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Sustainability and Green Finance: Banking System in Turkey

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ABSTRACT
Today, one of the main factors that increases the importance of sustainability and green finance is the scarcity of resources that meet needs. Sustainability has an undeniable importance in increasing the benefits obtained from these resources. Sustainability has important benefits in reducing environmental erosion, such as acting as a carrier for the transportation of existing resources to future generations. Green finance is the use of financial resources in projects that embrace climate change aspects in the creation of a sustainable environment. Green financing policies play an important role in the more efficient use of financial resources. At this point, banks, which are at the center of the financial system, are at a key point in terms of both maintaining sustainability and directing economic resources to the right areas. In the study, existing sustainability and green finance legislation studies in Turkey were followed. In addition, an attempt has been made to compile the studies carried out by banks operating in Turkey on sustainability and green finance. As a result of the study, it was seen that significant regulations were not made in credit policies in the banking system in Turkey, especially in terms of reducing environmental pollution. At the same time, it is seen that public-owned banks include more sustainability and green financing policies than private and foreign-capitalized banks.
Keywords: Türkiye, sustainability, green finance, bank.

Sürdürülebilirlik ve Yeşil Finans: Türkiye'de Bankacılık Sistemi

ÖZ
Günümüzde sürdürülebilirliğin ve yeşil finansın önemini artıran temel faktörlerin başında ihtiyaçları karşılayan kaynakların kıtlığı gelmektedir. Bu kaynaklardan elde edilen faydanın artırılmasında sürdürülebilirliğin yadsınamaz önemi vardır. Sürdürülebilirliğin, mevcut olan kaynakların gelecek nesillere ulaşımında taşıyıcılık görevi görmesi gibi çevresel erozyonun azaltılmasında da önemli faydaları mevcuttur. Yeşil finans, sürdürülebilir bir çevrenin oluşumunda finansal kaynakların iklim değişikliği yönlerini benimseyen projelerde kullanımıdır. Finansal kaynakların daha etkin kullanımında yeşil finansman politikaları önemli bir rol oynamaktadır. Bu noktada finansal sistemin merkezinde yer alan bankalar hem sürdürülebilirliğin devamı hem de ekonomik kaynakların doğru alanlara yönlendirilmesi açısından kilit noktadadır. Çalışmada Türkiye'de mevcut sürdürülebilirlik ve yeşil finans mevzuat çalışmaları izlenmiştir. Bununla birlikte Türkiye'de faaliyette bulunan bankaların sürdürülebilirlik ve yeşil finans konusunda yapmış oldukları çalışmalar derlenmeye çalışılmıştır. Çalışma sonucunda Türkiye'de bankacılık sisteminde özellikle çevresel kirliliğin azaltılması noktasında kredi politikalarında önemli düzenlemelerin yapılmadığı görülmüştür. Aynı zamanda kamu sermayeli bankalar, özel ve yabancı sermayeli bankalara göre daha fazla sürdürülebilirliğe ve yeşil finansman politikalarına yer verdikleri görülmektedir.
Anahtar Kelimeler: Türkiye, sürdürülebilirlik, yeşil finans, banka.

Introduction

Scarcity has been a fundamental factor that misleads economic actors throughout history. Rapid changes and vulnerabilities in the concept of need have become important warnings about resource scarcity. The individual independence of needs and carelessness in meeting them have led to the rapid depletion of resources. It is an inevitable reality that economic units have experienced and will continue to experience difficulties in the effective use of natural resources. At this point, it may be possible to eliminate the helplessness regarding the use of resources to some extent by increasing the efficiency of the use of resources with a higher degree of intervention. Green finance (GF) is an appropriate policy for enhancing resource efficiency. In the past decades, inefficient use of resources has caused problems for human societies (Kedir and Hall, 2021). Resource efficiency may result in lower energy intensity, job creation, mitigation of greenhouse gas (GHG) emissions, environmental

protection, and improvement of innovations and production technologies (Xu, She, Gao and Sun, 2023).

Sustainability is based on the need to establish a clear link between present and future generations. Sustainability ensures extending the economic life of resources, increasing the efficiency obtained from these resources, and transferring resources from generation to generation. Sustainable management of natural resources and the environment attempts to manage resources in the long term by achieving a balance between economic, social and environmental improvement. Sustainability may be explicated using a macro approach to the overall economic system or a micro approach that focuses the analysis on specific economic units. Corporate sustainability may be described as fulfilling the necessities of a company's stakeholders without compromising its capability of fulfilling the necessities of prospective stakeholders (Dyllick and Hockerts, 2002).

Table 1
Four Dimensional Sustainability Model

Economic dimension	**Ecological dimension**
In an economy centered on sustainability, the focus is on the management of resource flows and the integration of systems for environmental stewardship including the adoption of technologies that are benign to the environment and the incorporation of eco-design principles, considering the entire lifecycle of products, their disposability, and aesthetic aspects. Pricing mechanisms are adjusted to mirror the ecological and societal impacts, adhering to the principle where the originators of pollution bear the cost of remediation. Moreover, there is an emphasis on bolstering marketing networks at regional and local levels, alongside promoting equitable trade practices.	Optimal utilization of resources is emphasized, aligned with the natural cycles of regeneration and optimal timing for sustainability. The diversity of biological systems is prioritized, alongside the implementation of life cycle systems that are ecologically sound. The focus is also on harnessing energy from regenerative sources and applying the precautionary approach to safeguard against potential risks to the environment. Measures are undertaken to mitigate the degradation of ecosystems through minimizing pollutants, emissions, and waste generation.
Social dimension	**Cultural dimension**
The advancement of human health is advocated, along with equitable access to natural resources and opportunities for development. Emphasis is placed on the principles of social equity, considering the welfare of future cohorts. Efforts toward democratization are highlighted, ensuring inclusive participation across various strata of society in all facets of life, encompassing networks and sustenance through employment.	Ethical substantiation; enduring modes of living; integrated understanding of the natural environment; visual appreciation of sustainable progress; regional cultural multiplicity in approaches towards sustainability; ancestral wisdom; perception of temporality; tangible heritage; awareness among consumers; communal entities; cross-border collaboration; planetary accountability; universal cultural ethos.

Source: (Stoltenberg, U. (2010). Culture as a dimension of the concept of education for sustainable development. In: O. Parodi, G. Banse and A. Schaffer (Ed.), *Interactions: culture and sustainability*. *print sigma*, Berlin, 293–311.)

Stoltenberg sustainability in Table 1; It has been discussed under four dimensions: economic, ecological, social and cultural. In economic dimension; recycling, environmentally friendly innovative technologies, eco-design in the economic system, efficient use of resources, biodiversity, ecological dimension; prevention of destruction in the ecosystem, improvement of human health, justice in resource use, social dimension; resources for the future, finally in the cultural dimension; Sustainable lifestyle and consumer awareness are important sustainability issues in the model.

The concept of GF basically refers to financial arrangements for the use of projects that are environmentally sustainable and embrace climate change aspects (Chhaochharia, 2021). In this context, certain institutions (central banks, banks, institutional investors, international financial institutions, and financial regulators) use regulatory measures and policies for various asset classes to help rendering the financial system greener, such as below-market rate financing opportunities and

priority lending requirements (Iswaryalakshmi, 2022). It is described by the actions of all parties participating in the supply chain of products and services, including but not limited to financial resource providers, and both producers and consumers of goods and services (Al-Sheryani and Nobanee, 2020).

Today's economic model, which was created in periods when resource shortages were not felt so much and which does not take environmental risks into account, causes great difficulties especially on economic resources. Population growth and changing consumer behavior are expected to increase resource consumption from 7 billion tonnes in the early 1900s to 60 billion tonnes in 2005 and to 140 billion tonnes in 2050. The problems caused by increasing resource consumption can be listed as follows (Yeşilbüyüme, 2023):

- Increasing consumption of resources
- Increase in air water pollution
- Deterioration in soil quality
- Increasing amounts of waste and GHG emission rates
- Risk that economic resources will not be passed on to future generations
- Losses in biodiversity
- Inflation has become the world's ossified problem

GF takes into account the fit between economic resources and resource users. In addition, GF is a phenomenon that combines the words 'business' and 'finance' with environmentally- friendly behavior (Chhaochharia, 2021). In general terms, GF is the acquisition and use of funds for activities that protect the environment and provide a fair return to lenders or investors (Berensmann and Lindenberg, 2019; Ozili, 2021). In terms of ensuring a fair order, finance poses obstacles to a more livable world. At this point, sustainability offers many examples of financial markets removing these obstacles.

GF takes into account environmental risk management and differs from traditional banking methods in that it is specific to the benefits derived from environmental protection. It also promotes a green economy by significantly reducing the carbon emissions of the markets being financed. Therefore, governments must regulate and promote green industrial markets for the distribution of green products and seek to increase green consumption (Soundarrajan and Vivek, 2016).

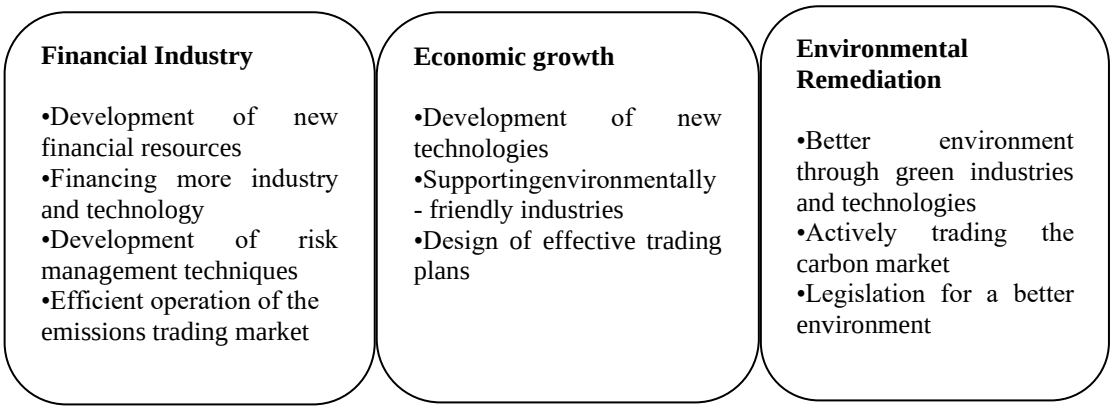
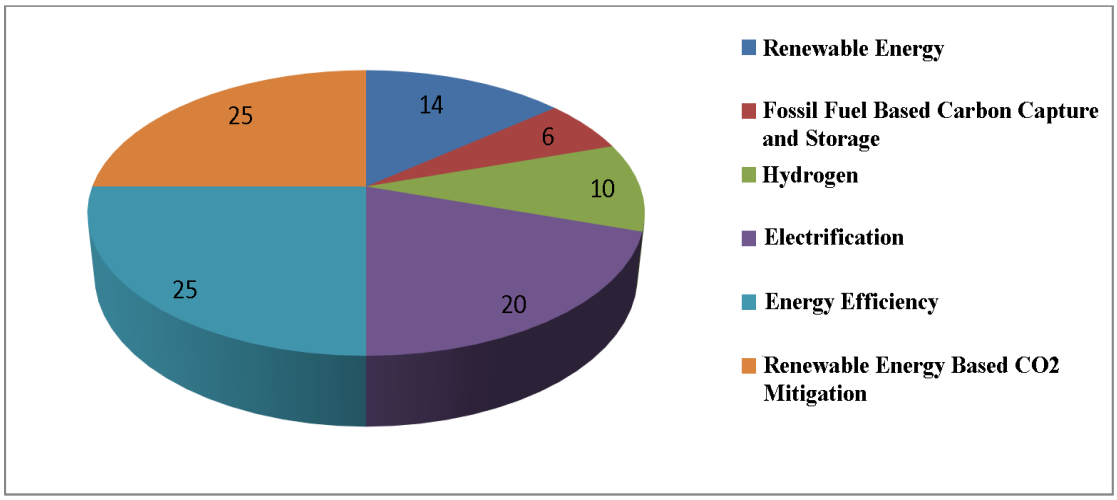


Figure 1. Benefits of Green Finance (Noh H. J. (2010). *Financial strategy to accelerate innovation for green growth*. Korea Capital Market Institute*)*

Figure 1 illustrates the benefits of GF in three areas: financial industry, economic growth and environmental improvement. GF supports financial industry markets in terms of developing financial resources, financing more industry and technology, developing techniques for risk management and efficient functioning of emissions markets. It contributes to economic growth in terms of developing

new technologies, supporting environmentally friendly industries and designing effective trade schemes.



Graph 1. 6 Technological Methods to Reduce Emissions by 2050 (International Renewable Energy Agency. (2022). *World Energy Transitions Outlook 2022: 1,5c pathway*. Retrieved from https://www.irena.org/Publications/2022/Mar/World-Energy-Transitions-Outlook-2022 in 23.11.2023.)

In Graph 1, according to IRENA's 2022 report, electrification and efficiency are described as a driving force for renewable energy sources. According to this report, it is stated that significant changes need to be made in the energy production and consumption of societies and that approximately 33 gigatons of CO2 emissions can be reduced annually by 2050. Graph 1 illustrates 6 technological methods to reduce emissions such as renewable energy, bioenergy with carbon capture and storage, clean hydrogen, electrification, energy efficiency, and the use of carbon capture and storage.

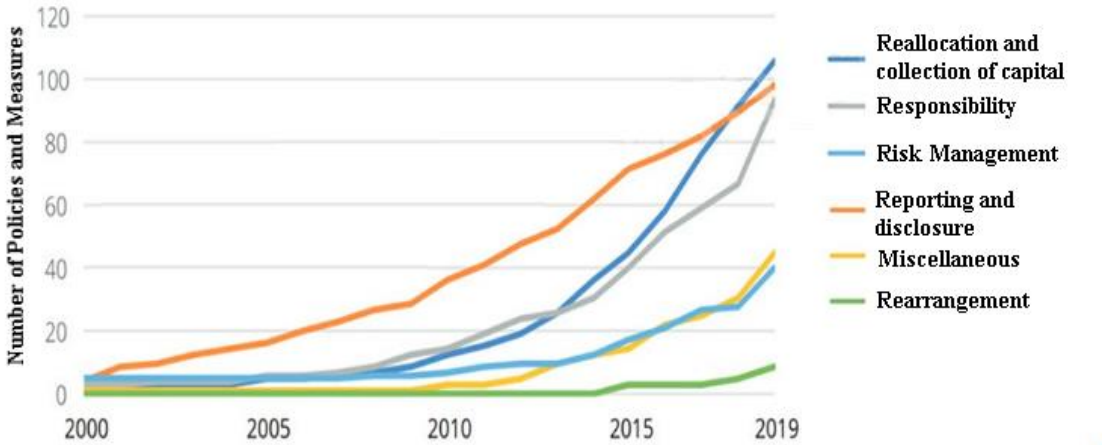


Figure 2. Measures Taken for Financial Risks Arising from Environment and Climate Change-2019 (UN Environment Programme. (2019). *Measures taken for financial risks resulting from environment and climate change.* Retrieved from https://www.unep.org/facts-about-climate-emergency?gad_source=1&gclid=CjwKCAjwzIK1BhAuEiwAHQmU3mSgSbT1HDSs8x-oolbsGmEqj1XBNh4XTt6TO7Kozsf3geZW7buFaBoCEAsQAvD_BwE in 25.11.2023.)

Figure 2 illustrates the measures taken by the United Nations Environment Program (UNEP) against financial risks stemming from the environment and climate change and the number of these measures. These measures are categorized under six groups under approximately 400 policy headings: reallocation and collection of capital, liability, miscellaneous, risk management, reporting and

disclosure, and rearrangement. As of 2019, reallocation and collection of capital, and reporting and disclosure were the most common issues where measures were taken against financial risks arising from environmental and climate change.

The study aimed to determine the current awareness in Turkey on sustainability and green finance. For this reason, the banking sector, which is one of the financial markets that is important for both concepts, has been evaluated at this point. Determining the sustainability-based green financing practices of the banking sector in Turkey is the main purpose of the study.

Sustainability and Green Finance Legislative Studies in Turkey

The basis of sustainability lies in human-oriented development goals. In Turkey, the sustainability development plan, which has been created and developed in this direction, has been tried to be included in the legislation of various policy areas and sectors (Dindar, 2023). The concept of sustainable development was first introduced in the Brundtland Report in 1986 and its importance in terms of development was mentioned. The first relevant goals were set with the Millennium Development Goals in 2000. As a result of the experience gained with the realization of these goals, it has led to the creation of broader goals covering all countries. As a result, in 2015, the United General Assembly adopted a resolution on the Sustainable Development Goals (SDGs), consisting of 17 goals and 169 targets, which should be completed by 2030 (TCA Presidency, 2023).

The Sustainable Consumption and Production National Action Plan Preparation Project, which was carried out by the General Directorate of Environmental Management, Ministry of Environment, Urbanization and Climate Change, Department of Air Management, with Boğaziçi University Financial Application and Research Center as the contractor, was realized on September 7, 2023 (Court of Accounts, 2023).

Table 2
Legislative Studies on Sustainability in Turkey

Type of Legislation	Legislation Name	Executor	Relation to Sustainable Construction
Law	Environmental Law	Ministry of Environment and Urbanization	Environmental protection Environmental sustainability
Law	Energy Efficiency Law Council of Ministers	Council of Ministers	Economic sustainability Energy efficiency
Regulation	Regulation on Energy Performance in Buildings	Ministry of Environment and Urbanization	Environmental sustainability Economic sustainability Energy efficiency
Regulation	Regulation on Increasing Efficiency in the Use of Energy Resources and Energy	Ministry of Energy and Natural Resources	Energy efficiency Recycling
Regulation	Regulation on Environmentally Responsible Design of Energy Related Products	Council of Ministers	Environmental sustainability
Regulation	Building Materials Regulation	Ministry of Environment and Urbanization	Environmental sustainability Energy efficiency
Regulation	Green Certification Regulation for Buildings and Settlements	Ministry of Environment and Urbanization	Environmental sustainability Energy efficiency

Source: (Gökçe, Ş., Aytekin, O., Kuşan, H. and Zorluer, İ. (2018). Sustainable Construction in Terms of Legislation and Standards in Turkey. *Uludağ University Faculty of Engineering Journal*, *23*(3), 289-312.)

Within the framework of sustainable development in Turkey, policies and programs have been put into effect to realize development goals. Table 2 shows the legislative activities enacted in relation to sustainability studies and the areas of interest in which these studies are carried out. In general, sustainability focuses on environmental protection, energy efficiency and economic sustainability.

Climate change is an important problem that occurs all over the world due to greenhouse gases, and therefore its risk impact is quite high (Tuncer, 2022). In the face of growing public awareness of the hazards presented by climate change and the political resolve of the international community to confront these difficulties, as expressed in the Paris Agreement, recent years have witnessed an intensifying debate on the role of central banks in addressing climate change-related risks and supporting the development of GF (Batten, Sowerbutts and Tanaka, 2016; Campiglio and Dafermos, 2018; Dikau and Volz, 2019). A growing number of central banks have adopted GF practices and legislation and begun to incorporate climate risk into macroprudential frameworks (McDaniels and Robins, 2018). In this context, the European Union put forward its climate-neutral target for 2050 with the European Green Deal on December 11, 2019 (Verdi, 2022). The EU plans to become climate neutral by 2050, to protect all living life by reducing environmental pollution, and to ensure that companies are pioneers in the world in terms of clean products and technology (European Commission, 2019).

In Turkey, several ministries, notably the Ministry of Environment, Urbanization and Climate, have implemented action plans in compliance with the European Green Deal. In 2021, Green Deal Action Plan (GDAP) of the Ministry of Trade of the Republic of Turkey, it emphasized the importance of providing access to the necessary financing sources in order to comply with the action plan. In this direction, it was shared with the public that documents that are closely related to the financial circles, such as the Turkish Banking Sector Sustainable Strategy, Green Bond and Green Sukuk Guide, will be prepared and included in the Green Consensus Action Plan.

In addition, Sustainable Lease Certificate Guide, Green Lease Certificate, Sustainable Debt Instrument, and the Green Debt Instrument, which will be encouraged to be used in the financing of investments that are likely to contribute to the sustainable economy, were accepted and published with the Capital Markets Board's Resolution No. 10/296 dated 02.24.2022 (Verdi, 2022).

Turkey's actions planned to be realized in the GDAP (Republic of Turkey Ministry of Trade, 2021):

- Sustainability in agriculture
- Sustainability in smart transportation
- Green and circular economy
- Green Finance
- Clean, affordable and secure energy supply
- Combating climate change
- Diplomacy
- Information activities on the European Green Deal

On the other hand, the plan draws attention to the concepts of sustainable production and sustainable consumption and states that the state, producers and consumers must act together (Ecer, Güner and Çetin, 2021).

The Banking Regulation and Supervision Agency has set a roadmap for the development of sustainable banking in line with the GDAP. In this regard, a Sustainable Banking Strategic Plan was prepared and adopted with the decision dated 12.24.2021 and numbered 9999. The other legislation prepared was on the working procedures and principles of the Service Units of the Climate Change Presidency. This regulation entered into force on June 21, 2022 and the Department of Climate Finance and Incentives was established as a sub-unit of the Presidency (Verdi, 2022).

Practices for Promoting Green Finance and Sustainability in Turkey

Uncertainties about the future lead countries to invest less. This calls for a better understanding that environmental issues are the financial risk sources with various adverse impacts on

a country's financial stability and macroeconomic conditions (Falcone, 2020). Turkey needs to take all these considerations into account and take steps to mitigate these challenges. Turkey is one of the countries most affected by global climate change, particularly desertification and degradation of water resources. For this reason, efforts are being made at national and international level to ensure a sustainable environment and development (Şakar, 2019). On June 2, 2023, the World Bank approved a financing of $ 450 million for the Turkey Green Industry Project, which aims to support an effective green transformation process for industrial companies in Turkey. Of this incentive, 250 million was allocated to the Small and Medium Enterprises Development and Support (KOSGEB) Presidency to help Small and Medium-Sized Enterprise (SMEs) improve their resource performance and reduce their carbon emission rates. The remaining $175 million was allocated to the Scientific and Technological Research Council of Turkey and $25 million to the Government of Turkey (Worlbank, 2023).

Organizations such as the Center for Sustainable Development and Climate Change and the Foreign Economic Relations Board supported the transition to green products in Turkey's trade with the EU in order to ensure that Turkish exporters are encouraged within the framework of the GF. The market where green transformation through GF can be most effective in Turkey is the banking sector. This is because 90% of Turkey's financial markets are composed of the banking sector. For banks, green transformation offers significant opportunities. Banks, which have a central place in allocating financial resources, have an important position in terms of transferring private capital and savings to appropriate investment areas during the transition to a sustainable economy (Banking Regulation and Supervision Agency, 2023). Institutions such as the BRSA, the Banks Association of Turkey (BAT), the Capital Markets Board (CMB), the Anadolu Trade and the Central Bank of the Republic of Turkey promote sustainable finance in Turkey.

Under IPA II, a national circular economy action plan called Technical Assistance for Assessing the Potential for Transition to Circular Economy in Turkey Project (DEEP) was prepared. This project promotes more efficient resource use and waste management to achieve a circular economy across Turkey (Ministry of Trade, 2022).

Table 3
Green Finance Projects Supported by the World Bank in Turkey

Project Name	Acceptance Date	Fiscal Year	Closing Date	Total Project Cost	Implementation Area
Green Finance project	9/11/2023	2024	-	405 Million Dollars	Industrial Development Bank of Turkey (TSKB), Maxis Venture Capital Portfolio Management Inc.
Public and Municipal Renewable Energy Project	6/13/2023	2023	31/12/2028	552.15 Million Dollars	Ilbank, Ministry of Environment, Urbanization and Climate Change
Green Industry Project in Turkey	6/2/2023	2023	30/06/2029	450 Million Dollars	Scientific and Technological Research Council of Turkey (TÜBİTAK), Small and Medium Enterprises (SME) Development Organization of Turkey (KOSGEB), Ministry of Industry and Technology (STB)
Land Management Infrastructure for Green and Sustainable Development	5/23/2023	2023	31/12/2028	85.44 Million Dollars	Republic of Turkey Ministry of Treasury and Finance

Energy Efficiency in Public Buildings in Turkey	11/5/2019	2020	31/12/2025	200 Million Dollars	Ministry of Environment, Urbanization and Climate Change, General Directorate of Construction Works, Ministry of Energy and Natural Resources
Renewable Energy Integration	9/5/2014	2014	12/31/2024	50 Million Dollar	TEIAS - Turkish Electricity Transmission Inc.
Innovative Access to Finance	7/22/2014	2015	12/31/2018	250 Million Dollar	Turkey Industrial Development Bank Inc.. (TSKB)

Source: (The World Bank (2023). *World Bank approves $450 million to foster a greener and more resilient industrial sector in Türkiye.* Retrieved from https://www.worldbank.org/en/news/press-release/2023/06/02/world-bank-approves-450-million-to-foster-a-greener-and-more-resilient-industrial-sector-in-türkiye in 04.10.2023.)

According to the data published by the World Bank (2023), the projects initiated within the scope of GF in Turkey and the numerical data regarding these projects are shown in Table 3. When the project costs are examined, the sectors that will be supported within the scope of GF for the most demanded projects are the public and municipalities with 552.15 million dollars. This is followed by projects developed for the industrial sector with 450 million dollars and the banking sector with 405 million dollars. Especially with the Green Industry Project, the Ministry of Industry and Technology aimed to support renewable energy investments of SMEs and entrepreneurs with technology infrastructure and circular economy in industry (Anadolu Agency, 2023).

Figure 3. United Nations Sustainable Development Goals (Türkiye Sustainable Development Goals (2023). Retrieved from https://turkiye.un.org/tr/sdgs in 12.11.2023.)

In order to promote and develop the implementation of sustainability all over the world, the United Nations (UN), including Turkey, has developed solutions for 17 main topics facing humanity. The UN's development goals related to sustainability are given in Figure 3. In this context, the UN has allocated a resource of 66.8 million dollars for the realization of SDGs in Turkey. Of this allocated resources, 27.4% was allocated for ending poverty, 26.2% for ending hunger, 0.3% for healthy and quality life, 1.6% for quality education, 5.1% for ensuring gender equality, 0.3% for accessible and clean energy, 5.8% for decent work and economic growth, 1.7% for industry, infrastructure and innovation, and 3% for sustainable development, 9% for reducing inequalities, 0.1% for sustainable cities and communities, 2.5% for responsible production and consumption, 6.2% for climate action, 1% for aquatic life, 0.1% for terrestrial life, 11.7% for justice, peace, and sound institutions, and 6% for partnerships for causes (United Nations Turkey, 2023). In Turkey, the National Sustainable Coordination Board was established on 07.19.2022 with a presidential circular on sustainability in

2022, consisting of the heads of the Presidency of Strategy and Budget, Turkish Cooperation and Coordination Agency, Human Rights and Equality Institution of Turkey and Turkish Statistical Institute.

Sustainability in the Banking System in Turkey

Sustainable funds have been named ESG funds after the initials of the words environment, social and governance. These funds (funds, bonds, bills, etc.) worldwide exceeded 22.8 trillion dollars in 2016 and 30.6 trillion dollars in 2018, reaching 35 trillion dollars in 2020. According to these data, this amount is expected to reach 50 trillion dollars in 2025. (Bloomberg, 2021). In Turkey, apart from sustainability-related issues such as energy, environment and food, the banking sector is also leading in the field of finance. The United Nations (UN) Global Compact, the world's leading sustainability initiative, aims to spread the understanding of sustainability especially in the field of finance and to develop harmonized standards in this regard (Garantibbva, 2023). With Turkey joining the Paris Agreement in November 2021, efforts to combat global temperature increases have increased. In particular, the reduction of GHG emission rates, efficient resource utilization and circular economy approach have started to be emphasized more. At this point, the British American Tobacco (BAT) follows the practices of various units working on this issue, including the Un Environment Programme (UNEP) Finance Initiative in carbon footprint management (Turkish Banks Association, 2022).

Table 4
Current and Future Sustainability Practices of Banks in Turkey

Sustainability Investments	Goal
Industrial Development Bank of Turkey Sustainability-themed funds including Renewable Energy, efficiency and Circular Economy	Ensure access to sustainable finance to achieve the 2053 net zero emissions goal
Yapı Kredi Bank By categorizing sustainability activities into three main groups: environmental impact, social impact and governance, low-carbon energy sources and sustainable financial funds	Acting with the awareness of its responsibility in the transition to a low carbon economy and developing sustainable financial products in line with this awareness
Akbank Long-term commitment to sustainable finance in Turkey, sustainable loan financing of TL 200 billion and investment funds balance of TL 15 billion in Turkey by 2030	By 2030, increase the number of financially empowered people, become a carbon neutral bank by 2025, reduce the impact of the loan portfolio on climate change by 2030
Şekerbank Inclusion of women in production through women's banking and inclusive finance, 1,843 supported women artisans, 1,500 women receiving financial literacy training and more than 5,000 women supported in agriculture	Carbon footprint is monitored, verified and reported annually. In this context, setting an annual carbon footprint reduction target of 5% reduction compared to the previous year within Scope 1 and Scope 2
İşbank 2.3 billion TL sustainable investment fund, 98.1 million MWh of clean energy generated by projects financed by İşbank in the last 3 years, 75% renewable energy projects/energy generation portfolio, 27,994 person per hour of sustainability training provided to employees	It aims to accurately determine the actions that credit customers can take on the path to decarbonization and to guide customers in this context, to provide the financial support required for the green and sustainable practices that customers will need in the decarbonization process, to create financial impact models within the framework of sectorally differentiated needs and to monitor the development of customers in this field.
Vakıfbank The banking processes of all branches were harmonized with the ISO 9001 Quality Management System,	VakıfBank aims to identify the environmental and social impacts that may arise from its customers' projects to be

ISO 14001:2015 Environmental Management System certification was obtained in 2017, all Vakıfbank employees were enabled to work in ISO 14001 certified buildings, energy policies were determined and ISO 50001 Energy Management System certification was obtained in 2023 in line with the goals and targets.	financed and to ensure that mitigating measures are taken by commissioning the Environmental and Social Risk Management System as of December 2022 within the framework of the Policy on the Management of Environmental and Social Impacts in Lending Processes.
ING Bank Investing in solutions to increase operational efficiency, utilizing 100% renewable energy in offices, financing renewable energy projects all over the world to be used in green loans and bonds and sustainability-related products, offering advantageous ING Sustainable Business Loans to customers within the scope of the program launched for Corporate Banking customers	Achieving zero carbon emissions in operations, Bringing the portfolio to net zero by 2050 or earlier, Guiding customers to net zero economy and providing financing, managing climate and environmental risks
Alternatif Bank In 2022, a project agreement was signed with Escarus, Turkey's leading consultancy company, for more efficient and strategic management of sustainability efforts, including gap analysis, review of strategy and management structure, system documentation and preparation of training content.	By the end of 2023, to ensure that the necessary infrastructure is in place to more clearly monitor and report both the organization's own impact and the activities realized as a result of the financing it provides in terms of Environmental Social Governance
Albaraka Türk Founded in 2020 by Inovasyon Venture Capital, it has met customer needs with projects such as Insha Ventures and fintech. Conducted many environmental projects such as Green Building, Carbon Disclosure and Zero Waste Projects	The Bank's ultimate goal is Net Zero Emission. Therefore, the Bank strives to formulate its sustainability strategy within the framework of environmental, social and governance
Ziraat Bank Within the scope of the SDG, SME financing and collateral products, sustainable agricultural loans, financial literacy trainings for customers, financing renewable energy projects, special loan projects for priority development regions and carbon footprint measurement studies were carried out.	To strengthen the Bank's position in the national market and worldwide competitiveness via corporate, environmental, and social sustainability practices.
Halkbank Approximately 502,075 tons of CO2 emission reduction in 2022 due to the renewable energy plants assessed by Halkbank. 8,133 firms were scored within the scope of Sustainability and Environmental Assessment in 2022. Saving 102 million pages through paperless banking practices. A Digital Credit Package for Women Entrepreneurs was introduced to customers on the Digital Credit Platform in July 2021. With the "Digital Women Entrepreneur Loan", 406 million TL was provided to 6,808 entrepreneurs in 2022 and a total of 530 million TL was disbursed to 11,688 entrepreneurs.	Combating climate change, information security and customer privacy, increasing access to financial services, social responsibility and contribution to social welfare in line with SDGs. In 2022 and beyond, the Bank aims to lower the environmental impact caused by its banking operations. In addition to enhancing the financing it provides to environmentally-friendly projects and sectors, the Bank will continue to apply digitization methods that will speed up the transition to emission reduction, waste management, and paperless banking to minimize the footprint of its operations.

Table 4 shows the investment activities and targets of the banks operating in Turkey in relation to sustainability. According to the data of the BAT, there are 54 banks in Turkey. Of these banks, 34 are deposit banks and 20 are development and investment banks. Among the deposit banks, 3 are public, 10 are private and 21 are foreign capitalized, while 3 of the development banks are public, 14 are private and 3 are foreign capitalized. In Table 4, 11 banks operating in Turkey are assessed in terms of sustainability. The principles established by the BAT to contribute to SDGs can be listed as follows (Turkish Banks Association, 2022):

1- Identifying social and environmental risks related to banking activities
2- Contributing to SDGs

3- Fighting against climate change
4- Ensuring financial health and expanding coverage
5- Improving human and labor rights
6- Expanding inclusion and equal opportunities
7- Identifying stakeholders and ensuring their participation
8- Determination of corporate governance
9- Developing institutional capacity for sustainability
10- Communication of all sustainability reports to stakeholders

Green Finance Practices of Banks in Turkey

Green banking is an important and evolving concept at the intersection of socio-economic growth, financial institution operations, and environmental policies. As the locomotive of financial markets, banks play an important role in the development of a low-carbon economic system. In recent years, the banking sector has increased the share of renewable and environmentally friendly green energy products in its loan portfolios in order to reduce the carbon emission rate in the economy. Especially in recent years, coal-fired thermal power plants have been excluded from financing, while renewable energy projects have been included in the scope of financing.

The green characteristic of GF requires the use of corporate governance, social inclusion, climate change, green building, clean energy, and financial resources to be extended to environmental protection in all sectors of the economy (Urban and Mojcik, 2019). Banks, as responsible members of society, are conscious of environmental changes and assume vital roles in complementing and supporting public activities towards substantial carbon mitigation globally through the sustainable banking practices or implementation of green banking (Zhixia, Hossen, Muzafary and Begum, 2018). GF is increasing prominence owing to the quest to sustain banks and society in general against unforeseeable future economic crises (Ziolo, Filipiak, Bak and Cheba, 2012). Recently, the conventional banking paradigm has shifted towards the provision of environmentally-friendly products (Dikau and Volz, 2020).

Table 5
Green Finance Practices of Banks in Turkey

Bank Name	Green Finance Practices
Denizbank	In accordance with the agreement signed between the Bank and the European Bank for Reconstruction and Development, the Bank provides its customers with Green Economy Financing Facility (GEFF) Turkey financing for sustainable energy investments.
Halkbank	In 2021, the Bank disbursed 45 billion in loans for GF and sustainable financing. It provided 14 billion credit support within the scope of energy efficiency and renewable energy. The Bank also launched loans such as renewable energy, energy efficiency, green workplace investment, green light commercial vehicle, green certified construction project, and electric vehicle charging station within the green energy loan package.
İşbank	After 2015, all of the financing allocated to electricity generation investments was allocated among renewable energy investments. In 2019, the first Green Bond was issued. Financing support is provided for GES investments through rooftop and self-consumption models. In addition to these investments, it sells financial products such as urban transformation, unlicensed electricity generation, energy efficiency, and environmentally friendly vehicle loans.
Industrial Development Bank of Turkey	The Bank signed loan agreements to support the green economy. Within the framework of the EUR 53.5 million green economy financing with the European Bank for Reconstruction and Development, investments supporting the green economy in Turkey will be financed.
ING Bank	In 1997, the first environmental and social risk policy was implemented. In 2015, an integrated climate action approach was launched by ratifying the Paris Climate Agreement. In 2015, a Green Bond was also launched.
Vakıfbank	In 2020, within the scope of the green housing project with the French Development Agency, EUR 100 million of the EUR 200 million resource was transferred to the market in 2022 and the remaining EUR 100 million in 2023. In addition, cooperation with the European

	Investment Bank, the World Bank and the European Reconstruction Banks in the field of GF continues.
Garantibank	In the first 9 months of 2023, a total of TL 59.4 billion of sustainable financing was provided, including TL 12 billion of green and social financing to the corporate segment. The Bank launched green loan products in 2018, a green public offering in 2021, and a green direct collection system in 2022.
Akbank	For the first time in Turkey, the Bank launched a blue tourism loan under green transformation for tourism, port and maritime activities. Akbank aimed to reduce its environmental footprint with the Çatı GES investment loan. A low carbon economy transition loan was developed to ensure the green transformation of the export and production sectors.
Ziraat Bankası	The Bank launched green house (TL 353 million), green vehicle (TL 36 million), residential thermal insulation (TL 23 million), and SPP investment and operation loans as financial products for green transformation and sustainability.

Source: Created by the author

Table 5 shows the practices of banks for GF in Turkey. In the researches conducted, 9 banks have provided support to financial markets in the field of GF. In general, it is seen that banks provide loan disbursement support to companies investing in renewable energy. In addition, financial products such as blue tourism loans, green bonds, green house and green vehicle loans have been introduced to the market, although they are not widely spread.

Conclusion

Today's important problems such as environmental protection, climate change and sustainability are based on the scarcity of resources and their diminishing day by day. Banks in the financial sector have important duties in ensuring low-carbon sustainable development related to the environment and climate. In this study, banks operating in Turkey are assessed in terms of sustainability and GF practices. Of the deposit banks operating in Turkey, 3 are public, 9 are private and 16 are foreign capital banks. When banks are evaluated in terms of sustainability investments in Turkey, it is seen that 100% of the banks with public capital offer sustainability-related investments and various financial products to the market. These financial products mainly consist of loans to support SMEs, entrepreneurs and agriculture. It is observed that 44% of privately owned deposit banks carry out sustainabilityrelated activities. These activities included low-carbon funds, energy resources, women's banking, financial literacy trainings, clean energy and sustainability trainings. Only 13% of foreign capital banks conduct sustainability activities. In general, it is seen that deposit banks carry out sustainability-related activities at a low rate of 36%. This indicator shows that sustainability has not been identified as an important strategy in Turkey, especially in the banking sector, which is the locomotive of financial markets. In order to develop and expand sustainable investments, it is important to include sustainability efforts in the strategic goals of banks.

Loans constitute the sanctioning power of banks on the market in terms of environmental sustainability. The analysis shows that the banking system in Turkey has not made significant adjustments in credit policies, especially in terms of reducing environmental pollution. At this point, borrowers who control environmental pollution and are interested in renewable energy, circular economy and environmentally-friendly agriculture should be able to use loans with lower interest rates. Given their intermediary role, financial service providers can encourage or prevent unsustainable behavior of governments, companies and individuals, and even trigger structural change in society (Louche, Busch, Crifo and Marcus, 2019). China, one of the world's largest economies, introduced guidelines and regulations in 2006 to integrate environmental issues into financial decision-making (Bai, Faure and Liu, 2013). According to the banking regulation developed in China in relation to sustainability efforts, lenders are required to limit lending to polluting industries and to withdraw loans already provided in the event of environmental controversies (Jin and Mengqi, 2011).

Investments made by economic units have important effects on the progress of environmental destruction. While these investments have prolonged the economic life of these units, some side

effects that harm the environment have also emerged. Banks, as the financiers of these investments, have positive or adverse effects on the environment. It is accepted that the internal operations of banks are not destructive. However, banks are somehow related to environmental hazards since they are linked to sectors such as paper, steel, chemicals, cement, energy, fertilizers, textiles, etc. (Chopra and Kakrecha, 2015). In this respect, all banks in Turkey provide loans to the market to finance investments. However, there are not many banks that develop policies within the scope of GF, except for publicly owned deposit banks. It is seen that 100% of the banks with public capital, 33% of the banks with private capital and 13% of the banks with foreign capital carry out financing policies for GF. Especially the credit policies developed by public banks to address environmental pollution and high carbon emissions should be followed and implemented by private and foreign capital banks.

The Contribution of Researchers

The contribution of the researcher to this study is 100%.

Conflict of Interest

There is no conflict of interest in this study

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Genişletilmiş Özet

Giriş

Kıtlık, ekonomik birimleri tarih boyunca yanılgıya uğratan temel bir faktör olmuştur. İhtiyaç kavramında meydana gelen hızlı değişim ve kırılganlıklar kaynakların kısıtlılığı konusunda önemli uyarıcılar haline gelmiştir. İhtiyaçların bireysel anlamda birbirinden bağımsız olması ve karşılanması noktasında dikkatsizlik kaynakların hızla tükenmesine neden olmuştur. Ekonomik birimlerin, doğal kaynakların etkin kullanımı konusunda sıkıntılar yaşadığı ve yaşamaya da devam edeceği kaçınılmaz bir gerçekliktir. Sürdürülebilirliğin temelinde şimdiki ve gelecek nesiller arasında açık bir bağlantı kurulması gerekliliği yatmaktadır. Sürdürülebilirlik, kaynakların ekonomik ömürlerinin uzamasına, bu kaynaklardan elde edilen verimin artmasına ve nesiller arası kaynak aktarımına imkan sağlayan bir kavramdır.

Yeşil finans kavramı, temel olarak çevresel açıdan sürdürülebilir ve iklim değişikliği yönlerini benimseyen projelerin kullanımına yönelik finansal düzenlemeleri ifade eder (Chhaochharia, 2021). Bu kapsamda yeşil finansman kapsamında bankalar, kurumsal yatırımcılar ve uluslararası finans kurumlarının yanında merkez bankaları ve finansal düzenleyiciler, yeşil finansın büyümesini hızlandıran ana aktörlerdendir. Finansal sistemin yeşilleşmesine yardımcı olmak için bu kuruluşlardan bazıları, öncelikli borç verme gereklilikleri, faiz oranı sübvansiyonları yoluyla piyasa oranının altında finansman olanakları gibi çeşitli varlık sınıflarına yönelik politika ve düzenleyici önlemler kullanır (Iswaryalakshmi, 2022). Bu kavram, finansal kaynak sağlayıcıları, mal ve hizmet üreticileri ve mal ve hizmet tüketicileri dahil ancak bunlarla sınırlı kalmamak üzere, mal ve hizmet tedarik zincirinde yer alan tüm tarafların davranışları ile tanımlanır (Al-Sheryani ve Nobanee, 2020). Yeşil finans, ekonomik kaynaklar ile kaynak kullanıcıları arasındaki uyumu dikkate almaktadır. Ayrıca yeşil finans, finans ve işletme kelimelerini çevre dostu davranışlarla birleştiren bir olgudur (Chhaochharia, 2021). Geniş anlamda yeşil finans, çevreyi koruyan ve yatırımcılarına veya borç verenlere adil bir getiri sağlayan faaliyetler için fonların edinilmesi ve kullanılmasıdır (Berensmann ve Lindenberg, 2019; Ozili, 2021).

Türkiye'de Sürdürülebilirlik ve Yeşil Finansman Mevzuat Çalışmaları

Sürdürülebilirliğin temelinde insan merkezli kalkınma hedefleri yatmaktadır. Türkiye'de bu yönde oluşturulmuş ve geliştirilmiş sürdürülebilirlik kalkınma planı çeşitli politik alanlarının ve sektörlerin mevzuatına dahil edilmeye çalışılmıştır (Dindar, 2023). Sürdürülebilir kalkınma ifadesi ilk olarak 1986 yılında Brundtland Raporunda (Sustainabledevelopment, 2023) tanımı yapılmış ve kalkınma üzerindeki öneminden bahsedilmiştir. Sürdürülebilir kalkınmayla ilgili olarak ilk hedefler 2000 yılındaki Bin Yıllık Kalkınma Hedefleri ile belirlenmiştir. Bu belirlenen hedeflerin hayata geçirilmesi ile elde edilen tecrübe neticesinde tüm ülkeleri kapsayan daha geniş çaplı hedefler oluşturulmasına neden olmuştur. Sonuç olarak 2015 yılında Birleşmiş Genel Kurulunda 17 amaç ve 169 hedeften oluşan ve 2030 yılına kadar fiilen tamamlanması gereken Sürdürülebilir Kalkınma Amaçlarını içeren karar kabul edilmiştir (Sayıştay Başkanlığı, 2023).

İklim değişikliğinin yarattığı riskler konusunda kamuoyunun artan farkındalığı karşısında, son yıllarda merkez bankalarının iklim değişikliğiyle bağlantılı riskleri ele alma ve yeşil finansın gelişimini desteklemedeki rolü üzerine yoğunlaşan bir tartışmaya tanık olunmuştur (Batten, Sowerbutts ve Tanaka, 2016; Campiglio ve Dafermos, 2018; Dikau ve Volz, 2019). Türkiye'de, Çevre Şehircilik ve İklim Bakanlığı başta olmak üzere birçok bakanlık Avrupa Yeşil Mutabakatı ile uyumlu eylem planları hayata geçirmiştir. Türkiye Cumhuriyeti Ticaret Bakanlığının 2021 tarihli Yeşil Mutabakat Eylem Planında, AB'nin hazırladığı eylem planına uyum sağlanabilmesi için gerekli finansman kaynaklarına erişim imkanının verilmesine vurgu yapmıştır.

Türkiye'de Yeşil Finans ve Sürdürülebilirliğin Teşvikine Yönelik Uygulamalar

Gelecekle ilgili belirsizlikler ülkeleri daha az yatırım yapmaya yönlendirmektedir. Bu durum çevreyle ilgili konuların, ülkenin makroekonomik koşulları ve finansal istikrarı üzerinde birçok olumsuz etkisi olan finansal risk kaynakları olduğunun daha iyi anlaşılması ihtiyacını ortaya çıkarmaktadır (Falcone, 2020). Türkiye'nin tüm bu hususları hesaba katması ve bu zorlukları hafifletmek için adımlar atması gerekmektedir. Dünya Bankası 2 Haziran 2023 tarihinde Türkiye'de sanayi şirketleri için etkin bir yeşil dönüşüm sürecini desteklemeyi amaçlayan Türkiye Yeşil Sanayi Projesi için 450 milyon dolar tutarında bir finansmanı onaylamıştır. Bu teşvikin 250 milyonluk bölümü Küçük ve Orta Büyüklükteki İşletmelerin (KOBİ) kaynak performanslarını geliştirmelerine ve karbon emisyon oranlarını azaltmalarına yardımcı olmak üzere Küçük ve Orta Ölçekli İşletmeleri Geliştirme ve Destekleme İdaresi Başkanlığı (KOSGEB) Başkanlığına kullandırılmıştır. Geri kalan 175 milyonluk kısmı Türkiye Bilimsel ve Teknolojik Araştırma Kurumuna, 25 milyon doları ise Türkiye Hükümetine tahsis edilmiştir (Worlbank, 2023).

IPA II Dönemi kapsamında Türkiye'de Döngüsel Ekonomiye Geçiş Potansiyelinin Değerlendirilmesi için Teknik Destek Projesi (DEEP) isimli ulusal döngüsel ekonomi eylem planı hazırlanmıştır. Bu proje ile Türkiye genelinde döngüsel ekonomiye ulaşmak için daha verimli kaynak kullanımı ve atık yönetimi teşvik edilmektedir (Ticaret Bakanlığı, 2022). BM'ler Türkiye'de sürdürülebilir kalkınma amaçlarının gerçekleştirilmesi için 66.8 milyon dolarlık bir kaynak tahsis etmiştir. Bu tahsis edilen kaynağın %27.4'ü yoksulluğun, %26.2'si açlığın sonlandırılmasında, %0.3'ü sağlıklı ve kaliteli yaşam, %1.6'sı nitelikli eğitim, %5.1'i toplumsal cinsiyet eşitliğini sağlamak, %0.3'ü erişilebilir ve temiz enerji, %5.8'i insana yakışır iş ve ekonomik büyüme, %1.7'si sanayi, yenilicilik ve alt yapı, %3.9'u eşitsizliklerin azaltılması, %0.1'i sürdürülebilir şehirler ve topluluklar, %2.5'i sorumlu üretim ve tüketim, %6.2'si iklim eylemleri, %1'i sudaki yaşam, %0.1'i karasal yaşam, %11.7'si barış, adalet ve güçlü kurumlar ve %6'sı amaçlar doğrultusunda ortaklıklar için kullanılmıştır (Birleşmiş Milletler Türkiye, 2023).

Türkiye'de Bankacılık Sisteminde Sürdürülebilirlik

Sürdürülebilir fonlar Environment, Social ve Governance (ESG) sözcüklerinin baş harflerinden oluşturularak elde edilmiştir. Dünya genelinde bu fonlar (fon, bono ve tahviller vb.) 2016'da 22.8, 2018'de 30.6 trilyon doları aşarak 2020'de 35 trilyon dolara ulaşmıştır. Bu verilere bakılarak 2025 yılında bu tutarın 50 trilyon dolara ulaşması beklenmektedir (Bloomberg, 2021). Türkiye'de sürdürülebilirlik ile ilgili enerji, çevre ve gıda gibi konuların dışında finans alanında da bankacılık sektörü önde gelmektedir. Dünyanın önde gelen sürdürülebilirlik inisiyatifi olan United Nations (UN) Global Compact, Türkiye'de faaliyette bulunan Sürdürülebilir Bankacılık ve Finans Çalışma Grubu aracılığı ile finans alanında sürdürülebilirlik anlayışını yaymayı ve bu konuda uyumlu standartlar geliştirmeyi amaçlamaktadır (Garantibbva, 2023).

Türkiye'de Bankaların Yeşil Finansman Uygulamaları

Yeşil bankacılık, çevre politikası, finansal kurum operasyonları ve sosyo-ekonomik büyümenin kesişen alanlarında öneme sahip ve gelişen bir kavramdır. Finansal piyasaların lokomotifi olan bankalara düşük karbonlu ekonomik sistemin gelişmesinde önemli görevler düşmektedir. Son yıllarda bankacılık sektörü, ekonomide karbon emisyon oranının düşürülebilmesi adına yenilenebilir ve çevre dostu yeşil enerji ürünlerinin kredi portföylerindeki payını artırmıştır. Özellikle son dönemlerde finansman konusunda kömür yakıtlı termit santraller devre dışı bırakılırken, yenilenebilir enerji projeleri finansman kapsamına alınmıştır. Bankacılık sektöründe yeşil finans, öngörülemeyen gelecekteki ekonomik zorluklara karşı bankaları ve genel olarak toplumu ayakta tutma arayışı nedeniyle öncelik kazanmaktadır (Ziolo, Filipiak, Bak ve Cheba, 2012). Son zamanlarda geleneksel bankacılık paradigmasının çevre dostu ürünlerin sağlanmasına doğru kaydığı görülmektedir (Dikau ve Volz, 2021).

Sonuç

Çevrenin korunması, iklim değişikliği, sürdürülebilirlik gibi günümüzün önemli sorunsallarının temelinde kaynakların kıtlığı ve her geçen gün azalımı yer almaktadır. Çevre ve iklim ile ilgili düşük karbonlu sürdürülebilir kalkınmanın sağlanmasında finans sektörü içerisinde yer alan bankalara önemli görevler düşmektedir. Bu çalışmada, Türkiye'de faaliyette bulunan bankaların sürdürülebilirlik ve yeşil finansman uygulamaları açısından değerlendirmesi yapılmıştır. Türkiye'de faaliyette bulunan mevduat bankalarının 3'ü kamusal, 9'u özel, 16'sı yabancı sermayeli bankalardır. Türkiye'de sürdürülebilirlik yatırımları açısından bankalar değerlendirildiğinde kamusal sermayeli bankaların %100'ü tarafından sürdürülebilirlikle ilgili yatırımların ve çeşitli finansal ürünlerin piyasa sunulduğu görülmektedir. Çevresel sürdürülebilirlik konusunda bankaların piyasa üzerindeki yaptırım gücünü krediler oluşturmaktadır. Yapılan analizlerde Türkiye'de bankacılık sisteminde özellikle çevresel kirliliğin azaltılması noktasında kredi politikalarında önemli düzenlemelerin yapılmadığı görülmektedir. Bu noktada çevresel kirliliği kontrol altına alan, yenilenebilir enerji, döngüsel ekonomi ve çevre dostu tarımla ilgilenen borçluların daha düşük faiz oranlı kredi kullanabilmeleri sağlanmalıdır.

Çevresel tahribin ilerlemesinde ekonomik birimlerin yaptıkları yatırımların önemli etkileri bulunmaktadır. Yapılan yatırımlar bu birimlerin ekonomik ömürlerinin uzamasına neden olurken çevreye zarar veren bazı yan etkilerde ortaya çıkmıştır. Bankalar bu yatırımların finansörü olarak çevre üzerinde olumlu veya olumsuz etkiler yaratmaktadır. Bankaların iç operasyonlarının tahrip edici olmadığı kabul edilmektedir. Ancak bankalar bir şekilde çevreye zarar vermekle ilişkilendiriliyor çünkü kağıt, çelik, kimya, çimento, enerji, gübre, tekstil vb. sektörlerle bağlantılıdır (Chopra ve Kakrecha, 2015). Bu açıdan değerlendirildiğinde Türkiye'de bankaların tamamı yatırımların finanse edilmesi adına piyasaya kredi imkânı sağlamaktadır. Oysaki kamusal sermayeli mevduat bankalarının dışında yeşil finansman kapsamında politika geliştiren çok fazla banka bulunmamaktadır. Kamusal sermayeli bankaların %100'ü, özel sermayeli bankaların %33'ü, yabancı sermayeli bankaların %13'ü yeşil finansmana yönelik finansman politikası yürütmektedirler. Özellikle kamu bankaları tarafından çevresel kirliliğe ve yüksek karbon salımına yönelik geliştirilen kredi politikalarının özel ve yabancı sermayeli bankalar tarafından da takip edilmesi ve uygulamaya konulması gerekmektedir.