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Golf courses: New phenomena in the landscape of the Czech Republic after 1990

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ABSTRACT

The main goal of the paper is an evaluation of the dynamics of golf course (hereafter GC[s]) construction in the Czech Republic (hereafter CR) after 1990 and an assessment of the impacts and the consequences of the GCs on the landscape. The construction of the GCs was evaluated from the point of view of the physical-geography with regards to human geography aspects with a focus on an assessment in relation to climatic, soil, hydrological parameters, land use and financial aspects. The paper is to present the localisation and the geographical description of the GCs and their assessment in the different regions of the CR. An original database was created for the purpose of the localisation and complex evaluation of all the GCs in the CR. The analysis was carried out on 114 GCs in the CR. These GCs covered a surface area of ca. 5106 ha, i.e., 0.06% of the total area of the CR in 2016. A significant share of the GCs was built on agricultural land with high quality (more than 34%), which is clearly a negative phenomenon. The reason for the construction of a large number of GCs on some high-yielding soils can be seen: a) in the low land price, b) in the low rent, c) in the negative results of entrepreneurial income (or in the surplus) of agricultural production up to the accession of the Czech Republic to the EU and d) the distance from large cities (location in regions) and spa town with rich clients. By 2004, the majority of the GCs had been built in the CR already. From the point of view land use, a total of 51% of the GCs area was registered as agricultural land in the Cadastre Land Register. Of the agricultural land, the largest share (35%) was registered as arable land and approximately one third of the GCs occupied permanent grassland. On the contrary, the other area, which should form the majority of GCs, because its areas are registered for sport activities, only accounted for 37% of the golf resorts' area in the CR. The GCs were also built on areas affected by human activity (mines, landfills, fly ash). The area of the GCs in the reclaimed territory was approximately 942 ha, i.e., more than 18% of the total GCs area. The reclamation of such territories by the construction of GCs is one of the variants of the use of such territories. Having assessed the climatic characteristics, it was determined that 20 out of the total of 114 GCs were endangered by potential drought. The theoretical and actual water demand for the irrigation of 9 selected GCs in drought-affected areas has been compared. It can be stated that all the selected GCs manage the irrigation water very well, the actual consumption is in line with the theoretical need. The observed difference in water between the calculated theoretical and realised irrigation of the GCs in mm/m^2 of irrigated area, ranges from -10.8 mm to + 9.7 mm in 1 month for an individual GC. The study by model "runoff curve numbers" (CN) showed a positive impact of the grassland in the areas of GCs with regards to the direct runoff. The hydrological impact of grassing the arable land is positive, since it contributes to the retention and accumulation of water in the catchment area.

1. Introduction

The history of the sport golf and its forerunners dates back to the Roman Empire, i.e., into the period prior to our Common Era (CE). The early form of the game was called "paganica", in which players used wooden sticks to push a small leather ball into a hole (Player, 2001). In 1297, a game resembling modern golf appeared in the Netherlands: it was played with sticks known as "kolvens" (Cupáková, 2011). In the 14th century, one could find a number of games resembling golf not only in different parts of Europe, but also in China. In England, this

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game was called “cambuca”; in Belgium and France, a Flemish game called “chloe” was reported and a game “palle-maille” was known on the area of modern France and Italy. The plains of faraway China were the cradle of “Chuiwan”. This game, similar to golf, was apparently older; it came to Europe in the 10th or 11th century (Doležal, 2007).

Ceron-Anaya (2010) claims that a great boom of golf and building of GCs started soon after the foundation of the first golf club in Scotland in the middle of the 18th century (namely in Leith, close to Edinburgh in 1744). The trend towards building GCs sped up enormously in the 19th century, in which more than 100 GCs were created in Scotland and England, i.e., from the Scottish Highlands to the highland and mountainous areas of the Pennines.

The beginning of the 20th century saw yet another major increase in the number of GCs in the world; the figure went to 982 only in the USA (up to 1900) and a remarkable number of GCs were also built in England (1200 up to 1914). Scotland, on the contrary, stagnated in the building of GCs with a “mere” 79.

From this point of view, it can be established that golf knows no continental or geographical limitations. Extreme GCs have even arisen on the Antarctic Plains, one at the McMurdo Polar Research Station on Ross Island. One GC that is used during the “Antarctic Summer” lies in the Union Glacier Camp. Greenland also has several GCs. The opposite extreme can be found in Death Valley (California, USA). It is the lowest-laid GC in the world. These extreme GCs are not classical greens (Novinky.cz, 2018).

Within the area of the Czech lands in the former Austro-Hungarian Empire, the first unofficial drives took place on the Emperor’s Meadow in Prague as early as in 1898 (Ryjáčková, 2010). The first official GC was founded in Marienbad in 1905. This GC is situated in higher highlands (Demek, 1987), in the immediate proximity of a spa city. The solemn opening of this GC in the West Bohemian spa city was attended by the British King Edward VII. This GC was first frequented predominantly by foreign clientele (Snížková, 2014). The second oldest GC in Prague is traditionally linked to the Ringhoffer family; it was built in 1926 on their private property in Motol. The first Czech golf club was founded here. The club was situated into the temperate climate and in lower uplands of the capital city of Prague. It was followed by two GCs, in Carlsbad and Líšnice, which were both built in 1928, i.e., in the period between the two world wars (Sedlák, 2004; Halada, 2007). The “GC Karlovy Vary” is a part of an urbanised city neighbourhood in a higher location on the transition between lower highlands and higher highlands; on the contrary, the “GC Líšnice” is situated near a municipality of the same name, 25 km from Prague in the Benešovská uplands. It sits on a rocky subsoil and is defined as a GC with moisture below average. Between 1929 and 1989 (i.e., 60 years) only 5 GCs were built, i.e., “GC Svratka” (1932), “GC Poděbrady” (1961), “GC Šilhéřovice” and “GC Semily” (both in 1970) and, finally, at the end of the totalitarian period 1987/1988, “GC Automotodrom Brno”. GC Poděbrady lies in the plain, three out of these GC are situated in lower uplands, only GC Svratka is in a higher position, i.e., a type of lower highlands. The GC in the regional city of Brno (the 2nd largest city in the CR) in the South Moravian Region is quite interesting, this GC was built on the site of a multifunctional area (as the name “Automotodrom” suggests, it is a racing circuit, which makes this GC quite unique). As regards to urbanised development, the “GC Semily” is situated also close to a district town. The landmark year for Czech golf is 1966, since golf was equalised with other sports by the Czechoslovak Union of Physical Education and Sports. The period of the 1970s and 1980s was marked by a growing popularity of golf in our country, especially for foreign clientele, however, one could hardly talk about an ideal situation due to the Communist regime (Dufková, 2010). This can also be proven by the number of GCs built until 1989, i.e., only 9. Golf was mainly played by members of the Communist Party and their foreign clientele. The turning point was 1989, in which democracy and a free market system were reintroduced to Czechoslovakia: the change became visible in every field (from the primary to the quarterly sector) of the newly established Czechoslovak Federative Republic.

After 1989, the building of GCs experienced literally a socio-economic “boom” (Numerato, 2009). The period after 1990 can be further distinguished into two phases: the 1st phase was marked by a slower tempo in building GCs until the middle of the 1990s, connected to the inflow of investment, i.e., the so-called “geography of investment” related to the building of GCs (Edgington, 1996) and to the privatisation of the public sector (Brom and Orenstein, 2007); the 2nd phase – from 2000 – in which the accumulation of investment took place, as well as the dramatic speeding up of the tempo in which GCs were built. This phase can also be attributed to the macroeconomic stabilisation and the development of market economy (Pleskovic and Stern, 2001). The 2nd phase related to the accumulation of investments and the fast-growing macroeconomic indicators in positive values was further supported by the EU subsidy policy (European Golf Association, 2017). The GCs was subsidized in the CR in the 2007–2013 programming period by vertiginous amount of almost 0.4 billion CZK.

The macroeconomic conditions have a particularly strong impact on individuals, but also on the demand for golf. (Barcena-Martin et al., 2017) came to the conclusion by evaluating the number of golfers and GCs in relation to indicators of the economic situation of the 15 EU Member States between 2000 and 2014.

There is no impact assessment on the landscape after the construction of the GC within the Czech Republic. However, a certain type of assessment can be found in the EIA (Environmental Impact Assessment), which is produced in response to the documentation before the construction of the GC. An example is the study at the Český Krumlov Golf Club (EIA SERVIS s.r.o., 2004). From a naturalistic point of view, the impact on the landscape was discussed in the case of the construction of the GC in Klánovice (Martiš et al., 2006). Subsequent operations of a GC have environmental impacts (e.g., tourism) (Warnken et al., 2001). However, the effects of GC on the landscape are already explored in Europe and Spain (Beard, 2000). A more complex nature of the study on the impact of GC construction on the landscape is demonstrated by Vargues and Loures (2008). Using GIS software and aerial photography, thoroughly assess their study of the visualisation and aesthetic character of GCs in the Algarve. The authors also made use of landscape physical-geographic parameters, i.e., the gradient of the terrain together with the vegetation cover. They divided the geographical area with the GC into landscape units: agricultural land (extensive and intensive), forests (with low and high density), meadows (xerophilic and hydrophilic), coastal areas (i.e., wet bank soil), areas with mineral extraction and residential/road networks (i.e., urban infrastructure). In their analysis of aerial photos and the gradient and morphology of the terrain, they also considered the distance of the given GC from residential and road networks (urban infrastructure).

The occupation of agricultural land is currently being given increased attention (Kabourková, 2018), but not the one it deserves. The change of the soil cover is mainly examined in the framework of urbanisation, good agricultural land needs to be protected from the framework of construction (Kadlecová, 2014). It should be remembered that according to Sálusová (2018), the arable land area in the Czech Republic in 1992 was 3209 thousand hectares and coincided with the size of the crops. The arable land area was 2972 thousand hectares in 2015 (a decrease of 237 thousand hectares), but only 2457 thousand hectares were used. This means that 515 thousand hectares were not sown and no one knows how to use this land.

In the Czech Republic, the issue of building GCs on different areas is also being addressed. GCs can be built in different habitat conditions (Svobodová, 2013). In the Czech Republic, GCs are also being built on mining sites (Strnad, 2013) or on sites of old landfills (Procházka, 2007; Růžičková Höfferová, 2012) or other devastated territories (Krainová, 2012). In England, GCs were also built in “brownfield” areas to help revitalise the countryside (Thums et al., 2008), whereas in the USA, GCs were projected in natural destinations attractive for tourists (Honey, 2008). With their socio-economic influence (sports and recreation), the