



**Swindon & Wiltshire**  
LOCAL ENTERPRISE PARTNERSHIP



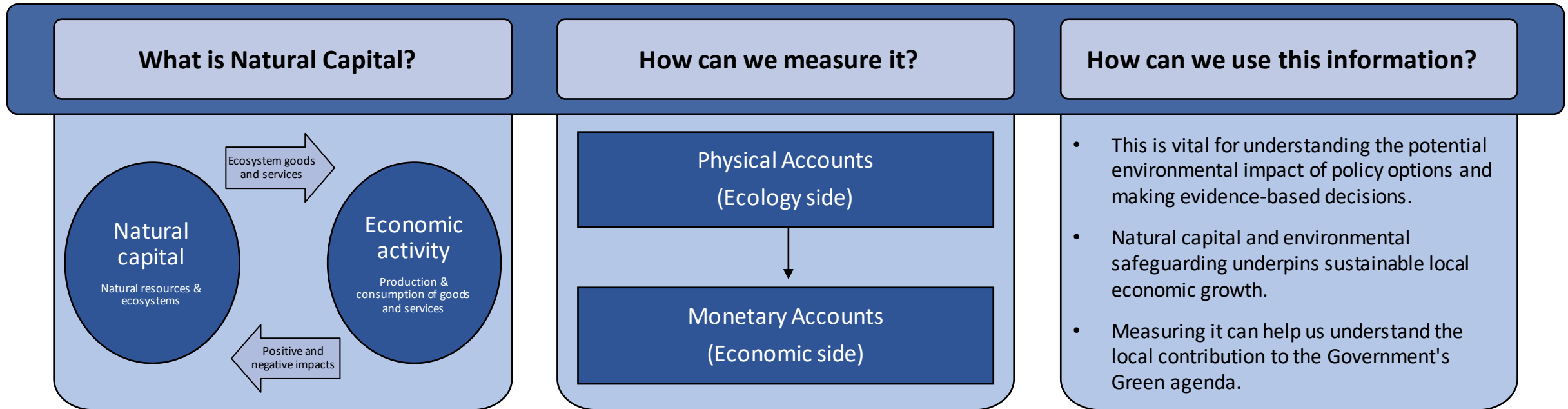
UNIVERSITY OF  
**BATH**

# Natural Capital: Specifying the Value of Nature

SWLEP Board  
20<sup>th</sup> July 2023

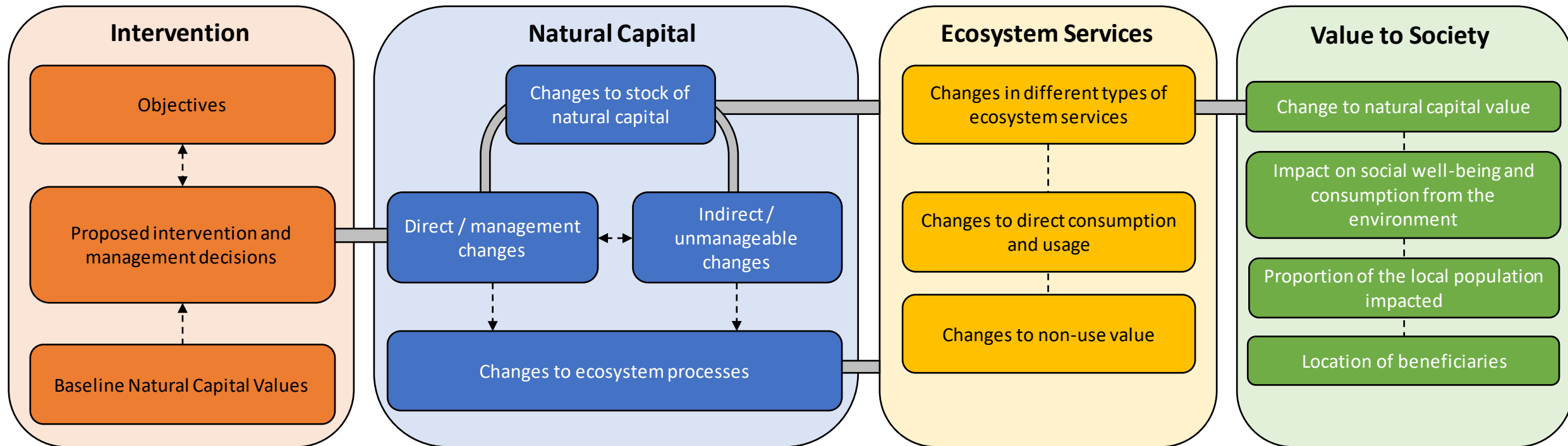
Parsa Mohammadpour

# Overview and recap



# Recap of the framework

- The decision-making framework aims to measure, understand, and value the relationship which local decision making has directly and indirectly with the stock of natural capital.
- Understanding this relationship is vital to bringing in the value of nature (with the risk and opportunities) into making more informed decisions, interventions and management choices.

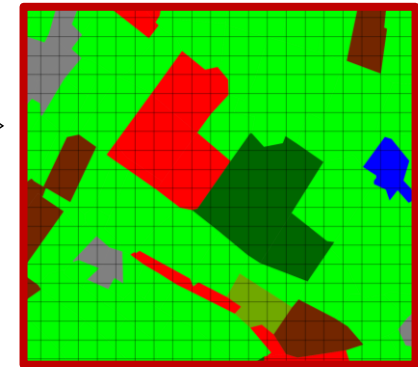


# Illustrative Application Example

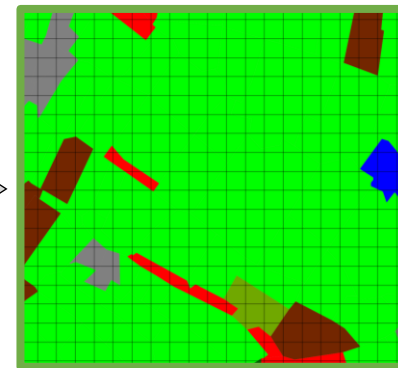
- In this example, we take an area (around 24 Ha) of farmland and examine the natural capital value impact of changing the land-use type.
- We have considered three potential scenarios where the area is: A) rewilded, B) expanded as a woodland, and C) developed as a suburban area.

Potential Scenarios

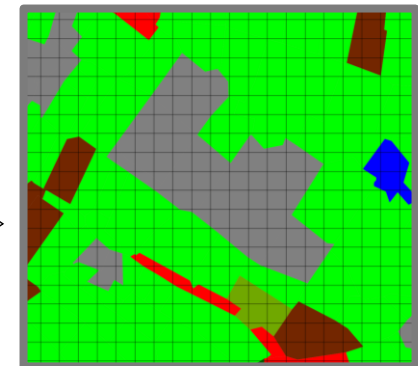
B: Woodland Expansion



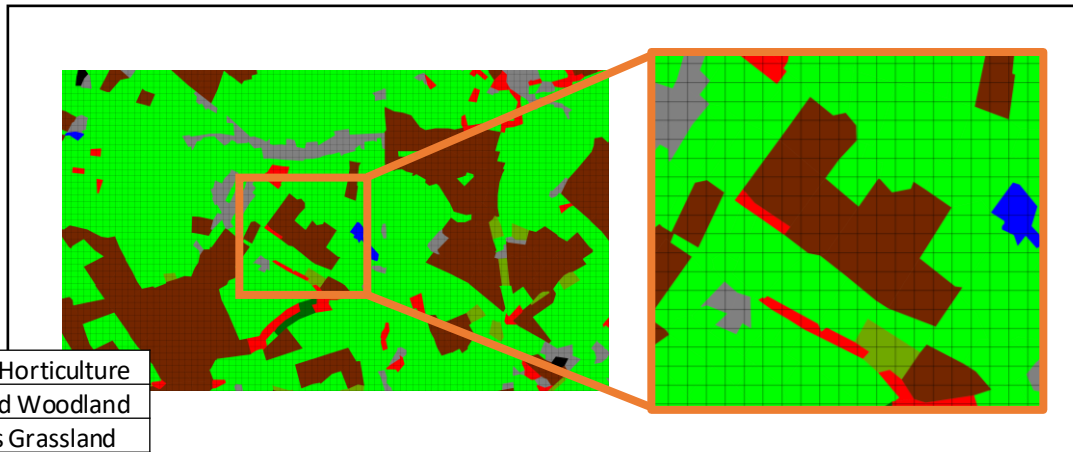
A: Rewilding



C: Suburban Development



Baseline



Arable and Horticulture
Broadleaved Woodland
Calcareous Grassland
Coniferous Woodland
Freshwater
Improved Grassland
Suburban
Urban

# Illustrative Application Example – Potential Impacts and Trade-offs

- The table indicates the scale of impact under the different illustrative scenarios. It captures the relative change from our baseline, where each scenario is compared to the current land-use for farming
- Depending on the environmental service and land-use type, the scale and change is significantly different, these are vital to understanding the trade-offs, opportunities and risks of different options.

This PhD captures the environment impacts, benefits and opportunities, but it will be important to compliment this with other pieces of information (i.e. economic impact) to make any decision.

It is important to note, these positive values are not instantly realised. Instead, we would expect a pathway to reach these values in the long run.

Changes in the make up of Natural Capital value from the baseline

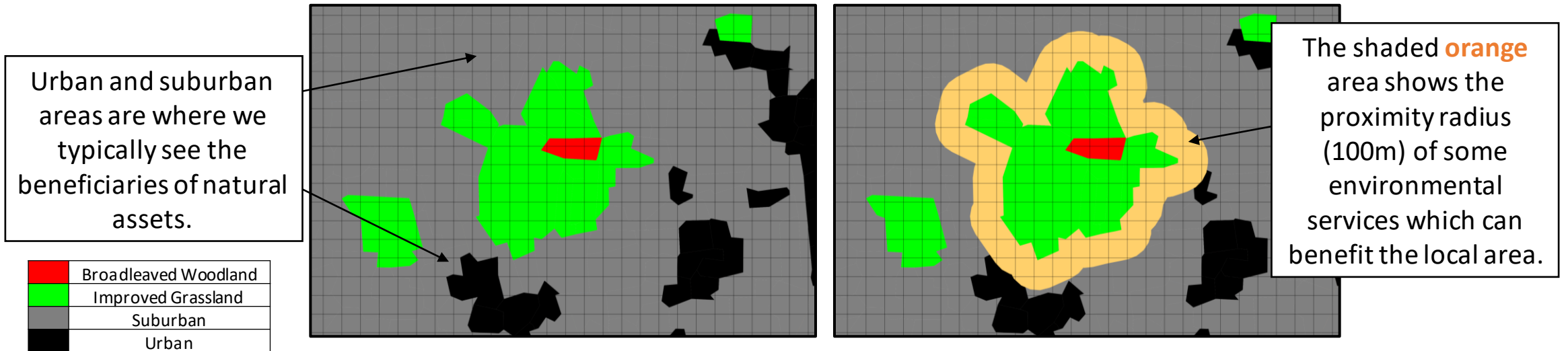
Relative Change from the Baseline	A: Rewilding	B: Woodland Expansion	D: Suburban development
Crop and Food Harvest	↓	↓	↓
Carbon Storage	↑	↑	↓
Air Quality Regulation	↔	↑	↓
Urban Cooling and Shading	↔	↑	↓
Flood Regulation	↑	↑	↓
Noise Reduction	↔	↑	↓
Recreational Activity	↑	↑	↓
<b>Annual Natural Capital Value</b>	<b>+ £12,000</b>	<b>+ £91,000</b>	<b>- £57,000</b>

In this example there would need to be consideration for the positive local economic benefits.

As part of the PhD, we would be able indicate the scale of potential of offsetting needed (i.e. net gain). But its important to consider the impact of irrecoverable environmental damage, which would cause local environment biophysical changes.

# The role of location and environmental assets

- Not all ecosystem services (i.e. benefits from the natural assets) are obtained equally. Some services can only benefit groups or certain parts of the population which are in closer proximity to the natural asset. This radius can be seen in the diagram below.



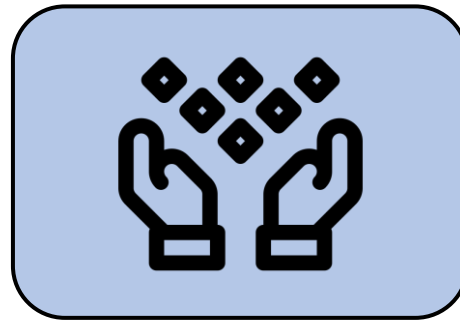
- Examples of services which require a closer proximity to get benefits or value from natural assets are: air quality regulation, urban cooling and shading, and noise regulation. If no beneficiaries are in this radius these benefits will go under-utilised or unrealized. Offsetting measures might not be as simple as a one-for-one replacement, because of the location of beneficiaries from site to site.

# The drivers of value in environmental services

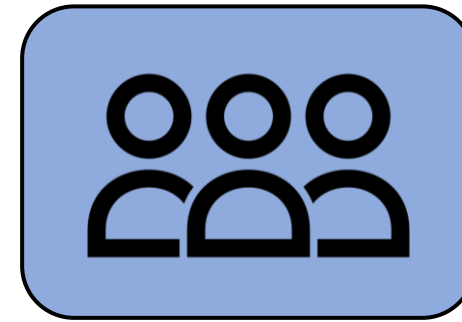
- Changing land-use types do not always create equal value in natural capital. There are several drivers and factors which means changes in the make up of your environmental asset will increase or decrease your natural capital disproportionately.



Location



Quantity



Beneficiaries



Source of Value



Quality

