Land Use Policy 44 (2015) 122–130

Contents lists available at ScienceDirect

Land Use Policy

journal homepage: www.elsevier.com/locate/landusepol

Identification of "Typical Agricultural Districts" for the development of rural areas applied to Eastern Sicily

Lara Riguccio*, Giovanna Tomaselli, Patrizia Russo, Concetta Falanga

Department of Agricoltura, Alimentazione, Ambiente, University of Catania, Via S. Sofia 100, 95123 Catania, Italy

ARTICLE INFO

Article history:
Received 11 July 2013
Received in revised form
21 November 2014
Accepted 23 November 2014

Keywords:
Multi-criteria analysis (MCA)
GIS data analysis
Rural landscape
Typical agricultural products

ABSTRACT

Typical agricultural products could play an important role in developing rural areas. They contribute greatly to forming the character, quality, and use of the countryside. This work uses multi-criteria analysis (MCA) of data from the Geographic Information System (GIS) to identify the territorial context of the "Typical Agricultural District". Such districts can be identified by the presence of typical agricultural practices, as defined by the relevant EC directive, their cultural resources, their infrastructure, and the landscape. These districts often specialise in high quality agricultural products and tourism, with the two activities complementing one another. The analytical process that we use in our case study allowed us to identify a particular district in which all of the agricultural and cultural values of the area were concentrated. This area could be used as a case study for specific plans and projects aimed at managing the landscape resources and developing the rural areas. The area studied is in Eastern Sicily but the method used is valid in a general sense, and could be applied in other contexts.

Introduction

The Cork Conference (1996) played an important role in the debate in the 1990s on the future of EC agricultural and rural policies. It gave birth to the "decalogue" which established the principles behind European rural development. In the following years rural development became the "second pillar" of the Common Agricultural Policy (CAP), and the new CAP for 2014–2020 has confirmed and reinforced this priority. In addition the programmes of the EC Structural Funds have resulted in an acceleration of the new regional policies. These are increasingly aimed at integrated development of the whole region, both urban and rural, and at sustaining the process of economic and social cohesion in the EU. They also highlight the growing importance in EU policies of economic activity other than agriculture in rural areas (Papadopoulou et al., 2011).

Thus at present EU polices are aimed at diversification of agricultural and rural activities, with the strategic direction being: improving the environment and the landscape, improving the quality of life, promoting diversification and creating local work opportunities.

The objective of improving the environment and the local landscape has been supported by legislation and in particular by the European Landscape Convention (Council of Europe, 2000; Van Berkel and Verburg, 2011).

This obliges the signatories to take actions to safeguard, manage, give added value to, restore and/or recreate the landscape (Russo et al., 2011).

For rural areas – defined as settlements of historic, social and cultural value or generators of a "cultural atmosphere", capable of linking the economy, the social sphere and the local authorities together in a dense network of relationships – diversification of their activities and multi-functionality may help them to improve the quality of the landscape (Bryant et al., 2011; Carullo et al., 2013a,b; Russo et al., 2014a,b; Siciliano, 2012). Traditional agricultural production methods play a recognised role in maintaining the rural matrix, and are an integral part of the landscape, society and economy (Herzfeld and Jongeneel, 2012; Strano et al., 2012).

Some studies have highlighted how typical products, thanks to pilot initiatives co-financed by the EU, have helped to give added value to the area and to protect the local community. The development of diversified activities in rural areas has made it possible to protect and safeguard these areas. These activities offer innovative products which help to create a suitable "environment" for tourism and cultural activities (Carmona-Torres et al., 2011; Febles-González et al., 2011).

The "identity of typical products" factor thus fits in perfectly with the "identity of the landscape" factor. Together they resemble

* Corresponding author. Tel.: +39 0957147584.
E-mail addresses: riguccio@Unict.It (L. Riguccio), gitomas@Unict.It (G. Tomaselli), patrusso@Unict.It (P. Russo), arch.Falanga@Yahoo.It (C. Falanga).

http://dx.doi.org/10.1016/j.landusepol.2014.11.018
0264-8377/

a cultural marker and encourage improvements in the social and economic well-being of the communities to which they belong. They thus provide concrete opportunities for possible growth in new sectors, such as tourism and recreational activities in rural environments (Erickson et al., 2011).

However at present these positive possibilities are often unattractive in areas which are greatly suited for such activities, such as, for example, Southern Italy. This is because they lack the services and support structure which are necessary for both agriculture and other multifunctional activities, as well as any plans aimed at developing local resources. Development in such a rural context can begin by using a "district" approach to manage the area. Let us being by defining "district" as a geographical area in which there are significant interactions between the economic, social and cultural elements of the area and natural elements of the landscape, and that these are capable of generating endogenous development processes and of taking advantage of the opportunities offered by the world economic network (Becattini, 2000; Iacoponi et al., 1995). Thus the "district" concept implies that there are firms or, more generally, products (handicrafts, cultural, agricultural, etc.) which, acting together in synergy, create its social and economic context (Arfini and Zanetti, 1997). Definitions of the district environment often overlook the importance of the quality of the landscape in defining such an area, despite the fact that is widely recognised that this is of fundamental importance if one is to encourage personal development and generate new and more varied activities (De Montis, 2014).

The following research – which is aimed at identifying areas which have the necessary characteristics to allow them to be defined as Typical Agricultural Districts – was carried out by developing a method based on MCA and the potential of GIS and testing it in a rural area of Sicily.

Such areas can be identified by the following conditions being present: there is a typical product with a quality or typical product label; there are other traditional local products (agricultural, handicrafts, etc.); there is a historical/archaeological context with particular aspects which are linked to the identity of the area; there is interesting landscape; there are local traditions (religious, folklore, food, etc.). The districts with these characteristics have specific special potential, and this should be taken into account when planning and managing sustainable development and giving added value to the agricultural, cultural and landscape resources of the area (De Montis et al., 2014).

Area of study

The entire province of Catania was used as a sample area for validating and verifying the method (Fig. 1).

The province of Catania has a wide variety of landscapes: the vast urban area of Catania; the slopes of Etna with their 17th century towns and villages; the Catania Plain, the largest plain in Sicily, Mount Etna, 3340 m high, the highest mountain on the island and the largest active volcano in Europe; the basin of the Simeto river, south of the volcano, made up of the course of the river itself and its tributaries, the Salso, the Dittaino and the Gornalunga; and the valley of the Alcantara river, a regional park, north of the Etna massif. The principal economic activities are agriculture and commerce (Riguccio et al., 2014).

Agriculture is practised in the rural areas, intensive citrus fruit cultivation on the plains and the hills, and extensive agriculture on the arable land of the Catania plain. Most of the agriculture in the province is specialised, but there are particular areas which are characterised by their production of typical certificated products. Most of these are concentrated on the slopes of Etna and consist of the vineyards and the network of old and new vintners which give

Fig. 1. Overview of the province.

character to the landscape north-east of the volcano, while south-west of Etna there are groves of citrus fruit, pistachio, olives, and prickly pear. Cherry tree woods are also found between 400 and 800 m a.s.l on the slopes of the volcano, while Mazzarone grapes are cultivated in some restricted areas of the Catania plain.

Materials and methods

The research employed MCA, using Microsoft Excel 2007 and GIS ArcMap 9.2, ArcGis 9 and AutoCAD 2008 software. The latter was used for preparing certain digital maps so that they could be then transferred into a GIS environment. It provided useful indicators of the geographical location of the characteristic features of the area and the results of multi-criteria analyses (Comino et al., 2014).

MCA

The multi-criterial analyses were used to compare, evaluate and provide a hierarchical list of the various alternative limits of the district. Once a single objective had been identified, a "finite" series of alternatives was expected to be created. The decision making process was thus aimed at deciding which of these alternatives, as defined by Keeney (1996), was the best (Mauchline et al., 2012). Fig. 2 shows the hierarchical order of the problems. The Analytic Hierarchy Process (AHR) (Carullo et al., 2013a,b; Ho, 2008; Saaty, 1990, 1996, 2008; Saaty and Sagir, 2012), was used to do this. This is based on constructing a square matrix containing in both the lines and the columns the elements that have to be put in hierarchical order, where every element x_{mn} is the result of the comparison of the indicators of line m and column n in relationship with the objectives which one wishes to obtain. This comparison was achieved using Saaty's numeric/linguistic scale (Saaty, 1990).