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Publisher: Routledge

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## Geografisk Tidsskrift-Danish Journal of Geography

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rdgs20>

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Sónia M. Carvalho Ribeiro<sup>a</sup>, Luís Madeira<sup>a</sup> & Teresa Pinto correia<sup>ab</sup>

<sup>a</sup> ICAAM - Instituto Ciências Agrárias e Ambientais Mediterrânicas, University of Évora (UE), Núcleo da Mitra, Edifício Principal, Gab 202, Apartado 94, Évora, 7002-554, Portugal.

<sup>b</sup> Department Landscape Environment and Planning DPAO, Largo dos Colegiais University of Évora (UE)

Published online: 15 Oct 2013.

**To cite this article:** Sónia M. Carvalho Ribeiro, Luís Madeira & Teresa Pinto correia , Geografisk Tidsskrift-Danish Journal of Geography (2013): Developing comprehensive indicators for monitoring rural policy impacts on landscape in Alentejo, southern Portugal, Geografisk Tidsskrift-Danish Journal of Geography, DOI: 10.1080/00167223.2013.846491

**To link to this article:** <http://dx.doi.org/10.1080/00167223.2013.846491>

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## Developing comprehensive indicators for monitoring rural policy impacts on landscape in Alentejo, southern Portugal

Sónia M. Carvalho Ribeiro<sup>a\*</sup>, Luís Madeira<sup>a</sup> and Teresa Pinto correira<sup>a,b</sup>

<sup>a</sup>ICAAM – Instituto Ciências Agrárias e Ambientais Mediterrânicas, University of Évora (UE), Núcleo da Mitra, Edifício Principal, Gab 202, Apartado 94, Évora, 7002-554, Portugal; <sup>b</sup>Department Landscape Environment and Planning DPAO, Largo dos Colegiais University of Évora (UE),

(Received 5 February 2013; final version received 16 September 2013)

In recent decades, rural Europe has experienced major transitions, impelled by multiple drivers at varying scales, leading to increasingly differentiated modes of rural occupation. There is a need to monitor the multiple forces driving these transitions, so as to ensure that rural support and development policies are well targeted. In this paper, we develop a methodology which recognizes and regionalizes the three dimensions underlying rural multifunctionality, namely production, consumption and protection as initially conceptualized by Holmes (2006, 2012). In our approach, these three dimensions are linked to socio-economic dynamics, which vary across space and may act as a stimulus or a constraint on the multifunctional transition. For the municipalities in Alentejo, southern Portugal, we construct an appropriate set of indicators for conveying the four (production, protection, consumption and socio-economic) dimensions studied. Results show that with a robust set of spatial indicators the different dimensions by Holmes were gauged across the case study area. Further, results also highlight the advantages of crosschecking the production, protection and consumption dimensions with a fourth socio-economic dimension in order to comprehensively explore the possible ways in which policy targeting can be made. This method can be a valuable tool to inform policy targeting and decision-making, including those of potential investors. Future research pathways are delineated in order to refine the employed indicator set and to include other possible dimensions and analytical techniques into this innovative methodological framework.

**Keywords:** multifunctionality; spatially explicit indicators; transitions; rural dynamics; rural policy; Portugal

### 1. Introduction

A substantial body of work has highlighted a close relationship between landscape characteristics and socio-economic development (Carvalho-Ribeiro et al., 2010; EU, 2007, 2009; Horlings & Marsden, 2010; OECD, 2001, 2006). On one side, landscape contains economic value that can manifest itself through the implementation of certain economic activities. On the other side, the process of economic development shapes landscape composition and configuration.

Studies on the spatial impact of the Common Agriculture Policy (CAP) have been revealing the close and specific relationships between agriculture and the countryside landscapes of Europe (EU, 2007, 2009; Vejre et al., 2007). It has been also acknowledged that the CAP shapes the development patterns of many rural areas (Carvalho-Ribeiro & Lovett, 2009; Pinto-Correia & Jorge, 1996; Pinto-Correia & Vos, 2004; Primdahl & Swaffield, 2010; Turpin et al., 2009). The CAP impact varies from region to region depending on the specific environmental, cultural and socio-economic conditions

and on the types of production and market organization (Pinto-Correia & Breman, 2009).

It has been increasingly recognized that the CAP has mainly benefited agricultural incomes in areas of the EU which were already being intensively farmed. Farming in these areas tends to be increasingly intensified and specialized, and farm management focused on market-oriented production. Areas in which there is less-intensive farming tend to be disadvantaged, leading to an increase in the prosperity gap between agricultural regions (OECD, 2006). On the other hand, these more peripheral areas have so far been able to keep diversified and unique landscapes, valued today due to the multiple functions they provide (Selman, 2009, 2012).

In the less-intensive agricultural farmland, mostly located on peripheral European regions, attempts have recurrently been made to integrate agricultural policy with other measures to support the broader economic and social context of rural areas. Relevant literature reveals how farm diversification into activities, such as development and marketing of high-quality products,

\*Corresponding author. Email: sribeiro@uevora.pt

agricultural tourism and investment projects related to the environment, can open up new prospects and opportunities (Pinto Correia & Breman 2009). But not all functions can be provided equally in all areas. Nor can farmers assess, on their own, what will be the appropriate future strategy for the local area in order to better design their own strategy.

It follows that there is a need to further investigate how these peripheral rural areas of Europe can be understood today and how local farming can be related with the landscape and the amenity functions it supports. Understanding the interaction between the different dimensions at play in these areas particularly will make it possible to identify pathways for future development that will be grounded on each region's vocation and potential.

A substantial effort has been made already in creating and developing European-scale typologies for distinguishing between rural areas across Europe (Berkel & Verburg, 2011; van der Ploeg & Marsden, 2008; van Eupen et al., 2012). These typologies are mostly data-driven approaches undertaken by summing up data layers. They do not address the new modes of rural dynamics and occupancies, which would require a strong conceptual background on the basis of the typologies defined (Holmes, 2006, 2012; Horlings and Marsden, 2010; van der Ploeg and Marsden, 2008; van der Ploeg et al., 2000, 2009). This calls for reconciling methodological approaches with strong conceptual background and appropriate data analysis techniques.

This paper aims at fulfilling a research gap by developing a methodological framework based on both (i) a solid conceptual background and (ii) robust analytical techniques to comprehensively derive indicators able to inform decision-making. The aim of the paper is to propose a new methodological framework utilizing the three dimensions proposed by John Holmes for Australia (Holmes 2006, 2012) and adapting them to the context of Europe peripheries. The specific questions this paper addresses are as follows:

- (1) How can the conceptual basis of Holmes (2006, 2012) on modes of occupance and rural transitions help in framing policy-targeted measures for multifunctional rural management in southern Portugal?
- (2) Is there an added value for crosschecking the occupance modes by Holmes with socio-economic dynamics in place for addressing multifunctional pathways?
- (3) Which set of indicators can best describe the individual dimensions, namely production, protection, consumption and socio-economic dynamics, for the case study area in southern Portugal?

## 2. Conceptual background, data and methods

The work developed here aimed at gauging the weight of the dimensions proposed by Holmes (2006, 2012), in different rural areas, so as to identify what are these area's vocations. The model proposed by John Holmes is grounded on multifunctionality as an attribute of rural space and tells us that rural areas may be placed differently according to the relative importance that the modes of occupance concerning production, consumption and protection have and their positioning helps us to understand what the vocation of the areas is today. In this way, the conceptual model by Holmes (2006, 2012) is used as a simple and clear basis in representing the different transition pathways rural areas might follow.

Further, Holmes points out that the relative importance of the multiple functions of rural space is not constant and its relative importance may change in time and space (Holmes, 2012). These transition pathways need to be understood if a strategic planning for these areas is to be considered. Thus, in order to assess, for the same areas, the constraints or potentialities for developing the vocations identified, a classification according to the socio-economic dynamics is proposed.

As shown in Figure 1, it is considered that the weight of the three dimensions, production, protection and consumption can change over time as a result of the socio-economic drivers in the areas, which can make it possible to develop certain assets, or not. For example, a high landscape value, related to landscape quality and identity, can indicate a vocation for recreation and leisure, and thus consumption as an important dimension. Nevertheless, if there are no social and economic dynamics nor entrepreneurship in the area thus no agents for developing consumption-related activities using this

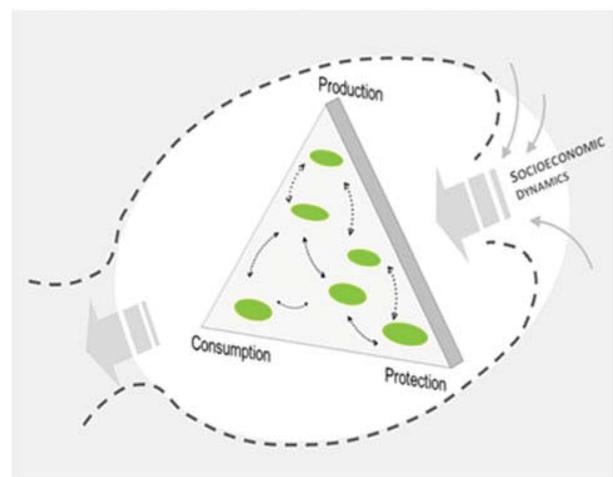


Figure 1. A schematic way of representing the conceptual model of the typology developed.