Research to support HNV farmland: Identification, targeting and future research needs

IT Sligo
An Institiúid Teicneolaíochta, Sligeach

Burren Winterage School 2015

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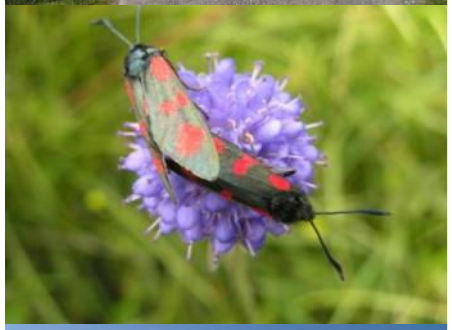
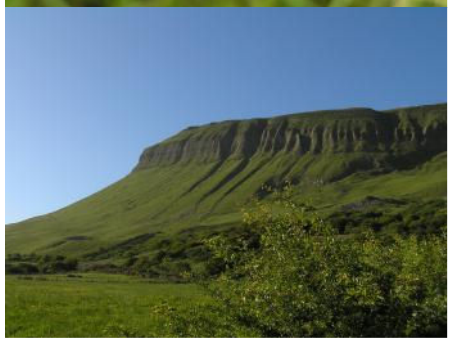
www.itsligo.ie

Collaborators and Funders

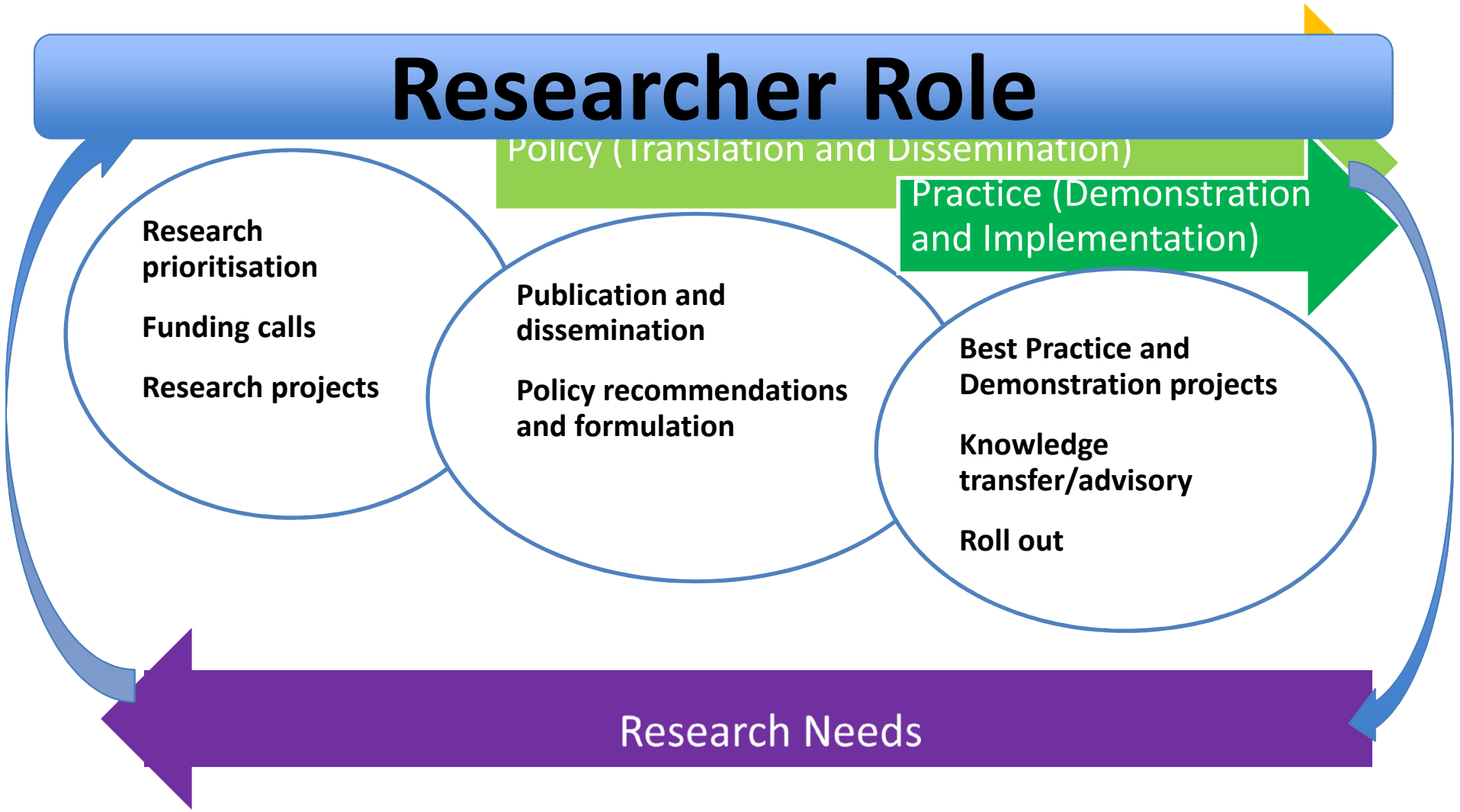
Outline

- The role of research – science into policy and practice
- What we know –current situation.
- Research initiatives: The Irish Experience
- Role of HNV and Future Research Needs

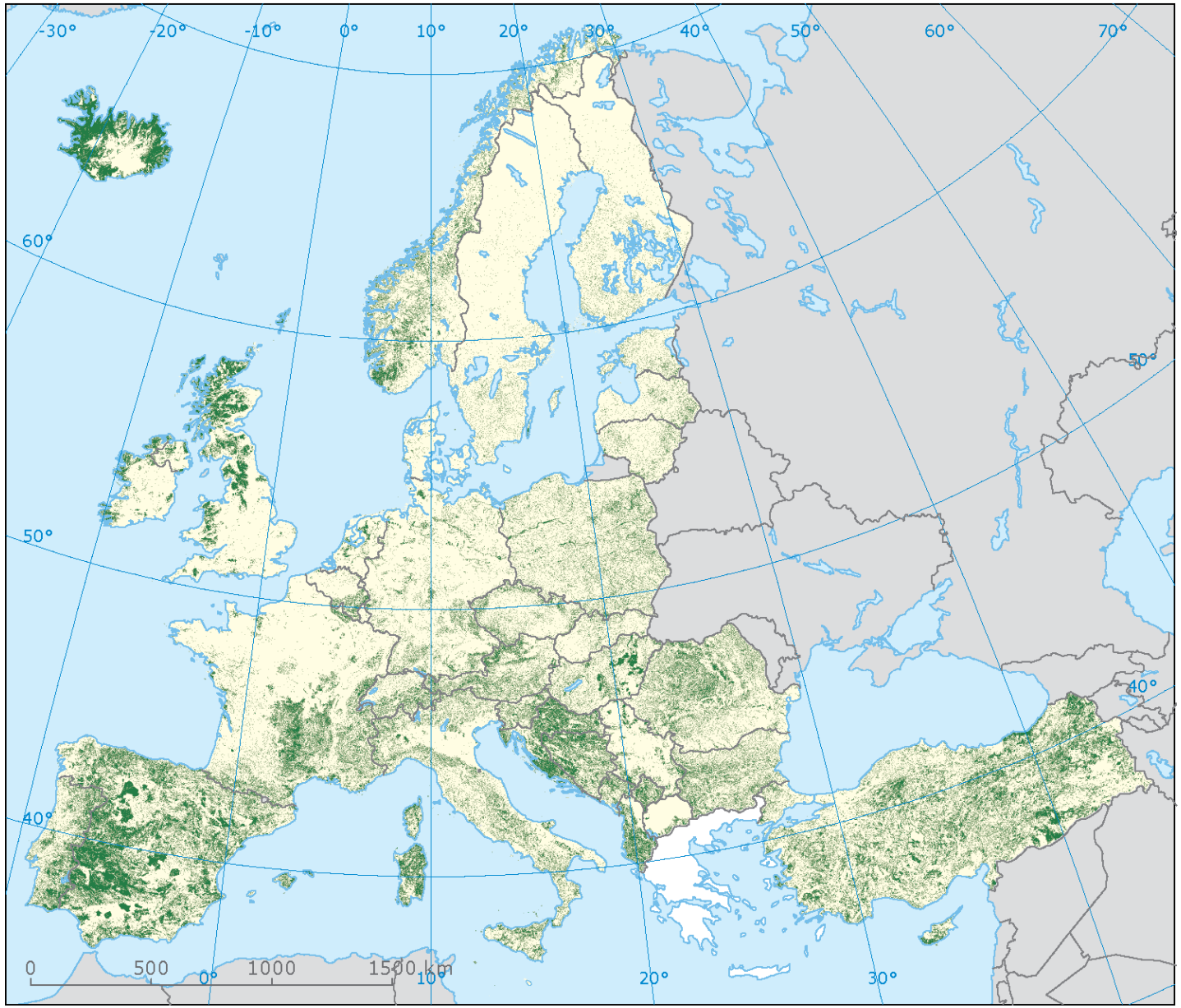


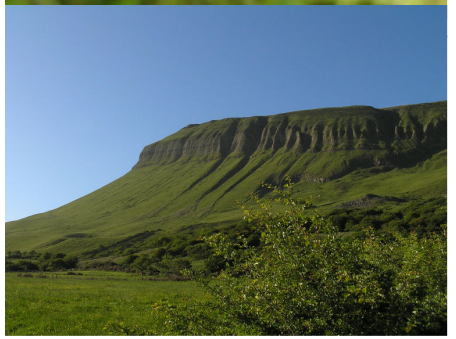



Science into Policy and Practice

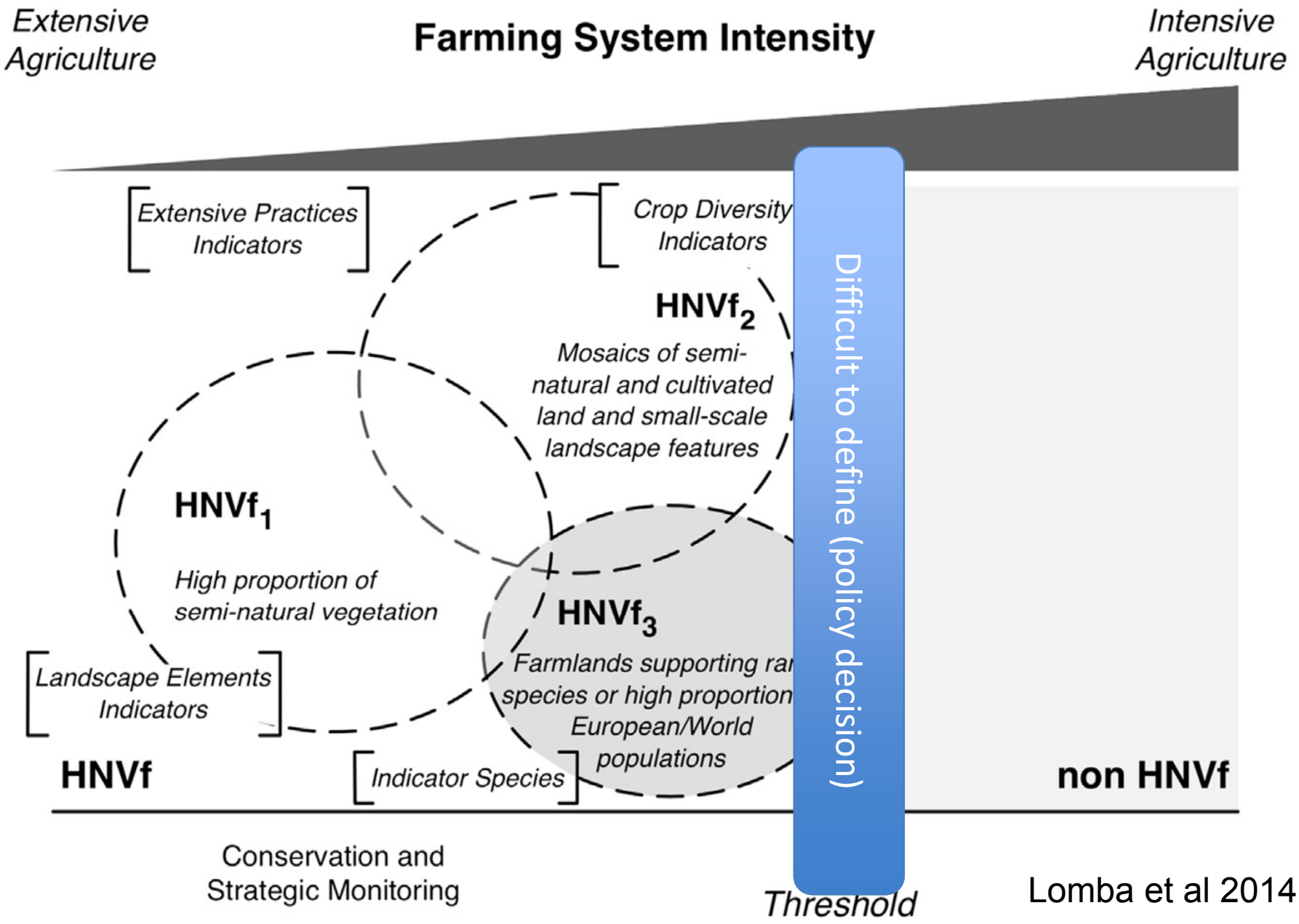


Current situation



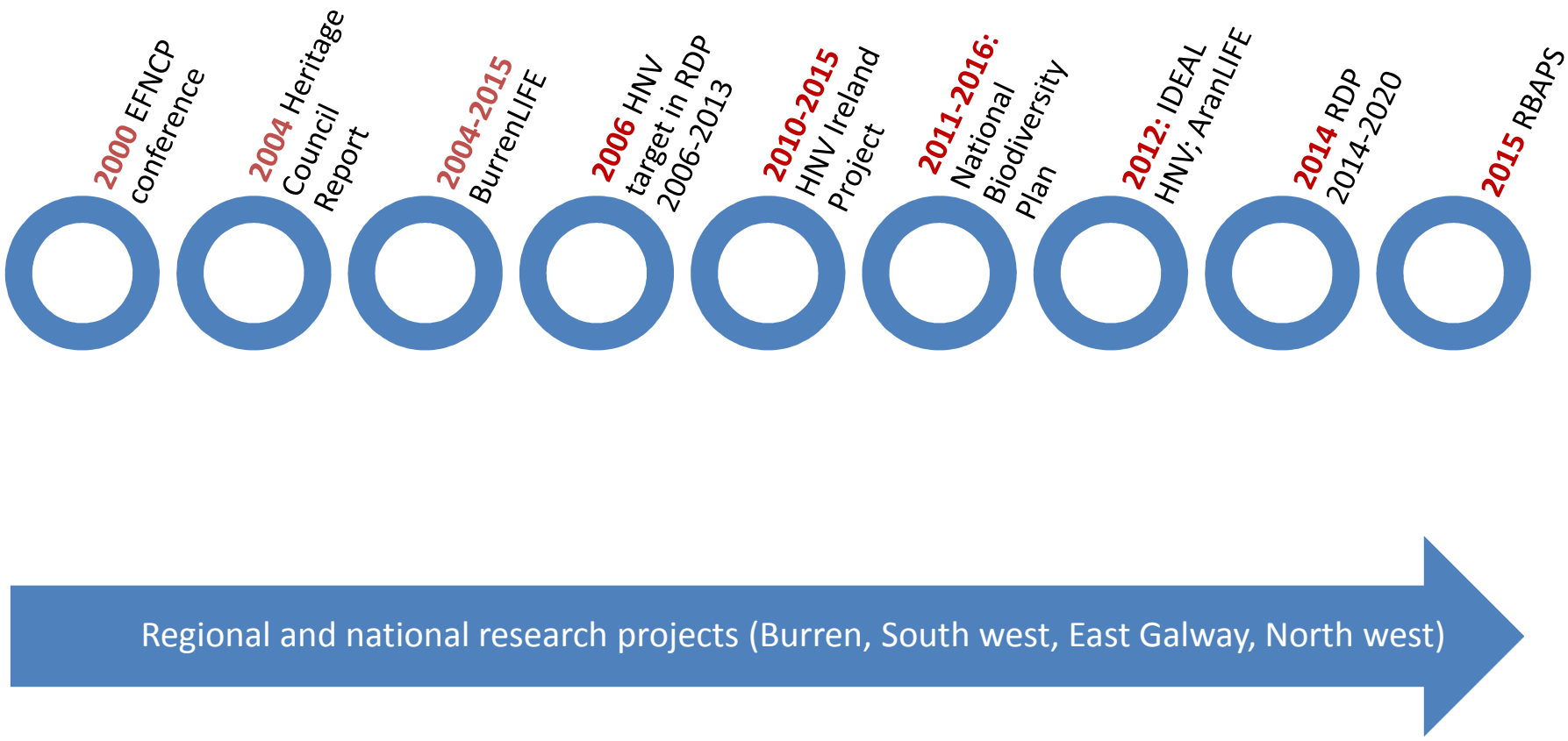


What we know



Lomba et al 2014

Timeline 2000-2015: HNV farmland concept and Ireland



Research Initiatives-Ireland

- Identification and characterisation– what is HNVf and where is it?
  - Farm-landscape scale
- Research support of best practice and demonstration projects – how do we support HNVf?
  - Development of support measures (hybrid action and results based)

Identifying HNV at farm level

- Developed a 10 point nature value index
- Applicable across intensities of pastoral based systems in Ireland
- Boyle, Hayes et al 2015

Nature Value Index

% improved Grassland	Score	Livestock Units per ha UAA	Score	Total length of linear habitat (m/ha)	Score	Final Score
91 - 100	0.5	> 2.26	0.3	< 100	0.2	1
81-90	1	2.01 - 2.25	0.6	101 - 125	0.4	2
71 - 80	1.5	1.76 - 2.00	0.9	126 - 150	0.6	3
61 - 70	2	1.51 - 1.75	1.2	151 - 175	0.8	4
51 - 60	2.5	1.26 - 1.50	1.5	176 - 200	1	5
41 - 50	3	1.01 - 1.25	1.8	201 - 225	1.2	6
31 - 40	3.5	0.76-1.00	2.1	226 - 250	1.4	7
21 - 30	4	0.51 - 0.75	2.4	251 - 275	1.6	8
11 - 20	4.5	0.26 - 0.5	2.7	276 - 300	1.8	9
0 - 10	5	0.15- 0.25	3	> 300	2	10

Example 1 LM13

- 3 % improved
- 0.4 LU/haUAA
- 371.2 linear habitat (m/ha)

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9.7

Example 2 SL14

- 75.5 % improved
- 2.51 LU/haUAA
- 167.4 linear habitat (m/ha)

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2.6

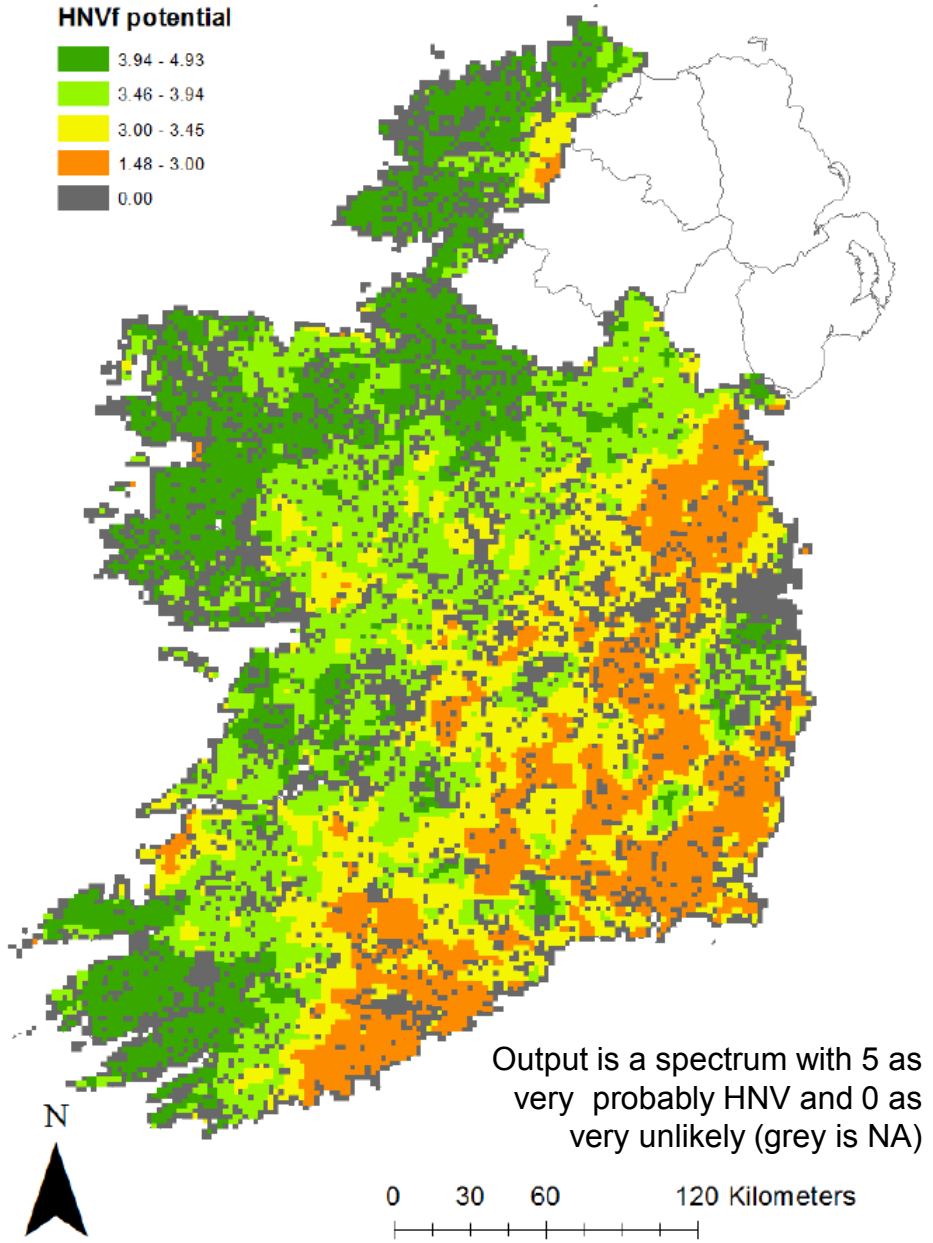

9.7
2.6

National distribution of potential HNV farmland

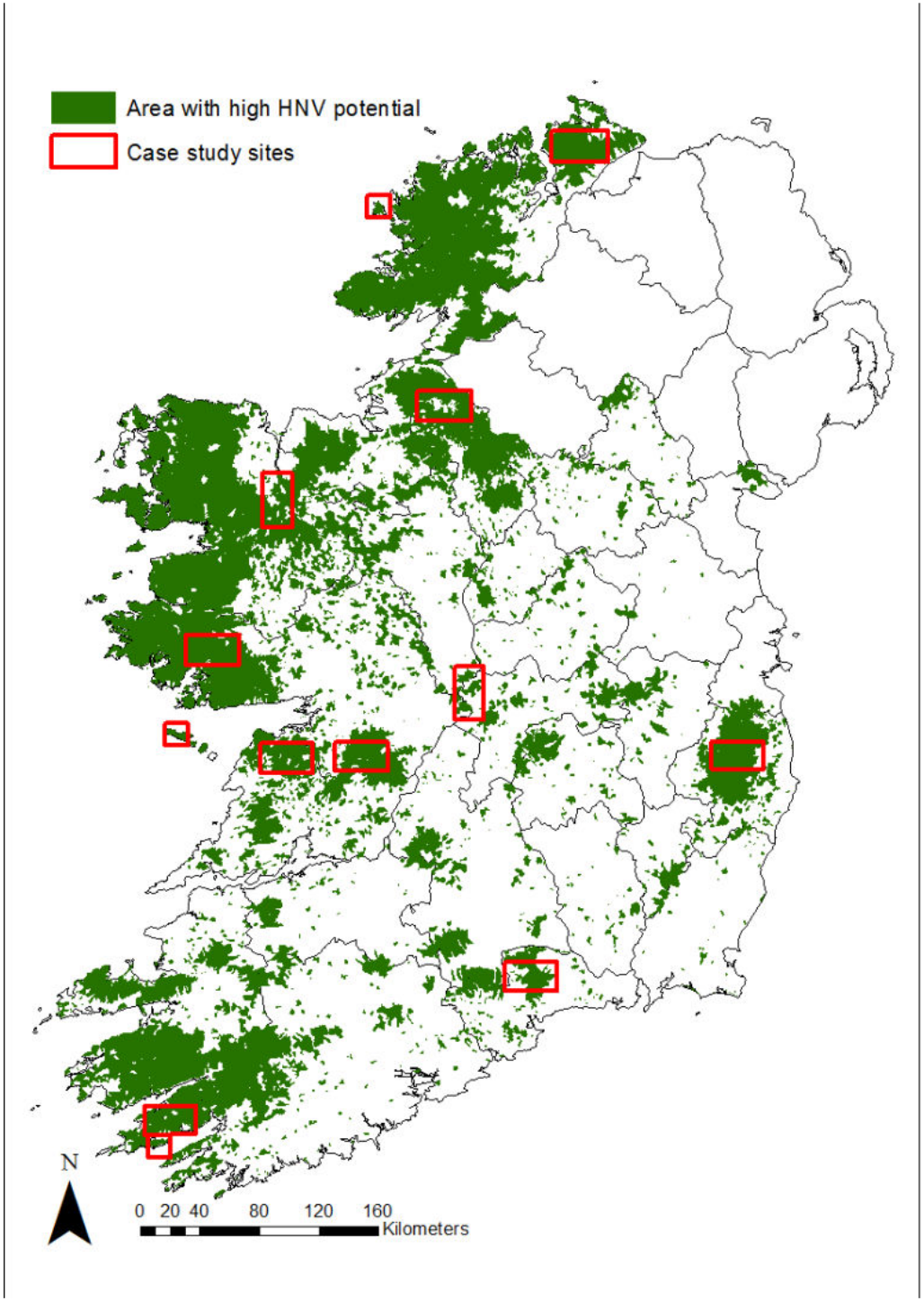
- IDEAL HNV project (Caroline Sullivan and Shafique Matin)
- Map of potential HNV distribution was developed at tetrad scale (2x2km)
- Parameters used:
  - 1. Corine-12 land cover (40%)
  - 2. LPIS stocking density (30%)
  - 3. Hedgerow cover (10%)
  - 4. River and stream (10%)
  - 5. Soil diversity data (10%)
- Weights based on Sullivan 2010; Boyle, Hayes et al 2015
- Validated against field data

Extent and distribution of HNV in Ireland

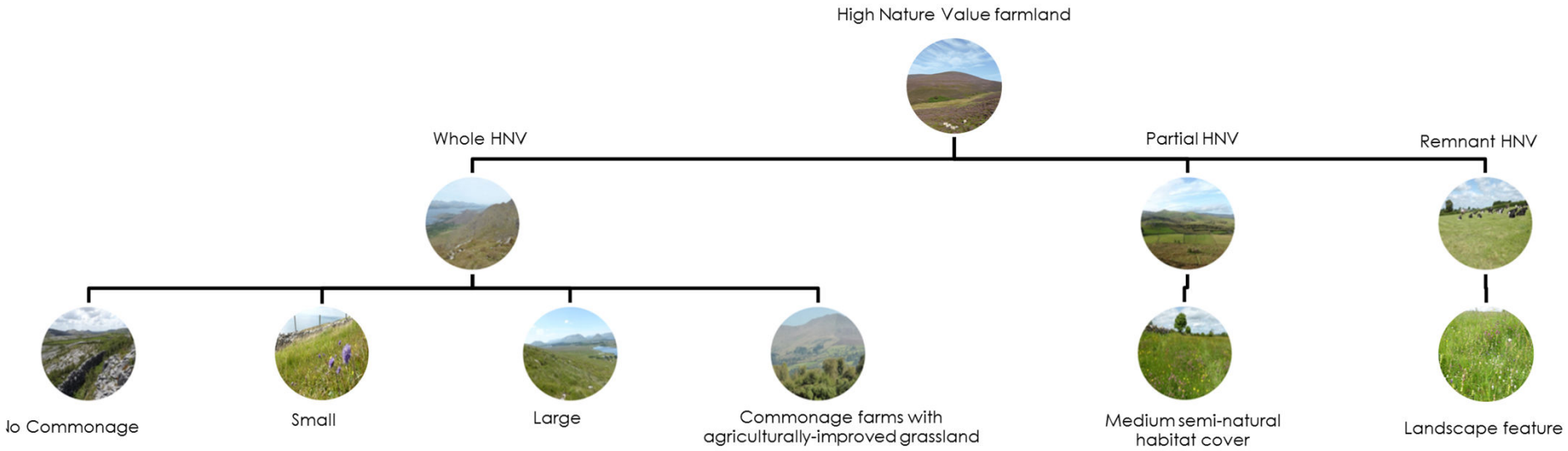
- Map of potential HNV farmland
- High HNV potential areas (score 4 to 5)
- Approx. 25% of agricultural area



Source: IDEAL HNV Project


Area with high HNV potential
Case study sites
N
0 20 40 80 120 160
Kilometers

HNV in Ireland

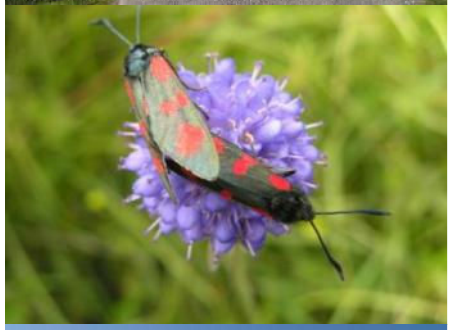


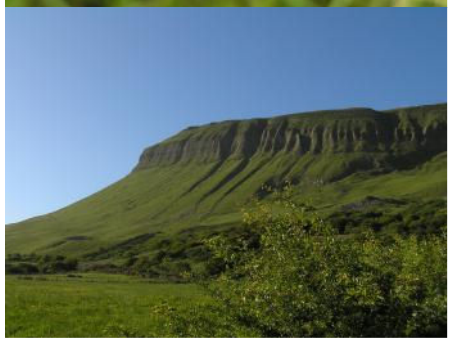
- **Whole farm HNV**
- > 2/3 semi-natural vegetation
- Stocking rate <1LU/ha

- **Partial** lower proportion of SNV 50:50 intensive and SNV; Stocking rate <1LU/ha
- **Remnant** <30% SNV. Intensive operation on rest of farm.
- **Landscape feature HNV** Shannon Callows

Best Practice and Demonstration Projects

- BurrenLIFE 2004-2020
- AranLIFE 2013-2017
- RBAPS 2015-2018





Ireland's Flagship HNV Programme: Burren LIFE 2004-2020 www.burrenlife.com

Burren Life PROGRAMME

The Burren | The Programme | Impact | Resources | News | Contact

Impact

Home / Impact

The Burren Life ('Burren Farming for Conservation') Programme divides its annual farmer payments roughly equally between payments for actions and payments for outputs. Here we look at the cumulative impact of 5 years of funding for farm-level actions – a total investment of c.€2.3m.

Actions

The actions supported by Burren Life vary from farm to farm and from year to year, allowing the farmer the flexibility to tailor these actions to the needs of his/her farm at that point in time…

READ MORE

Outputs

The Burren Life ('Burren Farming for Conservation') Programme divides its annual farmer payments roughly equally between payments for actions and payments for outputs…

READ MORE

Socioeconomic

The Burren is best known for its bare limestone landscape, rare flowers and iconic archaeological sites. But many people forget that the Burren is a living landscape…

READ MORE

Reaching Out

The concept of high nature value farming developed from a growing recognition that the conservation of biodiversity in Europe depends on the continuation of low-intensity…

READ MORE

AranLIFE 2013-2017 www.aranlife.ie

RBAPS 2014-2018

www.rbaps.eu

- Testing and developing results based AES
- €1.4 million budget
- 70% EU funded
- 30% from partners, & support from Heritage Council, DAFM & Teagasc
- 3.5 year project
  - 1st Jan 2015 to 30th June 2018
- 3 pilot areas:
  - County Leitrim, Ireland
  - Shannon Callows, Ireland
  - Navarra, Spain

BirdWatchIreland
birdwatchireland.ie
protecting birds and biodiversity

European Forum on
Nature Conservation
and Pastoralism

IT Sligo
An Institiúid Teicneolaíochta, Sligeach

Gestión Ambiental de Navarra, S.A.

An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

burren LIFE

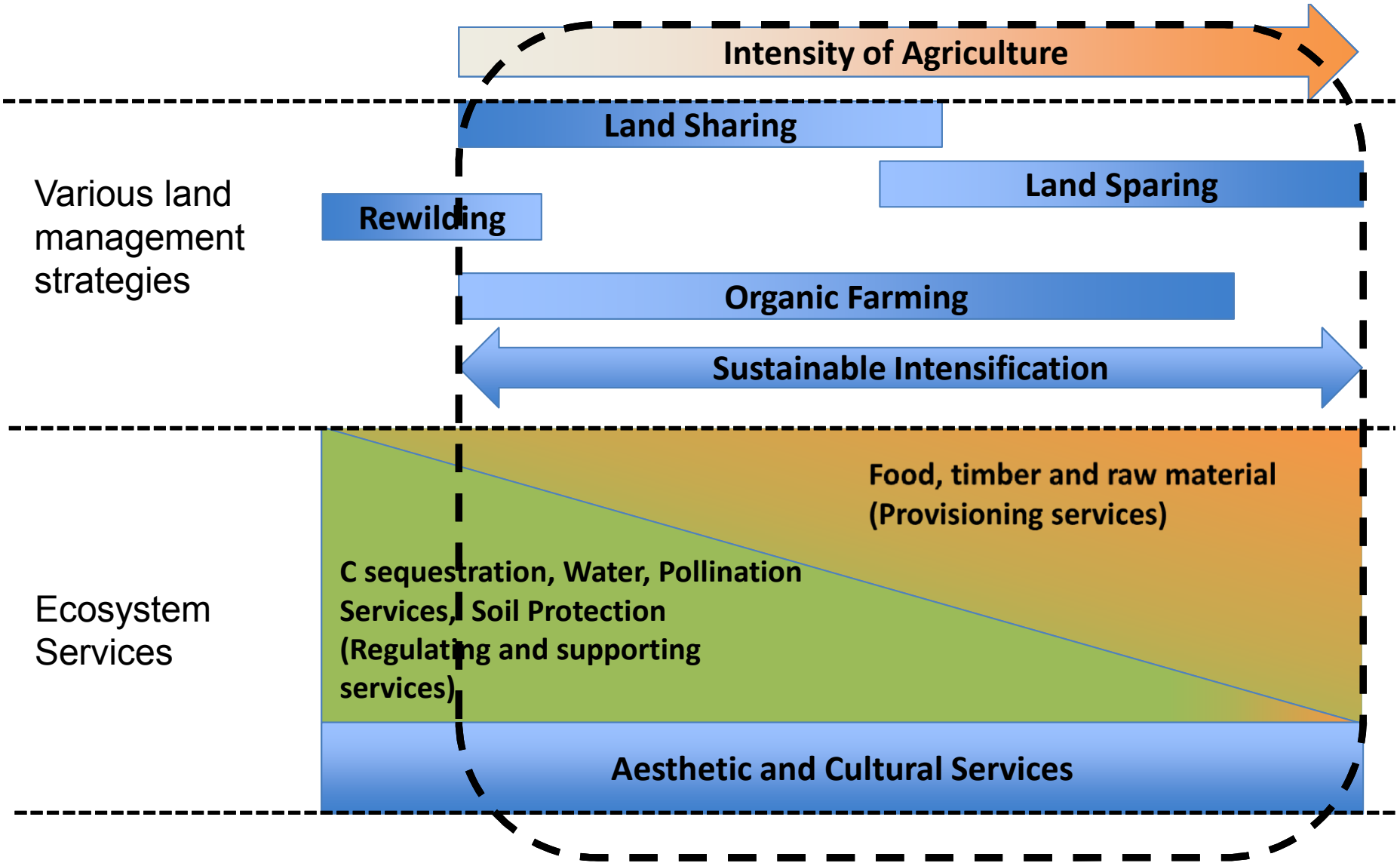
Lessons Learnt from Demonstration/pilot projects

- **Participatory-partnership approach to design, development and implementation**
  - **Local champions - Farmer led**
  - **Supported by NGOs and state agencies**
- **Needs to be:**
  - **Targeted to specific area (local and practical), Results based, flexible and adaptive management approach, tailored to individual farm**
  - **Well researched – knowledge based (science and tradition)**
  - **Integrated knowledge transfer/advisory service**
- **Results based Hybrid approach – farmers paid for result and actions that support delivery of result (10 point scoring - ecosystem health check)**
- **Putting the "value" back in High Nature Value**

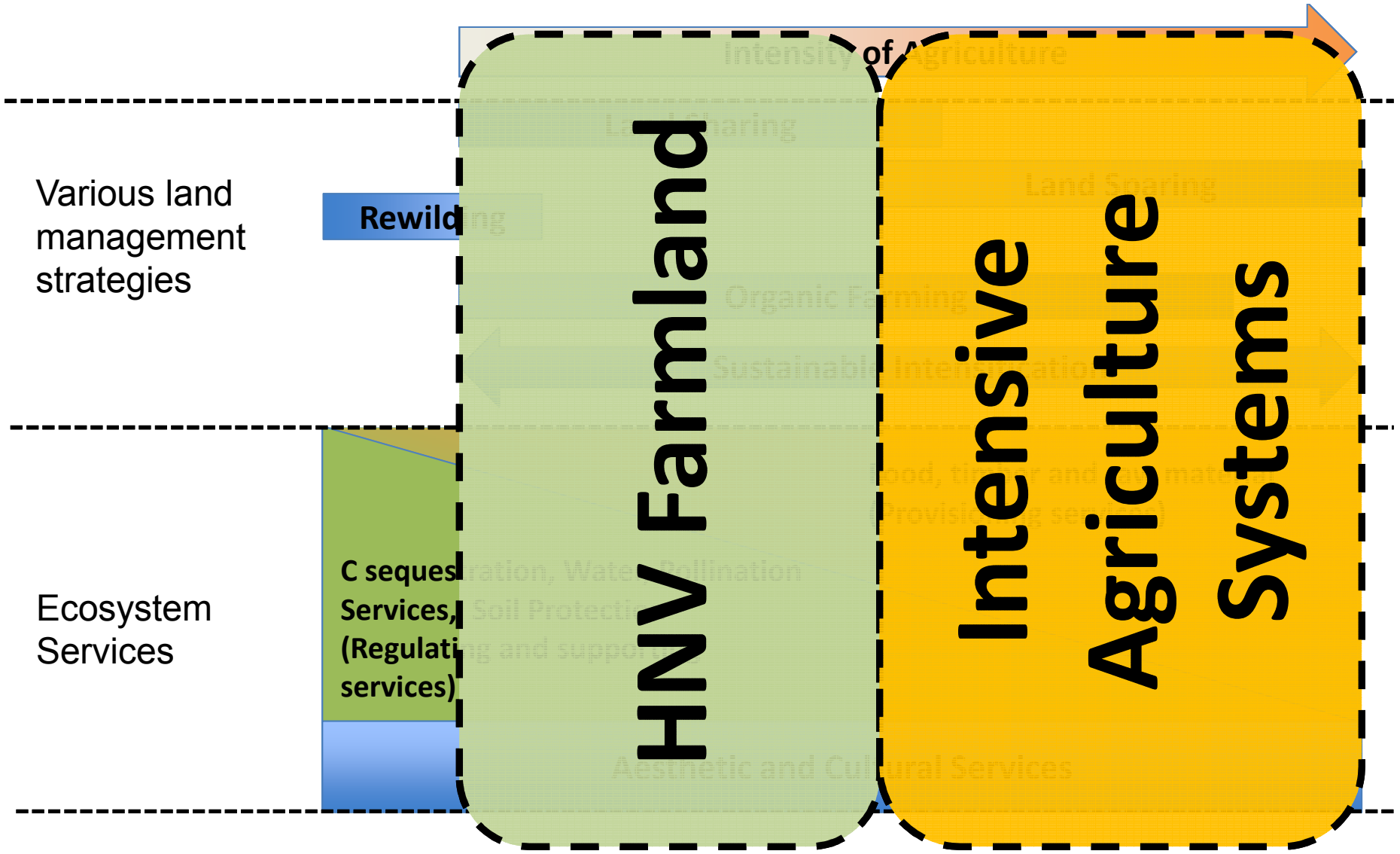
Where are we at end of 2015?

- We know what constitutes HNVf
- We know the regional distribution and how to identify HNV at farm levels
- We know the characteristics of various HNV areas
- We can design measures to support HNVf to deliver multiple ecosystem services
- Specific HNV support programme limited to Burren and pilot projects
- **We need to let everyone else know!!!!!!**
- Need for continued expansion


What is the role of HNV farmland?



Conceptual relationship between HNV farmland, intensive agriculture and various land management concepts



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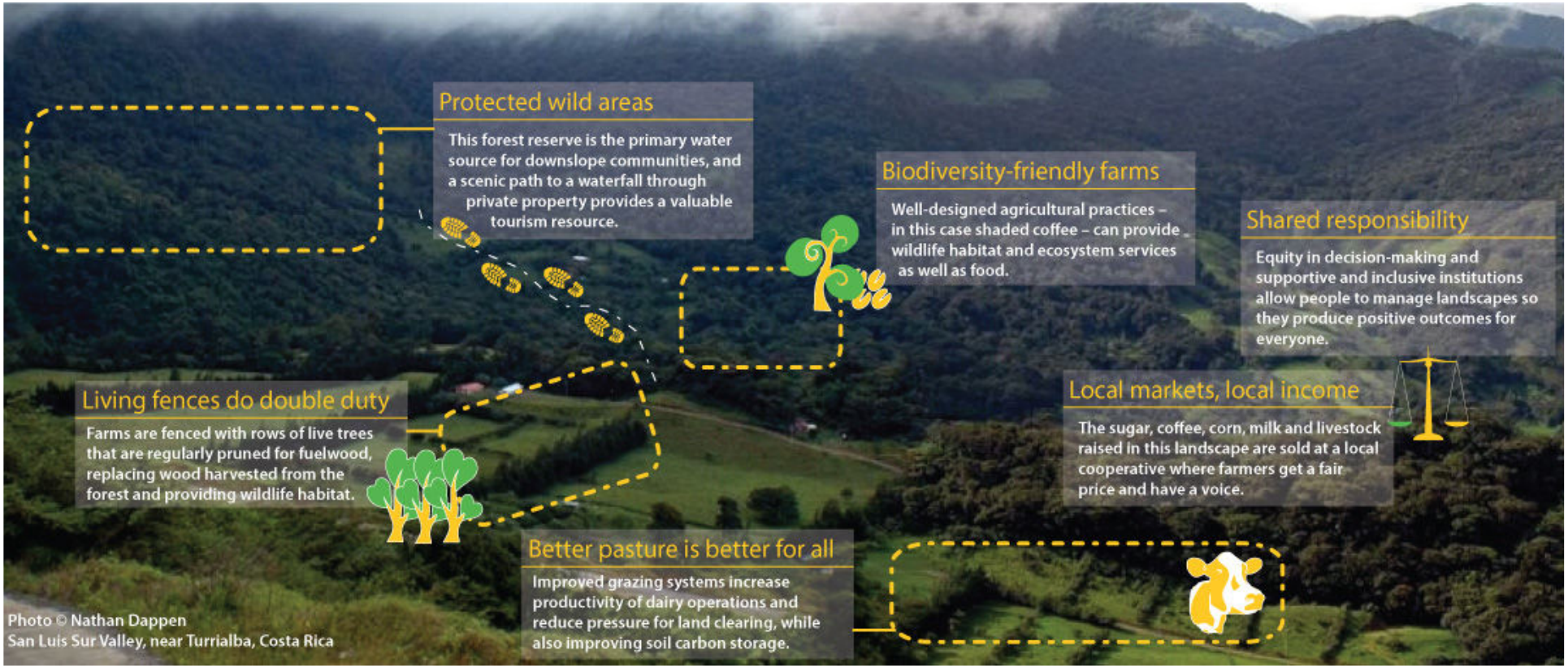
HNVF in an Integrated Eco-agriculture Framework



Source: http://peoplefoodandnature.org/about-integrated-landscape-management/

Future Research Needs

- Multidisciplinary projects (ecologists, agricultural and environmental scientists, economists, social scientists etc.)
- Mapping and quantification of Ecosystem Services associated with HNV farmland
- Optimising farm management to deliver biodiversity and associated ecosystem services (synergies and trade offs)
- Design of agri-environment schemes – payment for ecosystem services
    - Quantifying ecosystem health/service supply as a basis for payment systems
    - Financing: Biodiversity trading/credit system, voluntary markets?

Future Research Needs

- Continued development of improved monitoring techniques - evidence of delivery.
- Development of remote sensing techniques to monitor changes in quantity and quality of HNV farmland.

Next steps in Ireland

- Working towards CAP Reform 2020
- Ensure effective use of available resources and measures in RDP
- Community engagement - Locally Led AES (test bed for results orientated, innovative solutions)
- To support implementation and towards 2020 **NEED** a **knowledge and innovation network** (marrying tradition and science)
  - Focused on knowledge transfer, creation and development of innovative solutions
  - Occurring in a favourable policy and institutional framework