Re-development of a former military training area – The case of Brdy told from a local actors’ perspective

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Abstract
Military training areas (MTAs) are special spatial units. Closed and inaccessible for the general public, they have been shaped by long-term military use of various potential type and intensity. Following the suspension of operation, some MTAs fell derelict and buildings and infrastructures on it become brownfields. Local municipalities will have strong interests and will care about the re-development options – either in utilising potentials or in preventing competitions. We take a Czech example and use in-depth semi-structured interviews to investigate the how local actors perceived and influenced the re-development perspectives of the former MTA Brdy, Czech Republic. This case is interesting, because international and national politics in as much as different groups of local stakeholders played significant roles in creating opportunities and for holding or pushing a re- or new development on the military brownfield land. Next to the results of the qualitative interviews with local stakeholders, we include analysis of available statistical data and information about the case study municipalities. Our contribution gives an insightful investigation about the role that local actors played in determining new uses of the former MTA in uncertain and unstable socio-economic and political conditions typical for post-communist and developing countries.

Highlights

The use of military training facilities is influenced by geopolitical and strategic interests
Networking of actors is important for finding opportunities for new development of former military areas
A renewal of historical memory contributes to developing a new local identity.
The protection of the environment and biodiversity in military training areas is highly desirable.
Redevelopment of former MTAs bring specific types of challenges to stakeholders.

Keywords
Qualitative interviews; local actors; military geography; Czech Republic; military brownfield;
1 Introduction

Military training areas (MTAs) are specific forms of land. Often fully inaccessible for the general public, military usages resulted in special geographies, where military activity often impacted largely on the physical and social landscape in which it is embedded. At the same time, on-site MTA usage forms are often close to nature and (at least indirectly) linked to wildlife protection by military orders (Woodward, 2004). During the 20th century, many MTAs were created. The absolute number as well as the size of MTAs increased over time. This was the result of a rapid development of various new weaponry, including weapons of mass destruction (Vogel, 2007), with destructive on-site impacts (causing various forms of contamination) also having increased by conventional weapons (Burmaoglu and Sarıtas, 2017). Globally, the area of the MTAs is estimated at least at 50 million hectares; however, the actual figure is more likely closer to 200 million hectares (Zentelis et al., 2017).

After decades of operation, the operation of several MTAs was suspended in the years after the end of the Cold War. Many such areas no longer served their purpose and have become underutilized brownfield land. Brownfields can be characterised as derelict and underused sites that are often contaminated. These sites regularly contain remains of buildings and other facilities reflecting their previous uses, offering no immediate prospect of re-development; revitalisation normally requires coordinated intervention by stakeholders (cf. CEN, 2014). Brownfield revitalization is considered to offer sustainable alternatives to greenfield – undeveloped land – development (Bartke and Schwarze, 2015). Different groups of local stakeholders play very important roles in searching for new ideas and opportunities for re-development of un- or underutilised land (Frantál et al, 2015b; Harclerode, 2015; Rizzo et al., 2016).

This article gives an insightful investigation about the role that local actors played in determining new uses of the former Brdy MTA in the Czech Republic, thereby offering broader insights for the re-development of military brownfields in particular in uncertain and unstable socio-economic and political times as they were typical for post-communist and developing countries.

We presuppose that the role of local actors for the re-development of former MTAs (and related military brownfields) is significant. We investigate the former MTA Brdy in the Czech Republic as a case study. MTA Brdy was created in 1927 as a military artillery shooting range. Beginning of 2016, operation of the MTA was suspended. The territory covers an impressive area of 26,000 hectares, which was divided in public administrative terms between 27 neighbouring municipalities after suspension of operations.

Our investigation reveals the role played by various local actor groups in searching military and non-military re-development opportunities of the Brdy MTA and related military brownfields. We first provide some general characterization of MTAs before presenting results of interviews and data analysis of the case study. The final section concludes.

2 General characteristics of military training areas (MTAs)

The creation of MTAs was usually linked to a displacement of the local population, causing the occurrence of ghost towns and villages. Such processes caused more or less active protests and conflicts (Dudley, 2013).

The concept of military geographies (e.g. Woodward, 2004; Pearson et al., 2010; Coates et al., 2011; Dudley, 2013; Seidl, Chromy and Habartová, 2010; Hercik et al., 2014) points to the uniqueness of military land development as “white” areas on planned and regulated land development.

Operating MTAs impacted the local and regional development. Negative impacts were caused not least as the land within the MTA’s demarcation is usually excluded from the regional economic system and creates a barrier for through traffic causing increased peripheral positions of neighbouring sites (Havlíček et al., 2018). On the other hand, MTAs have been beneficial for some regions, because military activities generate demand for local and regional economic goods and services, establishing jobs in the respective sectors. As
Woodward (2004) emphasizes, military patronage may be directed to local shops, bars and restaurants, which may in turn depend solely or almost entirely on military personnel as their customers.

From an environmental perspective, MTAs are usually very valuable (Lindenmayer et al., 2016; Skokanová et al., 2017; Forejt et al., 2017). A rich body of literature proposed improvements of the environmental management (e.g. Zentelis et al. 2017; Fox et al. 2017; Guimarães et al. 2017). The isolation from industrial and general public use as well as from major cutting infrastructures often allowed a rich biodiversity to unfold. Notwithstanding, various military activities on MTAs caused the occurrence of serious environmental problems, often resulting in complex soil and groundwater contamination being very complicated and expensive to assess and remediate (Voie et al., 2006).

The suspension or a significant reduction of military activities can cause many socio-economic problems in a MTA’s region. As the demand for MTA oriented services and products diminishes, unemployment is rising often significantly. Military brownfields appear. Their probability of re-use depends on the location, in particular the vicinity to the regional centre and main transport infrastructure (Frantál et al., 2013). MTA brownfields are usually located in low populated areas – as a result their redevelopment potential is less compared to military brownfields in urban areas, e.g. barracks, with higher population density (Frantál et al., 2015a; Martinát et al., 2016).

Former MTAs often have characteristics of megasites (Schädler et al., 2012) being often complexly contaminated in soil and groundwater (petroleum substances, ammunition). The remediation even at a hazard defence level requires huge – often uncertain – investments. The regeneration process of military brownfields is often complicated by fact that military brownfields have on average a larger size in comparison to brownfields of other origins (Osman et al. 2015). Cooperation of the different groups actors is very important for successfully redevelopment of all types of brownfields (Alexandrescu et al. 2014, 2017) and it could be presupposed that this type of cooperation and networking among actors is also important both for protection of environment and biodiversity in the former MTAs and for post-military development projects that aim at improved socio-economic development of the region.

Recent research on brownfield redevelopment emphasizing the necessity to consider a regional perspective to identify and select future redevelopment plans (e.g. Limasset et al., 2018; Alexandrescu et al., 2017; Bartke et al., 2016 and Pizzol et al., 2016) is thus of relevance for MTA redevelopment. Notwithstanding, a site specific perspective and active involvement of actors is crucial at the regional and local levels (Alexandrescu, 2016a, 2016b; Bleicher and Groß, 2010; Hartmuth et al., 2008).

3 Methods and materials

We use interviews and analyse available information and data related to the Brdy MTA and 34 municipalities located in the neighbourhood of this MTA. Since the decision to suspend the MTA’s operation in 2012, the studied area experienced complex discussions focused on opportunities of re-development after the reduction of military functions and the establishment of a landscape protected area.

The main objective of our research is to identify the most important challenges from the perspective of local actors and their role of influencing the re-development. The MTAs development was also discussed in detail in Czech media. For this reason, responses to this issue were examined in the mainstream media, specifically newspaper articles, radio and television reports. In addition, available statistical data was used and the information from municipal websites, which were analysed to prepare interviews with actors related to the studied municipalities. In the case study area, a field survey took place in June 2017 and July 2017, during which 20 semi-structure in-depth interviews were hold with selected actors, who were identified as being important for municipal development – 10 interviews were held with elected representatives of municipalities (mayors or members of the municipal council) and 10 interviews were held with other key-informants for local development (e.g. local entrepreneur, school representatives and NGO) (cf. Tab. 1 for a brief characterization of the interviewed).
In a systematic procedure, we firstly contact partners from municipalities (mayors and members of municipal councils if mayors did not accept our invitation to interviews), which were influenced by MTA Brdy. These partners were asked to recommend other active stakeholders from the non-municipal sector, who actively participate on development issues of municipalities in the case study area. The objective was to cover the variety of ideas from respondents with various backgrounds and different views about the local development. Each interview lasted for circa one hour.

### Tab. 1: Overview of selected local partners for interviews (anonymous style)

<table>
<thead>
<tr>
<th>Type of partner for interview</th>
<th>Age category</th>
<th>Number of years spent in the case study area</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor 1</td>
<td>31-40 years</td>
<td>17</td>
<td>M</td>
</tr>
<tr>
<td>Mayor 2</td>
<td>41-50 years</td>
<td>13</td>
<td>F</td>
</tr>
<tr>
<td>Mayor 3</td>
<td>51-60 years</td>
<td>23</td>
<td>M</td>
</tr>
<tr>
<td>Mayor 4</td>
<td>61-70 years</td>
<td>19</td>
<td>F</td>
</tr>
<tr>
<td>Mayor 5</td>
<td>41-50 years</td>
<td>15</td>
<td>M</td>
</tr>
<tr>
<td>Member of the municipal council 1</td>
<td>21-30 years</td>
<td>9</td>
<td>M</td>
</tr>
<tr>
<td>Member of the municipal council 2</td>
<td>31-40 years</td>
<td>12</td>
<td>F</td>
</tr>
<tr>
<td>Member of the municipal council 3</td>
<td>41-50 years</td>
<td>14</td>
<td>F</td>
</tr>
<tr>
<td>Member of the municipal council 4</td>
<td>51-60 years</td>
<td>19</td>
<td>F</td>
</tr>
<tr>
<td>Member of the municipal council 5</td>
<td>61-70 years</td>
<td>21</td>
<td>M</td>
</tr>
<tr>
<td>Representative of school 1</td>
<td>41-50 years</td>
<td>9</td>
<td>F</td>
</tr>
<tr>
<td>Representative of school 2</td>
<td>51-60 years</td>
<td>14</td>
<td>M</td>
</tr>
<tr>
<td>Local businessman 1</td>
<td>31-40 years</td>
<td>12</td>
<td>F</td>
</tr>
<tr>
<td>Local businessman 2</td>
<td>21-30 years</td>
<td>8</td>
<td>M</td>
</tr>
<tr>
<td>Local farmer 1</td>
<td>41-50 years</td>
<td>15</td>
<td>M</td>
</tr>
<tr>
<td>Local farmer 2</td>
<td>51-60 years</td>
<td>17</td>
<td>M</td>
</tr>
<tr>
<td>Representative of civic association</td>
<td>31-40 years</td>
<td>11</td>
<td>F</td>
</tr>
<tr>
<td>Representative of the Military forests and estates</td>
<td>41-50 years</td>
<td>12</td>
<td>M</td>
</tr>
<tr>
<td>Representative of the Catholic church</td>
<td>51-60 years</td>
<td>13</td>
<td>M</td>
</tr>
</tbody>
</table>

Source: Own research

4 Local actors’ perception of re-development of the former Brdy MTA and surrounding municipalities

In 2012, the government of the Czech Republic decided to suspend the MTA Brdy operations. After interesting and disputed alternative, it was decided to protect the area against unregulated development by establishing the Brdy Protected Landscape Area. In the following, we report about these developments based on the key-informant interviews and analysis of public data about the case study area.

4.1. General description of the case study area’s population development and location

Our case study area covers not only the former MTA Brdy but includes municipalities in its surroundings. We include the administrative units with small number of inhabitants. These were impacted by depopulation in the last century (based on last census data before World War I and last census data in 21st century) with only four municipalities (Strašice, Mirošov, Příbram and Jince) with an increase of inhabitants in the period 1910 - 2011 (Tab. 2). The lowest number of inhabitants was recorded in the year 1950 as result of World War II and expulsion of original German population from Czechoslovakia in the post-war period, when many Czech families left their homes to settle in former German areas.

Investigating the long-term population development of the Brdy MTA, it becomes evident that the territory had low population density before military activities started in 1927. The data illustrates the effects of two displacement phases: (1) the first wave was caused by the German Army during the Second World War. – After the war, the territory had been settled again, but the pre-war population was not achieved in the post-
war period; (b) a second wave was enforced by the Communist regime in 1952. It caused another massive decline in the local population.

The case study area, which has been influenced by military activities (e.g. existence of military barrack and other services necessary for operating for needs of MTA Brdy) for many decades, is located in the south-west direction from Prague. Municipalities in the north-western part of territory have currently an advantage of a better connection via highway to Prague and Pilsen and further to Bavaria in Germany (Fig. 1).

**Tab. 2: Population development in Brdy case study area in period 1910-2011**

<table>
<thead>
<tr>
<th>Territorial units (MTA Brdy and surrounding municipalities)</th>
<th>Area (km²)</th>
<th>Number of inhabitants</th>
<th>Population increase or decrease 2011/1910 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MTA Brdy</strong></td>
<td>260.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bohutín</td>
<td>8.43</td>
<td>1,822</td>
<td>-10.5%</td>
</tr>
<tr>
<td>Borovo</td>
<td>2.30</td>
<td>280</td>
<td>-57.1%</td>
</tr>
<tr>
<td>Bratkovice</td>
<td>3.00</td>
<td>768</td>
<td>-49.9%</td>
</tr>
<tr>
<td>Čenkov</td>
<td>9.01</td>
<td>643</td>
<td>-78.6%</td>
</tr>
<tr>
<td>Dobřív</td>
<td>12.15</td>
<td>1,397</td>
<td>-12.2%</td>
</tr>
<tr>
<td>Dražín</td>
<td>3.64</td>
<td>853</td>
<td>-37.3%</td>
</tr>
<tr>
<td>Felabába</td>
<td>1.52</td>
<td>305</td>
<td>-16.4%</td>
</tr>
<tr>
<td>Hvozdec</td>
<td>3.83</td>
<td>511</td>
<td>-51.3%</td>
</tr>
<tr>
<td>Chaloupky</td>
<td>1.80</td>
<td>780</td>
<td>-34.9%</td>
</tr>
<tr>
<td><strong>Jince</strong></td>
<td>15.08</td>
<td>1,348</td>
<td>59.3%</td>
</tr>
<tr>
<td><strong>Křesín</strong></td>
<td>1.91</td>
<td>326</td>
<td>-65.6%</td>
</tr>
<tr>
<td><strong>Láz</strong></td>
<td>4.66</td>
<td>909</td>
<td>-37.0%</td>
</tr>
<tr>
<td><strong>Malá Vísa</strong></td>
<td>1.16</td>
<td>264</td>
<td>-62.5%</td>
</tr>
<tr>
<td><strong>Mirošov</strong></td>
<td>11.53</td>
<td>1,635</td>
<td>43.3%</td>
</tr>
<tr>
<td><strong>Mišov</strong></td>
<td>7.66</td>
<td>327</td>
<td>-68.5%</td>
</tr>
<tr>
<td><strong>Nepomuk</strong></td>
<td>2.49</td>
<td>523</td>
<td>-61.6%</td>
</tr>
<tr>
<td><strong>Obecnice</strong></td>
<td>5.50</td>
<td>1,858</td>
<td>-34.4%</td>
</tr>
<tr>
<td><strong>Ohrádské</strong></td>
<td>2.45</td>
<td>597</td>
<td>-51.4%</td>
</tr>
<tr>
<td><strong>Olešná</strong></td>
<td>10.68</td>
<td>604</td>
<td>-31.5%</td>
</tr>
<tr>
<td><strong>Podlesí</strong></td>
<td>4.38</td>
<td>1,302</td>
<td>-12.2%</td>
</tr>
<tr>
<td><strong>Podluhy</strong></td>
<td>4.78</td>
<td>749</td>
<td>-15.5%</td>
</tr>
<tr>
<td><strong>Příbram</strong></td>
<td>33.41</td>
<td>20,826</td>
<td>58.9%</td>
</tr>
<tr>
<td><strong>Rpety</strong></td>
<td>5.94</td>
<td>492</td>
<td>-5.5%</td>
</tr>
<tr>
<td><strong>Sádek</strong></td>
<td>1.86</td>
<td>441</td>
<td>-49.9%</td>
</tr>
<tr>
<td><strong>Sedlice</strong></td>
<td>5.69</td>
<td>517</td>
<td>-55.3%</td>
</tr>
<tr>
<td><strong>Skořice</strong></td>
<td>3.74</td>
<td>652</td>
<td>-63.8%</td>
</tr>
<tr>
<td><strong>Spálené Poříčí</strong></td>
<td>54.52</td>
<td>4,200</td>
<td>-36.7%</td>
</tr>
<tr>
<td><strong>Strašice</strong></td>
<td>7.93</td>
<td>2,256</td>
<td>11.0%</td>
</tr>
<tr>
<td><strong>Štírov</strong></td>
<td>1.30</td>
<td>147</td>
<td>-59.9%</td>
</tr>
<tr>
<td><strong>Těšín</strong></td>
<td>4.91</td>
<td>560</td>
<td>-53.2%</td>
</tr>
<tr>
<td><strong>Trokavec</strong></td>
<td>4.23</td>
<td>407</td>
<td>-78.6%</td>
</tr>
<tr>
<td><strong>Věšín</strong></td>
<td>17.06</td>
<td>1,436</td>
<td>-78.6%</td>
</tr>
<tr>
<td><strong>Vranovice</strong></td>
<td>6.23</td>
<td>564</td>
<td>-49.1%</td>
</tr>
<tr>
<td><strong>Zaječov</strong></td>
<td>7.03</td>
<td>2,001</td>
<td>-29.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>531.90</td>
<td>54,089</td>
<td>4.5%</td>
</tr>
</tbody>
</table>
4.2. Reduction of military activities in the Czech Republic and their impacts on the case study area

Before 1989, the intensity of MTA operations was higher in the Czechoslovakia than it is currently in the Czech Republic. The Czechoslovak army was organised following the Soviet model. In 1989, it had about 200,000 soldiers. Moreover, in the period between 1968-1991, there were about 70,000 Soviet soldiers in the country who also used the Czech MTAs. On the territory of the current the Czech Republic, military activities have been significantly reduced in the period since 1989. This can be derived from the numbers of soldiers – while there were circa 53,000 soldiers in Czech army in 1993, the number of soldiers in the Czech army declined to 11,000 by 2003. Since that year, the numbers of professional Czech soldiers has been increasing again to circa 30,000 soldiers by January 2018. The reasons stated for the re-militarisation are increased international security risks of terrorism and a threat of perceived rising imperial tendencies in certain countries.

Also the re-development of the former MTA Brdy was influenced by these trends.

First, the reduction of armed forces led to the creation of military brownfields (examples given in Fig. 2). Some military brownfields cover quite extensive area and they can be redeveloped only step by step – for example some parts of the military brownfield in Strašice have been successfully redeveloped, but other parts are waiting for new investments (Fig. 3).
Second, the increasingly unstable international security situation, influenced the former MTA Brdy as well, prominently exemplified by ambitious plans to create a US military radar station in Brdy. First consideration to build the radar site date back to 2002, when a missile defence strategy was discussed during the visit of the Czech Defence Minister Jaroslav Tvrdík in the USA (Maštálka et al., 2012). Detailed plans for locating the military radar in Brdy were discussed intensively in the period 2007-2009. This period is described by Hynek (2013: 374) as “golden period of bilateral cooperation between the Czech Republic and the United States”, because George W. Bush’s presidential administration had strong interests in stationing an X-band radar in the Czech Republic as a part of the so-called Third Pillar of the US Ballistic Missile Defence (BMD) system. The main result of negotiations of two countries was an agreement on establishing a US ballistic missile defence radar site in the Czech Republic, which was signed in 2008 (Agreement….., 2008). This agreement, however, did not enter into force. In September 2009, the new Obama administration informed the Czech government that plans of the previous Bush administration including the military radar in Brdy
were cancelled, explaining that the US had decided to use alternatives to address global security threats (Mašťálka et al. 2012).

Several representatives of municipalities around the Brdy MTA played an important role in organising protests against the plans to create an US military radar in Brdy. For example, the mayor of the municipality of Trokavec, which is located in the neighbourhood of the site, where the US radar was planned to be erected, is described in the documentary film “Czech Peace” as “a nightmare of the Czech Army and spokesman of the League of Mayors against Radar” (Klusák and Remunda, 2010). In Trokavec, in March 2007, the first municipal referendum was held in which 71 of 72 voters refused the US military radar operations. This inspired other municipalities where referenda or local polls were held. Also there, the overwhelming majority of voters rejected the plans for a US radar station. The municipal referenda were important for the networking of different types of actors and because they also initiated discussions focused on possible future development of their municipalities.

In August 2007, the so-called League of Mayors against the Radar was signed by 22 mayors from municipalities that had a direct border with the Brdy MTA and 15 mayors of municipalities from the wider neighbourhoods (Mašťálka et al., 2012). The protests were also broad to the attention of the European policy makers as shown in Figure 4. Notwithstanding, it must be noted that not all mayors of the neighbouring municipalities were against the US plans. Some supported the project despite the mainly negative perception of their local citizenry, because these majors saw the chance of obtaining new funds for the development of their municipalities. The government of the Czech Republic tried to convince municipal representatives to support the project by promising the creation of a special subsidy fund for 22 municipalities around the foreseen radar site – with a budget of 1 billion Czech Crones of which a quarter devoted especially to the development of municipal infrastructures, e.g. sewage treatment plants, water supply systems, sewage systems. At the same time, the Czech government, as part of a funded public relations campaign, pointed out the possible positive future impacts of US investments for the development of municipalities and the region as a whole. However, this episode of a special national fund for the municipalities in Brdy finished in a classic post-communist style: after municipalities elaborated specific project plans for solicitation of these funds, a new government was elected which felt no longer committed to fulfil the promises to the region given by the previous government. The discussions related to the radar station worsened the general conditions for future networking and cooperation of local actors, because these plans created conflicts and personal barriers amongst some of them.

**Fig. 4:** Selected mayors from the Brdy Region in Brussels in February 2009

Source: Mašťálka, Neoral and Cironis (2012: 183)
4.3. The role of local actors in searching for new post-military development opportunities after suspension of the Brdy MTA

The failure of the US military project in Brdy caused a counter-reaction. In January 2012, the Czech government decided to suspend the Brdy MTA and to reduce the four remaining MTAs (Brťina, Boletice, Hradiště and Libavá) with the rationale that the present professional armed forces of the Czech Republic do not need such large training areas. The suspension of the Brdy MTA significantly impacted the municipalities in the neighbourhood, because there was a change of functions in the area in the form of a reduction of military functions on one side and an increase of other functions, as for example environmental and recreational ones. In addition, the area of the Brdy MTA was divided administratively among 27 municipalities (Tab. 3) and the former MTA became a part of a new landscape protected area.

A noteworthy fact from the point of view of the actors related to municipal self-government was undoubtedly the decision that the protected landscape area of Brdy was established on an area of 345 km², which included not only the area of the former MTA with its size of 260 km² but also parts in its vicinity. It must also be noted that one part of the Brdy territory remained after the suspension of MTA operations in the hands of the Czech army – military activities continue in Jince training ground and a site called “America”. Nevertheless, the military functions of the area have clearly been reduced, and the issues of environmental protection (e.g. protection of water resources, protection of biodiversity), development of different types of tourism, and management of agriculture and forestry lands have become more important in the discussions of the local stakeholders. In this context, it is necessary to emphasize that not all local actors share the same development goals. Naturally, this causes conflicts among the different groups of actors.

<table>
<thead>
<tr>
<th>Territorial units (MTA Brdy and surrounding municipalities)</th>
<th>Number of territorial units 1st January 2015</th>
<th>Area 2015 (Km²)</th>
<th>Area 2016 (Km²)</th>
<th>Increase/ decrease of area (Km²)</th>
<th>Increase/ decrease of area (%)</th>
<th>Population on 1st January 2015</th>
<th>Population density on 1st January 2015 (Number of inhabitants/Km²)</th>
<th>Population on 1st January 2016</th>
<th>Population density on 1st January 2016 (Number of inhabitants/Km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTA Brdy</td>
<td>1</td>
<td>260.1</td>
<td>0.0</td>
<td>-260.1</td>
<td>-100.0%</td>
<td>27</td>
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<td>715.2%</td>
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In 2012, in connection with the planned suspension of the Brdy MTA, some mayors have expressed concerns about the sources of drinking water. Příbram and the neighbouring municipalities take 80% of their consumption of drinking water from the former Brdy MTA and they suspected that the re-development can negatively influence water quality. Finally, the central government decided that the ownership of the water resources in Brdy is transferred to the surroundings municipalities. Some mayors were not satisfied with the state of the water infrastructures, which can be illustrated by a statement from one of the mayors saying: "The Czech Army have not invested much money in the water pipes, it only corrected what was flowing."

The mayors of the 27 municipalities that increased the area of their territories also expressed their concern that the former MTA could become the object for too many unwanted developers. For this reason it was decided to change the municipal plans in such a way that the new territories of the former MTA were defined as areas, where the creation of both residential and non-residential constructions is prohibited. To
create new municipal plans, municipalities could apply for a special subsidy fund from the Rural Stabilization and Reconstruction Programme.

Tourism is often a first consideration for the re-use of natural landscapes – including the development of related infrastructures. In the case study, the attention of actors has been focused not only on the unique natural sights but also on a restoration of the historical awareness, which can be very important in terms of shaping a new regional and local identity (e.g. Marques et al., 2015). Because the territory of the former MTA is rather extensive, the focus has been on the creation of a network of bicycle paths. Their concept respects the demand of most local actors for no new constructions on the former MTA, allowing still for the location of technical infrastructures, as for example new parking places (Fig. 5), and tourist facilities as restaurants, accommodation, information centres. However, the propagation of tourism activities was not in unison. For example, some actors (e.g. owners of accommodation facilities) supported investments to winter tourism activities (e.g. creation of new ski slopes, regular creation of cross-country skiing tracks), while other actors, as for example owners of forests, highlighted the need to use winter seasons for the removal of wood, and a third group of actors representing self-government were afraid of pollution impacts to the water sources. For successful resolving these conflicts, an intensive communication was necessary. The concept of the cycling track network convinced most actors by building a good connection to the surrounding municipalities and being usable by hikers, too.

In order to restore the historical awareness, two educational trails have been created: the first one with the title “In the Footsteps of the Czechoslovak Artillery” presents to visitors the surroundings of the most famous artillery training areas and the infantry cabin on Jordan. The second educational trail with the title “Traces of Displaced Brdy Municipalities and Settlements” has as main attraction the Central Brdy Museum in Strašice and the hunting lodge of Tři Trubky. Another tourist attraction reminiscent of the previous military use is the atomic museum in a building after the Soviet army (Fig. 5 - right). In this context, it is necessary to appreciate that there are also facilities, which remember of the negative historical experiences with the displacement of populations (Fig. 6). This could be very important not only for development of tourism activities at abandoned sites (Navrátil et al, 2018; Klufová and Šulista, 2018) but being cornerstones of local history and serving as a memorial for persons and their descendants, who have own experiences with displacement.

To prepare an opening of the Brdy MTA for visitors, municipal representatives repeatedly appealed to the representatives of the Czech army to carry out fast pyrotechnic cleaning of the area in order to eliminate potential hazards for both tourists and local inhabitants. The army completed the pyrotechnic cleaning of the entire open area in December 2017.

Marketing activities, in particular various events, aimed at increasing the visibility of the former Brdy MTA. A prominent example is the “Day of the Czech Army” (Fig. 7). Also non-military events are organised, for example the sport event “Running Race Forests Brdy” or the activities for mountain bikers “Trans Brdy”. The development of tourism has become one of the main drivers for intensifying the cooperation between municipalities and other local actors. It led to a high representation of small municipalities as this cooperation has been developed within the ambition and framework of inter-municipal cooperation and local action groups. In addition, a promotion company was set up with the task to conceptually manage the development of tourism in the newly established Brdy landscape protected area, in agreement with the municipalities and other groups of stakeholders in the region.

**Fig. 5: New opportunities for tourists – new parking facilities in Kolvín (left) and new unique atomic museum with exhibits reminiscent of the Cold War in a former military buildings built in the past by the Soviet Army located near the municipality Mišov (right)**
Fig. 6: Memorial place of former settlements in Kolvín (left) in former MTA Brdy and detail information with the statement “At this place was a farmhouse No. 10 – family Frühauf….the family was evicted in 1941 by Germans (Nazi)……the farmhouse was finally demolished in 1953 (by Communists) ……Honour to their memory. Family Frühauf and their relatives…..September 2017” (right)

Fig. 7: Ground Day of the Czech Army increase visibility of former MTA among tourists - the tanks training area near municipality Strašice with 50,000 visitors (June 2016)
Agriculture and forestry are of considerable importance. The ownership of agricultural and forest land remained unchanged, as the main owner the military forests and estates (a company owned by Czech state) owns 309.2 km², with 284.7 km² consisting of forest areas (VLS 2017: 9). The management of such large forests also requires the cooperation in different areas between different actors, including forest owners in surrounding municipalities. Critical topics include, for example, the issue of the elimination of bark beetles, which was discussed in detail in the Czech Republic’s case of the Šumava National Park (Zýval et al., 2016), but currently it is also necessary to fight against spreading bark beetles in the former Brdy MTA and across the Czech Republic in other regions, because Czech monoculture forests are heavily affected by climate change impacts of increasing average temperatures and periods of droughts. Close and regular cooperation between owners and managers of forests and of farms with municipalities are necessary - for example regarding the protection of forests against fires and enforcement of tourists to comply with the safety and environment protection regulations.

4.4. Opportunities and threats related to the future development of former Brdy MTA

A final section of the interviews with the local actors focused on the identification of opportunities and threats that may affect the development of communities in the case study area in the future.

Local actors stressed opportunities especially as being related to the promotion and further development of tourism activities. Interestingly, this is because most of them are persuaded about the high value of the natural wealth of the Brdy landscape protected area. However, potential negative consequences of too massive tourism was not expressed.

In some municipalities with a better transport connection to large cities (Prague, Pilsen), the interviewees emphasized the development potentials for demarcating land for construction of new residential houses for new inhabitants – and thus local tax payers, who commute to the larger cities.

Asked about the biggest threat, some actors mentioned the aging of the population in some municipalities, especially in the small ones without basic services. This could lead to depopulation in the future. To counter this threat, interviewees emphasize the importance to invest into the transport infrastructure and into public transport system service, because effective commuting is understood to hold the migration of young, educated and skilled inhabitants from the case study area. Such depopulation problems are not unique to the Brdy area and have been discussed in many peripheral rural regions in EU countries (Kebza, 2018; Bański et al., 2018; Meijer and Syssner, 2017; Paniagua, 2008). The basic demographic data of the municipalities in the Brdy case study area (Tab. 4) indicate that the population grew slightly in most municipalities in the period 2012-2016. However, many of the municipalities are characterised by a relatively high proportion of
persons aged 65 and more. In this context, many representatives of the self-government stressed issues related to the care of the elderly. Topics such as setting up homes for old people, arranging lunch delivery and saving shopping opportunities became some of their most important issues at municipal level. Given the high share of seniors, it may be expected that some municipalities will face strong depopulation in the future. Actors from small municipalities criticised the lack of a basic infrastructure (shops, pubs, school and health facilities, and post office) as problems which could discourage potential new inhabitant from creating new houses in these settlements. Some representatives of the municipalities, in which school facilities are still located, also pointed to the threat that the aging population causes a decrease of the number of pupils, which means an increased risk of closure of these school in the rural municipalities.

Table 4: Current demographic data and information about municipal amenities

<table>
<thead>
<tr>
<th>Territorial units (MTA Brdy and surrounding municipalities)</th>
<th>Population 1st January 2012</th>
<th>Population 1st January 2015</th>
<th>Population 1st January, 2016</th>
<th>In age 0 - 14 years (abs.)</th>
<th>In age 0 - 14 years let (%)</th>
<th>In age 65+ years (abs.)</th>
<th>In age 65+ years (%)</th>
<th>Post office (yes = 1, no = 0)</th>
<th>School (yes = 1, no = 0, *school for 1-4 classes)</th>
<th>Doctor (yes = 1, no = 0)</th>
<th>Population increase/ decrease 2012-2016 (%)</th>
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<td>274</td>
<td>312</td>
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</table>
5. Conclusions

The intensity and use of MTAs is changing in time and these changes can cause uncertainties among local actors living in the neighbourhoods of these military training areas. In the 21st century in the Brdy case study area, local actors were impacted by the suspension of activities at the MTA and formed strong opinions about another military re-development in the form of a US military radar facility. Perceptions were related to promises of both Czech and US investments to the region. However, the change of the US geopolitical and strategic visions and the resignation of the US military project in Brdy changed the situation drastically. New challenges for local stakeholders materialised as the Brdy MTA was suspended and its territory was divided among the municipalities in the surroundings.

In the post-military era, the local actors were intensively searching for new development opportunities. Local actors had to cope with the fact that – while in the past development of their municipalities was limited due to military activities – new limits of development are determined by a complexity of factors including environmental restrictions. Especially the concept of protection of landscape protected areas versus residential and non-residential constructions.

All developments in the 21st century in the Brdy case study area could be marked as rapid turbulence that are typical of post-communist democracies (Klicperova-Baker and Koštál, 2017). In conclusion, the rapid turbulences of the 21st century recall the rapid turns of the 20th century with two displacement phases of the local inhabitants during the increase the of military training area implemented by Germans in World War II and Stalinists in 1953, and the stationing of the Soviet Army in the period after August 1968. Although it is, of course, possible to appreciate that in the 21st century the conflicts among actors with the different development goals in the different areas (tourism development, environmental protection, regeneration of military brownfields) were resolved in a less-conflict and democratic form in comparison to the previous 20th century.

Overall, our case tells interesting stories about the local actors’ role in site revitalisation and it specificity given a military use context. We find that ambitions and goals are mixed and that communication is important to understand and to negotiate goals. Such communication will be the basis for identification of locally meaningful and beneficial re-development options. Notwithstanding, overall the redevelopment potential will still depend also on superregional factors, such as national and international politics or the national and international connection to main infrastructures.

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