

Modelling the Spatial Distributional Effect of Common Agricultural Policy Reform

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Context and Background



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Context

- Significant spatial variability in agriculture in Ireland
 - Better land in the South and East
 - Poorer land in the North and West
 - Water Quality is spatially dependent
- Significant reliance on off-farm income
 - Spatial variability in labour markets
- Location specific costs – e.g. transport costs
- Spatial dimension to Direct Payments
 - A function of historical production which is location related
 - Disadvantaged Areas
 - HNV's
 - Localised REPS/AEOS



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Ideal Data

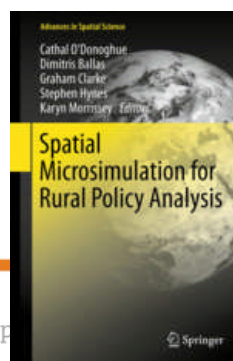
- Ideal Data
 - Farm Survey Income Data
 - Spatial Scale
 - Detail Farm Management Information
- However
 - Not available
 - Census – Spatial
 - Teagasc NFS – Income and Management Information
- Spatial Microsimulation in Agriculture
 - Ireland: Hynes et al. (2009b), Hennessy et al., (2007), O'Donoghue (2013)
 - The Netherlands: Van Leeuwen et al. (2008)
 - Sweden: Lindgren and Elmquist (2005)
 - Landscape services from Agriculture (Pfeiffer et al., 2012)
 - Participation in Rural Environmental Protection Schemes, (Hynes et al., 2008)



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Methodology

- Data Enhancement or Sampling Methodology
 - Currently on third version
 - Much improved speed and accuracy
- Sample Farms from NFS to generate spatial samples with same structure as Census of Agriculture
 - By Sizem System and Soil Type
 - NB not the same farms, merely the same characteristics
 - Adjustment to ensure that stocking rates are compatible
- Challenges
 - NFS is not representative of the smallest farms and
 - on land with poorest quality
 - Cell sizes can be challenging
 - Choice to sample from within region/LFA



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Validation

- Methodology
 - 12 Alternative Choices
- Validate against
 - Census variables
 - Local stocking rate
 - Winners and Losers from CAP reform at regional level (using NFS analysis)
- Correlations of Best Method
 - CAP Winners ~ 95%
 - CAP Losers ~ 95%
 - Census Variables ~ 90%
 - Stocking Rate ~ 70%
- Caution on peninsulas, due to limited number of small farms
 - However good across main farming areas



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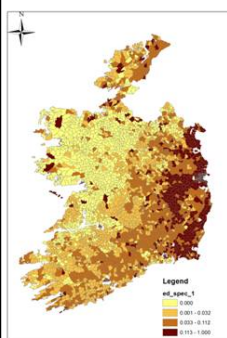
Structure of Agriculture



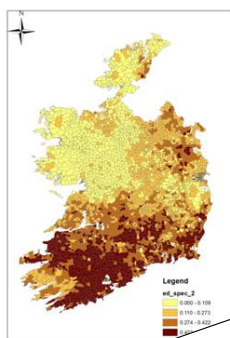
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Structure of Agriculture

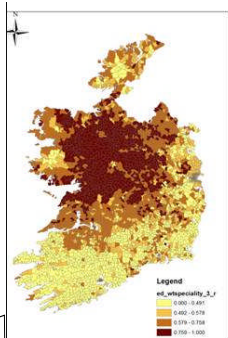
Tillage



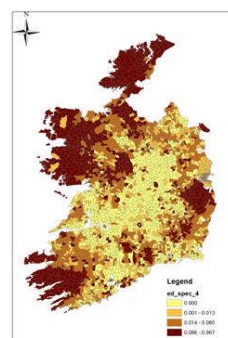
Dairy



Beef and Mixed



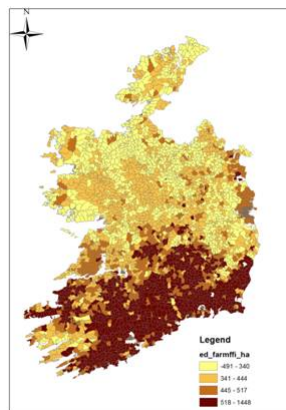
Sheep



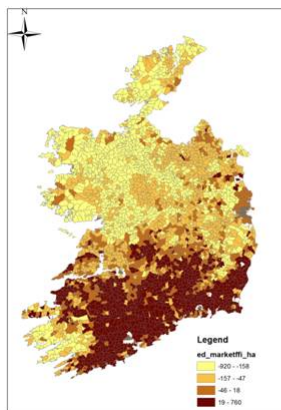
Tillage – East and South
Dairy – South
Beef – Midlands and West
Sheep – West and North West

Farm Incomes

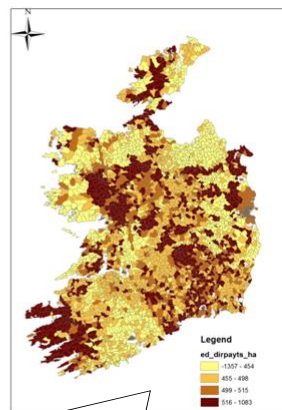
Farm Income/ha



Market Income/ha



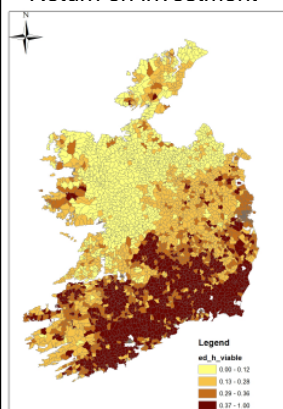
Direct Pav per ha



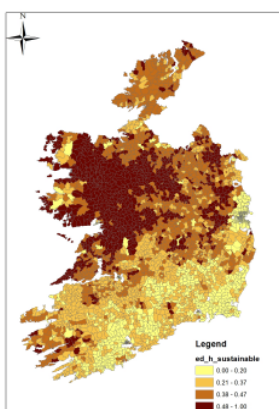
Incomes Higher – South and East of Kerry-Dundalk line
Direct Payments reflect both SFP and Disadvantaged Areas

Viability

Viable
Income > Min Wage +
Return on investment



Sustainable
Not Viable but with job



Vulnerable
Not Viable, no job



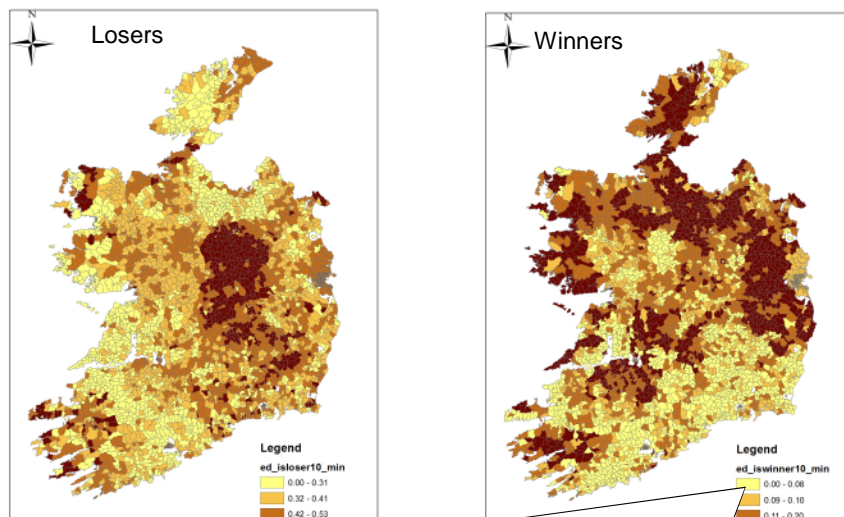
Viability – reflects higher incomes
Sustainable in West and Midlands
Vulnerable North West, Border, Coast

CAP Reform



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Winners and Losers Analysis from post 2014 CAP analysis



Winners in peripheral areas and in North Leinster
Losers in the East and South East
However overlaps

Spatial Distribution

	Between District		Within District	
	Baseline	Reform	Baseline	Reform
Direct Payments	17.8	13.9	82.2	86.1
Family Farm Income	14.5	13.1	85.5	86.9

Far more variability between farms than between areas
CAP Reform reduces spatial variability of incomes
But many winners and losers within the same areas

Next Steps

- Solve the peninsulas/small farms issue
- Methodology is currently being used in 5 other countries
 - Utilises data that is available in all EU members states
 - Pitch to EU Commission to fund development for all EU members states for use in EU CAP and RDP policy analysis
 - Gap in capacity at the moment
- Model future Less Favoured Area reforms
 - Improve the consistency with localised environment

Thank You
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