

# Exploring Terroir Zone and Tourism Cluster Based on GIS Mapping

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## INTRODUCTION

Terroir in term of agro-viticulture at the plot scale demonstrates significant differences of grape varieties, rootstocks and soil management practices in which different degrees of variability of environmental factors. Terroir related to agro-viticulture primarily focuses on the relationships between environmental factors related to vines, the quality of grapes and wines in order to assess the potential of vineyard quality and the indigenous knowledge in the defined area (Goulet & Morlat, 2011). Terroir is a spatial, ecological and cultural concept that links the cultivators with the special agricultural practices (traditional knowledge and cultivating technology), and it focuses on environment factors such as terrain, soil and climate conditions. Terroir conveys geographical distinctiveness, culture identity of a collective memory and a framed place name against globalization food production (Bowen & Zapata, 2009).

Even the agricultural products are not cultivated on a terroir zone, the linkage between agriculture and tourism is still evident. The nature of agricultural products, availability of other supporting cultural and tourism products, and proximity to markets vary from place to place. These factors influence the form and strength of links that can be fostered between agriculture and tourism. Stratford and Muskoka, both at a similar distance from metropolitan Toronto with strongly seasonality in their agricultural products and tourism, demonstrate different extent of agriculture linkages with tourism. Stratford with possessing more productive farmlands has a much stronger agricultural resource base than Muskoka, while Muskoka has longer history for tourism development based on the forested-lakes complex. Although neither of Stratford and Muskoka has the reputation to claim status as a “terroir” in the absence of a specific place branding strategy, both have successfully developed culinary tourism by the linkage of agriculture and tourism (Lee, Wall & Kovacs, 2015).

The Niagara Region has become home to an emerging New World Wine Route by the competitive advantages of winery clusters on the increasing in scale for marketing is the horizontal cluster advantage of the wineries surrounding the heritage-shopping town of Niagara-on-the-Lake. The complementary to the wineries of close to 60 tourist shops, numerous accommodation establishments, a historic fort and a festival theater reveals the advantage of tourism cluster. At the Regional level, the entire Niagara Wine Route with over 50 wineries, which are connected to the major tourist attractions of Niagara Region. Label of origin is particularly useful for the embeddedness and convention for marketing terroir specialties. By insisting upon a strong link in production to the ecology and culture of terroir, a local brand in the natural process labeled by terroir is essential. Several destinations and festivals promote their terroir specialties to serve as major tourist foods (Telfer, 2001).

A viticultural terroir is related to a particular area with a distinct quality of grapes and their wines in France. Although the conception of terroir is used as an analysis unit for comparing chemical composition of vintage products in different viticultural zones (Schlosser, Reynolds, King & Cliff, 2005; Bonfante, Basile, Langella, Manna & Terribile, 2011; Bowen & Zapata, 2009). Terroir means a small

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area of land reveals characteristics of a cultivation zone, an environmental complex including conditions of terrain, climate, and soil. Terroir related researches have mostly focused on the relationships between the quality of grapes or wines and a few environmental factors for the past 30 years. Until 1990s, GIS mapping was used on the concept of terroir by focusing on spatial analysis of diversity of viticultural environments in different areas (Vaudour, 2002). Thus, there is a need for empirical research on a better meaning of linkage between terroir and tourism by using GIS mapping to define terroir zone and its impacts on tourism cluster. This chapter aims to define different agricultural terroir zones, analyze the influencing factors on the spatial distribution of terroir zones by processing GIS mapping to examine the role of terroir specialty on how to shape a tourism cluster.

Although the linkage between agricultural products and tourism was weak on the food supply chains of hotel service sectors, the development of tourism itself does not trigger decline of agricultural sector, and the demise of agriculture can be attributed largely to the emergence of tourism as a viable alternative to a chronically unstable agricultural sector. Actually, the linkage between agriculture and tourism plays an importance role on the dimension of tourism development. When tourists are seeking authentic and unique experiences, agricultural products bring tourists in close proximity to the host culture, which can be as an input to tourist attractiveness. Foods and beverages have long been regarded as important components of tourist experiences, often can promote destination image and as contributors on festivals. Regarding to travel motivation, foods and beverages range from high interest to a destination as the primary motive to visit a specific restaurant or winery by accidental discovery (Plummer, Telfer, Hashimoto & Summers, 2005).

Terroir specialty, in relation to tourist food, sustains cultural heritage, promotes destination's visibility, especially for a significantly larger proportion of peak season, and offers a destination a longer, more sustainable to sell local produces (Everett & Aitchison, 2008). Local specialty referring to visitation of food festivals, restaurants or specific locations for food tasting, experiencing the attributes of cultivation region may be as a primary or secondary tourism motivating factor. Accordingly, terroir specialty can be transformed as a manifestation of tourist food by tasting local food or visiting local food consumption spaces such as restaurants and coffee shops, which become the places of culture performance, rather than simply physical consumption.

## **BACKGROUND**

A number of researches use GIS mapping to define meaningful areas according to different given indexes. Hsueh (2013) defines a clustering area of locations of mushroom huts based on GIS mapping according to the indexes of environment complex of slope, elevation, ventilation and water supply. Hsueh & Chen (2015) use GIS mapping to distinguish a clustering area of locations of tea processing firms distributed on a tea specialized cultivation area to confirm the co-location concept of industry cluster according to the indexes of environmental complex associated with accessibility, climate conditions and terrain conditions. Hsueh & Hsieh (2017) use GIS mapping to clarify a clustering area of pineapple dining industry including pineapple bakeries, creative restaurants and pineapple vendors based on point density analysis, buffer analysis and overlay analysis according to the indexes of terroir zone, tourism cluster, climate conditions, terrain conditions and local practices. Hsueh & Chang (2017) use GIS mapping to define a tourism potential area with ranked scores according to the site criteria of elevation variation, slope diversity, proximity to water, accessibility and service facilities. Hsueh, Chuang & Hsieh (2018), based on GIS mapping, explore a clustering area of tourist spots in a peripheral mountain area to develop

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