

# I. ARTYKUŁY

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## Introduction of innovative solutions in agriculture – legal aspects

Introduzione di soluzioni innovative  
in agricoltura – aspetti giuridici

The aim of the article is to identify the possibility of creating legal solutions for the implementation of innovation in agriculture in the Polish and European legal system. The particular emphasis on the development of new technologies put in the Common Agricultural Policy after 2023 indicates that it is becoming one of the most important factors shaping the competitiveness and profitability of agriculture. It presupposes the development of a number of legal mechanisms that together will make up agricultural innovation. This heterogeneity is a major problem but at the same time an opportunity for agriculture. The article identifies first of all possible legal solutions, but emphasises that they cannot be developed without the cooperation of specialists from other scientific disciplines and representatives of business related to modern technologies. The definition of the legal framework for innovative solutions in agriculture cannot be separated from the consideration of global and European aspects. The speed and possibilities of the application of modern solutions will determine the place of Polish agriculture in the international arena for many years to come.

**Keywords:** agriculture, innovative village, Common Agricultural Policy, National Strategic Plan, precision agriculture

L'articolo si propone di determinare se nel sistema giuridico polacco ed europeo è possibile introdurre soluzioni giuridiche volte a inserire innovazioni in agricoltura. Una particolare enfasi posta sullo sviluppo di nuove tecnologie nella politica agricola comune dopo il 2023 mostra che esso sta diventando uno dei fattori più importanti nel determinare la competitività e la redditività. Tale sviluppo richiede di elaborare numerosi meccanismi giuridici che nell'insieme porteranno a creare innovazioni. Questa eterogeneità rappresenta un grosso problema e allo stesso tempo un'opportunità per l'agricoltura. Nell'articolo vengono iden-

tificate, innanzitutto, possibili soluzioni giuridiche, ma la loro elaborazione non può realizzarsi senza una collaborazione di specialisti di altre discipline scientifiche e di rappresentanti del mondo imprenditoriale legato a nuove tecnologie. Il quadro giuridico per le soluzioni innovative in agricoltura va definito tenendo conto degli aspetti globali ed europei. La velocità e la possibilità di ricorrere a soluzioni innovative andranno a determinare la posizione dell'agricoltura polacca in ambito internazionale per molti anni a venire.

**Parole chiave:** agricoltura, villaggio intelligente, politica agricola comune, Piano strategico nazionale, agricoltura di precisione

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## Introduction

Innovative solutions are one of the declared objectives of the Common Agricultural Policy that may be achieved by increasing technical progress. At the European level, the new legal arrangements identify innovation as one of the main goals, alongside climate protection or increasing competitiveness<sup>1</sup> in agriculture in the financial perspective 2023–2027. The main objective in this respect is to modernise agriculture and rural areas by fostering the development and dissemination of knowledge, innovation and digitalisation and encouraging farmers to use them, at the same time ensuring better access to all of them including research, knowledge exchange and appropriate training.<sup>2</sup>

Undoubtedly, technological progress and new solutions related not only to the use of modern machinery, but also to the implementation of innovative farming techniques, know-how or, finally, the creation and use of patents in agriculture, is a determinant of the success of benefiting from agricultural funding. At the same time, the lack of financial resources for such large investments confronts farmers with the dilemma of choosing between proven, traditional agriculture and the implementation of innovations, the possible benefit of which is difficult to predict and perhaps disproportionate to its costs.<sup>3</sup>

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<sup>1</sup> A.Z. Nowak, A. Niewiadomska, *Wpływ funduszy strukturalnych na wzrost konkurencyjności polskiego rolnictwa – wybrane aspekty ekonomiczne*, “*Studia Iuridica Agraria*” 2012, vol. X, pp. 307–325; I. Lipińska, *Poprawa konkurencyjności działalności rolniczej w reformowanej Wspólnej Polityce Rolnej – wybrane zagadnienia prawne*, “*Przegląd Prawa Rolnego*” 2021, no. 2, pp. 277–291.

<sup>2</sup> CAP Objective 1, *Ensuring Fair Farm Income*, [https://agriculture.ec.europa.eu/system/files/2021-01/cap\\_specific\\_objectives\\_-\\_brief\\_1\\_-\\_ensuring\\_viable\\_farm\\_income\\_0.pdf](https://agriculture.ec.europa.eu/system/files/2021-01/cap_specific_objectives_-_brief_1_-_ensuring_viable_farm_income_0.pdf) [accessed on 2.11.2023].

<sup>3</sup> M. Struś, J. Kalinowski, *Dylematy wdrażania innowacji na obszarach wiejskich*, “*Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu*” 2015, no. 17(3), pp. 367–372.

The aim of the considerations presented in the article is to indicate the challenges that are faced with regard to the definition of regulations that would enable farmers to benefit from innovative solutions to the fullest extent possible. These solutions will also determine the future of agriculture in Poland and the possibility of using the latest technologies in accordance with the law. The determination of the legal framework for innovative solutions must be preceded by an analysis of the current legal status, not only in the sphere of agricultural law, but also in the area of intellectual property, civil law, administrative law, and even criminal law related, for example, to the theft of patents. The majority of innovative solutions originate from countries with highly “technicalised” economies, therefore future regulations should also take into account international norms, in particular in the field of industrial property trading. There are also examples of Polish legal solutions, which require *ex ante* evaluation and possible *de lege ferenda* postulates. A new legal framework for the functioning of agricultural innovative solutions in Poland can be defined based on the experience resulting from the application of these regulations.

The following research hypotheses will be highlighted in the study. The first one concerns the lack of uniform European and Polish solutions for a comprehensive implementation of innovative solutions in Polish agriculture. Most of the EU Member States have not as yet developed such comprehensive solutions either. The model of legal solutions for the implementation of innovative solutions to be adopted in the future does not have to be a single legislative act. It should, however, be a set of legal norms, which would make it easier for farmers to introduce innovations to their farms. For example, the call for the creation of a regulation on precision farming is worth highlighting here. Such a law could be the basis for uniform standardisation of all aspects of the application of new technological solutions in agriculture.

The second hypothesis concerns the combination of global<sup>4</sup> and European challenges together with the needs and financial possibilities of farmers to implement innovative solutions. Intelligent solutions, ranging from modern agricultural machinery, through advanced drones used in agriculture, to the complex use of patents or other industrial property rights, require not only legal action, but also the implementation of a wise agricultural and economic policy. The question arises whether Polish farmers, or more broadly European farmers, will be able to afford the use of drones in agricultural

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<sup>4</sup> I. Nurzyńska, M. Drygas, *Pożądana struktura wsparcia w ramach wspólnej polityki rolnej Unii Europejskiej po 2020 roku oraz cele polityki krajowych w świetle globalnych wyzwań modernizacyjnych wobec polskiego rolnictwa*, Warsaw 2021.

production, and those, imported from the United States of America, are very expensive too. It should also be made clear that technological progress is to be a guarantor of the safety of society as a whole, if only in terms of food production. The legal challenge then will be to identify the needs of the rural population and the financial possibilities of farmers in order to offer them a choice of legal instruments that will meet their expectations. At the same time, the combination of these mechanisms ought to realise the need to increase the competitiveness of agriculture<sup>5</sup> and while not leading farmers to bankruptcy.

Another hypothesis concerns the complexity of the legal instruments that make up agricultural innovation solutions. The implementation of innovative solutions will have to reflect not only the principles of agricultural law, related, for example, to the protection of the farmer's "workshop" or the respect of agricultural property, but will have to combine multiple branches of law. Even if we take only one example like the applicability of drones, this will have to be determined by civil law rules relating to the protection of property, regulations relating to the protection of personal data, business secrets (in this case, the farm), patent rules, administrative and legal regulations relating to air traffic, or even criminal law regulations relating to the illegal use of the information obtained, or deliberate damage caused by these devices. Just this one example shows that the implementation of innovative solutions creates three types of problems. The first is financial – the question is how to help farmers with the purchase of modern solutions. Secondly, social – how to convince farmers to change their mode of production, while at the same time guaranteeing them at least the same, if not higher, income. Thirdly, and finally, legal problems – how to implement innovative solutions so that they are not a threat to the farmer, but bring him benefits. This last problem is precisely an accentuation of the complexity of the legal instruments enabling technological progress in agriculture.

The multifaceted and interdisciplinary nature of the problem undertaken, entering not only the sphere of law, but also economics, social psychology, and even all engineering sciences related to modern devices, shows that it will not be possible to propose only one verifiable legal mechanism or model. However, it is necessary to strive to develop such regulations that will satisfy most of the expectations of farmers, who may not even be aware of some of the legal risks associated with the use of modern technologies

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<sup>5</sup> P. Popardowski, *Reguły konkurencji w rolnictwie w prawodawstwie Unii Europejskiej*, Warsaw 2018, p. 17 et seq.

in agriculture. The preparation of comprehensive regulations on innovation in agriculture will require the cooperation of specialists from many fields. This, in turn, will require time which farmers may lack but that is necessary to take advantage of the financial assistance offered.

The presented issues are only a sample selection of the most important problems faced by Polish farmers in implementing innovative solutions in agriculture. A further discussion that should follow ought to seek an answer to the question of how to effectively standardise innovative technological solutions so that they can be implemented in farms in a legally secure way. At the same time, coherent financial solutions will have to be prepared to assist farmers and minimise the risk of their bankruptcy if an innovative device fails. Here, the farmer cannot be the only one to whom the entire risk of using modern solutions will be transferred.<sup>6</sup>

## 1. Innovation – problems of legal definitions and their consequences

The concept of innovation itself is not defined by law. There is no legal definition in European legislation or in Polish legislation, either. In order to understand this concept, we may turn to dictionary definitions which reduce the understanding of innovation to the introduction of something new. Innovation understood in this way will refer to new machinery, equipment, technological solutions, as well as to new plant varieties or principles of agricultural production.<sup>7</sup> On the one hand, the lack of a uniform definition allows flexibility in applying solutions and calling any novelty in agriculture an innovation. This may help to obtain funding from European funds,<sup>8</sup> and it is worth noting here that innovation is understood quite differently by experienced farmers and quite differently by young farmers, who use more advanced farming techniques in their agricultural activities.<sup>9</sup>

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<sup>6</sup> I. Lipińska, *Prawne instrumenty zarządzania ryzykiem w rolnictwie w nowej Wspólnej Polityce Rolnej*, “Przegląd Prawa Rolnego” 2021, no. 1, pp. 203–216.

<sup>7</sup> J. Baruk, *Wiedza i innowacje jako czynniki rozwoju organizacji – podejście zintegrowane*, “Marketing Instytucji Naukowych i Badawczych” 2016, no. 3 (29), pp. 83–109.

<sup>8</sup> A. Gawlik, *Rola innowacyjności w kształtowaniu obszarów wiejskich*, in: *Zrozumieć innowacje w rolnictwie. Informacje wybrane*, Łosiów 2017, pp. 7–26.

<sup>9</sup> H. Kałuża, A. Ginter, *Innowacje w gospodarstwach rolniczych młodych rolników*, “Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu. Agribusiness” 2014, no. 361, pp. 89–98.

On the other hand, however, the lack of a clear definition of innovation means that it may include a new or more modern tractor and a complicated unmanned machine that will carry out specialist measurements of agricultural land. It should be emphasised that the lack of a precise definition may, in the long run, result in the misuse of European funds. At the same time, it seems obvious that for the purposes of specific regulations, several definitions of innovation will have to be formulated due to the multiplicity of possible activities. For example, in precision agriculture,<sup>10</sup> which is a complex farming system that adapts individual agrotechnical elements to changing conditions on specific parts of the field, depending on the current state of plant development or soil properties, a definition of innovation based on advanced information technology equipment will be necessary,<sup>11</sup> but where innovation will move towards know-how and patent law, then a completely different definition will be needed.

The very definition of the legal framework for innovation is also needed in view of raising funds to support its development. In the absence of such a definition, the question arises as to what is actually being supported? Besides, since there will be no legal framework for innovation, the measurability of the goal achieved through its implementation becomes a problem. Therefore, a normative definition of the meaning of innovation should be postulated at the very beginning of the creation of the various legal acts on innovation in agriculture.

Also, a legal framework for the implementation of innovation is a necessity. In the current state of EU law, norms on this subject can be found in many legislative acts. The popular eurolex search engine records 38452 uses of the phrase ‘agricultural innovation.’ This result alone shows how many legal regulations a potential beneficiary of European funds has to deal with. The lack of uniform regulation undoubtedly makes it difficult to obtain appropriate funding.

By way of example only, Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 laying down rules for support for strategic plans drawn up by Member States under the common

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<sup>10</sup> This concept is not new in Polish science, and there is still no regulation of how it should be applied; cf. J. Pawlak, *Rolnictwo precyzyjne, jego rola i ekonomiczna efektywność*, “Postępy Nauk Rolniczych” 2008, no. 1, pp. 3–14.

<sup>11</sup> Z. Brodziński, M. Juchiewicz, R. Marks-Bielska, Z. Nasalski, *Warunki rozwoju gospodarstw rolnych regionu Warmii i Mazur w kontekście Planu Strategicznego Wspólnej Polityki Rolnej na lata 2023–2027*, Olsztyn 2022.

agricultural policy (CAP strategic plans) and financed by the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013<sup>12</sup> can be cited. Recital 23 of this Regulation emphasises that “a smarter, more modern and sustainable CAP must make use of research and innovation to support the multifunctionality of the Union’s farming, forestry and food production systems by investing in technological development and digitalisation, as well as improving the uptake and effective application of technologies, in particular digital technologies, and enhancing access to and dissemination of impartial, reliable, relevant and new knowledge.” While this provision itself does not define innovation, the focus is primarily on technologies, including digital solutions.

At the same time, Article 127(3) of the cited Regulation stresses that “the innovations planned may be based on new practices, but also on traditional practices applied in a new geographical or environmental context.” This implies not only the use of modern technologies in agriculture, but also the possibility of using existing practices and equipment but in a completely different application. This understanding of innovation coincides with its linguistic meaning, while it is completely unclear what it would mean in agricultural practice and, above all, how it would be financed. The use of these general expressions in a legislative act such as a regulation may be inappropriate in view of the idea of comprehensibility of the law.

The Polish Strategic Plan for the CAP for 2023–2027<sup>13</sup> indicates as one of the objectives “Increasing innovation in the agri-food sector and in rural areas through the creation and widespread use of innovative solutions. The Polish agri-food sector needs solutions (organisational, technological and product-related) that will allow it to stand out from the competition both at global, the EU’s, and the regional, or local level. These should be innovative solutions produced at home or abroad, or transferred from successful implementations (copycat innovations), which will allow optimisation of

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<sup>12</sup> Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 laying down rules for support for strategic plans drawn up by Member States under the common agricultural policy (CAP strategic plans) and financed by the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013 (OJ EU L 435, p. 1).

<sup>13</sup> Communication from the Minister of Agriculture and Rural Development of 22 September 2023 on the European Commission’s approval of amendments to the Strategic Plan for the Common Agricultural Policy 2023–2027 (M.P. pos. 1052).

production, increase its sustainability or introduction of new products/services to the market.”<sup>14</sup>

The above shows that the implementation of innovation will not only have a national aspect, but has to be coordinated with global challenges, no longer only European ones, and in this respect, legal and comparative work on possible legal solutions for the implementation of innovation should be initiated. The existing regulations, for example those adopted in the USA, need to be analysed not only from a legal perspective, but above all from an economic point of view. It seems insufficient to look for solutions that do not take into account the international environment and the possibility of obtaining innovations from abroad.

This is particularly emphasised in the next objective, where it is stressed that “above all, farms should more actively implement product, process, organisational and marketing innovations. However, the process of modernisation of the entities of the sector will require large investments in innovative solutions, including above all investments in fixed capital.”<sup>15</sup> The mere calculation of the number of innovation shows the complexity of the problem and its interdisciplinary nature. It requires in-depth work not only by lawyers, but by specialists from all the fields as mentioned earlier.

These are only two examples from European and Polish regulations which show a high level of generality, and thus the heterogeneity of legal solutions, that we are going to face. Therefore, *de lege ferenda* legislative acts should be created and made in a way that will respond to the needs of farmers related to the implementation of innovations.

## 2. Innovation in rural areas and implementation of sustainable development

A separate issue requiring a detailed analysis is the definition of a legal framework for the implementation of sustainable innovation. Technological progress must not conflict with environmental or climate protection. Both innovation and climate stand at the heart of the European Green Deal.<sup>16</sup> Innovation in this area is primarily intended to help investment in renewable energy sources in rural areas. In this aspect, there is a lack of a uniform vision at both the national and the European level for the development of

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<sup>14</sup> National Strategic Plan for the CAP 2023–2027, p. 47.

<sup>15</sup> *Ibidem*, p. 48.

<sup>16</sup> S. Paleari, *The EU policy on climate change, biodiversity and circular economy: Moving towards a Nexus approach*, “Environmental Science and Policy” 2023, vol. 151, 103603.



these investments and, above all, for the introduction of the energy obtained into a country's energy system.<sup>17</sup> Organic farming also faces the challenge of reconciling its ideas, with technological advances.<sup>18</sup>

The use of drones, for example in organic production, gaining knowledge about the degree of potential fertilization of soil, humidity, pollution, etc., requires many legal instruments today. Firstly, instruments available under the civil law of property protection regulations – if a drone surveys a neighbour's field as well, how can the neighbour assert his or her rights. Secondly, under intellectual and proverbial property protection law – a drone can observe, for example, an innovative way of cultivation and record it. The question is how the inventor of this innovation will be protected here. Thirdly, under administrative law – the drone will violate airspace. The question arises as to how it will be allowed to use this space. Fourthly, under criminal law – if through the operation of a drone some offence or crime is committed, e.g. the drone falls and injures someone badly. The question arises as to who will be held responsible for this. Fifthly, under the protection of the climate and the environment – if the drone will be the perpetrator of pollution, for example through noise, or, if nothing else, in forest areas.<sup>19</sup> The question arises as to the extent of liability arising from such instances.

These five example spheres of regulation do not exhaust the complexity of the topic. Currently, the use of innovations such as a drone in rural areas is risky from a legal point of view, as there is a lack of comprehensive regulations that would allow this type of innovation to be used in a safe manner both for the farmer, for the owner of the machine, but also for the other participants in the economic turnover.<sup>20</sup> The drone itself is a mere exemplification here.<sup>21</sup> Similar legal problems can be encountered with practically every innovation. As has been stressed several times already, this requires close

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<sup>17</sup> Y. Dou, C. Zagaria, L. O'Connor, W. Thuiller, P.H. Verburg, *Using the Nature Futures Framework as a lens for developing plural land use scenarios for Europe for 2050*, "Global Environmental Change" 2023, vol. 83, 102766.

<sup>18</sup> G. Guarini, J.L. da Costa Oreiro, *Ecological transition and structural change: A new-developmental analysis*, "Socio-Economic Planning Sciences" 2023, vol. 90, 101727.

<sup>19</sup> M. Michels, H. Wever, O. Musshoff, *Drones take flight in forests: Uncovering the 'tree'-mendous potential and 'timber'-rific challenges for German forest managers by applying the technology acceptance model*, "Forest Policy and Economics" 2023, vol. 157, 103077

<sup>20</sup> C.X. Hui, G. Dang, S. Alamri, D. Toghraie, *Greening smart cities: An investigation of the integration of urban natural resources and smart city technologies for promoting environmental sustainability*, "Sustainable Cities and Society" 2023, vol. 99, 104985.

<sup>21</sup> J.P de Koff, *Effectiveness of a remote pilot certification training for agricultural professionals*, "Natural Sciences Education" 2023, vol. 52 (2), 20121.

cooperation between specialists in many fields. Lawyers alone will not be able to create a comprehensive regulation that addresses selected innovation needs.

Respecting the idea of sustainability with increased concern for the climate and the environment can prove extremely difficult due to the expansiveness of agriculture, including through innovation.<sup>22</sup> The construction of biogas plants, wind farms, or photovoltaic farms which are determinants of energy requirements in modern agriculture, must take into account the need to preserve the natural character of nature. At the same time, the promotion of climate protection and innovation can sometimes be mutually exclusive. For example, the need to set aside land leaving it as grassland when it could be used, for example for photovoltaics, will conflict with the implementation of innovations in agriculture.

There are also areas, such as various forms of protection or biosphere reserves,<sup>23</sup> where the application of innovations will have to comply not only with European, national or international patent law, but also with the norms of international organisations, of which Poland is a member. Reconciliation of all these regulations should give a clue to the norms of future regulations related to the implementation of innovations. At the same time, it is a challenge for the Common Agricultural Policy to create such innovations in agriculture that will have the least possible impact on the climate and the environment.

### 3. Financing the implementation of innovation in agriculture

A separate problem, which will only be tentatively signalled due to the lack of national implementing regulations for the new CAP, is the financing of the implementation of innovation in agriculture. It is rather reasonable to argue that, without public aid, farmers would not be able to meet the high innovation targets set out in the European legislation, or in the Strategic Plan for the CAP 2023–2027. However, the aid measures envisaged are scattered and the lack of relevant specific legislation at this stage undoubtedly makes a clear assessment difficult.

For example, only the measure provided for in the Polish Plan entitled “Creation and development of producer organisations and agricultural pro-

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<sup>22</sup> H.Y. Osrof, C.L. Tan, G. Angappa, S.F. Yeo, K.H. Tan, *Adoption of smart farming technologies in field operations: A systematic review and future research agenda*, “Technology in Society” 2023, vol. 75, 102400.

<sup>23</sup> B. Jeżyńska, *Zrównoważone rolnictwo w rezerwach biosfery*, “Studia Iuridica” 2022, vol. 94, pp. 143–160.

ducer groups,” in one of the requirements, indicates that when the entity intends to implement innovative measures – product, process and technological innovations within the framework of undertaken investments, the costs of these measures must relate to minimum 30% of the value of planned support.<sup>24</sup> This means that innovations and their already rather advanced degree of implementation, become a prerequisite for obtaining aid. At the same time, no legal provision defines and specifies what those product, process or technological innovations will be. As a result, farmers wishing to obtain funds are unable to specify what will actually be required of them. The fear is that innovation will not just become a buzzword, but an actual legal instrument that will improve the financial situation of farmers.

Another similar example is the action “Cooperation of EPI Operational Groups.” Here, it is indicated that “new technology will increasingly use IT solutions and support the development of precision agriculture. Innovation can also consist of direct changes in agrotechnology and crop selection. A key element is the development and use of biological advances to bring productive crops into production. New varieties and even species should make efficient use of the yield-forming potential of soils and be water-efficient.”<sup>25</sup> The use of mechanisms from the area of IT,<sup>26</sup> or even artificial intelligence, will be a challenge not only for Polish agriculture and lawyers having to standardise this mechanism, but above all for Polish science, which should provide relevant solutions.

The variety of innovations that farmers may choose will have to be secured by appropriate regulations. The choice of specific solutions must not only provide them with the security of investment financing or an appropriate profit, but also give them a guarantee for the future far beyond 2027. This is the biggest challenge facing Polish legislators in the implementation of innovation in agriculture.

## Concluding remarks

The analysis of legal solutions concerning innovativeness in agriculture presented in the paper leads to several final conclusions. Firstly, there is a lack of uniform European, as well as Polish, solutions that would serve

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<sup>24</sup> National Strategic Plan for the CAP 2023–2027, p. 1083.

<sup>25</sup> Ibidem, p. 1110.

<sup>26</sup> T. Qin, L. Wang, Y. Zhou, L. Guo, G. Jiang, L. Zhang, *Digital Technology-and-Services-Driven Sustainable Transformation of Agriculture: Cases of China and the EU*, “Agriculture” 2022, vol. 12 (2), p. 297.

comprehensively the implementation of innovative solutions in Polish agriculture. As indicated in the introduction, most of the EU Member States do not have such comprehensive solutions either. There is also no uniform aid model for financing innovative solutions. The individual elements that make up technological progress in agriculture consist of various legal mechanisms of the Common Agricultural Policy, sometimes even mutually exclusive. Usually, farmers use existing solutions, which are often much cheaper and no longer meet the current challenges of agriculture. At the same time, when they wish to implement modern, even very expensive innovations, they do not have legal certainty that would define their rights and obligations related to the use of new opportunities. A *de lege ferenda* postulate is to start working on norms for precision agriculture, agriculture 4.0 or other modern concepts of farming. However, this requires, as emphasised, multifaceted and interdisciplinary cooperation.

The implementation of innovative solutions will simultaneously respond to global and European agricultural challenges. It is on the adopted legal solutions and the amount of financial aid that it will depend whether Polish farmers will be able to cope not only with European competition, but also with that coming from outside the EU. In order to give farmers a chance to meet these expectations, it is necessary to arm them with precise legal mechanisms which will reduce the risk of investment and also provide them with adequate protection in the event of failure. At the same time, the mechanisms adopted often require negotiation at the international level, so that there is the possibility of using modern solutions originating not only from Poland.

After all, innovation cannot be just one legal mechanism and one legislative act. The multiplicity of technical, production, social, marketing, processing solutions means that it will certainly be necessary to prepare such legal instruments and such legal acts that will respond to the emerging high specialisation of agriculture. The postulated law on precision agriculture may be a prelude. At the same time, it is a good example of the legislator's ability to deal with this problem. It should be an example for further norms enabling the development of innovation in Polish agriculture. It should not be forgotten, however, that even the best-written law may prove ineffective without adequate financial support. Parallel to specialised legal acts concerning innovation, norms facilitating obtaining financial support for this type of investments in agriculture should be developed. Failure in this area will leave Polish farmers stuck with traditional agriculture, which in the long term may prove uncompetitive for agriculture, particularly outside of Europe.

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