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Vesna Martin *

* National Bank of Serbia, Belgrade, Serbia

E-mail:
vesna.martin@nbs.rs;
martinv0803@hotmail.com

Green Finance: Regulation and Instruments[1]

What we are doing to the forests of the world is but a mirror reflection of what we are doing to ourselves and to one another.

Mahatma Gandhi

Abstract: Green finance is the basis for the development of sustainable financing of environmental projects with the aim of respecting environmental and social aspects in making investment decisions. The development of green finance enables a green transition towards economic growth that will be sustainable in the long run because it is based on the principles of preserving the environment and reducing the risk of climate change. This creates a basis for preserving macroeconomic stability based on the development of new alternative sources of financing. The aim of this paper is to present green finance, with special reference to Serbia. The paper covers the regulation of green finance, but also the analysis of green finance instruments in terms of types and features and their development.

Keywords: green finance, sustainability objectives, environment regulation, climate protection.

JEL Classification: E44, E58, O44, Q58.

[1] The views expressed in the paper are those of the author and do not necessarily represent the official view of the National Bank of Serbia.

1. Introduction

In the last few years, climate change has become a major topic at the global level given its impact on the real and financial sectors. Climate change is a topic of great importance today, taking into account that the costs of climate change remediation can significantly affect the implementation of fiscal and monetary policy, as well as achieving and maintaining price and financial stability. In order to achieve full implementation of the principles of global sustainable development at the global level, it is necessary to create economic growth and development on a long-term sustainable basis. In order to create such a system, it is necessary to actively work on remediation of the impact of climate change, while attaching equal importance to preventive action. For all this, the development of green finance is of great importance, which represents the process of making investment decisions while respecting environmental and wider social aspects.

The development of green finance implies equal involvement of private and public sector entities (governments, central banks, corporates, households, international organizations) to develop, promote, implement and support sustainable environmental projects through the issuance of various financial instruments. Through the development of green finance, support can be provided to address the risks of climate change and reduce the impact of these changes on the environment. The development of green finance will not only mean the possibility of generating funds for environmentally sustainable projects, but also the opportunity for many companies, both public and private, to use the green transition to improve their competitiveness, efficiency and sustainability, which includes financial sustainability. In addition, green finance implies respect for the principle of green building, which in turn reduces costs for residential, commercial and industrial real estate, but also obtaining electricity from renewable sources (hydropower, wind, solar, biomass).

The aim of this paper is to analyse green finance, with special emphasis on the presentation of regulations and characteristics of instruments that can be marked as green. The paper is divided into the following parts. The introductory discussion is succeeding by a review of the literature, followed by a presentation of green finance regulations. The fourth part of the paper is focusing on the presentation of green finance instruments, while the fifth part of the paper will present the process of development of green finance in Serbia. In conclusion, we will summarize the main findings of this paper.

2. Literature review

On 11 December 2019, the European Commission has adopted a series of political initiatives called the "European Green Deal" with the goal of making the European Union climate neutral by 2050. In order to invest in a green future, the European Commission has committed to mobilizing at least 1 trillion euros in the next decade. Some 30% of the multiannual budget of the European Union for the period from 2021 to 2028 has been set aside for green investments, as well as the instruments of the NextGenerationEU (NGEU) program adopted to remedy the consequences of the Covid-19 pandemic (European Commission, 2019). This initiative points to the need for the highest state bodies at the level of the European Union to react and make adequate decisions, but it also shows that the green transition requires the engagement of significant financial resources. In order to mobilize significant financial resources, green finance instruments are being developed.

The expansion and development of the financial sector is essential for the development of both national economies and local economic entities (Khan, 2022). According to Ogunmola, Chien, Chau and Li (2021), proper capitalization is vital for the banking sector, which makes up the majority of the financial sector, whereas stable inflation is important from the central bank's point of view (Trabelsi, 2021). According to Sachs (2014), the main goal of the global financial system is to achieve the allocation of savings at the global level in order to use it in the most productive way. In case the financial system functions adequately, savings are focused on investments that can increase the standard of living, while in case of poor functioning of the financial system, savings can be allocated to projects harmful to the environment and real estate bubbles. Global warming and climate change are globally largely caused by greenhouse gas (GHG) emissions that require government intervention in order to align with the goals of the Paris Climate Agreement and the Sustainable Development Goals (SDGs). With the purpose of reducing global warming in 2016, the Paris Agreement was signed within the United Nations Framework Convention on Climate Change - UNFCCC with the aim of limiting global warming below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels (The Paris Agreement). Climate change associated with global warming increases physical risks to health, production, transportation, housing, electricity generation and distribution, but also affects other sectors as well as financial markets (Schellhorn, 2019).

Wang and Zhia (2016) draw attention to green finance as a phenomenon that combines all finance and business with the needs of environmental protection. Many participants engage in green finance, including individuals and corporations, manufacturers, investors and lenders. A growing number of institutional investors around the world, especially in the United States, Europe and Canada, are currently managing their investment portfolios by adhering to 'socially responsible' principles (Perez, 2007). Green finance can be presented differently depending on the participants and can be guided by efforts to preserve the planet, financial incentives or a combination of both. Unlike traditional financial instruments, green finance is more focused on investing in the environmental protection industry and on achieving environmental benefits. In order to achieve these goals, as advocated by Gilchrist, Yu and Zhong (2021), it is necessary to form a green economy by building a green financial system. While political and environmental representatives are trying to build a green financial system that supports reducing carbon emissions, the focus of green policy is on promoting different green instruments (such as, for instance, green loans and green bonds). Green finance requires large investments of financial resources that the public sector cannot provide on its own. On the other hand, the private sector has shown less interest in investing in green finance and providing funds for long-term infrastructure projects because these instruments carry a lower level of return (Yoshino and Taghizadeh-Hesary, 2018). Darvas and Wolf (2021) point out that adequate government regulation, tax policy and higher carbon prices are needed to make green investments profitable for the private sector. There are several constraints to ensure a sufficient amount of capital to finance green investments, among which Berensmann and Lindenberg (2016) point out information asymmetry, inadequate analytical capacity and insufficient clarity in defining "greens". There is currently a growing level of understanding of the complex and dynamic interrelationships between running a business, the impact on society and the environmental dimensions of these activities (Bhattacharyya, 2021).

The two main goals of green finance are to reduce the perception of risk and to internationalize the external effects of the environment (Streimikiene and Kaftan, 2021). In order to achieve SDGs, it is necessary to develop new economic practices and policies. With the high degree of correlation between reaching a green economy and implementing SDGs, an increase in human well-being and a higher degree of social justice can be achieved, but also a reduction in the risk of climate change and environmental scarcity (Khoshnava et al., 2019). Sachs, Thye, Yoshino, and Taghizadeh-Hesary (2019) point out that the financial industry needs to understand how SDGs will reshape the investment landscape and that the next period will be focused on long-term investments that will ensure a sustainable future for all. Climate change risk, according to Fabris (2020), does not lead to the creation of a new type of risk in the financial system, but integrates into existing ones: market risk (risk of unfavourable market prices), operational risk (the risk of jeopardizing business continuity) and credit risk (the risk that companies using outdated technology may notice a decrease in their profitability and thus jeopardize the regularity in the repayment of their obligations. The introduction of a carbon tax would have the same effect).

In order to realize SDGs, it is necessary to develop new green policies, new green instruments (green bonds, green funds), but also to establish green financial institutions (such as green banks). All of the above represents green finance. Based on an analysis conducted by Sachs, Thye, Yoshino and Taghizadeh-Hesary (2019a), such a strategy carries three challenges: identifying the right projects, developing complex plans that require equal involvement of the private and public sectors, and structuring funding. The government, in order to be successful, needs to ensure long-term efficient planning, budgeting and implementation of projects. In addition to government involvement, the role of central banks and financial regulators is important, as they can make a significant contribution to the development of green finance. Vallet (2020) stresses that climate change changes shocks on both the supply side and the demand side, thus affecting price formation and, consequently, changing the distributive effects of monetary policy. Volz (2017) points to the following arguments when engaging central banks in addressing environmental and sustainability challenges: (1) the market failure argument - a situation where commercial banks can grant loans for socially undesirable activities (for instance lending to companies that use carbon-intensive or polluting businesses); (2) macroeconomic and financial risk - climate consequences can straight affect the price of food and energy and thus directly affect the accomplishment of the main objectives of central banks, which are to achieve and maintain price and financial stability, and (3) the role of the central bank as a credible institution - central bank expertise in financial markets can promote best practice in the financial system. Climate change can have significant implications not only for core operations of central banks, but it also may raise questions about their broader role in tackling and mitigating the risks posed by climate change (Dikau and Volz, 2021). Central banks, according to Dikau and Volz (2018), can act through micro- and macroprudential policies, then from side of financial market development and credit allocation, but also by using guidelines and central bank soft power to support the achievement of sustainable goals. The next part of the paper focuses on analysing the regulation of green finance.

3. Green finance regulation

The first significant steps towards achieving the goals of sustainable development were made by signing the Paris Agreement, the UN 2030 Agenda for Sustainable Development and the European Union 2030 Agenda for Sustainable Development. The Paris Agreement is an international legally binding agreement on climate change, which was adopted on 12 December 2015, and entered into force on 4 November 2016. It was adopted at the United Nations climate change conference (COP21) by 196 Parties. The Paris Agreement implies social and economic transformation and the signatory countries support each other through financial assistance, capacity building and support for technological development. The UN 2030 Agenda for Sustainable Development, signed in September 2015 by Canada and 192 other United Nations member states, is an ambitious set of 17 SDGs, over 230 indicators and 169 targets. By signing this agenda, the entire international community reaffirmed its commitment to achieving sustainable development based on social inclusion, environmental protection, inclusive and sustainable economic growth. Thus, this agenda strives to achieve the world free from poverty and hunger, achieving full employment and equal access to education and health care, then to achieve gender equality and empowerment of all women and girls (The 2030 Agenda for Sustainable Development). The European Union 2030 Agenda for Sustainable Development was signed in September 2015 and represents the full commitment of the European Union (EU) and its member states to fully implement the UN 2030 Agenda for Sustainable Development and the agreed 17 SDGs (European Council, 2017).

The EU has so far launched a number of initiatives to turn its economy into a circular economy based on efficient use of resources, implementing the transition to low-carbon, which would provide ways to achieve long-term competitiveness. Paragraph 3 of Article 3 of the Consolidated Version of the Treaty on European Union clearly states that the Union should work towards sustainable development in Europe based on balanced economic growth and price stability, full employment and social progress, and the achievement of high levels of protection and improvement of environmental quality (Consolidated Version of the Treaty on European Union). In October 2016, the European Commission, one of the three main institutions governing the EU (along with the European Parliament and the Council of the European Union), established the High Level Expert Group on Sustainable Finance (HLEG) to develop a comprehensive strategy on sustainable finance at the EU level. HLEG submits recommendations to the European Commission aimed at facilitating the flow of capital from private and public sources to sustainable investments, as well as reducing the potential risk to the EU financial system from its exposure to carbon-intensive assets (European Commission, 2016). At the end of January 2018, HLEG submitted the final report to the European Commission titled *Sustainable Finance*: *High-Level Expert Group delivers a roadmap for a greener and cleaner economy*, which sets out strategic recommendations for the financial system that supports sustainable investments. This report proposed the following: (1) development of a classification system or taxonomy so that all financial market participants know what “sustainable” means; (2) clarification of investors' obligations to achieve a sustainable financial system; (3) improving the disclosure of information that financial institutions and companies take into account when deciding on sustainable investments; (4) labelling EU green investment funds; (5) establishing the practice of making sustainability part of the mandate of the European Supervisors Authorities (ESAs), and (6) establishing European standards for green bonds (European Commission, 2018).

In March 2018, the European Commission adopted the Action Plan for a greener and cleaner economy, which is a strategy for a financial system that supports the EU's climate and sustainable development agenda. This Sustainable Finance Action Plan is part of the Capital Markets Union's (CMU) effort to link finance to the specific needs of the European economy in order to benefit the planet and society as a whole. In addition, the action plan is a key step towards the implementation of the Paris Agreement and the European Union 2030 Agenda for Sustainable Development (European Commission, 2018a). Based on this Action Plan, two directives have been adopted that are legally binding for all EU member states:

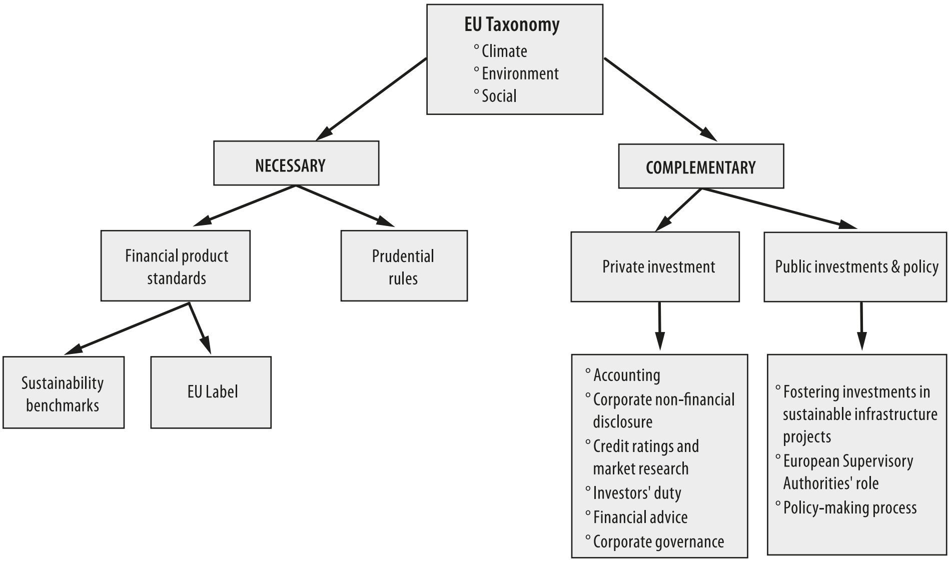
1) Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector that entered into force on 29 December 2019. The aim of this regulation is to introduce mandatory disclosure of information on how financial participants incorporate environmental, social and governance (ESG) factors into business risk management processes, followed by information on the main negative impacts of investment activities on the environment and how investors share information about financial products that they promote as "sustainable". The regulation envisages the establishment of a Joint Committee, consisting of the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA), with the aim of defining technical standards on content, methodology and presentation of information. with sustainable indicators (Regulation (EU) 2019/2088)

2) Regulation (EU) 2019/2089 of the European Parliament and of the Council of 27 November 2019 amending Regulation (EU) 2016/1011 as regards EU Climate Transition Benchmarks, EU Paris-aligned Benchmarks and sustainability-related disclosures for benchmarks that entered into force on 9 December of the same year. This regulation was adopted with the aim of ensuring adequate functioning of the EU internal market, in order to improve the functioning of that market and to ensure a high level of pro-

tection of consumers and investors. In this regard, it is of great importance to set benchmarks that will not jeopardize environmental, social and governance (ESG) objectives. This regulation distinguishes between two types of benchmarks: EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks. EU Climate Transition Benchmarks refer to portfolios of investors that will gradually reduce their carbon footprint by 2022, while EU Paris-aligned Benchmarks refer to portfolios of investors whose carbon footprint is in line with the Paris Agreement (Regulation (EU) 2019/2089).

The Taxonomy Regulation (Regulation (EU) 2020/852) was published in the Official Journal of the European Union on 22 June 2020 and entered into force on 12 July 2020. The taxonomy is based on six environmental objectives: climate change mitigation; climate change adaptation; the sustainable use and protection of water and marine resources; the transition to a circular economy; pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. Based on the regulations on taxonomy, the European Commission has reached a real list of environmentally sustainable activities by defining technical criteria for monitoring each environmental objective. In July 2021, the European Commission adopted the Delegated Act supplementing Article 8 of the Taxonomy Regulation, which achieved greater precision in terms of content, methodology and presentation of information required for financial and non-financial undertakings to publish regarding environmentally sustainable activities in their business, lending or investing. The additional revision of the Taxonomy Regulation took place on 2 February 2022 when the European Commission approved the Complementary Climate Delegated Act, which includes certain nuclear and gas energy activities in the EU taxonomy (European Commission, 2022).

Figure 1: Role of the EU taxonomy in the Action Plan



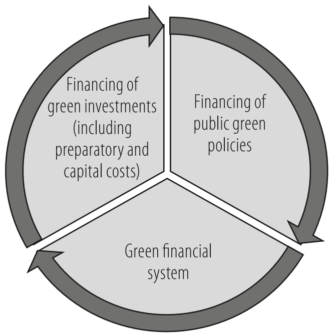
Source: European Commission (2018b), Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN

4. Green finance instruments

Climate change affects every aspect of our lives and businesses. For that reason, it is necessary to timely recognize the risks posed by climate change and act accordingly. Risks can vary: manufacturing companies are forced to switch to green energy if they want to stay competitive; the agricultural sector is already affected by drought, while rising energy costs are encouraging entrepreneurs to invest in energy efficiency, and growing water scarcity is forcing industrial sectors to protect water resources, process wastewater and recycle waste. The development of green instruments is an effort to use the funds raised in the financial market to finance sustainable development.

Lindenberg (2014) points out that green finance includes three segments: 1) Financing of public and private green investments, which includes preparatory and capital expenditures in areas such as prevention, minimization and compensation of environmental damage and environmental goods and services; 2) Financing public policies that will encourage the introduction of environmental protection

Figure 2: Green finance composition



Source: Lindenberg, N. (2014). Definition of Green Finance

measures or the adaptation of projects and initiatives, and 3) Components of the financial system related to green investments, such as financial instruments for green investments (such as green bonds) (Figure 2).

Green finance includes the following activities: *reduction of carbon dioxide emissions* (this activity can be realized by introducing a tax on carbon dioxide emissions. Another way is to change technology, processes or business rules), *carbon sequestration* (carbon sequestration is the process of preventing carbon dioxide emissions from the atmosphere. This is achieved through the development and implementation of green business operations that will prevent carbon dioxide emissions through the transition to renewable energy sources) and *recycling* (recycling can be seen as a kind of green financing through which energy consumption can be reduced by recycling material instead of throwing it away) (https://theimpactinvestor.com/sustainable-finance/).

4.1. Types and features

In addition to the constant development of traditional financial instruments, there is a continuous progress in green financial instruments. The most common green financial instrument is certainly green bonds, but other green instruments also have a presence in the global financial market (Figure 3).

Privately placed green bonds are a type of green bond that allows an entrepreneur or business owner to borrow money from a private investor using bonds secured by their assets (for example, their residential real estate). *Renewable and sustainable equity* is a form of financing for homeowners and businesses. The most common example is solar energy. By installing solar panels, the owner of a residential real estate can obtain a tax credit or cash benefits in exchange for the production of energy generated by the use of solar panels. *Green mutual funds* are an instrument that is quite similar to regular mutual funds and this type of fund invests in companies that provide goods and services that comply with the requirements of environmental protection (so-called environmentally friendly). *Solar bonds* are an instrument of green finance that cannot be bought for money, but its purchase is financed using green energy credits. *Green mortgages* allow a homeowner who has a traditional loan to take advantage of this green instrument. Residential property owners can thus save money by using renewable energy such as solar panels. *Green credit cards* are credit cards that allow the holder to earn a reward for using green financing projects. If the holder of this credit card spends a certain amount of money on green projects every month, it can bring him the appropriate additional income. *Green stocks* are an instrument of green finance aimed at investors who are aware of the consequences of the climate crisis. *Renewable energy credits* do not necessarily represent a source of capital but can stimulate demand with sustainable investment. This type of loan involves investing in solar panels or trying to reduce the impact of carbon dioxide on homeowners.

Figure 3: Types of green finance

Source: Sustainable Finance: 7 Different Types of Green Financing, Retrieved from https://theimpactinvestor.com/sustainable-finance/

Larsen (2019) analyses sustainable financial instruments such as sustainability bonds, social bonds, sustainability in the loan market, green loans and sustainability-linked loans. *Sustainability bonds*, as defined by the International Capital Market Association (ICMA), are bonds that are aimed at financing or refinancing projects that are a combination of green and social goals, or projects that have clear benefits for environmental protection and socio-economic benefits. *Social bonds*, according to the ICMA definition, are bonds whose issuance raises funds to finance social projects, or projects whose implementation achieves socio-economic benefits. One of the instruments of sustainable financing that raises funds outside the capital market is *sustainability in the loan market*. Namely, as green bonds have become a highly sought-after instrument of sustainable financing, especially for large organizations, it was necessary to develop a new sustainable instrument that can be used by small and medium enterprises, individuals and special purpose vehicles. It is for the purposes that sustainability has been developed in the loan market, which is a private instrument in the sense that the reporting system is less rigorous compared to green bonds. It is possible to disclose information about the credit relationship between creditor and debtor, but this is not mandatory. *Green loans* are an instrument similar to green bonds because the funds of this loan are used for green eligible projects. This type of loan implies that the borrower uses the funds exclusively for projects that make a significant contribution to meeting environmental goals. *Sustainability-linked loans* (SLLs) are also referring to as ESG-linked loans or sustainability improvement loans and represent loans aimed at achieving sustainability factors such as environmental, social, governance (ESG) or focusing on ESG-related indicators.

Guidelines for green finance vary from country to country, but most often include frameworks for environmental risk assessment and incentive schemes aimed at improving green finance (UN Environment Inquiry, 2017). When it comes to issuing green bonds, ICMA announced in 2014, with a consortium of investment banks (Merrill Lynch, Citi, Bank of America, BNP Paribas, Crédit Agricole, JP-Morgan Chase, Daiwa, Deutsche Bank, Goldman Sachs, Corporate and Investment Bank, HSBC, Mizuho Securities, Morgan Stanley, Rabobank and SEB), the Green Bond Principles (GBPs) which are voluntary guidelines based on transparency, accuracy and integrity of information to be disclosed by green bond issuers. GBPs are based on four main components: (1) revenue utilization; (2) project evaluation and selection process; (3) revenue management and (4) reporting (Climate Bonds). After that ICMA, together with the Hong Kong Monetary Authority (HKMA), published GBPs in 2018 and in 2020. Last one GBPs ICMA published in June 2021 together with the Sustainability Bond Guidelines (SBG), the Sustainability-Linked Bond Principles (SLBP) and the Social Bond Principles (SBP). ICMA has thus published the governance of the principles that provide a voluntary framework for promoting the role that the global debt instruments market can play in financing progress towards environmental protection and social sustainability (International Capital Market Association, 2021).

4.2. Green finance development

On 4 July, 2007 the European Investment Bank (EIB), the Bank of the European Union, issued the world's first ever green bond labelled a Climate Awareness Bond (CAB). The first issue of the green bond was issued in the amount of 500 million euros, with the maturity date of 15 May 2026, and it was listed on the Luxembourg Stock Exchange. This green bond issue was the EIB's intention to support sustainable finance and represented a continuation of the EIB's pioneering role in enabling investment through green bond issuance. Following this issue, the EIB said that with this transaction, the bank demonstrated its commitment to providing finance for projects with a high degree of impact on sustainable sectors beyond climate. Thus, the EIB has shown that it has the confidence of socially responsible investors by respecting rigorous market standards and transparency. The funds raised were invested by the EIB in the water sector, which is a sector with clearly defined impact indicators (European Investment Bank, 2018). In the first ten years, ending in 2017, the EIB managed to issue green bonds worth over 18 billion euros and thus became the world's largest issuer of green bonds. By 2017, 160 projects for the development of renewable energy and energy efficiency worldwide have been financed by broadcasting CAB. At the end of 2020, the EIB maintained its leading position by issuing green bonds in the total amount of over 33.7 billion euros, and these funds were collected in seventeen currencies. In 2020 alone, the EIB raised 6.8 billion euros by issuing green bonds. The EIB provides Green Bond benchmark markets in euros, US dollars and British pounds, but also issues CABs in other currencies such as the Canadian dollar, the Australian dollar, the Danish krone and others (European Investment Bank, 2020).

In addition to the EIB, the World Bank Group, through the World Bank and the International Finance Corporation, are pioneers in the development of the green bond market. The first green bond was issued by the World Bank in 2008, and in 2013 the International Finance Corporation became the first institution to issue a one billion US dollar global benchmark green bond, contributing to the complete transformation of the green bond market - from niche to mainstream. Thus, the World Bank and the International Finance Corporation raised funds to finance climate needs from various institutional investors, but also retail investors, and many investors invested in green bonds for the first time. In addition, the World Bank and the International Finance Corporation have played an important role in defining best market practices in terms of transparency and reporting (World Bank, 2017). The International Finance Corporation in 2017 created the world's largest green-bond, called the Green Cornerstone Bond Fund, whose funds are directed towards emerging markets. The Green Cornerstone Bond Fund has a portfolio worth 2 billion US dollars and is aimed at raising funds from private sources for projects focused on climate change remediation. This fund was formed by the International Finance Corporation together with Amundi, Europe’s largest listed asset manager (International Finance Corporation, 2017).

In March 2014, Unilever, a British multinational consumer goods company, issued its first ever green sustainability bond worth 250 million British pounds, at a fixed interest rate of 2% and had matured in December 2018. This green bond issue is also the first green bond issue bonds in British pounds and the first emission issued by a company from the fast-moving consumer goods (FMCG) sector. Unilever hired DNV GL for this show, an independent leading environmental consultancy, which developed the Green Sustainability Bond framework, and which is based on the Green Bond Principles (Unilever, 2014). The first social bond was issued in January 2015 by the Instituto de Crédito Oficial, which represents public bank on one side and on the other hand a State Financial Agency in Spain. The social bond issue was broadcast in the amount of one billion euros and had a maturity of three years. A large number of investors showed interest and 24% of this issue was bought by investors from Asia and the Middle East, followed by investors from Spain, Germany and other European countries. The aim of this transaction was to provide assistance to small and medium enterprises in economically underdeveloped regions, which generate a lower level of GDP per capital compared to the national average (Ross, 2016).

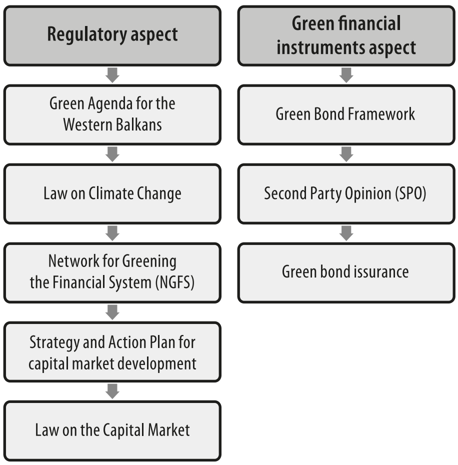
In 2016, Lloyds Banking Group, a financial services group focused on retail and commercial customers, launched an initiative to approve green loans to support customers in reducing carbon emissions. This credit scheme allowed the borrower to spread the cost of that loan over a period of between 10 and 25 years. A green loan differs from a standard loan in that the repayment of that loan is added to the electricity bill. At the same time, there is a so-called golden rule according to which the cost of the loan cannot be higher than the amount of saved electricity. This credit scheme implied that green loans could be used for the purchase and installation of solar panels, roof replacement or home remodelling (https://financer.com/us/wiki/green-loans/). Sustainability-linked finance was first issued in 2017 with the aim of encouraging the borrower to realize social, environmental goals or governance targets through pricing incentives. Since its launch, sustainability-linked finance has become the fastest growing instrument of sustainable finance, with corporate sustainability-linked loans (SLLs) and sustainability-linked bonds (SLBs) standing out the most. Since its introduction in 2017, sustainability-linked finance has been issued in excess of 809 billion US dollars, of which 85% relates to SLLs. The new market maximum was reached in 2021 when SLLs were emitted in the annual amount of 366 billion US dollars, which is 181% above the volume of emissions from 2020 of 130 billion US dollars. In 2021, the volume of SLBs emissions reached 103 billion US dollars, or 803% above the value of emissions from 2020 (Calonje and Orden, 2022). The decision of the European Central Bank of 22 September 2020 to accept SLBs as eligible collateral for Eurosystem credit operations and for outright purchases in Eurosystem monetary policy operations also contributed to this (European Central Bank, 2020).

According to Bloomberg, in 2021, sustainable debt instruments in the amount of more than 1.6 trillion US dollars were issued, which is the highest level so far. Thus, the total market value of these instruments reached over 4 trillion US dollars. The issuance of green bonds doubled between 2020 and 2021, with the volume of issues reaching more than 620 billion US dollars during those two years. During 2021, social and sustainability bonds together achieved record emissions of 400 billion US dollars (Bloomberg, 2022). According to ING Bank, the global investable sustainability market is expected to reach 1.3 trillion euros in 2022, of which 410 billion euros will be related to sustainability bonds (ING, 2021). These results were contributed by the UN Climate Change Conference (COP26) held in Glasgow from 31 October to 12 November 2021, but also other events organized in order to point out the need to engage funds from private and public sources in order to rehabilitate consequences of climate change. Green financing is positioned between sustainable economic and environmental development, the financial sector and meeting environmental goals. As green financing represents a relatively new model of financing at the global level, further development of existing and the creation of new instruments can be expected, as well as efforts for direct involvement of financial institutions in this process.

5. Green finance in Serbia

At the international level, Serbia is a signatory and ratified all major international environmental agreements, including the Paris Agreement, the UN Framework Convention on Climate Change, the 2030 Agenda for Sustainable Development, the Kyoto Protocol and the Doha amendments to the Kyoto Protocol. This indicates the country`s commitment to achieving sustainable development and environmental protection. For the development of green finance in Serbia, it is important to observe two aspects: the regulatory aspect and the aspect of issuing green financial instruments (Figure 4). Within the regulatory aspect, the Republic of Serbia has adopted several laws that contribute to the further green finance development. Thus, it has shown its readiness to prepare in the event of environmental crisis and to improve the protection system in the fight against natural disasters. In November 2020, Serbia joined the Green Agenda for the Western Balkans, which is a comprehensive strategic plan in the fight against climate change. This agenda is an effort to make sustainable economies from countries of the Western Balkans, to create a path to new energy sources and to preserve biodiversity. The agenda is based on five pillars (European Commission, 2020): (1) climate action, including decarbonisation, energy and mobility, (2) circular economy, addressing in particular waste, recycling, sustainable production and efficient use of resources, (3) biodiversity, aiming to protect and restore the natural wealth of the region, (4) fighting air, water and soil pollution and (5) sustainable food systems and rural areas. The key factor for the realization of the previously listed five pillars is digitization with the concept of dual green and digital

Figure 4: Green finance development in Serbia



Source: Author's illustration

transitions. The Green Agenda for the Western Balkans is complement to the "European Green Deal" signed by the European Commission in December 2019.

In March 2021, the Assembly of the Republic of Serbia adopted the Law on Climate Change, which provides an opportunity to create an efficient and transparent system for monitoring, reporting and verification in order to provide detailed information on progress in meeting domestic and international obligations. This Law makes it possible to identify areas where the implemented measures have not yielded results, as well as to identify alternative development paths that will ensure the reduction of greenhouse gas emissions in accordance with the nationally determined contribution. All this will have a positive impact on the health of citizens and economic development of the country. The adoption of this Law created an opportunity to increase the resilience of society to the adverse effects of climate change, as well as the harmonization of domestic legislation with EU regulations and the fulfilment of obligations under the Paris Agreement.

In July 2021, on the day it celebrated its 137th anniversary, the National Bank of Serbia became a member of a reputable international group of central banks and supervisors within the Network for Greening the Financial System (NGFS). NGFS is one of the globally leading movements of financial institutions aimed at "greening" the global financial system. The announcement of the membership of NGFS declared that the National Bank of Serbia has shown full commitment to managing the risk of climate change. On the other hand, the National Bank of Serbia will be a direct participant in the development of the latest solutions in the field of directing the financial system towards more environmentally friendly and sustainable financing (National Bank of Serbia, 2021). Additionally, employees in the National Bank of Serbia are members of the Work stream on scaling up green finance (WS3), which mandate is structured around four main topics: portfolio management, monetary policy, disclosure by central banks, and market transparency. The National Bank of Serbia has delegated one representative for each of these topics. The work of the subgroups is organized internally through teleconferences, workshops and written contributions.

Regarding the issuance of green instruments, it is necessary to work on the development of the financial market and its instruments. In this regard, in November 2021, the Ministry of Finance of the Republic of Serbia published the Strategy for capital market development for the period from 2021 to 2026 and the Action plan for the period 2021-2023 for the implementation of the Capital Market Development Strategy for the period from 2021 to 2026. The Strategy for capital market development for the period from 2021 to 2026 states the goals and measures for the development of the capital market in the Republic of Serbia, based on the realization of which economic growth should be achieved, domestic and foreign investments increased, and the offer of financial instruments improved. The Ministry of Finance stated in the mentioned strategy that during 2022, together with the Ministry of State Administration and Local Self-Government, it will analyse the challenges and obstacles for issuing municipal bonds and green municipal bonds in order to develop support programs for their issue, while the implementation of the program for issuing municipal bonds and green municipal bonds is planned for 2023. The Action plan for the period 2021-2023 for the implementation of the Capital Market Development Strategy for the period from 2021 to 2026 is a public policy document adopted to operationalize and achieve the general and specific objectives set by the Strategy for capital market development for the period from 2021 to 2026. The action plan specifies that within the introduction of new investment products and issuers on the domestic capital market, the process of administering issues in trading in financial instruments will be improved, where the possibility of issuing green bonds is emphasized, as well as the introduction of investment tokens as a new investment product. The Serbian Law on Digital Asset came into force in December 2020, to be applied as of 30 June 2021. This Law is the first law in the Republic of Serbia that regulates the sphere of digital business and digital asset trading activity. The main novelty is the introduction of virtual currency and digital tokens as a valid means of exchange between individuals and/or legal entities, as well as the legalization of digital asset mining (Martin, 2020, 2021). On 23 December 2021, the National Assembly of the Republic of Serbia adopted a new Law on the Capital Market, which entered into force on 5 January 2022. The goal of the new Law is to introduce greater transparency in business and the development of new financial instruments, which are a precondition for creating a market that will be more attractive for greater investment by domestic and foreign investors. The Law was adopted in accordance with the Strategy for Capital Market Development for the period from 2021 to 2026 and the supporting Action Plan. Also, this provided for the harmonization of domestic regulations with the Markets in Financial Instruments Directive II (MiFID II).

Another aspect of the analysis of green finance in Serbia relates to the issuance of green financial instruments. In June 2021, the Government of the Republic of Serbia established the Interdepartmental Working Group on Green Bonds with the aim of preparing the Green Bond Framework, which needs to be harmonized with the International Capital Market Association (ICMA Principles) standards. The Green Bond Framework provides assurance to investors that the funds raised by issuing green bonds will be used to invest in green projects. This framework document is based on four basic components: (1) resource use, (2) cost evaluation and selection process, (3) resource management and (4) reporting. In September 2021, the Government of the Republic of Serbia adopted the Green Bond Framework, making Serbia the first country in the Balkans to show a clear intention to promote awareness of the implementation of environmental, social and governance (ESG) projects aimed at mitigating the negative effects of climate change while preserving the environment. In addition to the Green Bond Framework, in the same month, the Government of the Republic of Serbia adopted the Second Party Opinion (SPO) - Sustainability Quality of the Issuer and Green Bond Framework, within which the analysis of the rating of the Republic of Serbia on ESG was performed. This analysis was performed by the Institutional Shareholder Services Group of Companies (ISS), which provides investors with the opportunity to develop and integrate a responsible investment policy into their business. Also, the ISS provides investors with data on climate change, advisory services so that all participants in the financial market can better understand, identify and measure the risks associated with climate change throughout their portfolios. When it comes to the level of rating, and based on the data from 31 August 2021, the Republic of Serbia was assessed as a moderate performer in terms of sustainability using the country rating methodology by the ISS ESG.

The Republic of Serbia issued the first green bond in September 2021 in the amount of one billion euros, which showed that it is an environmentally responsible country. The green Eurobond was issued with a maturity of seven years and the lowest recorded coupon rate on the international market of 1.00% (yield rate of 1.26%) and with the recorded demand from investors which exceeded the amount of 3 billion euros during the auction. With the issue of this green Eurobond, the Republic of Serbia became the only country outside the EU and one of the few European countries that issued a green instrument. Fundraising by issuing green Eurobonds is used to finance or refinance new and existing expenditures aimed at achieving and improving sustainable economic development, then investing in energy efficiency and renewable energy sources, as well as pollution prevention and control (National Bank of Serbia, 2021a). The green tranche was issued in accordance with the Government's strategic plan to invest additional funds to finance projects in the fields of environmental protection and climate change mitigation.

6. Conclusion

Green financing is a relatively new form of financing aimed at achieving the goals of sustainable development and environmental protection. In order to remedy the consequences of climate change, but also to create the preconditions for faster adaptation to them, it is necessary to generate a significant amount of funds from both public and private sources. All this requires an adequate understanding of the instruments of green finance and the development of the market for their issuance.

This paper aimed to present green finances, with a particular focus on the situation in Serbia. The first significant steps towards achieving the goals of sustainable development were made by signing the Paris Agreement, the UN 2030 Agenda for Sustainable Development, and the European Union 2030 Agenda for Sustainable Development. The European Union has so far launched a number of initiatives to turn the European Union economy into a circular economy based on efficient use of resources, implementing the transition to low-carbon, which would provide ways to achieve long-term competitiveness.

Besides the constant development of traditional financial instruments, green financial instruments are constantly progressing. The most common green financial instrument is certainly green bonds, but other green instruments are also present in the global financial market such as privately placed green bonds, renewable and sustainable equity, green mutual funds, green mortgages, green credit cards, renewable energy credits, and the like. According to Bloomberg, sustainable debt instruments in the amount of more than 1.6 trillion US dollars were issued in 2021, which is the highest level so far. Thus, the total market value of these instruments reached over 4 trillion US dollars. Such trends speak of how important the green finance market is and what their development potential is. This is indicated by the active engagement of international financial organizations, such as the World Bank, the European Investment Bank, and many others.

When it comes to the development of green finance in Serbia, it is necessary to consider two aspects: the regulatory aspect and the aspect of issuing green instruments. As for the former aspect, the Republic of Serbia has adopted several important laws, such as the Law on Climate Change, the new Law on Capital

Market, Strategy and Action Plan for Capital Market Development, but also the accession of the National Bank of Serbia to the Network for Greening the Financial System (NGFS). All this has contributed to the creation of better regulation of the financial market and further development of green instruments in the domestic regulatory framework. Another aspect of analysing the development of green finance in Serbia is the issuance of green instruments. In September 2021, the Republic of Serbia issued a seven-year green bond worth one billion euros for the first time. With the issue of this green Eurobond, the Republic of Serbia became the only country outside the EU and one of the few European countries to issue such instrument.

Thanks to the increased awareness of investors for topics such as ecology, sustainable development and environmental protection, there has been an enormous increase in the value of the green instrument market. It is important to further engage private and public sector investors to improve existing and develop new green instruments. This will create a world that will adequately respond to the challenges of climate change and will have sufficient resources to remedy its consequences, but also to invest in preventive activities to avert the emergence of new climate risks.

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