service or benefitting the workforce	Wider co-benefits
Substituting for a sector's service (e.g. mangroves replacing flood defence infrastructure in the surface water / risk management sector)	Economic: examples include improved area image, leading to increased investment and economic generation
Complementing a sector's service (e.g. upstream forests and riparian ecosystems along riverbanks can help regulate hydropower services in the energy sector)	Social: examples include underpinning health of local communities, supporting food production, supporting educational outcomes
Increasing the resilience of a sector (e.g. green roofs increase resilience of buildings across all sectors)	Cultural: examples include supporting cultural and natural heritage

Benefit the sector's workforce (e.g. inclusion of NbS can reduce stress and increase mental health in workers across all sectors)	Environmental: examples include supporting biodiversity, carbon sequestration, environmental quality
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Example:

The energy sector can leverage NbS for the benefits it provides to the sector core service. For example, the energy sector can restore upstream forests and riparian ecosystems along riverbanks for their services which include reduction of sedimentation within rivers and reservoirs, regulation of water flows and reduction in turbidity, which benefits the sector by reducing the need for dredging, reducing downtime and maintenance costs, and supports the regulation of energy generation from hydropower. This in turn can influence energy-related targets, such as 7.1 *“By 2030, ensure universal access to affordable, reliable and modern energy services.”*



The screenshot shows a five-step workflow: 1. Select project type (Infrastructure), 2. Select impact area (Women's Empowerment), 3. Select sector (Energy), 4. Select target, and 5. View actions.

The 'Energy' section lists example deliverables: Solar photovoltaic - Wind turbines - Biogas - Hydropower plants - Waste to energy plans - Power transmission lines - Battery banks - Microgrids.

Below this, a table lists relevant SDG targets for the chosen subsector:

Target number	Description	Influence on this deliverable
<input type="checkbox"/> 1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Poverty, as defined by the UN (1995), is characterized by severe deprivation of 'basic human needs', which includes fuel for cooking and heating. Ending or reducing energy poverty through investment in electrification projects can contribute to the empowerment of women in developing countries.
<input type="checkbox"/> 1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Basic services* includes those provided by all infrastructure sectors according to official definitions (UNCHS), including fuel for cooking and heating. Ending or reducing energy poverty through investment in electrification projects can contribute to the empowerment of women in developing countries.
<input type="checkbox"/> 1.b	Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	Governance of the electricity sector can incorporate gender-sensitive development strategies to address poverty objectives at all levels.

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Figure 10.3: Example of how the SustainABLE tool can be used to show influences within the energy sector.

Equally, the energy sector can leverage NbS for the benefits it provides beyond the sector. For example, the energy sector can restore and sustainably manage natural areas around energy transmission lines, such as wildflower meadows, orchards, ponds, and/or grazing and, which can provide benefits including for biodiversity, pollination, natural heritage and food production, progressing multiple SDG targets.

Try It:

1. Select a sector in the SustainABLE tool (e.g. energy).



2. Scroll down the page to look at how NbS can influence SDG targets through influences which benefit the sector, and through integration within the sector for wider co-benefits.
3. Pay attention to the target descriptions and information on how NbS influences the target.
4. If you wish, select a second sector for comparison (e.g. surface water / risk management) and see how the influences differ.

Activity 3: Using SDG targets as a starting point to inform NbS inclusion within infrastructure sectors

Users may want to address a specific SDG target through the project. For example, an investor may want to see that a project offers good value for money (e.g. target 8.1 “Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors”). Equally, civil society organisations may wish to see the project target gender equality (e.g. target 5.1 “End all forms of discrimination against all women and girls everywhere”). Or a national government may want to specifically prioritise projects that enhance resilience to climate change (e.g. target 1.5 “By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters”).

The SustainABLE tool can be used to support these aims, by enabling the user to navigate and look specifically for SDG goals and targets of interest, and, where an influence is stated, select a solution using nature.

Target	Target description	Sector-related influences	Wider co-benefits of strategically integrating NBS
1.5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Resilience of the poor to climate hazards, including flood risks, means improved resilience of infrastructure systems that provide basic services such as electricity. Investing in NBS in the energy sector can contribute to this target, and can increase the resilience of energy generation, for example, by stabilising soils, reducing sedimentation of hydropower reservoirs and regulating flows of water for increased hydropower energy generation. This reduces the need for dredging and maintenance of dams, reduces costs and expands economic lifespan of hydropower infrastructure, thus contributing to built energy infrastructure resilience. Forest protection can be considered as a service to hydropower in some contexts. NBS can also contribute to the resilience of the energy sector and their workers through their role in delivering protective services, such as flood and landslide mitigation. (1) https://www.iucn.org/downloads/nexus_report.pdf (2) https://www.pnas.org/content/110/23/9601 (3)	Investment in NBS in the energy sector can provide wider benefits which contribute to this target: through protecting, restoring or managing ecosystems around energy assets and networks, or upstream of hydropower dams, NBS can deliver protective services including flood protection and disaster risk management, which provide added resilience, not only to the infrastructure asset, but also to downstream communities. The same NBS can provide further resilience to local communities, through the provision of basic services such as water, food and fuel, which can support livelihoods and provide a safety net, increasing community resilience. (1) https://www.iucn.org/downloads/nexus_report.pdf (2) https://www.pnas.org/content/110/23/9601 (3) https://www.jstor.org/stable/40062056?se

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Target	Target description	Sector-related influences	Wider co-benefits of strategically integrating NBS
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Figure 10.4: Example of an SDG target and potential ways of leveraging nature within the energy sector to progress the target.

Try It:

1. In your selected sector of interest, imagine a national government wants you to target SDGs which demonstrate that the project will enhance climate resilience.
2. Scroll down to the targets that align with the investor’s specifications (e.g. target 1.5 "By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disaster"). See if nature can be leveraged to influence the target.

Activity 4: Learn how to influence specific SDG targets through actions

In addition to identifying potential influences that NbS integration across infrastructure sectors can have on the SDG targets, the SustainABLE tool also provides practical actions for each influence.

Actions are provided across the lifecycle of development projects, including planning and design, implementation, operation and management. As well as differentiating actions by project stage, actions can also be differentiated by which stakeholder these are most useful for. Potential stakeholders include project practitioners, NbS experts, local and indigenous communities, the private sector, civil society organisations, governments and legal institutions.



Recommended actions are supported by case studies and real-life project examples, which have been implemented by UNOPS and partners across the globe.

As shown in Figures 10.8 and 10.9, the tool provides information and resources that users can refer to in order to:

- (1) Understand what would be required for integrating NbS to achieve the desired influence and to assess the feasibility.
- (2) Start planning for a project that includes nature.
- (3) Understand which stakeholders would need to be engaged and begin to think about processes of engagement (some stakeholders, such as local and indigenous communities, will need to be engaged at the start of projects, and included in the decision-making process).
- (4) Make the case for financing or implementing the project.
- (5) Support awareness raising across the sector, to enable wider scaling up of NbS (e.g. engage private sector investors or local governments in the need for funding; engage researchers in helping to build an evidence-base to support evaluation of NbS in decision-making processes).
- (6) Ensure each positive influence is realised in practice.

As discussed in mini-lecture 15.2, Hands-On 9, and Lecture 18, all influences on the SDG targets are *potential*, and their ability to realise each SDG target will depend on the wider landscape and local ecological, socio-economic context, as well as the actions taken.

Try It (see figures 10.5-10.9 below for a step-by-step walk through)

1. In your selected sector of interest, select a target of interest (e.g. 5.1, as used in the exercise above: *“By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disaster”*).
2. Select the target and navigate through to the list of actions.
3. Have a look at what this would involve, which stage of the project the actions apply to, and which stakeholders would need to be engaged.
4. Peruse the best practice resources that are available and the case study that has been provided.

✔ Select all
✖ Clear all
17 Actions available for 1 selected Targets | Click to Submit

	Target number	Description	Influence on this deliverable
 <p style="font-size: 8px; margin-top: 5px;">Select all SDG 1</p>	<input checked="" type="checkbox"/> 1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Poverty, as defined by the UN (1995), is characterized by severe deprivation of 'basic human needs', which includes fuel for cooking and heating. Ending or reducing energy poverty through investment in electrification projects can contribute to the empowerment of women in developing countries.



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Figure 10.5: Click on the target in order to get a list of potential actions for realizing the influence (see in green above)

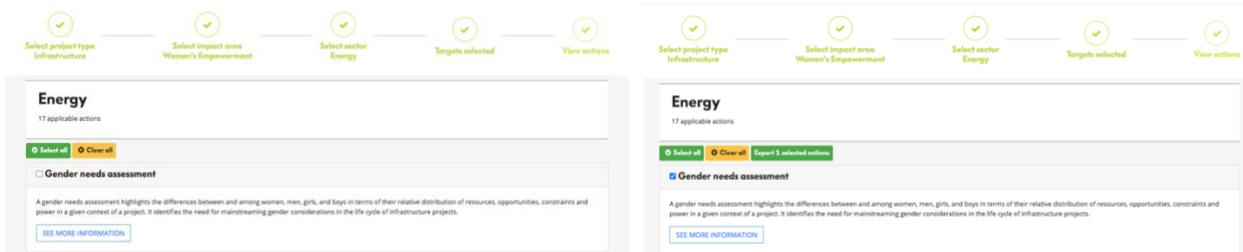
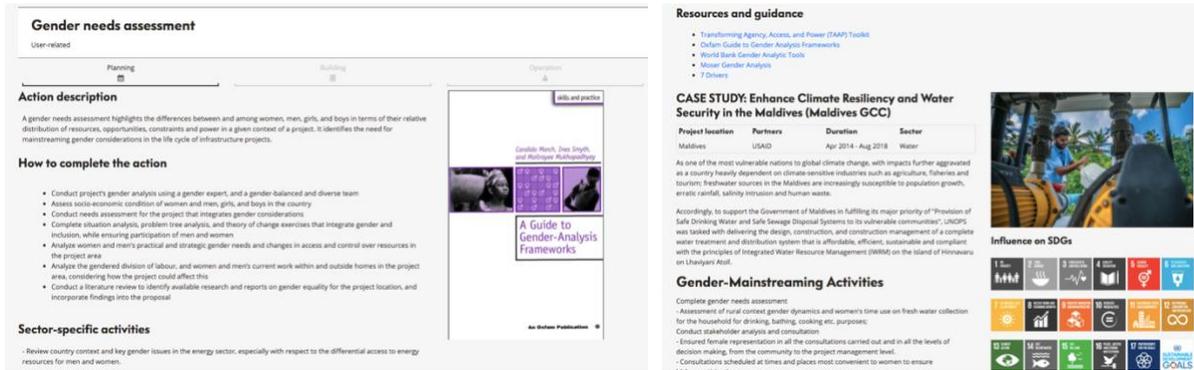


Figure 10.6 and 10.7: Click on recommended action in order to navigate through to further resources (see 'export 1 selected actions' in green above figure 10.7)



Figures 10.8 and 10.9: Examples of resources, best practice information and case studies are provided to help practitioners complete each action. These are differentiated by lifecycle stage (see top of figure 10.8).

Summary

In this hands-on exercise, we explored the SustainABLE module on Nature-Based Solutions, as a hands-on online tool that can be used by anyone who is interested in embedding nature or the SDGs at the heart of development projects. Here, we described the different functions of the tool, including:

- 1) The broad range of sectors in which NbS can be integrated;
- 2) How the tool can be used to identify opportunities for NBS to benefit the chosen sector or deliver wider co-benefits in order to deliver on the SDG targets;
- 3) How decision-makers can use the tool to target specific SDGs and SDG targets by integrating NbS in specific sectors;



- 4) How tool users can identify a list of recommended actions for integrating NBS across the project life-cycle, understand which stakeholders would need to be involved, and access best practice resources and case studies.

As such, the SustainABLE module can help infrastructure decision-makers to embed nature into infrastructure projects across the world, support countries to increase the effectiveness of their projects, resources and budget, and enhance progress on the SDGs through the strategic integration of nature.

Bibliography

Fuldauer, L. I., Scott Thacker, R. A. Haggis, F. Fuso Nerini, R. Nicholls, and J. W. Hall. 2021. "Targeting adaptation to safeguard sustainable development against climate-change impacts." *Manuscript Under Review.*, February. <https://doi.org/10.21203/RS.3.RS-235355/V1>.