

**Dragica Stojanović**<sup>1</sup>  
Megatrend University,  
Faculty of Management Zaječar

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## SUSTAINABLE ECONOMIC DEVELOPMENT THROUGH GREEN INNOVATIVE BANKING AND FINANCING

### Abstract

*The essence of the paper is a new concept of finance, which is synchronized with the environmental processes of the planet development – green finance. Green finance is positioned between the financial industry, sustainable economic development, and environmental protection. Banks can play a relevant role in promoting environmental sustainability by financing environmentally and socially responsible projects. To fulfill this role, the banking sector in certain countries has adopted the concept of Green Banking which promotes environmentally responsible financing and sustainable internal processes. The paper aims to study the role of banks in sustainable economic development through green banking activities. Building on the theoretical concept of green finance and green banking activities, it is ultimately suggested that developing green banking products are is a proactive idea that might enable eco-friendly business practices for present and future generations.*

**Keywords:** green finance, green banking, environmental protection, sustainable economic development

**JEL classification:** G21, Q01

## ОДРЖИВИ ЕКОНОМСКИ РАЗВОЈ КРОЗ ЗЕЛЕНО ИНОВАТИВНО БАНКАРСТВО И ФИНАНСИРАЊЕ

### Апстракт

*Суштина рада је нови концепт финансија који је усклађен са еколошким процесима развоја планете - зелене финансије. Зелене финансије се позиционирају између финансијске индустрије, одрживог економског развоја и заштите животне средине. Банке, такође, могу имати важну улогу у промоцији одрживости животне средине финансирањем еколошки и друштвено одговорних пројеката. Да би испунио ову улогу, банкарски сектор је у појединим земљама усвојио концепт Зеленог банкарства, који подстиче еколошки одговорно финансирање и одрживе унутрашње процесе. Циљ рада је да проучи улогу банака у одрживом економском развоју кроз активности зеленог банкарства. Надовезујући се на теоријски концепт зелених финансија и активности зеленог банкарства на крају се указује да развој зелених банкарских производа је проактивна идеја која би можда омогућила еколошку пословну*

<sup>1</sup> dragica.stojanovic@fmz.edu.rs, ORCID ID 0000-0001-5689-9818

*праксу садашњим и будућим генерацијама.*

**Кључне речи:** *зелене финансије, зелена банка, заштита животне средине, одрживи економски развој*

## Introduction

In the contemporary environment, there is overwhelming scientific evidence that global warming has a significant impact on economies both regionally and globally. Also, there is increasing evidence to suggest that climate change and environmental risks also have important implications for the financial stability of countries in the world. In this context, the financial sector plays a key role in directing economic growth towards the sustainability concept. In practice, this entails radical decarbonization of economies and fundamental changes in the financial sector, according to what has been called "green financing" (Stojanović, Đorđević, 2018).

Depending on the number of participants, green financing can be expressed in different ways. On the one hand, it may be due to financial incentives or it may be the wish to save the planet. On the other hand, it may be a combination of these two.

Green financing and sustainability of financing are broad terms that cover different financial products, and thus the banking sector has a mediating role between economic development and environmental protection. For the promotion of environmentally sustainable and socially responsible investments, banking of this kind can be called green banking. When looking at the banking sector operations, green banking offers a new approach that can be summarized and presented as a reorientation from the profit as the primary goal of banking activities to a new group of goals, which can be found uniting profit, environment, and people (Setijawan, 2011).

Since the introduction of the concept of "green" in finance is a relatively new field, the paper first defines the concept of green finance. The idea of green finance and green banking is based on the fact that it is necessary to embed "green" in the business strategies of the financial sector; the paper continues to point to the need for "greening" financial institutions. Starting from the fact that the "green" concept in banking primarily refers to the environmental aspect, a special emphasis is given to the concept, goals, and activities of green banking as well as to the most important green banking products. Based on the review of the existing literature, the paper concludes with a statement that in the context of the greater application of green finance and development of the green banking concept, there is a lack of consumer awareness and education.

## 1. Green Finance Concept

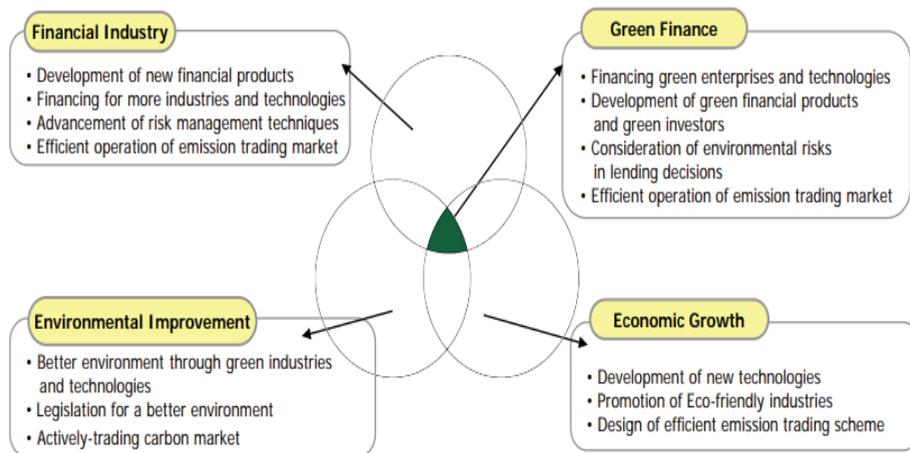
In recent years, on the global level, there is wide public recognition that the global financial system should actively contribute to the system of sustainable development. In line with the volume and urgency of the needs of financing sustainable development in recent years, the concept of green finance has become more pronounced all over the world. To solve the urgent environmental problems, such as climate change, the private

sector has a key role in solving the problems, while at the same time the green financial sector helps to transfer financial flows in green investments.

While the term „green finance” is increasingly used globally, it does not have a universally agreed definition (Stojanović, Ilić, 2018). In 2016, the G20 Green Finance Study Group described green finance as the “financing of investments that offer environmental benefits in the broader context of environmentally sustainable development” (G20 Green Finance Study Group, 2016). Considering that fact, the market for green finance includes market-based mechanisms, but also the financial products that can control pollution emission. Emissions trading is a market-based approach for controlling pollution, such as the number of greenhouse gases emitted to the atmosphere.

One of the first authors to deal with green finance infrastructure is Hee Jin Noh. (Figure 1). To support green economic development, green finance should include new technologies, financial products, industries and services which take into account the environment, energy efficiency, and pollutant emission reduction (Rakić, Mitić 2012).

Figure 1: Green finance



Source: Noh, 2010

The growing interest in green finance is a significant signal to the scientific community, whose task is to find, systematize and present the current situation in practice. As seen in Figure 1, green finance is a concept that combines finance and business with environmental behavior. More specifically, the intersection between the financial sector, the environment and economic development is driving financial institutions’ operations towards creating green products and services. As the awareness of people, with the help of media and various other campaigns grows, so does the need of these people to be more responsible towards the environment.

The most significant factors leading to the development of green finance are banks, institutional investors and international financial institutions, as well as central banks and financial regulators. Table 1 presents other factors that initiate and drive the

development of green finance, i.e. financial products and services.

*Table 1: Drivers of demand for green financial products and services*

<i>Environmental Knowledge and Media Coverage</i>	<i>Environmental Awareness and Public Opinion</i>	<i>Environmental Regulations and Legislation</i>
The age of information technology has provided a better understanding of the severity, sources and implications of various environmental changes. Also, greater media coverage, together with multinational eco campaigns, has much contributed to a better understanding of the importance of environmental protection and raised the demand for green products and services.	Raising environmental awareness of the public is a direct result of the knowledge of the environment and media coverage. It is this public awareness that, with the support of the government for environmental sustainability, it has lead to a significant increase in demand for green products and services.	Implementing government strategies, laws and other regulations that promote environmental protection programs, with particular regard to those that enable price security of green finance products and services, is one of the main drivers of demand growth.

*Source: Noh, 2018*

The tendency of the emergence and development of green finance is a trend that follows the development of the sustainable development concept and corporate social responsibility. Sustainable development is therefore imposed as a hypothesis of modern business operations and strategic commitment of all business participants that need joint action. In this context, the potential response to the growing demand for a socially responsible relationship with the planet Earth lies in implementing the “green” concept in financial institutions (Jones et al., 2017).

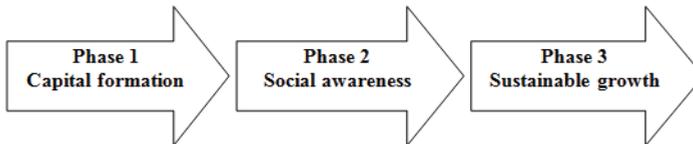
## **2. Greening of the financial sector**

The financial sector is the result of a long-term evolution that relates to global economic growth and is based on macroeconomic choices defined by legal, technology and government rules. However, nothing is irreversible. In this changing context, the financial sector is playing a key role in directing economic growth towards sustainability values based on promoting greater responsibility towards the environment, climate change, and sustainable economic development. Thus, sustainable finance can play a key role in transforming traditional economies towards a sustainable industry with clean energy and low-carbon industry. To embrace an integrated and holistic approach to sustainable development, the tendency of “greening” the financial sector is increasingly taking hold in developed market economies as well as in the developing countries (OECD Development matters, 2019).

Green financial institutions are financial institutions whose external and internal operations – strategic goals, day-to-day activities, products and services, investment policies, and risk management have respect for the components and the environment, and the society’s interests (Tarkhanova, 2018). The following Figure 3 illustrates the path of financial institutions’ transformation (state banks, commercial banks, insurance

companies, etc.) from the initial “greedy” state of capital generation and accumulation to gaining social awareness and sustainable development. Therefore, this transformation is an essential part of the modern strategy of how to attract more customers and stimulate their economic and financial growth.

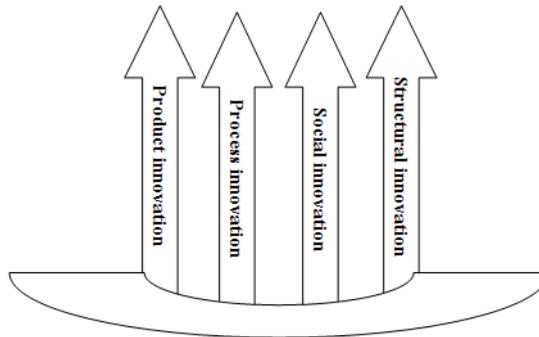
*Figure 2: Transformation to sustainable green growth in financial institutions*



*Source: Tarkhanova, 2018*

The “green” concept in finance refers primarily to the environmental protection aspect. It implies developing new financial products and services that are particularly relevant to environmental protection. Also, it implies developing new methods and techniques for enhancing traditional products and services that should merge environmental impact. Green innovation in the financial sector includes four categories (Figure 3).

*Figure 3: Green innovation categories in the financial sector*



*Source: Author*

Product innovation – in addition to the fact that products and services from financial institutions do not have a direct impact on environmental pollution, it is generally recognized that the indirect impact is on the financing of projects that must be controlled (investments in renewable energy sources).

Process innovation – involves innovative business processes and execution of services through transforming internal activities following the concept of sustainability. Social innovation – means organizing innovations in a unit in the processes of production and providing services (introduction of environmental management systems).

Structural innovation – involves establishing business relations in the international market, according to the principles of sustainable development (Tarkhanova 2018).

In recent years, there has been a widespread public recognition in the world

that the global financial system should actively contribute to sustainable development. Banking, as one of the main engines of each economic system, should naturally follow the trend. Namely, most banks and financial companies are quick in realizing that without adopting the principles of “green” sustainable development, their prestige and reputation in the society can be disrupted. Accordingly, driven by the scale and urgency of the need for sustainable development financing, the concept of green banking is increasingly expressed worldwide.

### 3. Green banking - Concepts, aims and activities

The concept of green banking mainly refers to the banking practices that encourage environmentally-responsible finance and environmentally sustainable internal processes. The main mission of the Green Bank is to combine its activities and ecology for the benefit of clients. Access to green banking varies from bank to bank (Rahman, Barua, 2016). By reviewing more literature, we come to several different definitions of the term green banking.

*Table 1: Definitions of Green banking*

Author(s)	Definition
Schultz (2010)	This means promoting environmentally friendly practices and reducing the carbon footprint from banking activities.
Goyal and Joshi (2011)	Ethical bank – environmentally responsible bank.
Azman 2012	Eco-friendly or environmentally-friendly banking to stop environmental degradation to make this planet more habitable
Bai (2011)	Banks’ environmental accountability and environmental performances in business operation
Bahl (2012)	Green banking is a kind of banking conducted in selected areas and techniques that helps to reduce internal carbon footprint and external carbon emissions.
Rahman and Barua (2016)	Green banking is a concept of shifting banks’ objectives from “profit only” to “profit with responsibility”

*Source: Author elaboration based on Paluszak, 2016*

As banks are one of the professional institutions that interact with a large number of people (clients), they can play a vital role in sustainable development. Sustainable green banking activities refer to the activities to enhance external and internal sustainability.

External sustainability enhancement activities include (Rudawska, Renko, 2012): offering preferential interest rates to the borrowers who intend to use solar energy; affinity cards that encourage borrowers to start eco-friendly management systems. These are credit cards from which a certain amount of money (part of the fee the bank charges) is donated to a charity each time the holder uses them; sponsorships and charity events, meeting the clients’ needs and complying with the law and ethics.

Sustainable business activities also refer to the internal activities that improve

sustainability: energy savings, reduced paper use, use of paper money, use of natural light where possible, use of natural ventilation instead of air conditioning, installation of modern thermal windows, control of tap dripping, rewards program for good performance, implementation of sick leave and/or maternity leave policies, staff training and training update, implementation of internal communication system, implementation of preventive health insurance for employees and proper employee salaries (Amin, Maran, 2015). To transform its business into a "green" business, Setijawan (2011) cites the necessary parameters:

- Integration of environmental aspects into banking risk management,
- Delegation of employees (of adequate quality and number) and jobs related to green investment and environmental protection,
- Equal treatment and consistency in law enforcement,
- Adequate regulations and controls,
- Sufficient incentives for green investment and green finance,
- Gradual implementation, and
- Coordination and cooperation between green banking interest groups and stakeholders.

Having in mind the above, green banking presupposes the environmental approach of banks in their external activities and the environmental responsibility in their internal operations. As banks are the main source of financing in the industrial sector, they must check that their financing is not being used for or is leading to any activity that causes environmental damage (Rahman, Barua, 2016). More precisely, the green bank wants to make a profit only in financing pro-environmental business ventures. The goals that such a bank should promote are poverty reduction, raising the education level of the population, promoting investments in cleaner, cheaper and safer energy, efficient use of public finances, saving natural resources, etc. Considering the products and services in green finance, the most important green banking operations are (Rakić, 2016):

*Retail banking* – among the first products offered in the form of green products are green credit and debit cards. They function by giving donations between 0.1% and 0.5% of the value of each purchase or transaction made by their holders. These amounts are forwarded to environmental NGO's or a special environmental fund set up by the bank itself. One of the best examples of a green card is the HSBC Visa Card. In addition to credit and debit cards, green car loans are becoming increasingly important. The fact that hybrid cars are powered by alternative drive or the combined one, and they have a much lower negative environmental impact, they have a lower interest rate than ordinary car loans. In addition to the above, retailing involves granting green mortgage loans in the situation when buying a house that is more energy-efficient than the average one, or if you want to borrow money to renovate your house into a more energy-efficient – "green" residential unit. Similar to green mortgages, but with an important difference, are green secondary mortgages that are most commonly used for real estate reconstruction and renovation (e.g. Energy efficiency loans). These loans involve taking out an extra loan on an existing mortgage for the same property and thus helping the clients to create a more energy-efficient house or apartment.

*Corporate and investment banking* – the first deals with financing business projects of business entities, while investment banking deals with the emission and sale of securities of the bank's clients in the domestic and international markets. In addition

to these activities, financial institutions are also involved in the management of capital, leasing and insurance services. Also, banks engage in providing services in corporate mergers and acquisitions, as well as in the process of securitization of credits and other forms of assets. The most important corporate and investment banking products and services are (Rakić, Mitić 2012):

- *Financing green projects* – relates to the loans to corporate and investment banking clients to finance large infrastructure projects;
- *Securitization of green loans and creating green bonds* – as a risk diversification mechanism, it applies to green loans for infrastructure projects where the bank appears as a guarantor of the securities emission. This allows clients to transfer some of the risks to the bank. This procedure is commonly called the eco-securitization scheme. There are many examples of securitization in the environmental field, with green bonds being the most adequate. Green bonds support the financing of projects that have a positive environmental impact. This signifies the obligation for the funds to be solely used to finance or refinance “green projects”, funds or business activities;
- *Financial weather derivatives* – created to protect against adverse weather. The use of weather derivatives aims at reducing generated revenue volatility, covering excess costs, cost reimbursement, opportunity to stimulate sales and diversify investment portfolios (Djordjević, Djordjević, 2014).

The fact that banks are one of the institutions that interact with the masses of people can stimulate the greening process with some internal and external driving forces. The internal driving forces come from the employees, shareholders and directors motivated to create green products and services, develop environmentally-friendly policies and thus contribute to sustainability. The external forces come from competitors and clients with the consciousness that only green loans can contribute to the sustainable growth development (Goel et al., 2017). In general, green banking refers to the efforts of the banking sector to keep the environment green and to minimize greenhouse gas effects through operational activities and green finance. Accordingly, the two main approaches to green banking are the green transformation of internal operations and environmentally responsible finance (Rajesh & Dileep, 2014).

## Conclusion

The growing awareness that the global financial system should contribute to sustainable development is leading to developing a “green” concept in finance and banking. Green finance is a concept that combines finance and business with environmental behavior. The intersection between the financial sector, the environment, and economic development is driving the operations of financial institutions towards creating green products and services. The banking sector is a major economic agent influencing economic growth and development in terms of quality and quantity, changing the nature of economic growth, and therefore, green banking is a good way to meet sustainable growth and development. The main mission of the green bank is to combine business and ecology for the benefit of clients. Also, the concept of green banking is

mutually beneficial for banks, industry and the economy and the review of existing literature reveals that what lacks in the context of greater implementation is the level of consumer awareness and education. The fact that in an era of globalization aspects of business activities focus not only on profits, but also on people and the environment, most banks have realized that without adopting the principle of sustainable "green" development, their reputation and image in the society can be damaged. Therefore, this transformation of banks around the world is becoming an essential part of the modern strategy of how to attract more customers and stimulate their sustainable economic and financial growth. The theoretical presentation of the concepts of green finance, green banking, and green banking products in the paper is the attempt by the author to open new horizons for developing such a financial system in Serbia.

## References

- Amin, J., & Maran, M. (2015). Bankruptcy and Sustainability: A Conceptual Review on Islamic Banking Industry. *Global Business and Management Research: An International Journal*, 7(1), 109–138.
- Azam, S. (2012). Green corporate environment through green banking and green financing. *The Financial Express*. Retrieved January 22, 2020, from [http://www.thefinancialexpressbd.com/more.php?news\\_id=135391&date](http://www.thefinancialexpressbd.com/more.php?news_id=135391&date)
- Bai, Y. (2011). Financing the Green Future- An examination of China's banking sector for green finance. (IIIEE Theses 2011:02) Retrieved January 22, 2020, from <http://lup.lub.lu.se/luur/download?func=downloadFile&recordOid=2203222&fileOid=2203226>
- Bahl, S. (2012). Role of Green Banking in Sustainable Growth. *International Journal of Marketing, Financial Services and Management Research*, 2(1), 2012, 27–35
- Đorđević, B., & Đorđević, M. (2014). Vremenski derivati - instrument zaštite poslovanja od vremenskih rizika. *Bankarstvo*, 6, 156-179
- Goel, A., Khatik, K. R., & Thakur, S. K. (2017). Green banking: an approach for achieving sustainable and balanced growth in new millennium. *Inspira- Journal of Modern Management & Entrepreneurship (JMME)*, 27, 07(04), 27-33.
- Goyal, K.A., & Joshi, V. (2011). A Study of Social and Ethical Issues in Banking Industry. *International Journal of Economics and Research*, 2(5), 49–57.
- G20 Green Finance Study Group, (2016). G20 Green Finance Synthesis Report. Retrieved January 15, 2020, from [http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis\\_Report\\_Full\\_EN.pdf](http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf)
- Ilić B., Sovtić K., Mihajlović D. (2019). Ekonomska i ekološka održivost Srbije - uslov podizanja kvaliteta života i zaštite životne sredine. *Ecologica*, Vol. 26, No 94, 193-198.
- Jones, P. B., Hillier, D., & Comfort, D. (2017). The Sustainable Development Goals and the Financial Services Industry. *Athens Journal of Business & Economics*, 3(1), 37-50.
- Noh, J., H. (2010). Financial Strategy to Accelerate Innovation for Green Growth.

- Korea Capital Market Institute.
- Noh, J., H. (2018). Financial strategy to accelerate green growth. ADBI Working Paper Series No. 866, Asian Development Bank Institute.
- OECD Development matters, (2019). A perspective from the financial sector on sustainable business. Retrieved January 15, 2020, from <https://oecd-development-matters.org/2019/04/12/a-perspective-from-the-financial-sector-on-sustainable-business/>
- Paluszak, G., & Paluszak, W. J. (2016). The role of green banking in a sustainable industrial network. *Bezpieczny Bank*, 4(65), 75-95.
- Rahman, S.M.M., & Barua, S. (2016). The Design and Adoption of Green Banking Framework for Environment Protection: Lessons from Bangladesh. *Australian Journal of Sustainable Business and Society*, 2(1), 1–19.
- Rajesh, T., & Dileep, S. A. (2014). Role of banks in sustainable economic development through green banking. *International Journal of Current Research and Academic Review*, 2(12), 136-141.
- Rakić, S., Mitić, P., & Raspopović, N. (2012). Primena koncepta "zelenog" u finansijama i bankarstvu. *Poslovna ekonomija*, 6 (1),167- 182.
- Rakić, S., & Mitić, P. (2012). Green Banking: Green Financial Products with Special Emphasis on Retail Banking Products. Sremska Kamenica: Educons University.
- Rakić, S. (2016). Ispitivanje uticaja društveno odgovornog poslovanja na profitabilnost banaka u Evropskoj Uniji. Univerzitet Edukons, Fakultet poslovne ekonomije, Sremska Kamenica, Doktorska disertacija.
- Rudawska, E., & Renko, S. (2012). Sustainability as the Direction for the Long-term Success in Banking: Poland vs. Croatia. *Folia Oeconomica Stetinensia*, 1, 97–117.
- Schultz, C. (2010). What is the Meaning of Green Banking?. *Green Bank Report*. 2, Retrieved January 28, 2020, from <http://greenbankreport.com/green-bank-deals/what-is-the-meaning-of-green-banking/>
- Setijawan, E. (2011). Role of Bank Indonesia to support Green Investment. Retrieved January 28, 2020, from <http://apgreenjobs.ilo.org/resources/role-of-bank-indonesia-to-support-green-investment>
- Stojanović, D., & Đorđević, B., (2018). Zeleno finansiranje kao mogućnost održivog ekonomskog razvoja regiona. *Zbornik radova II Međunarodna naučno-stručna konferencija "Regionalni razvoj i prekogranična saradnja"*, 371-381.
- Stojanović, D., & Ilić, B. (2018). Green financing in the function of risk management environment and sustainable economic growth, *Book of Proceedings: 30th International Scientific Conference on Economic and Social Development*, 69-76.
- Tarkhanova, A. E. (2018). Innovations and sustainability in the financial and banking sectors. *Terra Economicus*,16(2), 75-82.
- Wang, Y., & Zhia, Q. (2016). The role of green finance in environmental protection: Two aspects of market mechanism and policies. *Energy Procedia*, 104, 311-316.