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Perception of subsidies for the regeneration of agricultural brownfields in selected regions of the Czech Republic

Vnímání dotací na regeneraci zemědělských brownfieldů ve vybraných regionech České Republiky

Kateřina MAZANCOVÁ[1] (✉), Tomáš KREJČÍ[2], Stanislav MARTINÁT[2], Petr KLUSÁČEK[2], Kamil PÍCHA[1], Josef NAVRÁTIL[1]

[1] University of South Bohemia in Ceske Budejovice Faculty of Economics, Department of Trade and Tourism, České Budějovice, Czech Republic

[2] Institute of Geonics of the Czech Academy of Sciences, Department of Environmental Geography Brno, Czech Republic

✉ Corresponding author: mazank01@jcu.cz

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ABSTRACT

Agricultural brownfields are a key part of post-socialist rural areas in Central and Eastern Europe. Their regeneration is challenging and often slow or impossible without substantial financial support. Although subsidies for these transformations can be beneficial, they often face social criticism. This paper aims to assess the acceptance of subsidies for regenerating agricultural brownfields and identify factors influencing acceptable levels of support. Surveys were conducted among rural residents with agricultural brownfields and owners of unused buildings across three regions in the southern Czech Republic. Data were analysed using nonparametric methods, primarily GLM. Results show differences in the perception of subsidies between people involved in agriculture and those who are not. Differences also appear among agricultural property owners based on farm size, highlighting the need for a broader understanding of subsidies and better access for smaller enterprises.

Keywords: abandonment, agriculture, brownfields, development, Central Europe, subsidies

ABSTRAKT

Zemědělské brownfieldy jsou klíčovou součástí postsocialistických venkovských oblastí ve střední a východní Evropě. Jejich regenerace je náročná a často pomalá nebo nemožná bez značné finanční podpory. Přestože dotace na tyto transformace mohou být prospěšné, často čelí společenské kritice. Cílem této práce je posoudit akceptaci dotací na regeneraci zemědělských brownfieldů a identifikovat faktory ovlivňující přijatelnou úroveň podpory. Průzkumy byly provedeny mezi venkovskými obyvateli se zemědělskými brownfieldy a majiteli nevyužívaných budov ve třech regionech v jižní České republice. Data byla analyzována pomocí neparametrických metod, především GLM. Výsledky ukazují jasné rozdíly ve vnímání dotací mezi lidmi zapojenými do zemědělství a těmi, kteří se zemědělstvím nezabývají. Rozdíly se objevují také mezi vlastníky zemědělských nemovitostí na základě velikosti zemědělského podniku, což zdůrazňuje potřebu širšího pochopení dotací a lepšího přístupu pro menší podniky.

Klíčová slova: opuštěné, zemědělství, brownfieldy, rozvoj, střední Evropa, dotace

INTRODUCTION

Agricultural brownfields are a significant topic in rural development, influencing the social and economic life of communities while being a dynamic part of their physical environment (Bez et al., 2023). These are abandoned or neglected sites once used for collectivized farming (Navrátil et al., 2019). The nature of these areas makes it difficult to apply modern agricultural technologies, and their repurposing is limited. Although found worldwide, they are most prevalent in post-communist Central and Eastern European (CEE) countries (Navrátil et al., 2022; Svobodová and Věžník, 2009). Addressing the issue of unused agricultural buildings from the socialist era remains ongoing, with an emphasis on incorporating them into local and national brownfield revitalization strategies (Skála et al., 2013). Despite some successes, many agricultural buildings remain unused and deteriorating (Klusáček et al., 2021), with new brownfields still emerging (Bardos et al., 2020). The high financial cost of transformation means that most owners cannot revitalize these sites without support (Jacek et al., 2021; Svobodová and Věžník, 2009). In this context, targeted subsidies appear to be a viable solution, as there is public interest in rehabilitating these former cooperative or state farm areas, which often dominate the local landscape and pose environmental burdens (Skála et al., 2013; Krzysztofik et al., 2013). However, the legitimacy and effects of EU agricultural policy subsidies are widely debated (Swinnen, 2015; Balogh, 2023; Bacsi and Szálteleki, 2022; Saman, 2021; Kostadinov, 2013; Szálteleki et al., 2024; Fogarasi, 2024), particularly regarding their impact on economic efficiency. In 2016, subsidies accounted for 25% of agricultural production value in OECD countries and 15% outside the OECD. Some argue that these subsidies may reduce technical efficiency, as farms receive income without necessarily engaging in productive activities, lowering motivation for efficient practices (Minviel and Latruffe, 2016). Misallocation can occur when higher efficiency is incorrectly attributed to subsidy recipients, allowing changes in capital-labor ratios that disrupt allocative efficiency, ultimately harming competitiveness (Jolex and Tufa, 2022). Another issue is the social acceptance of such subsidies, as agricultural brownfields are typically privately owned. Despite their social significance, this aspect has not been critically assessed. That is why this paper aims to evaluate the level of social acceptance of subsidy support for agricultural brownfield issues and to identify the factors behind variations in acceptable subsidy levels.

Perception of subsidies in the general population

Public perception of subsidies for the remediation of agricultural brownfields is a complex topic that links environmental, economic and social aspects. The remediation of agricultural brownfields represents a significant opportunity to revitalize local economies, promote sustainable agriculture and address food security issues, making it an increasingly important issue in both urban and rural areas (Černík et al., 2016). In agricultural policy studies, it is assumed that the visibility of support mechanisms plays an important role in shaping public attitudes toward agricultural subsidies. It is argued that indirect agricultural support affects political satisfaction because the public is unaware of the true costs of these subsidies. (Dorsey, 2003). Brownfield regeneration is seen as essential for achieving sustainable development in specific areas, addressing ecological, economic, and social issues. Grants for brownfield revitalization enable the remediation and regeneration of these sites, allowing for new uses such as housing (e.g., Wernstedt and Hanson, 2009), recreational activities (e.g., Rizzo et al., 2015), or environmental improvements (e.g., Ridsdale and Noble, 2016). According to Dorsey (2003), the number of brownfield regeneration initiatives is increasing, reflecting a shift in the priorities of both the public and private sectors in land and space management. Preferences for different types of brownfield regeneration, such as green spaces/sports, housing/shopping, industry, or entertainment, are influenced by socio-economic characteristics such as gender, age, and education, as well as geographic variables such as city and residential zone (Frantal et al., 2015). Various European countries emphasize different factors in brownfield regeneration, with some focusing on national aspects like legislation and finan-

cial incentives, while others prioritize local factors, such as location and transport connections (Ghabouli et al., 2023). These findings suggest that public perceptions of brownfield regeneration subsidies are multifaceted, shaped by a combination of individual and contextual factors. Studies indicate that women typically prioritize community health and environmental quality, leading to a greater appreciation for brownfield redevelopment initiatives as essential for creating safe living environments and addressing social inequities (Variyam et al., 1990). In contrast, men often approach these subsidies from an economic standpoint, focusing on job creation and increased property values, which can result in differing levels of support or opposition based on the perceived balance between environmental benefits and economic outcomes (Hinze and Chrysochoou, 2024). They view these subsidies as vital tools for promoting sustainable development and rectifying historical environmental injustices, thereby emphasizing equitable revitalization efforts that serve diverse socioeconomic groups (Letang, 2017). Conversely, conservatives are more likely to adopt a market-oriented perspective, emphasizing fiscal responsibility and private sector solutions, which can lead to scepticism about government intervention and a preference for tax incentives as means of stimulating economic growth (Cui and Fang, 2023). The 2022 Special Eurobarometer 520 survey, conducted in 27 EU member countries with 26,511 respondents from various social and demographic categories, explored Europeans' views on financial support for farmers. 46% of respondents believed that the EU's financial support to stabilize farmers' incomes was "about right," while 39% thought it was "too low." Conversely, 7% thought it was "too high" and 8% were unsure. The "about right" opinion was most common among respondents aged 15-24, those with education beyond 20, white-collar workers, and residents of large cities. Those over 40, people who had finished education before 15, unemployed individuals, those struggling with debt repayment, and rural residents tended to view it as "too low." Europeans who believe that agriculture and rural areas are important for the future of the EU were more likely to say, "too low" (40% vs. 22% who do not see agriculture and rural areas as important). A majority of respondents who believe that the Common Agricultural Policy (CAP) benefits not only farmers, but society as a whole, view financial support as "about right" (50% vs. 39% "too low") (European Union, 2022).

Based on these findings, we can formulate the first hypothesis:

Hypothesis H1: The perception of the acceptable level of subsidies differs according to age (H1a), gender (H1b), economic status of the respondent (H1c), and their relationship to agriculture (H1d).

Perception of subsidies by the beneficiaries - farmers

Farmers' perceptions of subsidies for brownfield regeneration are shaped by a complex interplay of factors including their legal form, economic status, and the agricultural landscape they navigate. As subsidies play a crucial role in supporting agricultural practices and revitalizing previously developed lands, understanding these perceptions is essential for effective policymaking (Wilson et al., 2023). The perspective of farmers on subsidies, as their recipients, is primarily influenced by the fact that subsidies are part of their business economy (Georgieva, 2024). The ingrained belief that agricultural subsidies represent an inviolable right of farmers, which cannot be restricted or conditioned, is dangerous from both an economic and social standpoint. Agricultural subsidies are public funds that have a clearly defined purpose and support the transformation of agriculture towards a more sustainable model; otherwise, they are unjustifiable (Rexa, 2024).

However, businesses are aware of the significance of subsidies. For example, those that have received subsidies rate their market position more favorably than firms that have used other sources of financing. Entities that have received EU subsidies are more likely to see investment as a key factor for business development (Piątkowski, 2020). Two-thirds of farmers in the Eurobarometer study (2000), with 3,545 European farmers surveyed, expressed dissatisfaction with subsidies. Dissatisfaction

was negatively correlated with farm size and positively correlated with age. Although awareness of the CAP budget was weak, farmers had a clear view that the budgets allocated to CAP were insufficient, as the main beneficiaries of European agricultural policy are more likely to be food processors and consumers than farmers. Most farmers in established member states believed that the accession of Central and Eastern European countries would have a negative impact on their agricultural businesses. According to Świtek and Sawinska (2017), as farm size increases, farmers often express negative views about the diversity of the subsidy system for farms of different sizes. About half (51%) of farmers with farms larger than 100 hectares consider eco-schemes to be an unfair program. Farm size also significantly influences the assessment of the impact of Ecological Focus Areas on biodiversity. Larger farmers have more negative opinions. They also express more negative views regarding subsidy reforms. Institutional farmers often see these subsidies as essential for maintaining competitiveness, while smaller or family-run farms may feel marginalized and inadequately supported. Reports indicate that dependency on government assistance can lead to innovation stagnation, particularly for smaller operations, underscoring a notable controversy around the effectiveness and equity of subsidy distribution (Koman et al., 2021). It has been documented that farmers who own post-agricultural brownfields tend to evaluate subsidies for regeneration in a critical manner. Subsidies are frequently perceived as insufficient or misdirected when they fail to recognize the specific challenges of regenerating sites with legacy contamination and infrastructural decay (Klusáček et al., 2022). Furthermore, the perceived efficacy of such subsidies is found to be mediated by farmers' own appraisal of soil degradation and erosion risks. When high levels of severity and vulnerability of soil erosion are reported, subsidies are more likely to be considered as potential catalysts for sustainable regeneration.

However, it has been argued that the lack of targeted financial support specifically aimed at environmental rehabilitation undermines the overall effectiveness of current subsidy schemes, leading to a paradox where financial assistance is provided without promoting long-term sustainability (Duží et al., 2014). Overall, it can be said that farmers' perceptions of subsidies are highly differentiated and depend on various factors, particularly those related to the size and focus of the business. These factors are expected to influence perceptions of subsidies for the revitalization of agricultural brownfields. Based on the above findings, the following hypotheses were formulated:

Hypothesis H2: The required subsidy amounts for farmers differ according to their relationship to subsidies (H2a), dependence on subsidies (H2b), farm size (H2c), focus of the farmer or agricultural enterprise (H2d), legal form of the agricultural business (H2e), and the intensity of their perception of further development of the agricultural enterprise or the farmer's business (H2f).

MATERIALS AND METHODS

This study investigates the acceptance of subsidies for the regeneration of agricultural brownfields and the factors influencing perceptions of subsidy levels. The methodology for achieving the above-stated goal is based on obtaining two sets of primary data intended to test the established hypotheses. These data are the results of two surveys. Survey 1 (for testing partial hypotheses H1) was conducted among the inhabitants of rural spaces with direct contact with agricultural buildings of former collective agricultural cooperatives and state farms. Survey 2 (for testing partial hypotheses H2) was conducted among the owners of agricultural buildings. Both surveys were conducted in three regions of the Czech Republic: Vysočina, South Bohemia, and South Moravia (Figure 1). The study area consists of contrasting, yet complementary rural regions. The Vysočina region is dominated by extensive agriculture and dispersed settlement, the South Bohemian region has a significant share of agricultural landscapes and fish farming, and the South Moravian region is characterized by intensive agricultural production, viticulture, and strong ties to regional economic development.

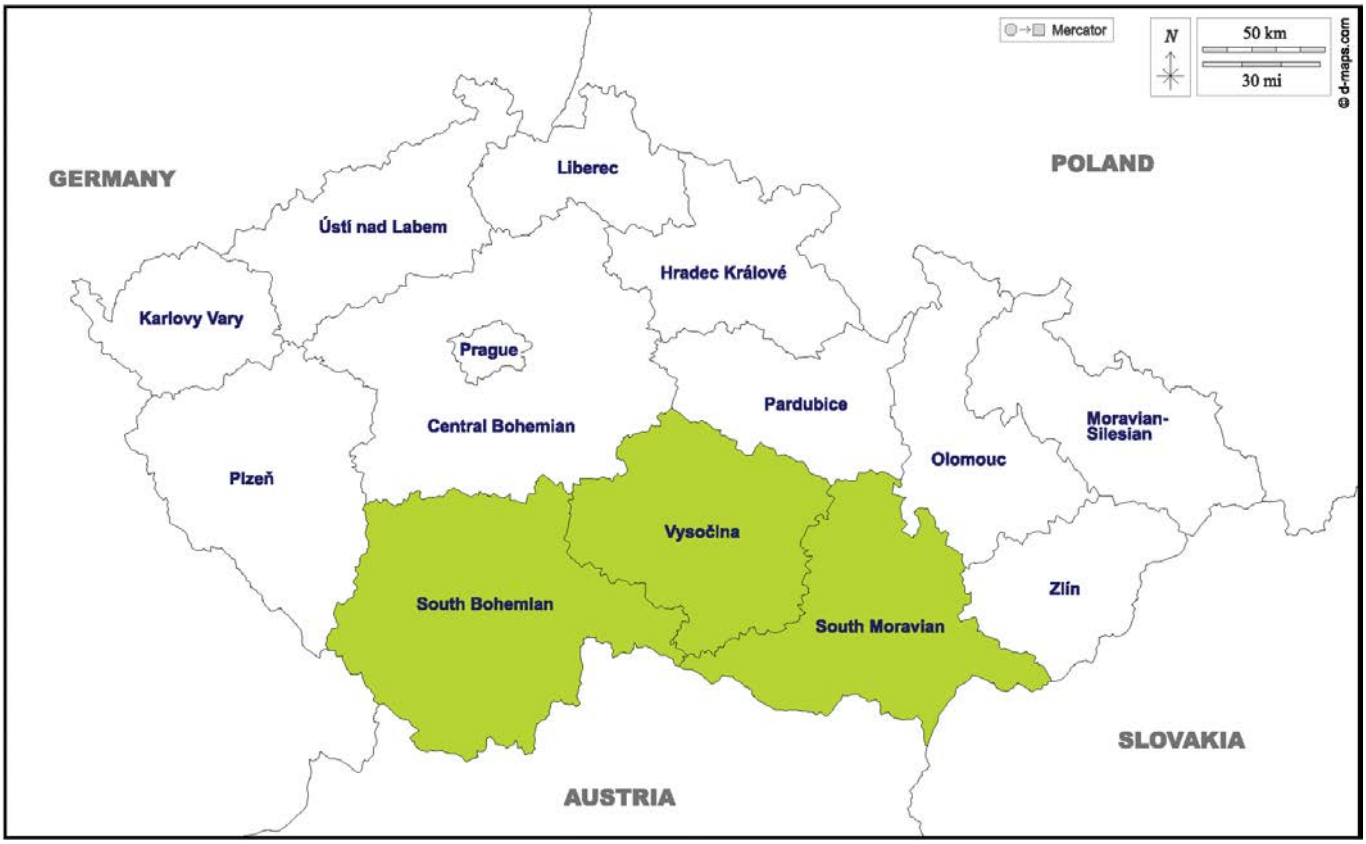

Figure 1. Study area in the Czech Republic (Vysočina, South Bohemia and South Moravia)

The selection of two groups of respondents was based on their differing perspectives on subsidies for agricultural brownfield regeneration. Rural residents are directly affected by the presence of brownfields in their communities, influencing their quality of life, local economy, and environmental conditions. Their perception reflects the broader societal stance on public financial support for brownfield rehabilitation. On the other hand, brownfield owners, primarily agricultural entrepreneurs, are the potential recipients of these subsidies and their perspectives are shaped by economic considerations, dependency on subsidies, and business feasibility. Understanding both viewpoints allows for a comprehensive assessment of subsidy acceptance and its influencing factors.

Survey 1 (inhabitants of the villages)

Survey 1 of the present study was undertaken together with a study on preferences for the regeneration of agricultural brownfields among the inhabitants of rural villages (Navrátil et al., 2022). Thus, the sample size and characteristics of the respondents are the same as in that study. The sample of respondents consisted of approximately 10% random sample of communities with former agricultural cooperative buildings, involving 180 communities. Six respondents over the age of 18 were surveyed in each village at the village common. The sample in each community included three women and three men, with two respondents from each of the three age categories: 18-40 years, 40-60 years, and older than 60 years. Data were collected during July and August 2020 (there were no COVID-19 restrictions in the Czech Republic during this period). Overall, 1,080 respondents were asked to complete the survey. The refusal rate was 28.33%. In total, 774 respondents aged 18 and above participated in the survey, and at least one respondent from all 180 communities answered the questionnaire. For a complete description of the sampling method, please refer to Navrátil et al. (2022). To deal with our above-stated hypotheses, inhabitants of the villages were asked the following question: "What is the maximum acceptable

amount of subsidy support for the regeneration of agricultural brownfields?" Responses were measured as a percentage of total costs, in tens of percentages. As independent variables in further hypothesis testing, information regarding the respondents: age, gender, economic status, and their relationship to agriculture, measured as direct work contact with agricultural activities (for a detailed description of the sample, please see Table 2 in Navrátil et al. (2022).

Survey 2 (brownfield owners)

The sample for Survey 2 consisted of farmers registered in the agricultural entrepreneur's system within the aforementioned study area. A random sample of 1,000 was selected from this group, who were contacted by phone and/or email. A response was received from approximately 300 agricultural businesses. Of these, 160 farms participated in the survey, which corresponds to an 84% refusal rate. The survey was conducted from March 2020 to November 2021. The basic characteristics of the sample surveyed are provided in Table 1 below.

Questionnaire of survey 2 was in the field undertaken together with another study focused primarily on the perception of the potential use of agricultural brownfields among farmers, and not presented in this paper. To deal with above-stated hypotheses, farmers were asked the following question: "What is the acceptable subsidy amount for the regeneration of an agricultural brownfield to encourage you to implement it?" The answers were measured as a percentage of the total costs in tens of percent. For hypothesis testing, the following independent variables were used: the use of agricultural subsidies (measured by a binary response: yes – no), economic dependence on agricultural subsidies (measured on a five-point scale: very low – low – average – high – very high), size of the business (measured by a binary variable: large – small enterprise with a threshold of 10 employees), the main production focus of the farmer or agricultural business (measured in categories: crop production, livestock production, mixed production), the legal form of the agricultural business (measured in categories: independent farmers, limited liability companies, agricultural cooperatives, joint-stock companies), and the intensity of perception regarding further development of the agricultural business or the farmer's enterprise (measured on a five-point scale: strong decline – moderate decline – no change – moderate development – strong development).

Table 1. Summary of the key characteristics of the surveyed sample (n = 160)

Characteristic	Number of farms
Farm types	
- Independent farmers	102
- Limited liability companies	25
- Agricultural cooperatives	23
- Stock companies	10
Farm size (number of employees)	
- Farms with up to 10 employees	119
- Farms with more than 10 employees	41
Post-agricultural brownfield ownership	
- Sold post-agricultural brownfield	10
- Demolished post-agricultural brownfield	12
- Rebuilt post-agricultural brownfield	63
- Still owns a post-agricultural brownfield	47
- Never owned a post-agricultural brownfield	28

Data analyses

The basis for evaluating hypothesis H1 was the selection of independent variables influencing the perception of acceptable subsidy levels for the regeneration of agricultural brownfields among village inhabitants using a multiple GLM model with a log function. All four independent variables regarding the characteristics of respondents (=tests of sub-hypotheses H1a-d) were included in the model. Statistically significant independent variables were identified using the forward selection

method. Differences between the levels of the variables selected by the model were then assessed for bivariate variables using the Mann-Whitney test and for multivariate variables using the Kruskal-Wallis test with a post hoc test. The results were visualized for clarity using box plots, showing the range, median, and the boundaries of the 1st and 3rd quartiles. Before the testing of hypothesis H2, the representation of farmers receiving and not receiving subsidies according to the size of the business had to be tested. The Fisher's exact test was used. Then, the amount of requested subsidies between large and small businesses was tested using the Mann-Whitney test (test of hypothesis H2a). Since the null hypotheses for both statistical testing were rejected, the group of farmers not receiving subsidies has to be excluded from further analysis of hypothesis H2b-f The test of hypotheses H2b-f was the same as in the case of testing hypotheses H1a-d. First, a multiple GLM model with a log function was used. All five of the independent variables we measured were included in the model. Statistically significant independent variables were identified using the forward selection method. Differences between the levels of the selected variables were then assessed for bivariate variables using the Mann-Whitney test and for multivariate variables using the Kruskal-Wallis test with a post hoc test. The results were visualized for clarity using box plots, showing the range, median, and the boundaries of the 1st and 3rd quartiles.

RESULTS

Inhabitants of the villages

The survey results indicate a clear differentiation in the perception of acceptable subsidy levels among rural inhabitants. The median of the upper acceptable subsidy limit across all questionnaires is 40% (Figure 2). Half of all responses fall within the range of 20-50%. Approximately a quarter of the responses are in the range of 0 to 10%, while the same number of responses fall within the range of 60 to 100%. The survey among residents of rural communities, therefore, indicates a relatively clear perceived upper limit for acceptable subsidies at 50%.

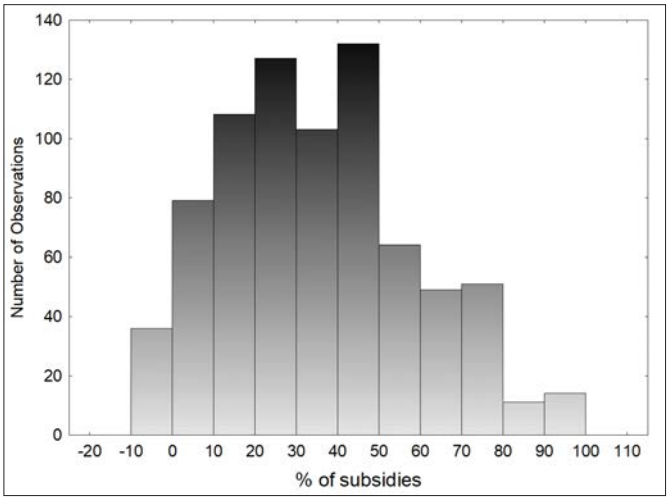

Figure 2. Histogram of responses to the acceptable level of subsidies for the regeneration of agricultural brownfields by residents of villages with agricultural brownfields

The partial hypotheses H1a-b were tested using a multiple GLM model with a log function for all four independent variables. To ensure that only statistically significant and mutually independent regressors entered the model, forward selection of variables was used. From the four potential factors we measured that could influence the perception of the acceptable subsidy size for agricultural brownfield regeneration, two significant factors were selected: household income and work in agriculture (Table 2).

The experience with agriculture was measured as the employment of the respondent or their closest relative in agriculture and tested using the Mann-Whitney U test (Mann-Whitney test, Adjusted Z = 4.458, $P<0.001$; Figure 3). Among respondents with direct experience in agriculture (Figure 2), the perception of the acceptable subsidy amount is statistically significantly higher (median over 50%) than among respondents without this experience (median below 30%). The second variable identified by the regression model with a statistically significant relationship to the perceived acceptable subsidy amount for the regeneration of agricultural brownfields is the economic situation of the respondent's household (Kruskal-Wallis test: H (5, N = 774) = 18.081, $P<0.01$; Figure 4).

Table 2. Regression summary for H1a-d testing

	Level of effect	Estimate	SE of estimate	Wald statistics	Lower CL	Upper CL	*P*-value
Intercept		3.815	0.033	13521.29	3.750	3.879	< 0.001
Economic status	extremely bad	0.538	0.116	21.46	0.311	0.766	< 0.001
Economic status	very bad	0.006	0.0767	0.01	-0.144	0.157	n.s.
Economic status	bad	-0.062	0.049	1.56	-0.159	0.035	n.s.
Economic status	good	-0.069	0.043	2.58	-0.153	0.015	n.s.
Economic status	very good	-0.124	0.046	7.35	-0.214	-0.034	< 0.01
Experience with agriculture	no	-0.089	0.021	17.98	-0.131	-0.048	< 0.001
Scale		22.891	0.582		21.779	24.060	

Figure 3. Medians, quartiles, and min-max ranges of the rank of answers according to the respondent's direct experience with work in agriculture

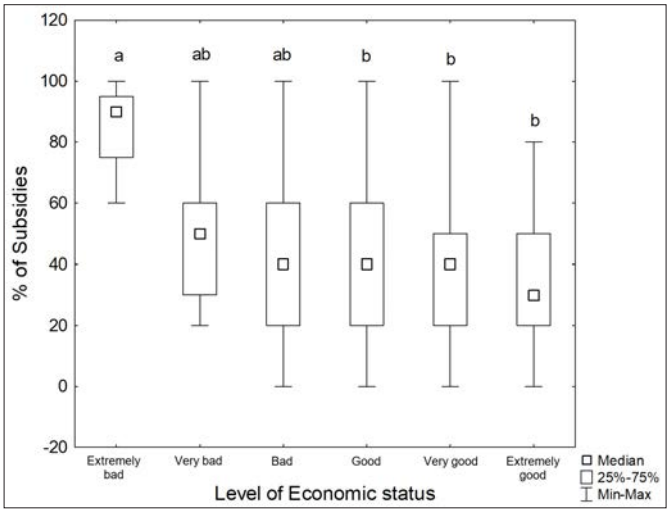

Figure 4. Medians, quartiles, and min-max ranges of the rank of answers according to the respondent's economic status, measured by relative household income (medians with the same letter do not differ significantly, *P*>0.05)

Respondents whose households are in the worst economic situation report a very high level of support (90%), compared to respondents from households in the three highest economic categories, who believe the support should be significantly lower (medians between 30 and 40%).

Brownfield owners

In the sample of 160 owners of dilapidated and/or abandoned agricultural buildings, 17 declared that they do not receive any subsidies. All of these owners are considered "small" farmers. The difference in the representation of farmers receiving and not receiving subsidies between "large" and "small" farmers is statistically significant (two-tailed Fisher test < 0.01). Among the farmers, the responses to the "fair" level of support for the regeneration, reuse, or disposal of agricultural brownfields clearly show a dominant preference for the metaphorical "half" (Figure 5).

It is crucial to note that farmers who do not receive subsidies are willing to accept significantly lower subsidies for the regeneration of agricultural brownfields (Mann-Whitney test, Adjusted Z = 6.407, *P*<0.001). Thus, the perception of subsidy levels for regeneration is internally structured in relation to the general acceptance of subsidies (H2a), and this structure is significant (Figure 6).

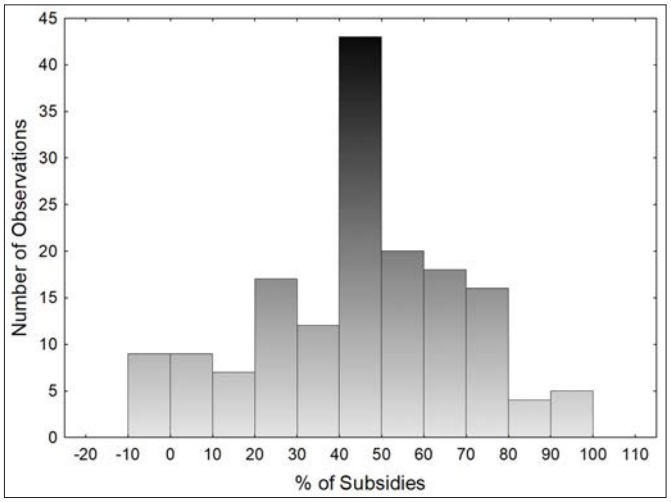

Figure 5. Histogram of responses to the perceived optimal level of subsidies for the regeneration of agricultural brownfields, according to their owners

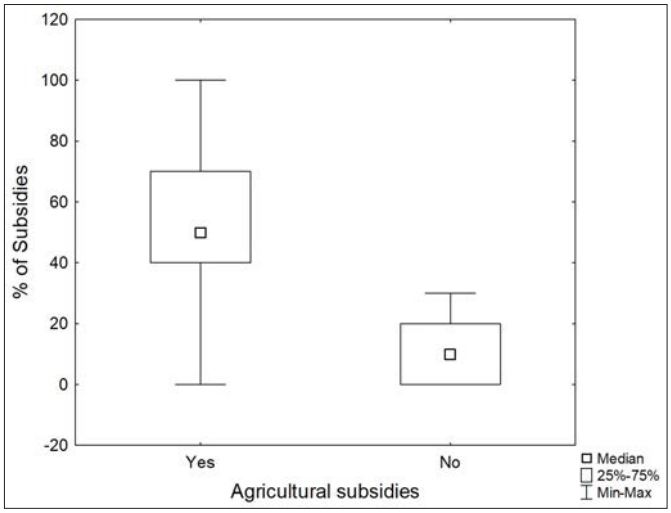

Figure 6. The optimal amount of subsidies for the regeneration of agricultural brownfields, according to the receipt of agricultural subsidies by the enterprise

Since the first analysis showed that those who do not receive subsidies are statistically significantly more represented only among "small" farmers, it was necessary to exclude the group of non-subsidized farmers from further analyses. Partial hypotheses H2b-f were tested using a multiple GLM model with a log function for all five independent variables. In order for only statistically significant regressors, which are mutually independent, to enter the model, a forward selection method was applied. The regression model identified 2 significant factors from the five potential factors we measured, which determine the perception of the acceptable "fair" subsidy level for regeneration – dependency on subsidies and farm size (Table 3).

The dependence of agricultural businesses on subsidies (at least in the perception of the farmers) is also confirmed by the test of hypothesis H2b. The test identified a strong relationship between the perception of the optimal subsidy amount and the perception of the possibility of the general survival of the agricultural business without subsidies, which is expressed as dependence on subsidies. Those who perceive a higher dependence on subsidies tend to request higher subsidies (Kruskal-Wallis test: H (4, N = 160) = 48.541, $P<0.001$; Figure 7).

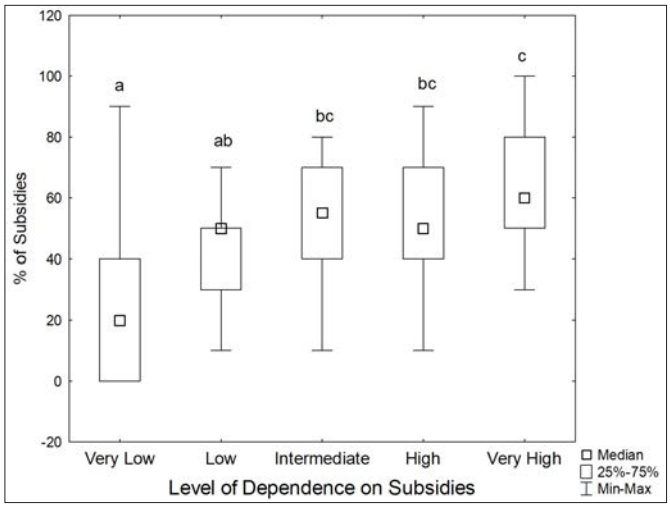

Figure 7. Medians, quartiles, and min-max ranges of the rank of answers according to the dependence of the enterprise on agricultural subsidies (medians with the same letter do not differ significantly, $P>0.05$)

The size of the business (H2c) is also significant for the perception of the subsidy amount for the revitalization of agricultural brownfields. Representatives of "large" agricultural businesses most often responded with a subsidy level of 50% (with half of all responses between 30% and 50%), while "small" farmers most often responded with a subsidy level of 60% (with half of all responses between 50% and 70%), and this difference is statistically significant (Mann-Whitney test, Adjusted Z = -2.484, $P<0.05$; Figure 8).

Table 3. Regression summary for H2b-f testing

	Level of effect	Estimate	SE of estimate	Wald statistics	Lower CL	Upper CL	*P*-value
Intercept		3.894	0.040	9510.338	3.815	3.972	< 0.001
dependence on subsidies	very low	-0.137	0.084	2.630	-0.301	0.028	n.s.
Dependence on subsidies	low	-0.215	0.081	6.973	-0.374	-0.055	< 0.01
Dependence on subsidies	intermediate	0.026	0.076	0.122	-0.122	0.175	n.s.
Dependence on subsidies	high	0.078	0.051	2.352	-0.022	0.177	n.s.
Business size	large	-0.094	0.034	7.820	-0.160	-0.028	< 0.01
Scale		18.276	1.081		16.276	20.522	

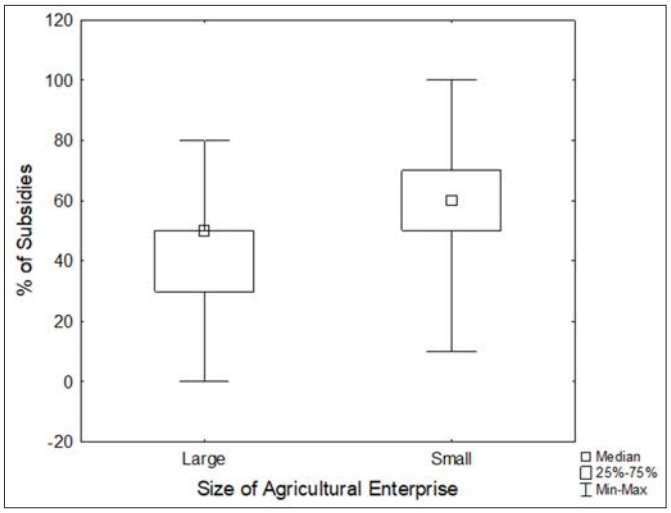

Figure 8. The optimal amount of subsidies for the regeneration of agricultural brownfields according to the size of the enterprise

DISCUSSION

The aim of this research was to assess the degree of acceptance of subsidy support for solving the issue of agricultural brownfields and to try to find an answer to the question of which factors are behind the differentiation of the acceptable level of these subsidies between residents of rural municipalities and farmers.

Inhabitants of the villages

The acceptance of subsidy amounts for the regeneration of agricultural brownfields was found to be on the "lower" half of the costs associated with regeneration. This corresponds with current subsidy programs. However, a significant differentiation in the acceptance of subsidy amounts for the revitalization of agricultural brownfields was found. Residents with direct experience in agriculture perceive the amount of agricultural subsidies substantially differently from those who do not have this experience (Schaub et al., 2023; Pfeiffer et al., 2020). The analyses show that the median acceptable subsidy rate among residents with agricultural experience exceeds 50%. On the other hand, residents without direct experience in agriculture are willing to accept a subsidy amount below 30%. This difference in perception may be caused by several factors. Residents with agricultural experience are likely to have better access to information about subsidy programs and their actual impact on agricultural businesses (Dereumeaux et al., 2020). They may also have a better understanding of the complexity and significance of these subsidies for the sustainability and development of agricultural activities (Bunkus et al., 2019). In contrast, people without this experience may have a limited awareness of the economic aspects of agriculture and the role subsidies play (Khatri et al., 2023). This statistically significant difference in perception highlights the need for better public awareness of agricultural subsidies and their impact (Daugbjerg et al., 2005). It also indicates the potential necessity for more targeted communication and education to reduce the gap in understanding between these two groups of respondents (Higgins, 1991; Rose et al., 2016). According to the results of the research, higher subsidies are more

likely to be envisioned by people whose households are in financial distress. This concept is further supported by the field of behavioral economics, where individuals are influenced by their current circumstances and comparative desires (Klein, 2020). Families facing financial difficulties may view increased subsidies as a direct means of improving their quality of life, given their immediate needs and constraints, which provides strong motivation to support any initiative offering financial relief. This principle suggests that individuals with lower incomes typically prioritize policies that bring immediate economic benefits (Chetty, 2015). Similarly, concepts of justice and social security, as discussed in the literature (e.g., Rawls), may provide one possible interpretative framework for understanding support for public spending among economically disadvantaged groups. However, this support may also reflect more pragmatic considerations, such as expectations of direct economic benefits at the local level, including employment opportunities or increased public investment in neglected rural areas, rather than adherence to abstract normative principles (Campbell and Marshall, 2006).

Brownfield owners

There exists a group of farmers who do not receive subsidies, and they have become part of the survey sample. This is a very interesting group of farmers, mainly small-scale farmers, who stand outside the subsidy system. There can be several motivations for this decision. One reason could be a rejection of subsidies as a tool that exacerbates inequality in market positions (Severová et al., 2012). From their perspective, subsidies are perceived as a mechanism that substantially distorts the agricultural sector by artificially sustaining economically inefficient actors and contributing to resource misallocation. Non-subsidized farmers argue that subsidies keep prices at levels that do not reflect real market forces, thereby disadvantaging those who are able to operate without external financial support. (Lapka et al., 2011) Other potential reasons for not receiving subsidies include the complexity of the administrative process for applying for subsidies, which can be time-consuming and financially demanding and requires detailed record-keeping, something that may be difficult for smaller farms to manage. Additionally, these farmers might have issues with the conditions tied to subsidies, such as the requirements for organic farming, as they prefer traditional (often conventional) farming methods and do not want to alter their practices to comply with subsidy conditions. Accepting subsidies also brings the risk of potential audits, increased dependence on state support, and a loss of the farmer's autonomy (McInerney et al., 2000). Non-subsidized farmers strongly value their independence from the state and deliberately avoid the administrative burden and external control associated with subsidy schemes. Their ability to maintain economic viability without public support reinforces the view that brownfield regeneration should primarily be a matter of private investment responsibility rather than an entitlement to public subsidies. Although there is a portion of "small" farmers who do not receive subsidies, this group is willing to accept significantly lower subsidies for the regeneration of agricultural brownfields. In contrast, the remaining "small" farmers who do receive subsidies consider, on average, a 60% subsidy rate for agricultural brownfield regeneration to be acceptable for project implementation. This is about 10% higher than the perception of "large" farms. Additionally, the required subsidy amount is independent of the type and focus of the business and does not correlate with plans for future development, as it is variable within these groups. The dependence of farmers on subsidies is a significant issue for the CAP. The amount of subsidy requested for agricultural brownfield remediation positively correlates with the perception of the farmer's dependency on subsidies. Farms that perceive their existence as dependent on subsidies are the ones demanding higher subsidies. CAP has long been criticized for creating a dependency on subsidies and for causing market distortions (Pawłowska and Grochowska, 2021). This stance is often grounded in the belief that subsidies reinforce unequal market positions, particularly in favor of large agricultural enterprises, and undermine fair competition within the sector. Non-subsidized farmers even articulate a more radical

position, advocating for the complete abolition of subsidies at the EU level as a prerequisite for establishing genuinely equal and competitive market conditions. This dependency is reflected in the attitudes and decision-making of individual farmers. In CEE countries, this situation was further exacerbated by the so-called transitional period, which deprived agriculture of its previously privileged institutionalized position, including large state financial subsidies. Agriculture was forced to operate within a completely different economic framework compared to its socialist past. The reduction in financial support most severely impacted large agricultural enterprises, whose intensive production required significant chemical and technological inputs (Zagata et al., 2019). The reduction of these inputs, due to lower subsidies, affected the economic results of these farms. Family farms, which after 1989 mostly did not replicate highly industrialized agriculture, also faced numerous challenges (e.g., limited access to finance, unstable price markets, difficult restitution processes, and complex economic reforms). Moreover, the success of newly established family farms was not always accepted by post-socialist rural communities (Swain, 2007). The reason for this was that these farms were seen as an alternative to large farms and were blamed for the loss of local jobs. Special attention should be given to small farmers who often feel a deep dependence on subsidies. These farmers view subsidies as an existential lifeline, which could be due to their limited ability to generate income through other means. Small farmers often face specific problems, such as smaller production scales (Sorvali et al., 2024), lower access to modern technologies, and limited opportunities for diversification. This strong sense of dependence strengthens their demand for higher subsidies, which directly conflicts with the broader public's views on the acceptable level of financial support. The public, not directly involved in agriculture, may tend to view subsidies as an inefficient and inadequate use of public funds, leading to tensions and debates on how public finances should be managed and what priorities should be set for agricultural support.

CONCLUSIONS

This paper examined the acceptance of subsidies for the regeneration of agricultural brownfields and the key factors shaping these attitudes from the perspectives of rural residents in the southern Czech Republic and agricultural entrepreneurs as potential implementers. The existence of agricultural brownfields reflects long-term structural changes in the agricultural sector over the past 35 years, which continue to influence landscape use and public perceptions of public support. The findings confirm an ambiguous perception of subsidies as a meaningful form of support for agricultural producers, with direct experience in agricultural work and household income emerging as the primary determinants of subsidy acceptance. Across both examined groups with direct involvement in agriculture, a consensus was identified around a 50% subsidy level as a socially acceptable threshold. The only notable variation relates to farm size, as small agricultural enterprises consider higher subsidy levels acceptable, reaching up to 60%. By contrast, acceptable subsidy levels appear to be independent of production orientation or future development plans, suggesting that factors such as the structure or clarity of available subsidy schemes may influence perceptions and represent a relevant direction for further research. Substantial differences in attitudes toward subsidies were also observed between population groups. Respondents without direct experience in agricultural production tend to accept lower subsidy levels, typically up to 30%, whereas farmers operating without subsidies show very low acceptance of any public support for brownfield regeneration. An inverse relationship between household income and support for subsidies was identified: respondents from economically disadvantaged households express the highest support, reaching up to 90%, while support among the highest income groups declines to approximately 30–40%. These results indicate that perceptions of public support differ markedly across income groups, reflecting contrasting views on social support and self-reliance. Considering these findings, the European agricultural market can be understood as a shared space shaped by differing national priorities and ambi-

tions, within which substantial regional differences exist in the role of agriculture and the use of support instruments. Although the study acknowledges certain spatial limitations, the analysed area represents a typologically diverse agricultural region. The results further indicate that subsidies play a significant role in the European agricultural context, in some cases approaching structural dependence, particularly among smaller farms, while the general population tends to perceive subsidies primarily as another form of public expenditure. These differing perspectives should be considered when evaluating attitudes toward support for agricultural brownfield regeneration. Future research should focus on expanding the geographical scope of analysis to additional regions of the Czech Republic and on comparative assessments of subsidy schemes across sectors. Further attention should be given to quantitative comparisons of subsidy volumes allocated to brownfield regeneration, analyses of successful revitalization projects, and more detailed regional evaluations incorporating sociodemographic factors. Research addressing public awareness of the non-agricultural functions of agricultural production and its broader impacts on the landscape and society would further contribute to understanding subsidy acceptance.

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