

Analysis of travel-to-work patterns and the identification and classification of REDZs

Dr David Meredith, Teagasc, Spatial Analysis Unit, Rural Economy Development Programme, Ashtown, Dublin 15.

david.meredith@teagasc.ie

Prof. Mike Coombes, Centre for Urban and Regional Development Studies, Newcastle University

Dr Colin Wymer, Centre for Urban and Regional Development Studies, Newcastle University

Overview

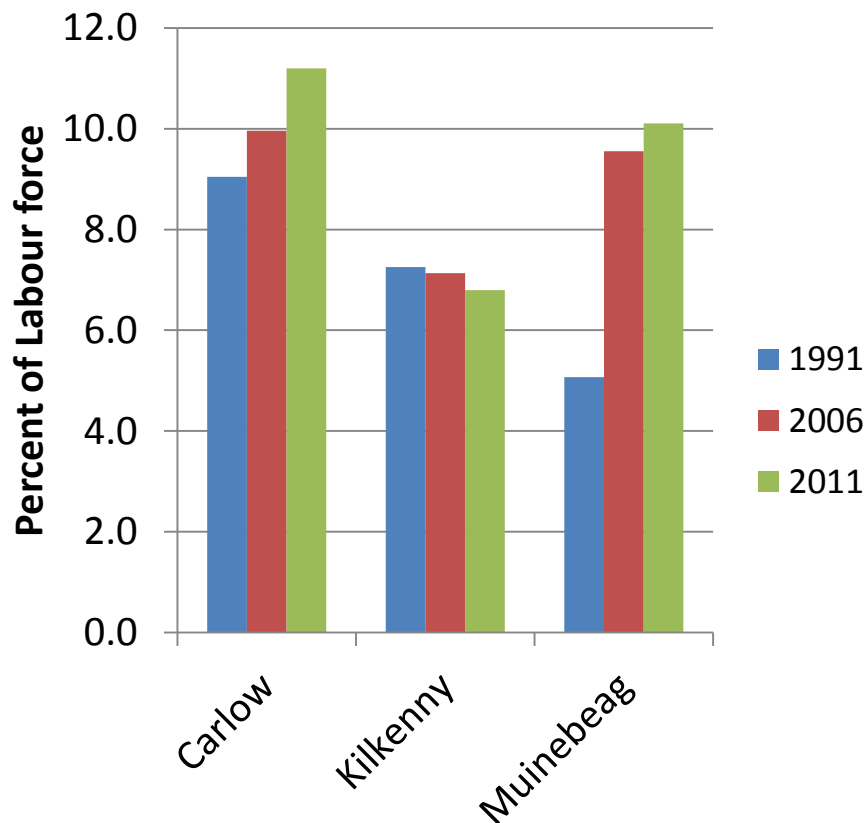
- Place matters
- Rural Economic Development Zones
- Identifying the Rural Economic Development Zones
- Classification of REDZs

The importance of place in Ireland (A truism?)

- The Irish economy and society are, in effect, the sum of what happens in different places.
 - These places are the sum of the activities of people living and working and businesses operating within them.
 - The social and economic development of Ireland therefore depends on how Ireland functions as a series of places.
- Social and economic development in Ireland, like everywhere else, is highly uneven, i.e. some places are more socially or economic developed than others.

Why does place matter (The need for a territorial approach)

Males – Unable to Work



- Spatial variation in the level of social or economic development reflects differences in how processes of social and economic change play out differently amongst different groups within the population and hence in different types of area.
- Variation in the level of development underpins the rationale for policy interventions
 - Sector specific
 - Place or territorial specific

Why does place matter (The need for a territorial approach)

- **Place can and does impact on economic and social outcomes:**
 - Life chances are strongly influenced by where one is born / lives.
 - Places with key attributes are more likely than others to attract certain types of investment.
 - Policies come together in particular ways in particular places.
- **Place enables targeting of concentrated groups.**
 - ‘Spatial sorting’ results in groups with particular characteristics being concentrated in particular places – e.g. those with higher education qualifications.
 - Vulnerable groups have tended to be concentrated in particular places – e.g. through selective out-migration of broad demographic cohorts or occupational groups within the labour force.

Why does place matter (The need for a territorial approach)

- **Drivers of productivity come together in places.**
 - Places reflect a specific combination of natural, physical, human and cultural assets that affect potential for development and the productivity of firms within that place.
 - These characteristics produce or attract the type of investment / workers they need.
- **There are limits to peoples' ability to move and commute.**
 - The financial and social costs of mobility act as a barrier to mobility.
 - For some commuting is not a viable option economically or socially e.g. the low skilled or those who own geographically fixed assets.

The contradiction of placeless power and powerless places

- Greater integration into global economies means growing numbers of people are increasingly embedded within extended spaces of production.
- Most people live their lives and function within “a locally specific, place orientated logic and often in defence of locally specific interests or local identity.” (Commins and Keane, 1995, p.188).
 - People view change through the lens of what it means for themselves, their families and their immediate locality. The wider context is generally downplayed.
- For development strategies to be effective they need to reflect the local context.

Functional Areas

- Functional areas are identified through analysis of travel-to-work data (POWSCAR, 2011).
 - Geographical areas within which most employers and employees fulfill their labour or employment needs
- REDZs are functional economic areas.
 - The areas are functional rather than administrative, i.e. the boundaries reflect patterns of economic activity (travel-to-work) rather than administrative areas.
- The basic principle of these areas is:
 - that they contain a 'high' proportion of workers who live and work locally and
 - that employers within the area source most of their workers from within the area.

Identifying the Rural Economic Development Zones

- POWSCAR data are analysed using a technique known as the European Regionalisation Algorithm.
 - This technique was developed by Prof. Mike Coombes and colleagues at the Centre for Urban and Regional Development Studies in Newcastle University.
 - The ERA has been applied to issues concerning labour, housing and primary health services in the UK, Northern Ireland, Ireland, Spain and New Zealand
- The ERA was adapted for this analysis to ensure that a large number of functional areas were identified.

Identifying Functional Areas

- The POWSCAR dataset describes residence – workplace interaction of the working population. It was published by the CSO following the 2011 Census of Population.
 - Individual Characteristics (Age, gender, occupation, industry, education)
 - Housing and Household characteristics (period house built / household composition)
 - Travel mode / time / departure
 - Area characteristics (Urban – rural)
 - Location of residence / Place of work
 - Region – Small Area

Identifying the Functional Areas

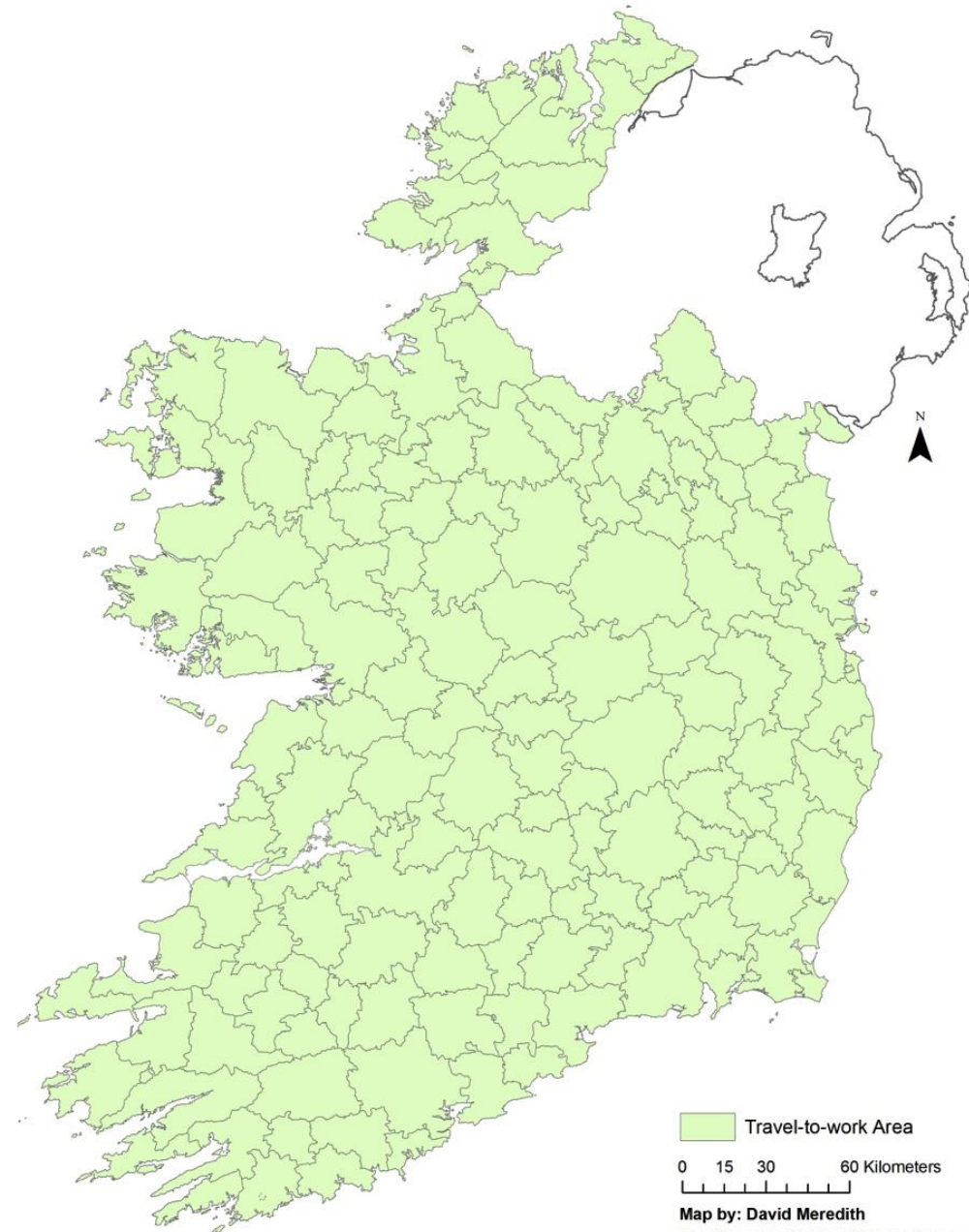
Criteria

Work Force Self-containment

- The **minimum** percentage of persons that persons that must live and work locally was set at **34%**. A **target** value of **45%** was also set to ensure that most of the resulting REDZs would have high levels of people living and working locally. Conventionally this figures are set at 66% and 75%.

Number of Jobs

- The **minimum** number of jobs within an area was set at **1,500** whilst the **target** value was set at **5,000**. Conventionally this figure is set at a substantially higher level, e.g. 5,000 or 20,000.



Travel-to-work Area

0 15 30 60 Kilometers

Map by: David Meredith

Data Sources: Central Statistics Office,
Census of Population, 2011
© Ordnance Survey of Ireland,
Government of Ireland and Teagasc

Identifying the Functional Areas

- Setting these criteria ensured that function areas other than those associated with the larger towns and cities emerged from the analysis.
 - It does not presume that a town is at the center of a functional area.
 - It allows areas with dispersed employment distribution to emerge.
 - It identifies 'polycentric' areas, i.e. areas with two or more employment nodes.

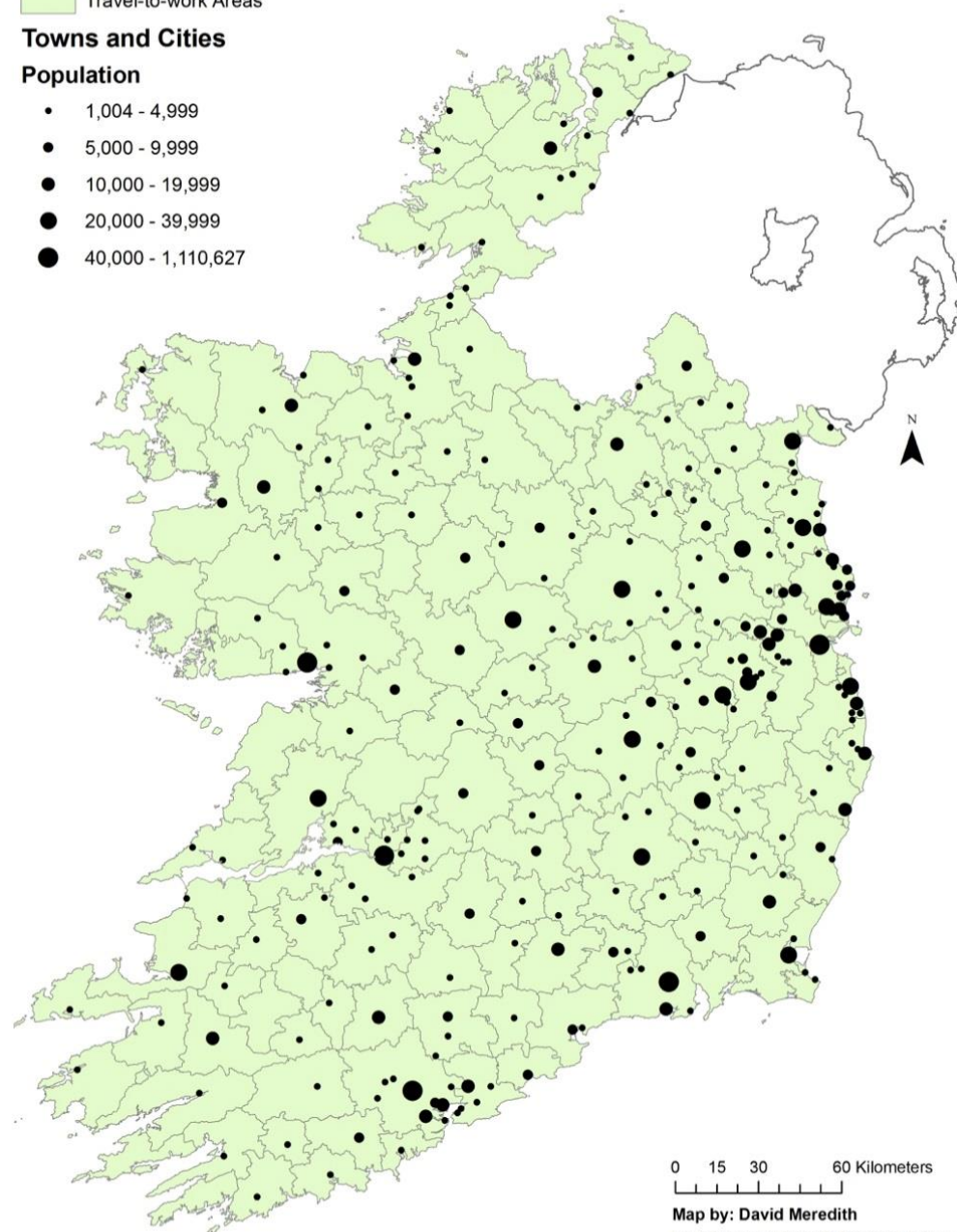
Identification of Rural Economic Development Zones

Travel-to-work Areas

Towns and Cities

Population

- 1,004 - 4,999
- 5,000 - 9,999
- 10,000 - 19,999
- 20,000 - 39,999
- 40,000 - 1,110,627



Identifying the Functional Areas

- This figure includes those areas strongly associated with the cities and large towns, e.g. Bray and Greystones. It was therefore necessary to classify the areas using a standard EU classification which distinguishes between:
 - predominantly rural = where more than 50% of the total population lives in the open countryside
 - intermediate = where between 20% and 50% of the population lives in the open countryside
 - predominantly urban = those with less than 20% of the population living in the open countryside

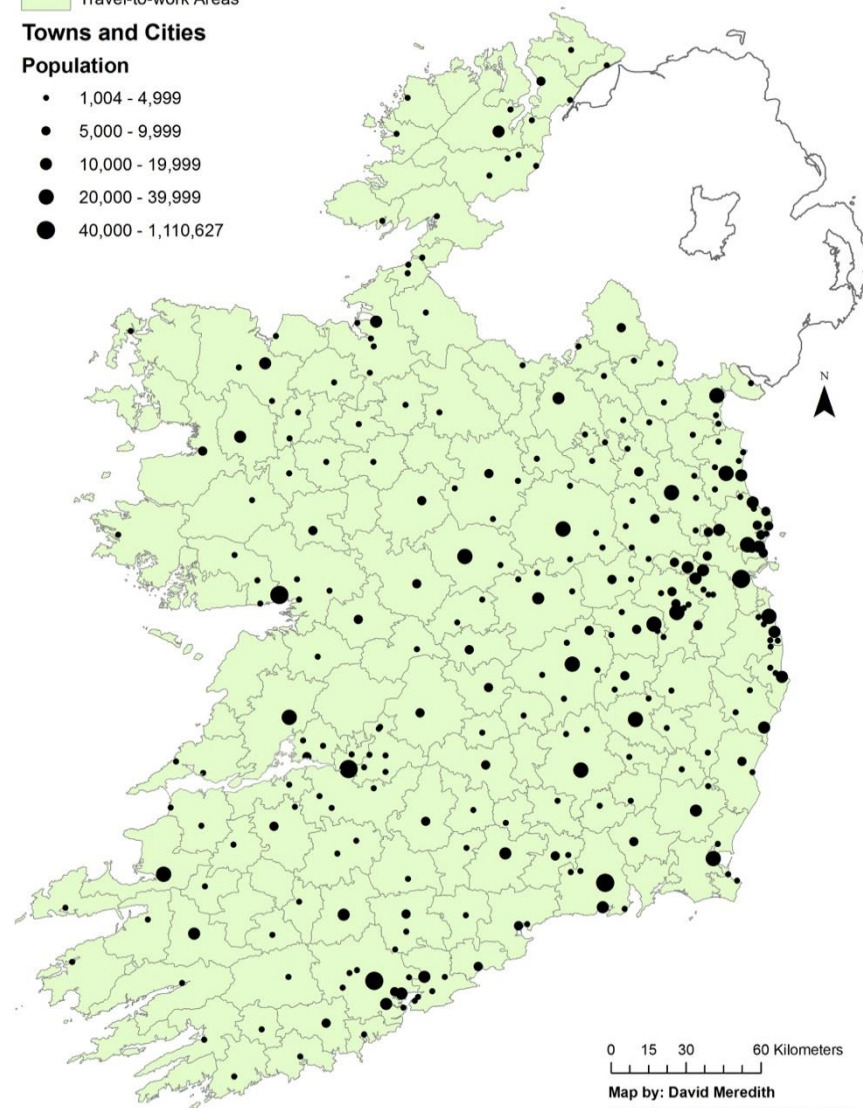
Identification of Rural Economic Development Zones

Travel-to-work Areas

Towns and Cities

Population

- 1,004 - 4,999
- 5,000 - 9,999
- 10,000 - 19,999
- 20,000 - 39,999
- 40,000 - 1,110,627

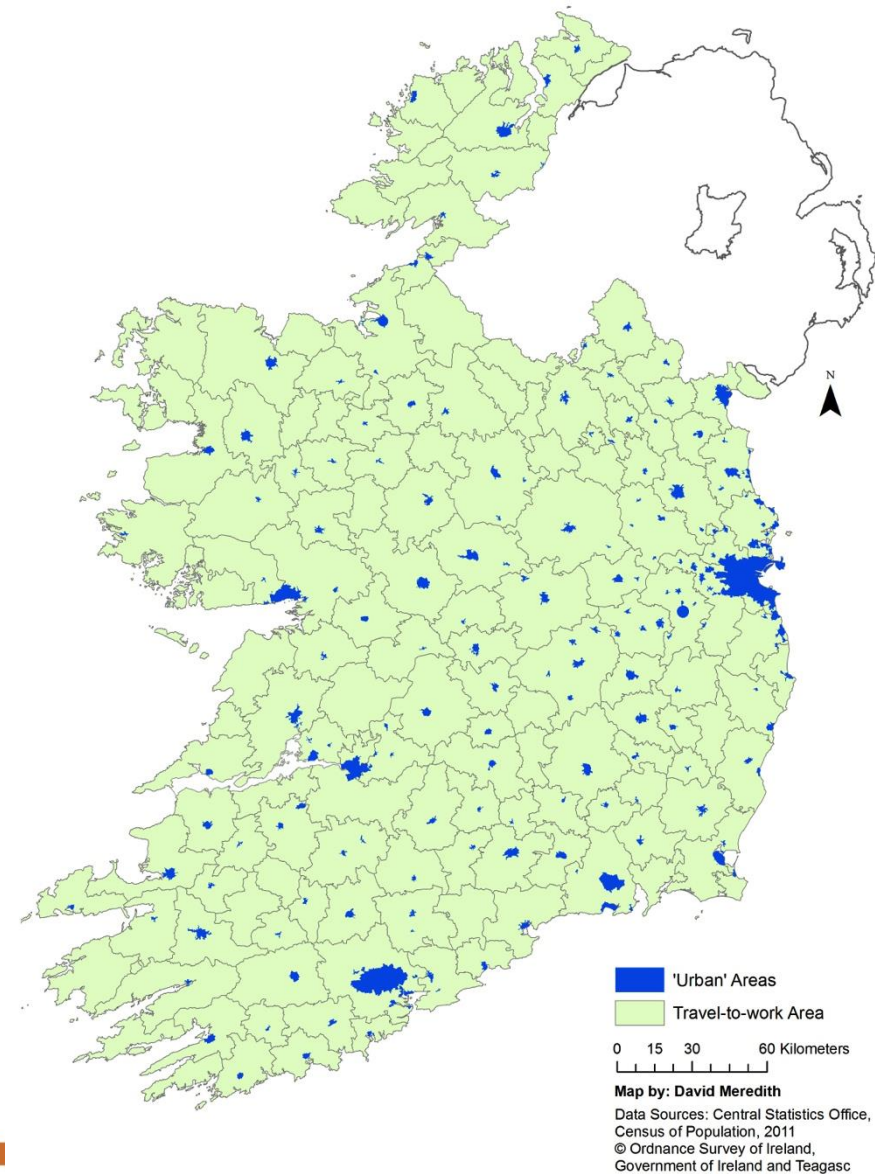


Map by: David Meredith

Data Sources: Central Statistics Office,
Census of Population, 2011
© Ordnance Survey of Ireland,
Government of Ireland and Teagasc

Identifying the Rural Economic Development Zones

- To classify the travel-to-work areas along these lines required a definition of what constitutes the 'open countryside'.
- In keeping with the CSO definition of places with 1,500 persons living within a city and its suburbs or a town and its environs as 'urban', anywhere outside of these places was considered to be part of the 'open countryside'.



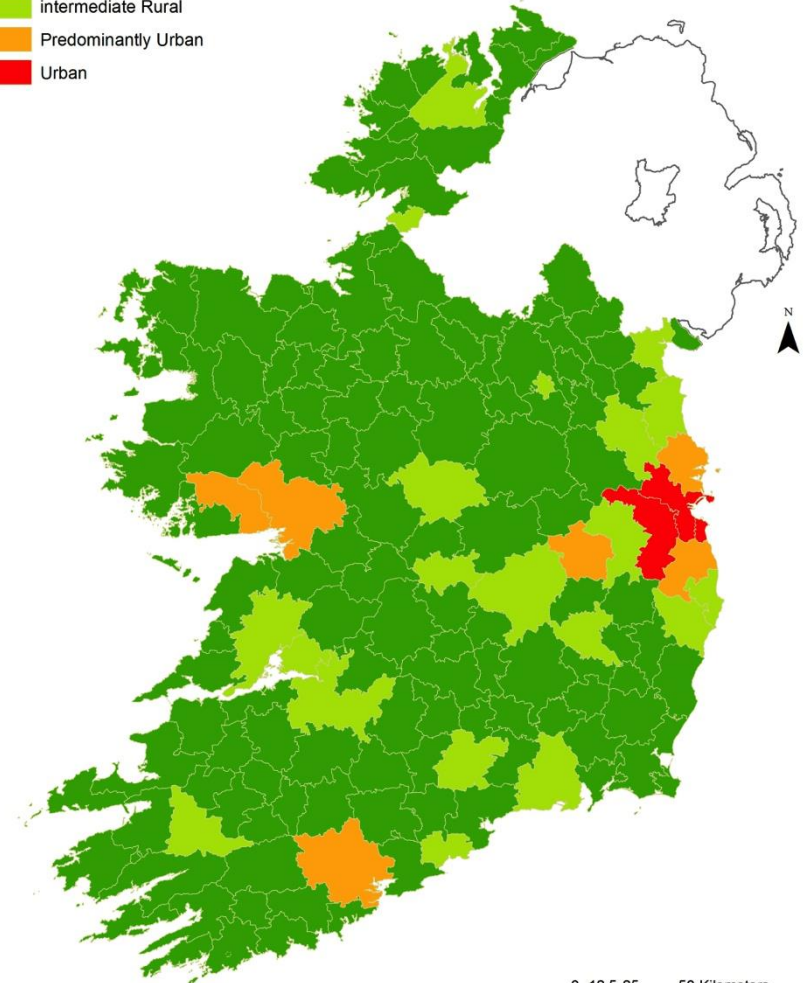
Classifying the Rural Economic Development Zones

- The analysis identifies 125 predominantly rural REDZs.
- The zones classified as Predominantly urban correspond with Galway and Cork cities and areas immediately north and south of Dublin City. The one exception to this is the area containing Newbridge, Kildare, Rathangan and Monasterevin towns.
- Intermediate rural areas are associated with the smaller cities, larger towns and geographically small REDZs which contain a town that accounts for a large proportion of their total population.

Classification of Rural Economic Development Zones

EU Rural Typology (2010)

- Predominantly Rural
- Intermediate Rural
- Predominantly Urban
- Urban



Classification	No. REDZs
Predominantly Rural	125
Intermediate Rural	20
Predominantly Urban	6
Urban	3

0 12.5 25 50 Kilometers

Map by: David Meredith

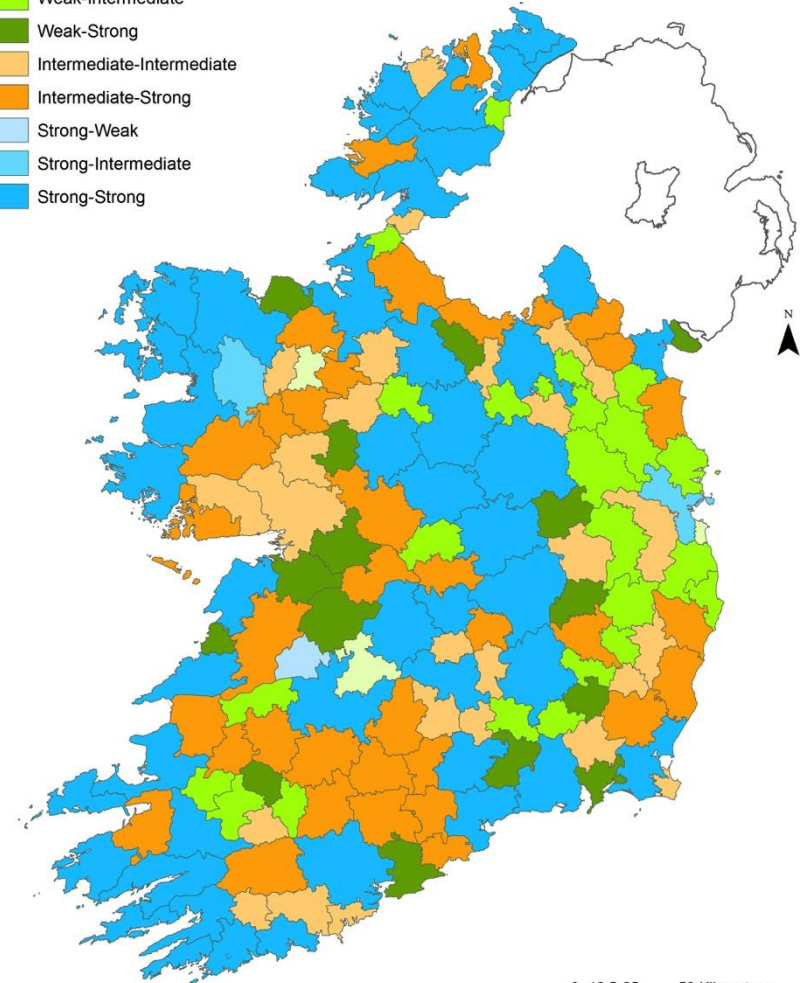
Data Sources: Central Statistics Office,
Census of Population, 2011
© Ordnance Survey of Ireland,
Government of Ireland and Teagasc

Classifying the Rural Economic Development Zones

- The assessment classifies each REDZs according to its level of Supply and Demand self containment, i.e. the percentages of the persons living locally that also work locally and the percentage of jobs in each area that are filled by locally resident workers.
 - Weak = <50%
 - Intermediate = 50% - 66%
 - Strong = >66%

		Local jobs filled by local residents			
		Weak	Inter	Strong	Total
Persons living and working locally	Weak	3	24	15	42
	Inter		26	36	62
	Strong	1	2	47	50
	Total	4	52	98	154

Classification of Rural Economic Development Zones Assessment of Combined Supply and Demand Self Containment



Interpreting this map

The first word in the classification reflects the Supply Side self containment score whilst the second word reflects the Demand Side self containment score, e.g. Weak-Weak equals those areas where both self containment values were less than 50%

0 12.5 25 50 Kilometers

Map by: David Meredith
Data Sources: Central Statistics Office,
Census of Population, 2011
© Ordnance Survey of Ireland,
Government of Ireland and Teagasc

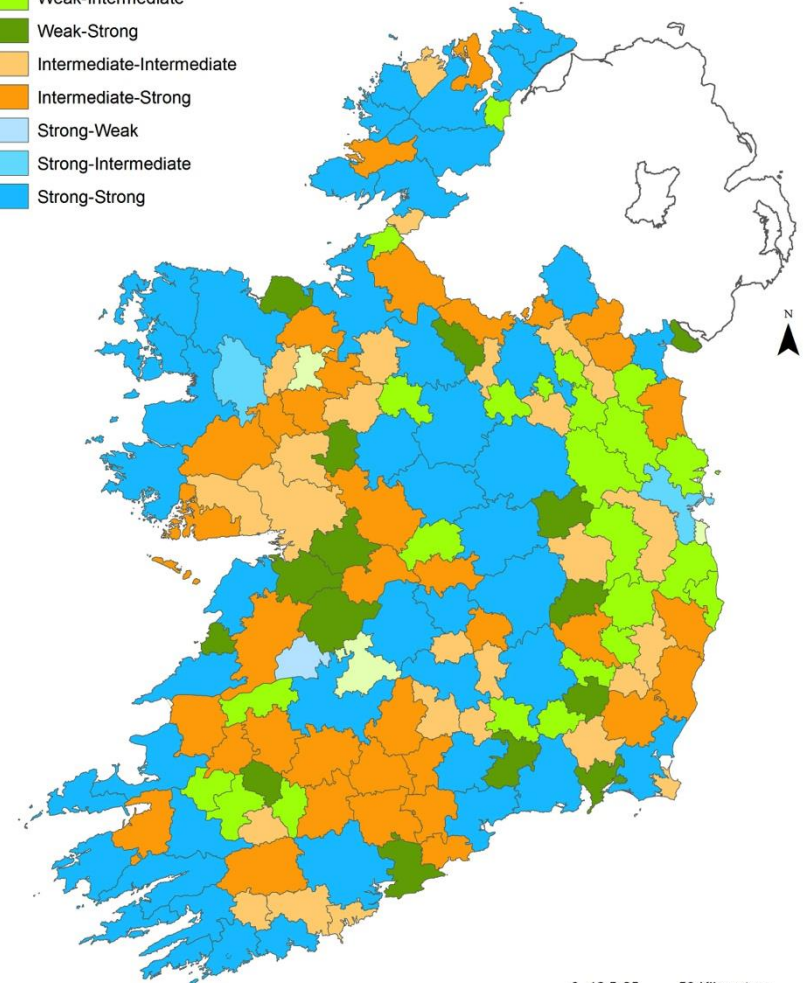
Classifying the Rural Economic Development Zones

- In general, zones containing cities, large towns and those that are distant from these places tend to have strong levels of both supply and demand self-containment.
- Zones that are relatively small in geographic size tend to be weak; this is particularly true of their Supply Side self containment.
 - Of the 154 areas, 42 have weak Supply Side self containment but there are only three areas with weak Demand Side self containment.

		Local jobs filled by local residents			
		Weak	Inter	Strong	Total
Persons living and working locally	Weak	3	24	15	42
	Inter		26	36	62
	Strong	1	2	47	50
	Total	4	52	98	154

Classification of Rural Economic Development Zones

Assessment of Combined Supply and Demand Self Containment



Interpreting this map

The first word in the classification reflects the Supply Side self containment score whilst the second word reflects the Demand Side self containment score, e.g. Weak-Weak equals those areas where both self containment values were less than 50%

0 12.5 25 50 Kilometers

Map by: David Meredith

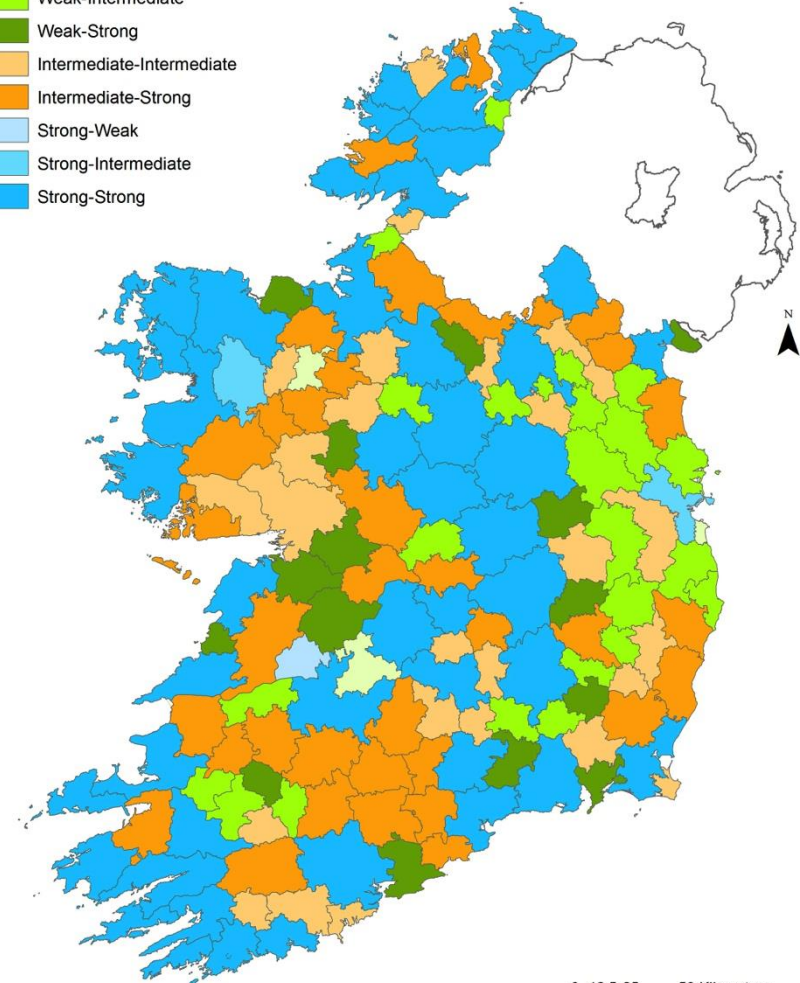
Data Sources: Central Statistics Office, Census of Population, 2011
© Ordnance Survey of Ireland, Government of Ireland and Teagasc

Classifying the Rural Economic Development Zones

- Supply side weakness reflects a mismatch between the quantity or skills of the workforce living in an area and the number or quality of jobs available in an area.
- Demand side weakness reflects a mismatch between available employment opportunities and the number or skills of the workforce living in an area.

		Local jobs filled by local residents			
		Weak	Inter	Strong	Total
Persons living and working locally	Weak	3	24	15	42
	Inter		26	36	62
	Strong	1	2	47	50
	Total	4	52	98	154

Classification of Rural Economic Development Zones Assessment of Combined Supply and Demand Self Containment



Interpreting this map

The first word in the classification reflects the Supply Side self containment score whilst the second word reflects the Demand Side self containment score, e.g. Weak-Weak equals those areas where both self containment values were less than 50%

0 12.5 25 50 Kilometers

Map by: David Meredith
Data Sources: Central Statistics Office,
Census of Population, 2011
© Ordnance Survey of Ireland,
Government of Ireland and Teagasc

Overall Assessment

- Areas that are Weak or Intermediate on the Supply Side may warrant enhanced enterprise support on the basis that they have available labour that may wish to work locally; this is particularly true of areas that are Weak – Intermediate, Weak – Strong, Intermediate – Intermediate and Intermediate – Strong.
- Areas that are Strong on the Supply Side but Weak or Intermediate on the Demand Side may warrant enhanced skills development.

		EU Typology of Rural Areas				
		Predominantly Rural	Intermediate Rural	Predominantly Urban	Urban	Total
Classification of Self Containment Levels	Weak - Weak	3				3
	Weak - Intermediate	18	3	1	2	24
	Weak - Strong	13	2			15
	Intermediate - Intermediate	20	5	1		26
	Intermediate - Strong	27	8	1		36
	Strong - Weak	1				1
	Strong - Intermediate	2				2
	Strong - Strong	42	2	3		47
	Total	89	20	6	2	154