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A model methodology for sustainable lending in the agricultural sector

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Subject. Processes of internal institutionalisation and state regulation of the sustainable lending market in the agricultural sector, as well as the ESG transformation of business processes of lenders and borrowers within the framework of the concept of sustainable development.
Objectives. The formation of a conceptual framework for sustainable lending and forecasting scenarios for its development in the agricultural sector; development of a model methodology providing a structural restructuring of the industry credit mechanism in terms of incorporating sustainable development goals and ESG factors into the credit procedures of banks and the business processes of borrowers, increasing the supply of relevant credit products, and creating a system of market and government incentives.
Methodology. The developed model methodology for sustainable lending is based on the concepts of sustainable development, ESG, responsible banking, and sustainable finance. In order to achieve the objectives, the author used abstraction, generalisation, formalisation, analogies, and scenario forecasting methods.
Results. It was shown that the concept of sustainable development and the principles of responsible banking form the basis of sustainable financing, the direction of which is sustainable lending. A conceptual apparatus of sustainable lending has been formed, which allows classifying it as a financial instrument for achieving sustainable development goals.
Conclusions. Based on scenario forecasting, an acceleration model for the formation of a sustainable lending market in the agricultural sector is substantiated. The model assumes a proactive role of the state and banks (promotion of values, incentives), consolidation of institutional changes, and infrastructure development. A model methodology for sustainable lending in the agricultural sector, including three structural components: information, product and incentive system has been developed. The information component performs the functions of goal setting, consolidation in formal norms and regulation of institutional changes, incorporation of ESG factors into standard credit scoring procedures, and development of the market for non-financial ESG products. The product component is differentiated by types of sustainable development credit products. Standardised loan products, including government support measures, are offered for verified projects. For projects financed according to bank standards, unique loan products are offered with internal financial and non-financial incentives, restrictions and ESG risk management tools integrated into their structure. The incentive system is differentiated into financial and non-financial based on the types of credit products.

Key words: sustainable development, sustainable finance, ESG, sustainable development credit products, responsible banking.

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Introduction

The Russian sustainable development agenda, even under condition of severance of economic and political ties in 2022, with Western countries promoting the concept of sustainable development and ESG, continue to be formed within the framework of global goals and trends in this area. This is due both to the need to solve internal environmental and social problems that affect the quality of life and well-being of the population, and the necessity to incorporate the principles of sustainable development into the ongoing processes of structural transformation and modernisation of the Russian economy in order to build efficient relations with friendly countries that support these principles, especially regarding the "green" agenda.

Introduction of cross-border carbon regulation (Lysunets, 2023) (the main part of the "green" agenda) and the expansion of its perimeter can affect not only the fuel and energy sector, metallurgy and other traditionally Russian industries, but also agriculture, which is a major emitter of greenhouse gases. Ignoring of sustainable development issues, including those related to climate change, will inevitably create new risks in the financial sector of the economy, since sustainable or responsible financing is one of the key elements of sustainable development, and banking relationships form a "transmission mechanism" for promoting ESG in a corporate environment (Houston & Shan, 2019). In the future, the integration of ESG risks into the regulation of the financial sector may significantly affect the accessibility of foreign capital, investment and sales markets even in friendly countries, which determines the need to study the boundaries of incorporating the principles of sustainable development into the Russian financial sector and its industry segments, in particular, into the credit agricultural sector market.

The development of a model methodology for sustainable lending in the agricultural sector is based on the author's hypothesis, which includes the following interrelated assumptions:

a) about the variability of development models of the sustainable lending market depending on the participation of the state in this process;

b) on the integration of ESG factors into the credit policy of financial organisations with the formation of a new methodology for sustainable lending, as well as the need to adapt it to the industry specifics of agricultural production and the development of government support measures.

Research materials and methods

A significant methodological aspect of the study of the responsible lending market is scenario forecasting of possible options for its development, where the key variables are the nature of the emerging credit mechanism (market or preferential) and the role of the state (reactive or proactive) in this process (Fig. 1).

The proposed strategic matrix describes the logic of further research and contains four possible scenarios for the development of the sustainable lending market in the agricultural sector, ranked in order of preference from the least likely (extensive) to the targeted (intensive):

1. Reactive (adaptive) model of development of the sustainable lending market, characterised by: minimal interest in ESG agenda and sustainable development goals of the state, banking community and business (with the exception of the largest exporting companies and banks); fragmented methodological and legal regulation; lack of financial and other incentives from the state. The low probability of such a scenario is associated with the formalisation of the concepts of sustainable

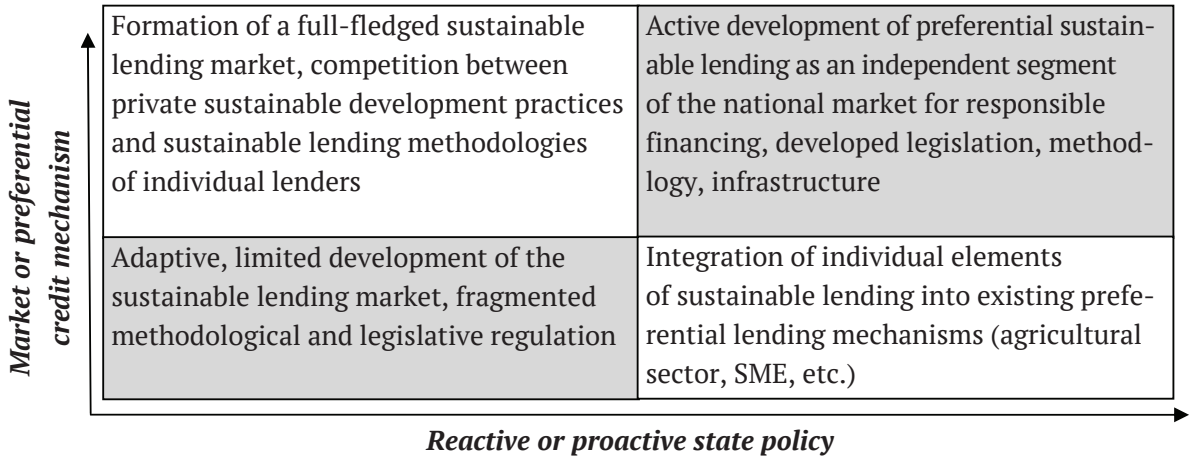

Fig. 1. Strategic matrix for the development of the sustainable lending market in the agricultural sector [compiled by the author]

development, climate neutrality, and ESG into a global trend, increasingly influencing the redistribution of capital in favour of economies and markets that ensure the implementation of their declared goals. Therefore, even under the conditions of increasing sanctions pressure, ignoring global trends can lead not only to reputation losses, but also to restrictions on the ability to attract financing and export products even in friendly countries.

2. Model of a market mechanism for sustainable lending, which is characterised by: evolutionary nature; multiple standards and strategies for sustainable development based on the best global and corporate practices ESG; competition between lenders in the sustainable lending methodology. Like the previous one, this model does not go beyond the limits of the reactive scenario, since "ESG transformation of Russian banking represents more of an external adaptation to the global demand for sustainable development than a radical restructuring of internal processes … changes in business strategies" (Evlakhova, 2022). The low probability of such a scenario is also associated with the difficulties of prudential regulation and supervision in locally fragmented markets, which will prompt the regulator to establish uniform approaches and standards mandatory for all participants. The assumption has practical confirmation under current conditions, for example, in the adoption of a national taxonomy of sustainable development projects, recommendations for assigning ESG ratings (sustainability ratings) and other norms aimed at harmonising methodologies and practices of sustainable lending.

3. Transition from a reactive to a proactive model of the development of the Russian market for financing sustainable development projects involves strengthening the role of the state (creating the necessary conditions and incentives) and motivating industry borrowers to taking into account ESG factors and sustainable development goals in their own activities. One of the probable scenarios for such a transition could be integrating sustainable lending into existing preferential lending mechanisms. In agriculture it will be mechanism for preferential lending to the agricultural sector – sustainable lending will develop within the framework of the sectoral credit mechanism. Incorporating the environmental and social components of sustainable development into the mechanism of preferential lending to the agricultural sector will preserve its essence and form, and incentives (as in the current mechanism) will be created by subsidised interest rates for the reduction of the cost of such loans below market cost (Korobeinikov, 2022). Changes in the current mechanism may appear: 1) in the list of permitted objects of preferential lending in terms of its expansion; 2) in the procedures for selecting loan applications regarding the inclusion of ESG factors in the credit

scoring of authorised banks and the procedure for examining applications by the Ministry of Agriculture of the Russian Federation based on the criterion of comprehensive solutions to economic, environmental, and social problems of rural areas.

4. As a target scenario, a model of accelerated development of the market for sustainable lending in the agricultural sector is proposed. The model is characterised by: the formation of an independent segment of the market for sustainable (responsible) financing – the market for sustainable lending in the agricultural sector; proactive state policy focused on the adaptive and balanced integration of Russia into the global market for financing instruments for sustainable development; consolidating institutional changes in formal norms and developing an infrastructure for responsible financing (including lending); the active role of banks in motivating industry borrowers for ESG transformation, taking into account sustainable development goals and combating climate change; standardisation of preferential and differentiation of market credit products for sustainable development.

Results

A formalised representation of the target scenario for the development of the sustainable lending market in the agricultural sector is provided by the developed model methodology, which includes three main structural components: information, product, and incentive system (Fig. 2).

The information component of the model methodology performs the following functions:

– formation of a common system of goals for sustainable lending in the agricultural sector through adaptation of global goals of sustainable development and combating climate change, ESG factors and principles of responsible banking to national goals: 1) sustainable development; 2) national (including food) security; 3) integrated development of agriculture and rural areas;

– consolidation in formal norms of institutional changes accompanying the formation of the sustainable finance market, in terms of improving regulatory approaches to the taxonomy of sustainable development projects, their verification and identification of attracted financial instruments, the development of a methodology for assessing ESG risks, constructing ESG ratings, introducing sustainable development issues and taking into account ESG factors in corporate governance, generating ESG reporting, integrating ESG risks into prudential regulation and supervision, and others;

– development of internal bank practices for assessing sustainable development projects (including own taxonomies, for example, ESG or social projects not covered by regulatory regulation) and associated ESG risks for their incorporation into standard credit scoring procedures;

– development of the market for non-financial information ESG products related to independent verification of sustainable development projects, assignment of ESG ratings (sustainable development ratings), consulting, insurance, and other services for ESG transformation of business models of industry borrowers.

The result of the information procedures will be a decision to recognise the project as sustainable (according to the criteria of the national or intrabank taxonomy) and the conditions for its financing. It should be noted that, like for other forms of lending, the decision will be made primarily on the basis of financial standards of creditworthiness, and the assessment of ESG factors (assessment of risks and opportunities associated with sustainable development) is additional in nature and may:

– lead to the refusal to finance projects with an unacceptable (critical) level of ESG risks;

– will affect the cost of financing (parameters of the bank's variable rate or the level of its subsidisation);

– influence the structure of the loan agreement by including additional ESG terms to mitigate relevant risks (for example, obligations of the borrower to account for and verify greenhouse gas emissions, improve water consumption efficiency, ESG insurance, obtain an ESG rating, formalise the planning and management system for sustainable development, etc.).

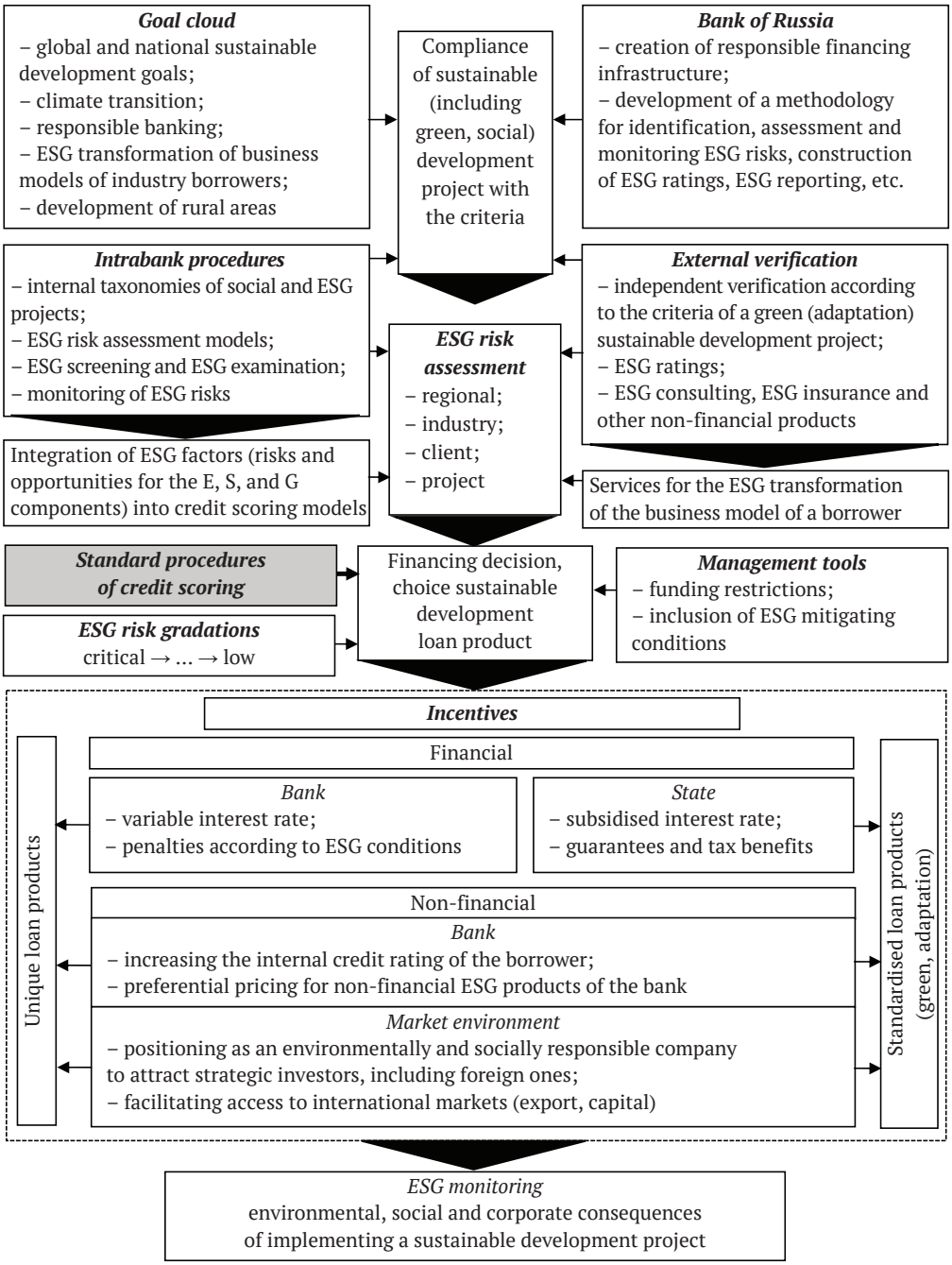

Fig. 2. Model methodology for sustainable lending in the agricultural sector [compiled by the author]

It is advisable to differentiate the product component of the model methodology in accordance with the possible types of credit products for sustainable development, highlighting standardised and unique credit offers. Before defining the difference between them, it should be noted that the instruments for financing sustainable development (sustainable or responsible financing) in the Russian Federation include:

– "green" or "adaptation" bonds;

– "green" or "adaptation" loans, credit lines[1].

Comparing the two types of markets emerging on their basis, the validity of the thesis about the priority of the green loan market for small borrowers, for whom access to the green bond

[1] On amendments to Decree of the Government of the Russian Federation as of September 21, 2021 No. 1587 : Decree of the Government of the Russian Federation as of March 11, 2023 No. 373. Access from the reference and legal system "ConsultantPlus".

market is actually prohibited, should be noted (Miroshnichenko & Mostovaya, 2019). Taking into account this limitation, as well as the peculiarities of agriculture associated with the dominance of small and micro forms of production organisation, the subject area of the study can be narrowed without compromising its complexity, excluding issues of issuing sustainable stock instruments not relevant for the industry. Therefore, all further statements will be about credit instruments for financing sustainable development (sustainable or responsible lending), the common attributes of which are specific:

– lending objects – operating and capital costs (OPEX and CAPEX) associated with the implementation of projects that have been verified according to international, national or intra-bank taxonomies of sustainable projects, the implementation of which is aimed at achieving sustainable development goals, climate change, or achieving specified ESG parameters;

– lending subjects – lenders and borrowers, who are a kind of trendsetters-innovators, capable of perceiving new trends before others and transforming their own business models taking into account the principles of sustainable development, climate neutrality, and ESG factors. Such a transformation involves not only formally consolidating relevant intentions and approaches in internal regulations, but also weighing financial goals through the prism of their impact on the achievability of sustainable development goals;

– institutional lending environment – regulatory framework, infrastructure and government support measures that ensure: a) the influx of private capital into sustainable (green) lending markets through the creation of financial and non-financial incentives that compensate for economic losses from environmental and social restrictions; b) independent or internal (directly by the lender) verification of the financed project according to the criteria of sustainable development; c) the possibility of supplementing standard procedures for credit scoring and creditworthiness confirmation with an assessment of ESG risks (climate risks) and incorporation of variable financial parameters that depend on the fulfilment of non-financial ESG conditions (regulation in this part is still fragmented, but institutional changes are taking place over time will be recorded in formal norms) in the structure of the loan product.

If the project is verified in accordance with the national taxonomy of green (sustainable) projects or recognised international standards (ICMA, CBI, EU) serving as the bases for the national taxonomy, then for its financing we propose to provide *complementary standardised preferential loan products (green and adaptation)* with government support measures integrated into their structure. The following standard elements of such loans in the agricultural sector are suggested:

– a detailed list of short-term and investment lending objects, corresponding to the criteria of the taxonomy, taking into account the additions necessary for agriculture and rural areas;

– the procedure for coordinating applications with the Ministry of Agriculture of the Russian Federation and maintaining a register of potential borrowers (in form it can repeat a similar procedure in the mechanism of preferential lending to the agricultural sector, differing only in the decision-making criteria);

– the maximum loan size per (group of related) borrower and the limits of budget obligations under the subsidy program;

– the upper limit of the interest rate and the procedure for compensating lost income to creditors (subsidy mechanism);

– additional criteria for ranking sustainable development projects by areas and significance (impact results), allowing the use of government loan guarantees and tax benefits (possibly not only for borrowers, but also for lenders) to prioritise the goals and objectives of sustainable development in industry, the regions, and specific rural areas.

The current taxonomy of green (adaptation) projects in agriculture, in our opinion, requires expansion to include projects related to the development of organic agriculture and integrated social development of rural areas,

which form the basis for a complementary line of *standardised loan products* in the form of loans or credit lines for purposes related to their implementation. In turn, the proposed additions expand and complement the current mechanism of preferential lending to the agricultural sector through the implementation (by integrating into it or forming an industry segment of the national sustainable lending market) of the first two ESG components of the concept of sustainable development: environmental (Environmental – addition to the taxonomy of green and adaptation projects in industrial agriculture, as well as the inclusion of organic agriculture along the entire value chain – from production to consumption of organic products) and social (Society – participation of agricultural producers in the development of rural areas). Thus, the proposed standardised credit products for sustainable development allow combining, within the framework of a general incentive mechanism, the strategic goals of agricultural development with the environmental and social component of sustainable development of rural areas, which has the potential to positively affect the effectiveness of goal setting (assessment of economic decisions through the prism of the environmental and social consequences) and budget expenditures for subsidising loan interest (the complexity of solving the economic, environmental, and social problems of a village).

Component G (Governance), in our opinion, does not require the use of any special credit levers, especially in agriculture, where small and medium-sized businesses predominate.

If the project is verified in accordance with the internal bank taxonomy of sustainable, social, or ESG projects, then banks will be able to offer their own line of financing, *unique loan products* with internal financial and non-financial incentives, restrictions and ESG risk management tools integrated into their structure. Such loan offers will be characterised by high variability in the terms and parameters of the loan transaction, associated with obvious differences in the criteria for constructing intrabank taxonomies in different credit institutions, which will make it impossible to standardise them and apply a unified system of government incentives to them.

The last element of the model methodology is a system of incentives differentiated into financial and non-financial in the context of the considered types of sustainable development credit products.

Most researchers, along with regulation, assign the state the role of a "key actor" (Efimova et al., 2023), "creating incentives for responsible green financing" (Evlakhova, 2022), "the engine that starts the process" (Kabir, 2019). The validity of such statements is confirmed by practice, and the forms of government support for sustainable financing are similar across countries and generally differ in organisation and procedures. The main forms are (Kabir, 2019):

– subsidies to cover part of the operating or capital costs when implementing a sustainable development project;

– subsidies to reimburse part of leasing payments or interest rates of loans (preferential leasing or lending – the cost of loan capital is lower than the market, a longer period, etc.);

– issuance (investment) in sustainable investment instruments (primarily bonds) to stimulate the development of the corresponding segment of the stock market;

– state guarantees;

– tax incentives (exemption from payment or refund of taxes, tax deductions, accelerated depreciation, etc., the objects of tax incentives can be R&D costs and investment costs for sustainable development projects).

Additional argumentation regarding the activation of the role of the state in the development of the sustainable finance market appeals to the "financial riskiness" and "lower profitability" of such projects and therefore, the state support acts as a compensatory "mechanism for protecting against the risks of relevant investments" (Plotnikov & Sushcheva, 2022), which removes the contradiction between the choice of economic and non-economic motivation in terms of minimising the "gap between the individual interests of investors (profit) and collective problems (environmental,

social and economic) of society" (Prosvirina & Dovbiy, 2022).

Therefore, for standardised loan products used to finance sustainable development projects, verified according to the national taxonomy, we consider a preferential interest rate as the main financial incentive. A tool that reduces the cost of financing for the borrower can subsidise the lender's shortfall in income, similar to the mechanism of preferential lending used today in the agricultural sector, which will ensure the preservation of the market nature of lending. Additional financial incentives for standardised loan products may include government guarantees and tax incentives for funded sustainable development projects.

For unique loan products, in contrast to standardised ones, only financial incentives will be available for banks that have a proactive position on issues of sustainable development and promoting the concept of sustainable development among their clients. Such banks should become a driver of the ESG transformation of the agricultural sector, a centre of expertise and an agent of change for industry clients. The main financial incentive will also be a reduction in the cost of financing, which (unlike standardised products with government subsidies) is provided by the lender and is realised in the form of a variable interest rate depending on the degree to which the sustainability goals fixed in the loan agreement or the ESG conditions are met. Demotivating incentives may also be used in the form of stipulating financial penalties under ESG terms in the contract.

Non-financial incentives may be common to all types of sustainable lending products and will come from both banks and the borrower's market environment. For banks, the use of non-financial incentives will become another element of the marketing policy, in particular, it can be the integration of ESG ratings (individual ESG factors) into assessing the creditworthiness of the client or creating complex offers, where preferential pricing for other non-financial ESG products of the bank complements the main credit offer. At the same time, the formation of non-financial incentives can occur in the process of market positioning, when creating the image of an environmentally and socially responsible company allows to attract the attention of certain groups of investors focused on ESG principles, and facilitate access to foreign export markets or capital markets of friendly countries.

Discussion

The market for sustainable, or responsible, lending in the agricultural sector is at the initial stage of its development, as a result there is variability in methodological approaches and the absence of a generally accepted conceptual framework, without which the construction of theoretical models and further research is complicated. A possible solution to this problem could be the formation of a conceptual apparatus through the prism of the sustainable development goals, the achievement of which is subject to sustainable financing (Fig. 3).

Sustainable finance is based on *sustainable development goals (SDGs)*, agreed upon by the international community and recorded in a resolution of the UN General Assembly in 2015[2]. These seventeen global goals, along with climate agreements, form the basis of the global *sustainable development* system, which has three key vectors (components of sustainable development): economic (managerial), social, and environmental, the aggregation of which into a single concept allows strategically interconnect the needs of living and future generations.

The obvious relationship between sustainable development goals and ESG creates conditions for harmonising the interests of society and business, since the same phenomenon is considered from different points of view, society and business, which leads to the actual blurring of the boundaries between these concepts in normative and scientific literature. To overcome the existing eclecticism, it is proposed to consider these two concepts in an inextricable link between "concept and practical implementation," where "sustainable

[2] Declaration "Transforming our World: The 2030 Agenda for Sustainable Development" was adopted by resolution of the United Nations General Assembly on September 25, 2015. URL: https://shorturl.at/JPWZ3

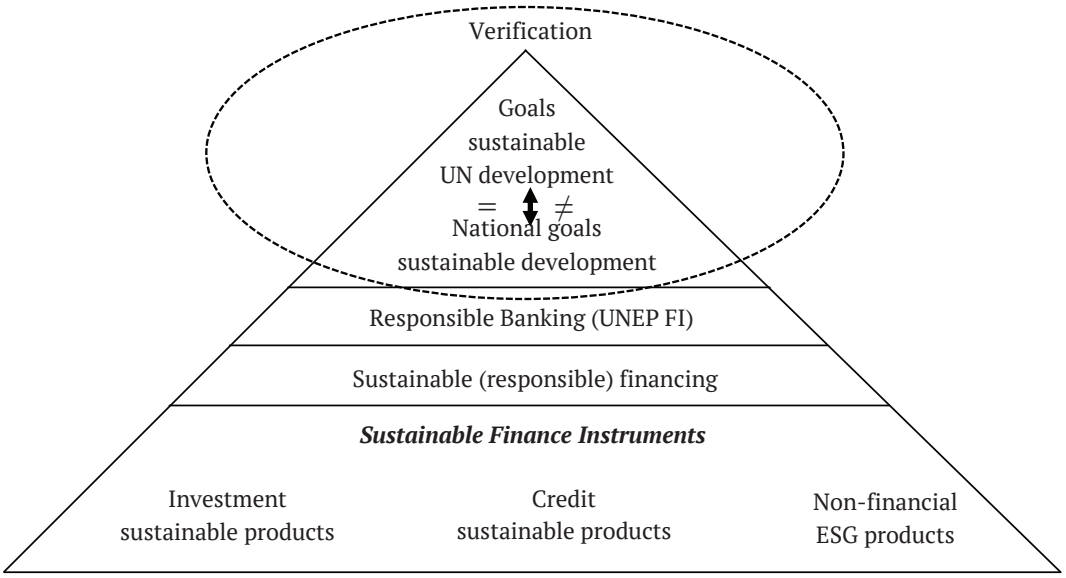

Fig. 3. Goal setting system for sustainable (responsible) financing [compiled by the author]

development" acts as a response to public demands and forms a common ideology, basic ideas, principles, trends, etc. (e. g., the concept as a whole), and ESG is developing as a mechanism for the practical incorporation of the principles of sustainable development into corporate governance and government regulation, e. g. a set of rules and approaches to transforming business models in accordance with the general concept.

The unconditional significance and comprehensive nature of the SDGs do not negate the need to take into account national interests, e. g. the verification of the SDGs through the prism of national goals and priorities for sustainable development[3], in fact, forming the upper level of the goal-setting hierarchy (this approach has already been actually implemented for the construction of a national taxonomy of sustainable development projects[4]). Moreover, the legal implementation of international obligations in SDGs should be limited if they interfere with "global competitiveness, import substitution and import priority… the strategic development of the country" (Korobeinikova & Stefanovich, 2023).

In agriculture, in addition to the priority of national interests and food security (Vorobyov et al., 2019), the criteria for sustainable development are proposed to include the following goals:

– maintaining the global competitiveness of the industry;

– sustainable and integrated development of rural areas;

– preservation of the rural way of life;

– national and cultural diversity with adjustments to the macroeconomic and political realities of a particular historical period.

One of the key barriers limiting the ability to achieve the stated goals in the near future is the gap between the actual and required level of financing, which determines the leading role of financial institutions in the concept of sustainable development. In particular, the gap in annual sustainable (including green) investments is estimated today at $2.5–4.2 trillion in developing countries to achieve the 17 UN Sustainable Development Goals by 2030 and at $9 trillion overall in the world economy to achieve carbon neutrality by 2050 (Tarasova & Lyashko, 2023).

[3] Goals and main directions of sustainable (including green) development of the Russian Federation : Order of the Government of the Russian Federation dated July 14, 2021 No. 1912-r. Access from the reference and legal system "ConsultantPlus".

[4] On the approval of criteria for sustainable (including green) development projects in the Russian Federation and requirements for the verification system of financing instruments for sustainable development in the Russian Federation : Decree of the Government of the Russian Federation of September 21, 2021 No. 1587 (as amended on March 11, 2023). Access from the reference and legal system "ConsultantPlus".

In the financial sector, SDGs and the goals of the Paris Agreement are reflected in the principles of *responsible banking*[5], securing the leading role of banks in achieving them, manifested in the redistribution of capital flows in favour of industries, enterprises and projects that make the greatest contribution (Bukhari et al., 2020). The concept of responsible banking involves the transformation of business models and strategies of banking activities based on strengthening the environmental, social and governance responsibility of banks when making financial decisions (Chiaramonte et al., 2021) taking into account ESG risks (Tommaso & Thornton, 2020), as well as embedding sustainability development practices, not only in the business model of banks, but also in promoting the ESG agenda in the client environment.

The practical implementation of the considered goals and principles in the financial sector was the formation of an independent segment of the financial market – *sustainable or responsible finance market*. Both terms appear as synonyms in both regulatory and scientific literature, and it can be assumed that the origin of the first is associated with the goals of sustainable development, and the origin of the second is associated with the principles of responsible banking. Taking into account their identity and derivative nature, the same approach can be extended to sustainable or responsible financing, considering the first concept to be basic, and the second concept is derivative, but reflecting the same phenomenon.

Therefore, under *sustainable (responsible) financing* as "an integral component of achieving global and national sustainable development goals" (Tarkhanova & Fricler, 2020) it is proposed to understand a set of specific approaches, standards, methodologies, incentives and investment and lending tools, within which the decision-making process on financing, along with financial logic, includes accounting environmental, social and governance risks and consequences of the funded project, verified according to SDGs or national sustainable development goals. The proposed definition aggregates the approaches of the G20 Working Group (Sustainable Finance Working Group), which defines it as "financing projects that have a positive impact on achieving the UN SDGs"[6], and the European Commission as "the process of taking environmental, social and governance (ESG) factors into account when making investment decisions in the financial sector"[7]. The use of the term sustainable finance as a unifying term for such concepts as "green (including climate) finance", "transition finance" and "social finance" also should be noted (Shushkevich, 2022).

The material form of existence and transfer of value within the framework of sustainable (responsible) financing is *sustainable finance instruments* (and even in the regulatory documents the terminology has not yet been defined, for example, "financial instrument for sustainable development"[8] or "sustainable development financing instrument"[9] are used as synonyms). A basic attribute of such instruments is their use to finance sustainable development projects.

Specific types of sustainable finance instruments are presented *financial and non-financial products for sustainable development*. We propose to classify financial products for sustainable development into *investment and credit*. The first from the list of the Bank of Russia includes various bonds, shares of mutual and exchange-traded investment funds, derivatives, trust management services, insurance and others, the second product includes loans and borrowings.

[5] "Principles for Responsible Banking" of the United Nations Environment Program Financial Initiative (UNEP FI). URL: https://shorturl.at/akFZ3

[6] Sustainable Finance Synthesis report, 2018. G20 Sustainable Finance Working Group. URL: https://shorturl.at/iqrS1

[7] Sustainable finance. European Commission. URL: https://shorturl.at/nqDPV

[8] On the approval of criteria for sustainable (including green) development projects in the Russian Federation and requirements for the verification system of financing instruments for sustainable development in the Russian Federation : Decree of the Government of the Russian Federation of September 21, 2021 No. 1587 (as amended on March 11, 2023). Access from the reference and legal system "ConsultantPlus".

[9] Bank of Russia. Glossary of terms in sustainable development finance and climate regulation. URL: https://cbr.ru/develop/ur/faq

The criterion for classifying the listed products as financial products of sustainable development is the purpose of financing, which must ensure (directly or indirectly) the achievement of the SDGs, the goals of the Paris Agreement, the national goals of sustainable development of the Russian Federation and (or) take into account ESG factors. For sustainable development loan products, the regulator allows any lending purposes, provided that the borrower's non-financial obligations in the climate transition or sustainable development are fixed in the loan agreement (e. g., obligations to achieve certain goals or ESG-performance indicators). Thus, the concept of "sustainable development loan product" is not identical to (includes) the concept of "green" loan, the goals of which are limited exclusively to environmental projects (Luo et al., 2017; Xi et al., 2020).

We propose to define the market in which sustainable development credit products for the agricultural sector will be circulated as the *industry sustainable lending market*, but in functional terms we are talking about *sustainable lending*. The sustainable lending market is expected to increase from 2.2 trillion dollars at the end of 2020 to 11 trillion dollars in 2025 (Vasilieva & Bakrunov, 2022). *Non-financial ESG products* (environmental insurance, ESG consulting, ESG ratings, etc.) indirectly incorporated into sustainable lending practices as assessment and mitigation tools of ESG-risks, as well as the ESG transformation of borrowers' businesses.

Conclusions

Institutionalisation of global concepts of sustainable development, climate neutrality, and ESG is leading to the formation of a new direction in agricultural lending, sustainable or responsible lending. The developed methodology for sustainable lending in the agricultural sector is distinguished by: 1) scenario forecasting of development strategies for the national responsible lending market in the agricultural sector and development of a target acceleration model based on the proactive and congruent participation of the state and banks, consolidation of institutional changes in formal norms, development of infrastructure and incentives; 2) presentation of a model methodology for sustainable lending in terms of three structural components: a) informational in terms of developing the goal-setting function, consolidating institutional changes, incorporating ESG factors into the lending process, and developing non-financial ESG products; b) product in terms of differentiation of credit products and standardisation of their structure; c) incentive systems in terms of justification of possible financial and non-financial incentives based on types of credit products for sustainable development.

Conflict of Interest

The author declares the absence of obvious and potential conflicts of interest related to the publication of this article.

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Финансы

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Модельная методология устойчивого кредитования в АПК

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Предмет. Процессы внутренней институционализации и государственного регулирования рынка устойчивого кредитования в АПК, а также ESG-трансформации бизнес-процессов кредиторов и заемщиков в рамках концепции устойчивого развития.
Цели исследования. Формирование понятийного аппарата устойчивого кредитования и прогнозных сценариев его развития в АПК; разработка модельной методологии, обеспечивающей структурную перестройку отраслевого кредитного механизма в части инкорпорирования целей устойчивого развития и ESG-факторов в кредитные процедуры банков и бизнес-процессы заемщиков, рост предложения соответствующих кредитных продуктов, формирование системы рыночных и государственных стимулов.
Методология. Разработанная модельная методология устойчивого кредитования опирается на концепции устойчивого развития, ESG, ответственного банкинга и устойчивого финансирования. Для достижения поставленных целей автором использованы методы абстрагирования, обобщения, формализации, аналогий, сценарного прогнозирования.
Результаты. Показано, что концепция устойчивого развития и принципы ответственного банкинга формируют базис устойчивого финансирования, направлением которого является устойчивое кредитование. Сформирован понятийный аппарат устойчивого кредитования, позволивший отнести его к инструментам финансирования для достижения целей устойчивого развития.
Выводы. На основе сценарного прогнозирования обоснована акселерационная модель формирования рынка устойчивого кредитования в АПК, предполагающая проактивную роль государства и банков (продвижение ценностей, стимулы), закрепление институциональных изменений, развитие инфраструктуры. Разработана модельная методология устойчивого кредитования в АПК, включающая три структурных компонента: информационный, продуктовый и систему стимулов. Информационный компонент выполняет функции целеполагания, закрепления в формальных нормах и регулировании институциональных изменений, инкорпорирования ESG-факторов в стандартные процедуры кредитного скоринга, развития рынка нефинансовых ESG-продуктов. Продуктовый компонент дифференцирован по типам кредитных продуктов устойчивого развития. Для верифицируемых проектов предложены стандартизированные кредитные продукты, включающие меры государственной поддержки. Для проектов, финансируемых по стандартам банков, предложены уникальные кредитные продукты с интегрированными в их структуру внутренними финансовыми и нефинансовыми стимулами, ограничениями и инструментами управления ESG-рисками. Система стимулов дифференцирована на финансовые и нефинансовые в разрезе типов кредитных продуктов.
Ключевые слова: устойчивое развитие, устойчивое финансирование, ESG, кредитные продукты устойчивого развития, ответственный банкинг.

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