



Driving forces behind vineyard abandonment in Slovakia following the move to a market-oriented economy

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ABSTRACT

The abandonment of farmland has become a widespread phenomenon in post-socialist countries that have seen revolutionary changes in their economic systems. The phenomenon is notable in vineyard areas, where abandonment leads to the loss of the unique character of vineyard landscapes. This paper assesses the extent of vineyard abandonment in Slovakia and analyses the driving forces behind it. We used statistical and Corine Land Cover data to map the change in vineyard areas in Slovakia and analyse the pressure of underlying driving forces. Special attention was paid to small-scale, traditionally managed vineyards that were not changed by agricultural collectivisation and are now considered to be traditional agricultural landscape structures. These areas were mapped using Google Earth aerial photography combined with field research. A case study of the Svätý Jur area provided a detailed analysis of the changes, driving forces and perceptions of local residents. This area is representative of a historical vineyard area that has been deeply affected by the country's political and economic transformations. We found that over the past 20 years almost half the vineyard area in Slovakia has been abandoned or converted to arable land. The import of cheap grape must and wines, increased production costs and insufficient agricultural subsidies have made viticulture unprofitable. Local farmers perceive financial instruments and an inadequate market as limiting factors for farming, together with weak support from local government and the expansion of unsuitable housing. While 65% of local people said they would engage in viticulture if it was more profitable, 31% showed no interest in farming at all. Abandonment of the vineyards is continuous process resulted from the economical and cultural changes after the transition to market-oriented economy. Government support should be directly aimed to protection and management of traditional small scale vineyards and their historical, cultural, biodiversity, and aesthetical values.

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Introduction

Vine growing and viticulture have a very long tradition in Slovakia and are part of the country's cultural and historical heritage. Hundreds of years of viticulture and viniculture has created a specific type of landscape (Bezák et al., 2010), with unique cultural and aesthetic values (Salašová and Štefunková, 2009). The change to a market-oriented economy in 1989 triggered the widespread abandonment of Slovakian vineyards and the vineyard landscape is disappearing. The extensification of agriculture can be seen in

all the post-socialist countries of Central and Eastern Europe following the fall of the Iron Curtain, as economies that had been centrally planned shifted towards free-market systems. As institutional regimes have changed, there has been rapid demographic change and a vast amount of farmland has been abandoned (Hostert et al., 2008; Kuemmerle et al., 2008). The contribution of agriculture to gross domestic product has decreased sharply (Takács-György et al., 2007) as has the role and importance of agriculture. An analysis of multi-temporal MODIS satellite data in Eastern Europe (Alcantara et al., 2012) shows that Russia and Belarus account for the largest share of abandoned agricultural land, 27.6% and 20.8%, respectively. Smaller areas were mapped in Ukraine (16.9%), Latvia (12.4%), Estonia (11.7%) and Lithuania (9.5%) and more limited abandonment was apparent in the Czech Republic (4.6%) and Poland (4.0%). An analysis of Corine Land Cover layers for the period 1990–2000 shows that the extensification of agriculture was most prevalent in the Czech Republic (more than 3.5% of country's total

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land area) and also occurred in Eastern Germany, Estonia, Hungary, Latvia and Slovakia (Feranec et al., 2010). Gerard et al. (2010) identified land cover changes in Europe in the period 1950–2000 from aerial photos. Slovakia showed the largest proportion of land that underwent change twice and the largest proportion of land that has changed state twice which is a reason for the reclamation or abandonment of previously collectivised and intensively used arable land. In Bulgaria, results from the applied change detection techniques for the period 1986–2000 indicated a significant increase in urban areas and decrease in agricultural land (Pangelova and Rogan, 2006). Baumann et al. (2011) analysed the situation in Western Ukraine and found that 30% of land farmed during the socialist era was abandoned after 1991. Similar results show the extensification of agriculture, the abandonment of agricultural land, or land reclamation as a consequence of the shift to democracy and a market-oriented economy in the Czech Republic (Lipský et al., 1999; Bičík et al., 2001; Boucníková and Kučera, 2005), Hungary (Burger, 2001), Romania (Vidican, 2009; Müller et al., 2009), Poland (Kozak et al., 2004), and Albania (Müller and Munroe, 2008) and in other post-socialistic countries.

Although there is no study that is specifically focused on changes in vineyard use in post-socialist countries, there are several case studies on changes in land use in regions where there are vineyards. For example, in the Kali basin of Hungary, Jordan et al. (2005) reported an increase in uncultivated zones, particularly in areas where labour-intensive vineyards had been located, due to land privatisation. In 2002, the area covered by vineyards was the lowest it had been for 200 years. Van Dessel et al. (2008) noted the extensification of land use in Lake Balaton catchment in the period 1981–2005 and the conversion of arable land and vineyards to grassland and forest. In Hungary, the changes were driven by the collapse of the collective farming system and depopulation of rural areas in the Lake Balaton catchment area together with the development of the tourist industry around the lake. An analysis of historical maps of Romania (Alexandrescu and Osaci-Costache, 2008) and the results of a case study of the area between the Olt and Topolog rivers shows that the extent of the viticultural landscape has declined continuously over the past two centuries (Osaci-Costache, 2008). A detailed and thorough examination of land use in the Czech Republic revealed several interesting results. A notable feature was a significant increase in vineyard area in the period up to 1991, followed by a decrease after 1991 (Demek et al., 2007, 2008; Skokanová et al., 2009; Havlíček et al., 2009, 2011). The only exception was the Dunajovické kopce hills, where the vineyard area remained relatively stable and the abandonment culminated in the 1960s, when the local German population was expelled (Skokanová and Eremiášová, 2012).

The viticulture in Slovakia has passed through four phases. The first period is the lead-up to socialism in 1948. *Vitis vinifera*, the common grape vine, has been grown in Slovakia since Roman times, with the first written accounts dating from the early 9th century (Záruba et al., 1985). In the 16th and 17th century, all viticultural towns became royal free towns. The 18th century was the golden age of viticulture. In 1720, the vineyard area covered approximately 57,000 ha, three times more than today. In the second half of the 19th century, viticide, an insect disease caused by the small louse *Phylloxera vastatrix* brought from America severely affected production (Záruba et al., 1985).

Following the move to communism in 1948 (the second period) the collectivisation of agriculture triggered huge changes in vineyard management. Farmers were forced to hand over their land to collective farms – agricultural cooperatives where the emphasis was on maximising production of agricultural commodities. Many traditional small-scale vineyards, managed by individual owners or families, were merged into large fields managed by agricultural

corporations (Boucníková and Kučera, 2005; Krivosudský, 2011; Supuka et al., 2011). The Slovak viticultural cooperative became the State Wine Factory, which had a monopoly on wine production. Wine was produced in large quantities, with no attention given to regional variations or particular processing methods. Wine production, its price, import and export were all controlled by the state. The goal of agricultural production was self-sufficiency with little attention paid to cost-effectiveness. Consequently, vineyards were planted in unsuitable areas such as northern slopes and water-logged plains.

Some well-maintained, small-scale vineyards were not collectivised (because of their size or remoteness) and remained under the individual management of hobby farmers, although their contribution to wine production was negligible. These vineyards are now recognised as Historical Structures of the Agricultural Landscape (or Traditional Agricultural Landscape structures), which are defined as structures such as cultivated fields, meadows, pastures, orchards, vineyards or recently abandoned plots at an early succession stage that have not been subject to the influence of agricultural collectivisation (Dobrovodská et al., 2010). They are important because of their rich diversity of plant and animal species that have evolved continuously over centuries (Špulerová et al., 2011; Babicová and Gerháťová, 2011).

The third period begins in 1989 and is marked by the transition to a democratic system with a market-oriented economy. This caused a general decline in agriculture, introduced market-driven forms of land use and completely changed the situation of vine-growers. An increase in imported wines and grape must, land restitution, lack of agricultural subsidies and other constraints brought the viticultural industry to the brink of collapse (Demo, 2001; Izakovičová et al., 2008). The transformation of the agriculture management system and external factors (e.g. lifestyles) was reflected in the landscape. This period saw the widespread abandonment of land that impacted both large-scale fields and traditional vineyards.

The final, fourth period dates from the entry of Slovakia into the European Union and the implementation of the Common Agricultural Policy (CAP) in 2004. These developments have had an ambivalent influence on vine growing. On the one hand, they brought renewed financial support for the agricultural sector; on the other hand the CAP imposed several restrictions on farming (reduced quotas, cutbacks in production and higher quality and hygiene standards). Moreover, application of the CAP brought administrative and financial requirements that were particularly demanding for small farmers. Recent statistics suggest that wine production in Slovakia is unprofitable. Records from 2008 show the highest historical negative profit-to-production ratio (Rovný et al., 2010). For every 1 EUR of investment in production, vine growers lost 0.46 EUR. An analysis of production costs and profits from commercial vineyards shows that 69.93% were unprofitable in 2009 (Taliga et al., 2010); this rose to 84.96% in 2010 (Pekárik and Taliga, 2011).

The local impact of the huge changes in the political system is illustrated by the following case study in the Svätý Jur area. This traditional vine-growing village is located 14 km from Bratislava, the capital of Slovakia, in the Small Carpathians foothills and the Danubian Lowland (Podunajská nížina) at an altitude of 130–370 metres. The original, medieval layout of vineyards formed the basis for the physiognomy of the landscape until the establishment of an agricultural cooperative in the 1950s (Lukniš, 1977). This transformed the majority of the small, narrow vineyard strips into large terraces that followed contour lines. Private ownership of vineyards only continued in very steep areas that were unsuitable for heavy machinery. Many of these vineyards have been abandoned since the change to a market-oriented economy or face pressure from a new direction – urbanisation.

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