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Innovation in the rural areas and the linkage with the Quintuple Helix Model

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Abstract

In this paper we analyze some specific conditions for local development. Our interest is oriented towards a multidimensional aspect of peripheral and rural areas. The rural areas considered as a productive system reflects a strong relationship between the agriculture and the other economic activities, In addition eco-systems must be protected and enhanced to develop innovation models that propose new roles and responsibilities for a new development vision. Following the implementation of the Smart Specialization Strategy and the Quintuple Helix Model this paper underlines the importance of connecting the innovation process with rural territories. We have considered some environmental and sectorial indicators for Sicily compared with the rest of Italy, to underline the role of peripheral areas for a new style of competitiveness based on the principles of sustainable development.

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Keywords: Rural Areas; Innovation; Quintuple Helix Model; Smart Specialization Strategy.

1. Introduction

The Smart Specialisation Strategy -S3- (Foray, David, & Hall, 2009) promotes the activation of flexible and dynamic strategies of innovation – to make easier a multilevel and place-based approach of the local development.

The main features of this new approach are:

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- the identification and enhancement of the competitive potential of areas, identification of the characteristic assets of each region (place-based strategy);
- the concentration of knowledge resources and linking them to a limited number of priority economic activities (principle of concentration);
- shared participation to innovation management, with the involvement of local stakeholders;
- lifelong learning based on the ex- ante and ex-post evaluation processes of the strategy.

The S3 tries to avoid fragmentation of interventions and put to system the politics of research and innovation, developing regional strategies of innovation that valorize the productive areas of excellence taking into account the territorial strategic positioning and development prospects in a global economic context. The application of the Smart Specialisation Strategy has involved the European regions in the formulation of a strategy to regional level. The regions should be discovery of what makes a local knowledge base original and somewhat unique (Foray, David, & Hall, 2011).

In the section 2 we analyze the linkage between the Quintuple Helix Model and the Rural Areas as well as the importance of the natural environment as an asset for the production of knowledge and innovation.

In the last section we propose some indicators to underline the potential of peripheral areas as key factors to reduce the gap of development in European Region. In particular we propose some sectorial and environmental indicators of Sicily compared with the rest of national data.

2. The Quintuple Helix Model and the Rural Areas.

The official document of the European Union Regional Policy "*Contributing to Smart Growth in Europe*"(EC, 2010b), which introduces the Smart Specialization Strategy, points out that the innovation process is increasingly understood as an open system where different actors collaborate and interact. According to the guide for the elaboration of Research and Innovation Strategies for Smart Specializations (RIS3), the European Commission makes explicit reference to the model of innovation of the "fourth helix" (Carayannis & Campbell, 2009), which is based on openness of innovation processes to civil society.

Under the hypothesis of this model, drawing up a strategy of innovation requires the participation of civil society in the planning process. In the Quadruple Helix Model, the users orientation, is considered a crucial element so that the innovation points out a change that accelerates and improves the way to conceive, to develop, to produce and to access to new products, processes and industrial services, changes toward wider social objectives for example best quality of the life. A change of paradigm that directly involves in the formulation of the strategies the end user of the innovation, and that it changes the role of the players in the innovation processes.

A further step should be done towards the Quadruple Helix Model proposed by *Carayannis* and *Campbell* (2010), especially in reference to models of innovation to be implemented in rural areas. The additional step to the model stresses the importance of the natural environment as an asset for the production of knowledge and innovation. The Quintuple Helix Model draws attention to the need for a socio-ecological transition of society and economy in the twenty-first century.

The natural environment is considered a central element for the production of knowledge and innovation because irreplaceable source for the same survival of the man. The realization of new green technologies and innovative processes in the direction of a sustainable development become fundamental to promote long term innovative strategies. The environmental and biodiversity protection pushes the knowledge and the innovation in the direction of a sustainable and social economy where all the actors are part and responsible in the formulation of the strategies of local development.

The European Commission, in the document "*The World in 2025. Rising Asia and partner-ecological transition*" (*2009*), has identified the social and ecological transition as one of the principal challenge for the societies and the actual and future economies. The rural areas, at the margins of the core-economies, preserve biodiversity and healthy environment should experiment and implement innovative models that cover the Quintuple Helix Model of innovation and that could make a great contribution towards the socio-ecological transition.

The following figure (Carayannis & Campbell, *2010*), illustrates the evolution of the innovation model of the triple helix of *Etzkowitz* and *Leydesdorff* (1997) highlighting the additional helixes to the basic model.