

Between capital investments and capacity building—Development and application of a conceptual framework towards a place-based rural development policy



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ABSTRACT

Within the debate about rural development policy (RDP), there has been increasing call for a stronger territorial focus emphasising the potentials, resources and demands of regions. Investments in territorial capital and regional capacity building have been considered as the two main cornerstones of a place-based approach to rural development (OECD, 2006). On the basis of an analytical literature review, we developed a framework to operationalise a place-based approach of RDP. In the proposed framework, the two cornerstones are further subdivided into six topics: “territorial capital” is broken down into physical, human, natural capital, while “capacity building” encompasses modernisation, restructuring and stabilisation of existing territorial assets. Regional RDP expenditure data for the years 2007 to 2011 are used to test the empirical validity of the framework, explore the regional implementation patterns of RD measures and their spatial distribution across European regions. A cluster analysis was applied to identify groups of EU regions with similar settings of RD priorities. In more than half of the regions either natural capital investments or stabilisation represent the dominant priority. Other regions make broader use of rural development topics and are able to combine different ones in their programme designs. The spatial heterogeneity observed in expenditures allocated to the different rural development topics is interpreted as evidence of the place-based character of the EU RD policy. The intervention of various authorities in the programming of RD policy (EU, Member State and regional), as well as the fact that spending ultimately depends on the voluntary uptake of the measures by individual rural actors are discussed as the important factors explaining this heterogeneity.

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Introduction

The European Rural Development (RD) policy has been introduced as the second pillar of the Common Agricultural Policy (CAP) to widen the focus from solely supporting farmers to a sustainable development of the rural area as a whole (Council Regulation 1257/1999). Since the 2005 reform, every Member

State (or regional authority at programming level) sets out a rural development programme (RDP) specifying what funding will be spent on which measures in the programming period, among the measures proposed in the European regulation on support for rural development by the European Agricultural Fund for Rural Development (EAFRD). For the period 2007–2013, RDPs were structured along three sectoral axes: (i) improving the competitiveness of the agricultural and forestry sector; (ii) improving the environment and the countryside; (iii) improving the quality of life in rural areas and encouraging the diversification of the rural economy (Council Regulation 1698/2005). The complementary LEADER measures involve highly individual projects designed and executed by local partnerships to address specific local problems. The policy is co-financed by the central EU budget and individual Member States' national or regional budgets.

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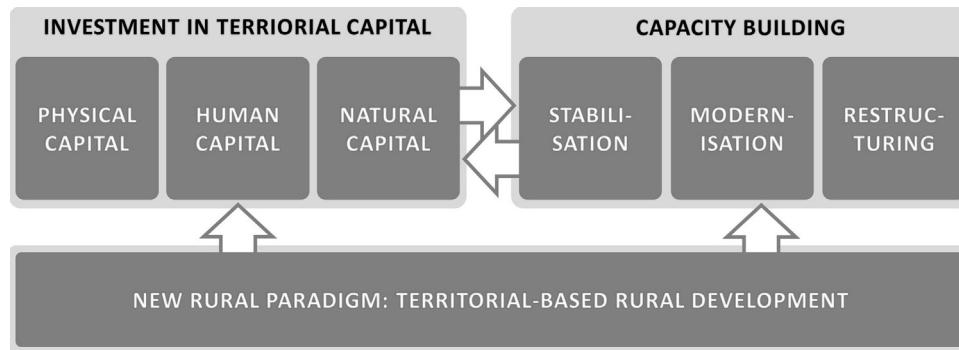


Fig. 1. Understanding place-based rural development as a result of capital investments and capacity building. Own illustration.

However, critics argue that RD programming does not take regional needs and potentials fully into account (Shucksmith et al., 2005; Copus and Dax, 2010). The call for a stronger territorial focus emphasising the role of regions and their endogenous capabilities is nothing new (van der Ploeg and Long, 1994; Richardson, 2000). According to several authors, a stronger regional focus could help to more efficiently respond to driving forces, such as the cost-prize-squeeze in agriculture, growing environmental concerns or the occurrence of new urban demands (Zasada, 2011; Horlings and Marsden, 2012). The insufficient connection with spatial criteria to target the need of specific places is already rooted in the often horizontal, less targeted construction of the measures (Shucksmith et al., 2005). Furthermore, there is a spatial incongruence between the often large programming level units and the small-scale regional requirements and knowledge, such as in the case of peri-urban areas (Zasada et al., 2011). Even the measures that include spatial criteria, such as agri-environmental measures (AEM) which focus on water catchment areas or to the NATURA 2000 network, have limited cost-effectiveness and lack targeting as a consequence of budget allocation and co-financing considerations by the RD policy programming authorities (Uthes and Matzdorf, 2013). The LEADER initiative, however, is seen as a positive example, as it considers the regional level to be the most effective to make strategic decisions, building on endogenous knowledge to make better use of available regional resources (OECD, 2006; Dwyer et al., 2007).

With the thematic axes of the RDP period 2007–2013 inevitably a sectoral separation of administrative competence, responsibility in planning and setting of funding objectives within the programming and monitoring process was given. By exchanging the three axis structure through six priorities to which EU Rural development measures for the period 2014–2020 are supposed to contribute, a more integrated design with at least partially cross cutting themes has been put into force. Still, more policy focus is required on places instead of sectors (and axes), acknowledging the heterogeneity of rural regions as complex economic, cultural and natural location (Richardson, 2000; Shucksmith et al., 2005). This is in line with OECD recommendations which promoted a paradigm shift in rural development in response to the observed heterogeneity of challenges for rural regions. The OECD calls for a place-based approach with stronger emphasis on investments and the valorisation of local assets (OECD, 2006). The European Spatial Development Programme (EC, 1999a) and the Territorial Agenda of the European Union (EC, 2011) have also highlighted the need for regional cooperation and dialogue between stakeholders for investments in infrastructure, improvements in ecological structures and cultural value to be able to use these regional resources. Finally, balanced territorial development is a key objective of rural development in CAP post 2014 (EC, 2013).

The first objective of this paper is to develop, on the basis of an analytical literature review, a conceptual framework for a place-based understanding of rural development policy (RDP). The framework development aims at providing a perspective, which takes into account the nature of rural development as either investing in territorial capital or building up capacities to valorise their potentialities, and thus highlighting the complementarity of both aspects (Section 2). The second objective, addressed in Section 3, is to test the conceptual framework and identify RD priorities of EU regions, with expenditure data from RD 2007–2013 programmes. The third objective is to analyse whether EU regions can be classified in groups, according to developed RD policy framework. Therefore a statistical cluster analysis is carried out in Section 4. As a conclusion, the general applicability of the conceptual framework is discussed, as well as recommendations for place-based approaches to RD policy are provided.

Conceptual framework: The rural development policy as investment in territorial capital and capacity building

Investments in territorial capital and regional capacity building have been considered as main cornerstones of a place-based approach to rural development (OECD, 2006). Still, it requires a more detailed elaboration of these two concepts to identify the links to specific RD policy and measures. In this section, we propose a subdivision of “territorial capital” and “capacity building” into thematic topics, drawing on existing theoretical concepts and debates from various disciplines. Fig. 1 provides an overview of the develop conceptual framework, its two cornerstones and six thematic topics, also shedding light on their complementarity.

Regional assets: The concept of territorial capital

Territorial capital represents “the amount and intertwinement of different forms of capital (or different resources) entailed in, mobilised and actively used in (and reproduced by) the regional economy and society” (van der Ploeg et al., 2009, p. 13). However, there are different interpretations and terminology of territorial capital. Porter (1998) refers to assets as factors for national and regional competitiveness, whereas others highlight the relevance of assets from the development perspective of rural areas and communities (Ceccato and Persson, 2003; Emery and Flora, 2006). The community capital framework has been used by the Food and Agriculture Organization (FAO) to operationalise the concept of sustainable rural livelihoods (Vargas, 2010). Although political, financial and social factors (Emery and Flora, 2006) or more soft and intangible aspects (Ceccato and Persson, 2003) have been taken into consideration, all approaches share the important commonality of the relevance of (i) physical capital, (ii) human resources and (iii) natural capital for (rural or regional) development and

competitiveness. Therefore, we focus on these three topics to operationalise the concept of “territorial capital” (Fig. 1). According to Swagemakers et al. (2012), those regional assets indirectly support regional development, but require constant reinvestment (Porter, 1998). It can be therefore considered the ‘hardware’ of rural development. Our paper incorporates the different terminologies of “assets”, “resources” and “factor endowments” as they are used in literature, but refers to the notion of territorial capital throughout.

Based on the definition of built capital by the FAO, physical capital is defined as the human-made infrastructure, which mainly encompasses investments in immovable and durable production properties or built-up structures like rural housing, transportation and communication infrastructure, but also technical facilities for flood protection or other natural disasters (Vargas, 2010). Investment in physical infrastructure promotes rural and regional development in different ways. It can improve the basic infrastructure for rural communities and agriculture. It contributes to employment and the productivity of the rural economy as well as to regional convergence. Physical capital reduces costs for economic agents to access urban markets, knowledge (Lakshmanan, 2011) and the global economic network (Anderson, 2000). It further enhances the interconnectedness of the individual economic agents and generates economies of scale. Other physical capital, such as rural housing, increasing the quality of life in rural areas, or disaster prevention, reduce financial risks of economic activities and improving regional resilience (Hill et al., 2012). Last, not least, investments in physical infrastructure often require extensive spending and are thereby able to induce job creation and economic growth in that rural area. In the EU, RDP investments in physical capital include infrastructure, basic rural services, building renovation and restoring the production potential (after disasters).

Human capital in this article is referred to in a broad sense, which includes the skills and education of the labour force, cultural and social capital. When defined narrowly as the availability of a skilled labour force (Gennaioli et al., 2013), human capital was found to be a substantial factor in regional development as it contributes to the regional knowledge base and supports innovation processes (Krugman, 1991), entrepreneurship and productivity (Gennaioli et al., 2013), and therefore income generation (Becker, 1964). Given the emigration and ageing of population in the more peripheral rural areas, it is also important to take into account the demographic dimension of human capital. Cultural assets represent a second dimension of human capital, which are essential to account for the role of local traditions and identity. In conjunction with the local environment, cultural assets are important as unique selling points (Dwyer and Findeis, 2008) and the regional development as a whole (Danielczyk and Wood, 2001). Furthermore, based on Bourdieu’s criticism of the economic terminology of human capital (Bourdieu, 1986), other scholars (e.g. Putnam, 1993; Fukuyama, 1995) made a clear distinction to social capital by referring to social interactions and networks, social norms and trust, institutionalised through civic organisations. Social capital can stimulate development and economic growth in rural areas by reducing information and transactions costs, as well as promoting knowledge transfer (Fukuyama, 1995; Woolcock and Narayan, 2000). In the EU RDP, support for investments in human and cultural capital includes a high diversity of measures to maintain a balanced age structure in the farming community, to stabilise the immigration and emigration balance to and from rural areas, training, consulting and information services on the cultural heritage and the enhancement of networks in rural areas through the LEADER approach.

Finally, natural capital plays a dominant role for the welfare and competitiveness of rural areas. It has a crucial role in the production of food, bio-energy, and extracting raw material, but also increasingly for the provision of ecosystem services, such as carbon sequestration, habitat conservation or recreation (MA, 2005;

TEEB, 2010). Endowment, maintenance and investments in natural capital assets are considered “key pillars of place-based policies for rural development” (OECD, 2006, 14). They help in “connecting the two other types of capital to a specific geographic setting and facilitating the relationship among people” (Vargas, 2010, 69). The attractiveness of landscapes and natural heritage has been found to be the main driver for restructuring the rural economy through diversification of farming activities, place marketing and tourism (Marcouiller et al., 2004; Courtney et al., 2006; Pfeifer et al., 2009; Lange et al., 2013). In the EU RDP, investments in natural capital are supported by afforestation, agro-forestry and agri-environmental measures. These are either directed to the provision of landscape features and diversity or as in the case of integrated, extensive or organic farming systems maintain or enhance good agri-environmental conditions and ecosystem functioning through crop and soil management practices.

Capacity building: Valorisation of territorial assets

Along with the investments in territorial capital, the second main element of the place-based approach to RD policy is the ability to valorise the local resources, such as natural amenities, cultural heritage or infrastructural equipment. The ability to effectively and efficiently exploit factor endowments is decisive in generating competitive advantages for the regions. In particular, the interaction and mobilisation of certain domains of regional rural development, including innovation (new practices and products), market governance (institutional capacity to interact with markets) and new institutional arrangements (institutional capacity to support stakeholder cooperation) are considered influential for rural change in the New Rural Paradigm (van der Ploeg and Marsden, 2009; Horlings and Marsden, 2012). Based on these approaches of capacity building, the conceptual framework developed here proposes a decomposition into three strategic pathways: (i) to stabilise and support of backward regions; (ii) to modernise agricultural commodity production and vertical integration of the value chain and (iii) to restructure and diversify economic activities in the rural areas as a whole in conjunction with the local environment (Fig. 1).

Stabilisation measures are aimed at continuing agricultural and forestry activities, farm survival and the maintenance of population in rural communities which are often highly dependent on agricultural activities. Some rural areas, defined as “less favoured areas” (LFA), face low productivity of agricultural land and therefore lower incomes and higher vulnerability of rural livelihoods (Buchenrieder and Möllers, 2009). Stabilisation measures mainly include support schemes to enable the economic agents based in these areas to cope with disadvantaged conditions, such as in mountainous regions, areas with specific handicaps or other less-favoured areas, as defined in Council Regulation 1257/1999. Stabilisation also covers support schemes for agents subject to environmental legislation limiting resource exploitation through economic activities or who have difficulties complying with community standards and supporting semi-subsistence farmers. Safeguarding the existence of farming systems in LFA regions is seen as vital in providing ecosystem services attached to agricultural land, such as the visual quality and recreational values of farmed landscapes or conservation biodiversity dependent on cultivated crops or livestock.

Modernisation is seen as a second way to improve the valorisation of territorial capital. RD measures focusing on the modernisation of agricultural production enable rural economic stakeholders to make better use of natural resources (e.g. through investments in machinery allowing increases in productivity) to establish new processes or products, such as organic or integrated production, quality products or products with protected designation of origin. It helps to improve the vertical integration of the agricultural activities and the re-territorialisation of the value

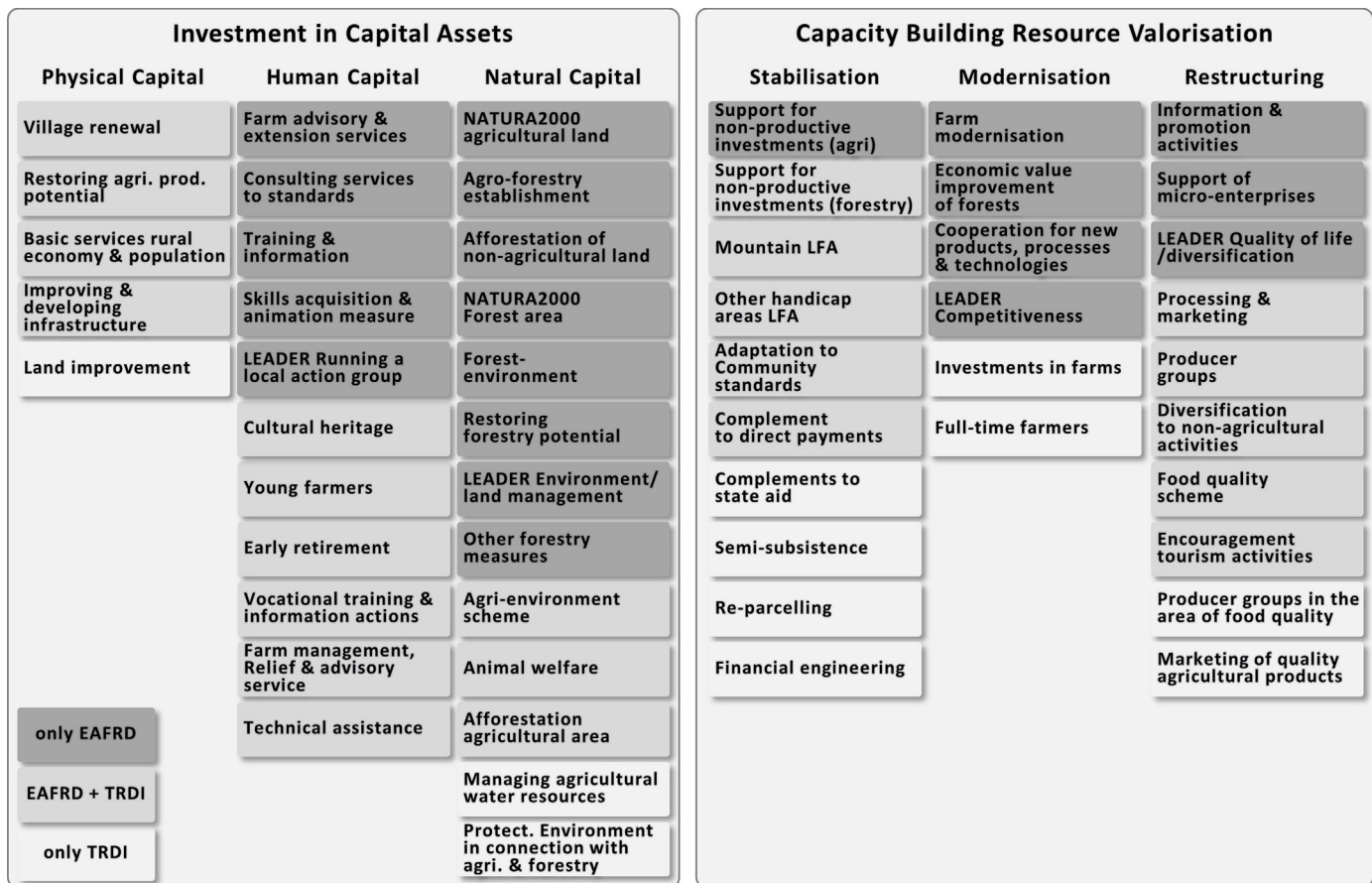


Fig. 2. RDP measures and rural development topics. Source: own illustration.

chain. Modernisation aims to increase productivity and the income of the individual economic unit, but also to improve co-operation.

Restructuring and broadening of the rural economy beyond pure commodity production is driven by the need to compensate revenue reductions from traditional agriculture and to generate extra income. It consists of establishing new activities and new rural goods and services demanded by (urban) society, such as the diversification into the equine, tourism (Hjalager, 1996) or social care sectors (Di Iacovo and O'Connor, 2009). However, this approach is strongly dependent on the abundance of environmental amenities (Pfeifer et al., 2009; Lange et al., 2013), the socio-economic conditions of the region and especially proximity to urban and metropolitan areas (Zasada, 2011). In the next section, we test the empirical validity of the framework by exploring the regional implementation patterns of RD measures and their spatial distribution across European regions.

Implementation pattern of rural development topics

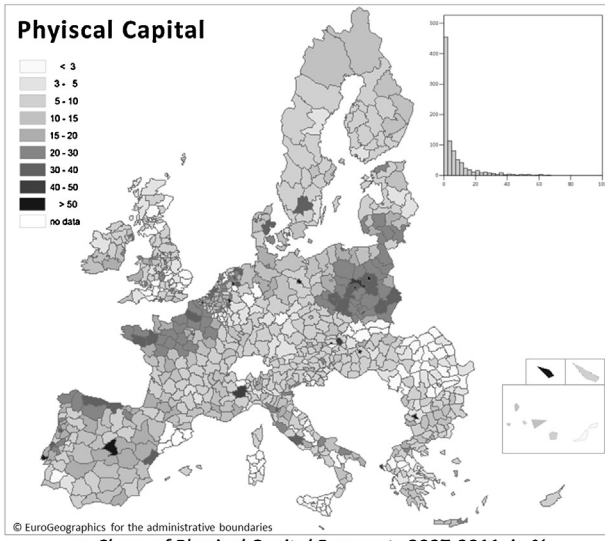
To test the empirical validity of the framework, regional funding data for the EAFRD and Temporary Rural Development Instrument (TRDI) funds from the Clearance of Audit Trail System (CATS) database for the years 2007 to 2011 were used. We explored the implementation pattern of RD measures in terms of regional expenditure and spatial distribution across European regions. Despite its well-known limitations (missing data although officially requested, not systematically crosschecked against other sources as well as declarations, measurement and reporting issues by beneficiaries and programming authorities), the CATS database provides good regional and temporal coverage to explore the allocation of RDP

funding in detail. In total, payment data per measure code for 43 EAFRD and 32 TRDI measures for 878 individual regions have been included in the analysis¹. The study was carried out at NUTS3 level, except for Germany where we used NUTS2 data, to avoid the inclusion of very small regional units and hence any overbalance of German regions in the analysis, due to the high number of NUTS3 regions. Since this level of observation is more precise than the programming level (usually at province or member state level), it allows us to take into account differences in allocation of RDP funding within programming units.

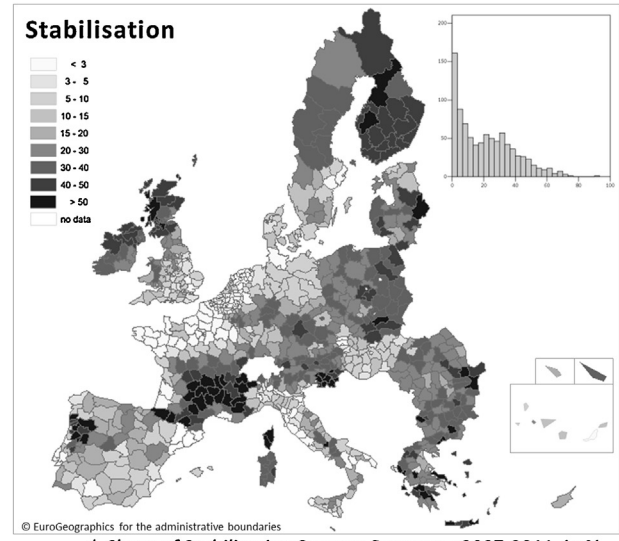
In order to apply this conceptual framework, each of the 75 RD measures from the CATS database was classified with one of the six RD topics (seamless and non-overlapping) (Fig. 2). This classification was based on the description of the measure's rationale and content outlined in the evaluation guidance note E—measure fiche (EC, 2006). Table 1 indicates the relative importance of these measures within each topic. All payments for the five years from 2007 to 2011 are aggregated for each region and represented as shares of total rural development funding, making the variance of regions RD design visible. Fig. 3a–f provides an overview of regional value distribution of individual payment shares across European regions.

At 38.7%, investments in natural capital account for the highest funding share among all six RD topics. Along with

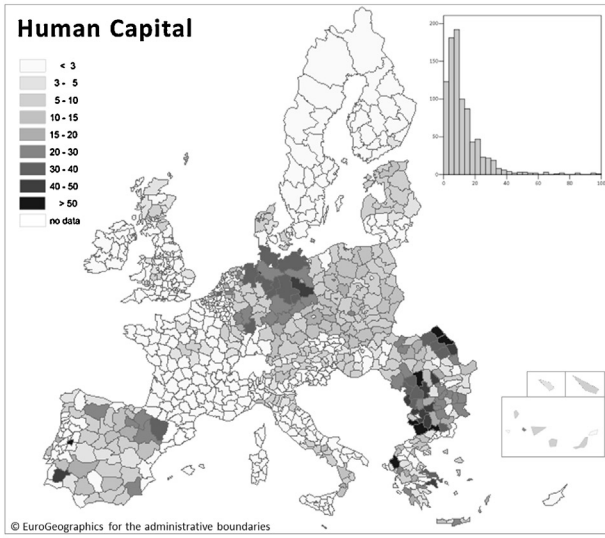
¹ The French overseas departments of Guadeloupe, Martinique, Guyana and Reunion as well as Spanish regions of Ceuta and Melilla have not been included here. Furthermore, the Spanish province of Cataluña has been taken out of the analysis as data for two of four NUTS3 regions is missing. In the case of Sardinia, a small payment share (<0.03%) could not be correctly allocated. The database refers to the beneficiary address. Where the area of funding is located outside the beneficiary's home region, payment figures were allocated to the latter region.



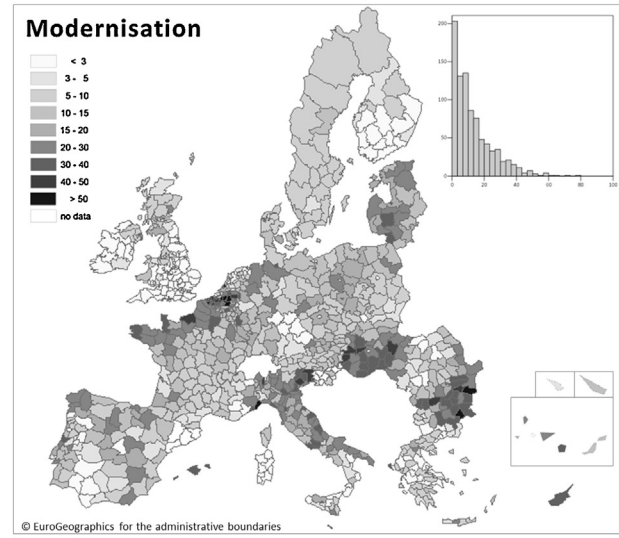
a. Share of Physical Capital Payments 2007-2011, in %.



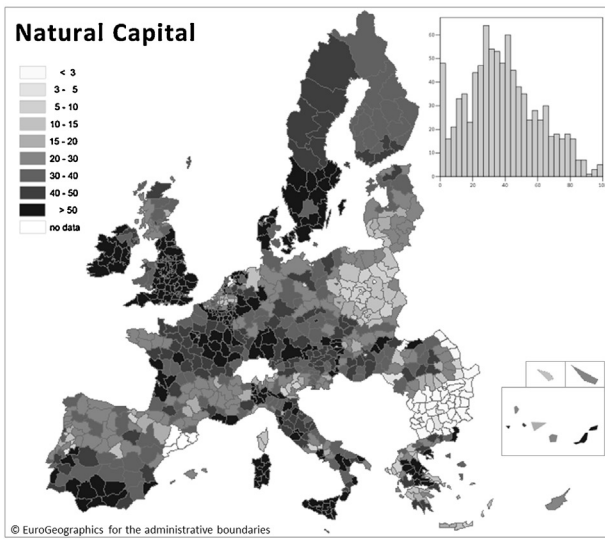
d. Share of Stabilisation Support Payments 2007-2011, in %.



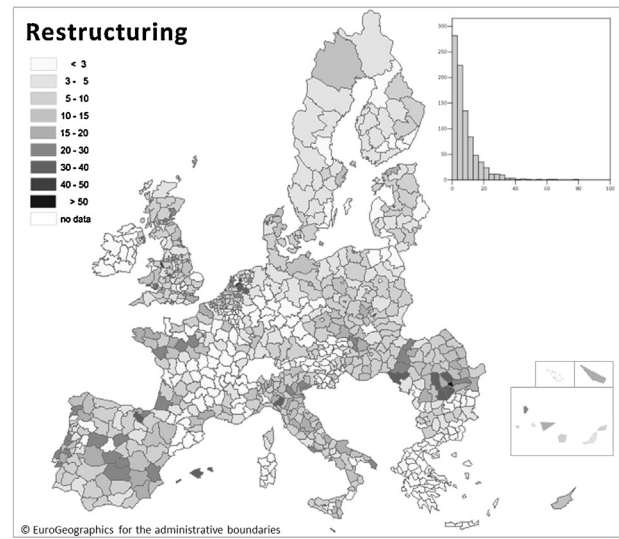
b. Share of Human Capital Payments 2007-2011, in %.



e. Share of Modernisation Support Payments 2007-2011, in %.



c. Share of Natural Capital Payments 2007-2011, in %.



f. Share of Restructuring Support Payments 2007-2011, in %.

Fig. 3. (a)–(d) Regional distribution of rural development topics. Source: own illustration.

Table 1
Descriptive statistics and value distribution of RD topics in 878 regions.

RD topic	Mean regional share of RD funding (%)	Std. dev.	Most important measures (medium value within topic)
Investment in territorial assets			
Physical capital	6.5	10.4	Infrastructure for agri./forestry (41%); basic services (31%); village renewal (24%)
Human capital	12.4	12.3	Young farmers (37%); LEADER (18%); rural heritage (10%)
Natural capital	38.7	22.1	Agri-environmental measures (84%); afforestation (6%); restoring forestry potential (4%)
Valorisation support			
Stabilisation support	21.3	17.7	LFA others (35%); LFA mountain (33%); non-productive investments (11%)
Modernisation support	13.0	12.3	Farm modernisation (90%); economic value of forest (4%); LEADER competitiveness (4%)
Restructuring support	7.9	8.6	Added value creation (53%); diversification of farm holdings (18%); tourism development (13%)

agri-environmental schemes (AES), support for management or NATURA2000 areas, afforestation, agro-forestry or the management of water resources and animal welfare represent the range of measures with natural capital objectives (Fig. 2). However, AES represent the most important individual measure in this group, covering an average of 84% of natural capital funding. Nevertheless, there is also a broad variance of shares across all regions. As Fig. 3a shows, very high values (>50%) are found in regions, such as the British Isles where extensive grassland management dominates or in environmentally sensitive regions, such as Scandinavia or some parts of the Mediterranean basin. But also prime agricultural areas, such as the North of France, invest in natural capital.

Under physical capital, which supports investments in village renovation, infrastructure and basic services for population and economy are combined with improving and restoring agricultural production potential. In terms of funding physical capital, the situation looks very different. But despite the investment intensity of infrastructure, this funding topic only accounts for an average payment share of 6.5% as shown in Table 1. In general, a skewed value distribution is found. Many regions, especially in north-western Europe exhibit very low or zero values, whereas investments in infrastructural assets, especially for transportation and agricultural production potential, are more relevant in central-eastern and southern Europe. However, funding shares rarely exceed 20–30% (Fig. 3b).

In combined investments addressing a balanced demographic structure (young farmer and early retirement schemes), education (training and skill acquisition) and knowledge brokerage (farm advisory services, technical assistance), European regions invest about 12.4% in human capital. The young farmer schemes are particularly prevalent here (Table 1). The spatial pattern, however, is rather scattered. High values above 20% are found in some eastern European regions (Lithuania, Poland) where the demographic situation of the farming community is an important issue. But particularly high values are also found in the Netherlands, northern France, Spain and in metropolitan regions, such as Berlin, Bratislava, Warsaw and Madrid. In contrast, many regions in the UK, southern Germany, Italy, Belgium or Slovakia exhibit very low values (Fig. 3c).

Support for less-favoured areas (LFA), adaptation to community standards, semi-subsistence and payments for non-productive investments are some typical measures defined here as stabilisation support (Fig. 2). At 21.3%, these account for the second-largest funding share. Due to the importance of LFA schemes in this topic (68%), particularly in marginal regions, such as in Scandinavia, eastern Europe, Scotland and Northern Ireland, mountainous regions, like the Massif Central and some Mediterranean regions, the focus is on continuity of primary production and stability of often remote rural communities. In these regions more than half of RD funding is often used for this objective. On the other hand, in intensive agricultural regions like Northern France or the

Benelux countries stabilisation payments are very low, as Fig. 3d indicates.

The funding topic modernisation support, mainly covers measures aimed at strengthening the competitiveness of the primary sector through modernisation, investment in farm holdings and the introduction of new products, processes and technologies (Fig. 2). There is a broad range of regions with a share of 10 to 30% among the topic, although in some regions in Belgium, northern Italy, Hungary and Bulgaria the share of RD funding can exceed 50%. It is given a low priority in the UK and Ireland, but also in parts of Finland and scattered areas around the Mediterranean. These often peripheral regions follow a natural assets or stabilisation pathway (Fig. 3e).

The restructuring topic represents the least important capacity building-oriented RD funding themes with an average payment share of 7.9% (see Table 1), despite a broad range of different measures including support for micro-enterprises, promotion activities, producer groups, food quality schemes and, in particular, diversification of farming and forestry. In many regions, the number of payments apportioned to structural changes in the primary sector is very low. This RD measure is more frequently implemented in Spain, Italy and in western France. These countries and regions are experienced in regional marketing through PDO and PGI schemes. Regions in Romania and the Netherlands also have higher shares of restructuring support. Nevertheless, their value rarely exceeds 30% (see Fig. 3f).

Regional rural development clusters

A cluster analysis was then applied to identify different types of regions sharing similar RDP designs. The aim of the cluster analysis is to statistically delineate these groups and to obtain an easily reproducible hierarchical structure with homogeneous groups. An agglomerative hierarchical clustering method with Euclidean distance was used to comply with the requirements of the number of cases and the interval-scale variable structure (Backhaus et al., 2008). For validation of the clustering results, the Minkowski metric was applied to an alternative distance measure (Day and Edelsbrunner, 1984). The hierarchical clustering method is gradual, starting with the individual objects (in this case, the regions) and combining two clusters based on their minimal internal cluster variance. The optimal number of clusters is then a function of the gradual development of the error sum of squares. The approach by Ward (1963) considers the error sum of squares as an internal measure of heterogeneity to define optimal classification. It has been checked for an inter-correlation between the different funding topics in an acceptable range, that variable value distribution was comparable and for the absence of significant outliers. The statistical analysis was conducted with the SPSS 12 software package.

Table 2
Definition of regional clusters by RD topic representation and homogeneity. Source: own calculation.

Cluster No.	n Regions	Representation of RD topic (<i>t</i> -value)					
		Physical capital	Human capital	Natural capital	Stabilisation	Modernisation	Restructuring
Base cluster 1 overrepresentation of stabilisation (<i>n</i> = 260; 29.6%)							
1.1 ^a	41	-0.5**	-0.4**	-0.8**	2.4*	-0.6**	-0.7**
1.2 ^a	57	-0.5**	-0.3*	-0.3**	1.4**	-0.5**	-0.4*
1.3 ^a	82	-0.4**	-0.4**	0.3*	0.7**	-0.5**	-0.6**
1.4 ^a	80	0.3*	0.0	-0.2**	0.4**	-0.3*	-0.2*
Base cluster 2 overrepresentation of natural capital (<i>n</i> = 199; 22.7%)							
2.1 ^a	84	-0.5**	-0.7**	1.9**	-0.8**	-0.8**	-0.3*
2.2 ^a	49	-0.4**	-0.5**	1.0**	0.0**	-0.7**	-0.5*
2.3 ^b	66	-0.4*	0.0	1.1**	-1.0**	-0.1*	-0.2*
Base cluster 3 underrepresentation of stabilisation (<i>n</i> = 245; 27.9%)							
3.1 ^a	42	0.0	0.5*	0.1*	-0.9**	-0.5**	1.7
3.2 ^a	5	-0.6**	0.8	-1.4**	-0.8*	-0.6*	6.0
3.3 ^b	86	-0.2*	0.0	0.3**	-0.6*	0.5*	0.0*
3.4 ^b	19	-0.3**	4.5	-1.1*	-1.1*	-0.8**	0.2
3.5 ^b	24	-0.5**	1.7*	-0.6*	-0.9**	0.9*	0.4*
3.6 ^b	8	-0.5**	0.0*	-1.2**	-1.0**	4.1*	-0.1*
3.7 ^c	61	-0.2*	0.0	-0.5**	-0.8**	1.8*	0.8*
Base cluster 4 underrepresentation of natural capital (<i>n</i> = 174; 19.8%)							
4.1 ^b	18	4.4*	-0.5**	-1.5**	0.1*	-0.4*	-0.2*
4.2 ^b	31	2.5*	-0.3*	-0.5**	-0.4*	-0.2*	-0.2*
4.3 ^b	30	0.5*	0.0*	-1.3**	1.4*	0.1*	-0.5*
4.4 ^c	45	-0.1*	-0.1*	-0.8**	0.2**	0.7*	0.8
4.5 ^c	26	1.1	-0.5**	-1.7**	0.5**	1.6*	0.4
4.6 ^c	24	0.4*	1.3	-1.3**	0.6*	-0.2*	-0.1*

* *F*-value (cluster homogeneity) ≤ 1.0 .

** *F*-value ≤ 0.1 .

^a Fully.

^b Partly.

^c None (confirmation by alternative clustering method).

The first step in the cluster analysis was to identify the four groups of regions, revealing the “mainstream” rural development funding trajectories: (i) overrepresentation of stabilisation; (ii) overrepresentation of natural capital; (iii) underrepresentation of stabilisation; (iv) underrepresentation of natural capital. The strong influence of stabilisation and natural capital topics to build the cluster is explained by their importance in terms of share of total RD funding (59.9% of the total RD funding). To obtain a more differentiated picture of variances in regional RD profiles, 20 clusters, which are hierarchically related to the four main-clusters, were defined by the representation of the particular topic (*t*-value) within each cluster (Table 2). Positive values indicate over-representation and negative values represent under-representation in the cluster. The *F*-value measures variable homogeneity (RD topic) across regions of one specific cluster. *F*-values above 1.0 indicate large variation which limits the significance of the variable representation.

To validate the identified clusters, the results were compared with findings obtained by the application of Ward cluster methodology using an alternative distance measure, which confirmed the four cluster method, but showed differences to Euclidean distance method. Using this validation process, 9 “solid” out of 20 clusters showed full matches. An additional seven clusters exhibit similarities between the two methods, whereas regions in four clusters were allocated differently. These clusters are characterised by a rather strong heterogeneity and include regions with rather heterogeneous RD profiles focusing on marginal topics, such as human capital, modernisation and restructuring.

Characterised by an overrepresentation of the stabilisation support, the first out of four region clusters covers 29.6% of all regions, including northern parts of Scandinavia and the British Isles, as well as large parts of Poland, the Czech Republic and Slovakia. Otherwise, this group includes many regions scattered around the Mediterranean basin, including Portugal, Spain, France, Slovenia and Greece (Fig. 4a). The base cluster could be divided again into four relatively

homogeneous groups of regions. The first regional group, covering 41 regions, is characterised by particularly high shares of stabilisation funding (*t*-value 2.4). At the same time, all other topics are clearly underrepresented in terms of RD payments. Group two is similar, but less significant. The relatively large regional groups three (*n* = 82) and four (*n* = 80) show a further decrease in the prevalence of stabilisation (0.7; 0.4), whereas these regions also focus to some extent either on natural capital (group three) or physical capital (group 1.4). That latter two are particularly interesting in that the combination of investments in regional assets and their valorisation with a stabilisation objective can to some extent be seen as either an extensification (natural capital) or securing of livelihoods and rural stabilisation (physical capital).

The second base cluster is determined by the overrepresentation of investments in natural capital and encompasses three sub-clusters with 199 regions (22.7%). Relatively homogeneous, the first two clusters differ in the dominance of the natural capital investment (1.9 and 1.0). The first of the two (2.1) is also characterised by low contributions to asset valorisation, especially stabilisation, whereas the second group (2.2) is much less underrepresented by stabilisation. Regions in the third, more heterogenic sub-cluster (2.3) notably exhibits a stronger underrepresentation of stabilisation in favour of payments in the other topics. Looking at the spatial distribution (Fig. 4c), these regions are found in areas from southern parts of Sweden, Denmark and England and Andalusia, Sicily, Sardinia and Greece, regions with advantageous natural amenities to be valorised for rural tourism, although this topic itself is hardly pursued at all.

The third base cluster shows a general underrepresentation of stabilisation and consists of seven sub-clusters and 245 regions (27.9%), which are very scattered with concentrations in France, Italy and Hungary (Fig. 4c). The sub-clusters 3.1 and 3.2 as a whole also feature a tendency towards human capital investments, whereas only a subset of regions in both groups shows very strong

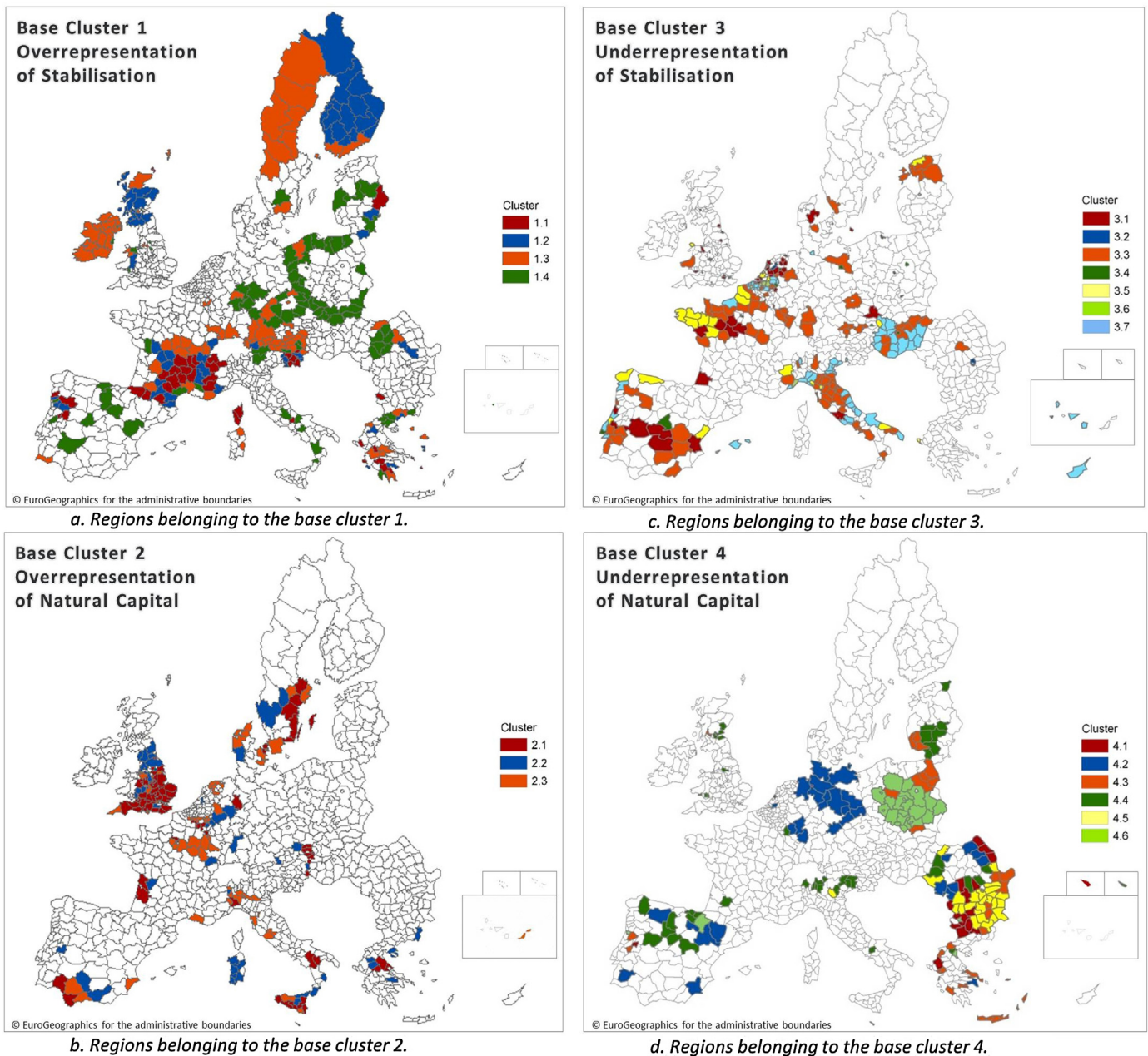


Fig. 4. (a)–(d) Regional distribution of rural development clusters. *Source:* own illustration.

restructuring support (1.7; 6.0). However, the high F -values (1.8; 2.8) indicate that this high value ought not to be considered representative for the whole group. Along with low stabilisation, regions of sub-cluster 3.3 also exhibit medium overrepresentation of natural capital and modernisation support. This combination of RD funding can be interpreted as an attempt to establish a bio-based economic orientation. Regional group 3.4 is characterised by low payment shares for natural capital and modernisation, but at least for part of the sub-cluster, also by very strong human capital investment (4.5). The other three groups (3.5; 3.6; 3.7), show a strong, but representative focus on modernisation, whereas sub-cluster 3.5 combines human capital support, which can be viewed as a priority setting for knowledge-based competitiveness.

The 174 regions in the last base cluster share a low priority tendency for natural capital. Whereas sub-groups 4.1, 4.2, 4.3 were at least partly confirmed in the validation process, the last three (4.4; 4.5; 4.6) were not verified. Despite or because of that, these

clusters are worth a closer examination, as they obviously follow rather unusual RD funding strategies. All of them display substantial differences in topic representations. Two groups (4.1; 4.2) show a very high and significant representation of physical capital investments. Sub-cluster 4.3 combines physical capital with stabilisation whereas the regions in sub-clusters 4.4 and 4.5 have a clear capacity building focus at the expense of investments in regional assets. The regional group 4 prioritises physical and human capital as well as stabilisation support. In terms of spatial distribution, the regions in this base cluster are primarily found in the new Member States, northern Germany and parts of Spain (Fig. 4d).

Discussion

The conceptual framework presented in this paper aims at developing a place-based understanding of rural development (RD), which departs from the idea of integrating of both

investments in territorial capital to improve regional factor endowment or strengthening the regional capacity to valorise the given (or produced) rural physical, natural or human capital. The framework has also been applied to analyse the implementation of RD programmes at a regional level. However, there was neither the ambition to identify specific regional strategies nor does this necessarily lead to any evaluation of RD policy. For this aim more information particularly about the existing regional situation is needed. The approach presented should rather offer a new place-based perspective to allow policy-makers and stakeholder to reflect on the appropriateness and internal consistency of RD programme designs.

Classification of RD topics

Generally, the framework shows a good applicability to classify RD measures into the six topics of physical, human and natural capital as well as stabilisation, modernisation, restructuring), based on the measures' scope and funding subject formulated in the regulation documents (EC, 2005, 2010). Measures which aim at investments in same types of assets or support the same type of capacity building were commonly classified in one topic group. The defined topics offered a good coverage and selectivity for the diversity of RD measures. However, due to fuzziness of the measure description, in some cases (e.g. cultural heritage as "human capital" or LEADER competitiveness as "modernisation") the measure allocation was not entirely explicit. Although, these measures usually cover lower funding amount, they can be of regional relevance in individual cases. Despite these smaller rooms for interpretation, the framework provides a tool to understand, evaluate and improve place-based RD policy priority settings.

Regional RD priority setting

Applying the conceptual framework to regional expenditures within the various RD policy measures has revealed a strong prevalence of stabilisation and natural capital investment. Given the limited budget, this implies only little financial scope for the application of other measures. A minority of the 20 groups shows a combined funding of investments in territorial capital and capacity building for their valorisation. It suggests that programming authorities are not making full use of the broadness of RD policy. This could be due to the fact that sustainable and environmental farming practices and the maintenance of farming in marginal areas have traditionally been prioritised as objectives of the RD policy. Member States and regions often make use of this policy instrument to support agricultural activities in disadvantaged areas beyond regular direct single farm payments in a rather horizontal way with a high number of beneficiaries, as observed by Shucksmith et al. (2005). Also the RD regulation (EC, 2005) requires that 25% of the RDP budget at programming level is spent on axis two measures which include both the agri-environmental measures (classified as support to natural capital in our typology) and support to less favoured areas (stabilisation priority).

It was observed in this analysis that a lower share of the budget is spent on capacity building support, especially on modernisation and restructuring. For some of the regions with available endogenous potentialities but lacking capacity to valorise them, RD support for these topics would be important. But the implementation of such measures largely depends on the availability of a network of farmers and other economic agents and on their willingness to take part in such schemes (e.g. Gasson, 1973; Sonnino, 2004) as well as on institutional arrangements (Marsden, 2010), which can be a major obstacle. In those cases, a more strategic approach to place-based rural development is needed to address these bottlenecks. Investments in territorial capital, however, allow stronger

sectoral delivery, ideally with a high degree of targeting by the programming authority. The spatial concentration of physical asset investments, especially in the new Member States, can be certainly understood as part of a catching-up and EU integration process in these regions, where investments especially in infrastructure have high priority.

Spatial variability of RD designs

A general observation to be drawn from this examination of RD payments is the high level of spatial heterogeneity in the funding patterns below the programming level (here mainly NUTS3). Heterogeneity within a programming region derives from regulations, which target implementation in certain localities or focussing on specific beneficiaries. Given that all the measures are voluntary, the spending figures ultimately depend also on the decisions of individual farmers and other rural stakeholders as addressees of the policy to participate in offered measures. Further, the regional distribution and concentration of the six funding topics suggests that RD is, for logical reasons, implemented in response to spatial framework conditions and needs. Spanish regions, for instance, are characterised by a high variability of RD designs at the level of the 17 programming regions, but also at a lower level, indicating that the implementation pattern also incorporates the spatial heterogeneity of the regions. Obvious differences in RD funding also exist between rural regions in metropolitan contexts, peripheral and marginal regions as well as prime agricultural regions.

However, it is also observed that regional RD profiles are often homogeneous within the same programming unit. This is the case in the UK, Poland and parts of Germany, suggesting a strong influence of programming level, being at the national or regional level, on the actual implementation pattern. Supporting the criticism of Copus and Dax (2010), it can be questioned, whether actual territorial needs and potential related to major differences in the socio-economic performance and natural conditions, if existing within countries and programming units, are sufficiently taken into consideration. Rather, a funding philosophy of the "watering can" equally distributing funding across the area instead of a regional targeting and priority setting is visible, which nonetheless can be valid under homogeneous spatial conditions. There is also certain inertia in policy making, path dependency and missed opportunities for RD strategy development. A strategy which maintains the status quo or realises deadweight effects might outweigh regional requirements and capacities and lead to variances in the intention and actual implementation. In particular, sufficient awareness among the programming authorities and co-financing regulations is debatable regarding their role in obtaining a balanced place-based RD strategy.

Further research

To obtain a clearer picture to what extent RD is designed and implemented following a place-based strategy, which acknowledges regional framework conditions, potentialities and requirements, it will be necessary to include indicators for regional natural and socio-economic conditions into the analysis. Information about the given regional situation is needed to reflect on the observed policy designs and whether a certain development strategy is appropriate (e.g. quality production, nature conservation, rural tourism, etc.). Also the relationship of the RD with other European regional policies (i.e. regional development, social and economic cohesion) needs to be taken into consideration. Dwyer and Findeis (2008) showed that investments in the territorial capital can be particularly expected for structural funds. Therefore stronger coordination or joint planning of the funds is necessary, as recommended by Copus et al. (2013). However, the results of

the present paper provide a first basis to reflect RD priority setting with the actual regional requirements and development options, for example, as presented by van Berkel and Verburg (2010).

Conclusion

The conceptual framework developed here allows putting EU Rural Development Policy in the context of the new rural paradigm, linking the implementation of RD policy with regional needs and potentials in a place-based perspective, as proposed by the OECD. Based on an analytical literature review thematic aggregation of individual schemes and measures is proposed. It distinguishes measures supporting different forms of investments (in physical, human and natural capital) and capacity building to valorise (i.e. stabilise, modernise or restructure) already available territorial assets.

In particular, a close look at the interaction between asset investments and the valorisation of already available territorial assets enhances the understanding of RD strategies and provides greater consistency for individual local projects. The analysis of regionalised RDP expenditure data revealed a high variance of RD policy application across EU regions, and within regions (below the programming level). In most cases, a concentration of one or a combination of two topics was found, with natural capital investments and to stabilisation as most important RD topics. The analysis also sheds light on the interactions between capital investments and capacity building, and on the relevance of the regional conditions and factor endowments in determining RD priorities.

Using a hierarchical cluster analysis four main groups and 20 sub-groups of regions with comparable RD profiles were identified. The observed intra-regional heterogeneity is interpreted as evidence of the place-based character of the EU RD policy. The intervention of various authorities in the programming of RD policy, as well as the fact that spending ultimately depends on the voluntary uptake of the measures by individual rural actors are two important factors explaining this heterogeneity.

For the new programming period 2014–2020 improved conditions towards the recognition of development potentials through a multi-level governance process have been established, which also allow space for more first place-based initiatives and projects. Both the Regulation (EC) No. 1303/2013 and the Regulation (EC) No. 1305/2013 support the territorial development of rural areas, including through local development strategies. In order to improve coordination and harmonisation of support under cohesion policy, with those for rural development, and other sectors, common provisions are established under the Regulation (EU) No 1303/2013. The new RD Regulation (1305/2013) offers Member States the possibility to give priority to investments by community-led local development partnerships, and to projects managed by local community organisations. It will be promising to track from the very beginning which regions and whether in line or not with the observed strategic behaviour of the previous programme.

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