



Upland farming Systems for Food and Ecosystem Services - A Future Policy Perspective

TEAGASC-CAFRE Uplands Symposium 2024

Ollscoil
Teicneolaíochta
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Technological
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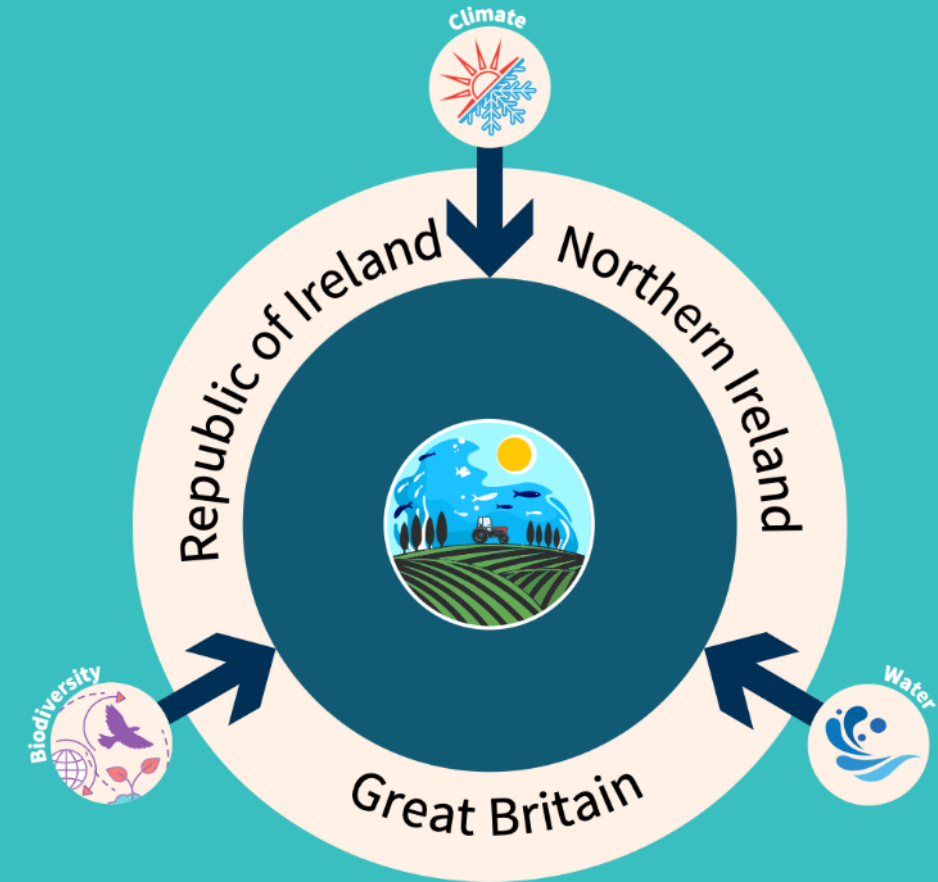
COCENTRE
Climate
Biodiversity
Water



Dr. James Moran (ATU)

ATU: Agroecology and Rural Development Research Group

- SFI, DAERA and UKRI funded 6 years programme
- Urgent need for evidence-based climate action integrated with biodiversity and water
- Policy Response Unit
 - Supported by the Sunflower Charitable Foundation through Community Foundation Ireland



HOST INSTITUTIONS



Trinity College Dublin
Coláiste Tríonóide, Cealla Árda Chloí
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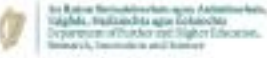
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FUNDED BY:



Outline

- Overall Context and Policy Coherence (stating the obvious!)
- Lessons from Scaling Innovative Place Based Approaches in Common Agriculture Policy (Uplands)
- Future Policy 2024-2028 (Design and Implementation)
- Key Messages



The reality



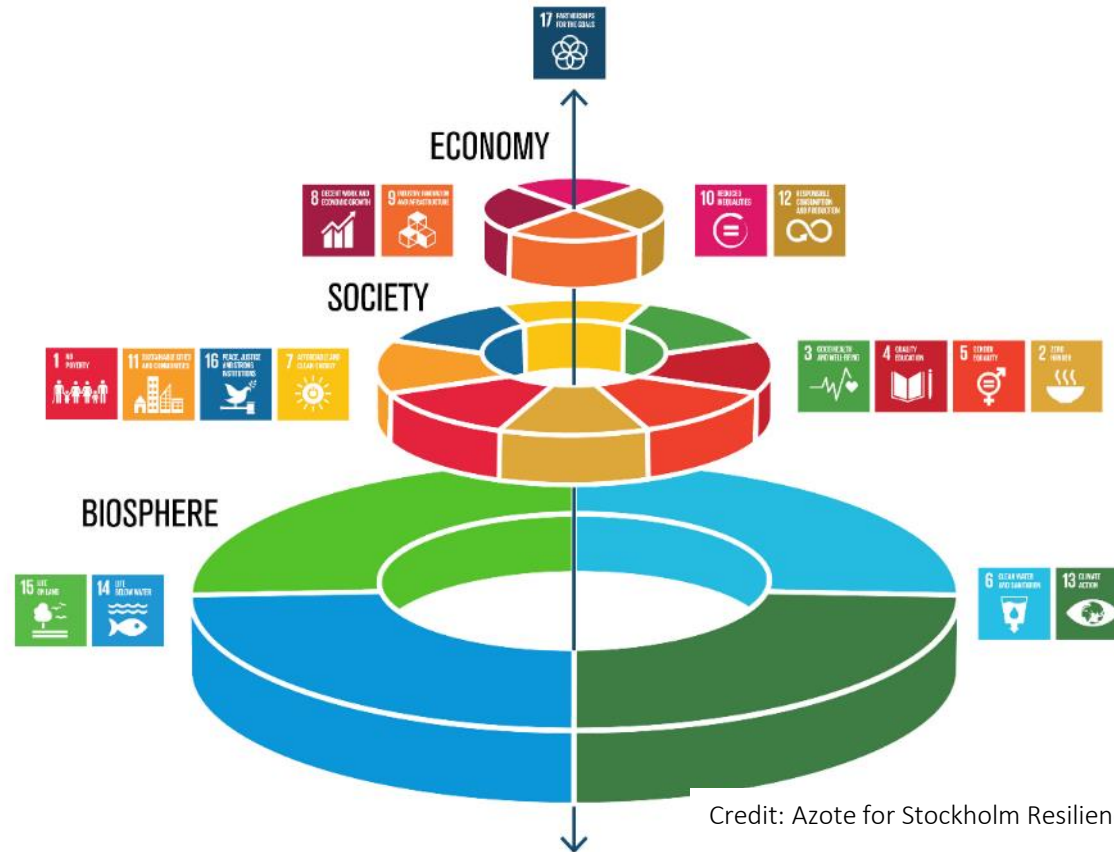
The plan

Broader Land Use Policy Context

- Peering through the keyhole!
- Multidisciplinary challenges
 - Nature
 - Water
 - Climate
 - Food and fibre production
 - Food and Water security
 - Governance and administration
 - Financing
 - ICT



Sustainable Agriculture and Land Use: Sustainable Development Goals



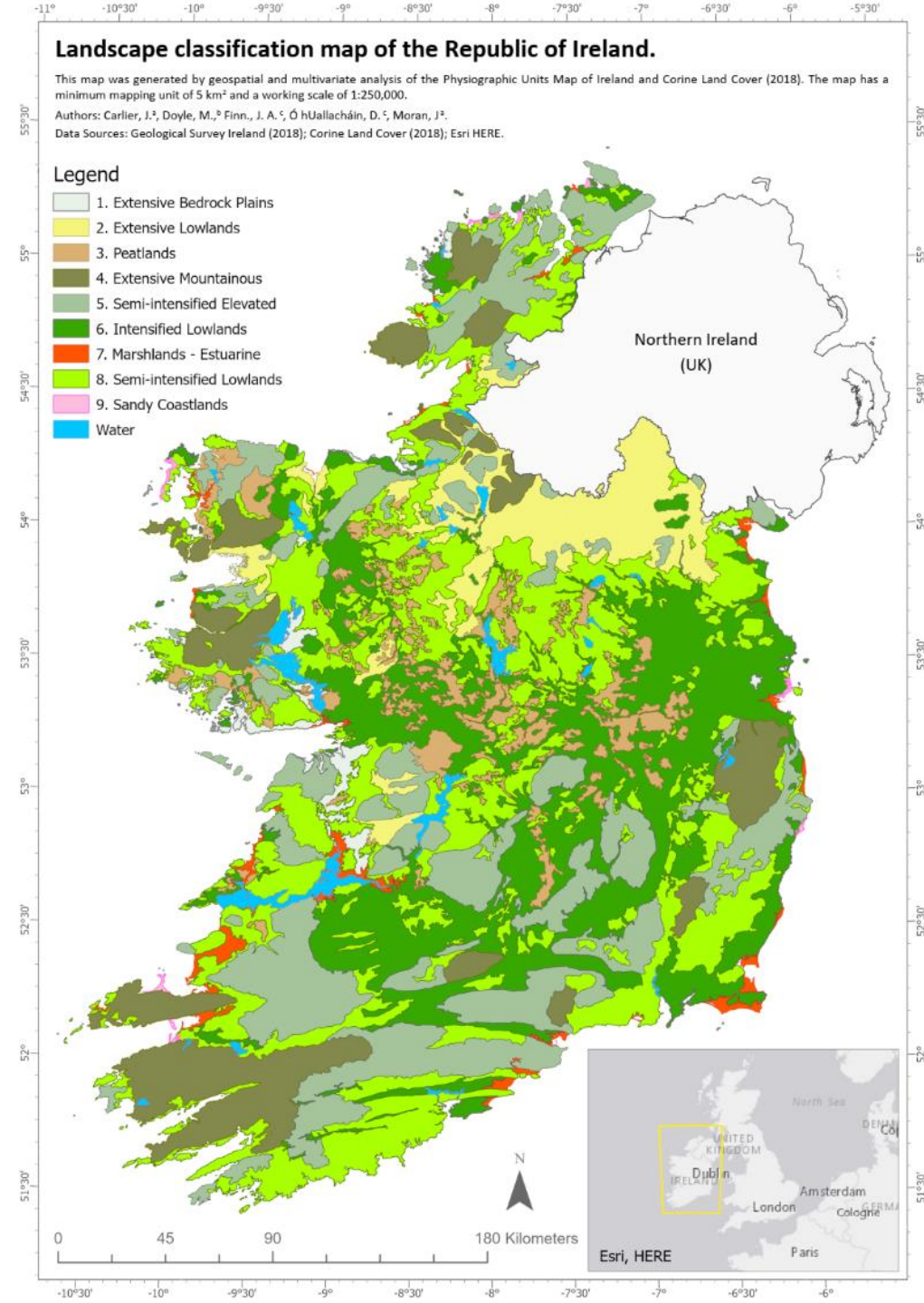
Economy is a
tool of a
functioning
society which is
dependent on
the biosphere

Credit: Azote for Stockholm Resilience Centre, Stockholm University (CC BY 4.0)

Graphics by Benker Lukarevz/Azote

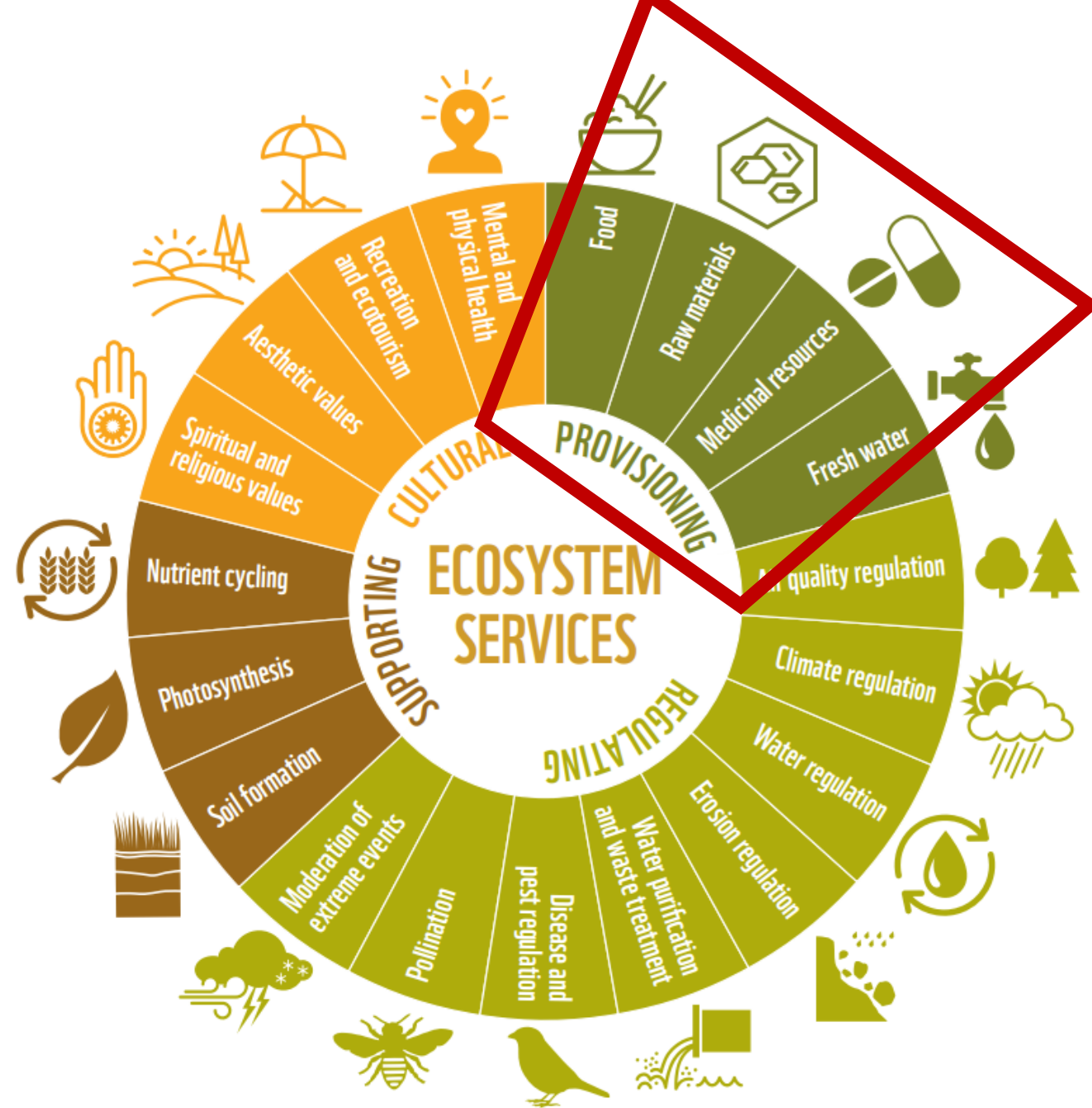
Diversity of Land Base

- Land base characterised by difference in geology, soils, climatic variation and land cover with a wide range in land use capacity.
- All land cannot be all things to all people!
- One size does not fit all!

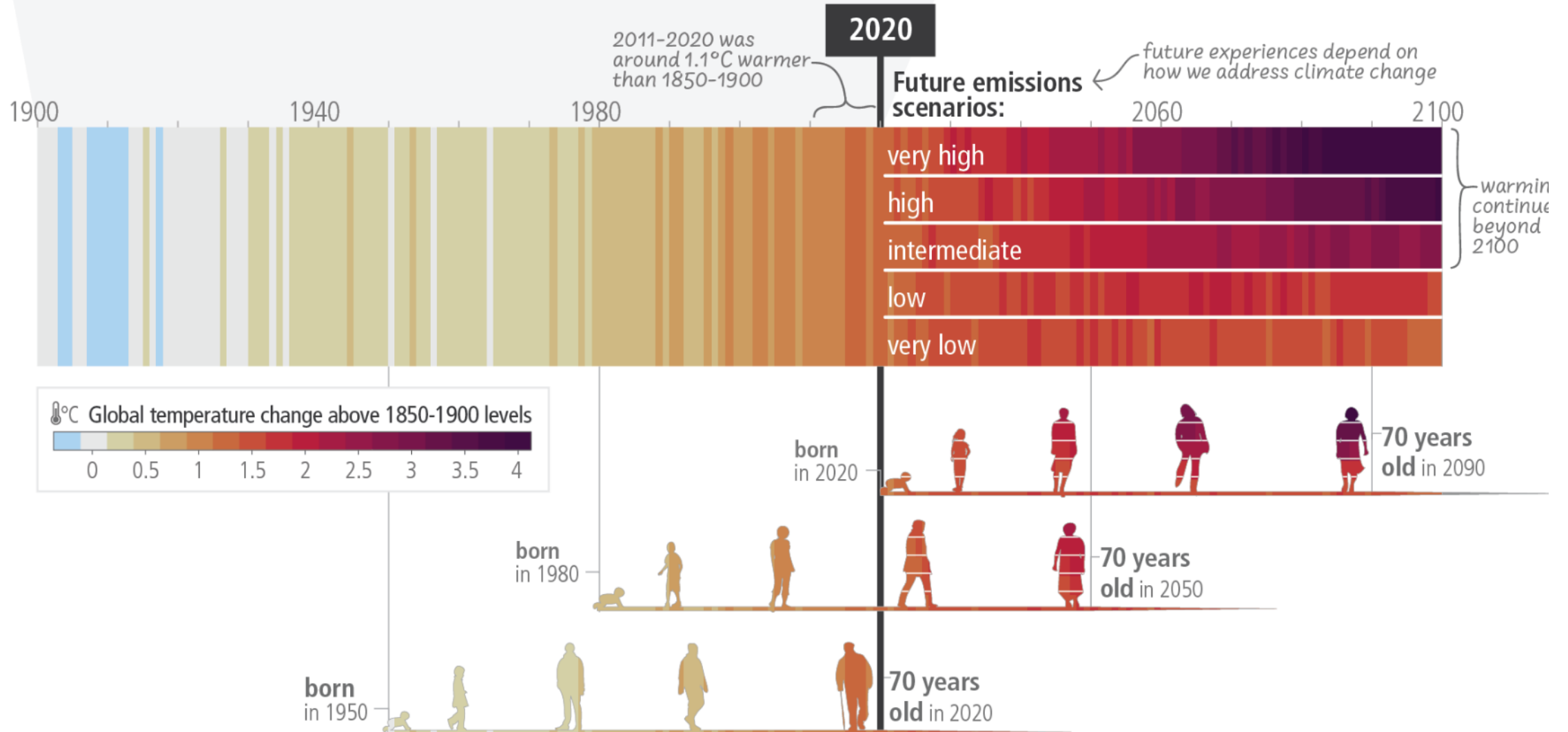


Diverse land base - provides range of Ecosystem Services

- Diversity of Irish farmed landscapes
- Need to provide range of goods and services
- Under supply of non-market ecosystem services/public goods



c) The extent to which current and future generations will experience a hotter and different world depends on choices now and in the near term



Biodiversity loss in Ireland



85% Protected Habitats in unfavourable condition; 46% with a declining trend.

Overwintering waterbirds declined by 40% (500,000) since 90s

20% breeding birds in long term decline; 30% are stable/increased

Semi-natural grasslands: ~30% of area monitored lost in last 10-15 yrs

A large image on the left side of the slide showing a chain of white paper cutouts of people holding hands, forming a large, stylized letter 'A' shape.

Policy CONTEXT: Lots of plans and strategies!

Co-ordination?
Integrated framework for action?
Capacity and Resourcing?

- EU Green deal; Farm to Fork Strategy; EU Biodiversity Strategy; EU Soils Strategy; Nature Restoration Law
- Government declared Climate and Biodiversity emergency in 2019
- Climate Action Plan
- National Biodiversity Action Plan
- Nitrates Action Plan
- River Basin Management Plan
- Food Vision 2030
- CAP Strategic Plan 2023-2027
- Our Rural Future - Rural Development Policy 2021-25
- National Planning Framework-Project Ireland 2040
- Participative democracy – Citizens Assemblies (Climate Action; Biodiversity Loss)



Policy Coherence?



- Land Use and Agriculture Policy context is complex
- Diverse set of demands and needs
- Policy and Interdepartmental coordination = foundation for enabling action from national to local level
- Need agile/adaptive governance and admin system to enable delivery

Forestry:

- Climate Action Plan 2021: A commitment to promote afforestation to increase planting to a rate consistent with realising 2030 ambitions
- Food Vision 2030: A rate of 8000 hectares (minimum) of afforestation per annum.

Peatland Restoration

- Climate Action Plan 2021: A commitment to reduced management intensity (water table management) on 80,000ha of drained organic soils by 2030.
- Ag Climatise: Reduce management intensity of 40,000ha of peatlands. Not clear about specific impact on water table levels or total GHG flux.
- Food Vision 2030: Under Goal 1 Action 4, Carbon Farming, there is a commitment to maintenance of current soil carbon stocks and “plugging of hotspots in organic soils”

CONTEXT SUMMARY: State of Nature In Ireland and Interactions with Agriculture

- Unfavorable status with a declining trend.
- Unclear policy/land use targets
- Legacy issues and inadequate policy response to date
- Positive moves - locally adapted pilots, results-based payments for ecosystem services
- Threats identified; solutions identified
- Now moving from pilots to wider roll out (**CHALLENGING**)

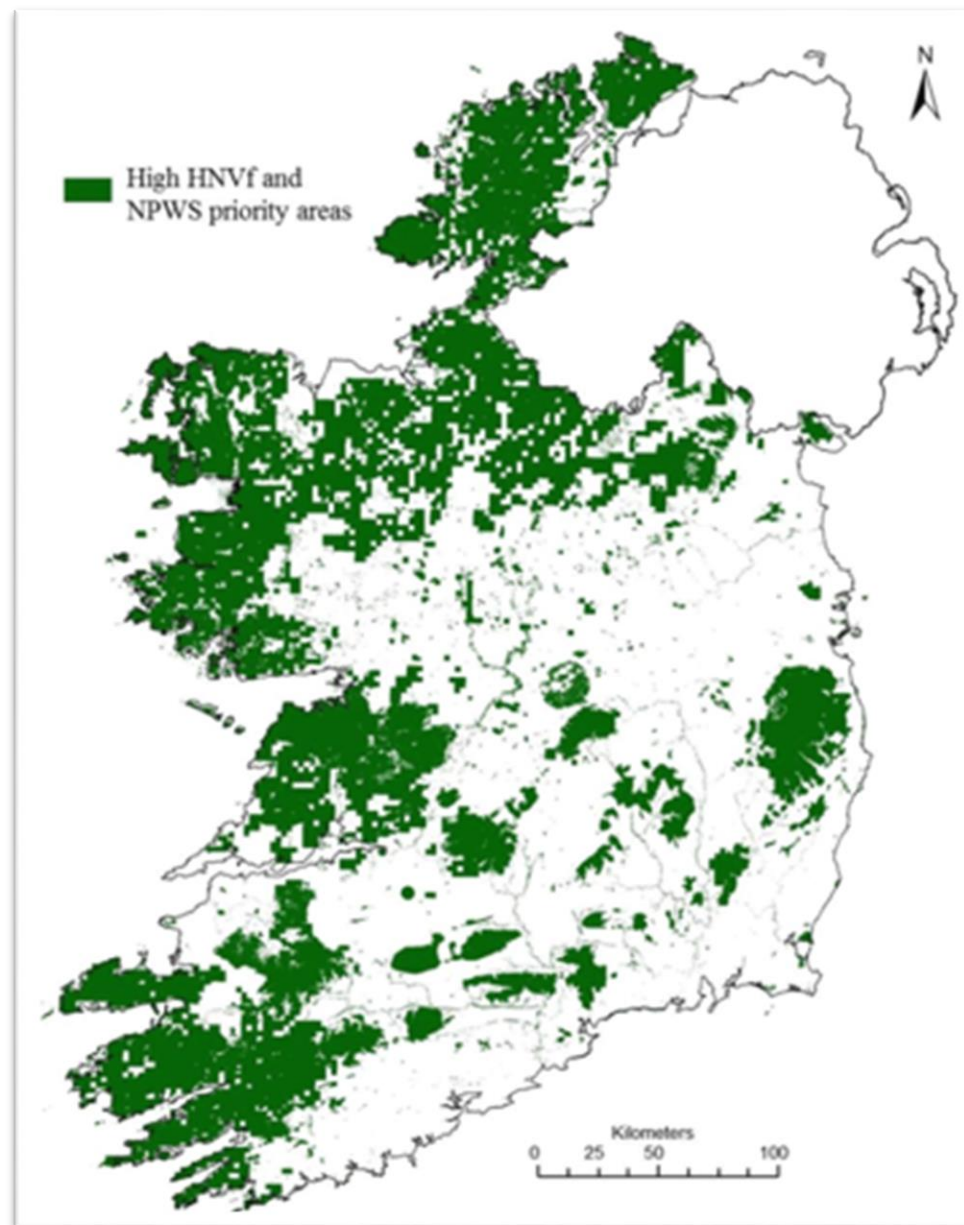


Research into policy and practice
(applied research, EIPs and wider roll out)



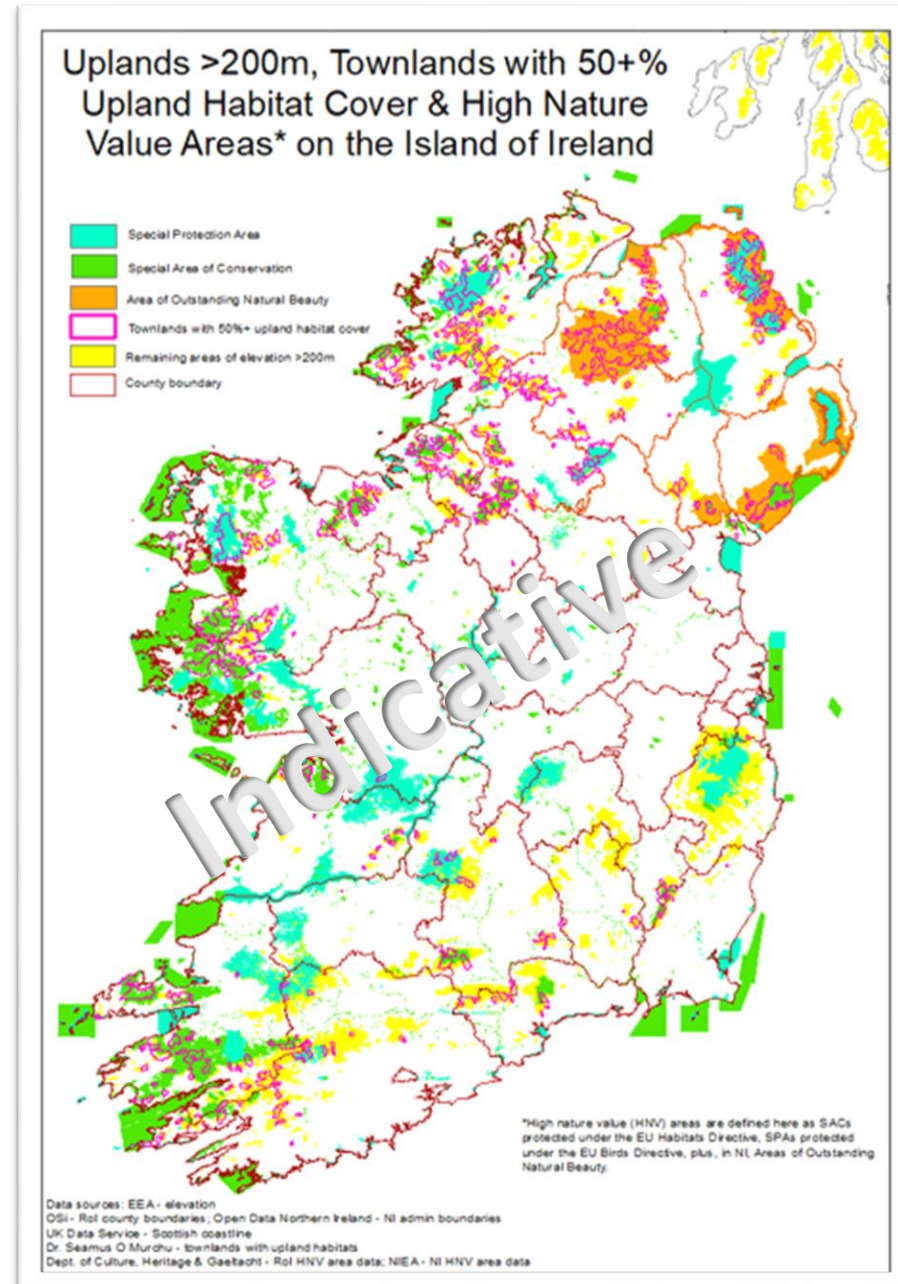
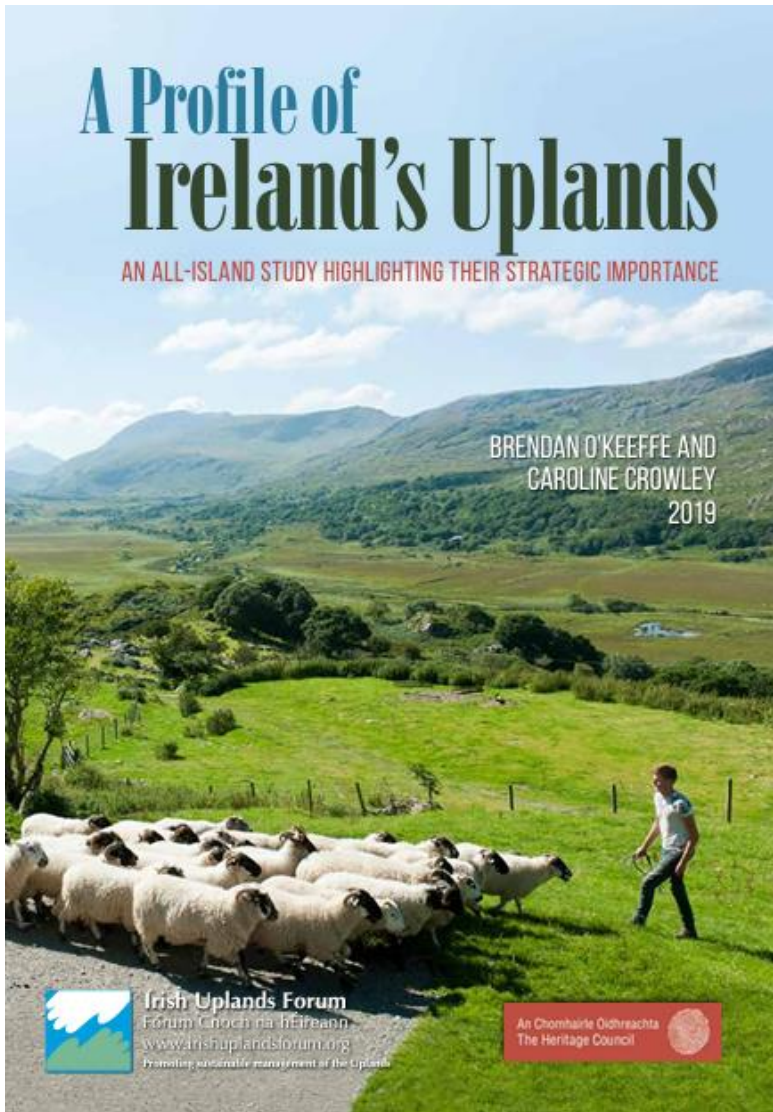


HNV: High Nature Value Farmland



- 33% of agricultural area
- Approximately 50% of total HNV farmland is part of Natura 2000 network
- Approximately 50% of HNV farmland occurs in upland areas
- Dual Threats: Abandonment and intensification of land use
- How do we improve socio-economic viability + maintain/enhance environmental quality?
- Valuing ecosystem services

All Island Uplands and HNV



- Diverse landscapes
- Socio-economic variability (proximity to urban centres, employment opportunities, tourism)
- Common challenges: contraction in upland farming; environment pressures; demographic weakness
- How do we improve socio-economic viability + maintain/enhance environmental quality?
- Valuing ecosystem services

Agricultural Mosaic Landscape
(partial HNV)



Drumlin-wet grasslands



HNV Landscapes are complex
mosaics



Hard to tell where the pasturelands
end and the woodlands begin

ous grasslands, heaths
limestone pavement



Extensive upland



Habitat Quality Model

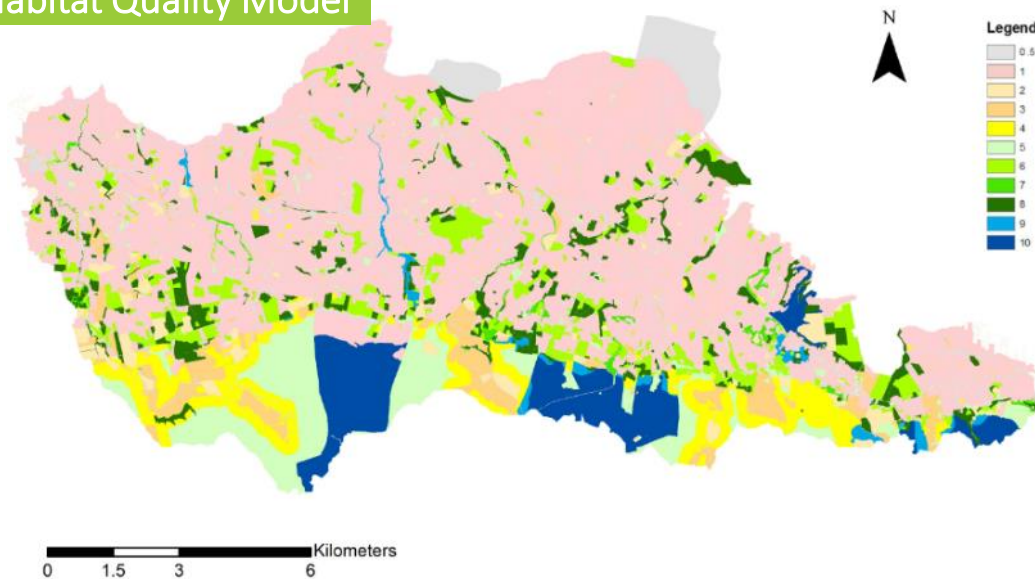


Figure 4.3. Results of the habitat quality model for Co. Sligo sub-catchment.

C Storage Model

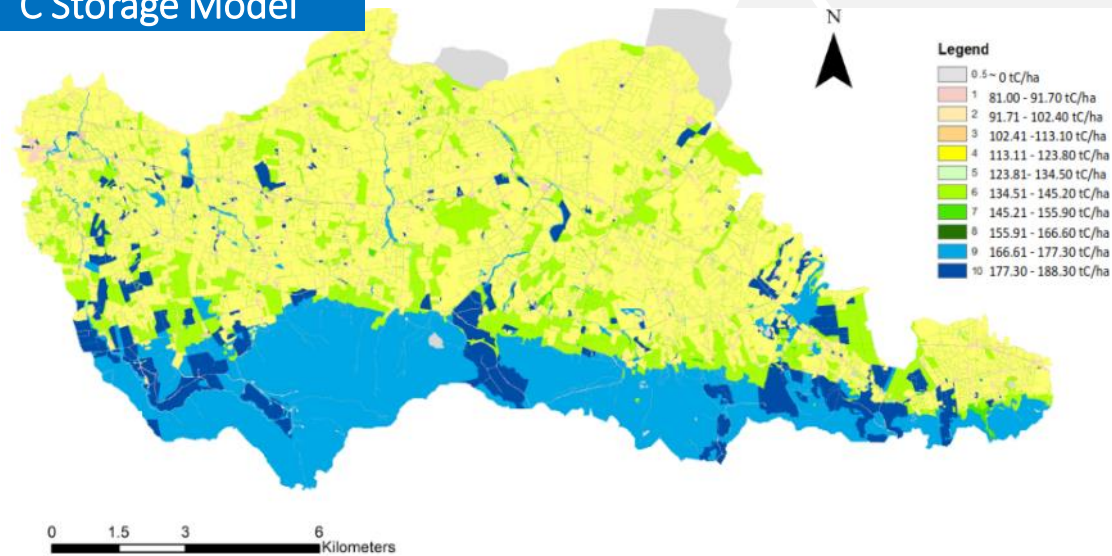


Figure 4.19. Results of the Carbon storage model (InVEST) for Co. Sligo sub-catchment.

Pollination Model

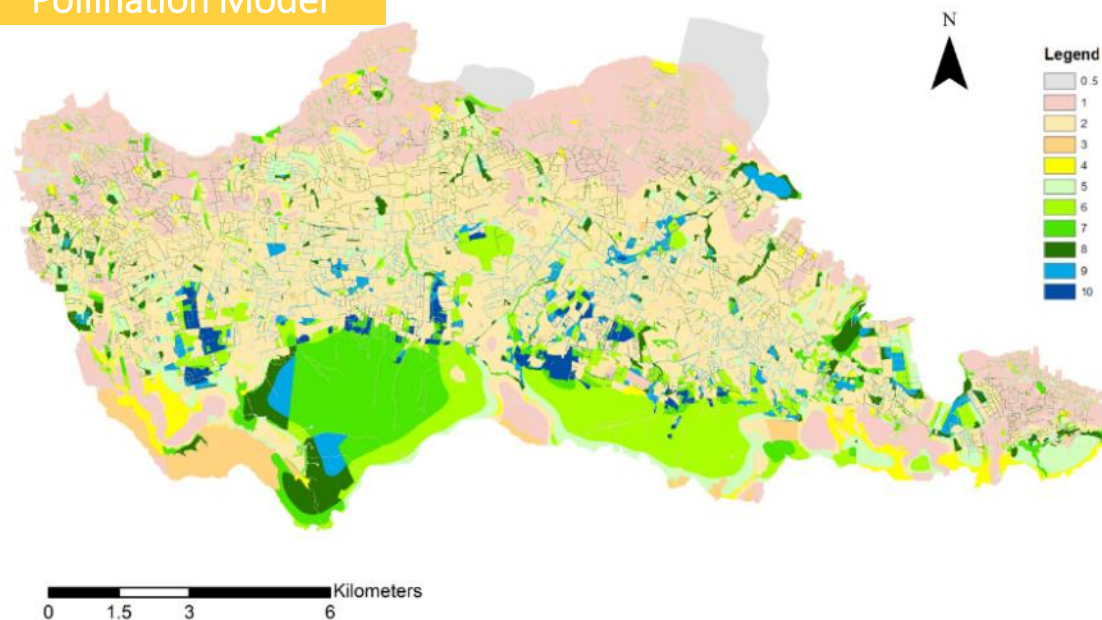


Figure 4.23. Results of the pollinator abundance model (InVEST) for Co. Sligo sub-catchment.

Production Model

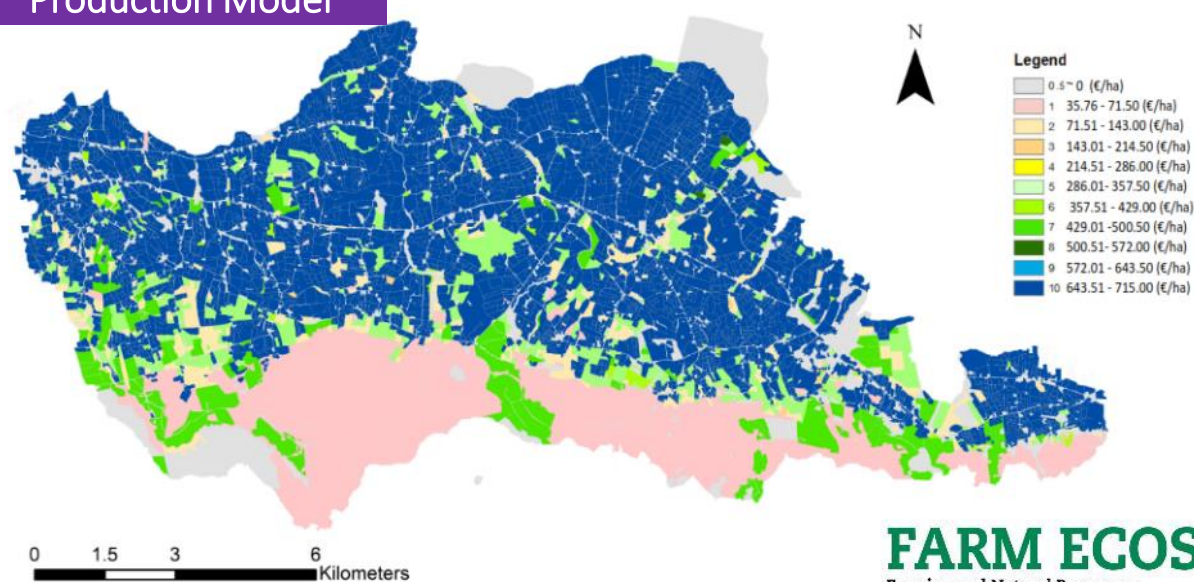


Figure 4.27. Results of income per habitat type (€/ha/annum) related to food and fibre production for

Clear synergies and trade offs

- Habitat quality correlates positively with carbon storage and pollinator abundance
- Weak negative correlations with food and fibre production values
- Some habitat/areas can provide some income from food production while having moderate habitat quality
- In general, semi-natural areas have greatest potential to produce multiple ecosystem (hotspots of ES)

Habitat Quality/ C Storage/ Pollination ES Ranking

1. Semi-natural grasslands
2. Woodland (non-production)
3. Heathland and peatland
4. Hedgerows and treelines
5. Commercial forest plantation

Food and Fibre Production ES Ranking

1. Improved grasslands/Tillage
2. Commercial forest plantation
3. Semi-natural grasslands
4. Heathland and peatland
5. Woodland (non-production)

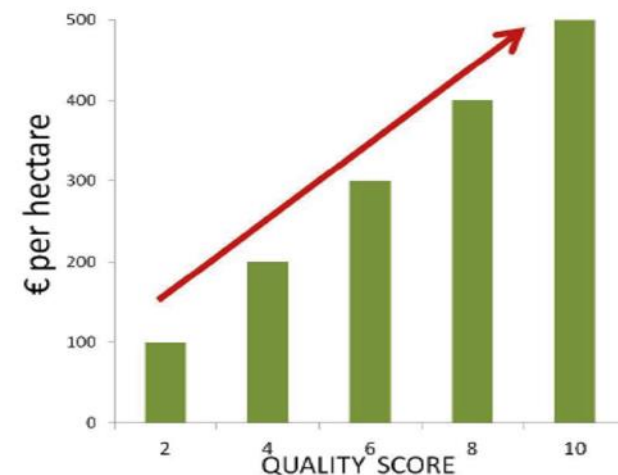
Locally Adapted Results-Based Approach

Biodiversity +

Associated Ecosystem Services

e.g. habitat quality, water, soil
carbon, pollination

Higher Nature Quality = Higher Payment



UP-SCALING

BurrenLIFE
Concept (20 farms)

2004-2009

Burren Programme
Testing and Upscaling (~160
farms)

2010-2015

Burren Programme
Full Roll out (~350 farms)

2016-2023

Burren Region:
Integrated Land Use
Continuous Development

2023-2027

OUT-SCALING

EU RBAPS Pilots
Ireland, Spain, UK,
Romania (~150 farms)

2014-2018

EIP Agri + EU LIFE +
Horizon 2020 +
INTERREG
R&D (~2000 farms)

2016-2023

National REAP Pilot
RBPS Development and
Admin. Capacity Building
(~5000 farms)

2021-2023

CAP Strategic Plan
(Ireland)
HNV farmland regions
Incl. Burren (~20,000)

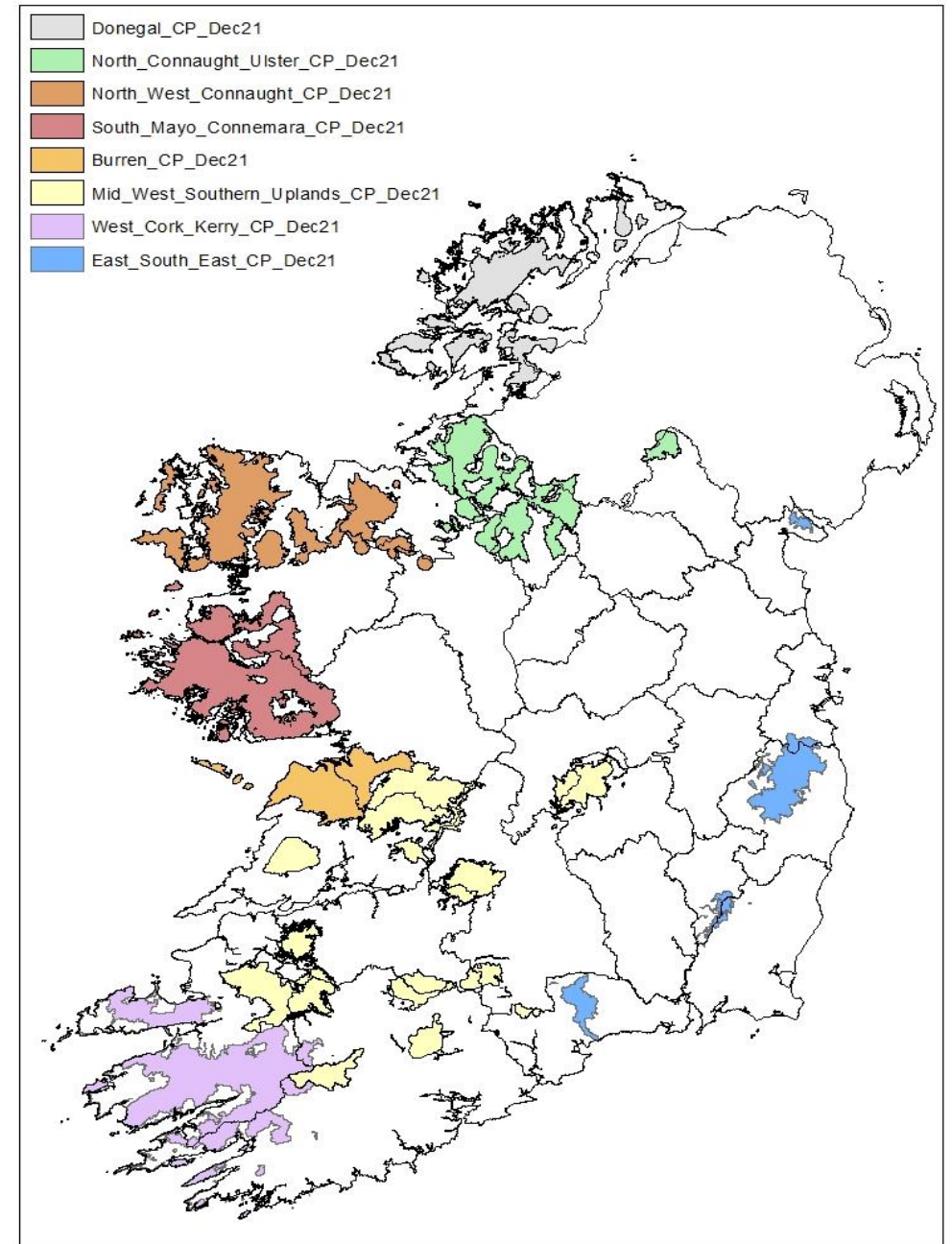
2023-2027

Hybrid Results Based and Locally Adapted Model



Agri-environment co-operation project areas

- AECM (agri-environment climate measure)
 - General Measure (similar to previous national scheme)
 - Cooperation Measure (targeted at high environment priority areas- see map coloured areas; areas with high proportion of designated nature areas under EU legislation plus high status water catchments identified under the water framework directive)
- 8 local area plans: diagnosis and action plan that adapts the overall measure framework to the local context (one size does not fit all recognised in proposal of this measure)
- Specialist Cooperation Project teams
- Design based on lessons learnt from previous European Innovation Partnership projects & LIFE programme
- Hybrid RBPS model
- Specialist advisory support
- Investments in supporting actions and landscape actions
- Potential big break through in rewarding delivery for nature, carbon and water services from our land
- Some issues unresolved/emerging challenges



Source: Dept. of Agriculture Food and the Marine

Future Policy



CAP

- Roots in 1950s western Europe
- Launched 1962 - Food supply and affordability, Incentivised production, guarantee prices
- 1980s food surpluses, sustainability of agriculture?
- 1990s new emphasis placed on environmentally sound agriculture
- 2000s Pillars I and II
- 2023-2027 CAP Strategic Plan (Integrating Pillar I and II)
- *Future? Balanced approach to realise a sustainable food system*



[This Photo](#) Picture: Pia Danner licence: [CC-BY-NC-SA 4.0](#)



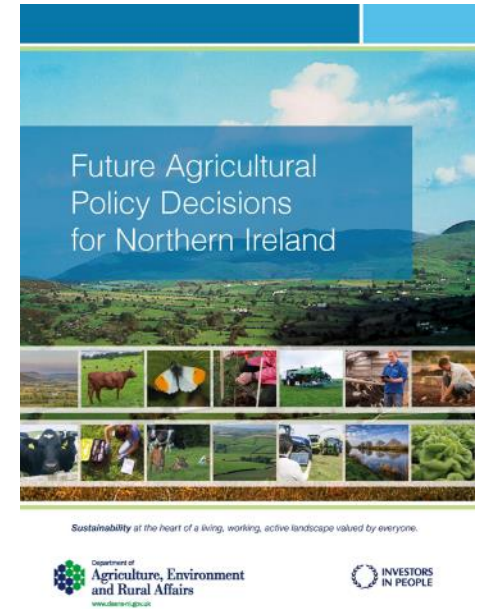
Direction of Travel

Sustainable Food System, Climate, Nature, Water, Food Security and Halting Degradation of Natural Resources

Can policy implementation create a supporting/enabling environment for action, better adapted to local needs?

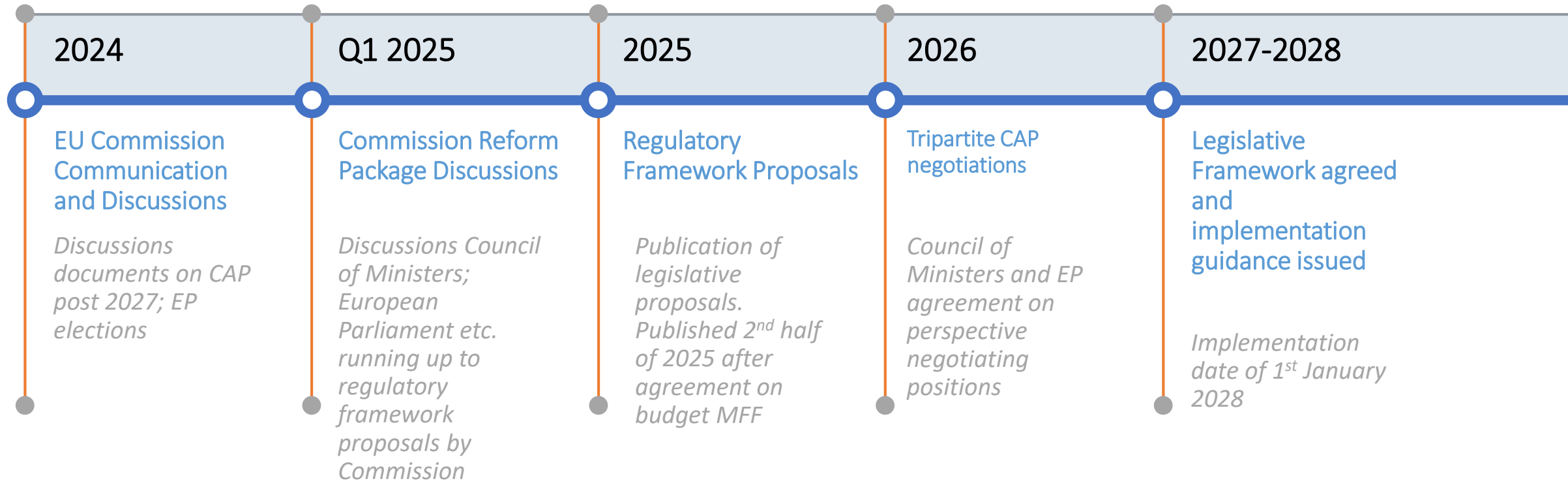
**Agricultural support
common framework**
Provisional framework
outline agreement and
concordat

February 2022
CP 613



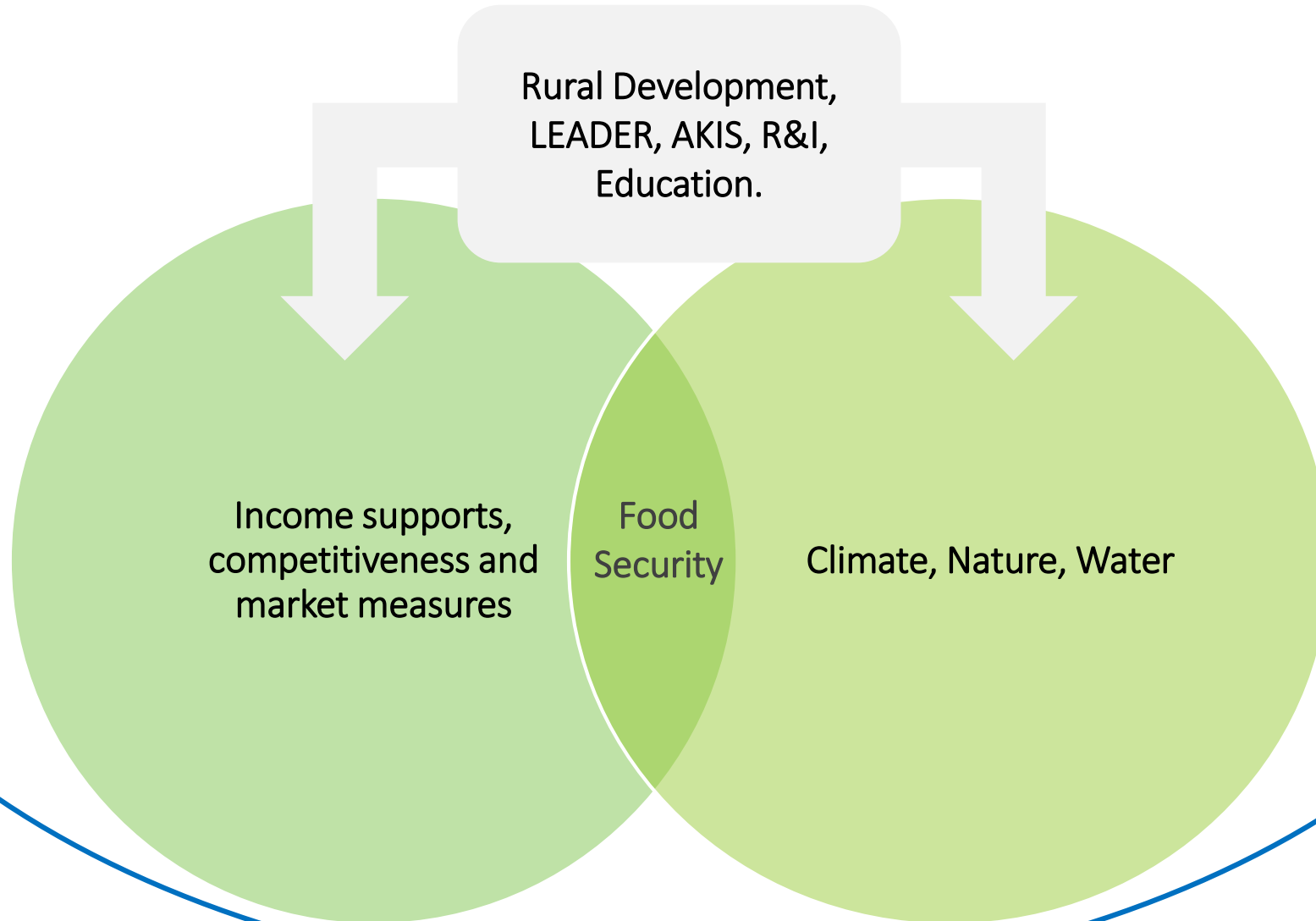
Predicted CAP Reform to 2028 Timeline

Working back from Implementation date 1/1/2028

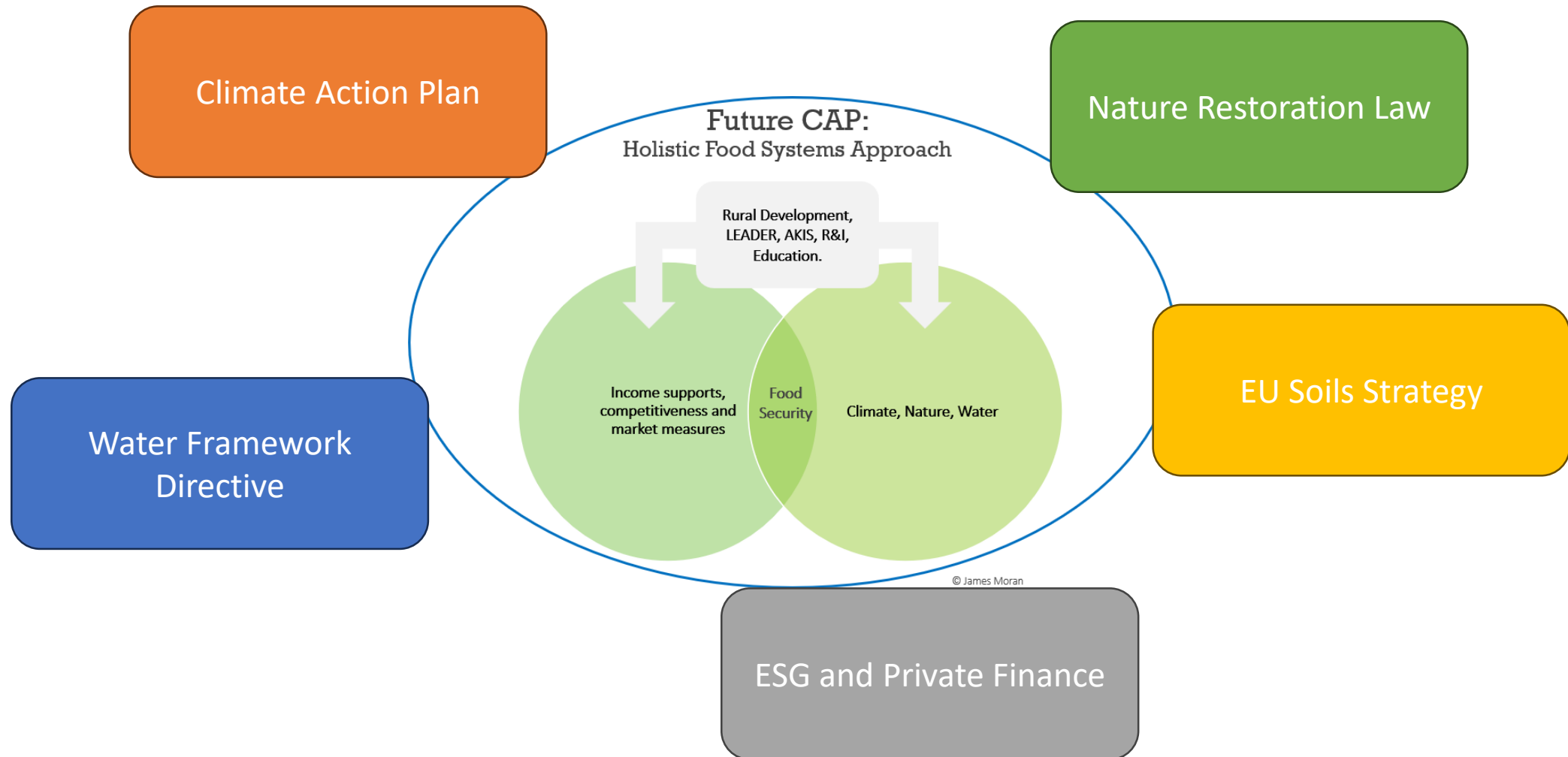




Future CAP: Holistic Food Systems Approach



Broader Policy Opportunities/Challenges



Nature Restoration Law

Objectives

- *(a) the long-term and sustained recovery of biodiverse and resilient ecosystems across the Member States' land and sea areas through the restoration of degraded ecosystems;*
- *(b) achieving the Union's overarching objectives concerning climate change mitigation, climate change adaptation and land degradation neutrality;*
- *(c) enhancing food security;*
- *(d) meeting the Union's international commitments.*



Opportunity and need for policy target alignment.

Restoration of terrestrial, coastal and freshwater ecosystems (Article 4).

Restoration of marine ecosystems (Article 5) including coordination of restoration of measures in marine ecosystems (Article 18).

Exemption for energy from renewable sources (Article 6).

Exemptions for national defence (Article 7).

Restoration of urban ecosystems (Article 8).

Restoration of the natural connectivity of rivers and natural functions of the related floodplains (Article 9).

Restoration of pollinator populations (Article 10).

Restoration of agricultural ecosystems (Article 11).

Restoration of forest ecosystems (Article 12).

Planting three billion additional trees as part of obligations in articles 4 and 8 to 12 (Article 13).



ROI: 2023-2027 R&D Environment ~€200 Million

NI Farming with Nature Test and Learn Pilots





Key message:

Transforming our land use system as part of a wider integrated land use strategy.

National land use framework enabling local/regional implementation

- **ENABLING WIDER POLICY CONTEXT:** Policy framework needs to enable positive action and incentivize delivery of results to combat biodiversity and climate crisis, while supporting viable farms and meeting societal needs
- **RAPID SYSTEMS CHANGE NEEDED:** change is inevitable and business as usual not an option
- **AGILE, ADAPTIVE GOVERNANCE AND ADMINISTRATIVE SYSTEMS:** needed to enable translation from national to local plus improved implementation (built in feed back loops)
- **CAPACITY and TRUST BUILDING:** essential to realise ambitious goals
- **SOLUTIONS:** need to be developed, locally adapted and scaled
- **EMPOWER THROUGH KNOWLEDGE SHARING:** across society producers and consumers
- **PARTNERSHIPS:** capacity and trust building, co-creation, innovation
- **PROMOTE AND RAISE AWARENESS:** societal demand and recognition for agriculture and forest areas and the services they provide; need for sustainable consumption to partner sustainable production within food system



Thank you

Questions