Living With Environmental Change

UK National Ecosystem Assessment
Follow-on

Work Package 6: Development of the UK NEA scenarios

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E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

NATURAL ENVIRONMENT RESEARCH COUNCIL

Llywodraeth Cymru
Welsh Government

Work Proposed

Stream 1: Refining the analytical logic

- Formalising functional relationships between drivers and impacts on services
- Developing the socio-economic contexts for the scenarios
- Extending the storylines to Northern Ireland and The Marine Sector

Stream 2: Stakeholder deliberation

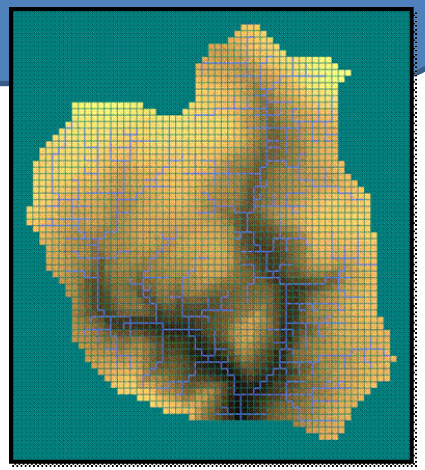
- Engaging with stakeholders to review the assumptions and outcomes
- Working with stakeholders to identify how scenarios can be 'down-scaled' to countries/regions

Progress: hydrological modelling

Landcover change and hydrology

Currently working with SHETRAN model
Key points:

a. Landcover a key input
b. Can be calculated for all UK catchments
c. The effect of different climate change scenarios can be examined
d. Works at 1 km grid square resolution



Stream 1: Refining the analytical logic

- **Formalising functional relationships between drivers and impacts on services**
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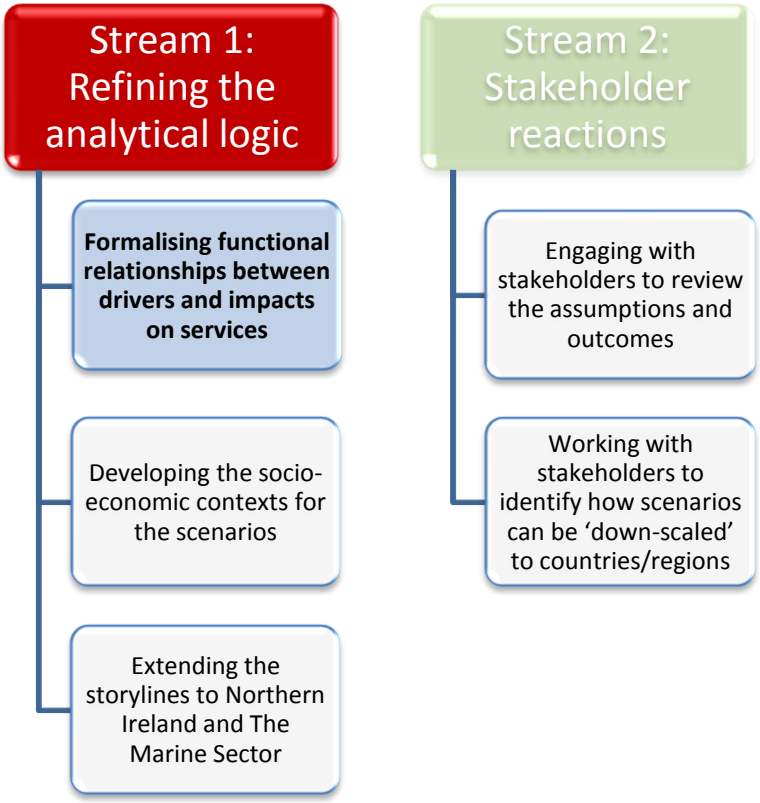
Progress: Biodiversity Modelling

Biodiversity modelling

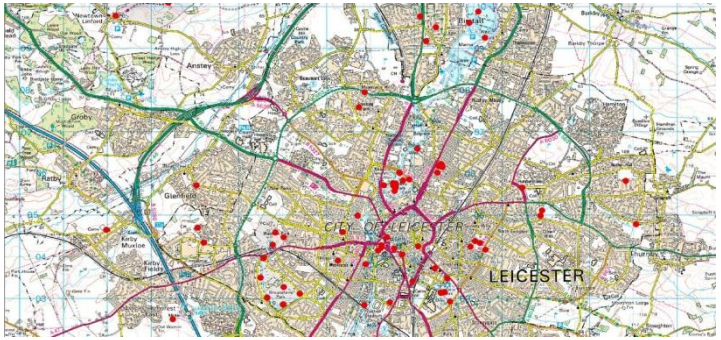
1. Working on models of farmland birds abundance relative to landcover
2. May extend this to all cover types using spatial regression models incorporating parameters such as land cover, altitude, climate, latitude & housing density
3. Needs to integrate with WP3a



Progress: GI Modelling

Green Infrastructure

1. MENE
2. New MENE questions on Gardens
3. Acquired Spatial Data
4. Will integrate with WP4



Locations of visits to park in a town or city

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Progress: Socio-Economic Context

VERGE (ethnographic futures) produced for and used for 4 scenarios. Link to WP4

Time steps developed at workshop

Plan to develop spatially explicit rule based model taking into account:

1. Current population density
2. Projected population (from scenarios)
3. Current and Projected Economy
4. Current and Projected Infrastructure
5. Altitude
6. Environmental Designations from Scenarios

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VERGE

Local Stewardship (supplemental content)

Indirect Drivers of Change (original scenario conent)	
Demographic	Population grows but slowly; immigration is very tightly controlled and only rich & skilled workers may enter the UK. Small families are encouraged. There is an expanding elderly cohort.
Socio-political	Local government gains considerable powers from Westminster and almost creates a mini-United States of GB & NI. A higher percentage of tax raised locally is spend locally.
Economic	Fairly static but reasonably healthy – most needs are catered for although excess supplies of goods are hard to come by.
Science and technological	Moderate development but greater focus on self-sufficiency in food and construction goods.
Cultural and religious	A strong utilitarian view dominates but also a greater understanding that nature supplies finite goods and services.

Additional Drivers and Models of Change (new content)

- There a no good models or patterns for forecasting the social implications of the intentional and controlled unwinding (not wholesale destruction or replacement) of something large and structurally complex like an economic system or a political economy
- The closest references points someone might use include rejection of technology/social change (the Amish in the United States), top-down conversion to command economies (USSR, China), or forced economic isolation (Cuba)

Fundamental Assumption within the Original Scenario Material:
Society can choose to consume less and downshift its economic activity, and this will result in a more peaceful and happier world.

Verge Domains	2030	2060
Define How people define "nature" and "natural"	• People are beginning to see the world as a place of specific responsibilities: it is incumbent upon each individual to take care of their *local* environs and resources • "Democracy" becomes an increasingly favored concept, and participatory processes become common in many aspects of daily life	• Individuals are very much of a family and a particular place; primary identities spring from these associations • The human impulse to invent, innovate, and consume must be continually dampened or channeled into socially-acceptable directions
Relate How people relate to the environment and the natural world	• As rural communities fill out with urban émigrés, economic roles and other activities shift towards things directly reliant on local habitats and ecosystems	• The natural world around individuals is seen as, well, the *natural* place in which humans would be found • People implicitly assume that any issue (housing, food, sports, etc…) must address or be placed within the context of a living and productive environment
Connect How people are connected to the environment and ecosystem services	• A return to a "hand-shake-based" economic life, with relationships and recommendations more important to how things gets done • People are transitioning to a more rural lifestyle in which they do more of their daily activities out in the world around them	• As localization continues, as local social networks become more important, and as long-distance travel continues to diminish, the UK sees the return of traveling merchants. These trusted individuals help serve an emerging network of makerspaces, and also act as delivery systems for online commerce between parties in different regions
Create The processes and technologies through which people produce goods and services	• People learn to blend local feedstocks, local values, and new tools to produce goods. Community makerspaces, with fewer 3D printers but more lathes and routers, spring up across the country to support individuals and small businesses.	• Economics is generally hyper local and tangible, and much more about biophysical flows than GDP, knowledge work, or "externalities". • For most communities, local environments provide most of the energy and physical flows that sustain daily life
Consume The ways in which we acquire and use ecosystem services	• The downscaling of daily life drives a dematerialization of consumer life, which drives a demand for things of unique beauty and durability. Quality, handcrafted or otherwise, becomes a key criteria for purchasing the fewer goods that people do buy	• The youngest generations are maturing with an innate capacity to see how to get the most use for the longest lifespan out of the material things of daily life; consumption is less about acquisition than it is about use (over the long term)
Destroy The ways in which people destroy natural value and the reasons for doing so	• While consumer refuse is diminishing, what waste does remain is often subjected to local "waste taxes" which rise over time • The drive to recycle and upcycle waste finds a natural outlet in the local makerspaces that spring up across the country	• Ideas or developments that are perceived to promote "growth", consumption, or expansion are seen as inherently destructive of the appropriately balanced order

Terms

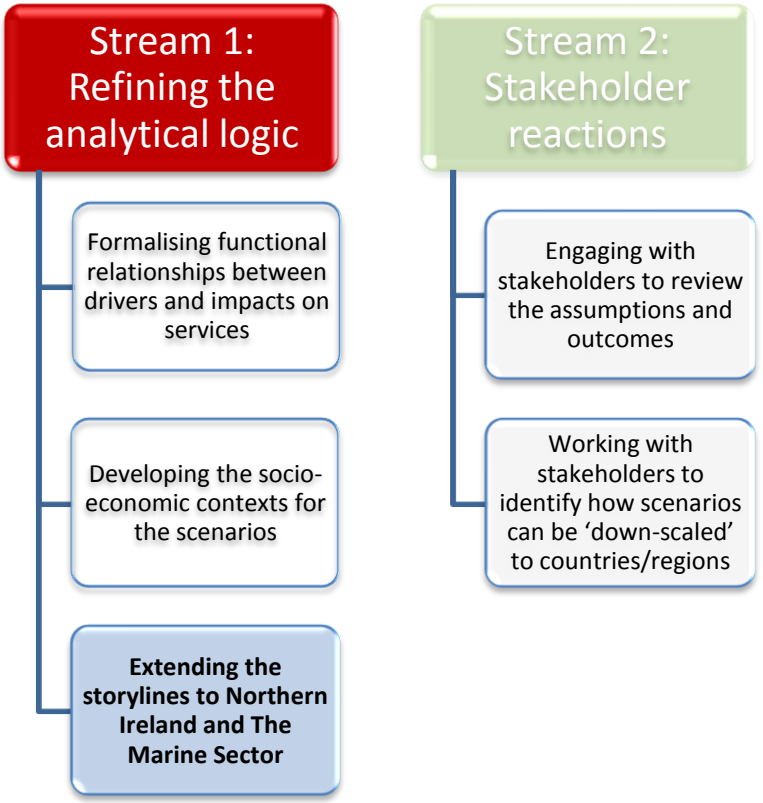
- Makerspace: a community-operated physical space or lab in which individuals interested in computers and coding, digital art, digital fabrication (including 3D printers and other equipment common to machine shops) and similar activities can gather to share knowledge and collaborate. Also known as a "hackerspace".

Progress: Northern Ireland Context

Northern Ireland

Workshop will take place in Northern Ireland on 19th February

This will build on work from the Scenarios Workshop (31/01 – 01/02/2012)



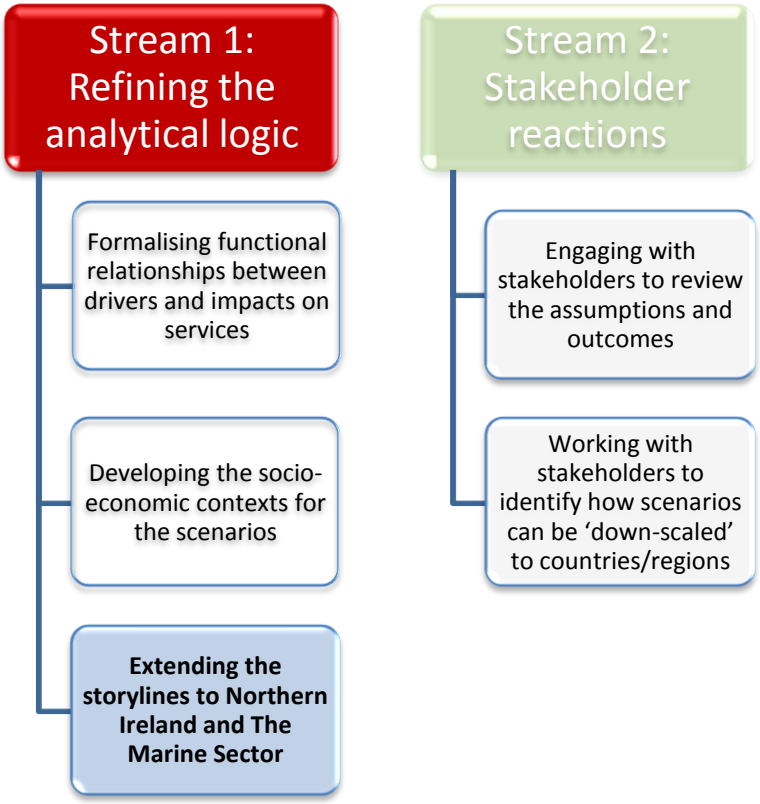
Progress: Marine

Marine

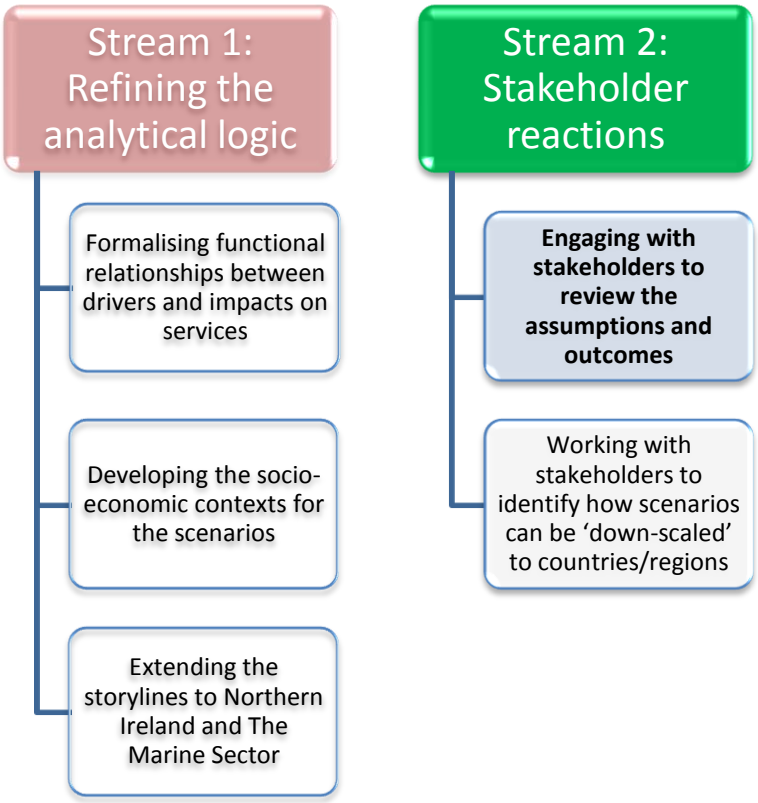
Working with WP3b and ABPMer

TOR agreed

- Review NEA1 scenarios and provide revisions to better reflect the outcomes for marine and coastal environments and associated ecosystem services
- Review functional relationships between drivers and selected services from the marine and coastal environments
- Identify key data resources and potential geographical frameworks for spatially explicit scenarios



Progress: Stakeholder Feedback

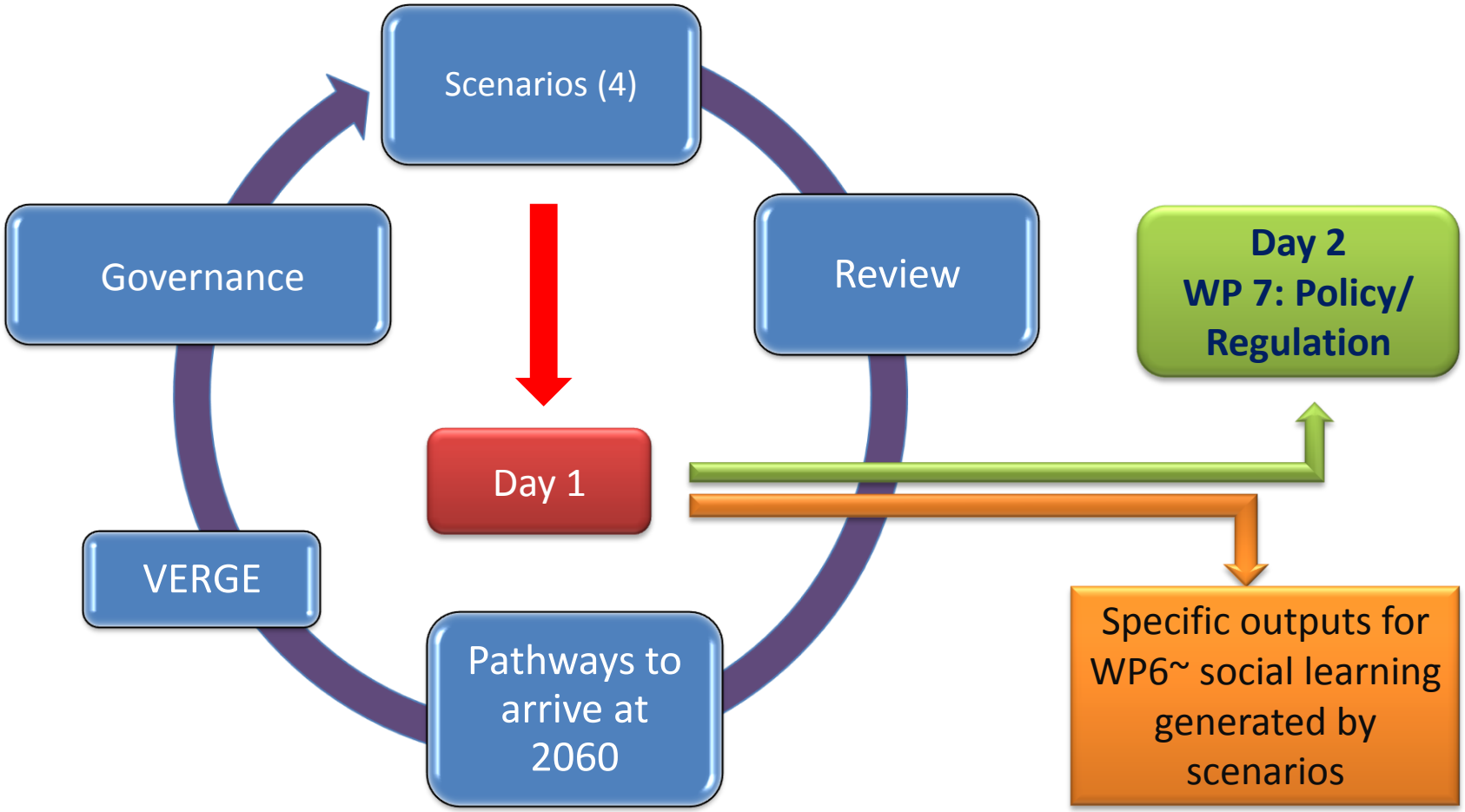


Stakeholder meeting took place on 31st January and 1st February

Stakeholder reviewed the scenarios under the following:

- Did the scenarios make sense/ suggestions for modification
- Did the ethnographic futures/ VERGE framework help
- Creating timelines
- Governance Considerations
- Policy Implications

NEA II workshop



Initial Feedback from Workshop

- 7/10 Generally found scenarios Plausible, 3/10 Partially Plausible
- 10/11 more likely to work with scenarios as result of workshop
- 7/10 said now thought differently about future issues
- Some support for usefulness of VERGE, but responses mixed
- 4/10 found windtunnelling useful, 5/10 had mixed feelings, 1 not useful
- 7/10 found the workshop as a whole helpful in terms of understanding the NEA scenarios and seeing how they could be used, 3/10 partially helpful

Progress: downscaling

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Stakeholder workshop suggested a day may be too short for this

May integrate with case studies from WP4

Consultation will be held with DEFRA to review scenarios in a regional context

Case studies and visualization tools