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The Typology of Rural Areas

and the Spatial Impact Assessment of (Rural) Policies

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In the presentation are used outcomes of the Expert Workshop on The Diversity of Rural Areas in the Enlarged Europe, IPTS, Seville, December, 14-15, 2006

Author's opinion – does not necessarily reflect opinions of the Commission

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Structure of the presentation

- Challenges and objectives of the research
- Delimitation of rural areas
- Regional diversity – various perspectives
- Typology of Rural Areas
- Spatial Impact Assessment
- Collaboration with MS

Rural diversity map. TR 2006

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Rural development policy

- Rural development policy under the Directorate General for Agriculture and Rural Development (DG AGRI)
- The new regulation (1698/2005)

Single Rural Development Fund

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Rural development policy

2007 - 2013
Rural Development Programme

<<LEADER Axis>>

Axis 1
Improving Competitiveness

Axis 2
Environment + Land Management

Axis 3
Diversification + Quality of Life

Single Set of Programming, Financing, Monitoring, Auditing Rules

Single Rural Development Fund

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Rural development policy

2007 - 2013
Rural Development Programme

- Axis 1 – focuses on modernisation of agricultural holdings
- Axis 2 – to assure production of non-commodities
- Axis 3 – goes beyond agriculture -> rural economy and society

- Implemented at the regional level:
 - selection from a menu of measures
 - particular combination of measures to fit with regional needs
- Diversity of measures and spatially differentiated implementation -> policy evaluation complex and difficult

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Policy evaluation

- Policy cycle provides a framework for policy evaluation (Midmore, 2006)

Agenda setting → Policy formulation → Policy implementation → Policy evaluation

Policy cycle, Anderson et al. 1978

- the zenith at the end of the policy cycle
- the other three phases are significant opportunities for
 - supportive analysis -> causal processes, changing environment, ex-ante policy assessment -> essential for policy formation
 - monitoring -> which indicators depends on the conception of causal relationships which policy is designed to affects -> data base for policy evaluation
 - formative evaluation -> when policy can be developed and changed

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JRC and RD Policy evaluation

Rbpts
Rural Business and Policy Studies

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- JRC mission: to provide Science Based Policy Support

Policy cycle, Anderson et al. 1978

- IPTS concentrates on socio-economic impact assessments
 - experience in agricultural sector analysis
 - commodity markets, trade, farm income, sustainable farming systems
 - rural development policy analysis is a new area – a response to a request of DG AGRI
 - support to the evaluation of the Axis 3
 - improving insight in governance of Axis 2 (and 3)

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Challenges of the Axis 3 Evaluation

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- Multi-sector (diversification into non-agricultural sectors)
 - eligible only "micro" businesses and small scale infrastructure integrated in "autonomous" (rural) economy – relatively large regions (e.g. NUTS3)
 - possibility to observe effects
 - variability of composition of businesses, conditions, factor endowments
- Which indicators?
 - socio-economic (income, employment, migration, availability and satisfaction with services)
 - other?
- Which spatial unit and up-scaling/aggregation of indicators?
- Target group for quality of life assessment
- Interaction with the other axes, Pillar 1 and other policies.

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Objectives of the research

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- The overall JRC objective to provide support to the assessment of RD policy (of DG AGRI) translates into three partial objectives
 - to provide a quality spatial (territorial) base for the RDP assessment:
 - exploring alternatives to existing OECD definition of rural areas (IPSC)
 - refining current (i.e. OECD) delineation and typology of rural areas including additional criteria like accessibility, High Natural Values (IES);
 - assessing characteristics of rural areas and providing clustering in "homogenous" groups of territorial units – creating a **typology of rural areas**. (IPTS)

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Objectives of the research

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- (Cont.)
 - to provide spatial impact assessment of (rural) policies:
 - providing definitions of indicators and methodologies how to deal with them incl. up-scaling/aggregation
 - socio-economic modelling** of functioning of rural areas (for Axis 3 - IPTS)
 - linking indicators and models (to provide SIA of RDP) (for Axis 3 – IPTS)
 - to study institutions and governance of rural development (IPTS)

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1. step

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- Goal: the Assessment of Performance and Processes
- more than in performance of recipients we (policy evaluation) are interested in performance and processes of a spatial unit (ASU)
- 1. step: identification and characterisation of ASU

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Current delimitation of rural areas

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OECD (1994) territorial scheme

- is used as the reference (the Community strategic guidelines for rural development, EC 2006)
- is based on population density in a two-level hierarchical approach:
 - local community level (LAU2)
 - regional level (NUTS3)
- Resulting in three classes of regions (NUTS3)
 - mostly/predominantly rural
 - significantly/ relatively rural
 - mostly/predominantly urban
- Dissatisfaction with the single criteria approach
 - sensitive to the size of the geographic unit (LAU2), and the choice of the thresholds,
 - heterogeneity of produced rural classes

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Alternative definitions of RA

Addressing the problem of LAU2 and NUTS3 and threshold (150 inhab./km²)

- JRC/IPSC: Urban = continuous area with local density >500 inhab./km² and a total population >50,000 inhab.
 - Local density estimated with a moving window of ~ 1 km².
- UK: Settlement morphology [sites <10000 inhab., village, town, disperse], Sparsity: average densities of households across areas of radius 10, 20 and 30 km is below a certain levels
- IE: Settlements ≤ 1500 inhab., ≤ 150 inhab./km²

There is rational behind the density criteria: social and economic activities depend on the concentration of *social and business actors /labour/consumers*.

Non population density definition:

- Area is Rural if more than X% of the territory belongs to Rural Land Cover Classes (Forest, Agricultural and Natural Land)

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Examples

Urban areas >50,000 inh. identified by a GIS automatic operation (IPSC, Agrifish, 2006)

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Accessibility and peripherality

Option 3 of SERA (SAC 2006)
⇒ Introduction of accessibility or peripherality as an additional determinant for delimiting rural from urban areas

- Accessibility described by many indicators such as distance, perceived distance, travel time, travel cost, daily accessibility, etc.
- Scarce data availability at high resolution, complexity of the indicators, multi-modal accessibility modelling

Category	Peripherality	Sub-categories	Code
Deep rural	< 100	Deep rural - peripheral	DRP
	> 100	Deep rural - accessible	DRA
Intermediate areas - limited urban influence	< 100	Intermediate areas limited urban influence - peripheral	IAP
	> 100	Intermediate areas limited urban influence - accessible	IAA
Intermediate areas - significant urban influence	< 100	Intermediate areas significant urban influence - peripheral	IAP
	> 100	Intermediate areas significant urban influence - accessible	IAA
Mainly urban	N/A	Mainly urban areas	MU

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The diversity of EU regions

- Using a neutral definition (such as OECD) rural regions differ in a number of characteristics
- Resource endowment
 - Demographic structures, labour, human capital
 - Natural resources
 - Natural values and environmental sensitivity
- Infrastructure/structure
 - Social
 - Business
- Stakeholders and their relationships (social capital)
- Drivers (as external economy performance, policies)
- Performance
 - Income, employment, growth
 - Social inclusion of inhabitants, migration in and out
 - Environmental - pollution/conservation

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Structuring characteristics

- The characteristics are represented by indicators
- We are interested in the relationships between indicators (variables)
 - some explain the other, other are interlinked
 - performance depends on "structural" and "conduct" characteristics
 - policies address some of the structural and conduct characteristics
 - the performance is set of characteristics/variables – often unable to optimize all of them
- A need for a framework

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Economic development of RA

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The need for a typology

- Assessment difficult/complex if all variables are regionally specific and models are regionally specific;
- also problem of interpreting results (comparison, aggregation).
- => **Need for grouping rural areas in a low number of "homogeneous" regions**
- the typology should be policy relevant and will always be assessment perspective specific
 - the conceptual framework of the assessment will determine the typology
 - but are there classes of policies and assessment perspectives (frameworks) for which a typology will be universal/common?
- the typology should be strictly built only on structural and conduct characteristics, or should not?
 - will not it create problems with interpretation?
- Characteristics (bio-physical, social, economic) have different spatial scales => compromising for resulting typology

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Conceptual approach (SENSOR)

Spatial Regional Reference Framework (SRRF)
NUTSX level = a combination of NUST2 and NUTS3

Primary Spatial (Landscape) Structure

- bio-physical variables:
 - climate (LANMAP level1)
 - topography (LANMAP level2)
 - parent material (LANMAP level3)

Secondary Spatial (Landscape) Structure

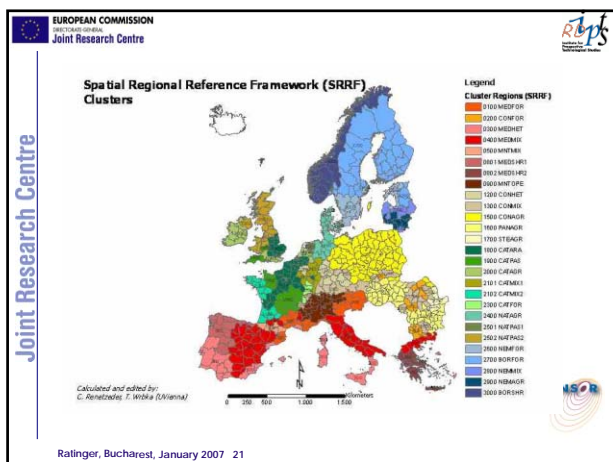
- socio-economic variables:
 - Corine LC (LANMAP level4)
 - population density in 2003
 - population annual change rate 1998 – 2003
 - activity rate
 - index of GDP in PPS/active in €
 - unemployment rate
 - FUAs with > 500000 inhabitants; population in thousands

Cluster-Analysis

aggregated SRRF-clusters

Source: Perez Soba, 2006

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Spatial Assessment of Performance

- Spatially differentiated impact of (rural) policies and development trends
- Change over time =<= development assumes dynamics of a system/RA
- Before we do Spatial Impact Assessment of policies we need to understand how RA function
- A range of modelling techniques:
 - qualitative; trend analysis; cost-benefit a.; econometric market models; mathematical programming; multi-criteria analysis, I-O analysis; CGE analysis
 - suiting perspectives; for multi-criteria, multi-sector, development dynamics and spatial differentiation we need a combination of them => **integrated assessment framework**

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Modelling approaches

- Social Accounting Matrix**
 - Regional models
 - Scope: multiple economic and social sectors
 - Simplicity: structure and linear behaviour
 - Data: some is often available (e.g. regional accounts); techniques (e.g. GRIT) for data generation
 - Software: spreadsheet or equivalent
 - Can show how Policy X has different effects in different regions
- Computable General Equilibrium (CGE)**

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A Typical SAM

	Sectors (Ag., etc.)	Capital	Labour	Households	Firms	Govt.	Rest of World	Invst.	Income
Sectors (Ag., etc.)	Intermed. Consump.			Cons.		Cons.	Exports	Invst.	Sales
Capital	Rents					Subs.	Profits from RoW		Rents
Labour	Local Wages					Subs.	Out-Commuter Wages		Wages and Salaries
Households			Payments to Hhds.	transfers	interest etc.	Transfers	Transfers from RoW		Househd. Income
Firms		Profits							Firm Income
Govt.	Taxes			Taxes	Taxes		Transfers from RoW		Govt. Inc.
Rest of World	Import'd Inputs	Profits to RoW	In-Commuter Wages	Transfers to RoW	Transfers to RoW	Transfers to RoW			Row Income
Savings				Savings	Savings	Savings	Savings		Savings
Expend.	Gross Productn. Value	Total Profits	Total Wages	Total Expend.	Total Expend.	Total Expend.	Total Expend.	Invst.	

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Source: Thomson, Psaltopoulos, 2006

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Modelling approach

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- Systems approach – STELLA model – TOPMARD project
 - Visual implying easy to use for people who are not necessarily 'modellers'
 - Designed for learning and creates a learning process
 - Can easily communicate with different disciplines and with end-users
 - Can handle qualitative and quantitative elements/data
 - Considers dynamics and feedback processes
 - Regional economics represented by SAMs
 - Linked case studies to get the EU perspective

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The Stella model – preliminary (TOPMARD)

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Bryden, Reisgard, 2006

TOP MARD

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Conclusion

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- Complex research – even the original purpose has been to have an instrument for evaluating "tiny" Axis 3
- a lot of research has been carried out, but mostly either investigating a particular measure or RDP from a particular perspective or in a couple of particular regions
- the task is to integrate them and develop a framework
- JRC looks for collaboration with MS in this direction
 - collaboration with researchers and research institutions from the NMS and CC is essential (JRC/IPTS call at www.jrc.es – so called AMI list, visits, etc.)
 - Establishing research networks (the December workshop in Seville might be a good step forward – <http://safh.jrc.es>; research projects (FARO EU (FP6), the new FP7)

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- Thank you
- <http://safh.jrc.es>

Rural diversity map. TR 2006

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