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‘Old Trees Cannot Be Replanted’: When Energy Investment Meets Farmers’ Resistance

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ABSTRACT

Open-cast lignite mining often arouses discontent due to its controversial use of land. This is particularly apparent when a mining operation interferes with well-managed agricultural areas. Mining investments usually face resistance from farmers who are attached to a rural setting and farmland. This paper summarises the results of a study on farmers’ attachment to place and patrimony. The place-oriented research was conducted among a traditionally farming-oriented community that expressed its disapproval of a lignite coal operation. Data were collected via questionnaire. The measurement of place attachment used a five-point Likert scale. The survey was distributed among the rural dwellers of two communes, Krobia and Miejska Górka (in the Wielkopolska Region, Poland), which will be affected by open-cast mining and a power station; both are dependent on the “Oczkowice” lignite deposit. The results show that the farmers have a deep attachment to their farmland; however, only a little attachment was detected to the local community.

1. INTRODUCTION

Being human means being ‘in place’, whereas being in place means to be ‘attached’ (Cresswell, 2004). This emotional tie between people and places creates a strong sense of place and local identity (Tuan, 1990). Place attachment refers to an emotional relationship or unconditional bond to a place (Low and Altman, 1992) that can provide a number of psychological benefits (Scannell and Gifford, 2017). For instance, the benefit of memory that connects people to their personal background (Twigger-Ross and Uzzell, 1996; Wheeler, 2014) and the benefits of belonging that connect people to their ancestors or cultures (Mazumdar and Mazumdar, 2004). Place attachment, however, changes

throughout the life cycle of individuals and depends on their social and economic status, length of residence, age, sense of security, social relationships in a place, and value system (Scannell and Gifford, 2010).

The concept of place attachment strongly depends on psychological ownership. This relation can be noticed as follows: the deeper the place attachment, the stronger the psychological feeling of exclusive possession of a place, and/or the deeper the place attachment, the stronger the right to use a place according to individual demands (Devine-Wright, 2011; Graybill, 2013). Furthermore, place-attached people are opposed to making place-changes, which is inevitable in the case of mining projects (Frantál, 2016). In cases like this, the NIMBYism attitude has a great impact on civil

involvement in place protection (Devine-Wright, 2013; Clarke et al., 2018; Wu et al., 2019), and this approach follows the rules: the geographically closer the threat, the stronger the resistance to change, and/or, the larger the threat, the stronger the action taken (Devine-Wright, 2011). Numerous studies have proven that place-attached people demonstrate greater resistance to land-use change that may threaten their localities (Venables et al., 2012; Devine-Wright, 2013; Anton and Lawrence, 2014; Brown et al., 2015), including farmers (Lokhorst et al., 2014).

Farmers, in a specific emotional manner, are attached to their farms and farmland, to a rural setting and farming community (Urry, 2016). Farmland is usually passed from one generation to another. Thus, the relationship between farmers and their farmland is very often manifested as a deep rootedness in patrimony and family dependence (Markuszevska, 2017).

In addition, personal involvement in a daily workplace and the fact that farmers usually spend their whole lives in one place can strengthen the sense of attachment (Riley, 1992; Walker and Ryan, 2008; Baldwin et al., 2017; Young et al., 2018). Moreover, there is a belief that rural communities can build stronger social bonds than urban residents. This is due to lifestyle reasons, namely that rural dwellers spend their lives in one certain place (village), and this creates favourable conditions for creating and strengthening a deep community bonding over time (McCuaig and Quinn, 2011; Berry et al., 2015; Urbańska, 2016). By knowing a place and creating a sense of attachment to it, people can constitute place as a centre of meaning or a field of care for individuals or communities (Relph, 1976; Tuan, 1977).

The presented paper concerns the attachment of a group of farmers to the place they live/work and the issue of a planned mining investment. New mining projects, and in particular large surface lignite mining, often encounter problems with social acceptance. The strip mining method, which is commonly practised in lignite excavation, causes severe environmental risks and is a very controversial form of land use (Bloodworth et al., 2009). In addition, open-cast mining forces the resettlement of local communities. The senses of loss and longing have garnered much attention in the field of place attachment (Williams and Vasce, 2003; Zentella, 2009; Cheshire et al., 2013; Xu et al., 2019). For instance, the findings of Marshall et al. (2007) have proven that people with a strong sense of place attachment are less willing to undergo involuntary resettlement. In addition, the studies of Milligan (2003) and Li et al. (2016) have shown that resettled farmers (from rural to urban areas) experience emotions such as loss, sorrow, worry, estrangement, and nostalgia.

This article discusses the issue of planned energy investments that come up against strong

resistance from local farming communities. The main objective was to measure the relationships between farmers and farmland (that they possess) and between farmers and homeland (where they live).

The reason for tackling this issue was to find out whether farmers' attachment to their patrimony is as deep as they declare (e.g. in the research of Brzezińska and Machowska, 2016, as well as in official and unofficial talks). Furthermore, this study aimed to discover whether the ongoing conflict between agricultural landscape and energy landscape (Markuszevska, 2019, 2020) strengthens or weakens this relationship. Finally, research on farmers' attachment to their land and lignite mine operations is rarely conducted (Frantál, 2016), therefore, the presented study fills this gap.

2. RESEARCH FRAMEWORK

2.1. Objectives and case study

Based on love of the land theory (Di Enno and Thompson, 2013) and the concept of psychological ownership (Preston and Gelman, 2020), this paper aims to discuss human-place interactions. In particular, the presented study analyses the attachment of a group of farmers to patrimony versus a planned energy investment. Thus, the following hypotheses were defined and empirically tested on a community scale:

- 1) farmers with a deep attachment to place are less likely to sell their farmland,
- 2) farmers with a deep attachment to place are more likely to protect their homeland against unwanted changes,
- 3) farmers with a deep attachment to place are less willing to resettle, and
- 4) farmers with a deep attachment to place feel emotional connection with the rural setting.

The area selected for research covers two rural communes: Krobia and Miejska Górka (the Wielkopolska Region, Poland), where the energy investment is going to be located. The 'Oczkowice' lignite deposit is located within these two communes (Fig. 1).

The selected case study is distinguished by having the richest soil resources in the country. This provides unique natural conditions for agricultural production (Kołodziejczak, 2016) that contribute significantly to regional food security. In addition, the local community is traditionally a farming-oriented community which is emotionally attached to patrimony (Brzezińska and Michałowska, 2016). On the other hand, the 'Oczkowice' lignite deposit is the richest lignite resource in the country (Przybyłek and Górski, 2016). The deposit covers an area of 71.04 km² (Urbański and Widera, 2016) and is estimated at 966 million Mg (Program for Lignite Coal Mining, 2018).

This coal deposit would maintain the supra-regional

energy demand if it were to remain open (Fig. 1).

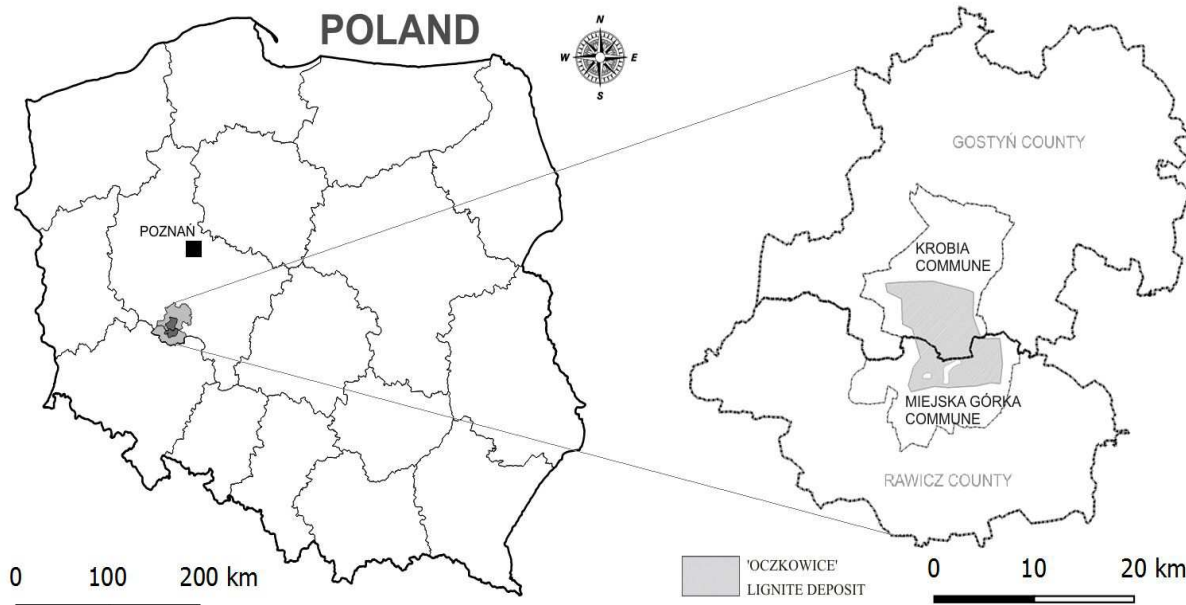


Fig. 1. Case study – location of the ‘Oczkowice’ lignite deposit in the area of the Krobia and Miejska Górka communes.

2.2. The methodological context of the research

Place-oriented studies were used to examine and clarify the relations between place attachment and the planned energy investment. The scope of questions about emotional bonds to a place followed items related to the dimensions of place identity and place dependence, e.g.: *I like the place where I live; This place means a lot to me; I cannot imagine a better place to live than where I live now; I identify strongly with the place where I live.* Another item examined emotional relationships with farmland (*I would never sell the farmland that belongs to my family; I miss my farm when I am elsewhere*), homeland (*Where I live, I feel spiritually bound to farmland/farming*) and connection to the surrounding environment (*Where I live, I feel a deep sense of connection to the rural landscape*). There were also those who specifically referred to energy intervention in the farming landscape (*I am irritated by the idea of the ‘Oczkowice’ open-pit mine spoiling a typical agricultural landscape; In my opinion, the ‘Oczkowice’ open-pit mine will change the surroundings in a positive way*). Additionally, the social place-related context was measured to express emotional bonds to the community in a place: family and neighbours (*I live here because my family lives here; Living here, I feel a sense of connection to my ancestors; I feel connected to the local community*).

The data were collected via questionnaire. The measurement of place attachment used a five-point Likert scale (where 1 means strongly disagree, and 5 strongly agree). The questionnaire also contains questions about gender, age, education, and place of

residence, as well as additional questions about the opinion of the ‘Oczkowice’ lignite mine (in favour or against), and whether the respondents’ profession is linked with the farming sector. Table 1 presents the respondents’ characteristics.

Table 1. The Krobia and Miejska Górka communes in numbers.

Return of survey	No. of respondents (122)
Gender	49% females 51% males
Respondents’ age	2.5% 20 years old and under 46% between 21 and 40 years old 43.5% between 41 and 60 years old 8% 60 years old and over
Educational level	23% primary school 72% secondary school 5% higher education
Length of residence	6.5% 10 years and under 9.8% between 11 and 20 years 66.4% between 21 and 50 years 17.3% 50 years and over
Farming involvement	50%
Mining investment	11% yes 89% no

The survey was distributed among the residents of rural areas of the Krobia and Miejska Górka communes. In the research, the residents of rural areas were exclusively taken into consideration, as a previous ethnographical study (by Brzezińska and Machowska, 2016) revealed that, among urban residents, relationships with place did not present any particular emotional attachments. For each local leader (*soltys*) who represents a village community, 15 questionnaire forms were delivered with the request for them to be randomly distributed among the village dwellers during organised meetings of the local community. This method of questionnaire distribution was thought to be less intrusive than door-to-door visits. The data were collected between August and November of 2018.

3. RESULTS AND DISCUSSION

3.1. Place attachment index

To determine how deep the attachment to place is, the respondents were divided into homogenous groups based on their mean score. The overall place attachment index could theoretically vary between 30 (minimum) and 150 (maximum) (Table 2).

Table 2. Different levels of place attachment and other selected respondents' variables in relation to their attitude to the mining operation.

Variable		Pro-mining attitude (%)	Anti-mining attitude (%)
Place attachment	Low	13	87
	Moderate	11	89
	High	10	90
Gender	Female	12	88
	Male	10	90
Age	<20	0	100
	21-40	8	92
	41-60	16	84
	<60	0	100
Education level	Primary school	14	86
	Secondary school	10	90
	Higher education	0	100
Length of residence	<10	0	100
	11-20	0	100
	21-50	12	88
Farming involvement	<50	14	86
	Yes	7	93
	No	15	85

Source: Markuszevska, 2019.

Consequently, three categories of place attachment were created that fell along a linear continuum: 'low attachment' (recorded in 12.3% of respondents), 'moderate attachment' (recorded in 54.1% of respondents) and 'high attachment' (recorded in 33.6% of respondents). Table 2 contains the results of the analysis that indicate three levels of place attachment in relation to the attitude towards the mining operation and other selected respondent variables.

In general, the results present a high level of place attachment, bearing in mind the theoretical variation of possible scores. However, it was expected that the 'high attachment' category would receive more than one third of the respondents' answers, as in official and unofficial discussions farmers often express a high level of place attachment.

3.2. Farmers' attachment to patrimony

It was expected that deeply attached farmers would be less likely to sell their farmland. The questionnaire item: '*I would never sell the farmland that belongs to my family*' correlated with the following respondent variables: gender, age, level of education, length of residence, pro-or-anti attitude to the 'Oczkowice' open pit-mine, and farming involvement. Correlation was significant in the case of farming involvement (*Pearson r* = -0.33), gender (*Pearson r* = 0.30), and length of residence (*Pearson r* = 0.21).

The analysis indicates that the farmers have quite a strong attachment to their farmland. For example, the results showed that the longer the farmers were involved in farming, the greater their unwillingness to relinquish their patrimony. Farmland is valued due to reasons of patrimony: the inheritance of farmland, which is handed from one generation to another, and thus has been managed by a certain family for many years, makes the land important for both sentimental and emotional reasons.

This study repeated the findings of other research that had been conducted in the same study region. Farmers refuse to sell their farmland despite its high price, because they are afraid that the land would be improperly used, that is, used for non-agricultural purposes, for example. The farmers in my study also admitted that they cannot imagine surviving work in another profession. Finally, the farmers confirmed that the farmland is synonymous with non-material richness and a sense of belonging (Andrzejkowicz, 2016). The emotional bond with farmland is additionally explained via the fact that farm work had been the main source of income for the residents for many generations that had so far provided them with a decent standard of living (Urbańska, 2016).

In relation to a place-protection context, it was assumed that deeply rooted farmers would be more

likely to protect their homeland against unwanted changes. Place-protection actions were understood as any kind of involvement in actions against the mining operation: demonstrations, protests, participation in conferences, etc.

To analyse place-protection relationships, the following items were selected: 1) *'I am involved very deeply in issues against the 'Oczkowice' open pit mine'*, 2) *'I would like to be involved deeply in the activities against the 'Oczkowice' open pit mine'*, 3) *'I am concerned about the negative consequences of the 'Oczkowice' open pit mine'*, and 4) *'I am irritated by the idea of the 'Oczkowice' open pit mine spoiling a typical agricultural landscape'*. As for the first item, correlation was noticed only with the level of education (*Pearson r = 0.25*). No significant correlation was noticed in the second item. Farming involvement correlated with the third above-mentioned item (*Pearson r = -0.21*), whereas age correlated with the fourth one (*Pearson r = 0.20*).

For a number of reasons, these were not the results that I hoped to achieve. For example, when conducting a study in 2016 (Markuszczyńska 2019, 2020), the respondents were asked if they participated in protests against the open pit mine. The share of "Yes" responses reached 41% of the total number. In this research it was expected that the findings would confirm the previous ones. It should be added that several local grassroots organisations have demonstrated their resistance to the construction of the lignite mine, and via their support, they strengthen the efforts of the local community. However, I made some observations about the protest actions that were key issues of local grassroots organisations. For example, as the activity of the leaders of these organisations weakened, the farmers' involvement in protests weakened as well. On the other hand, as some scholars have noticed (e.g. Lewicka, 2010), place-attached people do not always have to be engaged in various forms of social activity on behalf of their locality.

Nonetheless, my previous research (Markuszczyńska, 2019, 2020) revealed that the local community was strongly against mining operations (93% of the respondents were against), but at the same time the local residents accepted renewable energy solutions (75% of the respondents were in favour). This alternative solution, however, is a wind farm, and these, as a rule, come under criticism and meet with common social opposition. However, the argument of the affected community is that wind turbines impact the local environment less-negatively than coal investment, and additionally, the effectiveness of wind farms would maintain the supra-regional energy demand. Therefore, this transition from NIMBY (Not In My Back Yard) to YIMBY (Yes In My Back Yard) is perceived as a kind of place-protection attitude and a sense of responsibility for the place.

The study also aimed to examine whether farmers who feel a deep sense of place would be less willing to resettle. In relation to potential enforced population displacement, the following items were selected: 1) *'I would feel unhappy to have to move away'*, 2) *'I cannot imagine a better place to live than where I live now'*, and 3) *'I will not want to live here any longer if the 'Oczkowice' open pit mine is established'*. Among these three items, a correlation was detected only in the first one (the significant correlation with farming involvement, *Pearson r = -0.20*).

However, an interpretation of the gathered results created major difficulties because no matter whether respondents were in favour of or against the mining investment, they did not express any concern about resettlement (Markuszczyńska, 2019, 2020). It seems that the affected community does not have a vision of possible changes in land use, and, therefore, the respondents totally belittled the issue of displacement.

On the other hand, the local residents openly say, *'We will never go anywhere from here'*, or *'Old trees cannot be replanted'*, and, this way, they express their opinion of forced resettlement. Then, whatever happens, they will stay here forever, as they claim. Or, as long as we are here, no mine will open. This way, the affected community try to maintain their property rights. The psychological and legal land ownership make the members of the local community feel like exclusive owners of the land; farmers are convinced that they can do whatever they want when it comes to managing the land (see Brandenburg and Carroll, 1995; van Dyne and Pierce, 2004; Peltola et al., 2014).

The research confirmed that legal ownership generates a high sense of psychological ownership of place and farmland. This self-centred perception of a piece of land, so-called by Preston and Gelman (2020) as *'mine-ness'*, stimulates the farmers' feeling of taking control of the place. However, private rights to land (legal and psychological ownership) can be pushed into the background when it comes to maintaining the national interest and fulfilling common needs (Constitution of the Republic of Poland, 1997).

It was also hypothesised that deeply rooted farmers feel an emotional connection with the rural setting. However, this emotional connection was not documented in the following items: *'I feel a sense of pleasure when situated in an agrarian landscape'*, *'Where I live, I feel spiritually bound to farmland/farming'*, and *'I miss this natural surrounding when I am elsewhere'*.

The research suggests that farmers' daily routines are mostly made up of actions undertaken in the rural landscape. They are focused on their work, not admiring the landscape, and, although farmers spend a great deal of time observing the daily rhythms of crops and animals and the surrounding landscape, the rural

setting is nothing unusual for them. This way, however, farmers unconsciously build and maintain bonds with their setting (Quinn and Halfacre, 2014), and thus, farmland is not only a space that supports life and work, but also a place of symbolic meaning and a repository for emotions, and a location within history (Tveit et al., 2006; Nassauer, 2011; Carvalho-Ribeiro et al., 2013).

Finally, the study looked at emotional bonds to the community in a place. The findings did not support those of classic studies on neighbourhood attachment (Fried, 1963) and community belonging (Guest and Lee, 1983), which stated that one of the significant reasons for attachment to place is afforded by social interactions with others, and that these social bonds are stronger than the physical conditions of a place (Scannell and Gifford, 2017).

Community bonding presents a weak connection. The items: *'I am happy with my neighbours'* or *'I miss my neighbours when I am away'* and *'I feel connected to the local community'* were not statistically significant. Also, family bonds did not express such a high level of attachment as it was expected. The following items were not statistically significant: *'I live here because my family lives here'* and *'Living here, I feel a sense of connection to my ancestors'*.

The results did not confirm previous findings on community attachment (see Urbańska, 2016). The research suggests that a lack of strong social relationships may impede the creation of a coherent mining resistance in strengthening bottom-up initiatives that would represent a common interest for the affected community (Markuszevska, 2019).

4. CONCLUDING REMARKS

This paper analyses farmers' attachment to their farmland in the context of planned open-cast lignite mining. Although the issue was presented as an example of a local planned investment, a similar social attitude can be observed in the case of other surface coal mining regions, which fits in with the globally observed common social disagreement with the continuation of a coal-based economy.

However, some of the findings were not very clear. It is hard to resist the impression that the feedback of a local community depends on the manner in which the data are collected. During face-to-face interviews and informal talks (conducted regardless of the research presented in this paper) farmers declared a strong attachment to their homeland and the local community, and they expressed anti-mining sentiments. They did this as they were probably afraid of being criticised and judged for telling the truth: that they support pro-mining options. The answers from my survey, which was distributed via paper questionnaire forms, are more reliable and can be considered to be

'truer' since the respondents felt more comfortable to express their real opinion as they were assured of greater anonymity. In other words, people are afraid to express their opinion if their opinion does not match the general anti-mining trends. Similar findings were reported by Brzezińska and Michałowska (2016) and Urbańska (2016). In addition, the findings delivered some reflections on the question: "What are farmers attached to?". It seems that the analysed farming community is not strongly connected to their community, which contradicts the research that suggests that attachment is not always to a place but to people (see Hummon, 1992; Mesch and Manor, 1998).

Existing studies on place attachment mostly analyse the relationships between individuals and their environment in the contexts of pro-environmental behaviour, nature protection and conservation, urban environments or leisure and recreation. Therefore, the results of this study contribute to the farmer attachment theory, in particular because the review of past literature indicates that there is only a little interest in analysing the context of farmers' place attachment (e.g. Dominy, 2001; Hildenbrand and Hennon, 2005; Kuehne, 2013).

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