

Stanisław KOWALCZYK • Roman SOBIECKI

## CAN A SUSTAINABLE AGRICULTURE POLICY LEAD TO IMPROVED HUMAN WELL-BEING?

Reflections on the book *Sustainable  
Agriculture Policies for Human Well-being.  
Integrated Efficiency Approach*

Stanisław **Kowalczyk** (ORCID: 0000-0002-5052-3462) – *Warsaw School of Economics*

Roman **Sobiecki** (ORCID: 0000-0002-4235-8321) – *Warsaw School of Economics*

Correspondence address:

Niepodległości Avenue 162, 02-554 Warsaw, Poland

e-mail: skowal1@sgh.waw.pl

**ABSTRACT:** This paper is a scientific review of Czyżewski and Kryszak's book entitled *Sustainable Agriculture Policies for Human Well-being. Integrated Efficiency Approach* (2022). The work concerns one of the most important issues today, which is the sustainability of economic development, including the sustainability of agriculture and the consequences of such a process for current and future generations. This paper presents the main views and findings of the Authors of the reviewed book. It also includes their confrontation with other researchers' views, including this paper's authors.

**KEYWORDS:** sustainable agriculture, environment, farmers' income, model of agriculture, eco-efficiency

## Introduction

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Sustainable development, including sustainable agriculture, has increasingly absorbed the attention of academics, as well as politicians, social activists and local authorities for nearly half a century. Although a search through the written sources on ‘sustainability’ goes all the way back to *Sylvicultura Oeconomica* written by Hans Carl von Carlowitz in 1713, the modern interest in sustainability can be traced back to the famous Brundtland Commission report of 1987 (*Our Common Future*).

One of the most recent works on sustainable agriculture is *Sustainable Agriculture Policies for Human Well-being: Integrated Efficiency Approach* by Czyżewski and Kryszak, published by Springer in 2022. It holds a unique position in the field for several reasons, discussed later in the text. Despite extensive research and practical efforts, we still lack a universally accepted and unambiguous definition of ‘sustainability’ or a clear approach to ‘sustainable agriculture’. Both science and practice have yet to reach a consensus in this area.

The idea of sustainability, however, tends to provoke lively, emotional, and often controversial discussions (Norman et al., 2000). Typically, these discussions centre around viewing sustainability as either a philosophical approach to action or a collection of practical yet significant economic practices (Fretz et al., 1993).

One of the earliest authorial approaches to sustainable agriculture was proposed by Conway and Barbier (1990). However, it defined not so much the category of sustainable agriculture but rather agricultural sustainability. For Conway and Barbier (1990), agricultural sustainability is ‘the ability to maintain (preserve) productivity, whether of land, farm or labour, in the face of shocks and crisis situations’. These exceptional situations (shocks and crises) can, according to the authors, range from the emergence of new, previously unknown pests to soil erosion and a sudden increase in the cost of agricultural inputs. In addition, sustainable agriculture is also seen as a form of sustainable development, able to meet current needs without jeopardising the future (Ikerd, 2008). It is considered a global dynamic process that takes place in three areas (economic, ecological, and social) and at five levels (fields, farms, local communities, states, and international level) (Hayati et al., 2010). It is the epitome of a comprehensive perspective on quality throughout the food chain (Häni, 2007) or agriculture that meets predetermined standards (minimum and maximum) and/or balances sustainability across three dimensions (environmental, economic, and social) (Zegar, 2015).

According to one of the broadest concepts discussed in this context, an agricultural system is sustainable when policy and practice lead to (i) improv-

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ing or at least maintaining the quality and economic viability of farms, (ii) increasing rather than decreasing the long-term productivity of the agricultural and environmental systems, and (iii) enhancing the health and safety of agricultural producers and consumers (Weil, 1990). However, this approach is geared more towards the end results of the policies and strategies pursued (*ends-oriented definition*) rather than the ways and means of achieving the objectives (*means-oriented definition*).

Interestingly enough, 'institutional' approaches to sustainable agriculture proposed by various organisations and associations are just as plentiful, or even more, than the authorial concepts. Concepts proposed by individual economists, or teams of economists, as opposed to proposals from institutions and various organisations. This can be attributed to the simple fact that discussions on economic sustainability, including agricultural and food sustainability, began in the forums of international organisations such as the United Nations Organisation (The Brundtland Commission, 1983) in the late 1970s and early 1980s. Examples of such institutional approaches include those developed by the UN General Assembly, the American Society of Agronomy, UNESCO, the Sustainable Agriculture Initiative (SAI) Platform, and, last but not least, the Food and Agriculture Organization (FAO).

Unfortunately, there are also many myths and misconceptions surrounding sustainable agriculture that make it difficult for the public to understand and fully support it. There are two main dimensions of the controversy. The first stems from the misidentification dimension arising from the confusion of sustainable agriculture with various farming systems such as extensive, low-yield, traditional, organic, biodynamic, labour-intensive, low-cost or integrated. Thus, the disadvantages of aversions towards these systems are automatically transferred to sustainable agriculture and determine that it is viewed unfavourably. The second dimension (approach), which is naturally linked to the first one, comes from various misconceptions about the nature of sustainable agriculture. Myths that are generally not very encouraging to the idea of sustainability itself. These relate, among other things, to the equation of sustainable agriculture with the backward farming practices of our ancestors, i.e. agriculture that is low-tech, low-productive and unprofitable (i.e. fails to ensure food security or a good return on investment), agriculture that may intensify soil erosion processes due to frequent use of mechanical treatments (as a substitute for plant protection products), agriculture whose products are of lower quality and more difficult to standardise, making them less attractive for food processing, and finally, agriculture that is understood as a production and organisational model suitable only for small farms (Kowalczyk, 2018). However, most of these myths have no scientific or practical basis but rather are perpetuated, among others, by agribusiness representa-

tives (including mainly transnational corporations or large-scale industrial farms). Being constantly repeated, they are imprinting the erroneous conviction that sustainable agriculture is inferior to industrial agriculture.

Summarising their analysis of the concept of sustainable agriculture, Czyżewski and Kryszak (2022) (hereafter also: the authors) identify four key points:

- 1) practically all definitions contain similar elements, albeit expressed differently,
- 2) it is challenging to find postulates that are mutually exclusive,
- 3) contemporary approaches to sustainable agriculture place greater emphasis on social capital issues (including, in particular, food security and therefore the problem of hunger and malnutrition), which were previously overlooked,
- 4) and finally the importance of the economic efficiency of agricultural production is significantly increasing.

From this perspective, the fundamental elements of the contemporary concept of sustainable agriculture include at least the following: economic viability, production security, protection and restoration of the environment, preservation of natural resources, stability and resilience in terms of goals and efficiency in terms of implementation strategies.

## Agricultural Sustainability and Well-being

Czyżewski and Kryszak (2022) also adopt this outline for their research area, rightly considering parallel aspects such as production efficiency, negative environmental impacts, and socio-economic well-being, including food-related issues. Such an approach should be considered original and innovative and, at the same time, very ambitious and extremely difficult to implement. As such, it requires a specific opposition to the research of many other authors who usually prioritise environmental issues and the interests of future generations. By emphasising the importance of agricultural production efficiency and food issues, such as food security, nutrition levels, and hunger, Czyżewski and Kryszak (2022) seem to elevate the interests of contemporary generations to a level comparable to that of future generations. This means that both the interests of today's and future generations must be taken into account in the paradigm of sustainable agriculture.

The issues discussed in this context have arisen as a direct consequence of the so-called industrial model of agriculture. The industrial model of agriculture placed an emphasis on the efficiency and modernisation of farms, but it failed to include the full cost of production processes in the prices of agri-

cultural products. According to Czyżewski and Kryszak (2022), the technological and market-driven treadmill and the agrarian question became increasingly severe. The paradigm of sustainable agriculture, therefore, faces two fundamental dilemmas: how to overcome Cochrane's market treadmill and how to address environmental and social problems.

Czyżewski and Kryszak (2022) formulated the original thesis that the concept of sustainable agriculture emerged as a response to the consequences of Cochrane's market treadmill, and they believe that a clear understanding of the market treadmill is crucial for defining our goals towards sustainable agriculture. This is because, according to them, a correct understanding of the mechanism of the market treadmill allows one to clearly see the objectives we are setting for sustainable agriculture. This is because the economic reason for the market treadmill rests on the fact that agricultural income is not keeping pace with the increase in productivity and efficiency of farms. The root cause of this situation is primarily the elasticity of agricultural prices elasticity but also the typical characteristics of agricultural production, such as low labour mobility, the specific farm-household relations – as already emphasised by Chayanov, low efficiency of agricultural investments, and finally, insufficient adaptation of farmers to changing market conditions (Kowalczyk & Sobiecki, 2021). Consequently, despite farmers' constant efforts to improve productivity, their incomes do not rise (or rise minimally to the input) due to being 'appropriated' by the market. This phenomenon occurs in both highly advanced American agriculture and predominantly peasant European agriculture, not to mention traditional agriculture in other parts of the world. Indeed, this reflects the ongoing modern agrarian question, which neither developed nor developing countries have been able to effectively deal with (Kowalczyk & Sobiecki, 2021). Hence, the importance of an appropriate agricultural policy, including interventionism for agricultural sustainability – a policy whose priority should be to find a solution to the market treadmill and the agrarian question.

The solution to this vicious circle of farmers' failure to match the incomes of other professional groups manifested in the form of market-driven drudgery and, more broadly, the agrarian question – is to be found in sustainable agriculture and multifunctional rural development. Only this approach has the potential to balance economic, social, and environmental objectives in agriculture. A key assumption for this concept is that agriculture and rural areas provide public goods. Czyżewski and Kryszak (2022) argue in favour of this solution, citing the following reasons:

- a higher amount of payment for public goods should be directed towards farms implementing sustainable farming principles and pursuing multifunctional development with diverse sources of income,

- they should also favour activities with lower price elasticity, such as organic farming or agri-tourism,
- the provision of public goods eases, to some extent, the market orientation of farms and reduces pressure on agricultural prices,
- the subsidisation of public goods is less capitalised in the form of annuities, making it less likely to be taken over by non-agricultural agribusiness entities.

The argument outlined above is by all means correct and deserves support. However, the level of budgetary support needed for public goods and the sustainable agriculture model is still unclear and requires further examination. The support that will make it possible to eliminate, or at least mitigate, the manifestations of the agrarian question, including the market treadmill.

So far, such a relationship, i.e. the mitigating, positive impact of the sustainable agriculture model on the issues of the so-called agrarian question, is challenging to prove in practice. For instance, Matuszczak's research conducted in various regions of Poland shows that expenditure on environmental protection has no spatial determinants, i.e. there is no correlation whatsoever with individual regions and their natural conditions. (Matuszczak, 2020).

Further to the stream of necessary budgetary support for the sustainable agriculture model is its impact on the supply of agricultural products and food security in general. As the authors themselves highlight, the substitution of public goods in rural areas may spell less interest in agricultural production, eventually leading to its extensification, which is an important issue given the shortage of food and the still considerable extent of hunger in the world.

In addition, creating a sustainable agricultural system necessitates the establishment and proper implementation of environmental standards (quality standards, fees, subsidies, penalties, etc.) on both the national and, more importantly, international (global) scale. Therefore, as noted by Czyżewski and Kryszak (2022), moving from an industrial agricultural model to a sustainable one is not, and will not be, simple or quick.

In the classical view, the sustainable agriculture model is comprised of three dimensions: economic, environmental and social, and is viewed as an integrated whole. As a rule, its exemplification is the category of eco-efficiency. However, there is a valid question of whether achieving satisfactory eco-efficiency truly equates to sustainability. Firstly, this is because, as already stated, environmental protection often contradicts the economic objectives of farms, and secondly, farms that have high technical efficiency often have lower eco-efficiency. The research results are inconclusive when it

comes to prioritisation, with some farmers putting the economy first and the environment second.

In their argument, the authors emphasise types of agriculture that have the potential to decrease negative environmental impacts while yielding positive economic outcomes. They believe that organic farming is one such type and that under the current fragmented state of European agriculture, it has the potential to make a transition to organic farming relatively easy. However, this is a contentious argument for at least two reasons. Firstly, organic farming demands more knowledge and expertise than conventional farming. Mean while, the level of education and qualifications of farmers is positively correlated with the size of their farms, with owners of small farms being the least educated. Secondly, 'profitable' organic farms tend to be larger in size compared to conventional ones, mainly because organic farming practices yield lower output per unit area compared to conventional methods. For example, while the average farm in the EU has an area of 17.3 ha UR (2020), the average area of an organic farm is 50.0 ha (IFOAM, 2022). Thus, converting to an organic farm is primarily a chance for larger farms, at least with the current state of efficiency of organic farming techniques.

In conclusion, Czyżewski and Kryszak (2022) unequivocally and rightly assert that the relationship between eco-efficiency, environmental impact, and agricultural sustainability is highly complex. However, effective management techniques and production methods allow for enhancements in the eco-efficiency of farms and minimising their environmental impact.

To validate these assertions, Czyżewski and Kryszak (2022) are conducting their own extensive research, with the main objective of confirming their hypotheses about the feasibility of implementing the concept of sustainable agriculture, particularly the possibility of concurrently achieving economic, environmental and, more broadly, social objectives. More specifically, their aim is to quantify the sustainability of modern global agriculture and track its progress over time. The research involves a sample of 79 countries, plus the European Union countries considered as a separate cluster, bringing the total number of countries covered to over 100. Non-EU countries, due to significant differences in agricultural practices, are divided into two separate groups: Cluster 1, consisting of 29 countries, and Cluster 2, consisting of 50 countries. This division does not imply the recognition of only three agricultural models, as only Cluster 3, which encompasses the EU countries, can be considered relatively homogeneous. The other two clusters comprise quite diverse agricultural practices; for instance, Cluster 1 encompasses countries such as the USA and Canada, as well as Ghana and Albania. In the process of classifying countries, the authors relied on the premise that the basic input-output relationships in agriculture are a reliable indicator for deter-

mining the agricultural model in regional and international studies. In general, the countries included in Cluster 1 have higher average production intensity, particularly in areas such as livestock units (LSUs), employment and land productivity.

### The concept of integrated eco-efficiency

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Czyżewski and Kryszak (2022) present their own approach to measuring eco-efficiency and sustainability, called integrated efficiency (IE). Without going into the details of the methodology used, the approach focuses on evaluating slack, which is the amount of room for improvement in either decreasing bad output or increasing good output for a specific level of input. In simpler terms, it is about finding ways to make the outcome better with the same amount of output. Finally, the Malmquist index is calculated.

Based on the research findings, three key conclusions can be drawn. Firstly, the research suggests that there is substantial potential for the development of a non-industrial agricultural model, i.e. a sustainable agricultural model in general, which is evidenced by the existence of so-called slack – good and bad inefficiency – in the countries and groups (clusters) analysed. To put it simply, the possible outcomes are a reduction in inputs and bad outputs while increasing desirable outputs.

Secondly, the research uncovered substantial differences in performance not only between countries grouped into different clusters but also within individual clusters themselves. This is confirmed by the vast diversity in models and types of modern agriculture across the world. As an illustration, the so-called slack or the bracket of possible change in labour input (employment) among Cluster 1 countries ranges from a positive (+)9.5 in Argentina to a negative (-)82.37 in Thailand. In Cluster 2 countries, the slack for pesticide inputs ranges from a positive (+)3.35 in Iceland to a negative (-)95.17 in Guyana. Naturally, much smaller differences occur among EU countries, an example being the variation in livestock units (LSUs) among EU countries, which ranges from 0.00 in countries such as Sweden, Slovakia, Poland and Finland to a negative (-)22.68 in Spain.

Additionally, the changes in the slack values are significantly higher for countries in Clusters 1 and 2 compared to those in Cluster 3. For instance, when comparing the changes in employment slack between 2005/07 and 2016/18 in Cluster 1 countries, the range can be significant, from a positive (+)81.66 in Ghana to a negative (-)84.45 in Ivory Coast, with an average of a positive (+)4.83. Contrarily, for Cluster 2 countries, changes in slack for pesticide inputs range from a positive (+)90.48 in Nicaragua to a negative (-)94.81 in Bangladesh. Again, there is much less variation in the changes in



slack values among EU countries. As an example, the changes in employment slack among EU countries range from a positive (+)17.6 in Romania to a negative (-)44.2 in Belgium.

Thirdly, most countries are facing decreasing economies of scale in agricultural production, although the reasons behind this trend differ from country to country and region to region. As an example, the declining economies of scale in production in Cluster 1 countries are attributed to energy costs, while in Cluster 2 countries, it is due to costs of inputs excluding pesticides. The scenario is partially different for EU countries (Cluster 3). In this case, the trend exhibits more diversity, and thus, for instance, the declining economies of scale in terms of crop protection product use, greenhouse gas emissions (GHGs), and livestock units (LSUs) apply only to countries such as France, Spain, Germany, and Italy. Additionally, most EU countries have room for further reductions in employment while maintaining production levels. Overall, these findings raise questions about the necessity or even the validity of further intensification of industrial agriculture, which is inherently characterised by maximising production scale.

By adopting Czyżewski and Kryszak (2022) preferred integrated efficiency approach and eliminating inefficient practices in agriculture (known as slacks), it would be possible to significantly reduce resource usage (assuming only negative slack for inputs and positive slack for outputs) such as land by 22.9%, livestock units (LSUs) by 12.7%, energy by 11.7%, and greenhouse gas emissions (GHGs) by 14.6%.

The integrated efficiency, which serves as a comprehensive indicator of agricultural sustainability, did exhibit changes (as measured by the *Malmquist index*) in virtually all countries over the 2006-2018 study period. Interestingly, these changes were consistent across all Clusters and showed positive results in all Clusters, although the average yearly changes were relatively small in Clusters 1 and 3 (0.4% and 0.6%, respectively). For countries in Cluster 2, the average yearly change was 1.6%. It seems that the majority of countries have scope to upgrade their agricultural technology and increase their production efficiency. Yet, whether this opportunity will ever have a chance to materialise is highly dependent on the implementation of supportive policies that prioritise sustainability, including the sustainability of agriculture.

Reducing greenhouse gas emissions (GHGs) is a crucial and sensitive issue in this regard, and the agriculture industry and the food production system as a whole are major contributors to greenhouse gas emissions. According to various estimates, this participation could account for up to one-third of total emissions, including agriculture's contribution, which is

estimated to be around 20.0% (Crippa et al., 2021). These issues have been present in every Financial Agenda since the 2000 CAP reform.

An extremely important concern for the future of sustainable agriculture is, firstly, how to effectively assess the benefits of pro-environmental instruments and, secondly, how to shape them to maximise their effectiveness. However, the effectiveness of pro-environmental policies is a highly complex issue. As pointed out by Czyżewski and Kryszak (2022), the effectiveness of pro-environmental policies is a result of the interactions that occur in this area in terms of the need to optimise public expenditure and the adopted agricultural policy criteria, rational payment levels and the methods for their calculation, farmers' behaviour, and, finally, society's expectations for environmental improvement. The authors highlight another aspect, which they call the complexity effect or fallacy of composition. This arises simply from the fact that individual pro-environmental measures are aimed at specific issues, such as gas emissions, and then the performance measures are linked to broader environmental objectives. The latter, as it turns out, often interact and create synergies, potentially distorting the final impact of the implemented pro-environmental policy. Moreover, the farmers' perspective adds to the complexity, as they prioritise economic criteria for agricultural production, seeking Pareto efficiency. In other words, farmers are always trying to optimise a multidimensional production function. Thus, it is essential for agricultural policies to recognise and account for the multidimensional slacks that may arise. Incorporating these slacks into a comprehensive approach to evaluating agricultural policies can help minimise the fallacy of composition.

At the EU level, the fallacy of composition is partly due to the lack of coordination among the various environmental strategies being pursued by individual member states. Moreover, even if up to one-third of CAP direct payments are currently channelled to beneficiaries through greening instruments, this may be too small a financial flow for its positive environmental effects to be clearly and unequivocally visible.

Due to the lack of effectiveness of current environmental programmes, it is necessary to explore new strategies and solutions to address these issues. According to researchers of sustainable agriculture and the environment, there are two main directions that these efforts should focus on: (i) to estimate, as precisely as possible, farmers' lost income as a result of the implementation of pro-environmental measures, subsequently reflected in the amount of premiums paid, and secondly, (ii) and as emphasised by the farmers themselves, to provide them with open access to training and information in order to better comprehend the specific need for adopting pro-environmental measures. Therefore, as Czyżewski and Kryszak (2022) rightly emphasise, a sustainable agriculture policy should give far more importance

to developing social capital in this type of farming model. This is particularly crucial, as the scarcity of human and social capital in agriculture can act as a hindrance to implementing technical and organisational advancements.

The importance of reorienting sustainable agriculture policy to enhance knowledge, awareness, and environmental focus is also important for another reason. Many studies conducted globally have shown that using monetary incentives (financial subsidies, bonuses, and payments) is a risky approach and a way of ‘compelling’ certain social behaviour. This holds true for both promoting positive actions and preventing environmental degradation, as well as in areas such as education and healthcare. There are numerous instances where the implementation of monetary incentives has had the opposite effect, discouraging rather than encouraging participation in such programmes. As Raworth states, money circulating in the sphere of beliefs, mentality or customs can be harmful, as it erodes respect for the environment and trust within communities. In general, it is about finding a synergy between economic and social goals that align with environmental concerns, or in other words, effectively combining *the blunt power of markets with the influence of customs* (Raworth, 2021). The main “culprits” behind this state of affairs are economists, who vastly overestimate the significance of money as a tool for encouragement, persuasion, or pressure as opposed to the role of values, sense of responsibility, and cultivated habits. The roots of this perspective on the world, economy and humanity can be traced back to at least Marshall saw economic laws or phenomena as solely tied to money power (Marshall, 1890). Economists are followed by politicians in creating programmes and strategies that prioritise the role of money, not just in economic interactions but in society as a whole.

In conclusion, one must agree with Czyżewski and Kryszak (2022) finding that agricultural policy and environmental and social subsidies, while intended to have a positive impact, often have the side effect of hindering agricultural transformation and propping up inefficient farms. However, the term ‘side effect’ is largely used by economists to explain the unintended and unfavourable outcomes of their initiatives, which they did not anticipate or did not want to acknowledge.

The authors emphasise, however, that this direction of agricultural and environmental policy appears to be cost-effective in terms of long-term goals. Ultimately, this approach calls for a comprehensive strategy that balances the efficiency of resource allocation in agriculture with environmental and social benefits. The authors’ ability to structure this highly intricate issue of structuring economic, environmental, and social objectives showcases their realism and scientific credibility.

Chapter 5 of Czyżewski and Kryszak's work (2022), which evaluates the cost-effectiveness of environmental expenditure across different parts of the world, is particularly valuable and intriguing. It provides a comprehensive analysis of the concept of slacks and their relation to the level and structure of expenses incurred by agricultural and environmental policies worldwide. The authors highlight that accurately interpreting such an analysis poses numerous challenges due to factors such as cognitive limitations in understanding multiplier effects, spatial dependencies, and the interplay between policies in terms of synergies and trade-offs. Above all, however, it is important to be aware that public policies, including agricultural policies, significantly impact farmers' behaviour and, thus, the agricultural production function.

### The role of slacks in eliminating inefficiencies

The authors' fundamental assumption is that achieving the objective of sustainable agriculture requires, first and foremost, eliminating present-day inefficiencies, known as 'slack'. They embrace the idea that only this type of policy approach can positively impact the efficiency of agriculture production by creating conditions for progress in the Pareto sense and for more efficient use of available resources, including public goods. The existence of 'real slack' results from the limited rationality of production processes, in this case, in agriculture. It is the in-depth analysis of specific 'real slacks' and their connection to public expenditure through agricultural and environmental policies that undoubtedly is the authors' significant research accomplishment due to the fact that it enables one to quantify the impact of public expenditure on existing inefficiencies (i.e. the said slacks) and their importance in the process of creating the conditions for Pareto efficiency improvements<sup>1</sup>.

The authors analysed the impact of environmental policy, specifically its subsidies, on these slacks at three levels: global, identified clusters and years. The results of this analysis are complex and multi-directional. More positive correlations for environmental policy were found in the cluster system. In this case, the positive correlation between environmental expenditure and reduced inefficiency was notable, although the degree of variability was high among individual clusters. The lowest correlation was observed for the countries in Cluster 1, possibly due to the lack of coordination among pro-environmental policies in this group. In Cluster 2 countries, positive correlations were identified between expenditure and various forms of inefficiencies

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1 Measuring these relationships and the directions in which they occur is all the more challenging because Pareto-inefficiencies can be considered latent variables.

(slacks), which may seem unexpected given the presence of several underdeveloped nations in this group. Paradoxically, perhaps, as the authors explain, this simplifies the effective implementation of agricultural and environmental policies. A relatively low correlation of the studied variables also takes place in Cluster 3 countries – i.e. EU member states, although it is stronger than in Cluster 1.

In general, the main factors affecting the efficiency of agricultural and pro-environmental policies for all the clusters include livestock units (LSUs), energy usage, greenhouse gas emissions (GHGs), and fertilisers. An analysis of the efficiency of public expenditure relating to EU farms covered by the FADN system also provides interesting insights. The analysis reveals various partial interdependencies among the individual support measures that comprise the Common Agricultural Policy. Therefore, production-related subsidies (for crops and livestock) tend to have a negative impact on most forms of inefficiencies (slacks), while decoupled subsidies have a positive effect, although they cannot completely eliminate inefficiencies. Significantly, pro-environmental subsidies often lead to a decline in food security efficiency, which is a crucial but also a cautionary factor to consider when formulating a future pro-environmental Farm 2 Fork strategy.

In conclusion, Czyżewski and Kryszak's study (2022) clearly demonstrates the relationship between public expenditure and integrated efficiency (IE). This relationship is widespread, as confirmed by the research over the years, across many countries and regions. It is also inherently characterised by its unique structural and cross-cutting complexity. This implies that the pursued agricultural and pro-environmental policies should be tailored to the specific circumstances of each country and region, as no universal solutions exist for agricultural and environmental sustainability, and none are likely to emerge.

Czyżewski & Kryszak's study (2022) emphasises another crucial dilemma related to the issues under discussion, examining the connection between 'pure' agricultural policy and pro-environmental policy. Studies and practical experience suggest that there is no one-size-fits-all ideal model for agricultural policy, in other words, for policies to support agricultural development. As the authors correctly state, this is due to at least three factors: firstly, farmers' and taxpayers' expectations often differ; secondly, the agricultural policy must address not only economic goals but also social and environmental objectives; and thirdly, solutions must be grounded on well-supported premises, rather than being swayed by present circumstances or events.

In turn, the fundamental reasons for having an active agricultural policy include (i) the higher level of production risks in agriculture compared to other sectors, mainly related to the direct impact of climate and weather con-

ditions; (ii) the fact that agriculture produces public goods that cannot be fully 'valued' on the market; (iii) the fact that agriculture is crucial for ensuring food security and satisfying a basic human need – to combat hunger.

As a result of these factors, every country has a policy in place to address the challenges in agriculture and agricultural production. However, as seen from experience, there is no one-size-fits-all solution, which is why agricultural policies vary greatly from place to place. Furthermore, practical experience also confirms that these diverse agricultural policies often lead to similar, not entirely positive, outcomes. Firstly, one of the consequences is an unequal distribution of government subsidies. Most subsidies tend to go to larger and stronger farming operations, which are the least in need of support, instead of being distributed evenly, almost following the Pareto principle. Secondly, another consequence is the capitalisation of subsidies into the price of agricultural land, as well as rental prices, to varying degrees, depending on the type of subsidies applied. This leads to a portion, or sometimes even a significant amount, being absorbed by non-farmers and non-agricultural sectors periodically and regionally.

These issues and problems are part of the reception of agricultural policies, both in the past and present. Despite being in place for many years, traditional agricultural policies have been unable to solve these problems, leading to their evolution and the emergence of new challenges in agriculture, further complicating the agrarian question. Today, these unresolved issues, which are widely recognised as pressing in both scientific and political circles, have been joined by new challenges, mainly environmental ones.

This situation has resulted in the need for researchers and politicians to develop new solutions and proposals. In the context of this discussion, one such concept is the sustainability of agriculture, and Czyżewski and Kryszak's research (2022) attempts to answer whether this concept has enough potential to solve or at least reduce these problems. The authors present their own unique perspective on solving future agricultural issues based on an issue-based approach. The first step in their approach involves identifying specific solutions or strategies for the key problems of the future-focused concept of sustainable agriculture. The next step is to assess the impact of these strategies and adopt additional tools to create a comprehensive set of tools for shaping a sustainable agricultural model that is also adaptable to changing circumstances. According to the authors, the most viable solution is a dual model with two paths of development: firstly, intensive agriculture backed by counter-cyclical and pro-efficiency measures (subsidies), and secondly, extensive agriculture aimed at providing public goods and supported by pro-environmental subsidies. A single path for agriculture of the future is not feasible due to the complexity of economic, environmental and social objec-

tives. This affirms the stance that the most promising form of agriculture in the future will likely be a multigenerational option, including industrial, traditional, integrated and intermediate farms, with a stronger emphasis on integrated farming methods (Zegar, 2015).

The issue of sustainable agricultural development was also highlighted by Kowalczyk and Sobiecki (2021). The notion of sustainable development, as it is commonly comprehended, necessitates a synchronistic advancement in three dimensions: economic and productive growth, social well-being and environmental protection. A model for such an economy, including agriculture, should strike a balance between economic growth, environmental protection, and overall quality of life and health.

Conway and Barbier (1990)<sup>2</sup> were among the first individuals to propose an authorial approach to sustainable agriculture, although they defined the concept of agricultural sustainability rather than the broader category of sustainable agriculture. For them, agricultural sustainability is ‘the ability to maintain (preserve) productivity, whether of land, farm or labour, in the face of shocks and crisis situations’<sup>3</sup>. All these exceptional situations (shocks and crisis situations) can include anything from the emergence of new, previously unknown pests to soil erosion and a sudden increase in the cost of agricultural inputs. They can also result in unintended and substantial impacts on agriculture and its productivity. These impacts may include a drastic reduction in agricultural productivity, sustained low productivity levels, or even a complete collapse of the agricultural system. Sustainability, in contrast, refers to the capacity of the agricultural system to remain viable and resilient in the face of such challenges.

## Conclusion

Agriculture remains a vital sector even in the wealthiest countries, which are willing to invest substantial resources to support both the sector and its farmers. The disappearance of agriculture is unlikely, even in these well-developed nations, due to agriculture’s direct connection to the environment and its status as the greenest sector of the economy, providing renewable energy that is increasingly essential in today’s world. Additionally, agriculture has the potential to effectively combat poverty and alleviate hunger while maintaining environmental sustainability and food security. This per-

2 In this context, Conway and Barbier are referring to Conway’s earlier work (1988) published in: *The Greening of Aid: Sustainable Livelihoods in Practice*. London: Earthscan.

3 Conway, G. R., & Barbier, E.B. (1990). *After the Green Revolution. Sustainable Agriculture for Development*. London: Earthscan.

spective presumes the significance of agriculture's future role, regardless of its impact on employment and GDP generation.

In essence, the era has arrived for high-quality food and environmental standards, a shift reflected in the growing prominence of the concepts of sustainable development in economic discourse, as noted by Czyżewski (2016). However, the challenge lies in finding a way to reconcile halting the degradation of the natural environment, as noted by Matuszczak (2020), while ensuring food security, i.e. a reliable food supply. This convergence expands the scope of the contemporary agrarian question to encompass both rural areas and environmental public goods.

To summarise, the relationship between sustainable agricultural development policies and social well-being highlights the need to view the concept of sustainable agricultural development not as an alternative but as a concept of the convergence of various phases of agricultural development, including conventional (industrial), an approach that should incorporate the most significant advancements from various stages of agricultural development. This is not a novel idea, detached from prior phases of agricultural development, and sustainable agriculture should guarantee the capability to produce agricultural raw materials and nourish not only current but also future generations. It is, therefore, essential to formulate realistic concepts rather than utopian ones, as otherwise, the implementation of sustainable agricultural development policies will not result in enhancing social well-being in terms of nutrition. Any concept of agricultural development should not prioritise the social well-being of one generation over another or make trade-offs between present and future generations and vice versa.

Is it possible to have a one-size-fits-all concept of sustainable agriculture that could be implemented universally in all countries around the world? Our answer is NO. The concept outlines the parameters, standards and characteristics of sustainable agricultural development. However, their implementation may vary among countries, depending on their current level of agricultural development. The ability to fulfil the food requirements of the current generation also varies. In countries where hunger is prevalent, a manifestation of sustainability will be the development of agriculture (but also processing and storage) in such a way that hunger is eradicated, which is what the increase in social well-being will be built on. Sustainability will look different in countries with relative saturation in meeting food needs. Sustainability should be manifested in caring for the well-being of resources and reducing waste, including the 'overconsumption' of food. And this is what the increase in social well-being in these countries is likely to be focused on.

In this context, the postulates formulated by Czyżewski and Kryszak (2022) are extremely important and deserve careful attention for two rea-



sons: firstly, because the problems facing modern agriculture and the environment are considered in a theoretical dimension in the first step, and secondly, the theoretical conclusions are comprehensively verified empirically in the next step. This dismisses both the accusation of unrealistic ‘theorising’ and of conducting determined by unrealistic assumptions, estimates and calculations. These considerations make the views and suggestions contained in Czyżewski and Kryszak’s work (2022) deeply thoughtful and thus compel the reader to also rethink their own thoughts. This is not a typical situation for all scientific work and research. Thus, we consider Czyżewski and Kryszak’s work (2022) to be unique, based on original research, providing thought-provoking reflections, prognostic yet deeply realistic, and firmly rooted in the complex realities of the contemporary world.

### The contribution of the authors

Conception, S.K.; literature review, S.K. and R.S.; writing – original draft preparation, S.K.; editing, S.K.; concluding, S.K. and R.S.

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