Chapter 6

This Is My Land! Privately Funded Natural Water Retention Measures in the Czech Republic

Lenka Slavíková and Pavel Raška

Abstract Do landowners realize (and privately fund) natural water retention measures (NWRM) on their own land? Why? And how are they capable of assessing the hydrological and ecological effects of these measures? The Czech case study presents the story of an individual farmer who decided to invest his private resources in water retention and biodiversity enhancement while continuing his farming practices. We describe the historical and geographical background of the case study as well as the farmer's motivations and beliefs. We also discuss the scaling-up potential of the presented case. Information for the case study was gathered with a mixed-methodology approach that combined official statistical sources of cadastral records, content analyses of local media articles, a field survey and communication with the farmer during an excursion to his farm. The intention is to show the alternative when considering NWRM implementation. This alternative is heading the same direction as public subsidy schemes. Private initiatives may support (instead of undermine) public policy goals, and they are often faster and cheaper.

Introduction

Natural water retention measures (NRWM) are often initiated by river basin authorities or nature protection agencies, implemented in cooperation with multiple public bodies and supported with a public engagement processes and public funding (Rouillard et al. 2015; Hesslerová et al. 2016). Owners of the involved land represent a key stakeholder group to take into consideration. They might oppose the realization of these measures (regardless of public interest) if not properly treated.

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Hereby, planners' and decision-makers' intentions are often blocked by property right arrangements (Steinhäüßer et al. 2015). Such property right arrangements may vary in different legal, tenure and planning systems, but generally they pose a contradiction between the protection of owner's interests on the one hand and the right to share and protect common environmental values on the other (Hanna et al. 1996).

For this reason, when landowners themselves take the initiative and realize (privately funded) NWRM on their own land, they should gain increasing attention. Many simple situations can arise where stakeholders may show initiative. But why they do so? Do the owners require compensations? And how are they capable of assessing hydrological and ecological effects of these measures? Numerous questions arise in the scientific community when dealing with (rather random) un-coordinated private efforts in this matter.

The Czech case study presents the story of an individual farmer who decided to "restore" his glebe. We present the extent of his activities in terms of NWRM implementation and with respect to the level of coordination with public authorities as well as his proclaimed motivations and beliefs. At the end, we discuss the scaling-up potential of the presented case. In addition to these aims, the study provides an exceptional case for the post-socialist planning context, where the engagement of private actors (and their resources) in the ecosystem service provision has been a latecomer on the conservation agenda (Pavlínek and Pickles 2000; Tickle 2000).

A qualitative exploratory case study methodology was applied to obtain a complete understanding of the case (Yin 2003; Kaae et al. 2010). The research method was considered exploratory since the aim of the empirical research was to primarily investigate motives and beliefs of an individual actor pursuing public policy goals at his own expense. The goal was not to link his behaviour to an existing theory. Data for the case study was gathered from February until November 2017 through a combination of the following methods: (a) the review of publicly available records and documents (official statistical sources of cadastral records, local media articles and interviews with the farmer), (b) a field visit of the farmland, (c) un-structured personal communication with the farmer during the guided excursion on his farm. Gathered data has been manually processed and interpreted with the use of conventional content analysis to reveal existing patterns of behaviour (Hsieh and Shannon 2005).

Geographical and Historical Background of the Case Study

The area in focus is located in the northern part of the Czech Republic. The study area (Fig. 6.1) itself reaches into the western margin of the České Středohoří Mountains, a neovolcanic landscape dominated by the highest peak Milešovka (837 m a. s. l.; Raška and Cajz 2016). The unique scenery surrounding Milešovka has been subject to nature protection; in 1951, the first nature reserve of about 60 ha was established. In 1976, the Protected Landscape Area (PLA) České Středohoří of more than 106.000 ha was founded and is now protected under Czech legislation. In the broader area,

there are also numerous Natura 2000 Sites defined according to the EU Habitats Directive (České Středohoří 2017).

The study area consists of meadows, forests and small water streams. Climatically, it is located in the rain shadow of the near Krušné Mountains north-west from the study area. The annual precipitation has been one third lower than the Czech average (CHMI 2017). Depending on topography, exposure climate (southern and northern orientations) and edaphic conditions, the variety of biotopes evolved under the long-term human cultivation. While the northern steep slopes are covered with mixed forests, they continue downslope to mesophilic meadows. The southern steep slopes, in turn, receive much more solar energy and are typical for rock-mantled slopes covered by forests as well as semixerophilic and thermophilic vegetation. The southern foothills and slightly undulating surfaces were used as orchards in the past for their suitable climatic conditions (see Fig. 6.1).

The territory has been settled and cultivated since medieval times. At the beginning of the 20th century, the land was dominantly used for pasturing and small-scale agriculture combined with fruit-growing. After 1948, during the era of Communism, small parcels were expropriated, meliorated and consolidated into the large blocks of arable land for intensive agricultural purposes. The reason was the general effort of central-planned agriculture to result with large block of fields in both lowland agricultural regions as well as upland historical rural regions (Bičík et al. 2001; Orsillo 2008). After the fall of Communism in 1989 and under the circumstances of transformation towards a free-market economy (cf., Hruška et al. 2015; Kupková

Fig. 6.1 Study area—located around the Milešovka, the highest peak of the České středohoří Mountains in NW Czechia

and Bičík 2016), the existing agriculture cooperative went bankrupt, fields were abandoned due to low yields and the spontaneous succession started. At the end of the 20th century, this succession was stopped due to renaissance management practices of a new private owner who bought the abandoned land.

Mr. Pitek's Land

Mr. Daniel Pitek was born in 1966, and he is a forest engineer by education. After the fall of Communism in 1989, he established a private business based on drywall supply using his experiences gained in Germany. He has also ran a wood-processing company. At the turn of the millennium, Mr. Pitek decided to leave the capital Prague and to settle in the České Středohoří Mountains in the municipality of Černčice, the area where he originally came from. According to his own words, his main motive was to come back to the countryside (Respekt 2012).

First, he bought an old tavern there and established a deer preserve nearby. He observed the problematic state of the surrounding landscape ruined by the intensive agriculture and experienced first disputes with neighbors and officers because of the deer. As a result, he decided to change the status quo; but the only way forward to him was to become a landowner and to undertake changes on his own property (Respekt 2012). He started to buy the land, one parcel after another—currently he owns about 600 ha of grasslands and 30 ha of forests in dispersed patches of different size mainly surrounding the municipality of Černčice. At the beginning, he used financial resources from his existing businesses to cross-subsidize his new activities, but his goal is to run self-sustaining farms, such as sheep breeding and logging. He also receives regular agricultural subsidies on the land extended under the Single Area Payment Scheme SAPS (Idnes 2015). Nowadays, he is publicly presented as the private farmer and forester (Wikipedia 2017).

On abandoned fields, Mr. Pitek firstly cut early successional pioneer species and kept strong solitary trees and bushes as habitats for birds and other species. This practice is not common in the case of large agricultural companies that rent the majority of the land in the surrounding: “Some neighboring farmers laughed at me, when I kept solitary trees in meadows, because you need to drive around with the tractor. For farming such a feature is seen as an obstacle” (interview with Mr. Pitek by Neolivni 2017). Then he changed fields into grasslands as they were better suited to the local environmental conditions of the mesophilic meadows. At the southern slopes, he re-established orchards. Over time, he also grubbed out old agricultural drainage that resulted in spontaneous water retention in lower parts of the meadows. There, with the use of the excavator, Mr. Pitek created small pools to support the retention function of the terrain (Respekt 2012). Over the past 10 years, he has established about 40 small pools (Fig. 6.2). Some of them have turned into wetlands with vegetation, others are cleared out to avoid succession (information provided during the field survey). As he put it, “Building pools is my great enjoyment. But I

Fig. 6.2 One of the pools built instead of artificial drainage system on meadows at the northern footslopes of the Milešovka Mountain

do not found them for fun, they are fundamental for the surrounding countryside” (interview with Mr. Pitek by Idnes 2016).

For each small pool to be established, he only needs to obtain consent from the PLA authority and from the municipality. The pools are designed without regulation mechanisms and with respect to legislative size limits (area of 300 m², depth 1.5 m) in order to avoid more complicated permitting processes related to changes in land use designation. The process of establishing a pool is well described in Mr. Pitek’s answer to the question: “Could you give advice on how to set up a pool to fulfill its purpose?” (interview by Idnes 2016).

1. “First, you need to reveal where the water naturally accumulates in the countryside. It is not possible to build pools at whatever places. Sometimes, old maps may help...”—in this respect he relies on the detailed knowledge of his land, and in some cases, he also checked the old plans to verify the presence and structure of the drainage structures;

2. “Than you need to deal with the administration ...”—the administration process includes the permission provided by the municipal authorities and PLA authorities (see above);
3. “Than you can simply build it. My advantage is to have clay-rich sub-soil, so we excavate the hole with some profile and keep the nature to do its job. The hole firstly fills with water, than life. I do not interfere with this process any more”. The excavation is mostly done during winter, when the soil is frozen, so the pool bottom can be shaped easily. The excavation work is completed with the help of the local owners of excavators. The observed speed of spontaneous succession to reach dense litoral vegetation cover usually does not exceed one or two vegetation seasons, but depends on local conditions (habitat proximity, intensity of water accumulation, suspended sediment load, etc.).

Mr. Pitek plans to build a system of 18 further large ponds (each of 2,000–3,000 m²). However, according to his words, the permit granting procedures are very different in case of large bodies of water with controlled out-flow in comparison to the process for small pools (personal communication). The pond project has been prepared for more than one year and the construction permission has not been issued yet. Mr. Pitek seems to be frustrated with this bureaucracy.

All the undertaken and planned activities are mostly privately funded. On his land, Mr. Pitek prefers to do what he considers to be the right thing without subordination to public authorities and/or subsidy schemes. He consults experts (hydrologists, ecologists) when necessary, but most of the time he follows his “common sense”: “I create something like sponge here that absorbs the rainwater and keeps it for different uses” (interview with Mr. Pitek by Idnes 2016).

So far, no permanent monitoring or evaluation of hydrological effect is available to prove any benefits of the described effort. Having appeared in the media multiple times, Mr. Pitek’s activities have recently attracted the attention of scientists; accordingly, evidence may be forthcoming in the near future. However, in terms of the ecological effects and biodiversity increase, the effect of existing pools is easy to see right now, as indicated by higher yields on meadows (reported by Mr. Pitek), improvement of the grassland diversity (monitored regularly under the legal obligation by nature conservation authorities), as well as by the presence of amphibian and bird species formerly absent at the sites (reported also by researchers from the conservation agencies and local museums). The observed effects on his land also led Mr. Pitek to criticize the existing agricultural subsidies for sending perverse incentives to land management. Within these subsidies the amount of land and the agricultural production is favoured. Water retention and environmental sustainability results in the subsidy reduction. According to his opinion (information provided during the on-site visit), such perverse incentives include, for instance, subsidies for an intensive production of crops for biofuels or the former reduction of subsidized agricultural land determined based on the area of canopy of dispersed trees on meadows and pastures (thus limiting efforts for multifunctional land uses).

Motivations and Interactions

So far, we have not provided much information about the owner's motivations. According to his statements, his goal is to restore the landscape to reflect the situation at the beginning of 19th century when farmers did not exploit the land and respected the natural limits of the land use. He uses old maps (from the first third of 19th century) to support his decisions about land use changes (Idnes 2015). His ideal, therefore, represents the cultural countryside with sustainable farming rather than wilderness. He considers current intensive agricultural practices as harmful in the long run and he feels he has been doing the right thing (Neovlivni 2017).

Water management has become his key issue due to lack of water in the area—partly due to natural conditions (rain shadow), partly due to previous mismanagement (drainage systems). Climate changes that reallocate annual rainfalls have accelerated the problem. Mr. Pitek described the countryside he saw when returning from Prague as follows: “On hillsides, there were dying trees surrounded with totally torrid landscape that slowly turned into dessert” (interview with Mr. Pitek by Neovlivni 2017). Therefore, his intention has been to reverse this situation by changed management and agricultural practices and pool restoration. Judging by his numerous statements published in mass-media interviews, Mr. Pitek is fully aware of the interconnection of farming practices and small-water cycle, and his goal is to minimize adverse effects. The increasing problem of drought (as detected by official Czech documents—see Strategy 2017) is also fully reflected: “Everyone speaks about up-coming drought, but it is already here!” (interview with Mr. Pitek by Neovlivni 2017).

Therefore, the initial motivation of pool and future pond restoration is not to contribute to flood risk mitigation, but to accumulate more rainwater in the up-stream area for groundwater storage, farming and as a positive side effect for the biodiversity enhancement. Mr. Pitek is satisfied with the possibility to restore pools on his own—cheaply and fast. He is not fond of existing subsidy schemes as they frequently require increased bureaucracy (Idnes 2015).

The private effort is in line with the current management plan of the PLA České Středohoří within which Mr. Pitek's land is situated. The plan confirms a lack of water surfaces in the area, and the goal should be to establish small pools and wetlands to increase the retention capacity of the landscape (Management Plan 2017). The Czech Nature Conservation Agency and the Czech State Forest Company have re-established several pools and lakes with the use of public resources. The greatest obstacle remains the availability of land.

Therefore, the private owner and the public agencies undertake similar measures in different localities and pursue the same goals. Their mutual interactions, however, are not following official procedures. They are rather informal, based on social relationships. Mr. Pitek also serves as a PLA ranger and founded the local environmental NGO to interfere with development and restoration plans in the area. So far, the PLA has not funded any of Mr. Pitek pools from public financial resources, and there are no such plans for the future.

As apparent from abundant publicly accessible information in the press, Mr. Pitek's activities attract public attention. In 2015, he was awarded the Czech environmental prize of Josef Vavroušek (Nadace partnerství 2017). He regularly speaks with media and organizes excursions for students and other persons concerned. He was the unsuccessful regional political candidate for the Green Party in 2016, but later he left the party for disagreement with its future orientation. As a result of public exposure, natural scientists intend to establish bio-monitoring at his pools to analyze ecosystem dynamics. Mr. Pitek has already built strong ties with regional institutions and scientists, such as ornitologists and botanists, who are starting to perform both the formal and informal monitoring and research activities on his land. The example of formal research is represented with periodical inventory and assessment of grasslands in the PLA České středohoří (see above), whereas informal research is mainly based on monitoring endangered species of birds, for instance. Generally, he welcomes all kinds of scientific and dissemination activities, although he does not wait for the results to proceed further.

Scaling-Up Potential?

Numerous small scale efforts of the non-public nature field protection can be detected throughout Europe and world-wide—such as land trust movements (Ruseva et al. 2016; Bastian et al. 2017), Audubon society (Merchant 2010), etc. Different non-governmental non-profit organizations (NGOs) play an important role in this process as they gain private or public resources for buying the land and change its management (including the wetland protection or re-establishment, renaturalization of small water streams, etc.). When describing their activities, authors are often concerned with transparency (Adams and Moon 2013) and sustainability of their practices, especially when day-to-day management of gained land incurs additional costs (Pasquini et al. 2011).

Initiatives by individual private owners using their own resources for water retention or biodiversity enhancement, for example, are randomly described. Reasons might be that their activities are not considered special or/and they often do not seek for the public or academic attention. This situation is in sharp contrast with the enormous effort invested in the promotion of participatory governance schemes, where getting people “on board” is the main challenge. More cases of philanthropic (or not so profit-oriented) landowners would show us that, under some circumstances, private interest may be used to increase water retention, biodiversity, etc. Furthermore, if you own the land, whatever you do is fast and cheap (although non-participatory and to some extent non-expert).

In the Czech Republic, as a post-socialist country, environmentally concerned philanthropism came back to life after 1989, and is still in its infancy. Although a growing land trust movement is detectable (CSOP 2018) and a few other private-based efforts in biodiversity conservation exist (Česka pozice 2012), the Pitek case

is exceptional in terms of its extent and the hydro-ecological focus.¹ His aim to reconcile farming with water retention and biodiversity enhancement is in sharp contrast with agricultural practices prevailing throughout the Czech Republic, where the large share of agricultural land is rented to large companies and tends to degrade (see Sklenička 2016 for further evidence).

According to our opinion, individual cases, such as the one presented in our chapter, provide two challenges. First, they facilitate understanding of the possible individual motivations of land-owners, the mechanisms of their actions and constraints they face in environmental management. Understanding these issues seems to be crucial for targeted (tailored) and effective communication of NWRM implementation under different land ownerships. To reveal these individual motivations, institutional mechanisms and constraints, we propose an analytic framework that addresses the permissive and productive conditions to perform the NWRM measures in various contexts (see Fig. 6.3).

Second, and related to the previous, unlike the organized efforts of various NGOs that are aimed at single issues (mostly but not solely biodiversity) and that frequently don't consider economic valuations as the primary criterion for environmental management, the presented case shows that individual landowners may consider environmental measures in a more complex way (water retention as well as biodiversity) and in a framework of economic sustainability since they take financial responsibility for any effects and side-effects of their action.

It is not our intention to declare that more landowners like Mr. Pitek would solve our problems with NWRM enforcement and financing. As he put it: "Of course, everything I did was possible due to incomes from my drywall supply and wood processing business. Also my entire family supports me. Otherwise I would not be able to manage it" (quote from Respekt 2012)—this shows that private initiatives may support (not only undermine) public policy goals (compare different theoretical approaches in Slavíková et al. 2010). The rationale to promote and even establish private initiatives is mostly rooted in their potential to overcome land-use conflicts and improve conservation efforts on fragmented land through coordinated action. Another rationale lies in private landowner's ability to overtake the responsibility to sustain the NWRM or other environmental measures. To allow for upscaling, such direction will, however, make it necessary (i) to explore the various territorial and legal contexts (areas under conservation, tenure schemes etc.) for privately-funded NWRM, and (ii) to reconsider the current agricultural subsidy schemes in order to stress their complex dedication, thus debunking the misconception that they shall support the sole productive functions of agricultural land.

¹Researchers have identified a few other efforts in the Czech Republic, but these (i) are still in their beginnings with no published data, and (ii) represent the participatory rather than the bottom-up approach initiated by land-owners. These examples, for instance, include the current (re-)establishment of pools, ponds and greenery in the extensive agricultural land near the city of Liberec (Northern Czech Republic). In this case, the regional authorities looked for land threatened by droughts and have found a land-owner with ca. 1000 ha land, who—upon negotiations—was keen to realize the plans using both subsidies and his own financial sources.

Fig. 6.3 Tentative framework to assess the feedback between motivation for and effects of the environmental action based on the case study

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