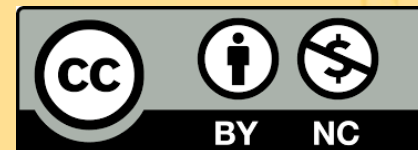


# Introduction to NBS: Nature's Benefits and Ecosystem Services

## Lecture (online)

Credit: Trinity Business School – Centre for Social Innovation –  
Trinity College Dublin

*Content created in 2024*



**Funded by**  
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## (Part 1)

# Learning Outcomes for this Learning Unit

- Introduce and interrogate the **definitions and elements of NBS** as it connects to the broader ecosystem.
- Highlight the **benefits of NBS** for ecosystem services, focused on the **environment, economy and society**.
- **Reflect on elements of NBS** in the learner's own personal experiences.
- Consider how NBS can offer benefits from the perspective of the **learner's own academic discipline of study**.

## Exploring NBS

- What comes to mind when hearing 'Nature-Based Solutions'?

*answer in the chat (or Miro Board)*

# What is NBS?

(video 2 min)



■ [Reference: NetworkNature](#)

## Elements of NBS:

1. Biodiversity
2. Resilience and mitigation of climate change effects
3. Environmental, societal and economic benefits
4. Cost-efficiency
5. Co-creation

*Beyond **technical solutions** for climate change, consider **nature solutions***

“Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience.

Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.”

- “... actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.”

## NBS Definition

Reference: [International Union for the Conservation of Nature](#)

- “Nature-Based Solutions...provide multiple benefits for biodiversity. Any approaches that do not improve biodiversity, are not based or delivering on a range of ecosystem services, are not Nature-Based Solutions.”
- “Nature-based solutions protect, sustainably manage and restore natural or modified ecosystems, which address challenges facing humanity (e.g. climate change, food and water security or natural disasters). At the same time nature-based solutions bestow wider benefits to human well-being and biodiversity.”

**NBS Definition – extended:**  
*what it is and what it is not*

Reference: Connecting Nature

### Nature derived solutions:

- **Wind, wave, and solar energy derived from nature**
  - replace our carbon energy needs and benefit society.
  - In isolation, not based on functioning natural ecosystems or not direct ecosystem benefits

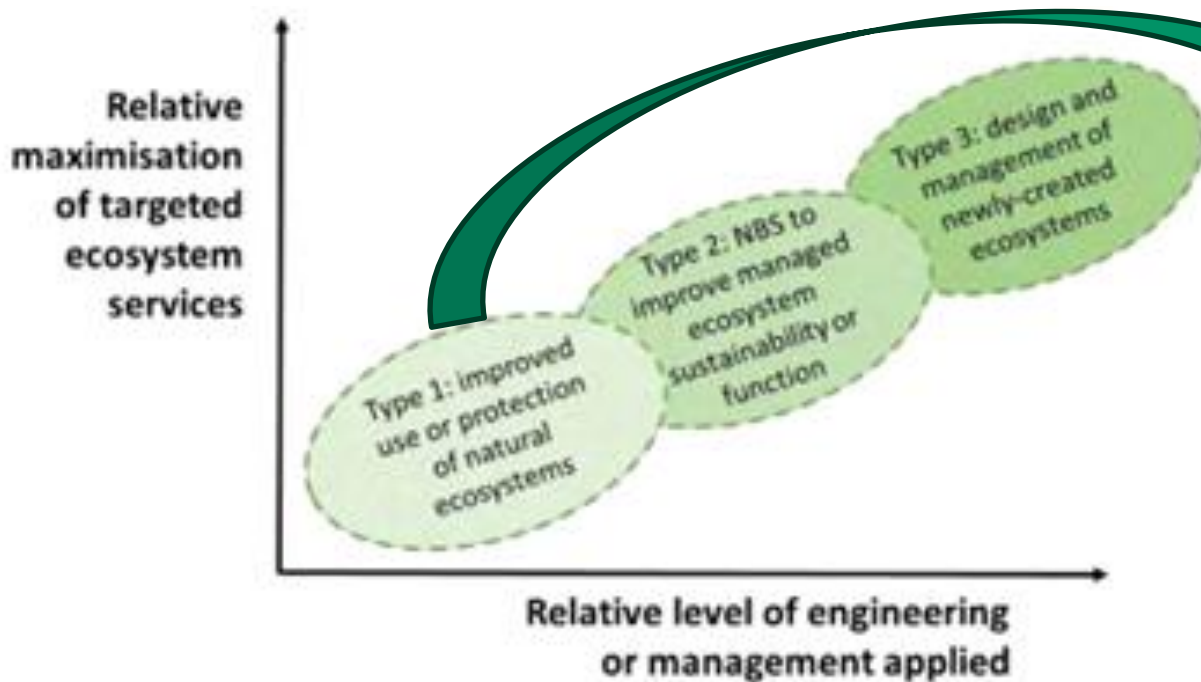
### Nature inspired solutions:

- **Innovative design, production of materials/structures/systems modelled on biological processes**
- sticky gloves that mimic geckos
- Not based on direct use of ecosystem services and do not provide benefits for nature.

**Terms that sound like NBS –  
but are not**

Reference: [Network Nature \(2023\) NBS Made Easy Brochure](#)





## TYPE 1 - Protection and conservation strategies (*some examples*)

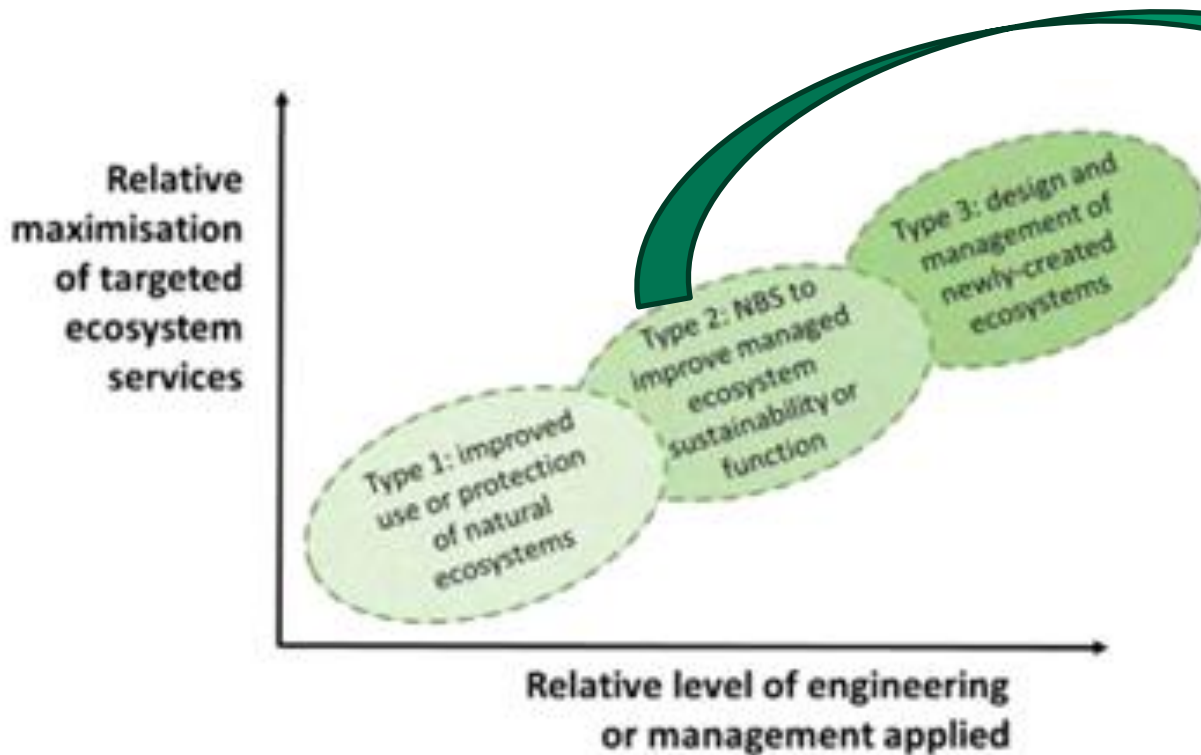
- Protected areas, conservation zones
- Limit or prevent land use
- Maintenance or enhancement of natural wetlands

***“PRESERVE”***

# NBS Classification

UniLab – Urban Nature Labs adapted from Eggermont et al., 2015 (p.12)





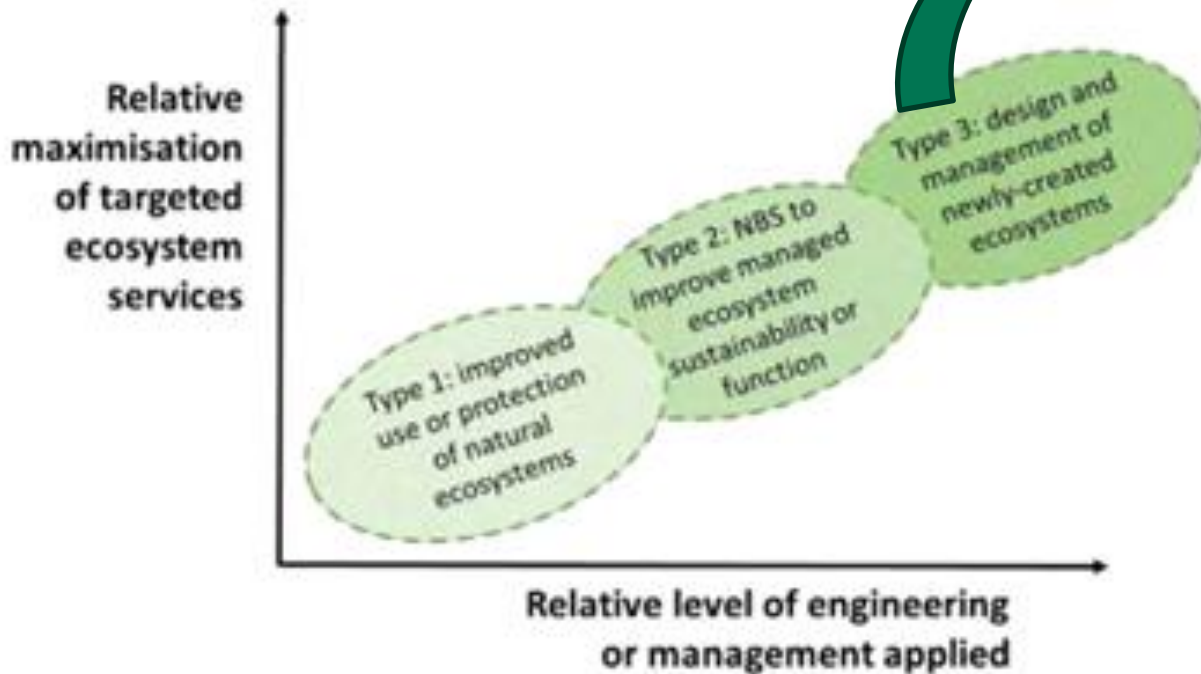
## TYPE 2 - Sustainable management protocols (*some examples*)

- Pest/weed management
- Habitats/shelters to support biodiversity (e.g., insect hotels)
- Sustainable fertiliser use

**“IMPROVE”**

# NBS Classification

UniLab – Urban Nature Labs adapted from Eggermont et al., 2015 (p.12)



## TYPE 3 – Highly intensive ecosystem management (*some examples*)

- Green spaces (e.g. Botanical garden)
- Trees and shrubs (e.g. orchard)
- Soil conservation (e.g. slope revegetation)
- Blue-green space (e.g. dune structures)
- Green build environment (e.g. green roof)

**“CREATE”**

# NBS Classification

UniLab – Urban Nature Labs adapted from Eggermont et al., 2015 (p.12)

# Types of NBS - Examples

(video 2 min)

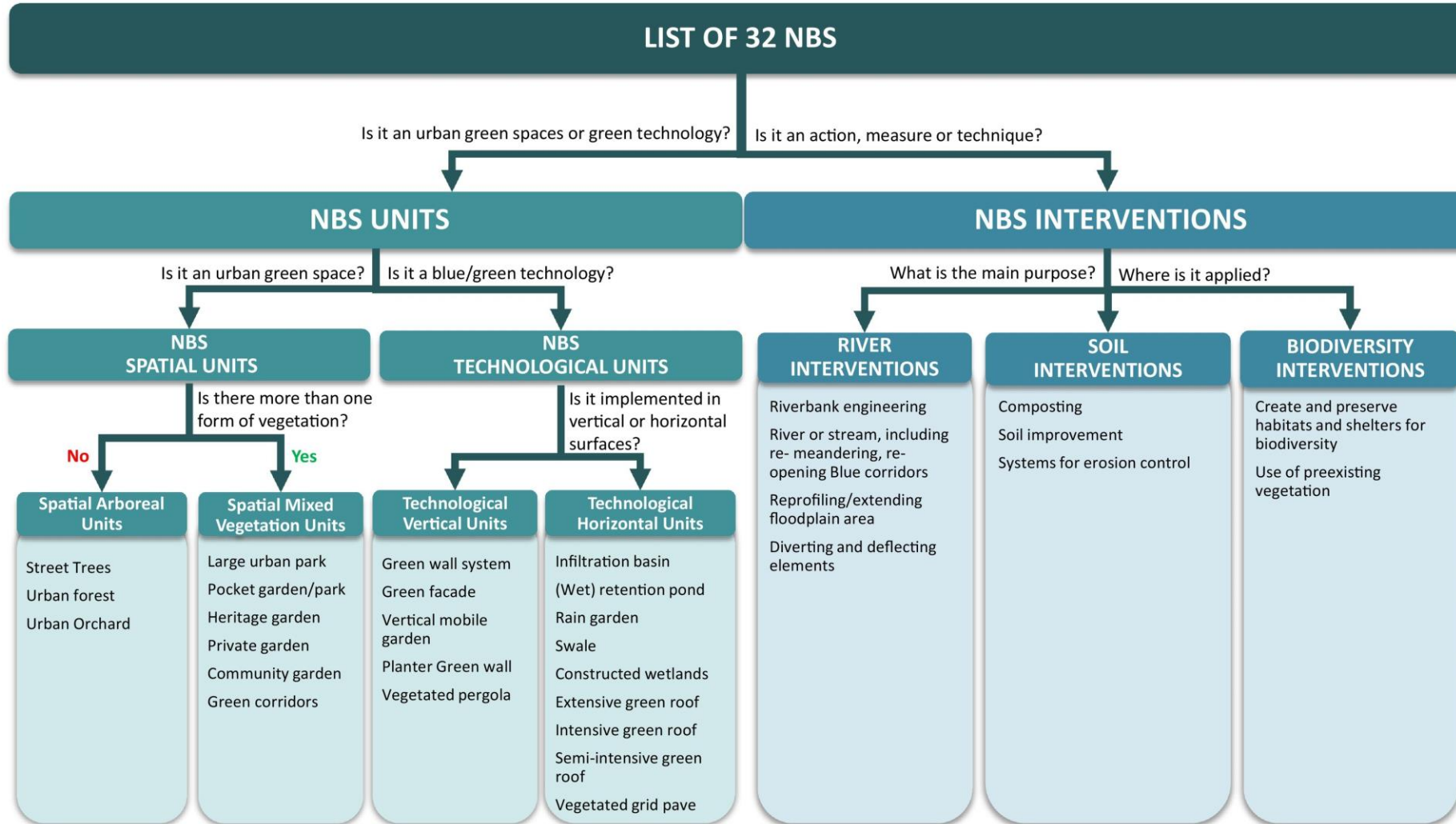


■ [Reference: NetworkNature](#)

**NBS can be found in:**

1. Urban
2. Rural
3. Coastal communities

# NBS Examples – A Hierarchical Classification



## Exploring NBS – Revisited

- *What comes to mind when hearing 'Nature-Based Solutions'?*

*Is NBS what you thought?*

*What is different? The same?*

*Discuss in the group or respond in group chat*

## NBS 5 Principles

1. Does it use nature/natural processes?
2. Does it provide/improve **social** benefits?
3. Does it provide/improve **economic** benefits?
4. Does it provide/improve **environmental** benefits?
5. Does it have a net-benefit on biodiversity?

■ Connop, S. “Nature-Based Solutions Explained.” [Connecting Nature](#).

## (Part 2)

### **NBS Benefits: *A Reflection point***

*Based on what you learned so far and your own knowledge:*

- What Nature-Based Solutions are you familiar with?
- What do you see are the benefits of NBS?



# Summary of the Benefits of NBS: *tackling the climate and biodiversity crisis*



# NBS: Social Benefits

- **Human well-being**
  - Air quality
  - Health and well-being
- **Societal well-being**
  - Social cohesion and social justice
  - Participatory planning and governance



## NBS: Economic Benefits

- **Fostering a nature positive economy**
  - Green jobs
  - Nature-based enterprises and entrepreneurship
  - Partnership with private sector for nature-positive initiatives

### ■ [Union for the Conservation of Nature](#)

The Vital Role of NBS for a nature positive society (video 3 min)



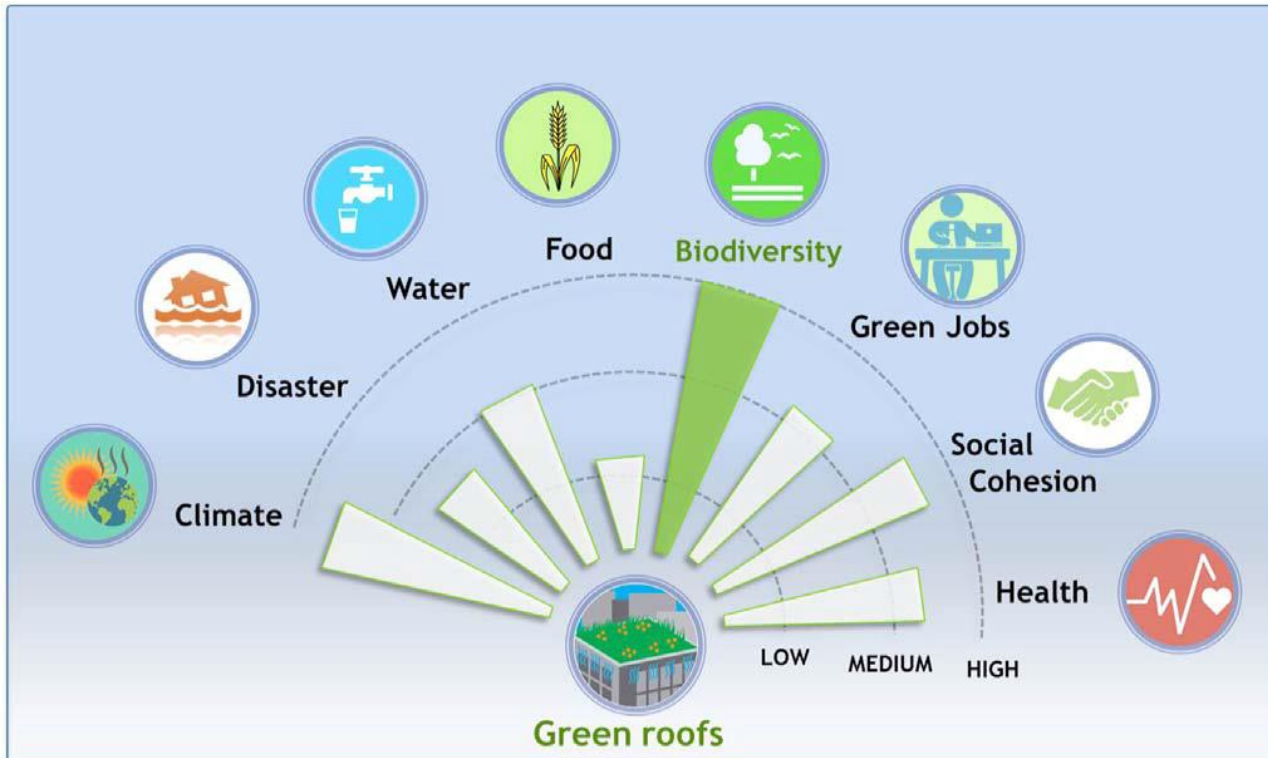
[Reference: NetworkNature](#)

# NBS: Environmental Benefits

- Ecosystem-based approaches to societal challenges for:
  - Biodiversity benefits
  - Urban regeneration
  - Coastal resilience
  - Climate mitigation and adaptation



## Example of NBS: Benefits of Green Roofs



- Cross-cutting ecosystem approach to this NBS solution
  - Varying benefits some higher impact than others

*What benefits resonate with you most about this Nature-Based Solution?*

Reference: [Faivre et al \(2017\) "Nature-Based Solutions in the EU" Env Res p.510](#)

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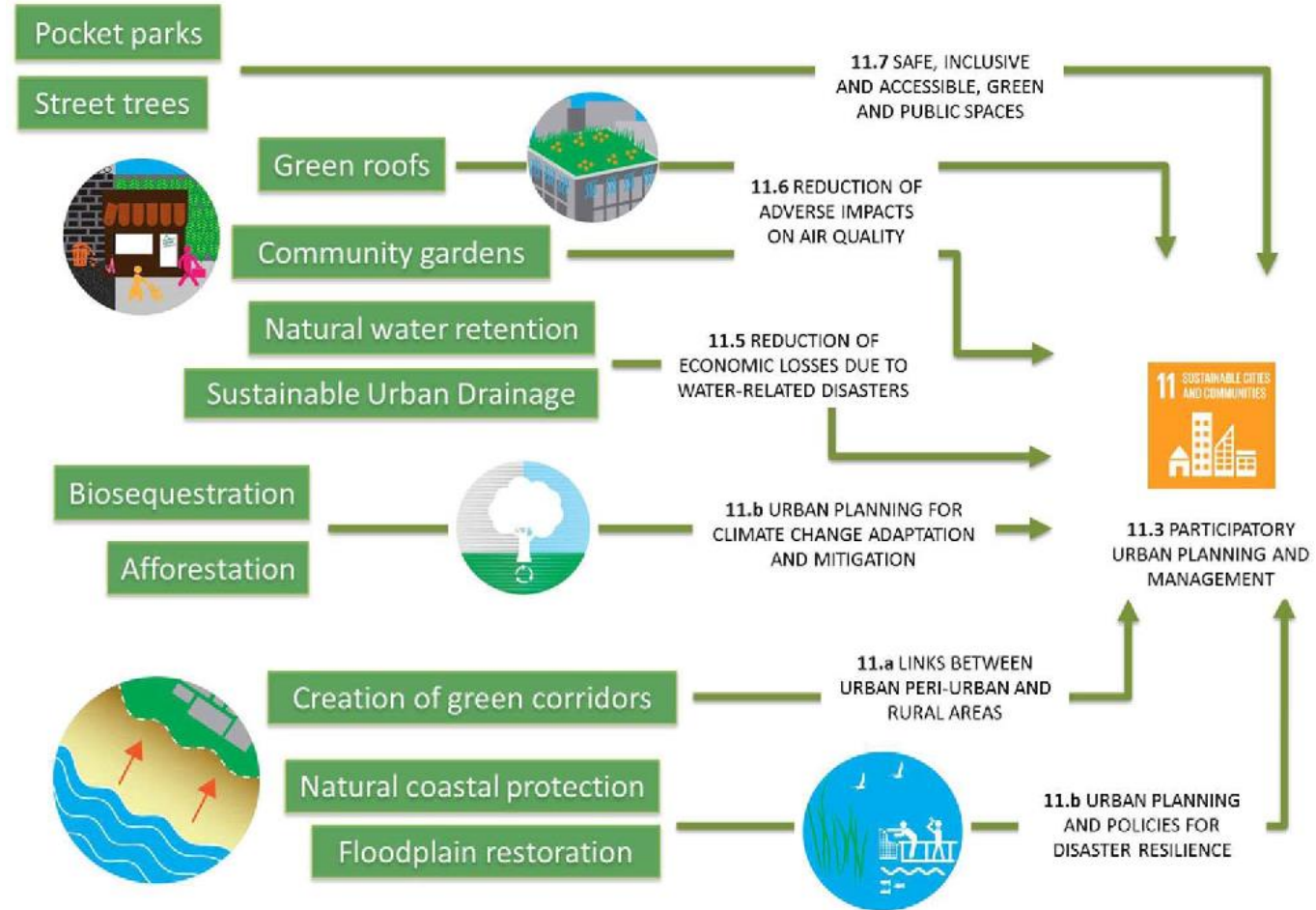
## NBS Definition – EU

Reference: [European Commission](#)

# NBS Benefits and the SDGs

- Addressing the Sustainable Development Goal targets
    - Follow one NBS (in green) and see the link to SDG 11 targets:*
- SDG 11: Sustainable Cities and Communities

**THINK GLOBAL, ACT LOCAL**



Reference: [Favre et al \(2017\) "Nature-Based Solutions in the EU" Env Res p.510](#)

## (Part 3)

# NBS: A multidisciplinary reflection

*Given the learning on the benefits and elements of NBS*

- What do you see as the links to your academic discipline?
- How can you link NBS ideas and benefits in your area of study?
  - *Pair and Share (breakout groups – 2 people) – 5 minutes*
  - *Share with the whole group – 5 minutes*



## (Part 4) Final Summary: Benefits of NBS

*Reflect on your NBS learning:*

- What NBS benefits resonate with you the most?
  - Why?
  - What's the potential and possible challenges to implementation?

## Final Summary: Benefits of NBS

*Reflect on your NBS learning:*

- What is your key takeaway item?
- What new information on the benefits of NBS will you share with others?



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# Thank you!

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