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An Evaluation of the Effectiveness of Legal Instruments for the Protection of Agricultural Land in Poland

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Abstract: Legal protection of agricultural land is a fundamental element of the State's strategy for nature conservation, food security, and sustainable spatial planning. This article aimed to conduct a comprehensive assessment of the effectiveness of legal instruments in protecting agricultural land in Poland. The analysis primarily focused on the provisions of the Act of 3 February 1995 regarding the protection of agricultural and forest land, the relevant planning regulations, and administrative decisions. The evaluation relied on *Statistics Poland* data for 2003-2024 concerning the area of agricultural land taken out of agricultural production and voivodeships experiencing high development pressure. The analysis revealed that, although Poland has an extensive legal framework for protecting agricultural land, its effectiveness is limited by the liberalization of procedures, the low spatial coverage of zoning plans, and the prioritization of economic goals over environmental objectives. The study's results confirmed that agricultural land conversion to non-agricultural uses should be closely monitored, and that spatial planning policies should be better aligned with soil protection goals.

Keywords: legal protection, agricultural land, Act on the protection of agricultural and forest land, agricultural land conversion to non-agricultural uses, spatial planning

1. Introduction

Agricultural land should be regarded as a strategic and non-renewable resource that is of fundamental importance for maintaining ecological balance, ensuring food security, regulating the climate, and protecting landscapes (Kurowska et al. 2020). Agricultural land conversion, resulting from growing urbanization pressure, the development of technical infrastructure, and planning decisions, leads to a gradual reduction in agricultural land area. To address these challenges, an effective and cohesive legal protection system is needed to reconcile environmental protection with socio-economic needs. This issue is particularly concerning in Poland, where agricultural land comprises a significant portion of the country's total land area. Land use management can also be examined from the perspective of institutional theory and policy-mix approaches, which emphasize the interplay between formal regulations, market-based instruments, and voluntary mechanisms (Kryszk et al. 2022, Liang 2024). In the European Union, agricultural land protection is strongly embedded in multilevel governance structures, where spatial planning instruments interact with agricultural, environmental, and climate policies. This theoretical framework allows for better interpretation of the effectiveness of Polish regulations in comparison with broader European experiences.

Poland is currently at the nexus of developmental and environmental challenges, and due to growing development pressure, particularly in suburban areas, more agricultural land is being taken out of production. According to Śleszyński et al. (2024), most land conversion decisions are made for economic reasons, which are prioritized over environmental and planning concerns in administrative practice. In this context, the land protection system should be assessed not only in terms of its effectiveness, but also in relation to its alignment with spatial planning mechanisms and the implementation of the relevant regulations at the local level.

In Poland, the first legal regulations for the protection of agricultural land were introduced in the 1960s. Initially, agricultural land protection laws were applied selectively and were limited to agricultural policy instruments, including Regulation No. 198 of the Council of Ministers of July 12, 1966, on the protection of agricultural land (Official Gazette of the Republic of Poland, 1966, No. 40, item 200). A more systematic approach to the protection of soil resources was developed in the following decades, which gave rise to the Act of 26 October 1971 on the protection of agricultural and forest land and land reclamation (Journal of Laws, No. 27, item 249), the first legislative instrument to introduce land reclamation and soil classification guidelines. In turn, the Act of 26 March 1982 on the protection of agricultural and forest land (Journal of Laws,

No. 11, item 79) was an important milestone in strengthening administrative tools and introducing a more formalized system for land registration and soil quality assessment.

The Act of 3 February 1995 on the Protection of Agricultural and Forest Land (Journal of Laws, 1995, No. 16, item 78, as amended) was a pivotal legal act that remains in force. This legislation outlined the requirements for removing land from agricultural and forestry production, introduced payment mechanisms for land conversion, and established the procedure for integrating land-use plans into planning documents (Karpiuk 2013). Since its adoption, the act has undergone numerous amendments regarding the scope of land protection and the deployment of financial and administrative instruments.

Land protection is also an integral part of many related legal acts, including the Act of 27 March 2003 on spatial planning and development (Journal of Laws, 2003, No. 80, item 717), which created a framework for Poland's spatial planning policy and rules for siting new development projects on agricultural and forest land. As of 2003, Polish municipalities are no longer legally obligated to cover their entire territory with local zoning plans. Most planning permissions are issued based on a decision on development conditions (issued on a case-by-case basis), which considerably decreased the efficacy of agricultural land protection regulations (Górski 2019).

In addition, the productive, ecological, and social roles of agricultural and forest land are protected and supported by other legal acts, including the Nature Conservation Act of 2004 (Journal of Laws, 2004, No. 92, item 880), the Environmental Protection Law of 2001 (Journal of Laws, 2001, No. 62, item 627), the Forest Act of 1991 (Journal of Laws, 1991, No. 101, item 444), and the provisions of the Civil Code Act of 23 April 1964 (Journal of Laws, 1964, No. 16, item 93). These legal acts regulate land ownership and safeguard landholders' rights to own and use land. They also introduce environmental constraints on land use, which implies that property rights can be restricted to protect public interests, for example, by prohibiting land development in protected areas, placing property owners under the obligation to reclaim degraded land, or acquiring a permit for the conversion of agricultural and forest land. These regulations have been introduced to reconcile property rights with environmental protection and sustainable development goals.

According to Karpiuk (2013), legal instruments should be supported by a prevention policy, environmental education, and systemic control mechanisms. The absence of clear land protection regulations in planning documents, combined with the prioritization of development goals, often leads to uncontrolled land conversion (Górski 2018). In the long term, these processes can decrease the functional value and productive potential of agricultural land, contributing to the degradation of the landscape and the natural environment (Kijowski 2012). Therefore, the importance of protecting agricultural and farm land extends beyond environmental concerns. Agricultural land and forests influence the spatial structure, quality of rural life, and long-term regional development policy. Within the framework of harmonious spatial development, agricultural land and forests serve as climatic, hydrological, and landscape buffer zones, playing a crucial role in preserving ecological continuity and mitigating urban sprawl (Marks-Bielska & Bieniek 2018).

The Act of 3 February 1993 on the protection of agricultural and forest land (Journal of Laws, 1995, No. 16, item 78, as amended) remains in force. It sets forth the rules for quantitative and qualitative protection (Article 3), the conversion procedure (Articles 6 and 7), the applicable fees (Article 22b), and financing mechanisms (Agricultural Land Protection Fund). The discussed act introduced the criteria for soil quality classification. Still, its effectiveness was compromised when agricultural land located within city limits was exempted from the requirement to acquire a land conversion permit (Śleszyński et al. 2024).

The present study was undertaken to analyze the legal framework for the protection of agricultural land in Poland, with special emphasis on the relationship between legislative changes and the area of agricultural land taken out of agricultural production. The effectiveness of legal instruments was evaluated using spatial and statistical data, employing empirical and comparative research methods. This article aims to comprehensively evaluate the effectiveness of legal instruments in protecting agricultural land in Poland, with a particular emphasis on the impact of legislative changes and spatial planning on the scale of land conversion between 2003 and 2023.

2. Materials and Methods

This study employed an interdisciplinary approach, combining legal analysis with quantitative analysis of statistical data, to examine the impact of changes in legal acts and spatial planning regulations on the area of agricultural land withdrawn from production in Poland between 2003 and 2023. The study employed an interdisciplinary approach, combining a legal analysis with a quantitative analysis of statistical data.

The first stage of the study involved a detailed analysis of the legal acts binding during the examined period, in particular:

- Act of 3 February 1995 on the protection of agricultural and forest land (Journal of Laws, 1995, No. 16, item 78, as amended),
- Act of 27 March 2003 on spatial planning and development (Journal of Laws, 2003, No. 80, item 717, as amended),
- and the subsequent amendments to the above legal acts in 2003, 2008, 2015, 2021, and 2023.

The decisions of administrative courts (Supreme Administrative Court, Voivodeship Administrative Courts, 2024) and legal commentaries were also considered in the analysis.

A quantitative analysis of statistical data regarding the area of agricultural land removed from agricultural production was also conducted. Statistical data were obtained from *Statistics Poland* (Statistical Yearbook of Agriculture, *Statistics Poland* 2023; Local Data Bank of *Statistics Poland*, accessed on 22 July 2025). The analyzed dataset spanned a twenty-year period and was examined to identify potential correlations between market trends, anomalies, and changes, as well as the dates on which the analyzed legal acts and amendments came into force. In this study, the term "agricultural land" follows the definition provided in Article 2 of the Act on the Protection of Agricultural and Forest Land. In this study, "effectiveness of agricultural land protection" is understood as the extent to which the legal framework prevents the irreversible conversion of soils with defined quality classes to non-agricultural uses. Effectiveness was assessed in three dimensions: (1) legal coverage (formal scope of protection), (2) administrative enforcement (implementation and control mechanisms), and (3) environmental outcomes (changes in the area and quality of agricultural land over time). It should be noted that according to the above definition, agricultural land includes not only agricultural land that has been entered into the Land and Building Register, but also other types of land (occupied by housing, fishing ponds, family allotment gardens, and farm access roads).

Data were processed using descriptive statistics (analysis of annual fluctuations, outliers, linear trends) and elements of comparative analysis (comparison of data before and after legislative changes). A cause-and-effect analysis was also conducted to identify the relationships between legislative acts and the area of agricultural land taken out of production. The literature on the protection of agricultural land and the procedure of rezoning agricultural land for development purposes was reviewed. The applied research approach supported an assessment of the actual effectiveness of the legal framework for agricultural land protection, facilitating the identification of areas that require further monitoring and analysis.

3. Results and Discussion

Over the last three decades, the 1995 Act on the protection of agricultural and forest land has been amended numerous times in response to changing economic and social needs and development pressures. The introduced legislative changes affected not only the scope and method of agricultural land protection, but also the rate and scale of land conversion processes.

An analysis of subsequent amendments to the above act reveals that the legislative approach has evolved from a strict protection model to a more flexible system that is open to exceptions and aligns with the developmental goals of municipalities. The key amendments to the Act on the protection of agricultural and forest land and other regulations related to agricultural land conversion, in particular the Act on spatial planning and development, are listed in chronological order in Table 1. The developed list was used to evaluate the effectiveness of agricultural land protection instruments in the context of changes in spatial planning and rapid economic growth.

Table 1. Key amendments to the Act on the protection of agricultural and forest land introduced 1997-2023 in the context of spatial planning and development by Kurowska (2017), www.sejm.gov.pl (accessed on 25 July 2025)

Amendment	Key provisions
Act of 22 May 1997 amending the Act on the protection of agricultural and forest land (Journal of Laws, No. 60, item 370). Entered into force on 29 June 1997.	1) Agricultural and forest land may be exempt from lump-sum fees and annual fees, and owners of forest land may be entitled to lump-sum compensation for premature tree harvesting for the needs of public projects, if the area of land designated for development did not exceed 1 ha and the project could not be developed on unprotected land; 2) Agricultural and forest land that is taken out of production and converted to residential use is exempt from conversion fees: a) up to 0.05 ha for a single-family house, b) up to 0.02 ha per apartment for a multi-dwelling unit. *Point 2 remains in force.*

Table 1. cont.

Amendment	Key provisions
Act of 27 March 2003 on spatial planning and development (Journal of Laws, No. 80, item 717). Entered into force on 11 July 2003.	Amendments to Articles 7, 9, and 11. The amendment modified the procedure of withdrawing agricultural land from production when its conversion to non-agricultural use does not require statutory permission from a voivodeship governor (applies to low-quality agricultural land and small parcels). In these cases, a local zoning plan does not have to be developed before agricultural land is taken out of production. At the same time, more stringent requirements were introduced for low-quality soils (consolidated agricultural land with an area greater than 1 ha). Before the amendment, Article 7, Section 4 concerned agricultural land designated for the construction of water reservoirs, mines, public roads, and railway lines – *these provisions remained in force until December 31, 2008*.
Act of 19 December 2008 amending the Act on the protection of agricultural and forest land (Journal of Laws, No. 237, item 1657). Entered into force on 1 January 2009.	Amended: Article 7 section 3, Article 11 sections 1-6, Article 12 section 3, Article 28 section 4 point 1; Added: Article 5b, Article 11 sections 1a and 1b; Repealed: Article 7, section 2, points 3 and 4, section 6, Article 12, section 15. Agricultural land assigned to soil quality classes IV-VI and located within the administrative boundaries of cities was deprived of statutory protection and made available for development purposes. The amendment stipulates that the provisions of the act do not apply to agricultural land within the administrative boundaries of cities.
Act of 25 June 2009 amending the Act on the protection of agricultural and forest land (Journal of Laws, No. 115, item 967). Entered into force on 1 January 2010.	1) Article 12, section 7 was modified – fees that were previously calculated in tons of rye grain were replaced with monetary fees, depending on the type of land and soil quality class; 2) Article 12 section 17 was added – payments and annual fees in virtue of land designated for public projects (as defined in Article 6 of the Act on real estate management) can be written off in whole or in part if the land area does not exceed 1 ha and the project cannot be developed on unprotected land.
Geological and Mining Law of 9 June 2011 (Journal of Laws, No. 163, item 981). Entered into force on 1 January 2012.	The provisions of Article 8 were aligned with the Geological and Mining Law (the conversion of agricultural and forest land to non-agricultural and non-forestry use, where such conversion requires the consent of the voivodship governor, must be indicated in the local zoning plan. The above does not apply to land that is temporarily (for a period of up to 10 years) withdrawn from production for the purpose of prospecting for or identifying mineral deposits.
Act of 8 March 2013 amending the Act on the protection of agricultural and forest land (Journal of Laws, 2013, item 503). Entered into force on 26 May 2013.	1) Article 7, section 2, point 1 was modified – the conversion of agricultural land assigned to soil quality classes I-III to non-agricultural use requires the consent of the voivodship governor, irrespective of land area; 2) Article 7, section 3a was added – the voivodeship governor (town or city mayor) is a party to land conversion proceedings.
Act of 13 December 2013 on family allotment gardens (Journal of Laws, 2014, item 40). Entered into force on 19 January 2014.	Article 2, section 1, point 6 was modified – family allotment gardens and botanical gardens were included in the definition of agricultural land.
Act of 11 July 2014 amending the Environmental Protection Law and other legal acts (Journal of Laws, 2014, item 1101). Entered into force on 5 September 2014.	1) The amendment repealed Article 5b, which exempted agricultural land located within city limits from the provisions of the Act; 2) The amendment added Article 10a, which exempted agricultural land located within city limits from the provisions of Chapter 2 of the act (the conversion of agricultural land to non-agricultural use requires a formal permit).
Act of 10 July 2015 amending the Act on the protection of agricultural and forest land (Journal of Laws, 2015, item 1338). Entered into force on 10 October 2015.	1) Article 7 was modified – the conversion of agricultural land with an area of up to 0.5 ha, assigned to soil quality classes I-III, to non-agricultural use does not have to be indicated in the zoning plan if at least one-half of each consolidated land plot is situated in a densely developed area and if the land in question is separated from the boundary of the nearest land plot and a public road by a distance of up to 50 m; 2) Article 4, point 29, defining the term "dense development," and point 30 defining the term "densely developed area," were added.

Table 1. cont.

Amendment	Key provisions
Anti-Terrorism Act of 10 June 2016 (Journal of Laws, 2016, item 904). Entered into force on 2 July 2016.	Article 7, section 1a was added – the conversion of agricultural and forest land to non-agricultural and non-forestry use, when it requires the consent of the voivodeship marshal—issued after obtaining the opinion of the chamber of agriculture—must be indicated in the local zoning plan prepared in accordance with spatial planning and development regulations. These provisions do not apply to areas where local zoning plans are not prepared.
Act of 27 March 2003 on spatial planning and development (Journal of Laws 2021.1873).	Areas intended for renewable energy generation facilities (and their buffer zones) with a power output exceeding 500 kW (previously 100 kW) must be indicated in the municipal spatial development framework. Two exceptions were introduced: the above provisions do not apply to ground-mounted photovoltaic systems with an installed capacity of more than 1000 kW, situated on agricultural land assigned to soil quality classes V, VI, VIz, and unproductive/uncultivated land.
Act of 27 March 2003 on spatial planning and development (Journal of Laws 2023.977).	Spatial planning reform; The amendment introduced a municipal general plan that is binding for the preparation of local zoning plans; Local zoning plans were aligned with the general plan to account for functional zones, urban planning parameters, and green permeable area; A decision on development conditions can be issued only when infill development areas have been specified in the general plan. The amendment will take effect on 1 July 2026.

Table 1 lists the changes introduced to Polish legal acts regarding the withdrawal of agricultural land from production between 1997 and 2023. The analysis revealed that land conversion procedures were gradually liberalized, particularly regarding low-quality agricultural land and land within the administrative boundaries of cities.

Special attention was paid to the amendments introduced in:

- 2003 – The Act on Spatial Planning and Development introduced exceptions under which agricultural land can be taken out of production without the need to adopt a local zoning plan. This reform introduced more flexibility to decision-making, but also weakened the land protection framework;
- 2008/2009 – agricultural land located within city limits and assigned to soil quality classes IV-VI was deprived of protection, which made some areas highly vulnerable to development pressure and contributed to urbanization and suburbanization;
- 2015 – this amendment introduced the option of changing the designation of agricultural land without indicating it in the local zoning plan, provided that the land is assigned to soil quality classes I-III and is located in a densely developed area, which made valuable soils more susceptible to urban sprawl;
- 2023 – This amendment introduced several systemic changes to enhance the transparency and predictability of the planning process, as well as promote its digitalization. Most importantly, this amendment replaced the municipal spatial development framework with the general plan, which became obligatory for all municipalities and may be adopted as a local law.

From a legal perspective, successive amendments to the 1995 Act have gradually shifted the balance from environmental protection towards the interests of investors and local development. According to the legislator, these changes were necessary to promote the construction of housing and power infrastructure, which is why agricultural land conversion to residential development (single-family housing) (1997) or renewable energy development (2021) was exempt from conversion fees.

The 2023 amendment to the Act on Spatial Planning and Development can have both positive and negative effects on agricultural land protection. On the one hand, the replacement of the municipal spatial development framework with the general plan promotes the incorporation of agricultural land protection principles into municipal planning documents. General plans are obligatory and more detailed, which contributes to the harmonization of land development rules in the entire municipality. Additionally, the creation of a digital Register of Zoning Plans and the obligation to maintain a Register of Development Applications within the ICT system can contribute to more transparent planning decisions and effective monitoring of agricultural land conversion processes.

On the other hand, this reform also entails significant risks. General plans do not have to be consulted with the authorities responsible for agricultural land protection, which undermines their protective effects, in particular concerning low-quality agricultural land (soil quality classes IV-VI), which is most often converted to non-agricultural use such as housing development. Local zoning plans can be replaced with an Integrated Development Plan (IDP), a new tool that may facilitate agricultural land conversion outside the rigid and time-consuming planning procedure. The provisions of the IDP are negotiated directly between the developer and municipal authorities. In practice, the IDP can favor large development projects, even if they conflict with the municipality's long-term strategy for nature conservation and the protection of agricultural land. The interaction between different acts has played a significant role in shaping the effectiveness of farmland protection. For example, the 2021 amendment to the Act on Spatial Planning and Development, which facilitated the location of renewable energy facilities, coincided with changes to the Act on the Protection of Agricultural and Forest Land. This overlap effectively reduced the scope of statutory protection for specific soil categories, demonstrating that sectoral reforms may undermine land protection if not coordinated within an integrated policy framework.

Therefore, the efficacy of the discussed reform will be primarily determined by the municipal authorities' commitment, the quality of general plans, and the involvement of the institutions responsible for agricultural land protection in the consultation process and planning supervision.

The municipal general plan has the potential to protect agricultural land, in particular by introducing planning zones (agricultural, homestead, and infill zones), eliminating highly arbitrary decisions on development conditions, and increasing the transparency of planning procedures. According to Koliński (2024), the effectiveness of new solutions will depend primarily on the commitment of municipal authorities to agricultural land protection and the quality of analytical and cartographic tools used in the planning process. The area of agricultural land taken out of agricultural production in Poland between 2003 and 2023 (Fig. 1) illustrates the scale of the problem well.

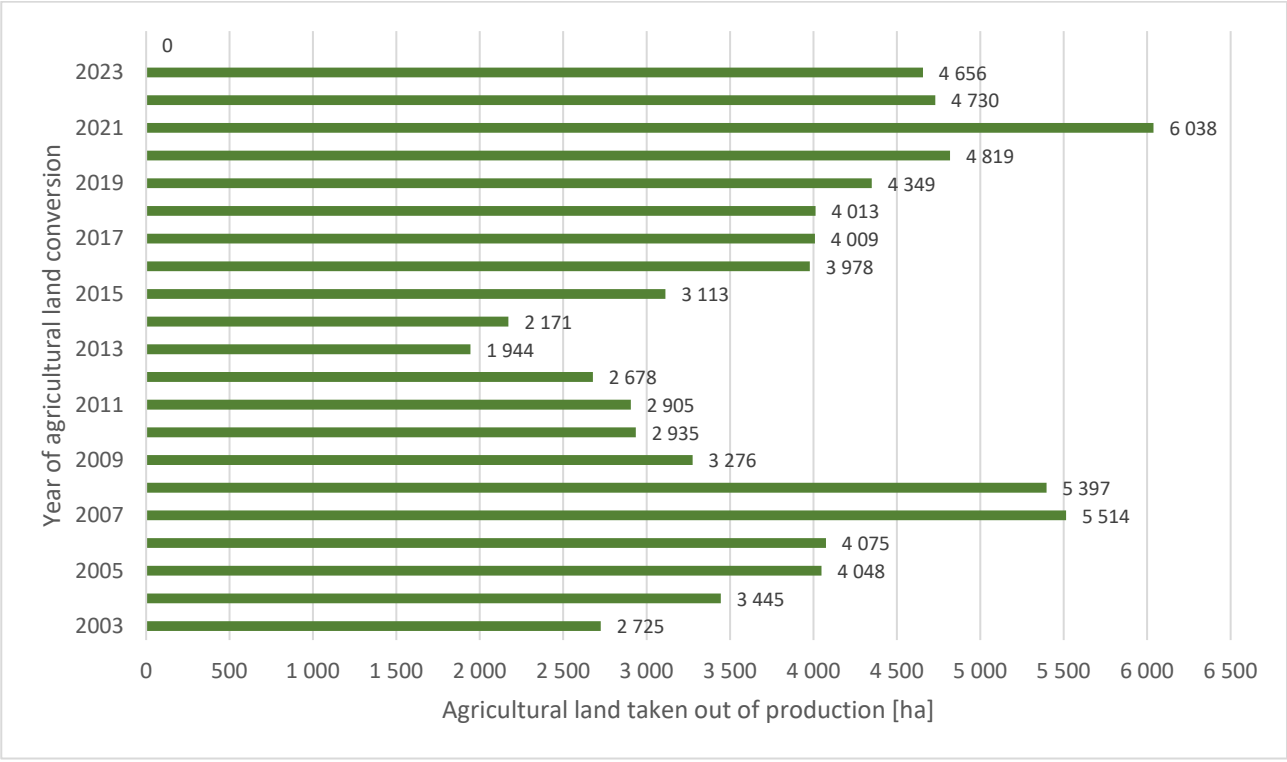

Fig. 1. Agricultural land taken out of production in Poland between 2003 and 2023 (Statistics Poland)

An analysis of *Statistics Poland* data (*Statistics Poland*, 2025) concerning agricultural land that was taken out of agricultural production between 2003 and 2023 revealed apparent variations in agricultural land conversion trends across years, suggesting that these processes are influenced by legal, social, and economic factors (Ciechanowicz-McLean & Wysokińska 2018, Kwartnik-Pruc et al. 2011).

Between 2003 and 2008, the area of agricultural land converted to non-agricultural use increased from 2725 ha in 2003 to 5514 ha in 2007. This period witnessed rapid urbanization, and agricultural land protection

mechanisms were not yet firmly grounded in the legislative framework (Karpiuk 2013, Bieluk 2015). This trend clearly declined in the following years (2009-2014), and only 1994 ha of agricultural land was withdrawn from production in 2013. According to Świtalska (2016) and Górski et al. (2019), this decline could be attributed to the strengthening of planning procedures and growing awareness of the need to protect land resources. The area of converted agricultural land increased after 2015 and peaked in 2021 at 6038 ha. This trend has been exacerbated by the growing demand for development land and the implementation of renewable energy projects, particularly photovoltaic farms, on low-quality agricultural land (Marks-Bielska & Bieniek 2018, Kurowska et al. 2020). The amendments of 2021 (Journal of Laws, 2021, item 1873) facilitated the construction of renewable energy facilities on low-quality soils (classes V and VI) and unproductive/uncultivated land, which could have directly contributed to the rise in the area of agricultural land converted to non-agricultural uses (Milczarek-Andrzejewska et al. 2020, Andrzejewska 2025).

The influence of changes in the key legislative acts on the area of agricultural land withdrawn from production is presented in Figure 2.

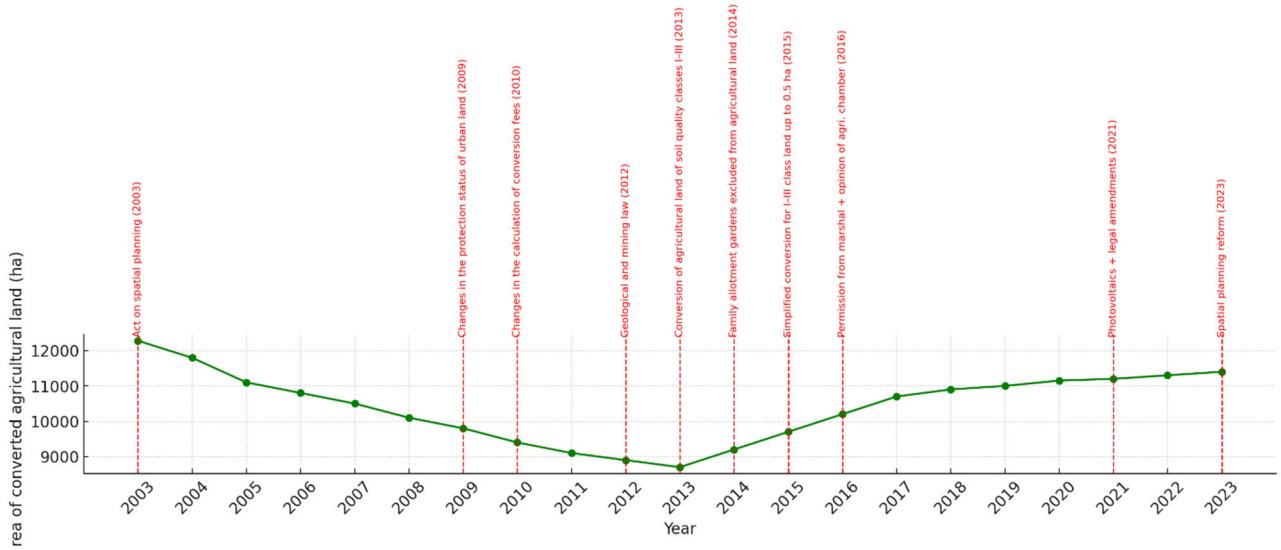

Fig. 2. The impact of legislative changes on the area of agricultural land taken out of production according to *Statistics Poland* data

On 1 January 2010, the financial instruments for agricultural land protection were significantly modified. The system, which calculated fees for irreversible agricultural land conversion based on rye grain prices, was abandoned. In the amendment to the Act on the protection of agricultural and forest land (Journal of Laws, 1995, No. 16, item 78, as amended), fees calculated based on rye grain prices were replaced with lump-sum fees (listed in the appendix to the Act). This change was introduced to simplify administrative procedures and increase their transparency, but in practice, it resulted in the gradual liberalization of legal provisions.

The mechanism allowing landowners to deduct the market value of land from the conversion fee (Article 12, section 6) was retained, effectively eliminating the obligation to pay the lump-sum fee in many cases. Additionally, conversion fees were not systematically indexed in successive years, which decreased their real value in financial terms. Consequently, conversion fees were initially introduced as an economic barrier to discourage the uncontrolled conversion of agricultural land to non-agricultural uses. Still, their role in preventing land degradation gradually declined over the years. Conversion fees, intended initially as a strong economic barrier, gradually lost their real value. After 2010, lump-sum payments replaced fees indexed to the price of rye grain. As these lump-sum values were not regularly adjusted for inflation, their deterrent effect decreased considerably (Bieluk 2015). Empirical analyses indicate that the effectiveness of these instruments now depends more on transaction terms and property appraisal methods than on their statutory level.

According to Bieluk (2015), the effectiveness of financial instruments is more likely to be determined by transaction terms and the appraisal method used for property valuation than by the wording of legal provisions. This observation raises significant concerns regarding the cohesion of the agricultural land protection framework and its resilience to development pressure, especially in suburban areas.

There is empirical evidence to indicate that the legal framework for agricultural land protection is not highly effective under growing development pressure. Due to the dispersal of administrative powers, a lack of coherence in planning policy at the local level, and difficulties in interpretation, current planning practice does not

provide sufficient protection for agricultural land (Cymerman 2010, Błażewski 2024, Orłowski 2024). These problems may exacerbate the fragmentation of agricultural land and, in the long-term perspective, lead to a deterioration in its functional and environmental integrity (Roszkowska-Mądra 2020, Śleszyński et al. 2024). Therefore, the analysis of data from 2003 to 2023 indicates that existing protective mechanisms should be strengthened and that spatial planning systems should be integrated with land protection goals. A sustainable planning policy should prioritize rational land-use planning based on comprehensive and integrated legal and planning instruments (Marciniuk 2020, Kryszk et al. 2022), while considering the interests of local communities and the need to safeguard the productive capacity of agricultural land for future generations.

Bieluk (2015) and Śleszyński et al. (2024) have argued that the Act of 1995 created a comprehensive agricultural land protection system by aligning the quantitative and qualitative aspects of land protection with financial instruments and administrative procedures. These regulations can be used to evaluate the effectiveness of agricultural land conversion decisions and their implications for coherent spatial planning. According to Kurowska et al. (2020), land protection regulations are the essential elements of the spatial planning framework, aimed at minimizing the adverse effects of urbanization pressure and the ongoing environmental crisis.

Article 10 of the Spatial Planning Act of 2003 aligns the provisions of this act with the spatial planning system. Pursuant to Article 10, the decision on the conversion of agricultural land to non-agricultural use became an act of local law. However, Roszkowska-Mądra (2020) noted that decisions on development conditions are often arbitrary because only a small proportion of Poland's territory is covered by zoning plans, particularly in rural municipalities. A review of the relevant jurisdiction and literature (Marciniuk 2020, Kurowska et al. 2020) indicates that the 2008 reform significantly weakened land protection mechanisms by exempting urban land and infrastructure projects from the requirement to obtain a conversion permit. The trends in agricultural land conversion in the examined period are presented in Figure 3.

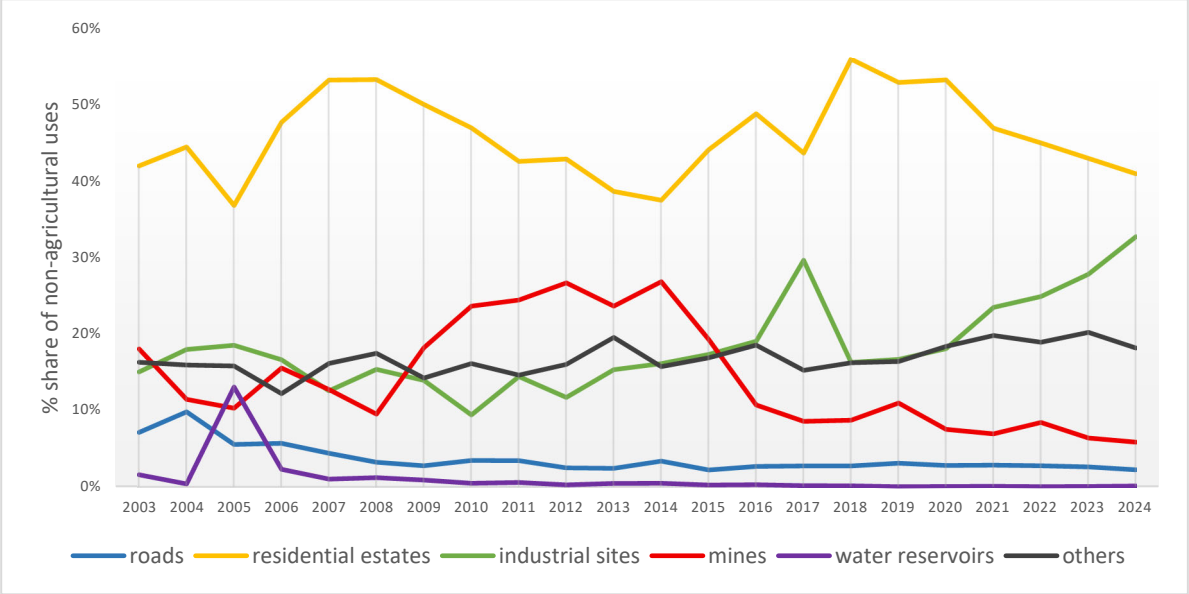

Fig. 3. Trends in agricultural land conversion in Poland between 2003 and 2024 (as at 2025)

During the study period, agricultural land was converted mainly to residential use. The share of agricultural land designated for residential purposes ranged from 36.8% to 55.9%, peaking in 2018 at 55.9%. The share of agricultural land converted to industrial use also increased in the analyzed period, reaching 32.7% in 2024 (Fig. 3).

These trends clearly indicate a rise in development pressure, particularly in the residential and industrial sectors. The percentage of agricultural land of different soil quality classes that was permanently taken out of production during the study period (2003-2023) is shown in Figure 4.

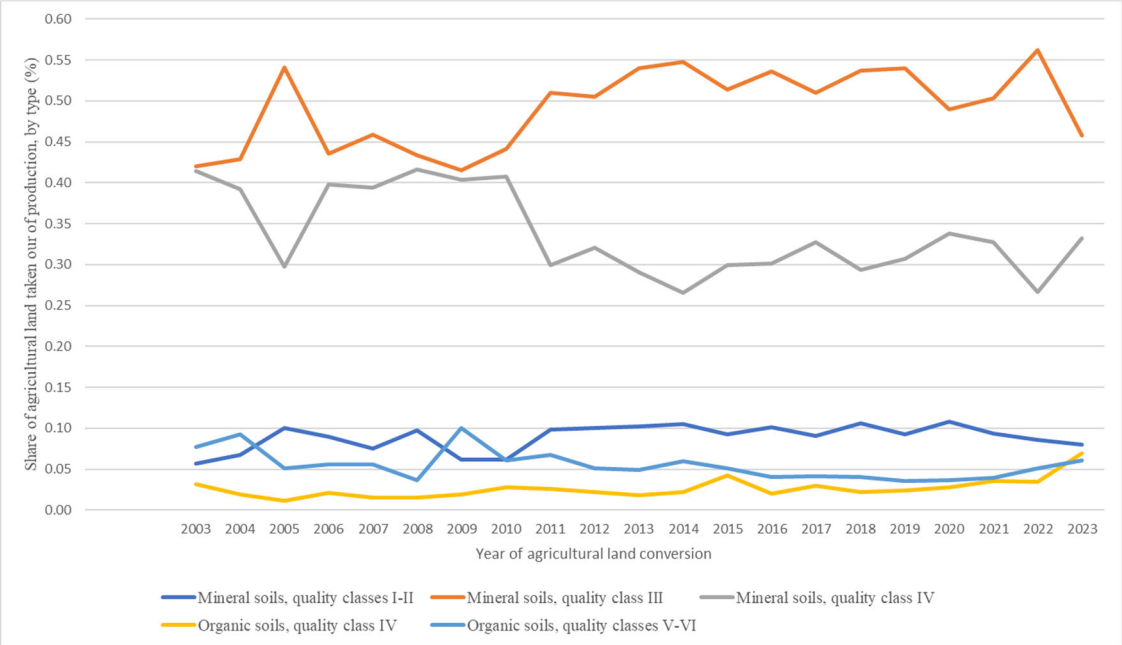

Fig. 4. The percentage share of agricultural land characterized by different soil types and soil quality classes that was taken out of production in Poland between 2003 and 2023 (as at 2025) (Statistics Poland)

The majority of agricultural lands converted to non-agricultural use in the analyzed period were mineral soils of quality class III. These soils accounted for approximately 41% to 56% of all agricultural land conversions, and their share was particularly high after 2010, which could suggest that this category of agricultural land was particularly susceptible to development pressures due to residential, industrial, and logistic projects. The high quality of converted agricultural land suggests that existing mechanisms are failing to provide effective protection for land with high productive capacity.

Mineral soils of quality class IV were the second most frequently converted category of agricultural land. The proportion of these soils in all agricultural land conversions remained relatively stable during the study period (27-42%), and it clearly decreased from 2010 to 2016. A rising trend was observed after 2016, which could indicate that development pressure shifted towards lower-quality agricultural land, possibly due to local planning regulations or the depletion of more attractive resources.

The proportion of mineral soils in quality classes I-II in total agricultural land conversions was low, not exceeding 10%. However, an increase to nearly 9-10% was noted in particular years (2005, 2009, and 2014). Despite the relatively low percentage share of these soils in all agricultural land conversions, the conversion of high-quality agricultural land to non-agricultural use raises serious concerns because such resources require a high level of protection. The combination of Statistics Poland data with soil classification from the National Soil Register (linked through TERC codes) enabled a spatially explicit analysis of land conversion. Figures 2-4 illustrate both the temporal dynamics and the soil class structure of converted land. The observed peaks in land conversion (2007, 2015, 2021) coincide with significant legislative amendments, which suggests a causal relationship between liberalization of procedures and increased land take.

Regional differences also highlight strong development pressure in metropolitan areas (e.g., Pomerania, Silesia, and Małopolska), confirming that local planning coverage plays a crucial role in farmland protection. Statistical tests comparing average annual conversion rates before and after the 2008 and 2015 reforms revealed significant increases in land conversion, particularly for soil classes III and IV, indicating that legal changes had a measurable effect on land use outcomes.

Organic soils of quality classes IV and V-VI were least frequently taken out of agricultural production. Between 2003 and 2023, the proportion of these soils in all agricultural land conversions reached 2-7%, with a slow increase after 2019, particularly in the group of class IV soils. These observations may indicate a growing demand for these categories of agricultural land as sites for renewable energy development.

The collected data indicate that, although Poland has an extensive legal framework for protecting agricultural land, its effectiveness varies considerably across the country. Market pressure, gaps in planning regulations, and the liberalization of conversion procedures lead to land fragmentation and a decline in agricultural land productivity, especially in suburban and metropolitan areas. To overcome these challenges, the legal framework should be reformed, and the effectiveness of planning and institutional structures should be improved at the local level.

The analysis of spatial and legislative data indicates that, despite the existence of a legal framework for the protection of agricultural land, its effectiveness is limited by urbanization and development pressure. On a domestic scale, agricultural land is primarily used for residential and industrial development, with most conversions occurring in the vicinity of large urban centers and metropolitan areas.

The structure of agricultural land taken out of production varies in terms of planned use and soil quality class, suggesting that instruments for protecting land with high agricultural suitability should be strengthened, particularly in regions with considerable growth potential. These data can be used to draw conclusions regarding the need to integrate land protection policy with planning and economic policies at the local, regional, and national levels. The evolution of Polish regulations has also been shaped by European Union law and policies. The Common Agricultural Policy (CAP), the EU Biodiversity Strategy, and the European Green Deal have influenced national reforms by promoting soil protection, sustainable spatial planning, and the development of renewable energy. Similar observations are made in European studies, which highlight the interplay between EU directives and local planning practices (Polman et al. 2020). For instance, the 2021 amendment, which facilitates the siting of renewable energy facilities on low-quality soils, reflects both EU energy transition targets and the tensions between climate goals and farmland protection.

In the context of agricultural land protection policy, it is worth noting that existing legal instruments, despite their formal and regulatory efficacy, often do not fully support sustainable planning. In the absence of local zoning plans, investors may apply for individual decisions on development conditions. This procedure allows highly productive land to be converted without a comprehensive assessment of its agricultural and environmental value.

4. Conclusions

Agricultural and forest land is afforded statutory protection in Poland, but the effectiveness of these regulations varies considerably across the country. The binding legal acts, in particular the Act of 3 February 1995 on the protection of agricultural and forest land, constitute a formal framework for protecting agricultural resources. However, high development pressure and gaps in spatial planning regulations reduce the efficacy of the legal framework, especially in urban and suburban areas.

The conducted analyses revealed high and steady development pressure on agricultural land with high to average agricultural suitability (soil quality classes III and IV), which could pose a threat to the long-term productive potential of rural areas. The observed changes should encourage efforts to strengthen agricultural land protection instruments in Poland's spatial and agricultural policies.

The 2008 legislative reform exempted urban land from the requirement to obtain a conversion permit, thereby increasing the proportion of high-quality agricultural land that was taken out of production. Consequently, the share of Class III soils converted to non-agricultural use increased during the analyzed period, in some years by more than 50%. In most cases, agricultural land was converted to residential and industrial uses. In 2023, agricultural land in the voivodeships of Pomerania, Silesia, Łódź, and Małopolska was primarily converted for residential purposes, which correlates closely with the attractiveness of these land resources and urbanization pressure.

An analysis of agricultural land conversions by soil quality class indicates that land with average agricultural suitability (class IV) acts as a buffer in the process of siting new development projects. Class IV soils account for a significant proportion of land conversions, which suggests that agricultural land in this category may still be available and that a certain balance has been achieved between productive potential and development pressure. Planning instruments should be strengthened, particularly by expanding the coverage of local zoning plans and reducing arbitrariness in development condition decisions. The spatial planning policy should also be integrated with the soil protection policy, both at the national and local levels.

In an era of climate change and increasing food demand, protecting agricultural land should be a priority in Poland's sustainable development policy. To achieve this goal, legal regulations should be revised, and systems for monitoring and assessing the effects of planning decisions on land resources should be further developed.

The results of this study indicate that agricultural land conversion should be further monitored in terms of location, soil quality, and spatial functions. Rational land management requires the integration of planning policy and land protection policy, as well as the implementation of more diverse and flexible protection mechanisms, particularly in the context of growing urbanization pressure and climate change.

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