

# Development trends in Agriculture 1989-99 - new patterns of development?

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# Content of presentation

- Development trend and conceptualisation of development trend in agriculture
- Introduction of a frame work to analyse current development trend i agriculture
- Results
- Conclusions



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# Post war development trends in Agriculture

## Development dimensions:

- **Intensification** - increased farm input (fertilizer, capital, agrochemicals, energy etc and increased output per hectare land
- **Concentration** - increased proportion of total productive resources or farm production (output) are located in a smaller number of farm units, parishes, regions etc.
- **Specialisation** limiting production to a few products in a farm business or (regions), labour specialisation

## Results:

- Fewer farms - less people employed in agriculture
- Increased productivity - overproduction
- Declining prices - price squeeze
- Negative impact on environment

# New demands, new driving forces

- Policy demands for a more sustainable development
  - Integration of environmental consideration
  - Rural Development - a living countryside
  - Diversification of production/economy
- Search for new income opportunities to maintain profitability
- Changes in Agricultural policy
  - Change from Pillar 1 to Pillar 2 support
  - Change in the Pillar 1 support - from price support to decoupled direct payment = adaptation to the WTO agenda

# Conceptualisation of the new processes of change

- Contested field
  - From Productivism to Post-productivism - Marsden et al (1993), Ilbery and Bowler (1998), Mather (2006)
  - From Productivism to Multi-functionality - Wilson (2001)
  - From Productivism to Ecological modernisation - Evans, Morris and Winter (2002), Huggart and Paniagua (2001)

# Adaptation strategies for farmers

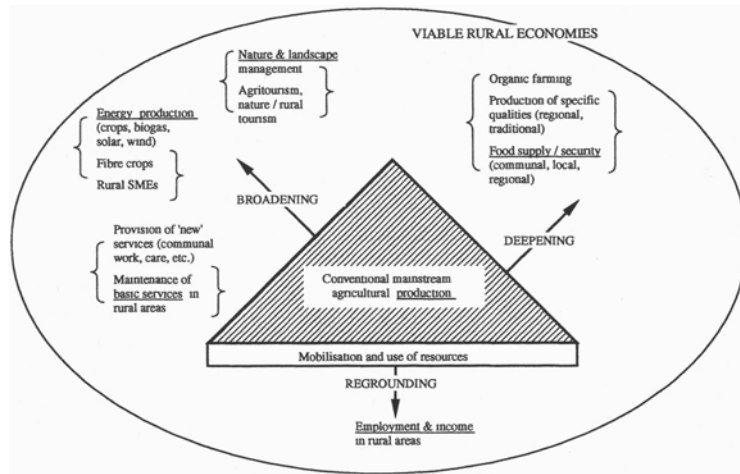


Figure 5.2 MFA as characterised by new activities, markets, jointness and regional-level synergies

Table 4.5 Pathways of farm business development

1. Extension of the industrial model of farm business development based on traditional products and services on the farm
2. Redeployment of farm resources (including human capital) into new agricultural products or services on the farm (agricultural diversification)
3. Redeployment of farm resources (including human capital) into new non-agricultural products or services on the farm (structural diversification)
4. Redeployment of human capital into an off-farm occupation (OGA)
5. Maintenance of traditional farm production and services with reduced capital inputs (extensification)
6. Hobby or part-time (semi-retired) farming

Sources: Bowler (1992b) and Ilbery and Bowler (1993a).

Results: Continuation of existing development with some modification and/or appearance of new and alternative development trends

Intensification - Extensification  
 Specialisation - Diversification  
 Concentration - Dispersion

# Indicators

## **Intensification-extensification:**

Changes in standard gross margin (sgm) per hectare land  
1989-1999 sgm=the standard production value of the activity minus  
the standard variable cost including the value of both crops and animal

## **Specialisation-diversification:**

Change in specialisation 1989-1999

## **Concentration-dispersion:**

Change in average farm size 1989-1999

Data used: census farm statistics from 1989 and 1999  
from Department of Statistics Denmark

- 7 land use classes:
  - Cereals, Pulses, Rootcrops, Seeds, Grass and green fodder in rotation, Horticulture, Permanent grass

Formula for calculating the level of regional specialisation,  $H_r$  (entropy)

$$H_r = H/H_{\max} \quad [0 < H_r < 1]$$

Where:

$$H = - \sum (IF \log_{10} IF),$$

$$H_{\max} = - K (1/K * \log_{10} * 1/K),$$

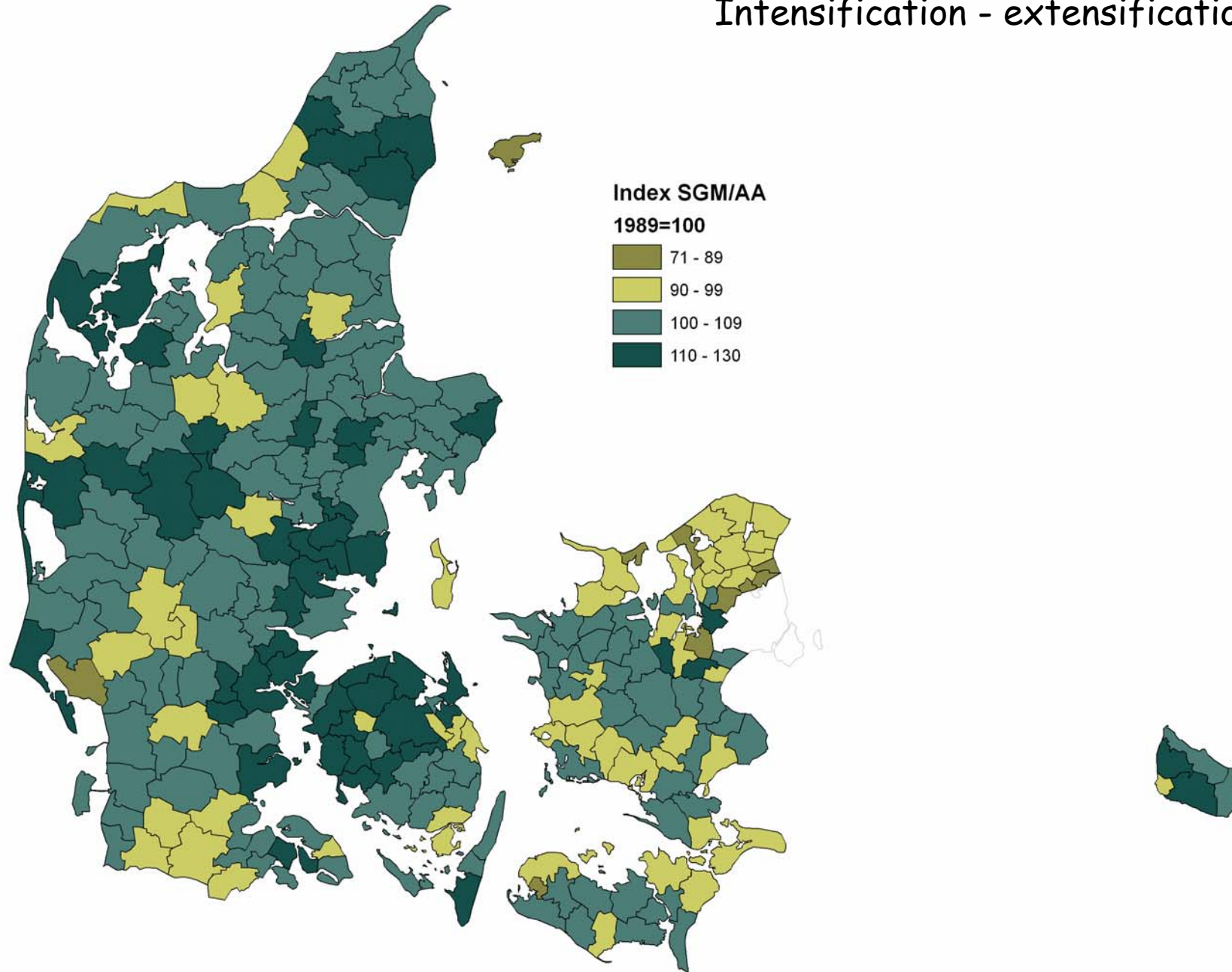
$IF$  = land use ( $I$ ) as a relative proportion of the farmland ( $F$ ) in a region,

$K$  = number of land use classes

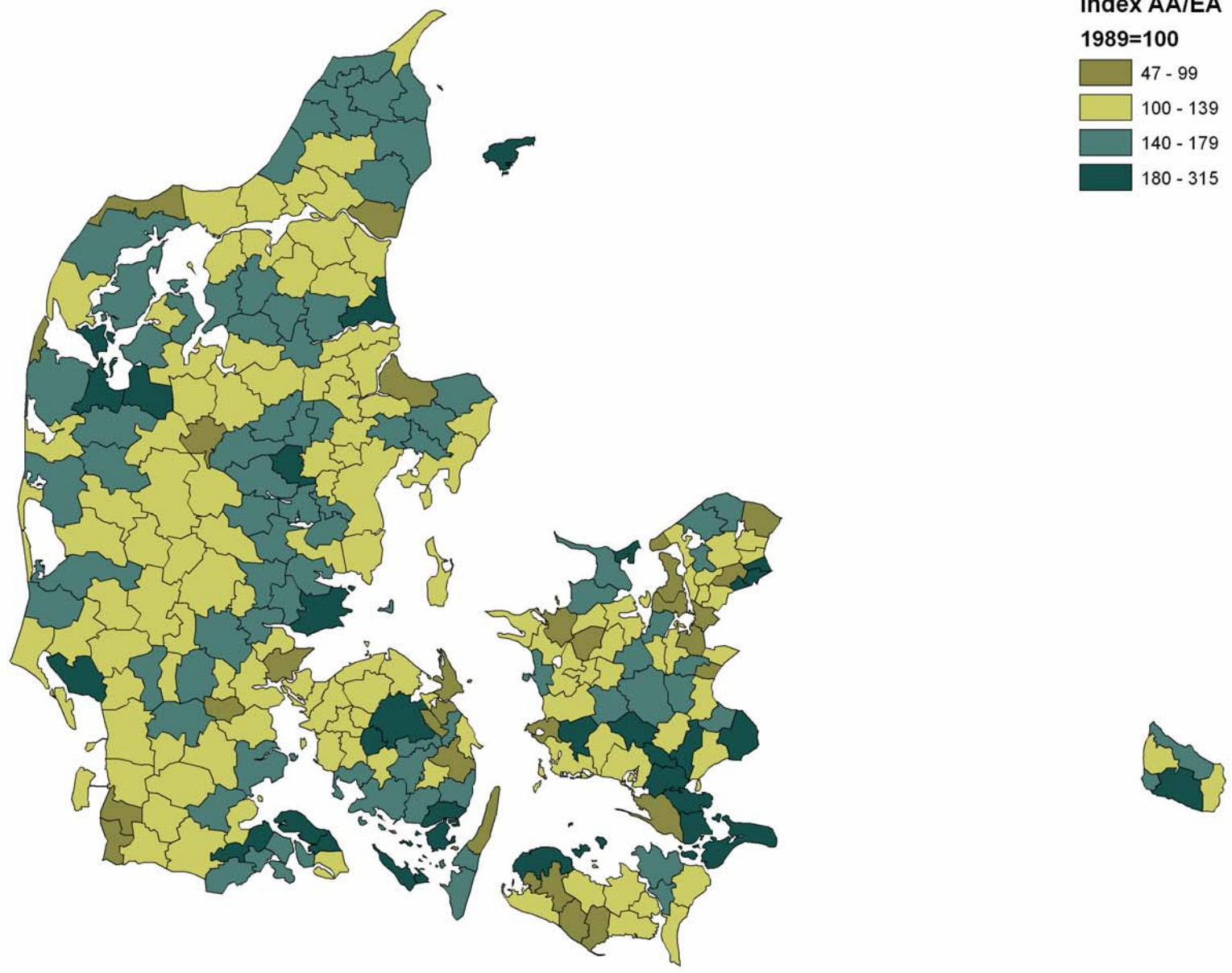
Source: Bowler and Ilbery (1997)



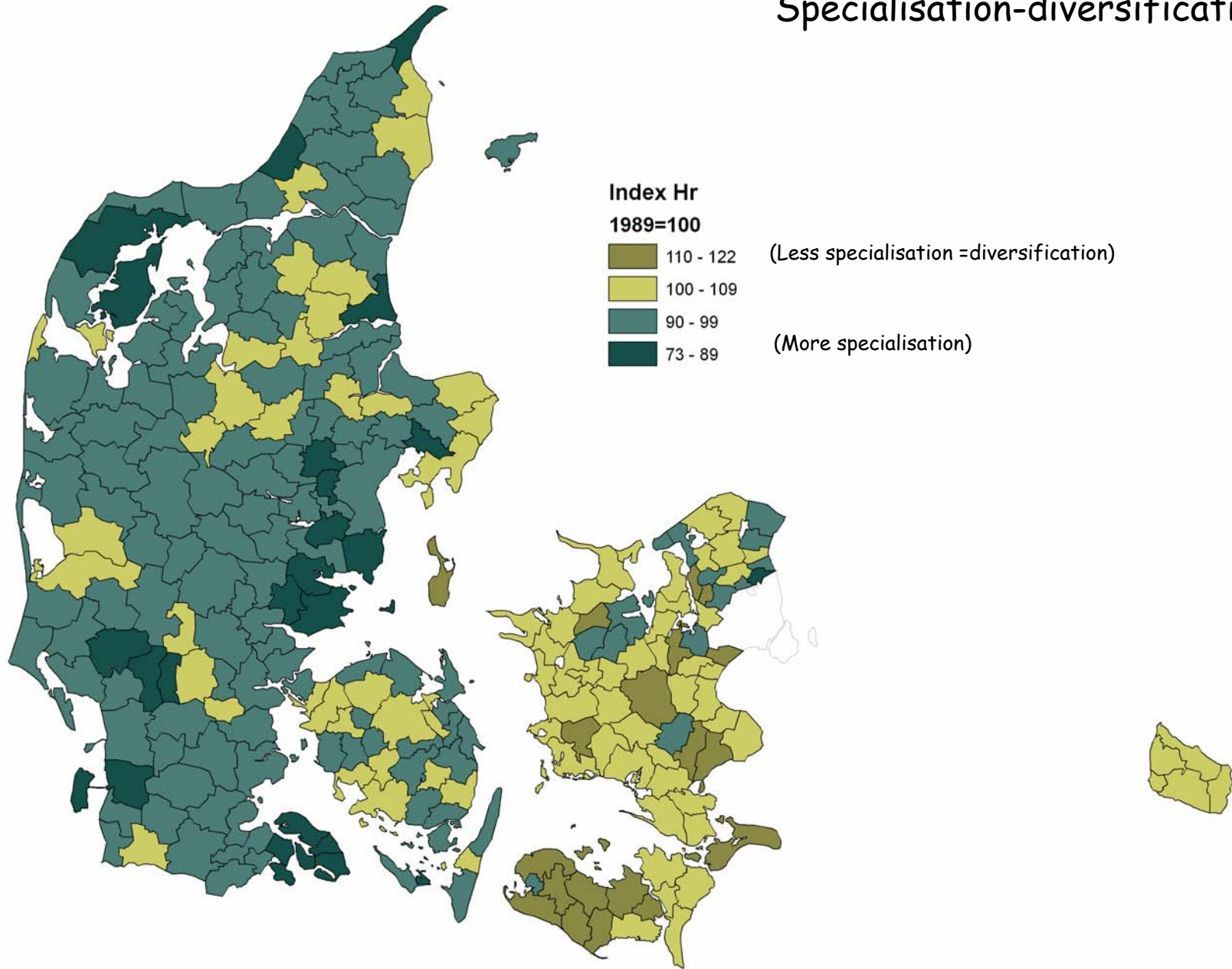
# Intensification - extensification



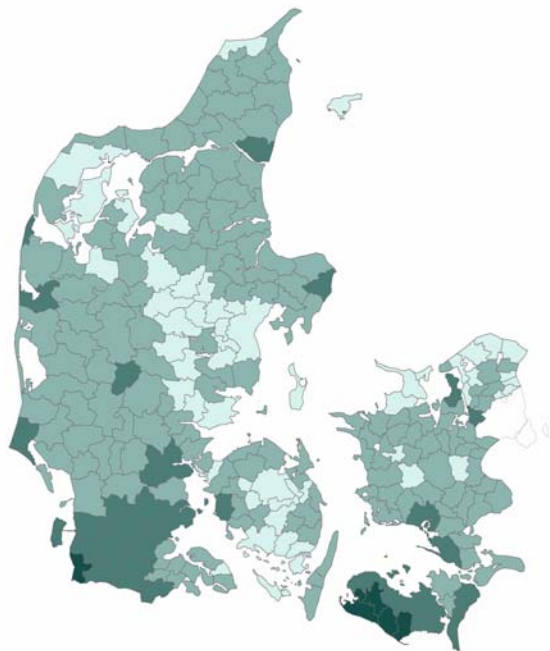
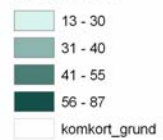
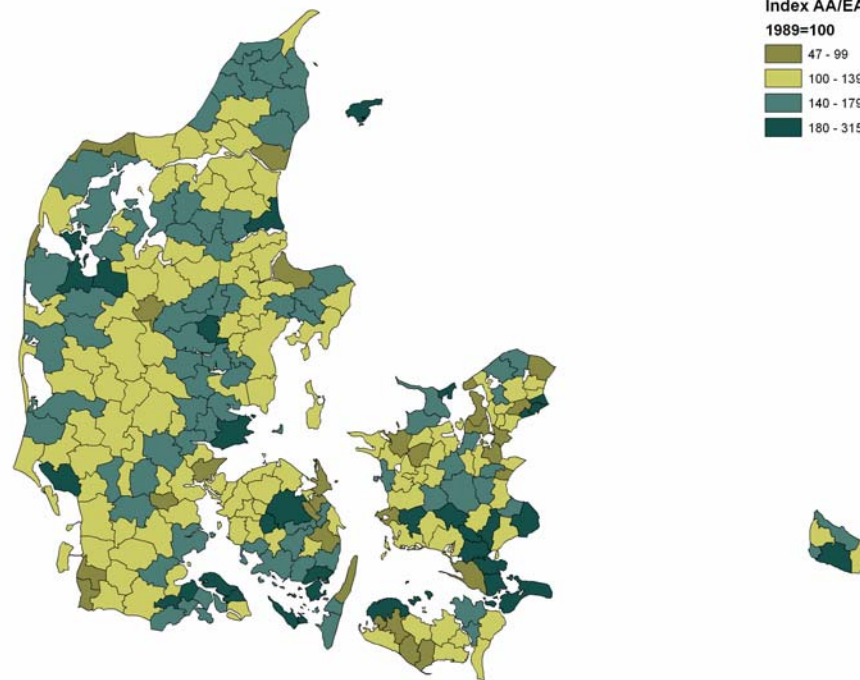
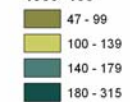
# Concentration-dispersion



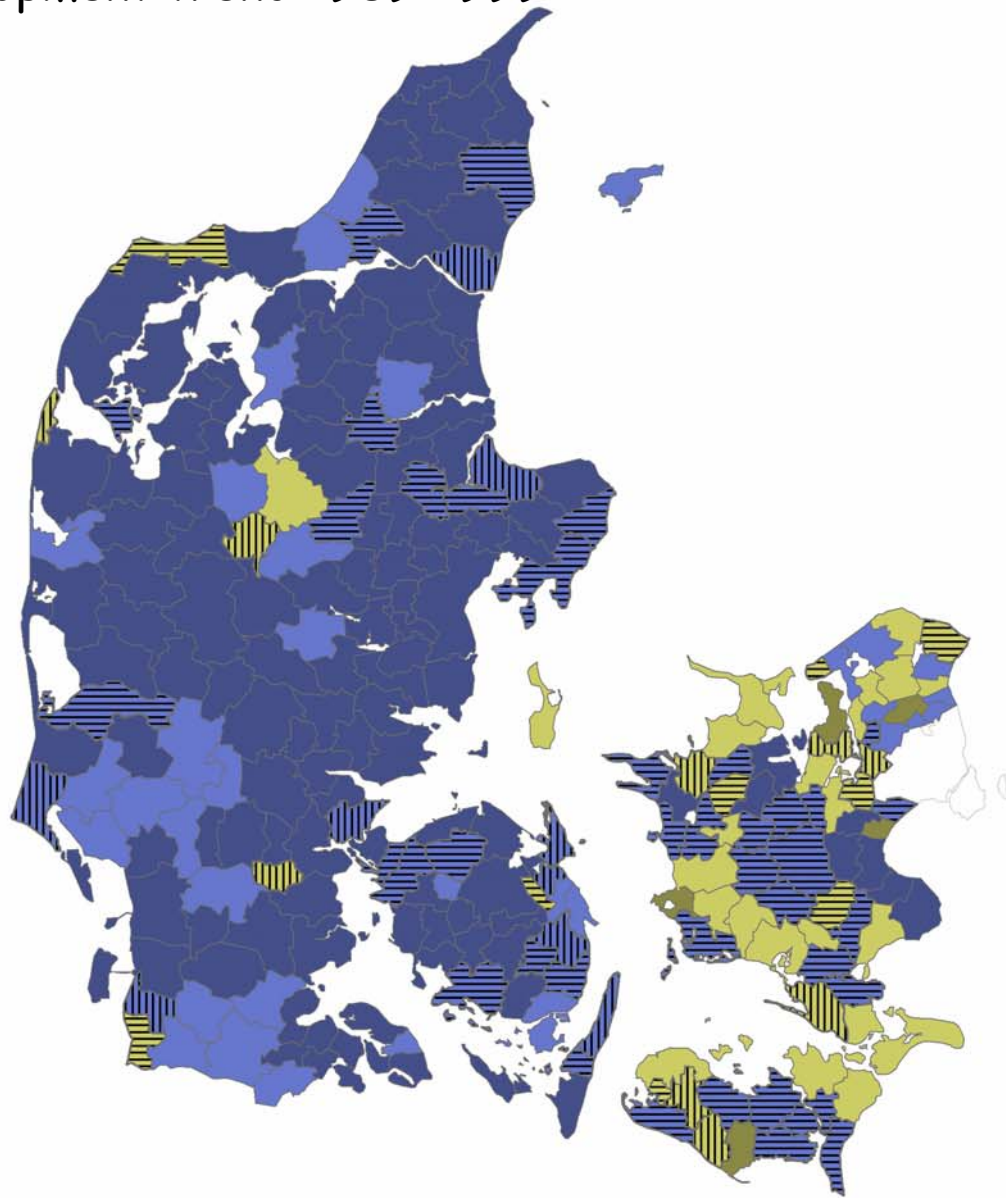
# Specialisation-diversification



## AA/EA 1989

Index AA/EA  
1989=100

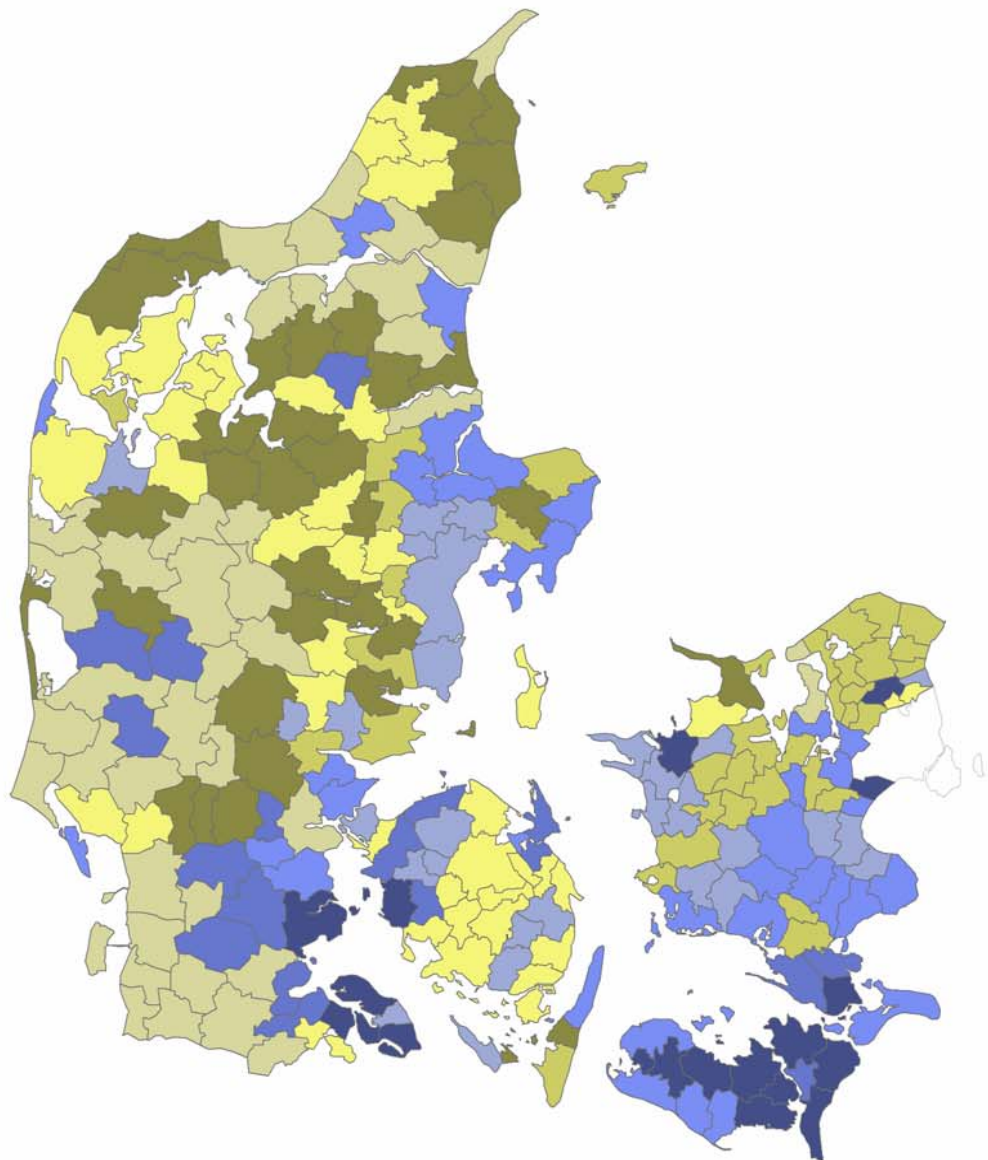
# Development trend 1989-1999



9		Spec, Exten, Dis
5		Div, Exten, Dis
8		Spec, Inten, Dis
34		Spec, Exten, Conc
10		Div, Inten, Dis
24		Div, Exten, Conc
122		Spec Inten, Conc
43		Div, Inten, Conc

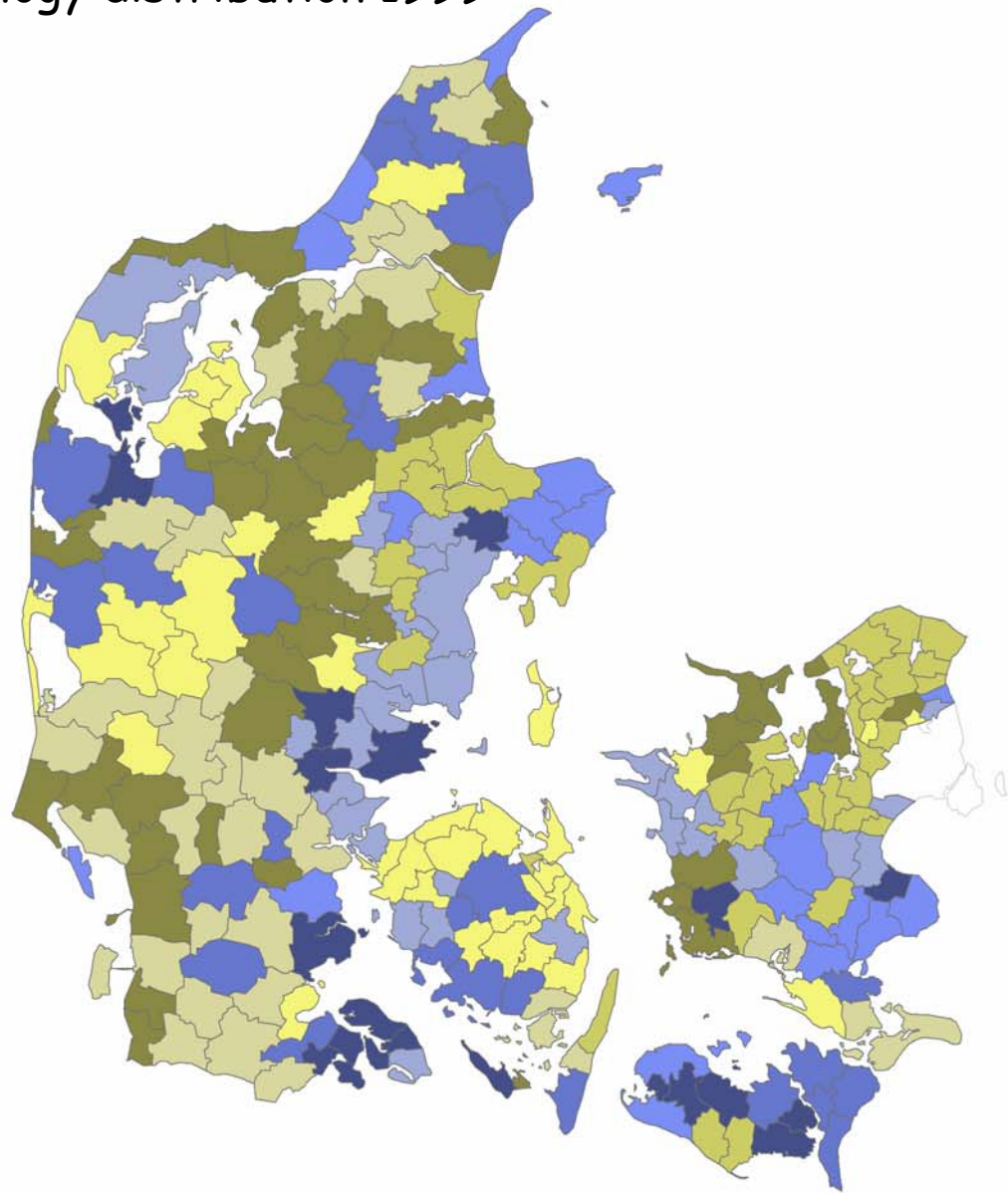
Blue = productivist trend in 2 or 3 dimensions= 207 regions  
 Green = alternative trend in 2 or 3 dimensions= 48 regions

# Typology distribution 1989



- 1 Spec, Inten, Con
- 2 Div, Inten, Con
- 3 Spec, Exten, Con
- 4 Spec, Inten, Dis
- 5 Div, Exten, Con
- 6 Div, Inten, Dis
- 7 Spec, Exten, Dis
- 8 Div Exten, Dis

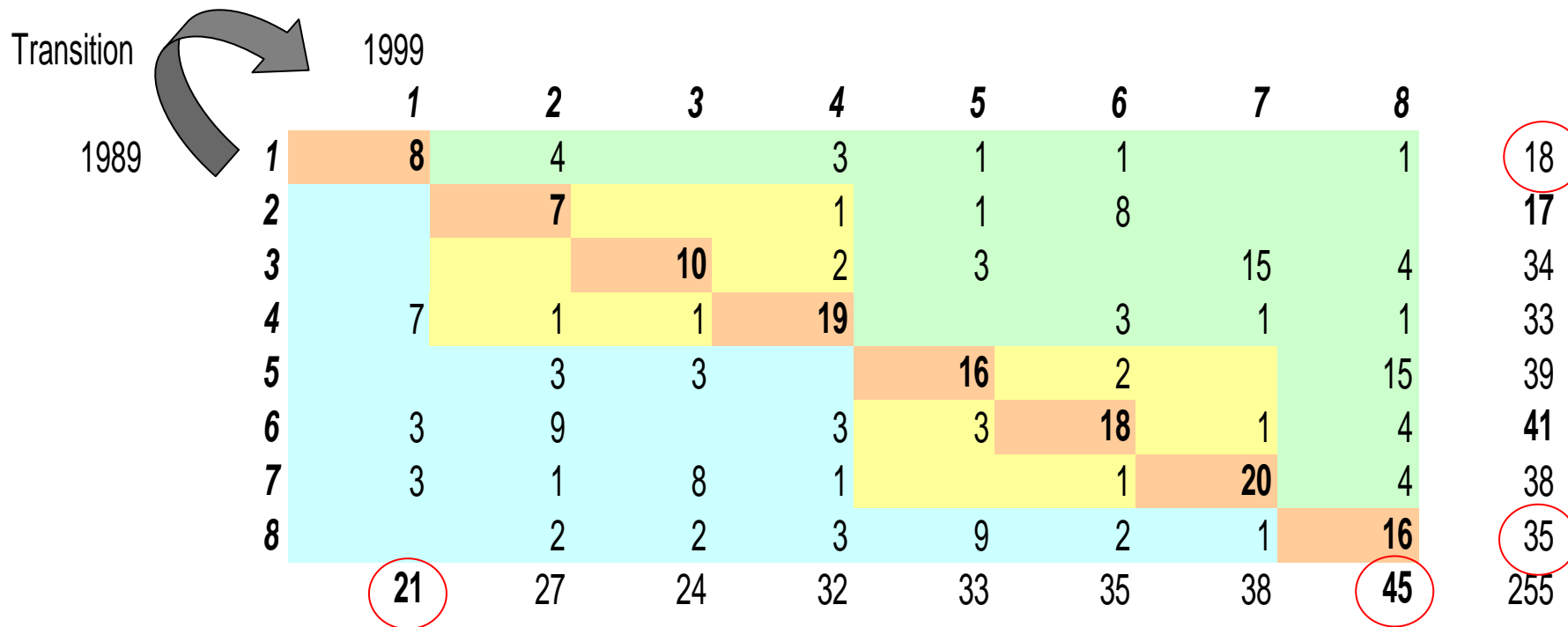
# Typology distribution 1999



- 1 Spec, Inten, Con
- 2 Div, Inten, Con
- 3 Spec, Exten, Con
- 4 Spec, Inten, Dis
- 5 Div, Exten, Con
- 6 Div, Inten, Dis
- Spec, Exten, Dis
- 8 Div, Exten, Dis



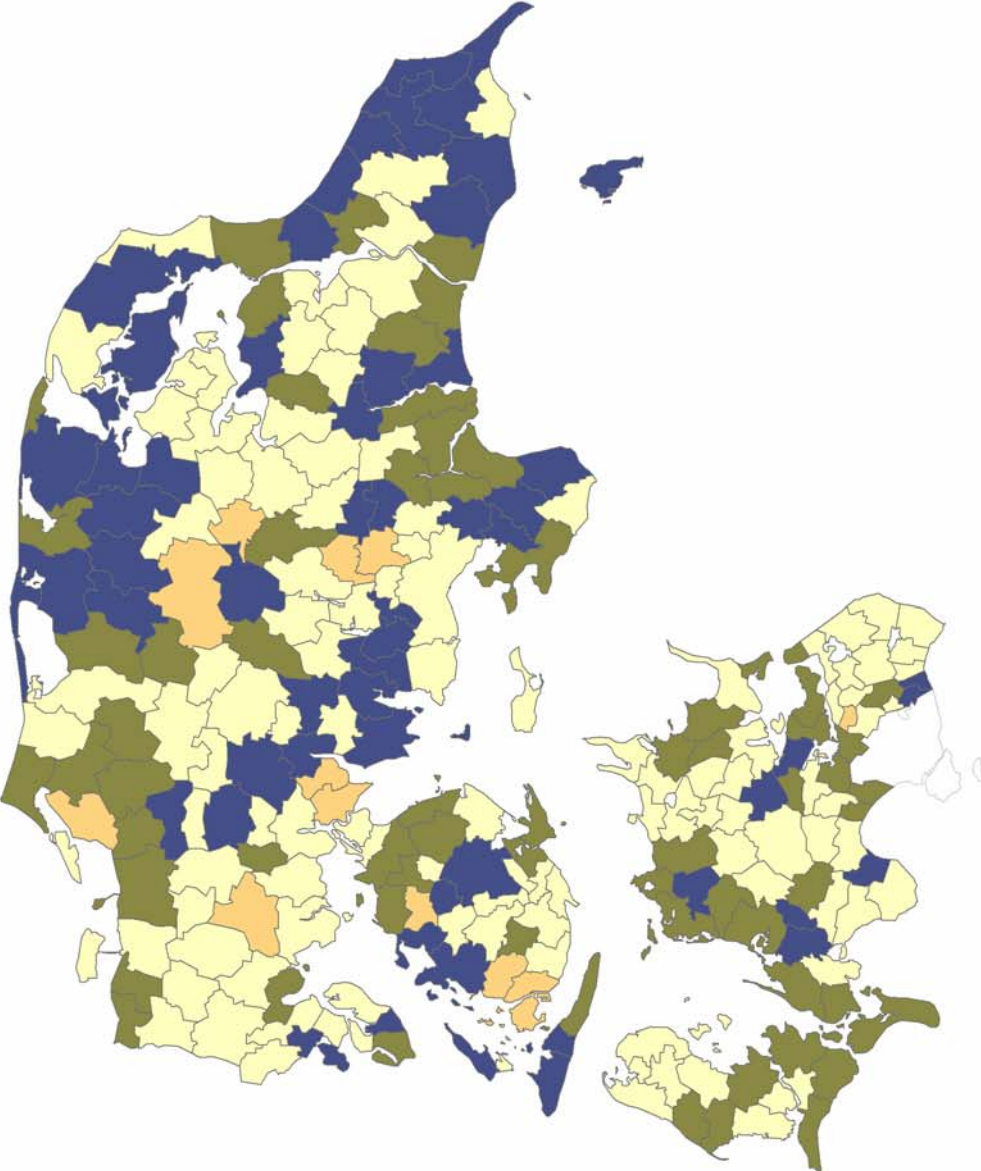
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# Typology change 1989- 1999

- 114 No change
- 69 Alternative pathway
- 60 Productivist
- 10 Internal change



## Conclusions 1989-1999

- No clear pattern of the development for three single dimensions *except for the specialisation- diversification dimension* - diversification is more widespread on Zealand
- Dispersion occur - a new trend for the period 1982-1989 no dispersion was observed, but no pattern
- 207 out of 255 regions have moved in the productivist direction (having 2 or 3 dimensions moved in this direction) - alternative development pathways are mainly seen on Zealand- little sign of new development trends
- The topology analysis show no clear development patterns (vague pattern), however an polarisation seems to occur with more regions in the extreme types in 1999