

LEGAL GAPS IN RUSSIAN AGRICULTURAL SUSTAINABILITY LEGISLATION: A COMPARATIVE ANALYSIS AGAINST EU AND CHINESE REGULATORY PRACTICE

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Background. Questions about the regulatory preconditions for greening national agricultural sectors have grown sharper across post-socialist economies, including the Visegrad region, where EU accession created pressure to align domestic legislation with Common Agricultural Policy (CAP) conditionality requirements. Russia, outside the EU framework, faces structurally similar challenges through its own commitments under the Paris Agreement, the Convention on Biological Diversity, and SDG targets 2, 12, 13, and 15 – yet without the external compliance lever of EU membership. **Objective.** To identify and systematise legal gaps, collisions, and structural imbalances in Russian agricultural and environmental legislation that impede sustainable development of the agro-industrial complex (AIC), and to formulate concrete amendment proposals drawing on EU and Chinese comparative experience. **Methods.** Systematic analysis of 25 regulatory acts (NLAs) using a three-method design: (1) formal-legal analysis (internal, vertical, and horizontal consistency review); (2) comparative legal analysis benchmarking Russian NLAs against China's rural revitalization legislative package (2021–2026) and EU CAP 2023–2027 conditionality; (3) content analysis with systematic coding using operationalised criteria for a 'gap,' 'collision,' and 'imbalance.' NLAs were selected on three criteria: direct regulation of agricultural activity; sustainability-related provisions; normative relevance to SDGs 2, 12, 13, 15. **Results.** 73 legal constraints were identified across nine thematic blocks. Critical findings include: absence of environmental conditionality ('green screening') in the state support system; lack of legal status for soil carbon sequestration; contradictions between land, environmental, and agricultural legislation; barriers to circular economy and cooperative models; no statutory priority for biological plant protection. China's experience – the Rural Revitalization Promotion Law (2021), the Agriculture Green Development Plan (2021–2025), and the Emission Reduction and Carbon Sequestration Plan (2022) – offers directly applicable precedents. Specific amendments are proposed for 10 federal laws, 4 presidential decrees, and 7 government resolutions. **Conclusions.** Without addressing identified legislative gaps, Russia's AIC cannot achieve its declared green transformation targets. The proposed 'green screening' mechanism, legislative recognition of soil carbon, and differentiated subsidy rates by environmental performance are consistent with approaches proven effective in both V4 countries (through CAP eco-schemes) and China, offering a convergent reform pathway.

Keywords: sustainable agriculture, legal gaps, green transformation, state support, ESG, SDGs, agro-industrial complex, comparative law, Visegrad region, China; circular economy

Introduction

The question of how legislation either enables or blocks green transformation in agriculture is no longer purely academic. In V4 countries, the post-2014 shift toward CAP greening and the post-2022 'Farm to Fork' strategy has forced a practical confrontation with the regulatory preconditions for sustainability transitions: which provisions actively steer behaviour, which are merely declarative, and which create unintended contradictions with sectoral legislation. Slovakia and Czech Republic, for instance, had to reconcile their pre-accession agricultural subsidy structures with the new conditionality architecture – a process that exposed the same type of norm-layering problems this paper analyses in the Russian context (Seuser and Gubíniová, 2024; Priečková and Lušňáková, 2024).

Russia sits at an analogous juncture. The constitutional and strategic policy framework is not absent: Article 75.1 of the Constitution enshrines sustainable growth; Presidential Decree No. 309 on national development goals through 2036 incorporates climate and environmental metrics; and the Low GHG Emissions Strategy until 2050 identifies agriculture as both an emission source and a potential sink. What is absent is the translation of these objectives into operative legislative provisions – criteria, incentives, procedures – capable of actually steering agricultural behaviour.

This paper undertakes a systematic analysis of 25 NLAs governing Russian agriculture from a sustainability standpoint. It proceeds in four steps: methodological specification; analysis of the most significant federal laws;

comparative assessment against Chinese and EU regulatory experience; and formulation of concrete amendment proposals. The scientific novelty lies in the application of a rigorous comparative methodology to a question that Russian legal scholarship has addressed only in fragmented ways.

Literature review

The relationship between legal conditionality and farmer behaviour in sustainable agricultural transitions has received sustained attention in the European context. Abades et al. (2023) assess the CAP 2023–2027 reform against European Green Deal biodiversity targets, finding that while the conditionality architecture is directionally correct, baseline standards remain insufficient to achieve the stated Farm to Fork objectives. This gap between legislative intent and behavioural outcome is a central theme also in Lottes et al. (2024), who situate the CAP's reform history within a 'wicked problem' framework – one in which each reform cycle generates new contradictions alongside its solutions.

Organic farming expansion in V4 countries has been analysed by Priečková and Lušňáková (2024), who document divergent trajectories across Czechia, Poland, Slovakia, and Hungary between 2018 and 2022. Their finding that Hungary shows the highest growth rate despite starting from a lower base suggests that subsidy design and certification burden – both of which are directly shaped by national implementing legislation – matter more than baseline conditions. The circular economy dimension, including the legislative tensions between waste management regimes and on-farm

resource recovery, is examined by Seuser and Gubiniová (2024) in the context of EU consumer protection law.

For Chinese agricultural policy, Wang, Yuan, and Gong (2023) provide an analytical framework centred on the concept of 'high-quality development', showing how green finance instruments, technology incentives, and carbon market pilots interact in China's policy mix. The empirical evidence on mandatory agri-environmental regulation – specifically China's 'Two Zero' policy requiring simultaneous zero growth in fertiliser and pesticide use – is evaluated by Cheng et al. (2025), who report a 37.2% reduction in fertiliser application and 23.6% in pesticide use following policy implementation.

Russian scholarship has examined ESG transformation of the AIC (Marinchenko, 2022; Marinchenko, 2025) and specific subsectors including organic production (2025) and rural development (2023), but a systematic comparative legal analysis of legislative gaps has not previously been conducted. This study bridges that gap.

Methods

The study employs a mixed qualitative design combining formal-legal analysis, comparative law, and content analysis with systematic coding.

Formal-legal analysis examined each NLA for internal consistency (contradictions within the same act), vertical consistency (compliance with higher-level legislation or international treaty obligations), and horizontal consistency (compatibility with acts of equal legal force). A provision was coded as a 'gap' when a required regulatory element was absent and this absence was confirmed in three or more comparable international legal systems. A 'collision' was identified when two or more NLAs contained mutually exclusive provisions affecting the same regulatory object.

The NLA corpus ($n = 25$) was assembled on three criteria:

- direct regulation of agricultural activity or land use;
- presence of provisions relevant to environmental protection, climate regulation, or resource conservation;
- normative relevance to SDGs 2, 12, 13, and 15. The corpus spans the full regulatory hierarchy from the Constitution through presidential decrees to government resolutions.

Comparative analysis benchmarked Russian NLAs against China's legislative package and the EU CAP 2023–2027 conditionality framework, with specific attention to transferable regulatory solutions for the five most critical gaps.

Results and Discussion

Results: key legislative gaps

The analysis of 25 NLAs revealed 73 legal constraints distributed across nine thematic blocks. The most consequential findings across the eight principal federal laws are presented below.

Agricultural cooperation (Federal law no. 193-FZ, 1995)

The law's definitional provisions confine cooperative purposes to economic outcomes, leaving no normative space for environmental or social sustainability objectives. The exhaustive list of cooperative types excludes service, energy, and circular economy cooperatives – forms explicitly recognised under China's Rural Revitalization Promotion Law (2021) as 'new-type agricultural business entities'. There is no mechanism for accounting non-financial contributions, such as ecosystem service provision, in cooperative share capital.

Pesticide and agrochemical regulation (Federal law no. 109-FZ, 1997)

The law establishes safety standards for chemical agents but contains no statutory priority for biological or low-risk alternatives. This creates a structural disadvantage for biopesticides relative to conventional products: identical registration procedures, no preferential fee structures, no fast-track pathways. China's trajectory illustrates both the direction of reform and its limits: the 'Two Zero' policy reduced pesticide use by 23.6% (Cheng et al., 2025), while five new pesticide regulations effective January 2026 introduce risk-based tiered registration with explicit biopesticide preferences (Shao, Ni, Zhou et al., 2024). Yet even there, biopesticide market share remains around 10%, demonstrating that legislative design must be reinforced by economic incentives.

Agricultural land circulation (Federal law no. 101-FZ, 2002)

A direct collision exists between this law's prohibition on siting waste-processing facilities on agricultural land and Federal Law No. 248-FZ's liberalisation of the livestock by-products regime. A farm legally entitled to treat manure as a by-product rather than waste cannot legally process it on-site into fertiliser or biogas without changing the land use category – a bureaucratic barrier that makes circular economy operations practically inoperable at farm scale.

Environmental protection (Federal law no. 7-FZ, 2002)

The law's enforcement architecture is oriented around point-source pollution and creates no differentiated incentive structure for farms adopting best available techniques (BAT). Diffuse pollution from agricultural runoff – the primary environmental pathway for both fertiliser and pesticide contamination – falls largely outside its operative provisions. The absence of any 'green bonus' (reduced payment rates for BAT adopters) means the law functions as a penalty regime without a complementary incentive arm, which is the structural deficit identified in the pre-2023 CAP literature (Abades et al., 2023).

Agricultural development (Federal law no. 264-FZ, 2006)

This is the central NLA for agricultural state policy, and it is here that the most consequential structural gap appears. Article 11, which defines the purposes for which state support may be disbursed, finances conventional production without any environmental conditionality. A farm that degrades soils or exceeds pesticide norms is legally indistinguishable, for subsidy purposes, from one that invests in carbon sequestration or biodiversity maintenance. EU CAP 2023–2027 addresses this through mandatory conditionality baselines and voluntary eco-schemes; China's Agriculture Green Development Plan 2021–2025 through 'green screening' – differentiated subsidy rates tied to environmental performance. Neither mechanism exists in Russian law.

Organic production (Federal law no. 280-FZ, 2018)

The organic law created a regulatory category but provided no effective economic incentive for transition. Certification burden is uniform across farm sizes, creating a proportionally heavier cost for small producers. Labelling controls are insufficiently rigorous, generating consumer confusion that suppresses premium price formation. V4 experience, documented by Priečková and Lušňáková (2024), shows that where subsidy support for organic transition is better designed – as in Hungary – growth rates accelerate substantially.

GHG emission limitation (Federal law no. 296-FZ, 2021)

The law's coverage threshold (50,000 t CO₂-eq.) excludes all but a handful of agricultural operations from mandatory reporting. More fundamentally, agriculture appears only as an emission source: there is no legal definition of a 'soil carbon sequestration project,' and no approved methodology for quantifying agricultural GHG absorption with regional soil-climatic coefficients. China's 2022 Emission Reduction and Carbon Sequestration Implementation Plan, though still developing its accounting methodologies, has taken the foundational legislative step of recognising the agricultural sector's carbon sink function. The Yangtze River Delta pilot (2024) for agricultural carbon trading provides an operational model.

Livestock by-products (Federal law no. 248-FZ, 2022)

The liberalisation of the by-products regime was a genuine step forward, but it created a regulatory void: the law establishes no positive incentives for by-product processing, treats all farms uniformly regardless of scale and infrastructure capacity, and does not address the land-use collision identified in Section 4.3.

Discussion

The Visegrad parallel

The legislative problems documented above are not unique to Russia. The V4 experience of aligning pre-existing agricultural support structures with CAP conditionality is instructive precisely because it was mandatory and externally enforced – and it was still difficult. Slovakia's adaptation of its SAPS payments to meet cross-compliance requirements, and the Czech Republic's successive reforms to organic certification support, both involved the same type of norm-layering and definitional ambiguity documented here. The difference is that V4 countries had an institutional deadline and a financial incentive (CAP receipts) to resolve these tensions.

Russia lacks an equivalent external lever, which makes the legislative reform challenge harder in one respect – there is no accession deadline – and easier in another: reform can be phased and sequenced rather than wholesale. The Chinese experience, discussed below, demonstrates that targeted statutory amendments to existing acts can be more effective than omnibus legislation.

The Chinese model: what transfers and what does not

China's Rural Revitalization Promotion Law (2021) is architecturally relevant to Russia in three respects: it integrates ecology as a co-equal pillar of rural development alongside industry and workforce; it links governmental accountability to environmental outcomes; and it creates legal space for new cooperative and enterprise forms oriented to green production. These are precisely the dimensions absent from Russian agricultural cooperation and development legislation.

The 'Two Zero' policy – requiring zero growth in both fertiliser and pesticide application – produced measurable results but required a specific combination of central mandate and decentralised implementation (Cheng et al., 2025). The pesticide regulatory reform package effective January 2026 introduces risk-based tiered registration that directly addresses the biopesticide access problem identified in Section 4.2 (Shao, Ni, Zhou et al., 2024). Even China, however, has not resolved the gap between legislative intent and market outcome: biopesticide market share remains approximately 10%, and World Bank monitoring notes that provincial governments' subsidy transfers do not yet consistently reward green performance over volume (World Bank, 2022).

The honest comparative conclusion is that China offers Russia a model of direction and architecture, not of results. The legislative steps – recognition of soil carbon, green conditionality for subsidies, preferential biopesticide registration, circular economy provisions for cooperatives – are clearly marked; the outcomes remain work-in-progress in both countries.

Conclusions and Recommendations

The analysis of 25 NLAs using formal-legal, comparative, and content analysis methods yields five principal conclusions.

First, Russian agricultural legislation contains a functionally sufficient set of sustainability objectives at the constitutional and strategic planning level, but these objectives are not operationalised in sectoral acts with the specificity required to change farmer behaviour. The gap between purpose clause and funding provision in Federal Law No. 264-FZ is representative of this pattern across multiple NLAs.

Second, the most consequential single gap – identified in all three reference systems (EU, China, comparative scholarship) – is the absence of environmental conditionality in the state support system. Addressing

Synthesis of identified constraints

Table 1 Systematisation of identified legal constraints and international comparators

Thematic block	Core problem (Russian law)	Comparable regulatory response
Land relations	circular economy infrastructure prohibited on agricultural land; land quality not linked to support eligibility	China: Rural Revitalization Law; V4: CAP cross-compliance GAEC standards
Agricultural cooperation	no green cooperative forms; no intangible sustainability contributions	China: new-type agricultural entities; V4: CAP small farm schemes
Pesticides/agrochemicals	no statutory priority for biological agents; no preferential registration	China: Two Zero policy + 2026 tiered registration; V4: SUD national action plans
Organic farming	no economic incentives; uniform certification burden regardless of farm size	EU: CAP eco-schemes; differentiated organic payment rates (V2)
Climate/soil carbon	no legal definition of sequestration project; no AIC accounting methodology	China: Emission Reduction & Carbon Sequestration Plan (2022); Yangtze pilot (2024)
Environmental regulation	penalty-only regime; no BAT incentives; ineffective against diffuse pollution	EU: Nitrates Directive + BAT reference documents; V1 circular economy framework
State support	no environmental criteria condition access to subsidies or preferential loans	EU: CAP conditionality 2023–2027; China: Agriculture Green Development Plan 2021–2025
Food security doctrine	no environmental performance indicators; climate risk not recognised as strategic threat	China: NDC 2021; EU: Farm to Fork food system approach
Rural development	green agenda and circular economy absent from rural strategy	China: Rural Revitalization Promotion Law; V4: rural development programmes under EAFRD

this through 'green screening' amendments to Federal Law No. 264-FZ is the highest-priority reform intervention.

Third, the legislative barrier to circular economy development – specifically the prohibition on on-farm waste processing on agricultural land – is a collision between two federal laws that could be resolved by a targeted amendment to Article 6 of Federal Law No. 101-FZ, without requiring changes to either act's broader architecture.

Fourth, introducing a statutory definition of 'soil carbon sequestration project' into Federal Law No. 296-FZ would create the legal basis for agricultural carbon trading and position Russia to participate in BRICS carbon market frameworks – an opportunity currently foreclosed by the absence of the underlying legal category.

Fifth, the V4 experience and China's reform trajectory both confirm that preferential biopesticide registration pathways can be embedded in existing regulatory frameworks without wholesale legislative reconstruction. Amending Federal Law No. 109-FZ to introduce risk-based tiered registration – the approach taken in China's 2026 package (Shao, Ni, Zhou et al. 2024) – is the technically simplest and potentially most impactful change for reducing chemical inputs.

The convergence of these findings with recent V4 scholarship on organic farming development (Priečková and Lušňáková, 2024), and circular economy law (Seuser and Gubiniová, 2024) suggests that the structural legislative challenges of post-socialist agricultural sustainability transitions share common features across jurisdictions – and that remedies developed in one context may be more transferable than is commonly assumed.

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References

- Abades, S.R. et al. 2023. Opportunities and challenges for Common Agricultural Policy reform to support the European Green Deal. In *Conservation Biology*, vol. 37, 2023. DOI: 10.1111/cobi.14052
- Adeogun, S.O. et al. 2025. Adoption and Impact of Climate-Smart Agriculture Practices Among Vegetable Farmers in Maseru District, Lesotho. In *Visegrad Journal on Bioeconomy and Sustainable Development*, vol. 14, 2025, no. 1, pp. 13–17. DOI: 10.2478/vjbsd-2025-0003
- Cheng, Z. et al. 2025. Reducing fertilizer and pesticide application through mandatory agri-environmental regulation: Insights from the 'Two Zero' policy in China. In *Agricultural Water Management*, 2025. DOI: 10.1016/j.agwat.2024.109100
- Constitution of the Russian Federation (adopted 12.12.1993, with amendments).
- Federal Law No. 101-FZ of 24.07.2002, On the Circulation of Agricultural Land.
- Federal Law No. 109-FZ of 19. 7. 1997. On the Safe Handling of Pesticides and Agrochemicals.
- Federal Law No. 193-FZ of 08. 12. 1995. On Agricultural Cooperation.
- Federal Law No. 248-FZ of 14. 7. 2022 (amendments to waste legislation, livestock by-products).
- Federal Law No. 264-FZ of 29. 12. 2006. On the Development of Agriculture.
- Federal Law No. 280-FZ of 3. 8. 2018. On Organic Products.
- Federal Law No. 296-FZ of 2. 7. 2021. On Limiting Greenhouse Gas Emissions.
- Federal Law No. 7-FZ of 10. 1. 2002. On Environmental Protection.
- Government Directive No. 151-r of 2. 2. 2015. On the Strategy for Sustainable Development of Rural Territories.
- Government Directive No. 3052-r of 29. 10. 2021. On the Strategy for Socio-Economic Development with Low GHG Emissions until 2050.
- Government Resolution No. 717 of 14. 7. 2012. On the State Programme for the Development of Agriculture.
- Huang, J. – Rozelle, S. 2023. Agricultural Policy in China: Evolution and Challenges. In *Annual Review of Resource Economics*, vol. 15, 2023, pp. 45–70. DOI: 10.1146/annurev-resource-102422-090045
- Kondratieva, O.V. et al. 2025. State and trends of organic agriculture development in the Russian Federation. In *Tekhnika i oborudovanie dlya sela*, 2025, no. 5(335), pp. 2–5. DOI: 10.33267/2072-9642-2025-5-2-5
- Lottes, P. et al. 2024. A never-ending story of reforms: on the wicked nature of the Common Agricultural Policy. In *Sustainable Agriculture*, 2024. DOI: 10.1038/s44264-024-00027-z
- Marinchenko, T.E. 2025. Factor of Sustainable Development of the Agricultural Sector. In *Int. Conf. on Finance, Economics, Management and IT Business (FEMIB 2024)*, 2025, pp. 325–330. DOI: 10.63550/ICEIP.2025.69.71.001
- Marinchenko, T.E. 2025. Sustainable development of agriculture in the context of climate change: the role of state policy. In *Tekhnika i oborudovanie dlya sela*, 2025, no. 10(340), pp. 44–48. DOI: 10.33267/2072-9642-2025-10-44-48
- Marinchenko, T.E. 2024. The Main Areas of the State Policy of Russia in the Field of Sustainable Development. In *Proc. II Int. Scientific Forum on Sustainable Development and Innovation (WFSDI 2023)*, 2024, pp. 354–359. DOI: 10.2991/978-94-6463-234-7-39
- Marinchenko, T.E. 2022. Transformation of the Russian Agricultural Sector under the Influence of ESG Principles. In *Proc.m ISSDRI*, 2022, pp. 302–306.
- Marinchenko, T.E. – Korolkova, A.P. – Goryacheva, A.V. 2023. Rural development as a factor of sustainable development. In *E3S Web of Conferences*, vol. 467, 2023, 02005. DOI: 10.1051/e3sconf/202346702005
- Marinchenko, T.E. – Valeeva, A.I. 2024. Greening of the agricultural sector as a condition for sustainable development of the Russian economy. In *iN E3S Web of Conferences*, vol. 539, 02001. DOI: 10.1051/e3sconf/202453902001
- Matthews, A. 2024. *The Common Agricultural Policy of the European Union*. Dublin : Trinity College Press, 2024, 280 p.
- OECD. 2025. *Agricultural Policy Monitoring and Evaluation*. Paris : OECD Publishing, 2025. DOI: 10.1787/a80ac398-en
- OECD. 2023. *China: Agricultural Policy Monitoring and Evaluation*. Paris : OECD Publishing, 2023. DOI: 10.1787/b14de474-en
- People's Republic of China. 2021. Law on the Promotion of Rural Revitalization. Adopted 29. 4. 2021; in force 01.06.2021.
- Presidential Decree No. 20 of 21. 1. 2020. On Approval of the Food Security Doctrine.
- Presidential Decree No. 309 of 7. 5. 2024. On National Development Goals through 2030 and beyond to 2036.
- Presidential Decree No. 812 of 26. 10. 2023. On Approval of the Climate Doctrine.
- Priečková, D. – Lušňáková, Z. 2024. Towards Sustainable Agriculture: A Comparative Analysis of Organic Crop Area in Czechia, Poland, Slovakia, and Hungary. In *Visegrad Journal on Bioeconomy and Sustainable Development*, vol. 13, 2024, no. 2, pp. 29–34. DOI: 10.2478/vjbsd-2024-0007
- Seuser, P. – Gubiniová, K. 2024. European Consumer Protection Regarding Recycling Products Made from End-of-Life Tires in the Context of the Circular Economy. In *Visegrad Journal on Bioeconomy and Sustainable Development*, vol. 13, 2024, no. 2, pp. 25–28. DOI: 10.2478/vjbsd-2024-0006
- Shao, Y. – Ni, J. – Zhou, S. et al. 2024. Safety assessment of agricultural products and the pesticide regulation trend in China. In *Agricultural and Food Economics*, vol. 12, 2024, Art. 29. DOI: 10.1186/s40100-024-00322-w
- United Nations. Paris Agreement. 2015.
- United Nations. Transforming our world: the 2030 Agenda for Sustainable Development. Resolution A/RES/70/1. 2015.
- Wang, S. – Yuan, L. – Gong, B. 2023. China's Agricultural Green Transition and High-Quality Development Toward Carbon Neutrality, In *Chinese Political Science Review*, vol. 8, 2023, pp. 240–272. DOI: 10.1007/s41111-023-00238-8
- Wezel, A. et al. 2020. Agroecological principles and elements and their implications for transitioning to sustainable food systems. In *Agronomy for Sustainable Development*, vol. 40, 2020. DOI: 10.1007/s13593-020-00646-z
- World Bank. 2022. China Green Agricultural and Rural Revitalization Program for Results (Hubei and Hunan). Project No. P178907. Washington DC : World Bank, 2022.

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