

# Predicting the Distribution of High Nature Value farmland in Ireland: IDEAL-HNV

John Finn, Caroline Sullivan, Daire O'hÚallacháin, Stuart Green, Brian Clifford, Shafique Matin, David Meredith, James Moran

<sup>1</sup>. Teagasc, Environment Research Centre, Johnstown Castle, Wexford

<sup>2</sup>. Centre for Environmental Research Innovation and Sustainability, IT Sligo, Sligo

<sup>3</sup>. Teagasc, Agrifood Business and Spatial Analysis, Ashtown, Dublin 15,



[www.high-nature-value-farmland.ie](http://www.high-nature-value-farmland.ie)

Twitter @johnfinn310

Email: [John.finn@teagasc.ie](mailto:John.finn@teagasc.ie)



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- NPWS for provision of data
- Steering Group







High Nature Value (HNV): farmland with high proportion of semi-natural vegetation









10:56 9/SEP/2014









**HNV farming systems:  
not just in the uplands – a  
specific challenge**







## Where are the HNV farming systems?!

Objective, national-scale approach is needed

(More than just designated areas)







## Member States have obligations to High Nature Value farmland

Headline environmental indicators of CAP.

Member States required to:

- identify areas with HNV farming practices in each Member State (by 2006);
- support and maintain HNV farming through Rural Development Programmes (by 2008), and;
- monitor changes to the HNV area over time.





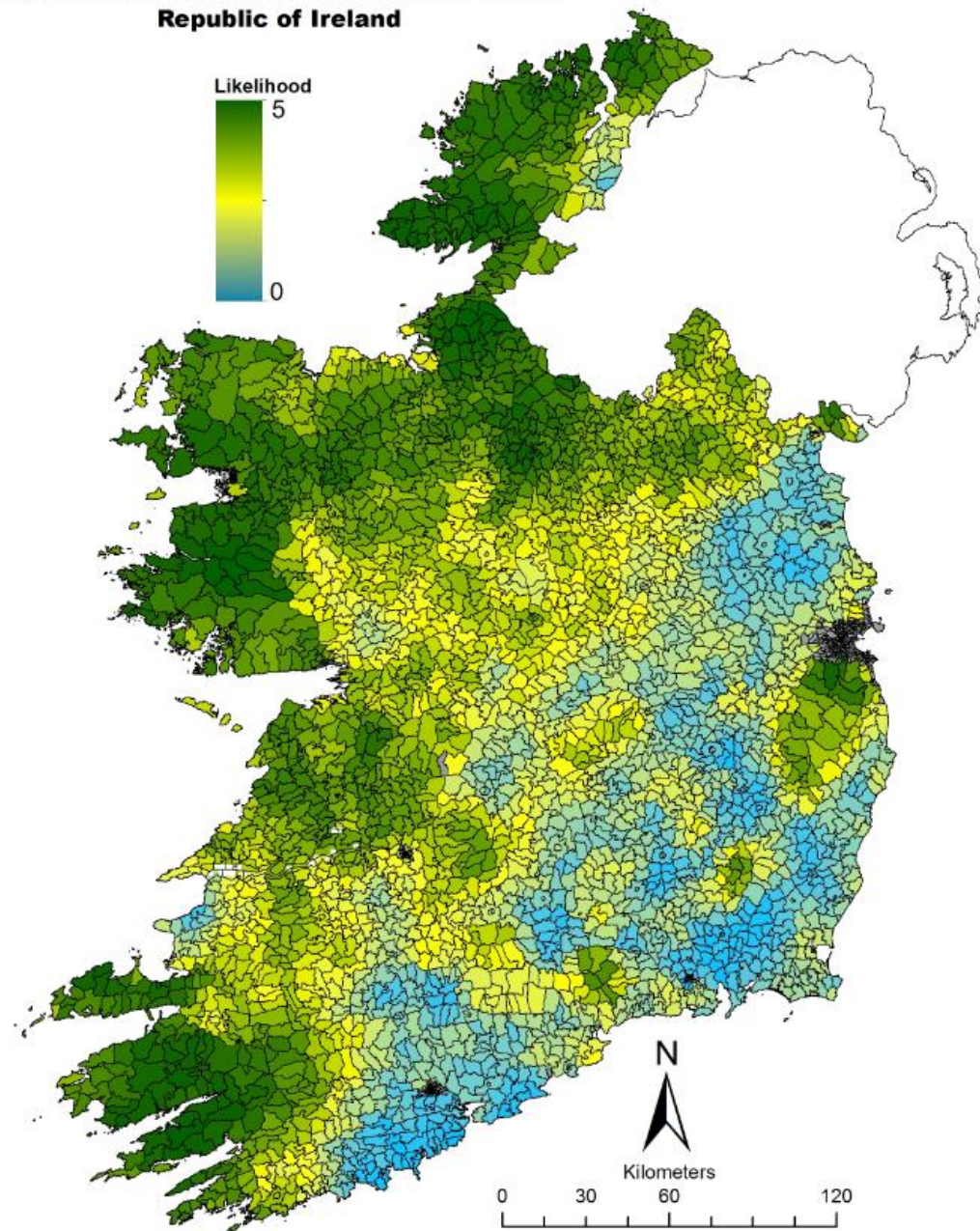
# Simple indicators can effectively predict HNV

## Five tetrad-scale indicators:

- Semi-natural land cover classes from Corine (40%)
- Stocking density from LPIS (30%)
- % hedgerow cover from National Hedgerow map (10%)
- Length of river and stream (OSI) (10%)
- Soil diversity, Teagasc map of soil associations (10%)

83% accuracy: validated against known HNV habitats and non-HNV habitats \*

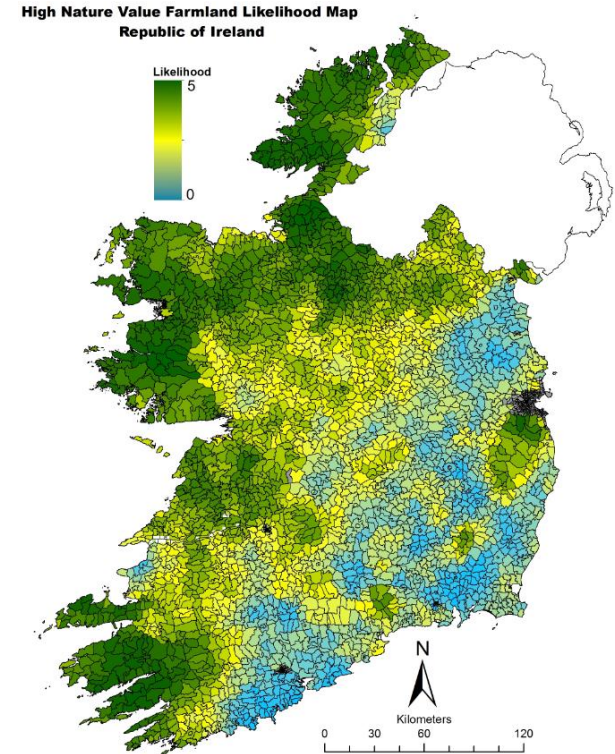
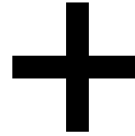
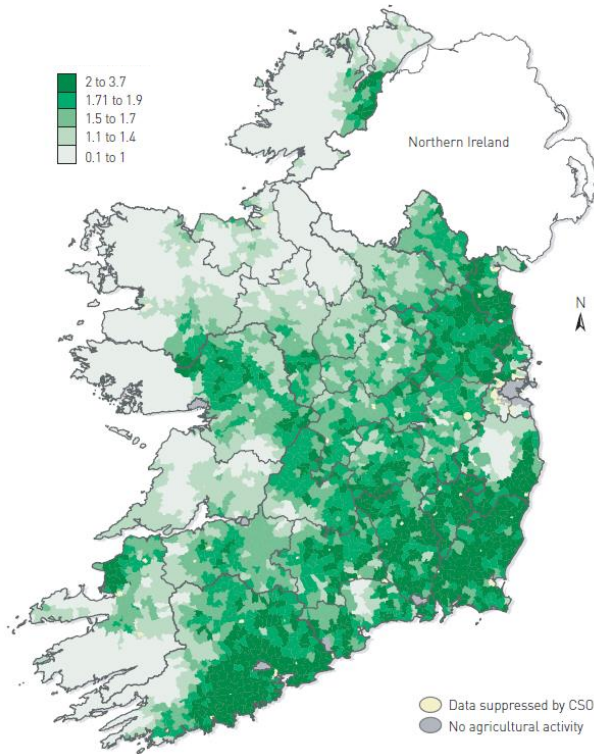
Matin et al. (2016) Journal of Maps.





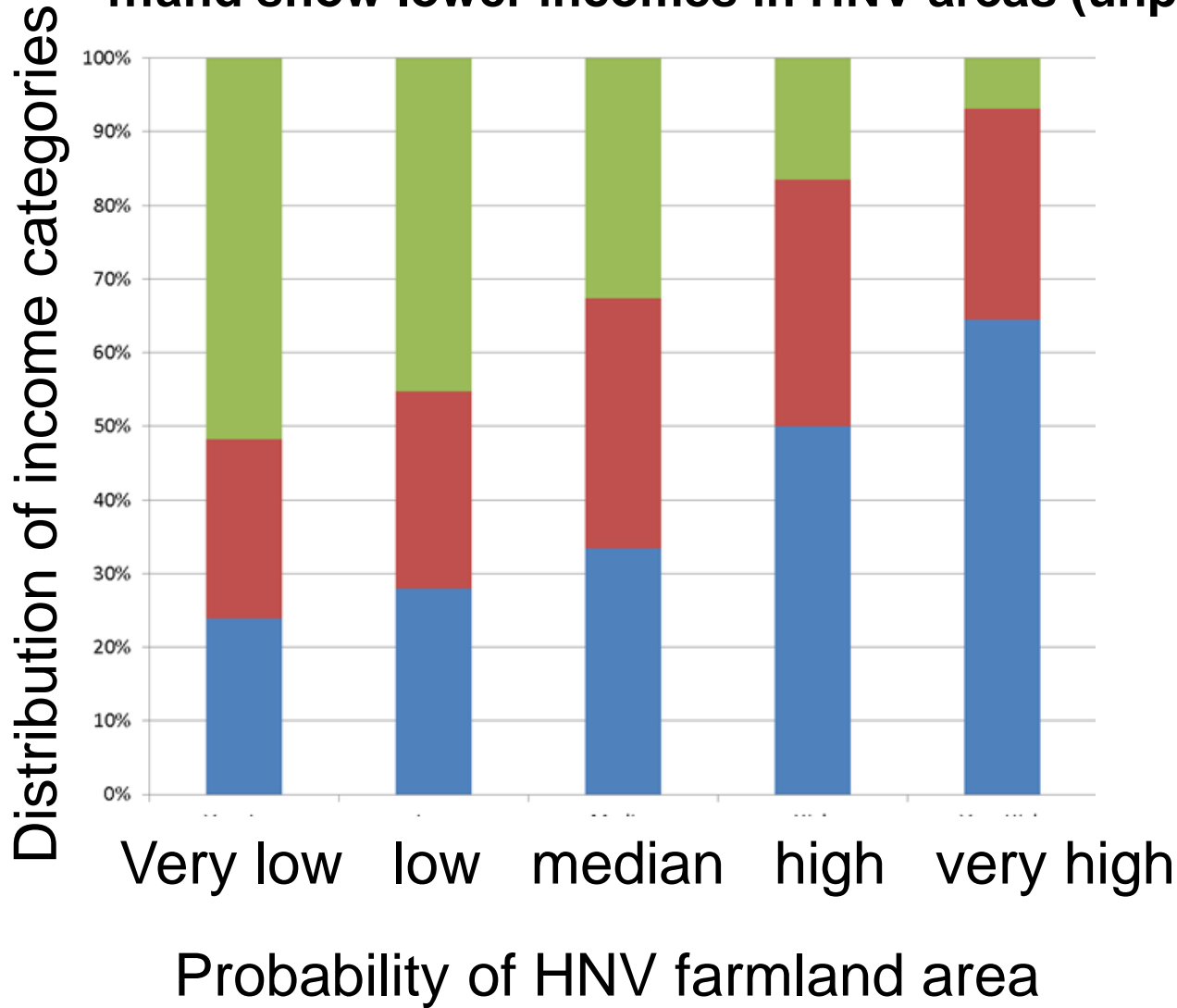
# National data on farm incomes can be spatially categorised...

## Farm incomes (spatial)





# National data on farm incomes can be spatially categorised... ...and show lower incomes in HNV areas (unpubl. data).



- SO > €25,000
- SO €8,000 - €25,000
- SO < €8,000



**Lots of HNV occurs outside of priority areas (Ministry of Environment)**

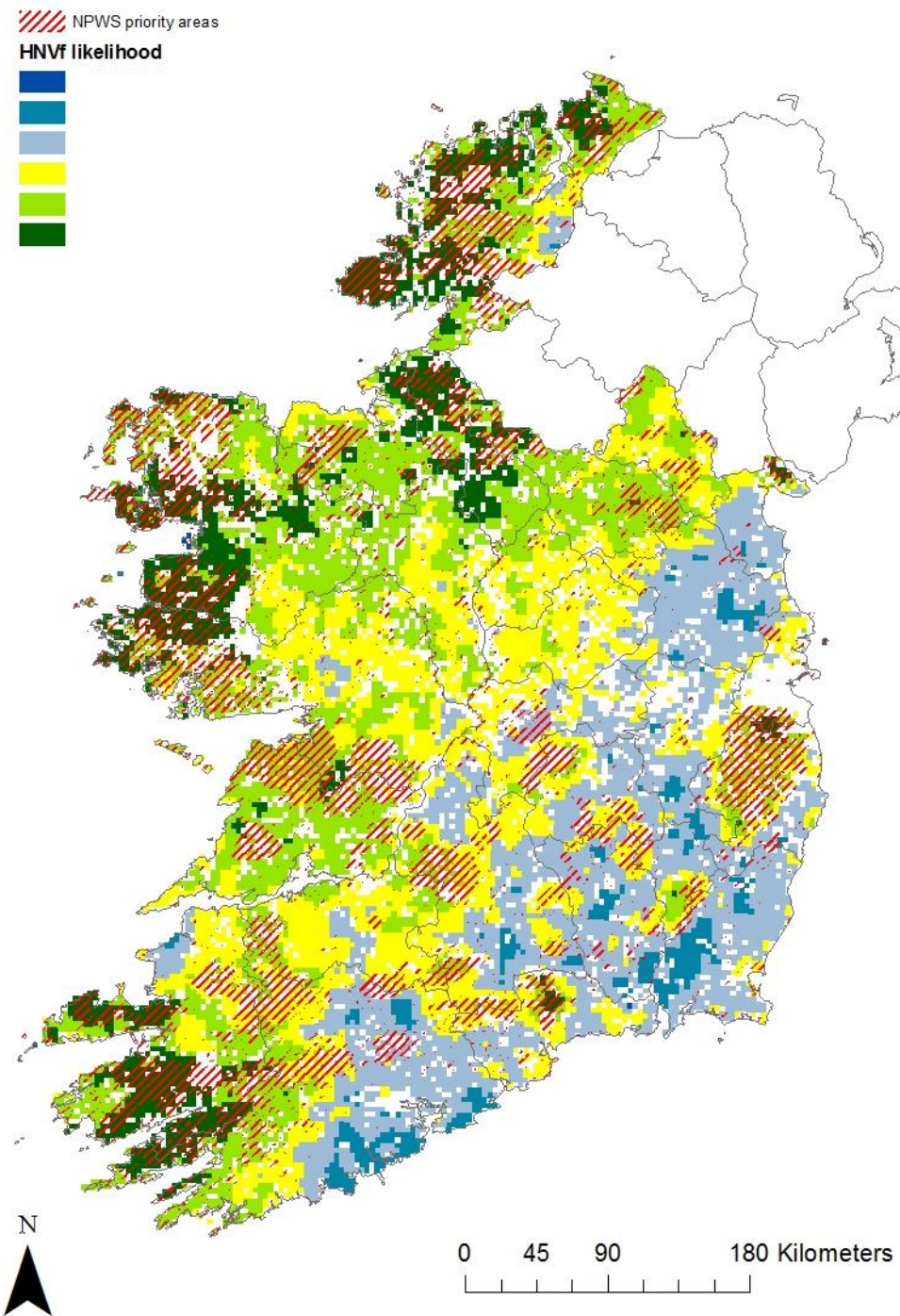
**→ Conservation outside of designated areas will be necessary to conserve HNV**

Overlay of NPWS priority areas for farmland conservation and IDEAL-HNV distribution of HNV

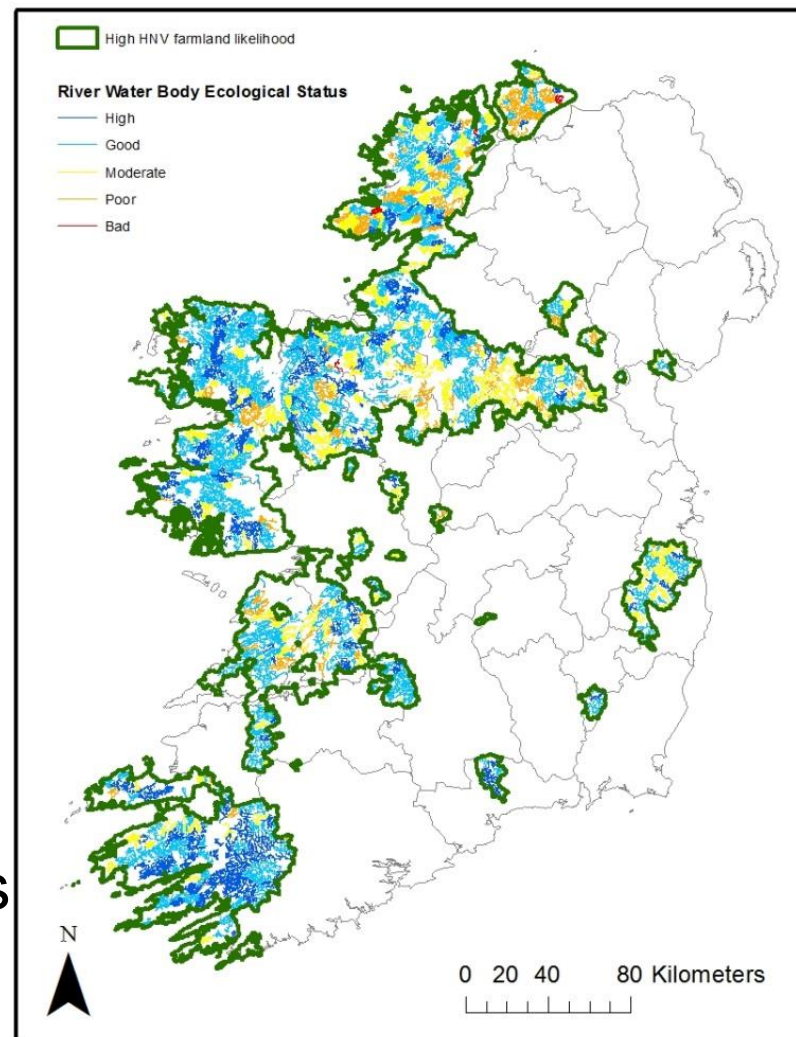
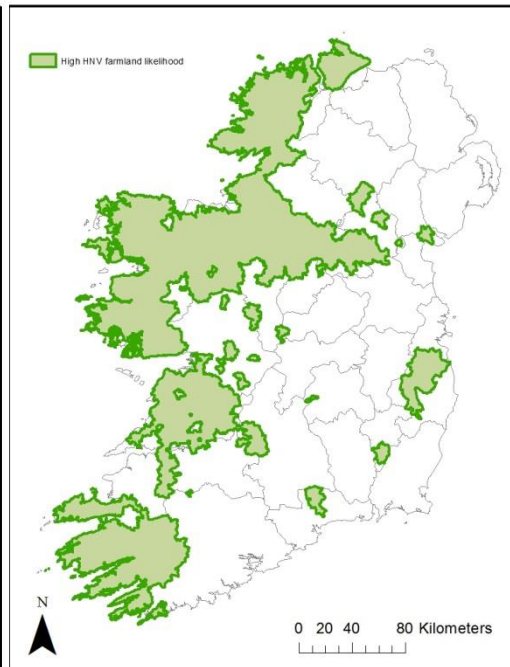
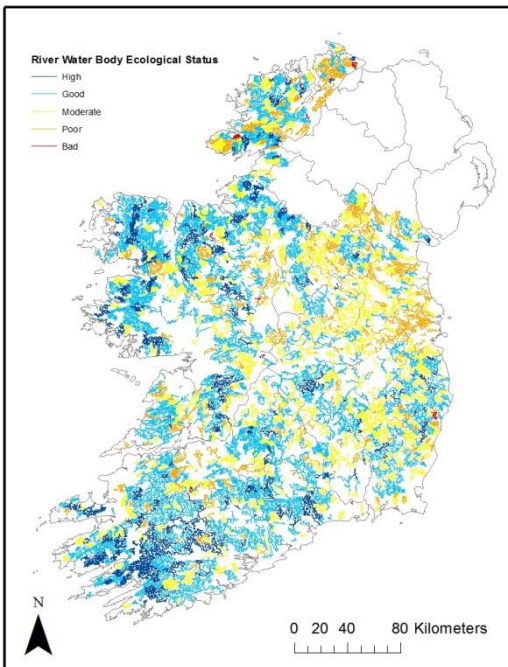
1. Majority of designated sites in HNV areas
2. Lots of HNV outside of priority and designated areas

**Matin et al. (in prep.)**

**Matin et al. (2016) Journal of Maps**



# Ecosystem service provision from HNV: water quality



HNV areas contain:  
63% of Good Status river waterbodies  
79% of High Status river waterbodies





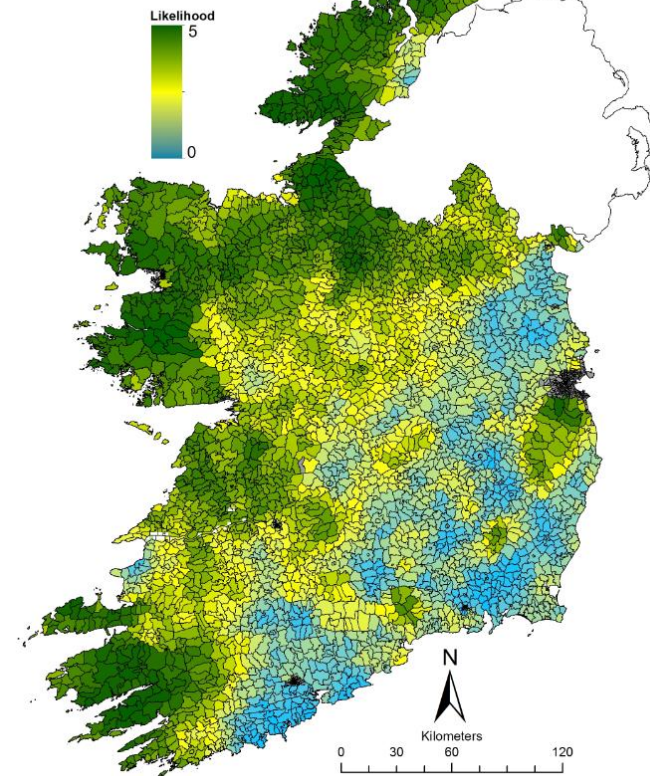
# Research to support policy

- Objective methodology (five indicators)
- Baseline distribution of HNV farmland (RDP evaluation)
- Assess extent to which financial supports are targeted to HNV farmland (RDP evaluation)
- Represent HNV farmland in national-scale modelling and projections (agri-economics; LULUC, ecosystem services)
- Often called 'marginal lands' – but these areas are mainstream for ecosystem services!

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High Nature Value Farmland Likelihood Map  
Republic of Ireland



## References

Matin, S., Sullivan, C.A., Ó hUallacháin, D., Meredith, D., Moran, J., Finn, J.A., Green, S. (2016) Predicted distribution of High Nature Value farmland in the Republic of Ireland. *Journal of Maps* VOL. 12, ISS. SUP1.

<http://www.tandfonline.com/doi/abs/10.1080/17445647.2016.1223761>

Online viewer of Irish national HNV map:

<http://teagasc.maps.arcgis.com/apps/View/index.html?appid=b69364f0b7614127a6cf27e0d6e07731>

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