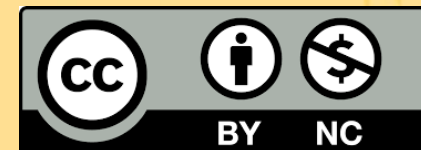


# Skills for Nature-Based Solutions (NBS)

## Lecture (online)

Trinity College Dublin

*Content created in 2024*



**Funded by**  
**the European Union**

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**NBS are “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.

**NBS Definition – EU**

Reference: [European Commission](#)

# Demand for NBS

## ■ Why are NBS skills Important?

- **Urban Sustainability:** Growing need for experts in **climate change**, **biodiversity**, and **water management**.
- **EU Research Projects:** Projects like **Connecting Nature**, **ReGREEN**, and **CIVITAS** demonstrate job opportunities in urban greening and **nature-based climate adaptation**.

## Career Opportunities

- Green economy,
- urban planners,
- landscape architects,
- environmental engineers, and
- community engagement specialists.

# NBS Careers



## ■ Key Skills for Working with NBS

- **Environmental Science:** Knowledge in **ecology**, **biodiversity**, and **ecosystem management**.
- **Urban Planning:** Designing green spaces and integrating **green infrastructure** in cities.
- **Project Management:** Planning, executing, and overseeing NBS projects.
- **Community Engagement:** Facilitating participation, co-designing projects, and managing stakeholder relations.
- **Technical Skills:** Proficiency in **data analytics**, **GIS**, and **IoT technology** for monitoring NBS.

# NBS Careers

- **Urban Planning for NBS Integration**
  - **Job Title:** Urban Planner, Sustainability Manager, or Environmental Planner.
  - **Key Skills:**
    - Designing and implementing **green infrastructure** (e.g., **green roofs**, **rain gardens**).
    - Integrating NBS into **zoning laws** and **building codes**.
    - **Policy development** and **regulation** for sustainable urban environments.
  - **Example:** Urban planners involved in **Copenhagen's green roof initiative**



## In-Class Exercise 1:

**Objective:** Identify key **roles** for implementing NBS in a city.

- **Instructions:**

- Split into groups and choose an **urban challenge** (e.g., flooding, heat islands).
- List **job roles** and **skills** required for each phase (design, implementation, monitoring).
- Discuss how different professionals collaborate in implementing NBS solutions.



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# Exemplar Role 1



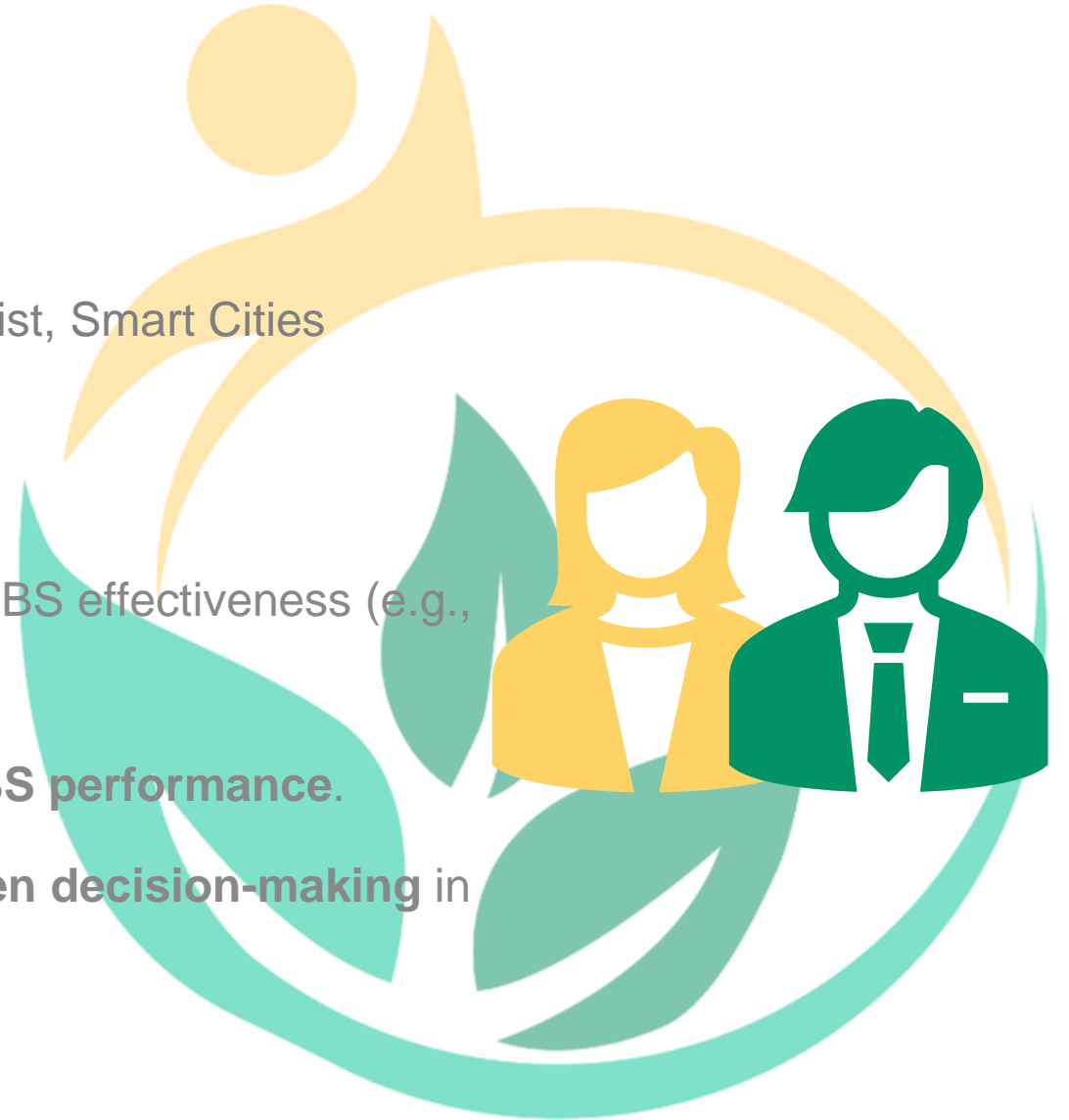
## Designing Green Infrastructure

- **Job Title:** Landscape Architect, Urban Designer.
- **Key Skills:**
  - Creating **parks, urban forests, green streets, and public spaces.**
  - Integrating **nature-based solutions** such as **green walls, wetlands, and permeable surfaces.**
  - Sustainable **site planning, designing multifunctional landscapes, and ecosystem restoration.**

## Exemplar Role 2

### Technologies for NBS Monitoring and Evaluation

- **Job Title:** Environmental Data Analyst, GIS Specialist, Smart Cities Technician.
- **Key Skills:**
  - Using **IoT, smart sensors, and GIS** to monitor NBS effectiveness (e.g., monitoring **water quality, temperature**).
  - Analysing data to track **urban resilience** and **NBS performance**.
  - Developing **technology solutions** for **data-driven decision-making** in urban planning.





## Exemplar Role 3



### Technical Roles in NBS

- **Job Title:** Environmental Engineer, Stormwater Engineer, Water Resources Specialist.
- **Key Skills:**
  - Designing and implementing **Sustainable Urban Drainage Systems (SUDS)** and **green infrastructure** for water management.
  - Expertise in **hydrology**, **stormwater treatment**, and **pollution control**.
  - **Climate adaptation** and **resilience building** through engineering solutions.

# Exemplar Role 4

## Engaging Communities in NBS Projects

- **Job Title:** Community Engagement Officer, Stakeholder Liaison, Public Relations Specialist.
- **Key Skills:**
  - Facilitating **consultation, workshops, and participation processes.**
  - Co-designing NBS with local residents, businesses, and other stakeholders.
  - Communicating the benefits of NBS to the public and ensuring **local ownership** of green projects.



## In-Class Exercise 1:

**Objective:** Develop a career pathway in the **NBS sector**.

- **Instructions:**

- Choose an **interest area** (e.g., **community engagement, engineering, urban planning**).
- Create a **career path** with necessary education, certifications, and experience.
- Discuss potential **job opportunities, industries, and research projects** that are currently available.



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## Nature Based Entrepreneurship



- **Business and Entrepreneurial Careers in NBS**
- **Opportunities:** Launching **green businesses** or starting a **social enterprise** focused on urban greening, water management, or **sustainable construction**.
- **Funding Sources:** EU grants, **Horizon Europe**, and private sector investments in **green infrastructure**.
- **Key Roles:** Entrepreneurs, business consultants, and project managers who bridge the gap between **local governments** and **private sector innovation**.

## Nature Based Entrepreneurship

- **The Importance of Soft Skills in NBS Careers**
  - **Communication:** Clearly conveying the importance of NBS to stakeholders and communities.
  - **Collaboration:** Working effectively with multidisciplinary teams.
  - **Problem-Solving:** Finding creative solutions to challenges in urban environments.
  - **Adaptability:** Navigating policy changes and evolving community needs in NBS projects.



## Interdisciplinary Field



### ■ Interdisciplinary Skills for NbS

- The role out of NBS requires a range of skills, backgrounds and ideas
- **Example:** In the **CIVITAS** project, professionals from **urban planning, transportation, and technology sectors** collaborated to create **green mobility** solutions.
- **Key Skills:** Understanding of **technology, urban planning, policy, and social science** to deliver effective NBS solutions.

# Future for NBS

European policy will continue to drive the  
creation of NBS roles  
(European Commission 2021)

## Emerging Trends in NBS Jobs

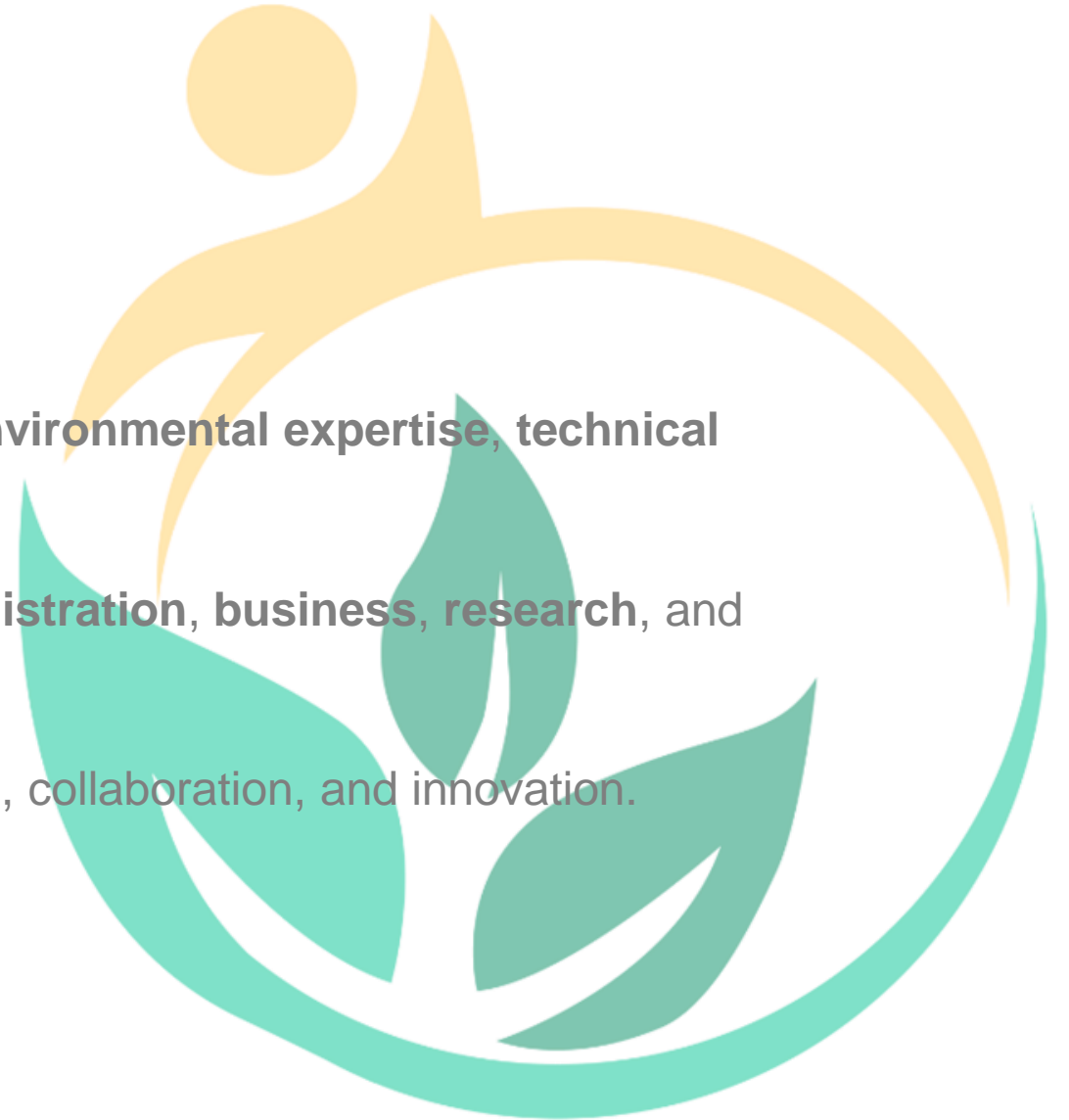
- **‘Sustainability Managers’**: Key roles in developing corporate strategies for NBS integration.
- **Green Infrastructure Specialists**: Expertise in designing, implementing, and maintaining green roofs, urban forests, and other green infrastructure.
- **Climate Adaptation Experts**: Roles focused on using NBS to help cities prepare for climate change impacts.



# Conclusion

## Developing Skills for NBS: The Path Forward

- **NBS** require a diverse set of skills that combine **environmental expertise, technical knowledge, and community engagement.**
- **Opportunities** are abundant across **public administration, business, research, and non-governmental sectors.**
- Building a **career in NBS** involves lifelong learning, collaboration, and innovation.







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# Thank you!

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