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## THE THEMATIC DEBT MARKET IN SUPPORT OF SUSTAINABLE DEVELOPMENT OF RURAL AREAS – OPPORTUNITIES AND CHALLENGES

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**Abstract:** Despite the extraordinary diversity of rural areas on a global scale, they are administrative and geographical areas where agricultural production dominates and contributes to food security, as well as where vital ecosystems function. Industrial revolutions and socio-economic processes led to the reduction of the population in rural areas as a whole and even to their depopulation in certain regions of the world, while causing environmental pollution and disruption of biodiversity. In many countries, the agenda is to develop strategies and to take measures to preserve, revive and develop rural areas, to attract young people and ensure employment, for prosperity and transition to an economic, social and environmental sustainability.

In this article, the possibilities of using the so-called thematic bonds for financing the sustainable development of rural areas. More specifically, the following tasks are set to be solved in it.

First, to present the current problems and challenges facing rural areas.

Second, to examine the traditional instruments used in individual countries to finance rural areas, including those aimed at sustainable development.

And third, to analyze the thematic bond market in the context of their use to finance the transition to sustainability in rural areas.

The article argues and proves that despite some problems and challenges, green and social bonds, sustainability bonds and sustainability-related bonds can be used both as a tool for direct and indirect financing of agriculture sector and rural areas in general.

**Keywords:** rural areas, sustainable finance, green bonds, social bonds, sustainability bonds, SLBs

### 1. INTRODUCTION

Rural areas are the subject of research and analysis by scientists from several scientific fields, as well as experts from institutions at various levels. When defining them, specific criteria are laid down in classifications for national, regional and international purposes, due to the "extreme diversity in terms of economic and social status, history, traditions, natural and cultural features". Moreover, the definitions themselves are subject to discussions and corrections "to reflect the changes in the socio-economic conditions or the administrative-territorial structure in individual countries" (Georgieva, 2018, 36).

Regardless of the differences and dynamics of the defining criteria, rural areas are characterized by lower population density and large areas of undeveloped land. The leading industry in most of the countries is agriculture, and due to the lower presence of buildings and population, they have authentic nature where people can spend their time for recreation, hobbies and tourism (National Geographic, 2023). According to estimates of the information platform Statista (2023a), in 2021, 43% of the population lives in rural areas, with a serious downward trend observed in the last three decades. Due to the changes in the structure of national economies and the advantages of urban areas in the field of education, culture, health care, administrative services, etc., urbanization affects developing countries more and more, but the share of agriculture in the gross domestic product, in exports and in providing employment remains high. At the same time, agriculture is at the beginning of the food chain and the basis of ensuring food security. In the European Union, 137 million people or about 26% of the population live in rural areas, but they account for 83% of its territory (European Union/Rural Vision, 2023).

The new definition laid down in the Strategic Plan for the Development of Agriculture and Rural Areas of the Republic of Bulgaria for the period 2023-2027 defines as "rural areas the municipalities in which there is no inhabited place with a population of more than 15,000 people" (Ministry of Agriculture and Food, 2023, 434). According to this definition, in Bulgaria 215 out of a total of 265, or over 80% of the municipalities are classified as rural areas, with 31% of the population living in them (European Union/Rural Observatory, 2023a).

Based on the place and role of rural areas for socio-economic development, the present article focuses on the study of the possibilities of using the so-called thematic bonds for financing rural areas and ensuring economic, social and environmental sustainability in them. That is why, in the first place, the article considers the peculiarities and the more important problems facing rural areas today. Second, popular instruments used in individual countries to finance the transition to sustainability in rural areas are examined. Finally, in accordance with the peculiarities and limitations of statistical information, an analysis of the use of thematic bonds in agriculture as a sector – the core of

rural development is carried out. It is argued that despite some problems and challenges, green and social bonds, sustainability bonds and sustainability-linked bonds can be used as both a direct and indirect financing tool for agriculture and rural areas in general.

## **2. RURAL AREAS – CURRENT CHALLENGES**

The defining features of rural areas and the dynamics of social and economic processes highlight the following more significant problems and challenges related to their development today.

First, rural areas are more affected by population decline and aging. Thus, for example, a lower share of the population in all age groups under 50 years of age lives in the rural areas of the EU (European Union/ Rural Vision, 2023).

Second, there is a downward trend in the proportion of people with higher income levels living in rural areas. There is also an observed correlation that the proportion of people living in rural areas is lower in countries with a higher level of income. For example, in 2021 less than 1/5 of the population in high-income countries lived in rural areas, compared to about 65 percent among people living in least developed and low-income countries. In the same year, Papua New Guinea was the country with the highest proportion of the population living in rural areas (Statista, 2023b). EU statistics also report that a larger percentage of the population in rural areas lives at risk of poverty and social exclusion compared to other areas – 18.1% respectively compared to 16.8% EU average (EU/ Rural Observatory, 2023b). However, the distribution by country is uneven, with the largest share of the population at risk of poverty and social exclusion in the Member States of Eastern and Southern Europe (Eurostat, 2023).

Next, access to services and infrastructure in rural areas globally, including health, social, educational, postal and banking services, is severely limited. In the EU, the average road distance to essential services is much shorter in urban areas than in rural areas – for example, the average distance to the nearest health center is 3.5 km, while for remote rural areas the average distance is almost 21.5 km, and only 60% of rural households have access to fast broadband (>30Mbps), compared to 86% of the EU population as a whole (European Union/Rural Vision, 2023b).

Fourth, there are significant differences in the economic development of rural areas compared to the rest. Primarily rural areas are associated with agriculture, forestry and fisheries, and there is a tendency towards a continuous decrease in their contribution to the gross domestic product and employment. In the EU, GDP per capita in rural areas is only ¾ of the average for the Union as a whole, regardless of the trend towards less differentiation. At the same time, the employment rate is higher in rural areas than in cities, increasing for the period 2012-2021 from 68% to 73%, which is, however, associated with a decrease in the active population in rural areas (European Commission, 2021, 4-5).

Fifth, there is a tendency to diversify the structure of the economy in rural areas, with growing share of services – for example, recreation and tourism. In this regard, in the EU, the number of tourist nights per inhabitant in rural areas is three times higher than in urban areas. On the other hand, more and more rural areas are associated not just with agriculture, but with the so-called bioeconomy. FAO (2018, 3) defines the bioeconomy as "the production, use and storage of biological resources, including related knowledge, science, technology and innovation, to provide information, products, processes and services in all economic sectors aimed at a sustainable economy". Specifically, it covers agriculture and forestry, fisheries, aquaculture, food production, feed, bioenergy and bio-based products. The bioeconomy in the EU has an annual turnover of 2.2 trillion euros and provides employment to around 17.5 million people. In a high-growth scenario, the total annual turnover of the bioeconomy sector in the EU could reach €3 trillion by 2050 and create up to 700,000 jobs, mostly in urban, coastal and rural areas (European Union/ Rural Vision, 2023).

The outlined features and trends in rural areas apply to an even greater extent to the countries of Central and Eastern Europe, including Bulgaria. A leading cause of the depopulation of rural areas in our country is the migration of part of the population to cities and abroad, caused by high unemployment, low living standards and less and less access to social services (See Ilcheva, 2022, 11-12).

The problems facing rural areas are catalysed by environmental changes, affecting them more acutely than other regions. To overcome them, decisions and actions are taken by the public sector, local authorities, businesses and civil organizations. EU interventions aim to support the diversity and sustainability of agriculture and the quality of life in rural areas (Byanov, 2015, 140). In this sense, the so-called Long-Term Vision for Rural Areas by 2040 comes into effect in the EU, which provides the foundation for building rural areas as 'stronger, connected, sustainable, and prosperous by 2040' (European Commission, 2021, 11 and following). A pivotal moment logically found in strategic documents and development plans for rural areas is the search for funding opportunities, especially in the context of digitalization and the pursuit of a greener, more inclusive, and equitable economy.

### 3. SUSTAINABLE DEVELOPMENT OF RURAL AREAS AND ITS FINANCING

The following sources and instruments are used to finance sustainable development in rural areas on a global scale.

- **Public and private investments.** Depending on the administrative-territorial structure and the peculiarities of the budget system in individual countries, cities and municipalities in rural areas can attract public and private funds and direct them to infrastructure construction (road construction, water supply, etc.), in support of agriculture, in the development of tourism, as well as to the construction and maintenance of renewable energy sources, contributing to the energy independence of rural areas. When constructing infrastructure in rural areas, the aim should be directed towards using materials with a minimal detrimental impact. Environmental, or so-called 'green', materials provide an opportunity for both creating an ecological living environment and optimizing the utilization of energy and raw resources (Ivanova, 2021, 117).

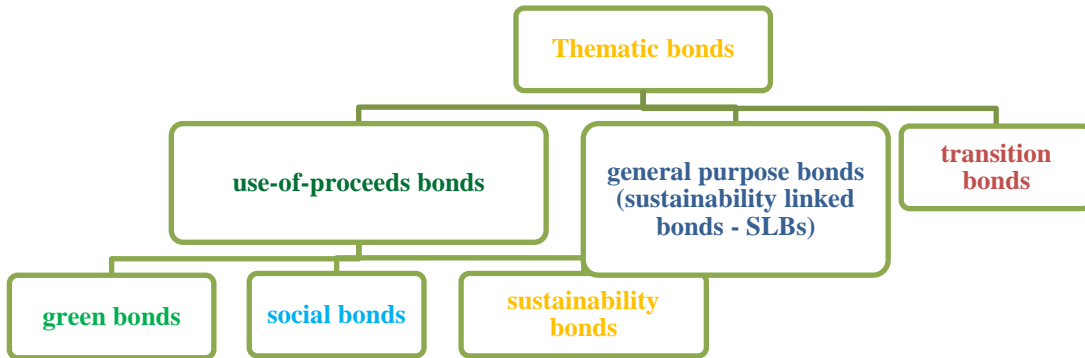
- **Regional and national funds and banks provide subsidies, equity participation, and/or loans under favourable terms.** The possibilities of using regional sources are related to the belonging of the respective country to a certain regional economic community. Rural areas will have to respond to the changing conditions for regional development, and measures in the direction of sustainable development could help local authorities to preserve valuable jobs and revive the local economy (Byanova, 2022, 147). Within the EU, rural areas are supported through various funds and programs promoting sustainable development, agriculture, energy efficiency, biodiversity, socio-economic structure, etc. Specifically, member states can leverage the opportunities offered by the strategic plans of the Common Agricultural Policy, particularly the European Agricultural Fund for Rural Development, the programs under the cohesion policy (European Regional Development Fund, Cohesion Fund, European Social Fund +), the Recovery and Resilience Mechanism, InvestEU, and other programs, as well as the European Investment Bank to address investment gaps in rural areas (European Commission, 18; ESC, 11). In China, as part of the establishment of a Green Financial System, various types of development-oriented green funds are established at both national and local levels. These funds bring together the efforts of local financial institutions, investment intermediaries, state and private enterprises, and invest through equity capital for a predetermined period (Wang, 2018, 278). In Kazakhstan, where agriculture holds significant potential, state entities like KazAgroFinance JSC, Fund for Financial Support of Agriculture JSC, and Kazakh Agrarian Credit Corporation have been established for financing sustainable rural development through loans and other forms of support (ITA, 2023; Nurzhanova et al., 2023).

- **Microcredit from financial institutions and cooperatives.** Microcredits are provided to small businesses, farmers, entrepreneurs and individual entrepreneurs in rural areas who need financial support for the development of their business, including for the implementation of green tourism and agricultural ideas. For example, in the United States, Grameen America, a branch of Grameen Bank, founded by Professor Muhammad Yunus in Bangladesh, provides microcredit and accompanying support to small businesses and entrepreneurs in the United States, with the aim of reducing poverty (Grameen America, 2023). and in the EU – the European Microfinance Network (EMN) and the European Investment Fund (EIF). The EMN is a membership-based not-for-profit organization based in Brussels that promotes microfinance as a tool to combat social and financial exclusion in Europe through self-employment and micro-enterprise creation, and the EIF, majority-owned by the EIB, provides financing to small and medium-sized enterprises through risk capital and risk financing instruments (EU/ EIB, 2023).

Besides these traditional ways, specific tools that can be used are the so-called thematic bonds. Through them, funds can be mobilized in central and local budgets, from supranational, state and private banks and funds and redistributed to individual enterprises, cooperatives and/or individuals, and also directly – from the enterprises themselves, with an object of activity in agriculture, tourism, etc. in rural areas. Following the launch of the pioneering climate bonds by the EIB and the World Bank in 2007-2008, the market for fixed-income financial instruments designed for ecological projects and activities initially experienced gradual growth, which turned into exponential development after 2014-2015. Their model, in turn, became the foundation for the subsequent diversification of investment objectives and the debt instruments themselves, as well as for the establishment of regulatory guidelines on international, regional, and national levels (see Tsonkova, 2022, 60-63).

### 4. DYNAMIC AND STRUCTURAL ANALYSIS OF THE THEMATIC DEBT MARKET IN THE CONTEXT OF THE PROBLEMS OF RURAL AREAS

Taking into account the dynamics of market practices, as well as the framework of the leading organizations that accumulate and analyse information and drivers in market regulations, such as ICMA, CBI, etc., we should highlight four main types of thematic bonds suitable for financing environmental and social initiatives within rural areas (Figure 1).



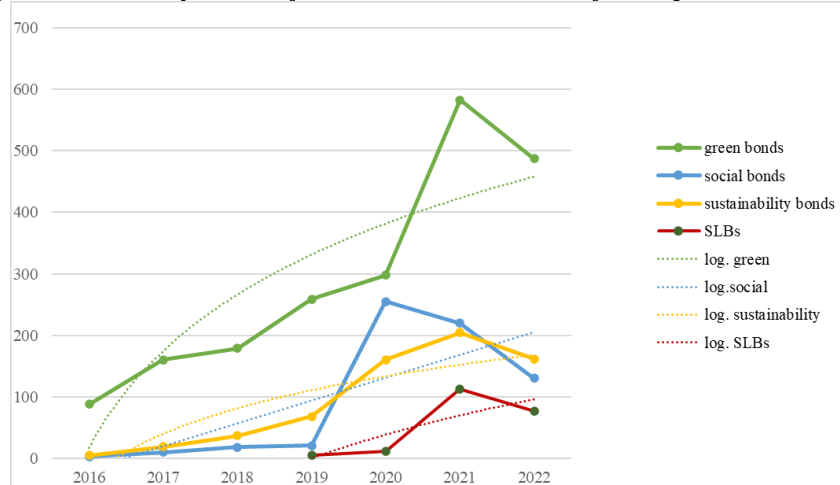
**Figure. 1. Thematic bonds suitable for sustainable financing of rural areas**

'Use of proceeds' bonds are utilized to fund projects with specific focuses – environmental, social, or both combined (sustainability bonds). General purpose bonds or sustainability-linked bonds do not have a specific direction but include financial 'penalties' or 'rewards' that the issuer pays if predefined and time-bound sustainability-performance targets (SPTs) are not met. Transition bonds are instruments issued by companies in environmentally problematic industries, operating in sectors outside green taxonomies.

Organizations that collect and analyse data on the thematic bond market do not structure the information according to whether the funds are intended for rural or other areas. Therefore, the scale and dynamics of the use of these tools within rural areas cannot be traced precisely, but can be judged indirectly, based on the available data and some considerations.

First and foremost, the dynamics and structure of the entire thematic debt market for sustainability are indicative of trends also observed in rural areas, as a significant portion of the investment guidelines to varying extents apply to all regions within countries. These guidelines encompass areas such as renewable energy sources, infrastructure, clean transportation, access to essential services, socio-economic progress and empowerment, employment generation including through financing SMEs and microfinance, and more. From the Climate Bond Initiative (CBI) dynamic data series analysis it can be concluded that there is a positive trend in the total volume of the primary market until 2021 in general and in the individual sub-segments. The market's direction is tied to the catalysing role of common regulations related to climate, environment, social and health topics, the diversification of issuer structure across sectors, geographical regions, and other indicators, as well as innovations in financial markets. Geopolitical issues and economic cooling in 2022 have led to declines in the volumes of debt markets overall, including specifically in the sustainable instruments market (Figure 2).

**Figure. 2. Market dynamics of the thematic bond market for the period 2016 – 2022.**



Source: According to CBI data.

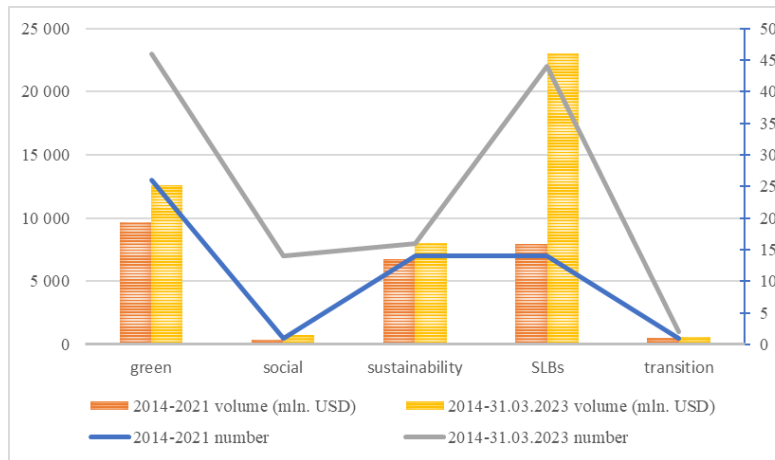
Next, the scale of the thematic debt market aimed at rural areas can be judged by the structure according to the key sectors of investment of the funds and the focus on specific goals for sustainable development. Data from the specialized website Environmental Finance show that the two leading directions for use of the proceeds are renewable energy and clean transport – worth 130 and 89 billion dollars, respectively, which represents ¼ of the total market volume. However, we should highlight food security, preservation of terrestrial and marine biodiversity, job creation, sustainable management of living natural resources and sustainable water management, making up a total of \$114.3 billion or 13% of the total volume of the thematic debt market and here the issuers from the financial sector, sovereign issues and the issues of the development banks intended for the relevant area should also be taken into account (Environmental Finance, 2023, 16-17). These areas can be referred to the rural economy in a broader aspect, and the latter is almost entirely tied to "production" within the rural areas.

If we prioritize sustainable development goals (SDGs) as the leading criterion, data reveals that the highest alignment of fund usage is with goals related to the energy and transportation sectors. The second goal - 'Zero Hunger' – is one of the least funded objectives with a share of less than 1% of total funds. This goal holds potential for future fund allocation and is particularly suitable for rural areas.

In fact, agriculture accounts for 4% of the global GDP, reaching over 25% in the least developed countries (World Bank, 2023). The sector is crucial as healthy, sustainable, and inclusive food systems are among the most important tools to end extreme poverty and provide nourishment to the projected 9.7 billion people by 2050. Moreover, growth in the agricultural sector is two to four times more effective in increasing incomes among the poorest compared to other sectors.

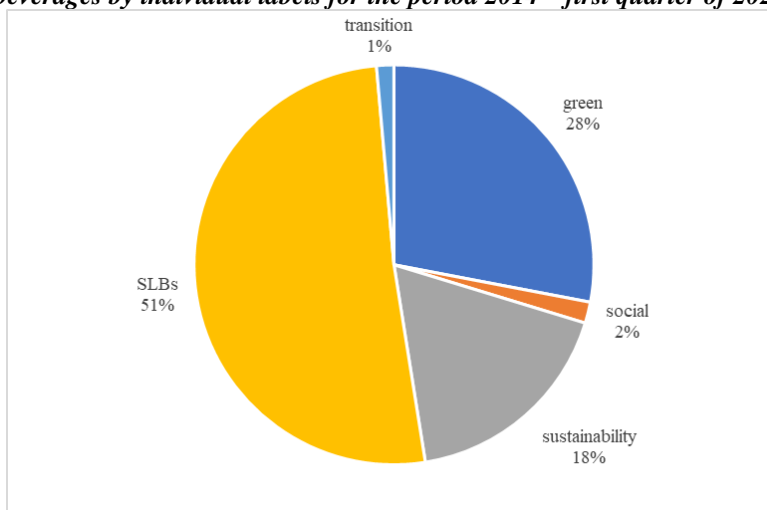
Analysing the structure of thematic bonds issued solely by non-financial enterprises in the agriculture, fisheries, food, and non-alcoholic beverage sectors can provide important insights into the scale and trends within the sector (Figures 3 and 4).

**Figure 3. Cumulative value and total number of issued thematic bonds from the agriculture, fisheries, food and non-alcoholic beverages sector by individual labels**



Source: Author`s calculations according to Environmental Finance data.

*Figure. 4. Structure of the issued thematic bonds from the sector of agriculture, fisheries, food and non-alcoholic beverages by individual labels for the period 2014 – first quarter of 2023.*



Source: Author`s calculations according to Environmental Finance data.

For the period from 2014 to the end of the first quarter of 2023, the total number of bonds issued by enterprises in agriculture, fisheries, food and non-alcoholic beverages belonging to sustainable debt is 122. More than half of them are issued only for 2022 and the first quarter of 2023. The cumulative value of the issuances in the sector amounted to 45 billion US dollars, with 20 billion dollars being the increase for 2022 and the first quarter of 2023. Against the background of the contraction of the overall sustainable debt market in 2022, there is a positive trend for the thematic instruments in agriculture and related sectors both in terms of number of issuers and in terms of value.

The largest share is sustainability-linked bonds (SLBs), which is logical, since they can be used not only for specific, but for general corporate purposes, and also the reporting requirements are not so strict. Next in volume are bonds with a green label, although they occupy first place in terms of the number of issuers. For the period from 2022 to the end of the first quarter of 2023, there is substantial growth in social bonds, despite the low starting base. Regardless of the great potential of sustainability bonds, combining environmental and social focus of the funds, interest in them has been weak for the last year. The so-called transition bonds have the least representation – with only 2 enterprises. The reasons are related to the general lower prevalence of this label.

Overall, despite an increasingly strong market presence, sustainability-focused bonds in the agribusiness, fisheries, food and non-alcoholic beverage sector account for between 1 and 2% of the total value of the sustainable debt market. It should be noted, however, that funds accumulated through sustainable bond issues by development banks, governments and financial institutions are also directed to the sector.

In regional terms, the most significant is the performance of the North America region with 30% of global issues, followed by Europe and Central Asia with 28%, East Asia and the Pacific region with a share of 21%, and the largest issuers are companies from the USA, Australia, Mexico and Great Britain. Among the so-called emerging markets within the EU, Poland and Romania are the leaders with the fastest growing debt market of sustainable instruments. Both economies are characterized by rapid economic growth, as well as an important presence of agriculture in GDP and employment. However, no thematic bonds have yet been issued by the agribusiness sector (Environmental Finance, 2023, 39, 48).

## **5. PROSPECTS FOR THE DEVELOPMENT OF THE DEBT MARKET IN SUPPORT OF RURAL AREAS**

Bonds are issued by multilateral development banks, governments, local authorities and joint stock companies. This explains their less frequent use in the agribusiness sector – typical of rural areas where micro-enterprises and small enterprises predominate. At the same time, bonds can be used to mobilize funds at a lower cost from development banks and governments and target relevant projects in different sectors and regions. The lower cost of capital, as well as the importance of agriculture to national economies, makes them a potentially attractive instrument for financing projects with environmental and/or social characteristics and benefits. The fragmented, heterogeneous and complex nature of the agricultural sector is the reason for the low relative share of companies from the real sector, issuing green, social, etc. thematic bonds. The lack of precedential emissions in CEE countries, including those with

a high relative share of agriculture in GDP and employment, is also a leading cause of limited or missing markets to date.

The transition to sustainable food systems, on the one hand, and increasing financial competence, on the other, are the determinants for the future development of the sustainable debt market in the agribusiness sector and rural areas in general. However, this requires a complex approach at all levels of management and cooperation efforts of public authorities, the private sector, the non-governmental sector and social partners along the food production and supply chain (Rangone, Ali, 2021, 324). It is also necessary to accumulate and disseminate information about the primary and secondary market of thematic bonds, through the focus of rural areas financing, which is not available at this stage.

## 6. CONCLUSION

Rural areas are vital to the global population because of their leading role in food production, in protecting the natural environment and in providing clean places for recreation and tourism. The accumulation of increasingly serious environmental and social problems raises the issue of financing their sustainable development. Traditional financing instruments offered by national and supranational funds and financial institutions are related to accumulation of funds from various sources. After the pioneering projects by the EIB and the World Bank in 2007-2008, and particularly following the initiation of international and regional regulation for green bonds, a new and specific segment in the fixed-income instrument market emerged, known as the thematic, GSS+ or ESG bond market. Institutions, companies, and entrepreneurs in rural areas can tap into the advantages of this market, which gains priority within the investment community. This is accomplished both indirectly, through proceeds from issues of sovereign and sub-sovereign bonds and bonds issued by financial institutions for funding sustainable projects, and directly, which is within the realm of this sector functioning as joint-stock companies.

However, to stimulate the development of this segment, a broader educational campaign and initiative are necessary from central and local authorities, as well as collaboration among various stakeholders – the public sector, capital market institutions, sector-specific and civil organizations, and non-financial enterprises.

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