Deprivation and its Spatial Articulation in the Republic of Ireland

New Measures of Deprivation based on the Census of Population, 1991, 1996 and 2002

This chapter presents a new deprivation index based on the 2002 Census of Population. It also provides, for the first time, an analysis of the changes in deprivation experienced by each area over the past decade. This new deprivation index for the Republic of Ireland is based on an innovative and powerful approach to the construction of deprivation indices, which builds on the best elements of existing approaches to index construction whilst simultaneously pushing out the boundaries in favour of greater conceptual clarity and precision.

How is the new deprivation index constructed?

Most deprivation indices are based on a factor analytical approach which reduces a number of indicator variables to a smaller number of underlying dimensions or factors. This approach is taken a step further in the new index: rather than leaving the definition of the underlying dimensions of deprivation to data-driven techniques, the authors develop a prior conceptualisation of these dimensions. Based on the 1991 and 1996 deprivation indices for Ireland, as well as analyses from other countries, three dimensions of social disadvantage are thus identified: Demographic Decline, Social Class Disadvantage and Labour Market Deprivation.

Demographic Decline is first and foremost a measure of rural deprivation. Unlike their manifestation as unemployment blackspots in urban areas, long-term adverse labour market conditions in rural areas tend to manifest themselves either in agricultural underemployment or in emigration. The latter is also, and increasingly, the result of a mismatch between education and skill levels, on the one hand, and available job opportunities, on the other. Emigration, however, is socially selective, being concentrated amongst core working-age cohorts and those with further education, leaving the communities concerned with a disproportionate concentration of economically-dependent individuals as well as those with lower levels of education. Sustained emigration leads to an erosion of the local labour force, a decreased attractiveness for commercial and industrial investment and, ultimately, a decline in the availability of services.

Demographic Decline is measured by five indicators:
- the percentage of population aged under 16 or over 65 years of age
- the percentage change in population over the previous five years
- the percentage of population with a primary school education only
- the percentage of population with a third level education (inverse effect)
- the percentage of households with children aged 15 years and under headed by a single parent (inverse effect)

Social Class Disadvantage is of equal relevance to both urban and rural areas. Social class background has a considerable impact in many areas of life: educational achievements, health, housing, crime, economic status and many more. Furthermore, social class is relatively stable over time and constitutes a key factor in the inter-generational transmission of economic, cultural and social assets. Areas with a weak social class profile tend to have higher unemployment rates, are more vulnerable to the effects of economic restructuring and recession and are more likely to experience low pay, poor working conditions as well as poor housing and social environments.

Social Class Disadvantage is measured by five indicators:
- the percentage of population with a primary school education only
- the percentage of population with a third level education (inverse effect)
- the percentage of households headed by professionals or managerial and technical employees, including farmers with 100 acres or more (inverse effect)
- the mean number of persons per room
- the percentage of households headed by semi-skilled or unskilled manual workers, including farmers with less than 30 acres

Labour Market Deprivation is predominantly, but not exclusively, an urban indicator. Unemployment and long-term unemployment remain the principal causes of disadvantage at national level and are responsible for the most concentrated forms of multiple disadvantage found in urban areas. In addition to the economic hardship that results from a lack of paid employment, young people living in areas with particularly high unemployment rates are frequently lacking positive role models. A further expression of social and economic hardship in urban unemployment blackspots is the large proportion of young families headed by a single parent.

Labour Market Deprivation is measured by four indicators:

- the percentage of households headed by semi-skilled or unskilled manual workers, including farmers with less than 30 acres
- the percentage of households with children aged 15 years and under headed by a single parent
- the male unemployment rate
- the female unemployment rate

Each dimension is measured in an identical way at each Census wave and then combined to form a measure of Overall Affluence and Disadvantage. This new approach thus allows the same set of dimensions and indicators to be applied to successive waves of Census data, establishing a common structure and measurement scale. However, unlike the deprivation indices for 1991 and 1996, the scores are no longer expressed in terms of decile rankings, and this entails a considerable shift as far as the interpretation of deprivation scores is concerned.

Interpretation of the new deprivation scores

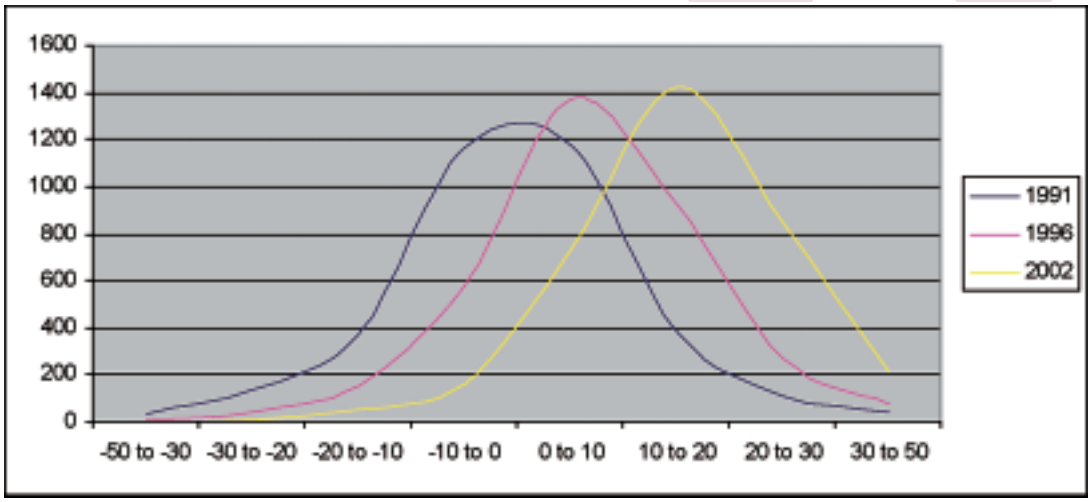
Previous deprivation indices for the Republic of Ireland (including Haase 1991 and 1996) used decile rankings (i.e. dividing all EDs into ten equally-sized categories) to measure the degree of relative deprivation. However, relatively large changes at the extremes of the affluence-deprivation spectrum may not be reflected in a change in decile ranking, whilst relatively minor changes at the middle of the distribution can easily result in a change of one or two deciles. For this reason, the index presented here pays greater attention to the actual level of deprivation experienced, using finely-differentiated deprivation scores rather than deciles.

The figure overleaf demonstrates a number of important characteristics of the new set of deprivation measures. Firstly, the scores range between roughly –50 (most disadvantaged) and +50 (most affluent). More importantly, the measurement scale is identical for all three Census waves, thus allowing the direct comparison of each area's score from one wave to the next. The scale is constructed in such a way that the mean score for 1991 is set to be equal to zero.

Secondly, the rightward shift of the 1996 and 2002 curves relative to that for 1991 reflects the exceptional growth experienced by the Irish economy over the past decade. The mean score for 1996 is 7 and the mean score for 2002 is 15, which captures the underlying trend. Naturally, the actual deprivation score for a given area may change over time even where its position relative to other areas remains constant.

Thirdly, the curves follow a bell-shaped curve, with most areas clustered around the mean and fewer areas exhibiting extreme levels of affluence or deprivation. This explains why it has been decided not to use a decile ranking, as the latter does not conserve these distributional characteristics. This is of particular concern in the case of extremely deprived areas, which may greatly improve their standing in actual terms, whilst remaining within the lowest decile of scores.

Distribution of Overall Deprivation Scores, 1991, 1996 and 2002



Reading the maps

Seven maps are included here: Overall Affluence and Deprivation for the years 1991, 1996 and 2002, Relative Affluence and Deprivation for 1991, 1996 and 2002 and the Change in Deprivation between 1991 and 2002. The complete set of maps for Ireland as a whole, including the mapping of scores for the individual dimensions for 2002, are included in a forthcoming publication by ADM which also describes the construction of the index in greater detail.

Map 1: Overall Affluence and Deprivation in 1991 - This map shows the 1991 scores which are constructed in such a way that they have a mean of zero.

Map 2: Overall Affluence and Deprivation in 1996 - This map shows the 1996 scores using the same structure and measurement scale as the 1991 index. The resulting map shows the growth in affluence with a mean score of seven.

Map 3: Overall Affluence and Deprivation in 2002 - This map shows the 2002 scores using the same structure and measurement scale as the 1991 and 1996 indices. The resulting map shows the further growth in affluence with a mean score of fifteen.

Map 4: Relative Affluence and Deprivation in 1991 – As the 1991 deprivation scores are already centred around zero, this map is identical to Map 1.

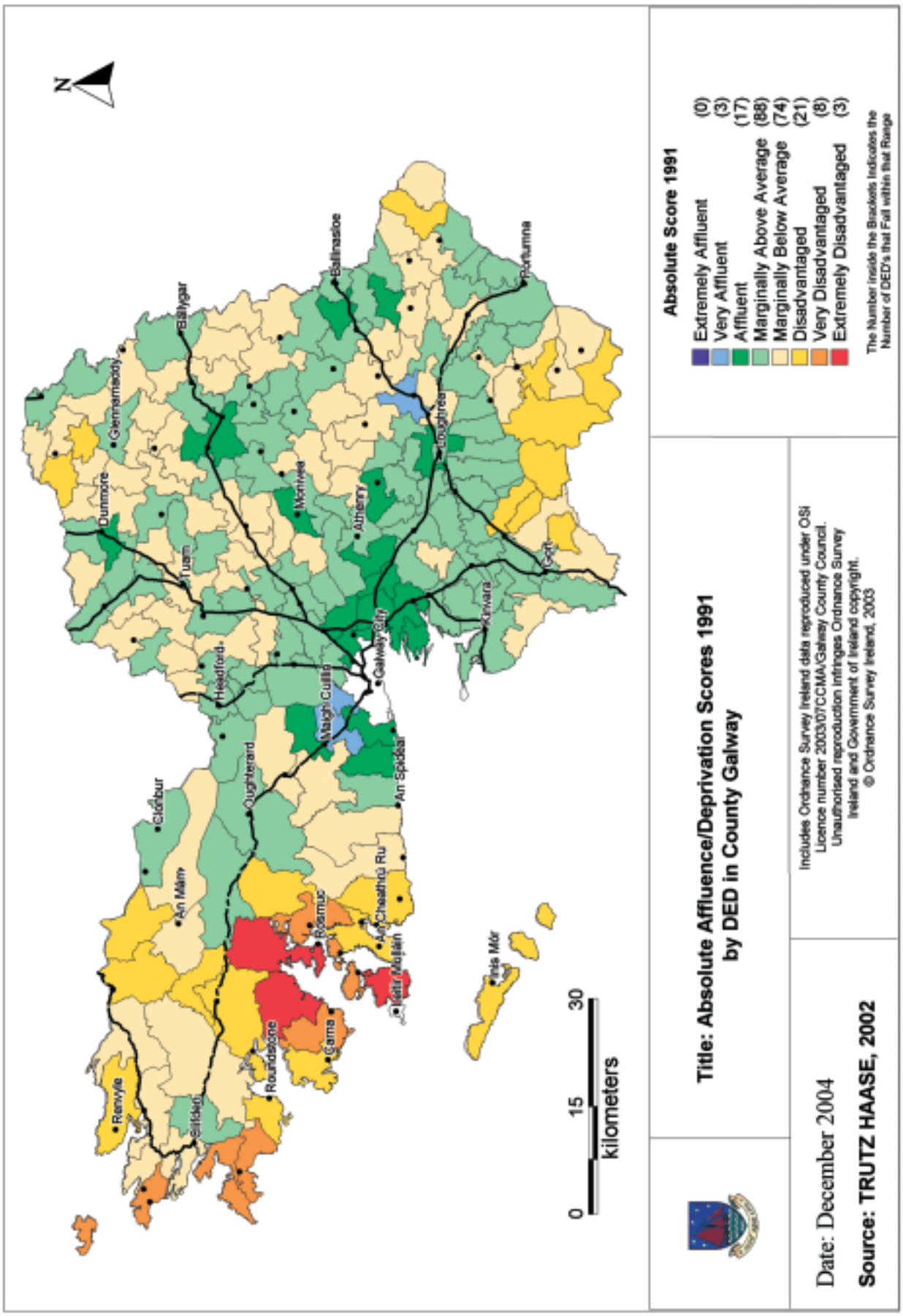
Map 5: Relative Affluence and Deprivation in 1996 - This map shows the 1996 scores, but after deducting the underlying trend of seven. The resulting map thus shows relative distribution of affluence and deprivation as it pertains in 1996.

Map 6: Relative Affluence and Deprivation in 2002 - This map shows the 2002 scores, but after deducting the underlying trend of fifteen. The resulting map thus shows relative distribution of affluence and deprivation as it pertains in 2002.

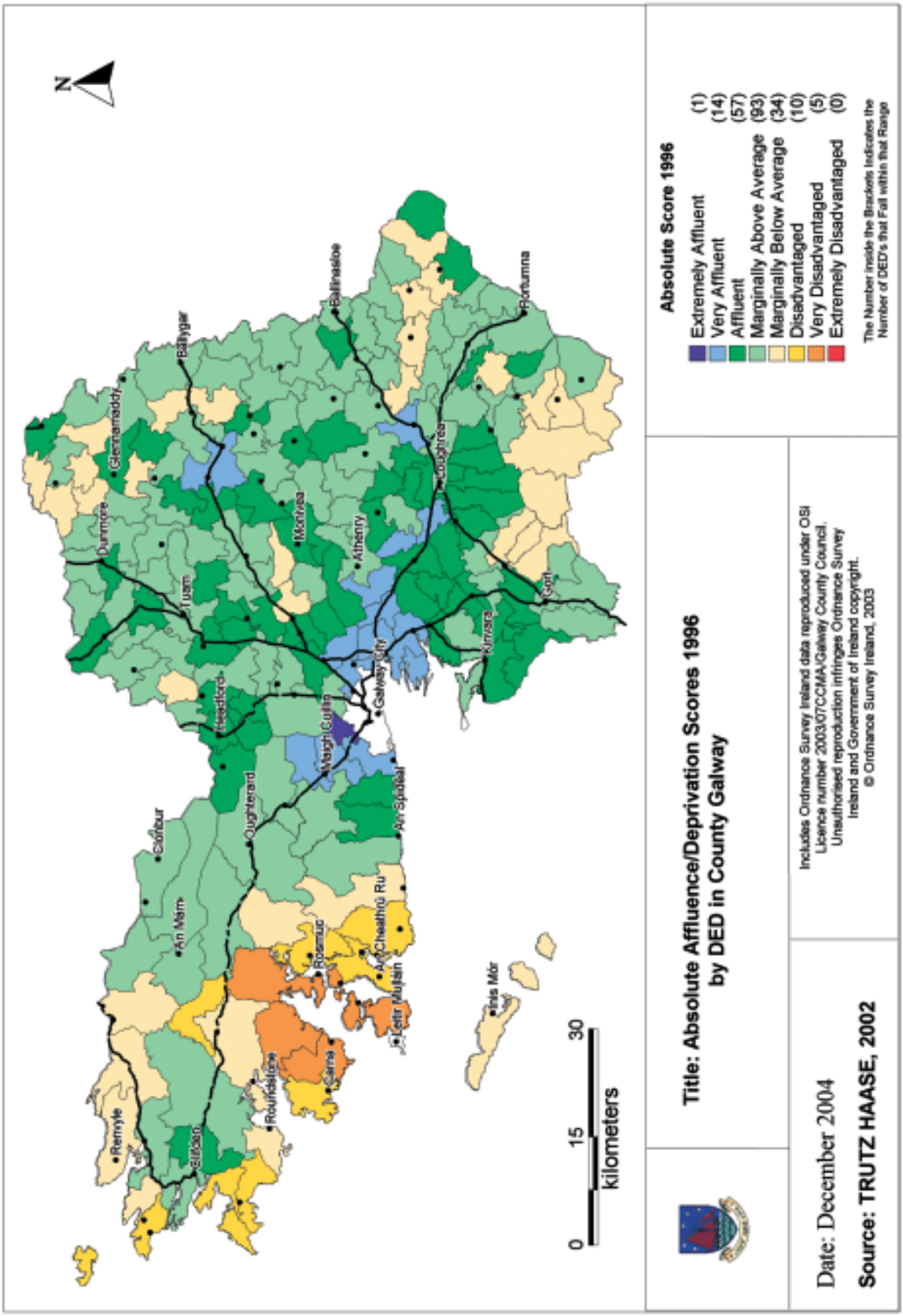
Map 7: Change in Affluence/Deprivation between 1991 and 2002 – The final map shows the difference between the 1991 and 2002 scores The average change between the two census waves is 15. Thus, when judging a particular area's performance over the inter-censal period, this underlying trend must be borne in mind.

[1] T. Haase & J. Pratschke (2004) *Deprivation and its Spatial Articulation in the Republic of Ireland – New measures of deprivation based on the 1991, 1996 and 2002 Census of Population.* Dublin: ADM.

Map 1


Title: Absolute Affluence/Deprivation Scores 1991
by DED in County Galway
Date: December 2004
Source: TRUTZ HAASE, 2002
Includes Ordnance Survey Ireland data reproduced under OSi Licence number 2003/07/CCMA/Galway County Council. Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright. © Ordnance Survey Ireland, 2003
Absolute Score 1991
Extremely Affluent (0)
Very Affluent (3)
Affluent (17)
Marginally Above Average (88)
Marginally Below Average (74)
Disadvantaged (21)
Very Disadvantaged (8)
Extremely Disadvantaged (3)
The Number inside the Brackets Indicates the Number of DED's that Fall within that Range
0 15 30
kilometers
N
Ballygar
Ballinasloe
Portumna
Glennamaddy
Dunmore
Tuam
Monivea
Athenry
Loughrea
Gort
Kinvara
Headford
Galway City
Maigh Cuillin
An Spidéal
Oughterard
Clonbur
An Mám
An Cheathrú Ru
Rosmuc
Inis Mór
Carna
Roundstone
Renvyle
Sirfidén

Map 2



N
Ballinasloe
Portumna
Ballygar
Glennamaddy
Dunmore
Tuam
Montvea
Athenry
Loughrea
Gort
Kinvara
Galway City
Headford
Maigh Cuilin
Oughterard
An Spidéal
Clonbur
An Mám
An Cheathrú Ru
Rosmuc
Lettr Mullain
Inis Mór
Carna
Roundstone
Renvyle
Eiriden
0
15
30
kilometers
Title: Absolute Affluence/Deprivation Scores 1996
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Date: December 2004
Source: TRUTZ HAASE, 2002
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Ireland and Government of Ireland copyright.
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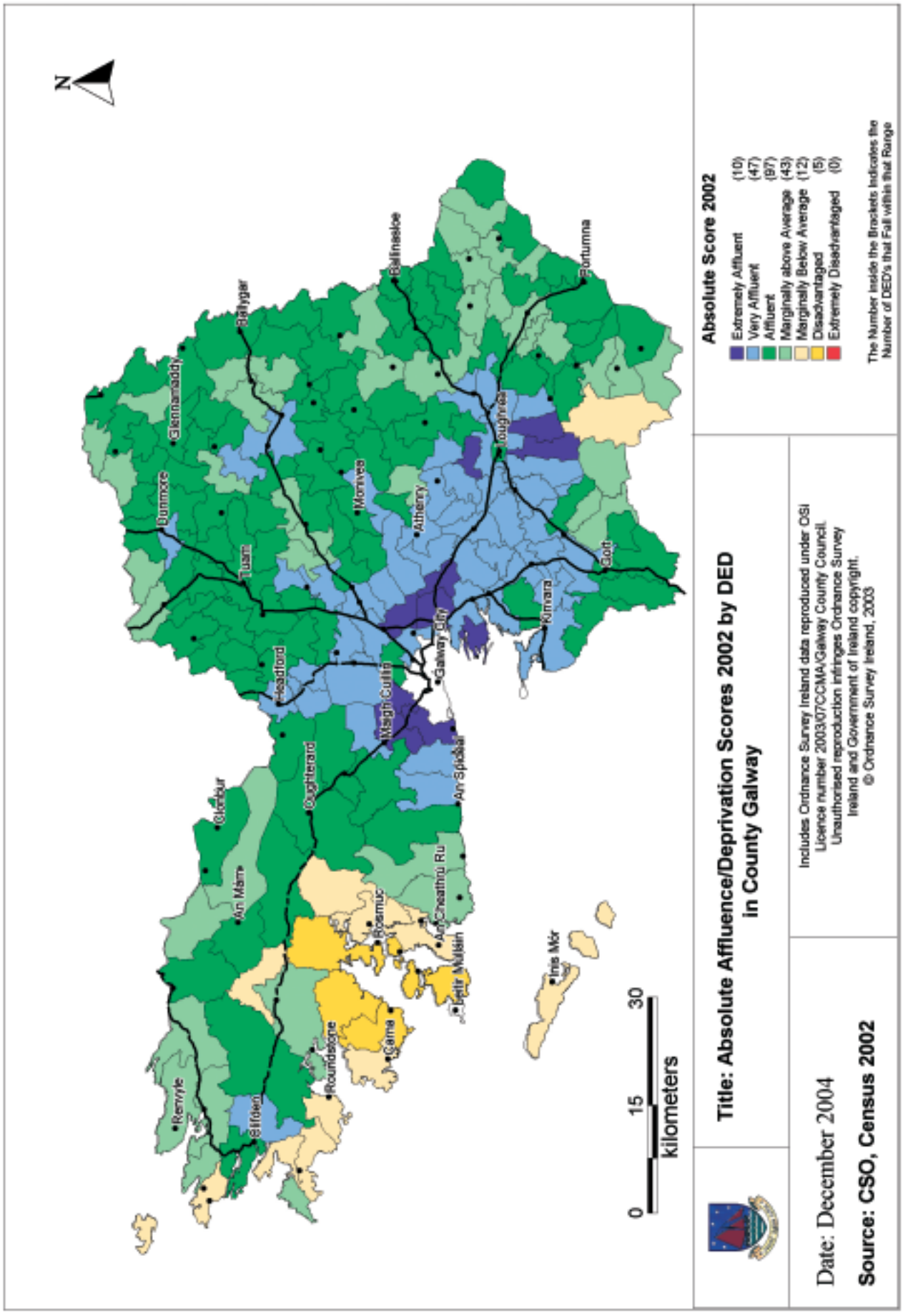
Absolute Score 1996
Extremely Affluent (1)
Very Affluent (14)
Affluent (57)
Marginally Above Average (93)
Marginally Below Average (34)
Disadvantaged (10)
Very Disadvantaged (5)
Extremely Disadvantaged (0)
The Number inside the Brackets Indicates the
Number of DED's that Fall within that Range

Map 3


N
Absolute Score 2002
Extremely Affluent (10)
Very Affluent (47)
Affluent (97)
Marginally above Average (43)
Marginally Below Average (12)
Disadvantaged (5)
Extremely Disadvantaged (0)
The Number inside the Brackets Indicates the Number of DED's that Fall within that Range
Title: Absolute Affluence/Deprivation Scores 2002 by DED in County Galway
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Date: December 2004
Source: CSO, Census 2002
0 15 30
kilometers
Ballinasloe
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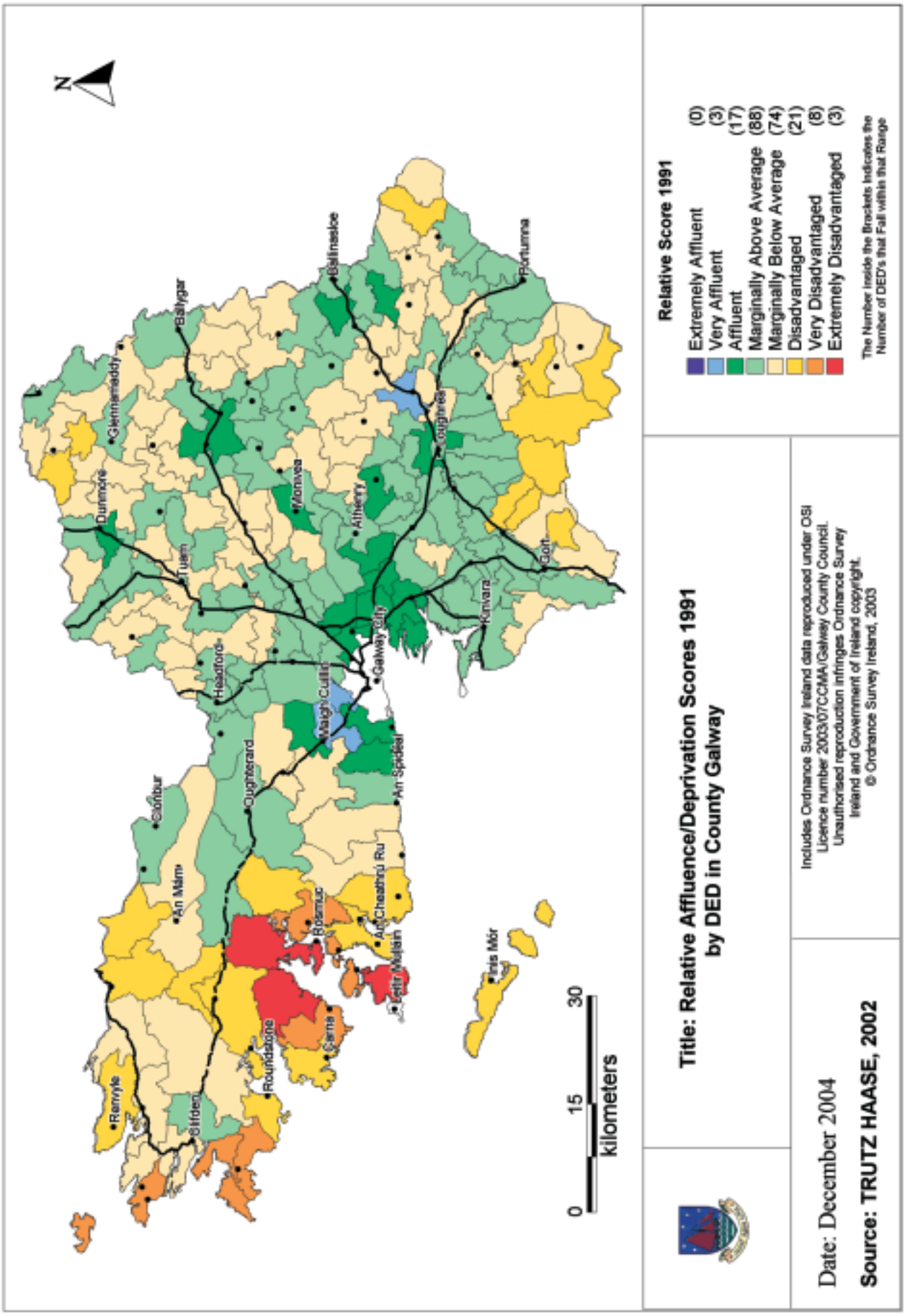
Glennamaddy
Dunmore
Tuam
Monivea
Athenry
Loughrea
Gort
Kinvara
Galway City
Headford
Maigh Cuilin
An Spidéal
Oughterard
Clonbur
An Mám
An Cheathru Ru
Rosmuc
Leitir Mullain
Inis Mór
Cama
Roundstone
Renvyle
Sliden

Map 4



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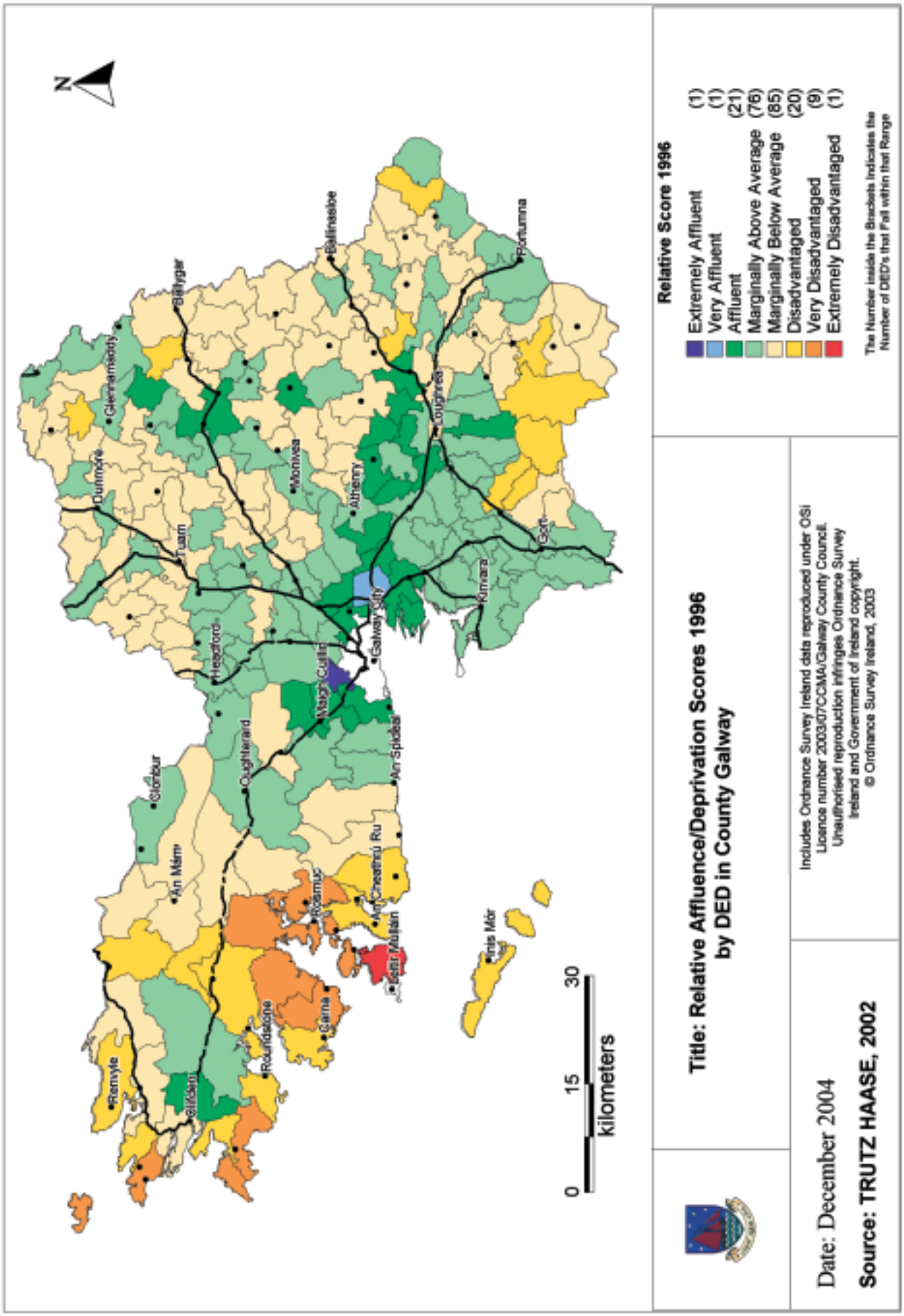
Date: December 2004
Source: TRUTZ HAASE, 2002
0 15 30
kilometers
N
Ballygar
Glennamaddy
Dunmore
Tuam
Headford
Glonbur
An Mám
Oughterard
Maigh Cuilin
Galway City
An Spideal
An Cheathrú Ru
Rosmuc
Letir Mullain
Inis Mór
Carna
Roundstone
Clifden
Renvyle
Ballinasloe
Portumna
Loughrea
Athenry
Monivea
Gort
Kinvara

Map 5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Source: TRUTZ HAASE, 2002
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Relative Score 1996
Extremely Affluent (1)
Very Affluent (1)
Affluent (21)
Marginally Above Average (76)
Marginally Below Average (85)
Disadvantaged (20)
Very Disadvantaged (9)
Extremely Disadvantaged (1)
The Number inside the Brackets Indicates the Number of DED's that Fall within that Range
0 15 30
kilometers
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Ballinasloe
Portumna
Ballygar
Glennamaddy
Dunmore
Tuam
Monivea
Athenry
Loughrea
Gort
Kinvara
Galway City
Headford
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An Spidéal
Oughterard
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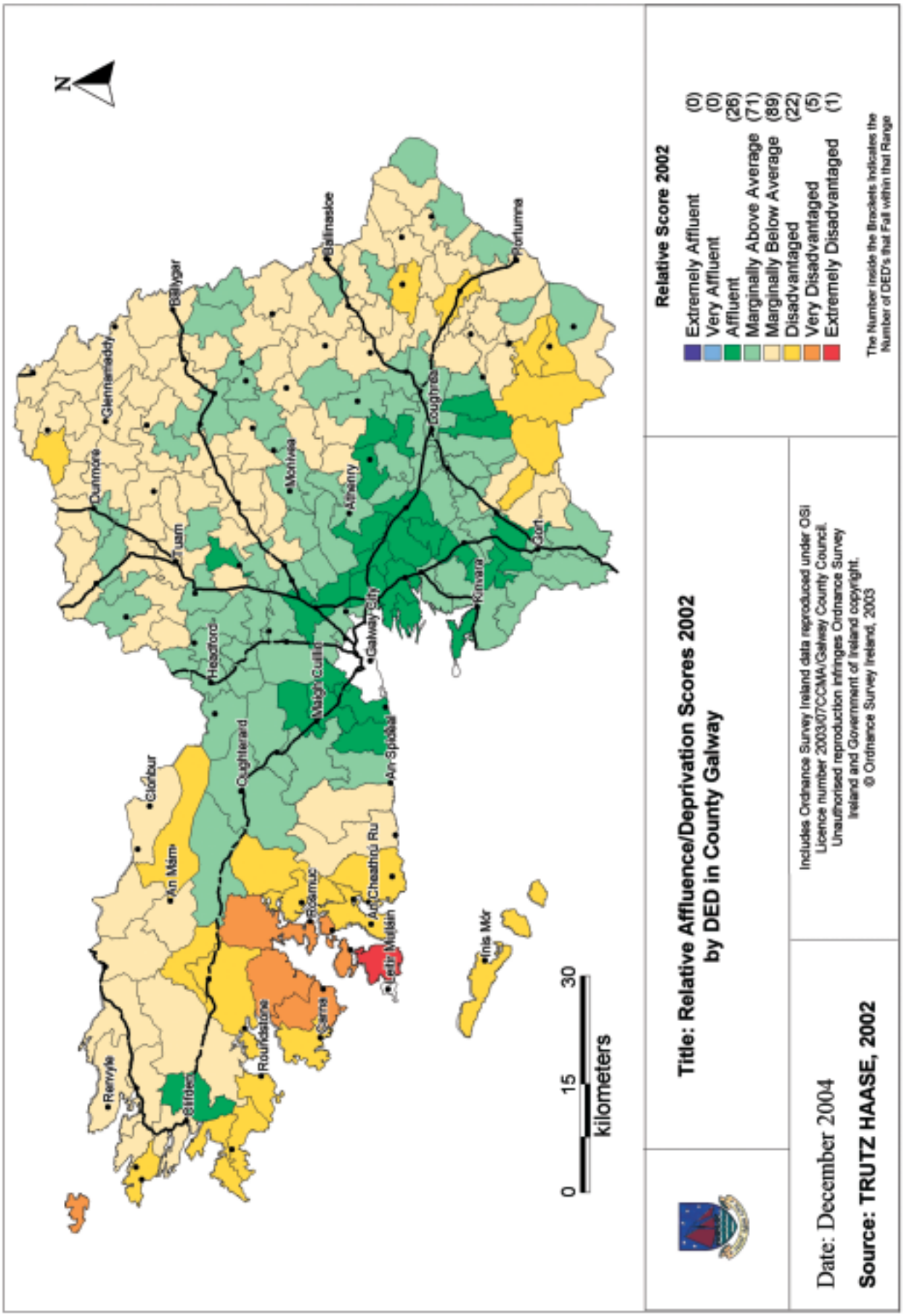
Rosmuc
Béhr Mullán
Inis Mór
Carna
Roundstone
Clifden
Renvyle

Map 6



N
Relative Score 2002
Extremely Affluent (0)
Very Affluent (0)
Affluent (26)
Marginally Above Average (71)
Marginally Below Average (89)
Disadvantaged (22)
Very Disadvantaged (5)
Extremely Disadvantaged (1)
The Number Inside the Brackets Indicates the Number of DED's that Fall within that Range
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Date: December 2004
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Ballinasloe
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Galway City
Headford
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An Spidéal
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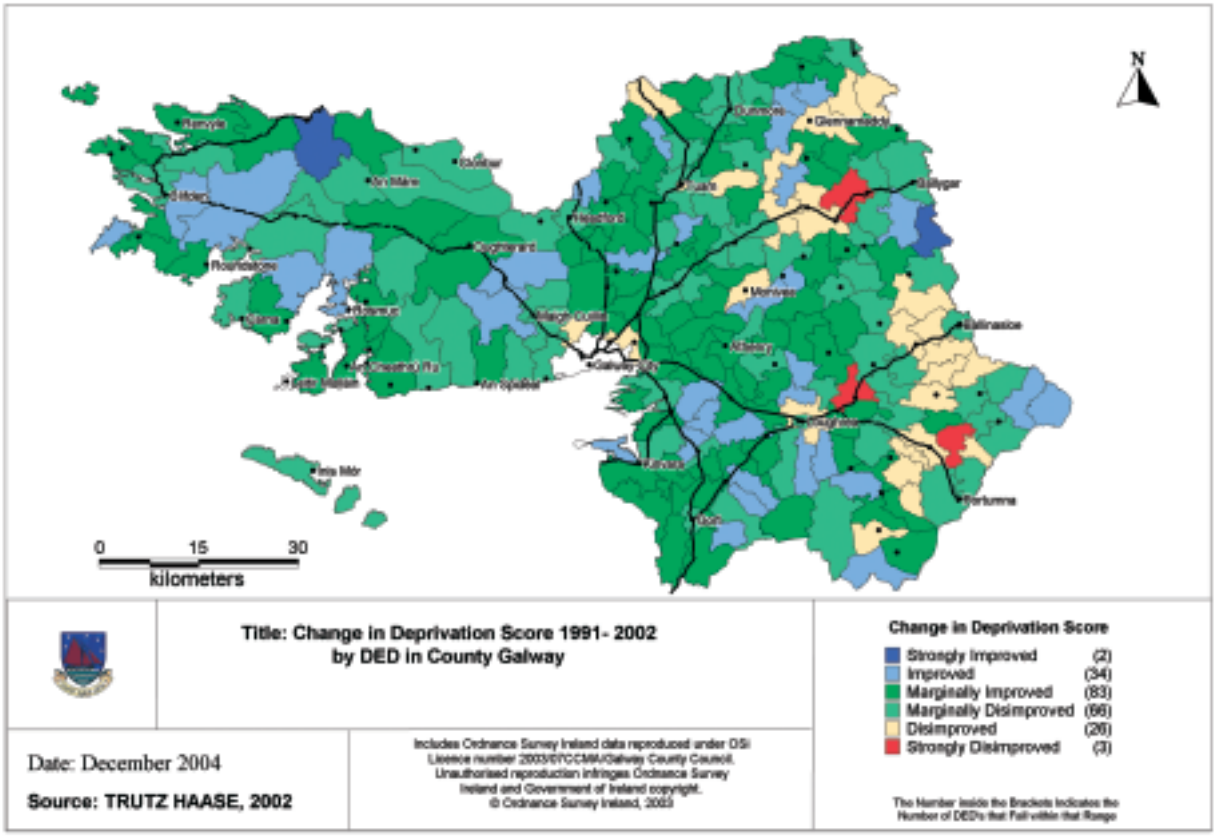
Sarna
Renvyle
Clifden

Map 7



Substantive Findings

Ireland 1991-2002, a period of sustained growth

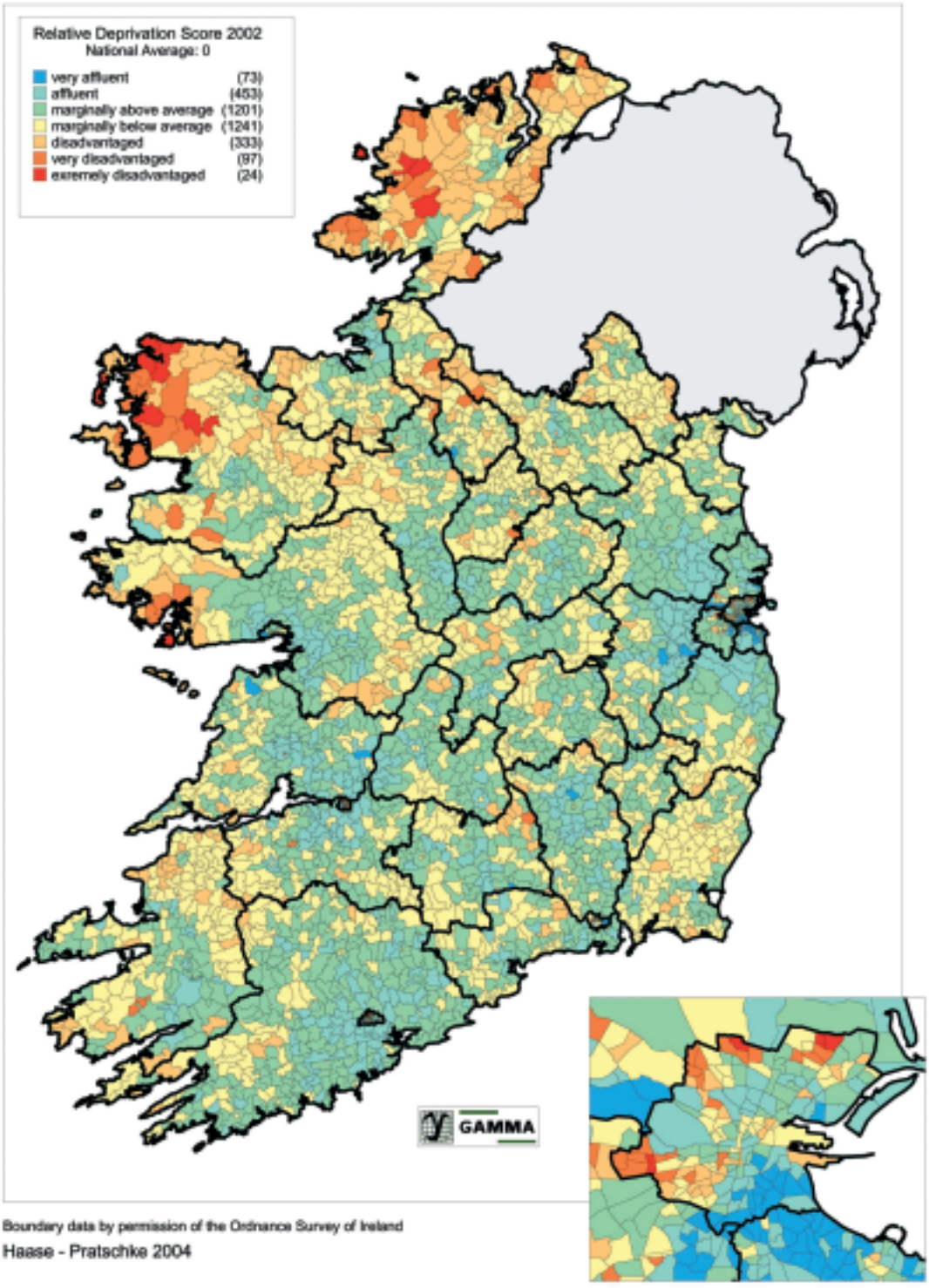
The first set of maps (Maps 1-3) presented here show the actual level of overall affluence and deprivation in 1991, 1996 and 2002, using identical intervals for all three maps. The scores range, in broad terms, from -50 to +50, with higher values indicating greater affluence and lower values indicating greater deprivation. The scores are not de-trended; i.e. the (national) mean for 1991 is zero, but the means for 1996 and 2002 are approximately 7 and 15 respectively, reflecting the considerable growth in the Irish economy over this 11-year period.

The maps provide fascinating insights into the spatial distribution of this growth, most importantly its nodal character and the overriding importance of Ireland's urban centres. The most affluent areas of the country are distributed in concentric rings around the main population centres, mainly demarcating the urban commuter belts. The maps show how rapidly these rings of affluence expanded during the 1990s as large-scale private housing development took place in the outer urban periphery, leading to high concentrations of relatively affluent young couples in the areas concerned.

The spatial distribution of deprivation over time

The second set of maps (Maps 4-6) show the limited degree to which the relative position of local areas changed during the 1990s. The worst-affected areas in 1991 were generally the worst-affected ones in 2002. As is increasingly clear from analyses carried out in different countries, the spatial distribution of relative deprivation is highly stable over time. Indeed, as a recent study of England and Wales shows, the distribution of relative deprivation in these two countries has not changed dramatically over the course of a century.

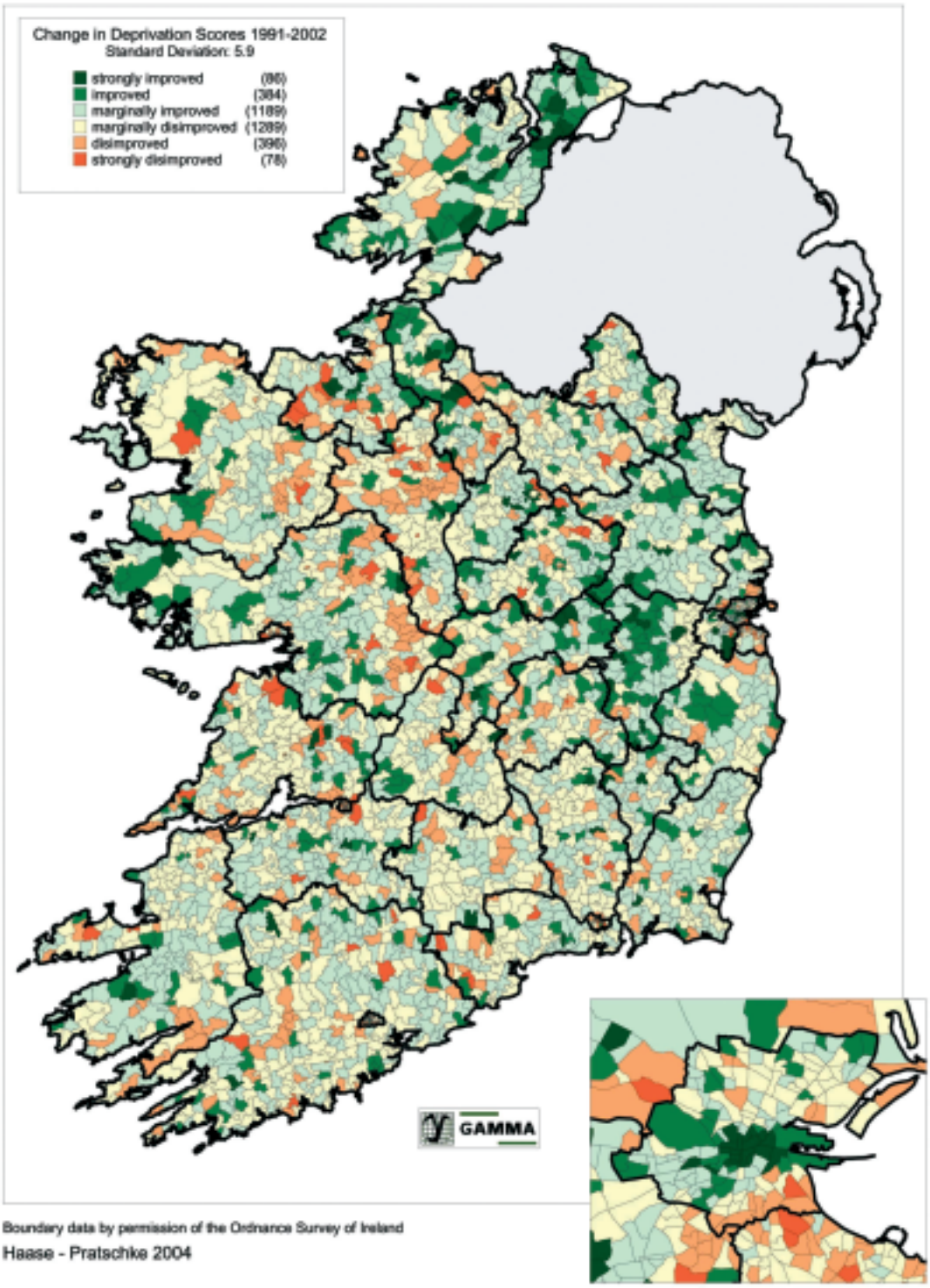
Map 4.3: Relative Affluence and Deprivation, 2002



Boundary data by permission of the Ordnance Survey of Ireland

Haase - Pratschke 2004

Map 4.4: Change in Relative Deprivation, 1991-2002



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