



Exploring the Multifaceted Value of UNESCO Biosphere Reserves in the United Kingdom

Presented by Nicholas Oribe (MSc Environmental Sustainability)

Prepared for the Edinburgh Forests and Landscapes Network (EFLN), September 2024

Project Background



Capturing the value of UNESCO UK Biosphere Reserves (UKBRs).

Identifying and applying a framework/approach for valuing the diversity of activities at UKBRs.

Using a case study from a specific UKBR: applying the framework to capture its value.



unesco

Man and the Biosphere
Programme

UNESCO Biosphere Reserves

Man and the Biosphere (MAB) Programme

- UNESCO initiative since 1971 to harmonise people and nature.
- Multidisciplinary focus on natural and social sciences, economics, and education for promoting sustainable development.

UNESCO Biosphere Reserves

- Sites for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems.
- 748 biosphere reserves worldwide.
- Accounts for around 275 million people globally.
- Covers 7 million km² throughout 134 countries.
- Each biosphere reserve offers a range of activities.





unesco

Man and the Biosphere Programme

UNESCO Biosphere Reserves

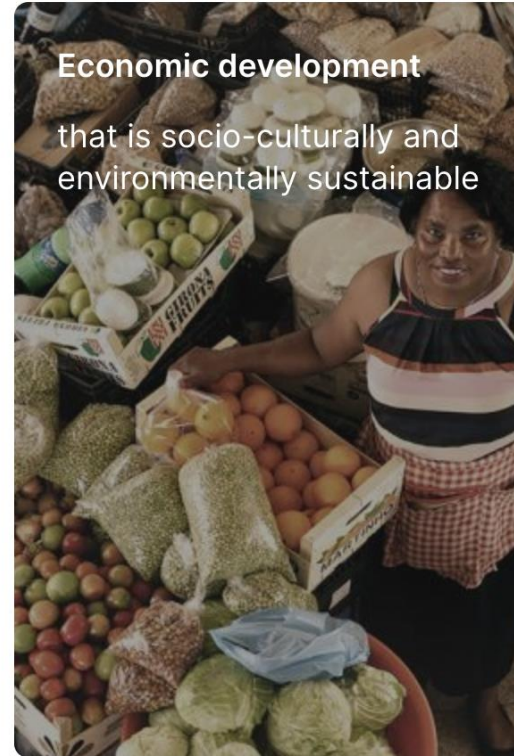
Conservation

of biodiversity and cultural diversity



Economic development

that is socio-culturally and environmentally sustainable

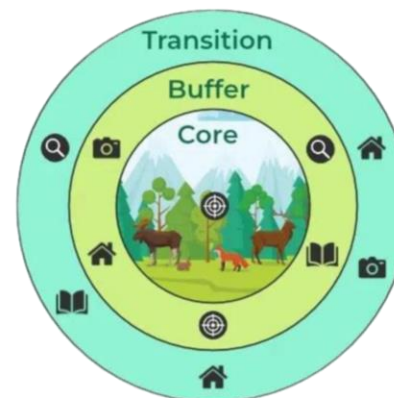


Logistic support

underpinning development through research, monitoring, education and training



Zones of Biosphere Reserves



- Biodiversity
- Tourism
- Human Settlement
- Research
- Education
- Monitoring

Biosphere Reserves in the UK



Quick facts: spotlight on UK Biosphere Reserves

7
Biosphere
Reserves

5 Islands

22 million
visitors per
year

850,000 people
in the UK call
Biosphere
Reserves their
home

10%
of the UK's land
surface
covered

300+ sites of special
scientific interest

20 marine
conservation zones

16 rivers

50 designated wild
land areas (Scotland)

Biosphere Reserves in the UK

Current predicament

- Navigating funding procurement during times of fiscal austerity (in this case, post-COVID & inflation).
- Resource limits and other ‘real world’ constraints.

Measuring the value of UK biospheres

- Oftentimes difficult to attribute a numerical value to biosphere activities.
- Aligning measurements (qual + quant) of biosphere activity with regional/national/int’l climate and sustainability goals.
- Opportunity to apply a more novel and efficient approach to try and capture holistic biosphere value.



Applying a Capitals Approach?

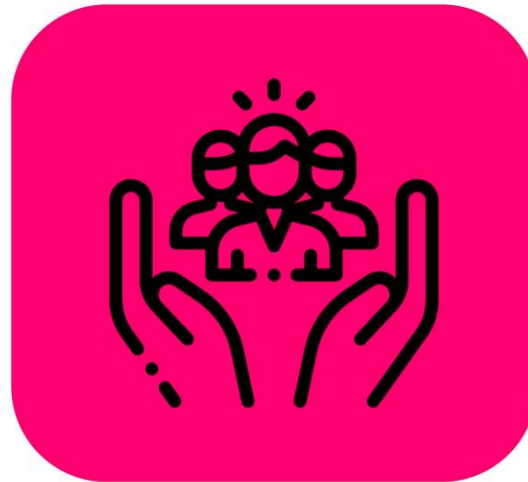
Natural Capital

The stock of renewable and non-renewable natural resources that combine to yield a flow of benefits to people.



Social Capital

The networks together with shared norms, values, and understanding that facilitate cooperation within and among groups.



Human Capital

The knowledge, skills, competencies, and attributes embodied in individuals that contribute to improved performance and well-being.



Built/Produced Capital

The man-made goods as well as all financial assets that are used to produce goods and services consumed by society.



Capitals Coalition Protocol

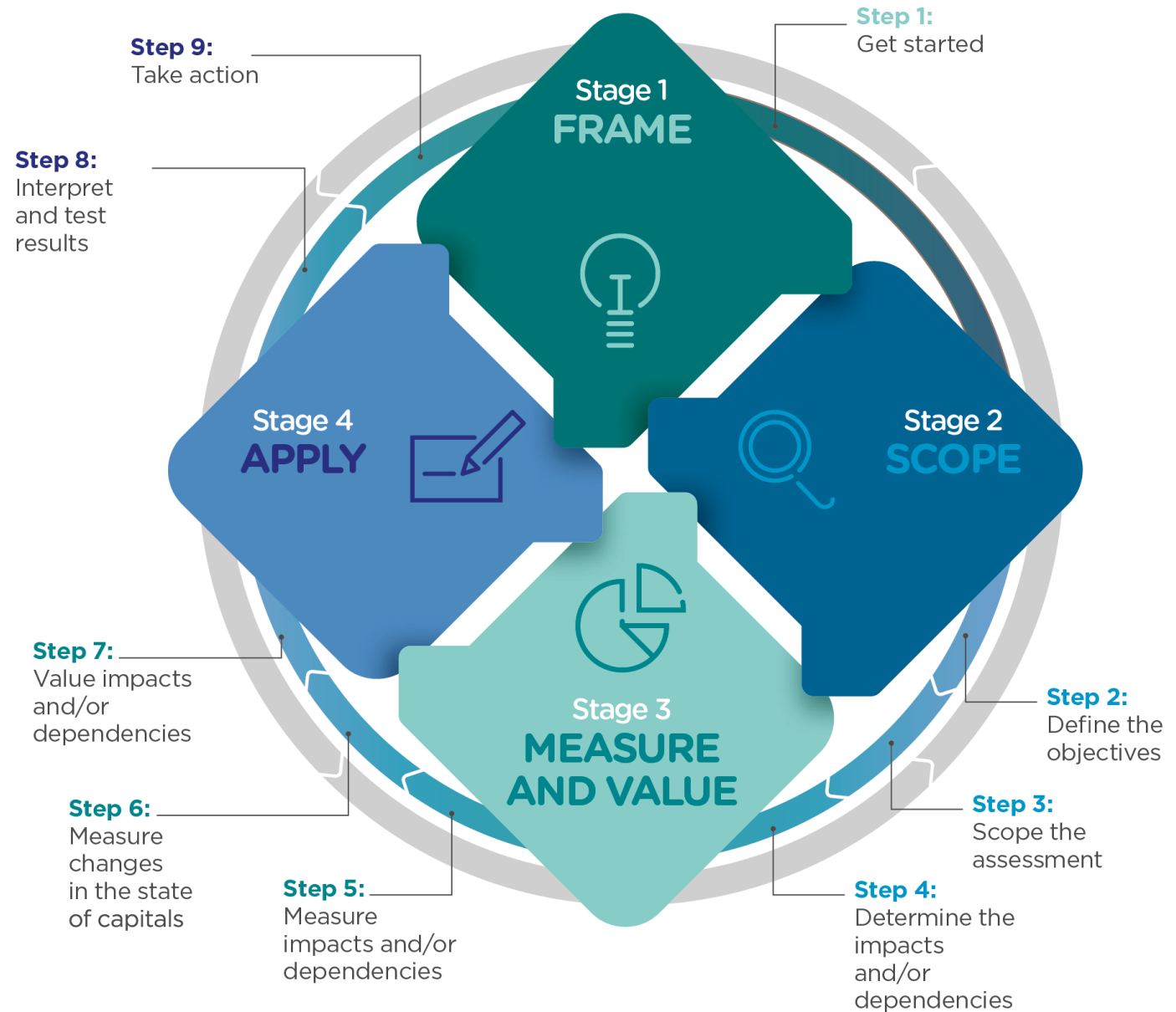


Framework/toolkit approach

- Focus on Natural, Social, and Human capital.
- Helps organisations understand the value that flows from various capitals and ensure that these capitals are included in decision-making.
- Communicates value to various stakeholders (decision-makers, and potential collaborators + financial supporters).
- Typically used in the private sector – but in this case, repurposed for UKBRs to create potentially noteworthy value propositions.

Capitals Coalition Protocol

The step-process.



Research Aims



Case study

- Apply Capitals Coalition framework to the Galloway & Southern Ayrshire Biosphere Reserve (GSAB) in southwest Scotland.
- Focus on 2 audiences: funders and community members.
- Evaluate practical applicability and long-term strategic use-case of the framework approach.

Goal of GSAB

- Work with businesses and communities in collaborative partnerships to deliver sustainability solutions for conservation, learning, and the local economy.



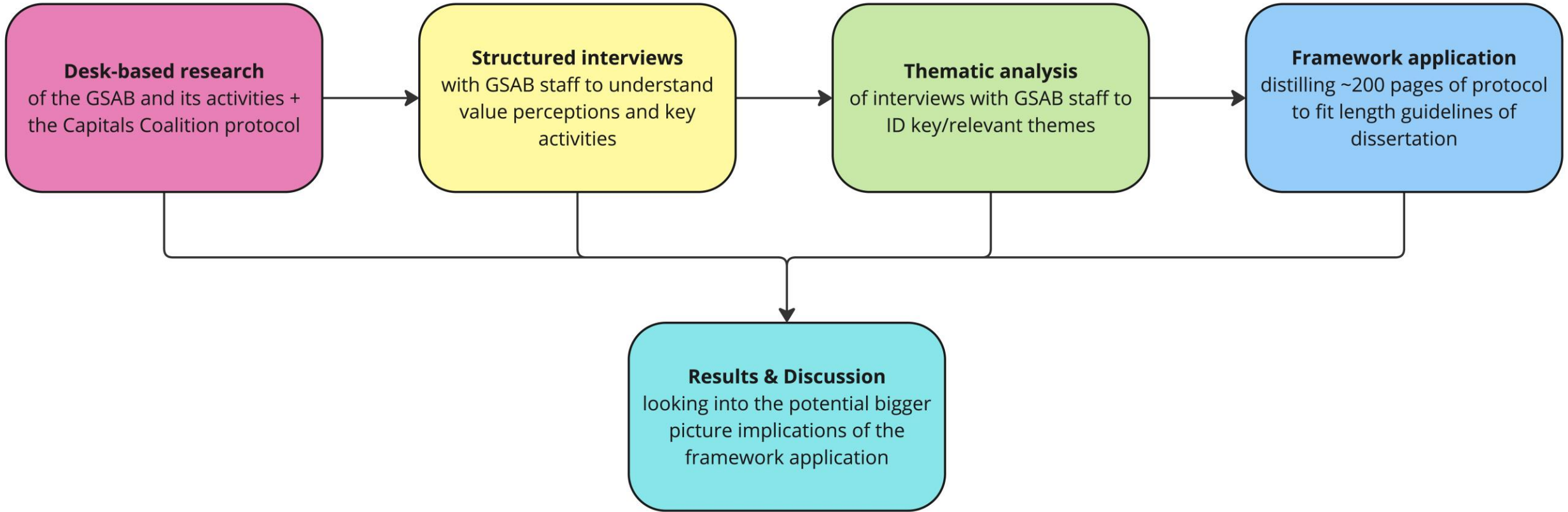
Research Aims



Ideal outcomes

- ID 3 key capitals for natural/social/human capitals based on GSAB activities and thread each activity through the Capitals Coalition framework.
- Understand how looking at the GSAB through a capitals-focused lens can help capture the breadth of biosphere activities.
- Identify useful, cost-effective, time sensitive valuation/narrative methods for collecting and ‘parking’ data at the GSAB and UKBRs.
- Capturing value that would help convince funders that providing funds to Biospheres is good value for money.





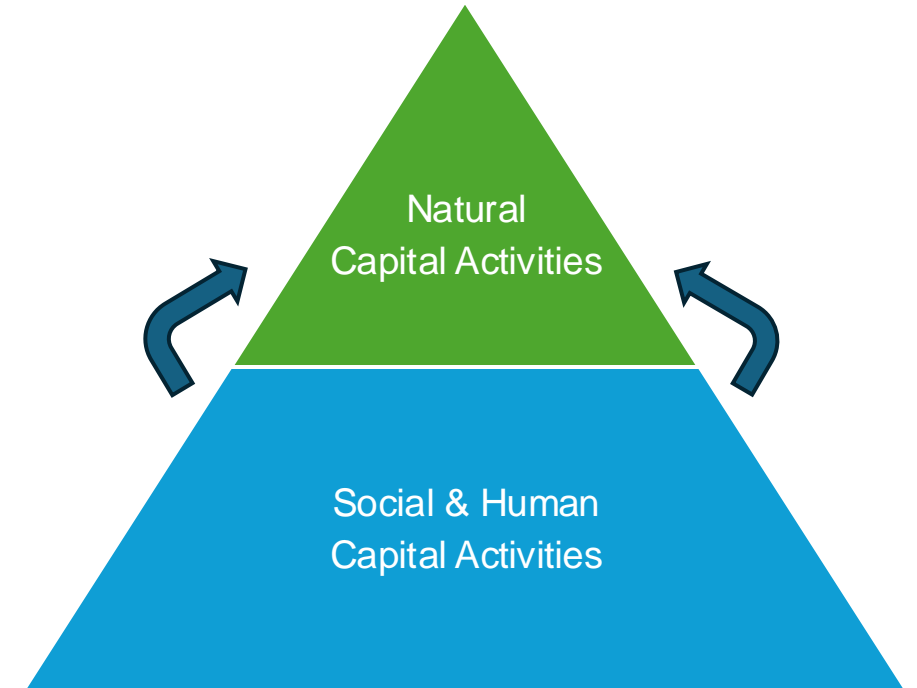
Research Methods

Research Results



Key capitals identified based on GSAB activity

- Natural Capital: Biodiversity, forests & woodland, peatlands.
- Social Capital: Community trust and engagement, networks and partnerships, cultural heritage.
- Human Capital: Skills development, education, health & well-being.
- Most impactful activities at the GSAB were found to relate most to social + human capital, which in turn can enhance natural capital activities in the future.



Research Results



Examples of activities for each key capital

- **Natural Capital:**
 - Peatland restoration projects.
 - Land use & management for biodiversity.
- **Social Capital:**
 - Building networks and partnerships by bringing together various stakeholders to build meaningful, long-lasting collaborations.
 - Community workshops and engagement initiatives.
- **Human Capital:**
 - Educational programmes and delivery in schools.
 - Training workshops for aspiring sustainable tour guides.
 - Biosphere certification mark for sustainable business.



Key Capitals, Activities, Indicators, Valuation Methods	Natural Capital			Social Capital			Human Capital		
	The stock of renewable and non-renewable natural resources that combine to yield a flow of benefits to people			The networks, social norms, values and understanding that facilitate cooperation, both within and among groups			The knowledge, skills, competencies, and attributes embodied in individuals that contribute to improved performance and well-being		
Inventory of key capitals that are enhanced by GSAB activity	Biodiversity	Forests, Woodland, & Farmland	Peatlands	Community Engagement	Networks & Partnerships	Cultural Heritage	Skills Development & Knowledge	Education & Cultural Awareness	Health & Well-being
Examples of key activities going on at the GSAB	Sustainable Tourism	Tree planting programmes	Peatland restoration	Community visioning workshops	Formation of multi-stakeholder partnerships	Protection & awareness of cultural heritage sites	Sustainability in business	Educational programme delivery	Exploring relationships to nature
		Natural capital auditing for farmland		Public Forums	Joint projects and initiatives	Organisation of cultural heritage events	Guide trainings	Educational toolkits & events	Promotion of outdoor recreational activities
	Species Monitoring	Land-use management	Ecosystem restoration	Community-led events	Additional workshop delivery with local organisations	Promotion of traditional practices	Workshops on sustainability, local biodiversity, climate action, etc.	Public awareness campaigns	Mental health support services & initiatives
				Outreach programmes and volunteering	Community meetings			Cultural exchange & environmental initiatives	
Inventory of progress indicators	Number of native & protected species per hectare	Tonnes of CO2e sequestered annually in each landscape	Hectares of peatland coverage in the GSAB	Public participation rates in events & workshops	Total number of active & past partnerships (annual or since GSAB designation)	Attendance numbers at cultural events	Total number of training hours provided & people and businesses obtaining certifications	Number of students engaged	Narratives of impact on sense of place & identity, improvements to health & well-being
	Number of tourists & visitors per year for sustainable tourism	Number of initiatives & landowners involved in projects annually	Heactares restored of peatland restored annually	Community trust & social cohesion or satisfaction scores	Percentage of successful network collaborations	Number of visitors annually to cultural heritage sites	Total number of training sessions delivered	Cost per student or school of educational delivery	Number of participants in health programmes
	Number of businesses involved in sustainable tourism	Total number of projects facilitated by the GSAB	Tonnes of CO2e sequestered annually through peatlands	Number or percentage of residents engaged & projects completed	Community satisfaction scores	Total funding for cultural projects	Increased economic output for new guides & certified businesses as a result of business mark, guide certification, media coverage from GSAB, etc.	Narratives of cultural heritage, sense of place, learnings from education	Wellness scores from residents & groups
	Dollar values of economic benefits for tourism annually (focusing on sustainable tour guide businesses)	Total hectares of forest, woodland, farmland coverage in the GSAB		Community participation in events increases -- ie. increase in events held over a given year and number of people engaged	Narratives / testimonies from residents and communities (business as usual data collection)	Community participation percentages or rates		Satisfaction scores based on surveys	Awareness of sustainability and local environment
	Value of the UNESCO Trail (ongoing project)	Dollar value of sequestration	Dollar value of sequestration	Total number of volunteer hours secured	Increased economic output for new guides & certified businesses		Narratives and testimonials of training impact		
Inventory of valuation methods to capture & measure capitals	Surveys & questionnaires for visitors	CO2e sequestration measurements	Cost-benefit analysis of peatland restoration projects	Social cohesion, trust & satisfaction scoring index	Surveying assessments for numbers & percentage of people involved	Surveying assessments for numbers & percentage of people involved	Social Return on Investment (SROI)	Social Return on Investment (SROI)	Storytelling method / Narrative analysis
	ES valuation in monetary terms	ES valuation in monetary terms	Mapping for total hectares of peatland in the GSAB & ha covered by ongoing or past projects	Surveying assessments for numbers & percentage of people involved	Growth rate assessments for number of new, certified businesses	Deliberative valuation methods	Contingent Valuation Method (CVM)	Surveying assessments for numbers & percentage of people involved	Social Return on Investment (SROI)
	Species richness index	Carbon pricing estimates	Benefit transfers for value of similar environmental benefits in other locations	Deliberative valuation methods	Deliberative valuation methods	Contingent Valuation Method (CVM)	Surveying assessments for numbers & percentage of people involved	Participatory workshops & mapping exercises	Ethnographic Analysis
	Participatory workshops & mapping exercises for biodiversity & species presence	Mapping for total hectares of land management projects in the GSAB	Participatory workshops & mapping exercises	Storytelling method / Narrative analysis	Storytelling method / Narrative analysis	Social Return on Investment (SROI)	Deliberative valuation methods	Storytelling method / Narrative analysis	Structured interviews / Focus groups
	Travel cost method	Cost-benefit analysis of projects	Contingent Valuation Method (CVM)	Social Network Analysis (SNA)	Social Return on Investment (SROI)	Storytelling method / Narrative analysis	Pre- & post- workshop assessments	Pre- & post- workshop assessments	Surveying assessments for numbers & percentage of people involved
	Participatory workshops & mapping exercises	Participatory workshops & mapping exercises		Structured interviews / Focus groups	Social Network Analysis (SNA)	Structured interviews / Focus groups	Storytelling method / Narrative analysis	Contingent Valuation Method (CVM)	Contingent Valuation Method (CVM)

Research Results



x



Framework effectives

- Low-Cost, low-lift: efficient data storage that can enable streamlined communication of successful biosphere activities.
- Enhanced Methodology: Offers potential improvements for the ability to reflect on and measure current activities.
- Shows how the 3 capitals intertwine to deliver on larger goal of deepening the relationship between humans and their environment.
- Supports with framing scope assessments of capital assets and identifying quality indicators that seek to make the intangible more tangible.

Bigger Picture Context



x



Application to other UKBRs

- Business-oriented focus can help communicate the value proposition.
- Mix and match with valuation methods tailored to meet funder and community expectations.
- Capture and communicate positive impacts on education, skills development, sustainable tourism, etc. for funder and community audiences.

Align with government + funder ambitions

- Compile data based on best current practice (ie. following TCFD; government climate goals).



unesco

Man and the Biosphere
Programme



Thank you for listening!

Prepared for the Edinburgh Forests and Landscapes Network (EFLN), September 2024