



The Role of Green Finance (Green Sukuk and Green Bonds) In Sustainable Development: Selected Experiences With A Special Reference To Iraq

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Received: 30-10-2025
Accepted: 30-11-2025
Published: 30-12-2025



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Abstract: The research population to reveal the role of green financing (green sukuk and green bonds) in sustainable development, as the world population is expected to reach 9 billion by 2050, This population increase requires the availability of food, water, and energy, and undoubtedly the current growth patterns are inefficient and insufficient for such a population, as they still rely on traditional economic growth methods despite many countries adopting sustainable development. The proper path today is to move towards green growth and the transition to a green economy, so that growth becomes inclusive and environmentally friendly, efficient in the use of natural resources, and meets the needs of all citizens. The research aims to identify green finance instruments (green sukuk and green bonds) by defining them, their importance, characteristics and key principles. The research also aims to study the experiences of some countries in the field of green finance and the use of its instruments to transition towards a green economy, including China and the United Arab Emirates. Furthermore, the research aims to study Iraq's direction towards transitioning to a green economy and sustainable development, highlighting the key steps it has started on this path, and to determine a future vision for transitioning to a green economy in Iraq, following the example of other countries worldwide. The research has reached a set of conclusions and recommendations related to the study.

Keywords: Green Finance, Green Sukuk, Green Bonds, Sustainable Development.

Introduction

With the emergence of environmental challenges imposed by climate change and the increasing impacts of human activities, especially industrial and urban ones, it has become necessary to find new financial tools that consider environmental aspects in addition to economic ones. Here, green finance has emerged as one of the new financial tools supporting the path of sustainable development by mobilising financial resources and directing them towards projects that protect the environment, reduce carbon impacts, and consider social justice. This type of finance contributes to building a more resilient economy capable of facing climate risks and gradually transitioning towards sustainable productive activities.

Green finance reconciles a country's macroeconomic policies with environmental and social objectives as it fully integrates economic growth, environmental sustainability and social equity. The transition to green growth enhances sustainable development pathways to address the challenges of the twenty-first century, environmental degradation, climate change and population growth. Green growth not only achieves environmental improvement but also contributes to economic development and meets social needs. Hence, green finance emerged within the progressive shift towards the green economy experienced globally. Green finance is financing aimed at economic growth, similar to conventional financing, but it targets reducing carbon emissions, improving the efficiency of natural resource use, tackling pollution and providing social justice to meet the needs of the current generation without compromising the rights of future generations.

Importance of the research

1. The importance of this research comes from the significance of transitioning to a green economy to protect the environment due to climate change.
2. Preserving natural resources and not depleting them for future generations.

Research problem

Has the world in general, and Iraq in particular, made significant progress towards transitioning to a green economy

Research hypothesis

The study assumes that the world is serious about taking clear steps towards transitioning to a green economy and finding new green financing tools that can contribute to this transition after recognising the threat of environmental degradation.

Study methodology

The researcher used the case study method and both the inductive and deductive approaches by collecting and analysing information and data to reach conclusions and provide the necessary recommendations.

Green Finance (Concept, Origins, Importance, Types)

1. The Concept of Green Finance

Several varied definitions of green finance have emerged, including:

1. Green finance is defined as financial investments directed towards sustainable development projects and environmental products that promote a more sustainable economy. Green finance includes climate finance and other environmental objectives such as combating industrial pollution, improving water sanitation, and protecting biodiversity.
2. The G20 defined it as finance that encompasses all forms of investment or lending that consider environmental impact and promote environmental sustainability.
3. The International Finance Corporation (IFC) defined it as various investments and loans that fund environmentally friendly projects aimed at protecting the environment and conserving natural resources.

4. As defined by Hohne, Kholza, Fekets, and Gilbert, it is a broad term that can refer to financial investments flowing into sustainable development projects and environmental products. It is financing aimed at achieving economic growth while reducing pollution, gas emissions, and global warming, minimising waste, and improving the efficiency of natural resource use.
5. The German Development Institute defines it as financing green investments, whether in the public or private sector, encompassing many areas including financing the production of environmental goods and services, providing compensation for environmental damage and mitigating it, prevention measures such as dam maintenance, renewable energy generation, financing public policies that encourage eco-friendly agriculture and ecological projects, and components of the financial system involved in green investments.
6. According to Moschet, it is funds that achieve a medium- to long-term strategic balance of environmental and service objectives in environmental sectors in a way that ensures meeting individuals' needs for goods and services while preserving the environment and its resources.

2. Origins, Importance, and Objectives of Green Finance

Origins of Green Finance

The issue of green financing for the environment has become a major challenge facing the achievement of sustainable development worldwide, and the financial sector, as the main driving force of economic development, has sought to contribute in its own way through green financing.

Green financing was first used by the American economist Richard Saunders when he taught the first course on environmental finance at Columbia University in 1996. Another term used globally for it is green finance.

Thus, the concept of green finance spread globally and began to be implemented in 2015 following the signing of the Paris Agreement under the United Nations Framework Convention on Climate Change. According to Article 2 of the agreement, the aim of this initiative is to support the global response to the threat of climate change by keeping the global temperature rise in the twenty-first century well below two degrees Celsius above pre-industrial levels and pursuing efforts to limit the increase to 1.5 degrees Celsius. Enhancing the capacity of countries to manage climate change, as well as aligning financial flows with a pathway towards low greenhouse gas emissions and climate-resilient development, are other objectives of the Paris Agreement, as achieving these goals is not possible without tremendous efforts by both public and private financial institutions to provide the necessary funding.

Another initiative for green finance is the establishment of the G20 Green Finance Study Group (GFSG). This idea was proposed to study green finance under China's G20 presidency and was endorsed by the meeting of G20 finance deputies and central bank governors on 15 December 2015 in Sanya, China. The aim of this group is to identify institutional and market barriers to green finance, and based on country experiences,

develop options on how to enhance the financial system's capacity to mobilise private capital for green investment.

According to Article 11 of the European Union Labour Treaty, environmental protection must be integrated into the formulation and implementation of Union policies and activities, particularly with the objective of promoting sustainable development, as China is one of the countries most actively promoting the idea of green finance and taking initiatives on the international stage. China also developed the concept of green finance in the domestic market, and in August 2016 issued guidelines for establishing a green financial system. This document was presented to promote the sustainable development of the Chinese economy, establish a green financial system, improve the capital market's role in allocating resources for green projects, and support and promote the development of the green economy.

The United Nations Environment Programme (UNEP) also addressed the issue of financing the transition to a green economy and called for the establishment of key green financing mechanisms. Consequently, the Green Climate Fund (GCF) was conceived to mobilise large-scale financing for investment in low-emission development, during the climate conference held in December 2010. The same programme also emphasised the necessity of creating financial institutions at both global and national levels and called for the development of the banking system, which plays a central role in providing financial support for various investment projects in the green economy.

Overall, financing involves a wide range of financial institutions, asset classes, and public and private funding, considering the scale of investment expenditure required for environmentally friendly projects. Therefore, cooperation between the public and private sectors is crucial, enabling market players such as banks and investors to participate in the green economy through specific financial products like green loans, green bonds, and green investment funds. Governments can also use public financial resources to support environmental projects either through direct green investments or by supporting private green financing.

Importance and Objectives of Green Finance

Green finance holds great importance, which lies in the following:

1. Green finance provides the necessary funding for investment in agriculture, freshwater resources, fisheries, forestry and protected areas, leading over time to improved soil quality and appearance and increased crop yields.
2. Green finance enhances efficiency in the agricultural, industrial and municipal sectors regarding water demand, thereby reducing pressure on groundwater and surface water in both the short and long term.
3. Green finance contributes to poverty reduction by optimally utilizing natural resources and ecosystems, ensuring sustainable development through the flow of benefits from natural capital directly to the poor.
4. It helps provide and increase new employment opportunities, especially in the agriculture, plant, energy and transport sectors.

5. It separates resource use and environmental impacts from economic growth, characterised by a significant increase in investments in green sectors, supported by reforms enabling economic policy-level implementation.
6. Redesigning business, infrastructure, and institutional frameworks by increasing the share of green sectors in the economy.
7. Reducing energy and resource consumption in non-clean production processes, thereby leading to decreased waste and greenhouse gas emissions.

Green finance aims to achieve a set of objectives at all levels, which are represented as follows:

1. Social level aims to:

- Achieve social welfare, improve lifestyle and social development.
- Achieve equality.
- Optimise access to resources and work on meeting the needs of society members.

2. Economic level aims to:

- Increase economic growth rates.
- Increase income levels and provide job opportunities.
- Attract investments and establish new economic activities.

3. Environmental level aims to:

- Reduce environmental risks.
- Improve the efficiency of resources and energy.
- Achieve environmental responsibility for economic entities and reduce the burden on the ecosystem.

Types and Sources of Green Finance

Types of Green Finance

Green financing takes several forms, which can be summarised as follows:

1. Financing in terms of duration, which can be divided into:

- Short-term financing refers to funds that an organisation obtains from others and commits to repay within a period exceeding one year, and it is directed towards operating activities. Operating activities are the processes carried out by the organisation over a short period, characterised by their continuous repetition during the production process.
- Medium-term financing is the financing directed towards funding the permanent part of the institution's investments in working capital, additions to its fixed assets, and projects under implementation, which extend over several years and range in duration from one to seven years.
- Long-term financing is the financing that extends for more than seven years, as it is intended to fund long-term investment operations, which are those operations conducted by institutions over a long period with the aim of acquiring means of production, real estate, land, or buildings.

2. Funding by source is classified as follows:

- Domestic green financing refers to internal bank financing, which is the set of resources that a bank can obtain independently without resorting to external sources, meaning the funds are derived from the bank's own activities, essentially representing self-financing.
- External green financing refers to funds obtained from other external entities, such as individuals, banks, or financial institutions, and can be obtained in two ways:
 - The first method is direct external green financing, which occurs through direct contact between lenders and borrowers without the intervention of a financial intermediary, through the issuance of financial deficit units for green securities, along with an appropriate return for lending risks represented by the assigned financial assets. Direct financing is a financing channel through which funds move directly from lending units and is called direct financial instruments or securities. These can include shares and bonds issued specifically to finance green projects, thereby becoming green shares and bonds.
 - The second method involves the indirect transfer of funds from saving units to deficit units through the intervention of financial intermediaries such as commercial banks, insurance companies, savings and loan associations, and other financial brokerage institutions. These financial intermediaries can accept deposits dedicated to green projects and allocate their returns to green projects.

Sources of Green Finance

Sources of green financing can be divided into two levels:

1. Local green financing sources, which refer to local funding sources for environmental projects, meaning the sources from which national economies obtain funds to be used for sustainable development and environmental protection.

These include several sources, such as:

- Financing through service users, which is done by paying fees in exchange for receiving the service or through self-financing by the service users, as fees are one of the funding resources to ensure the continuation of managing certain waste services. Self-financing by service users refers to producers of waste, such as large industrial companies, investing in purchasing and managing their own recycling systems and treatment facilities.
- Financing through the general budget, which can be available from the general budget at different government levels, such as national, regional, or municipal levels according to each country. The general budget allows three types of financing, namely:
 - Funding operational costs for managing the administrative system.
 - Supporting, operating, and maintaining publicly available service systems.
 - Investment funding, which is usually available within the framework of public investment planning procedures.

Funding is usually provided in the form of grants from the annual general budget, meaning that taxpayers are the real source of this type of funding, although the funds

available in the general budget are limited in developing countries, so environmental concerns compete with other interests such as healthcare, water supply and infrastructure.

- Funding through environmental protection funds: some countries have established funds for environmental protection. These funds are considered public financing sources outside the general budget, providing funding primarily as grants or loans. Environmental protection funds are the only sources that rely on formal separate applications for each individual project, and funding is usually provided based on the strength of the funding request.

- Banks and local lending institutions: these financial resources can invest in infrastructure projects according to the financial feasibility of the proposed project, so fees collected from beneficiaries of green projects must be sufficient to ensure a reasonable financial return on investment.

2. International green financing sources:

International green finance resources can be divided into main groups according to different capital resources and the various types of financing available. International green financing sources rely on international development banks that operate similarly to commercial banks but are established by a number of countries.

The only difference is that they provide favourable conditions for countries that do not have borrowing capacity, with simpler and easier procedures. The ability to obtain these loans depends on creating a national plan for the subject matter of the loan.

Among the most important international development banks are:

1. The International Bank for Reconstruction and Development (IBRD)

It is the largest and oldest institution in the World Bank Group, established in 1945 and owned by 183 countries. It provides loans only to eligible countries and is considered the first multilateral institution to implement environmental protection policies since 1970, achieving significant progress in 1989 by integrating environmental considerations into the main course of its public policy, making environmental concerns the predominant feature of the Bank's operations. The World Bank is committed to the Millennium Development Goals agreed upon by 189 countries at the United Nations Millennium Summit in 2001, which outlined three general goals: raising living standards, improving the quality of work, and protecting shared regional and global resources.

2. The US Central Bank for Economic Integration

It was established with the aim of promoting integration and balanced economic and social development in the Central American region, by supporting programmes in the public and private sectors and projects that provide employment and production opportunities, contribute to improving productivity and competitiveness, and raise human development indicators in the region. It was founded in 1999 and the bank focuses on three areas within sustainable development: - Micro, small, and medium-sized enterprises, with the bank providing credit and technical assistance through banks, finance companies, or non-governmental organisations. - Environment, as the bank

finances environmental projects by directing resources from a dedicated fund to projects related to water conservation and protection, energy preservation, development of energy generation sources, climate change, education, environmental legislation, and other topics related to sustainable development. - Social development, where the bank directs resources to programmes aimed at reducing poverty, promoting education and healthcare, achieving integrated rural development, and housing projects.

3. European Investment Bank

This bank represents the European Union's financing institution and provides loans to EU member states. It aims to finance capital projects that align with EU objectives. Outside the EU, the European Investment Bank implements the financial provisions of agreements concluded under EU policies to support development and cooperation. The European Investment Bank directs its lending activities towards five priorities:

- Preserving, protecting, and improving the quality of the environment.
- Working to protect human health.
- Ensuring the proper utilization of natural resources and rationalizing their consumption.
- Encouraging the implementation of measures at the international level and addressing regional and global environmental problems.
- The European Investment Bank's lending to projects that seek to preserve the environment and improve the quality of life inside and outside the European Union reached 9 billion euros in 2001.

4. Asian Development Bank

The Asian Development Bank (ADB) is a lending institution for developing countries in the Asian region. The ADB's general objectives include poverty reduction, focusing on activities that help the poor, achieving sustainable economic growth and social development, and implementing good governance. The Bank's poverty reduction strategy recognizes that environmental sustainability is a fundamental requirement for achieving economic growth, and sustainable environmental development has become an important theme that is a recurring common denominator in the Bank's long-term strategic framework.

5. International Development Funds

International development funds include lending institutions that provide loans on favorable terms without interest or at a low interest rate. A number of countries establish development funds and become members of them, and provide them with grants and donations, which are the main source of their capital. Development banks often manage these funds or have a close relationship with them. International development funds include institutions such as the International Development Association and the Global Environment Facility.

6. International Development Association

The International Development Association (IDA) is the conduit through which the World Bank provides preferential loans. It grants long-term loans at zero interest rates to

the poorest developing countries. The grants and aid provided by the IDA represent a quarter of the aid provided by the World Bank. The IDA lends between \$6-7 billion annually to finance development projects that focus on the basic needs of people, health services, clean water, sanitation, and primary education.

7. Global Environment Fund

This fund was established in 1990 and the Global Environment Facility is one of the main drivers dedicated to implementing international and multilateral environmental agreements and business factors that address four critical threats to the global environment, which are represented by the following values:

Biodiversity.

- Reducing the risks associated with climate change.
- Combating water pollution and soil degradation.
- Eliminating persistent organic pollutants.

Challenges and Reasons for the Shift Towards Green Finance

Green finance faces a number of challenges, the most important of which are:

1. The lack of specialized financial markets for financing green projects has led to difficulty in trading financial instruments such as green stocks and bonds.
2. Low level of awareness of green banking activities.
3. Weak legislation and laws that regulate the work of green banks.
4. The existence of monopolistic forces that benefit from directing funds to projects that are harmful to the environment and hinder attempts to access clean energy projects.

According to studies published by the Organisation for Economic Co-operation and Development (OECD), there are several challenges, the most important of which are:

1. Lack of local guidelines.
2. Costs of green bond requirements.
3. Lack of classifications, indices and lists of green bonds.
4. Lack of green bonds issued.
5. Lack of awareness of the advantages of green bonds and the relevant international guidelines and standards.
6. Difficulty for international investors to access local markets.
7. Inadequate availability of local investors.

It is worth noting that there are many reasons that have prompted countries around the world to move towards a green economy, the most important of which are:

1. Economic development, the increase in the number of factories, the increase in the volume of pollution, and the rise in the percentage of carbon dioxide gas.
2. Urban sprawl, population growth, and the establishment of industrial facilities on agricultural lands have led to desertification and increased carbon dioxide emissions.
3. Increased carbon emissions as a result of the growing reliance on carbon dioxide in the industrial sector.

4. Reduction in forest area due to the use of tree wood in many industries, which has led to an imbalance in the surrounding environment.
5. Pollution of sea and ocean waters as a result of burying and leaking industrial waste.
6. The rapid increase in the world's population and the growing need for resources.

Green Finance Instruments Green Sukuk and Green Bonds and Sustainable Development

1. Green Sukuk Concept, Origins, Characteristics, and Reasons for Spread

Green Sukuk: Origins and Concept

The increasing number of global banks aiming to achieve sustainable and environmentally friendly development has led to a significant increase in green projects. The World Bank, the European Commission, the United Nations Development Programme, and other international agencies have championed the drive to achieve a cleaner, more resilient, and more sustainable global economic ecosystem. In addition, there is a need for increased resources to finance such green projects. In 2008, the World Bank pioneered the concept of green bonds, which provide investors with an innovative way to support renewable energy, mass transit, and other low-carbon projects. Since then, green projects have been rapidly growing.

Although international green bond agencies were pioneers in issuing them, the private sector has begun using green bonds to finance its environmental activities. What usually attracts investors to these bonds is the ease with which environmental initiatives can be integrated into their investment portfolios, as well as the ability to protect their portfolios from the risks of exposure to climate change. Green bonds are increasingly being purchased by public sector investment funds, as well as by fund managers and financial institutions.

The idea of green bonds first appeared in France in 2012 and since then it has attracted a lot of attention. Investments in green bonds have reached \$1 billion in countries including Morocco, Pakistan, Egypt and Tunisia, while in Malaysia they exceeded \$1.5 billion in 2013.

These instruments have been called green because they are concerned with repairing the environment and protecting it from climate pollution and environmental degradation, and they work to reduce biodiversity in water, plants and air. Among their projects is financing sustainable development and others, and their main goal is to preserve, adapt and review the climate and the environment.

The intrinsic value of green bonds lies in the fact that they represent investor support for green activities that maintain the balance of the ecosystem. Some believe that resorting to issuing green bonds was due to the increasing reluctance of private banks to provide loans for climate solutions due to the volatility of financial markets and the shift in priorities in the European Union to the debt crisis. Governments do not have the capacity or effectiveness to provide financing for the transition to a low-carbon economy, as other priorities are putting pressure on their budgets. This means the failure to conclude international agreements to limit climate change, and the necessary financing will not be

achieved for years, even if there is a potential source of financing, which is the Green Climate Fund, which is supposed to allocate \$100 billion annually by 2030.

Several definitions of green bonds have emerged, including:

1. The Green Sukuk Working Group (GSWG) defined it in 2012 as investments in renewable energy and other environmental assets that are compliant with the provisions of Islamic Sharia, as they address the Sharia's concern for the environment.
2. As defined by the World Bank: Green bonds are interest-free bonds that generate returns for investors without violating the principles of Islamic Sharia. A green Islamic bond is one whose proceeds are used for specific, environmentally sustainable infrastructure.
3. As defined by the Gulf Bond and Sukuk Association (GBSA), they are Sharia-compliant investment financial instruments for financing environmentally sustainable projects that meet the developed eligibility criteria derived from the International Climate Bond Standards Scheme.
4. As defined by the Malaysian Stock Exchange: (Environmentally beneficial bonds issued to finance environmentally beneficial projects.
5. It was also defined as (investments that comply with the provisions of Islamic Sharia in the field of renewable energy and other environmental assets, and the proceeds are used to preserve the environment and natural resources, as well as to preserve energy use, promote renewable technology, and reduce global warming and gas emissions.

Characteristics and Advantages of Green Sukuk

Green bonds have numerous advantages and characteristics, which can be explained below:

1. It allows investors to invest in the renewable energy sector as the population rises and fossil fuels dwindle, making renewable energy reserves increasingly profitable and important.
2. It enables investors to diversify their investment portfolio and hedge against the climate.
3. Investing in green bonds, especially in the field of renewable energy, contributes to reducing the risks of oil price collapses and fluctuations.
4. Green bonds provide the basis for ethical green investment because they have the ability to combine profitable investment with ethical investment, such as not investing in industries that are harmful to the environment.
5. Providing a high degree of confidence in investors' funds, as their money is used for clear purposes and known assets.
6. It attracts environmentally conscious investors because it meets the standards and provides funding for sustainable development projects.
7. It is also attractive to traditional investors as it generates reasonable traditional returns that are in line with the risks.
8. It has the ability to reduce the gap between the traditional financial market and the contemporary Islamic market.

There are several reasons for the recent increase in reliance on green bonds, including:

1. Banks are refraining from financing infrastructure projects due to strict capital requirements.
2. The increasing number of investors interested in environmentally sustainable investment.
3. The significant growth in green bond markets is due to the market opportunity to use green bonds as a tool to finance environmentally sustainable development projects.
4. It provides investors with a high degree of certainty that their money will be used to finance environmentally sustainable projects.
5. Increased need for funding for major sustainable development projects.
6. The existence of Sharia and accounting controls that regulate the issuance and dealing with Sukuk.
7. The existence of laws that regulate the operation of green bonds, especially in countries that deal with financial instruments that comply with Islamic Sharia.
8. Green bonds have gained significant acceptance from both Muslim and non-Muslim investors due to their high returns.
9. Government support through encouragement and issuing laws regulating the work of the instruments.
10. It offers options that suit investors who prefer low-risk financing and investors who prefer diversifying investments.
11. Projects financed by green bonds can provide foreign currency to host countries if their laws allow foreigners to subscribe to them.
12. It allows for the expansion of the popular participation base as a source that generates expected returns and profits for them.

Areas of Operation for Green Sukuk

Green bonds target several areas, including:

1. Investing in sustainable transport.
2. Investing in the establishment of renewable energy plants.
3. Investing in green technology.
4. Investing in projects of public benefit.
5. Waste management.
6. Sustainable agriculture.

Green Bonds

Origins and Definition of Green Bonds

Recently, with the support of the United Nations Conference on Trade and Development (UNCTAD), global markets have begun taking steps towards transitioning to a green economy. Within this framework, the Green Finance Initiative emerged, launching and marketing green bonds as a financing tool for this economic transformation. Green bonds are a debt instrument, like conventional bonds, but specifically designed to raise funds for environmentally friendly projects such as renewable energy. The first green bonds were issued in 2007 by the European Investment

Bank. The market began to grow slowly before experiencing strong momentum due to global green initiatives such as the 2015 Paris Climate Agreement. However, green bonds still represent a small portion of the global bond market, which is estimated at around \$130 billion according to the World Economic Forum.

The first bond issued by the European Investment Bank in 2007 was worth 600 million euros and was directed towards renewable energy and energy-saving projects. This was followed by another issuance from the World Bank worth 4 billion dollars in 2008. The volume of bonds issued did not exceed 14 billion dollars in the period from 2007 to 2009, then it doubled in 2016 to reach 97 billion dollars, and was estimated at about 220 billion dollars in 2020.

Several definitions of green bonds have emerged, including:

1. The World Bank defines green bonds as sustainability instruments issued to raise funds specifically to support climate and environment-related projects, which distinguishes them from traditional bond.
2. It was defined as (a new financing tool available to the public and private sectors that is similar to traditional bonds in many elements such as classification, pricing and implementation process, but it differs from them fundamentally in the use of the asset and its returns, as it is directed towards projects that are less carbon-intensive and environmentally and climate-friendly, and it requires the availability of additional information about the environment, as it is dedicated to one type of project.
3. It is also defined as (a fixed-income instrument specifically designed to support environmental or climate-related projects, where green bonds usually come with tax incentives to enhance their appeal to investors.
4. It was also defined as (one of the most important tools of green finance that aims to accommodate external environmental factors and modify risk perceptions in order to increase investment in sustainable projects.
5. It was also defined as (bonds whose issuance proceeds are directed towards investment in environmentally friendly projects. They are like other bonds, but they require high standards and principles specific to them and to the projects selected for financing.

Four types of green bonds have been classified and are currently in use, and new types may emerge, as the market is constantly evolving. They are:

1. The traditional or ordinary green bond, which is a traditional bond that includes the right of recourse to the issuing entities, and it is consistent with the principles of green bonds.
2. Green yield bonds, which are bonds that do not include the right of recourse to the issuing entities and are in line with the principles of green bonds, and the creditworthiness of the bond is related to cash liquidity, which is also linked to the flows of revenues, fees, taxes, etc., and therefore its financial returns go to green projects.
3. Green project bonds, which are bonds that do not include the right of recourse to the issuing authorities and are issued for one or more green projects, where the investor

directly exposes himself to the risks of the project with or without the right of recourse to the issuing authorities.

4. Guaranteed green bonds, which are bonds that comply with the principles of green bonds and are issued for one or more projects, for example, asset-backed and covered bonds, mortgage-backed bonds, and others.

Principles of Green Bonds and the Challenges They Face

In 2018, the World Bank Group, along with a group of issuers, investors, insurance companies and investment banks, developed the Green Bond Principles, which are guiding and optional principles:

1. Criteria for evaluating selected projects. These principles help through clarity, ease of communication, and transparency between bond issuers and investors, which leads to enhancing the availability of information necessary to assess the environmental impact of green bonds.
2. Criteria for using proceeds: Bond proceeds are used to finance or refinance green projects, as these projects support the goals of sustainable development and the environment.
3. Managing the returns of green bonds. The net returns of the bonds are added to a sub-account so that the management of these returns can be monitored and tracked.
4. Transparency reports, which disclose the operations related to the issuing entities, identify the list of projects supported by green bonds, describe these projects and the amounts allocated to them, and disclose them through news bulletins, websites, or in the form of published financial reports.

Green bonds face a number of challenges, including:

1. Lack of awareness of the advantages of green bonds and the relevant international guidelines and standards.
2. The lack of guidelines in local markets and the lack of definition and disclosure of the motives behind green bonds.
3. Lack of classifications, indicators and lists of green bonds with international guidelines and standards.
4. The high costs and requirements for issuing green bonds are sometimes necessary for some small issuing companies.
5. Difficulty for international investors to access financial markets.

The Role of Green Finance Sukuk and Green Bonds in Sustainable Development

The Contribution of Green Finance to Sustainable Development

The transition to green finance is no longer a need but a necessity to stop the depletion of natural resources, ensure development, prosperity, and stable growth, create new job opportunities, reduce energy consumption in production, minimize waste and pollution, mitigate greenhouse gas emissions, and address the challenges of climate change. Through green finance, sustainable development can be achieved by exploiting alternative opportunities to reduce resource depletion and ensure their rational use. The foundation

of green finance is the creation of new, sustainable financial instruments and finding solutions to financing problems, which means finding solutions to the challenges that hinder the achievement of sustainable development. Green finance seeks to achieve economic growth and development while considering the social aspect, such as achieving social welfare, and the environmental aspect, such as preserving ecological resources and protecting the environment. Thus, green finance is considered a means to achieve sustainable development in the best ways and mechanisms, and this is clearly evident in the contribution of green finance to achieving sustainable development through.

1. The economic element: Green finance aims to maximize income, eliminate poverty, and optimize the use of natural resources.
2. The social element: Green finance seeks to promote the well-being of society and achieve social justice by improving basic health and education services, meeting minimum security standards, respecting human rights, and developing different cultures.
3. The environmental element: Green finance seeks to achieve environmentally sustainable development by preserving and promoting physical and biological resources and ecosystems.

Investing in environmental projects is considered to be for the efficient allocation of environmental resources and to encourage their rational use, as they are limited and their use through production or consumption leads to their degradation and disruption. The impact of financing these projects on the environmental and technological aspect of the institution is represented in the following points:

- Efficiency in allocating resources used as inputs in the production process.
- Reducing the consumption of products that are harmful to the environment.
- Reducing the volume of waste and polluting gas emissions.
- Efficiency in rationalizing energy use.

Requirements for Enhancing the Efficiency of Green Finance Instruments in Achieving Sustainable Development

Green finance is considered an effective and powerful tool aimed at reducing negative environmental impacts and promoting economic and social sustainability to foster the green transition and achieve sustainable development. The following are some of the policy options required to enhance the efficient use of green finance tools in achieving sustainable development.

1. Developing a strong regulatory framework for green finance instruments.
2. Promoting awareness of green debt instruments and their benefits for investors and the public in general.
3. Developing unified and approved standards for classifying green projects.
4. Strengthening international cooperation and coordination in the field of developing and regulating green debt instruments.
5. Mobilizing financial resources.
6. Stimulating innovation and green technology.

7. Improving efficiency and environmental sustainability.
8. Encouraging corporate social responsibility.

The Sustainable Developmental Role of Green Finance

Sustainable green finance tools are used to generate many projects that preserve the environment within the framework of the transition towards a green economy on the one hand, and enhance social life and all aspects of life on the other hand, including (58):

1. Investing in renewable energy.
2. Investing in sustainable construction and green architecture.
3. Sustainable transport.
4. Water management.
5. Sustainable agricultural land management.
6. Green Technology

Selected Experiences in Green Finance with Special Reference to Iraq

The Chinese Experience

China has witnessed rapid development in various fields in recent years and has become the second largest economy in the world. As a result of this great development, significant damage has been inflicted on natural resources, soil and water quality, and climate change. This has led to the necessity of restructuring the economy in a way that is consistent with preserving the environment and various resources. This has prompted China to move towards a green economy strategy, as environmental factors did not constitute an important part of China's development plans strategies, and environmental problems did not receive attention from decision-makers, until environmental problems and challenges emerged and it became clear that China contributes significantly to global pollution. Studies indicate that the contribution of the industrial sector alone constitutes 40% of GDP, and heavy industries constitute 3% of GDP. These heavy and light industries are major polluters of the environment, causing nine times the pollution caused by services due to the use of coal in the energy consumed.

Green Finance in China Origins and Principles

Green finance has developed rapidly in China, starting with the G20 meeting. The first green finance policy was issued by the People's Bank of China in 1995 (Notice on Environmentally Friendly Credit). In 2007, the banking regulator (CRBC) issued guidelines on green credit, encouraging banks to promote environmental objectives and consider environmental risks in their operations. In 2016, guidelines for establishing a green financial system were published with the endorsement of the State Council of China. The green finance system in China is regulated by the CRBC, which publishes guidelines on the issuance of green bonds by companies, and the PBOC, which publishes an approved green bond project program for the issuance of bonds by Chinese banks. China has followed a set of principles to promote green finance, namely:

1. Integrating green finance into national strategies.

2. Developing green finance in financial reform and liberalization.
3. Active participation in international cooperation.

Areas of Green Finance in China

Green finance encompasses all operations based on encouraging and financing various environmentally friendly projects, and green finance in China has taken many forms, including.

1. Green bonds

The Bank of China has identified several areas eligible for green bonds, including renewable energy, energy efficiency in buildings, pollution prevention and control, environmentally sustainable management, conservation of terrestrial and aquatic biodiversity, clean transportation, sustainable management of water and wastewater, green buildings, basic infrastructure, affordable housing, and job creation. The annual issuance of green bonds reached \$77.3 billion in 2015 and then rose to \$289 billion in 2020.

2. Investing in renewable energy.

Renewable energy refers to extracting alternative energy from non-exhausting natural sources such as solar, wind, rain, and geothermal energy to solve the environmental pollution crisis, with investment in the field of renewable energy reaching \$83.6 billion in 2020.

3. Green Insurance

Green insurance, also known as pollution liability insurance, compensates its participants for personal injury or significant losses caused by pollution. China was one of the first countries to initiate a general policy for pollution insurance through environmental compensation funds, with compensation from this fund exceeding \$1.5 billion in 2019.

4. Green loans

The People's Bank of China sets and formulates interest rates on green loans and has given licenses to all banks and financial institutions to grant them according to specific conditions. It has set discounts for interest rates on green loans to prepare the volume of private investments financed by these loans. The volume of green loans reached 10% of the total loans granted to finance the economy in 2019.

5. Green investments:

The total green investments are calculated based on a number of variables, including:

- Investment in addressing industrial pollution, which amounted to 5,426,404 million yuan in 2008 and increased to 6,151,513 million yuan in 2019.
- Investment in infrastructure such as environmental sanitation, which amounted to more than 1200 billion yuan in 2020, and in the field of sanitation, it amounted to 2675 billion yuan in 2020, and in the field of horticulture and greening, it amounted to about 2500 billion yuan, and in the field of gas supply, it amounted to 250 billion yuan in 2020, and in the field of central heating, it amounted to 500 billion yuan in 2020.
- Investment in the field of forests and trees: where more than 1800 billion yuan was invested in forest development in 2020, more than 2100 billion yuan was invested in

environmental construction in 2020, more than 600 billion yuan was invested in forest support in 2020, and more than 200 billion yuan was invested in other forest investments in 2020.

Trends in Green Finance in China During the Third Millennium

At the beginning of the third millennium, fiscal and monetary policies shifted towards imposing restrictions on some highly polluting and energy-intensive industries, while the People's Bank of China took a series of measures to transition to a clean and low-emission economy, the most notable of which are:

1. Enhancing the interaction between credit policies and industrial policies, as well as supporting energy and environmental conservation.
2. Establishing strict guidelines on credit provided to new projects related to production in industries suffering from severe energy overuse.
3. Integrating administrative law enforcement information into its credit information system, which can be accessed and used by the commercial market as one of the considerations when financing institutions.
4. Implementing the 13th Five-Year Plan 2016-2020 for the reform and development of the Chinese financial sector.
5. Initiating research office efforts of the People's Bank of China to jointly design a sustainable financial system and define a set of green finance tasks.

From the foregoing, it is clear that there is a trend towards building a green and sustainable financial system that protects the environment. This trend allows for attracting private capital to green industries, reducing the financial burden on the government, and creating a new growth area through a clean, environmentally conscious economy. This can be achieved through three mechanisms:

First, increasing the return on investment in green projects by reducing financing costs and enhancing the availability of funds through discounted interest rates, green bonds, green initial public offerings (IPOs), green ratings, and green stock indices.

Second, reducing the return on investment in projects that pollute the environment.

Third, raising awareness among investors, companies, and consumers through mandatory environmental disclosure requirements for institutions and investment companies, building an active network of investors in green projects, and implementing more effective educational programs on green consumption.

The UAE Experience in Green Finance

The UAE is considered a leading country in the issuance and trading of green bonds and sukuk, as green capital markets are seen as financing options that support environmental investments and mobilise the necessary funding to back the transition towards a green economy as a basis for laying the foundations of sustainable development.

Financing Pathways Green in the UAE

The UAE has adopted the green economy approach as a path towards sustainable development through the UAE Green Development Strategy 2012-2021, which included several tracks (64):

1. The first track: green energy, which consists of a set of programmes and policies aimed at enhancing the production of renewable energy and related technologies, encouraging the use of clean fuel, in addition to energy use in the public and private sectors.
2. The second track: government policies aimed at encouraging investments in the green economy, facilitating the production, import, export, and re-export of green products and technologies, in addition to creating job opportunities in this field.
3. The third track: under the title of the green city, which includes a set of urban planning data aimed at preserving the environment, improving the environmental efficiency of housing and buildings, and promoting eco-friendly transportation (sustainable transport), in addition to programmes to purify the indoor air of cities in the UAE to provide a healthy environment.
4. The fourth pathway involves addressing the effects of climate change through policies and programmes aimed at reducing carbon emissions from industrial and commercial facilities, in addition to promoting organic farming with a range of incentives at both federal and local levels. This pathway also includes preserving biodiversity and protecting ecological balance.
5. The fifth pathway, named Green Life, includes a set of policies and programmes aimed at rationalising the use of water, electricity, and natural resources. This pathway also encompasses environmental awareness and education initiatives.
6. The sixth pathway involves developing and supporting green technology, focusing in its initial stage on carbon capture and storage technologies, and waste-to-energy technologies.

With the aim of highlighting the UAE's efforts in the field of sustainability and its commitment to supporting the country's transition towards a green economy and finding innovative solutions to combat the effects of climate change, the Dubai Declaration on Sustainable Finance was launched during the 14th roundtable meeting of the UN Environment Programme Finance Initiative (UNEP-FI) in Dubai in October 2016. The principles included the following:

1. Cooperation in establishing a framework to enhance and integrate sustainable green investments in the Emirate of Abu Dhabi, the UAE, and the region as a whole.
2. Facilitating constructive dialogue on sustainable finance among all stakeholders, including the financial community, business sector, and government sector.
3. Identifying new and innovative measures, products, and services to support diverse economic, social, and environmental development initiatives in Abu Dhabi and its surroundings.
4. Encouraging opportunities for education, environmental protection, and sustainability improvement.

5. Raising awareness among relevant stakeholders in implementing this declaration and promoting collaboration with them at local and federal levels.
6. Holding periodic meetings to assess the progress of implementing this declaration.

The development of green bond and sukuk issuance in the UAE.

The UAE is considered the first country in the Middle East to issue green bonds through a financial institution, with First Abu Dhabi Bank issuing the first green bonds in 2017 worth \$587 million over five years. Projects benefit from effective governance by the Green Bonds Committee of First Abu Dhabi Bank, and the bank provides an annual Green Bonds report in accordance with Green Bond principles. Additionally, the Dubai Financial Services Authority (DFSA) issued the first guidelines for best practices for green bonds in 2018 to provide market practitioners with a reference framework for issuing and listing green bonds and sukuk. These voluntary guidelines ultimately led to the listing of high-level green financial instruments on Nasdaq Dubai in 2019.

The issuance of Islamic sukuk has witnessed significant development in the UAE, with the total Islamic sukuk issued in 2004 reaching \$0.04 billion, while the GDP that year was \$147.82 billion, making the ratio of Islamic sukuk to GDP 0.27%. The total issuance of Islamic sukuk reached in 2022 the total was \$70.49 billion, with the GDP that year being \$507.06 billion, and the ratio of Islamic bonds to GDP was 13.9%. This clearly indicates the significant development that the UAE has witnessed in the issuance of green bonds, as shown in Table (1):

Table 1. Issuance of Green Islamic Bonds in the UAE and GDP

Year	Issued Sukuk billion dollars	Gross Domestic Product (GDP) billion dollars	Ratio of issued sukuk to GDP%
2004	0.04	147.82	0.027
2005	0.61	180.62	0.034
2006	2.23	222.12	1.00
2007	5.75	257.92	2.23
2008	7.47	315.47	2.37
2009	9.59	253.55	3.78
2010	15.71	300.17	5.23
2011	16.71	360.83	4.54
2012	19.51	384.61	5.07
2013	28.85	400.22	7.21
2014	37.26	414.11	8.99
2015	38.54	370.28	10.43
2016	51.75	369.26	14.01
2017	55	390.52	14.08
2018	57.12	427.05	13.37
2019	59.18	417.99	14.15
2020	60.63	349.47	17.35
2021	66.54	415.18	16.03
2022	70.49	507.06	13.90

Source:

1. Islamic Financial Services Board, Data, <https://www.ifsb.org/psifl-03.php>.
2. World Bank Group, World Bank Open Data <https://data.albankaldawli.org>

Some Leading Green Projects in the UAE Green Economy

1. The Model City in the UAE: It was established under the name (Masdar City) and is low in water and energy consumption, providing wastewater recycling for agricultural purposes. It uses 200 MW of clean solar energy compared to 800 MW from conventional sources and 20,000 cubic metres of fuel daily for a city with similar characteristics, housing around 50,000 people, and is expected to be completed by the end of 2025.
2. Shams Solar Thermal Power Plant: It is one of the (Masdar Company) renewable energy projects, the first of its kind in the Middle East and one of the largest solar thermal power plants in the world with a capacity of 155 MW, enough to supply 20,000 homes and help reduce 175 tons of carbon dioxide emissions.
3. Green Energy Technology Project (Green Ammonia): Khalifa Industrial City announced in 2021 the launch of an industrial facility to produce green ammonia with an investment of 3.67 billion dirhams and a production capacity of up to 200,000 tonnes of green ammonia using 40,000 tonnes of green hydrogen through the allocation of a solar power plant to extract hydrogen and oxygen molecules from water. The facility will have an electricity generation capacity of 100 MW in the first phase, increasing to 800 MW upon completion of all operational phases. The project will reduce carbon dioxide emissions by 600,000 tonnes annually compared to emissions resulting from traditional ammonia production methods.

Green Finance in Iraq

The transition to a green economy has become an urgent necessity due to climate change and the damage it causes to nature, and Iraq must follow the example of most countries in the world by pursuing this transition and providing all the necessary resources for it, despite all the obstacles it faces.

Challenges Facing the Transition to a Green Economy in Iraq

1. Environmental Pollution in Iraq The high levels of pollutants exceeding permissible limits in Iraq have negatively affected the health of the majority of the population, leading to an increase in the number of congenital malformations, cancer cases, and respiratory diseases. This will adversely affect the present and future of sustainable human development in Iraq. The rising levels of air pollution threaten the achievement of a sustainable green economy and are caused by several issues, including the wars Iraq has fought, increased desertification due to reduced rainfall, the production of fossil fuels, and the lack of modern technologies in their extraction, which has contributed to increased air pollution (69). Despite the 2005 Iraqi Constitution stipulating the formulation of policies to ensure the protection of the environment from pollution and maintaining its cleanliness in cooperation with non-regional provinces, the laws have not been effectively implemented, and the environmental situation in Iraq continues to deteriorate.

2. Contamination of Drinking Water Iraq

Has been suffering from water contamination for decades due to the increasing population, industrial development, and the dumping of factory waste into rivers, in addition to hospital liquid waste and sewage. It is worth noting that the Ministry of Environment, while monitoring 30 stations for treating polluted water from sewage, found that 6 stations discharge their water directly into the river, 5 stations to sewers, 11 stations are not operational, and only 8 are functional. These stations belong to both the public and private sectors. To make matters worse, the issue of water scarcity has emerged, which is a developmental problem that must be addressed.

3. Waste Management and Recycling in Iraq

Waste management is one of the major environmental challenges that the state is increasingly focusing on, not only because of its harmful effects on public health and the environment but also due to its social and economic impacts. Waste includes residues from households, shops, commercial markets, and service institutions such as schools, universities, hospitals, streets, parks, hotels, and others. The core processes for managing waste, represented by (collection and transportation, sorting, treatment, recycling, and final disposal), have not kept pace with global developments in this field and lack clear standard strategies and plans for dealing with this waste. The resulting environmental pollution has led to missed opportunities to use waste as a beneficial resource. By 2020, there were 57 sites with environmental approvals and 141 sites without such approvals.

4. Technology and financing: In terms of management and localisation of modern technologies that accompany the transformation process, performance has not been at the required level, in addition to insufficient necessary funding.

5. Multidimensional poverty affecting a large segment of society from several aspects including: income level, education level, electricity, drinking water, and health services, all of which constitute a real obstacle to the transition towards a green economy in Iraq.

6. Rapid depletion of natural resources and energy sources without considering the share of future generations, which is contrary to the concept of sustainability.

7. The trap of economic rent or the so-called Dutch disease through the expansion in exploiting and depleting natural resources at the expense of manufacturing industries.

8. Food security: Iraq faces a crisis in securing the requirements of the ration card and the needs of the Iraqi individual due to the failure to fully exploit fertile agricultural lands.

9. Limited random urban expansion, deteriorating housing conditions and city congestion, in addition to converting large areas of agricultural land into residential areas (74).

Green Finance in Iraq: Challenges and Justifications

Adopting Islamic sukuk is considered an important alternative to conventional interest-based financial instruments, and efforts are currently underway to develop appropriate legislation to promote the issuance of Islamic sukuk in Iraq, in addition to organising awareness campaigns aimed at fostering an investment culture in them among banks and financial institutions. Islamic sukuk are distinguished by their ability to finance

a wide range of projects, both large and small, which require long-term investments from multiple parties, and they are also an effective means of absorbing financial surpluses, facilitating the easy repayment of investors' funds.

In July 2024, the Iraqi Council of Representatives sought to pass the Islamic Investment Sukuk Law, which aims to enhance the Iraqi financial market and expand available investment options, allowing government institutions, Islamic banks and companies to contribute to economic projects in line with Islamic financial market standards. The law aims to: (76)

1. Developing the Iraqi financial market by offering new investment instruments that comply with Islamic law.
2. Diversifying investment instruments to meet the needs of investors seeking new investments compliant with Islamic law. The Central Bank of Iraq has announced the establishment of the Green Bank for Sustainable Development, which is the first of its kind in the Middle East. Its main targeted project will be "Sun Capital" to provide electrical energy, aimed at producing 100 MW. This bank focuses on providing sustainable green banking services and creating 100,000 job opportunities for young people (77).

Islamic banks face a range of challenges that hinder the achievement of their objectives, including:

1. The absence of appropriate legal legislation.
 2. Lack of awareness and financial literacy regarding the importance and benefits of Islamic sukuk among investors and the public.
 3. Weak financial infrastructure, as the Iraqi financial market is limited to the basic structures needed to effectively support, issue and trade sukuk, such as active secondary markets and specialised financial institutions.
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- 1) Political and economic challenges: The unstable political and economic conditions negatively affect investor confidence in new financial instruments, including Islamic sukuk.
 - 2) Shortage of qualified personnel and lack of specialised skills and experience in the field of Islamic sukuk, which hinders the development and effective implementation of this sector (78).

Justifications for Using Islamic Bonds in Iraq

Islamic sukuk are considered one of the most prominent alternatives as they provide innovative financial solutions to address the shortage of financial resources, and their successful implementation requires a suitable environment and the fulfilment of specific requirements.

The main justifications for using Islamic sukuk for sustainable development in Iraq are as follows:

1. Benefiting from the successful experiences of issuing Islamic sukuk in Malaysia, Saudi Arabia, and the UAE, which contributed to stimulating their investments and achieving outstanding results.
2. Increasing profits and reducing reliance on public budgets, considering that Islamic sukuk are
3. financing tools outside the framework of the public budget. Supporting monetary policy, as the use of Islamic sukuk is an available option for the Central Bank of Iraq to include them among monetary policy tools in accordance with Islamic principles. They are effective tools for absorbing excess liquidity, reducing inflation rates, and financing part of the public budget, and these tools have proven globally successful.
4. Financial crisis management: Islamic sukuk are distinguished by their ability to address financial crises as they provide the necessary liquidity to achieve a balance between the financial and real economy, and they also work to enhance the efficiency of Islamic financial markets and provide protection against financial risks.
5. Enhancing economic independence through the financing of infrastructure projects via Islamic sukuk, which contributes to reducing external loans, thereby supporting Iraq's autonomy and ensuring the preservation of the rights of future generations.

A Future Vision for the Transition to a Green Economy in Iraq

To achieve a forward-looking vision capable of transitioning towards a green economy and achieving sustainable development in Iraq, it is essential to adopt policies that promote sustainable development across all levels, including:

1. Political and administrative aspect

- Focusing international efforts on enhancing the capacities of relevant institutions to face challenges.
- Increasing technical and financial support to build and develop institutions and society.
- Formulating and implementing development policies capable of meeting the requirements of the transition and achieving sustainable development without conflicting with previous policies and identifying the responsible entities.
- Employing qualified personnel and strengthening the role of human resources in the transformation process.
- Expanding training and qualification centres in line with the requirements of the transition towards a green economy.

2. Social aspect

- Supporting national programs to alleviate poverty and increase income.
- Building capacity, focusing on education, and fostering a belief in the transition to a green economy through curriculum and skills development, implementing green programs that reduce energy consumption, raising awareness of the importance of sustainability, and integrating environmental sustainability into educational programs.

- Supporting civil society organizations and strengthening public-private partnerships.
- Strengthening relationships with international financing institutions to assist in implementing sustainable development plans that guarantee the rights of future generations.

3. Economic Aspect

- Intensifying regional and international efforts to rebuild the economic infrastructure and support vital production sectors.
- Creating an attractive environment for international investments and enhancing the role of economic management in state institutions.
- Developing strategies that aid the transition to a green economy in line with available capacities, achieving optimal use of natural resources, focusing on waste management, and adhering to health and environmental standards.

4. Environmental Aspect

- Supporting environmental strategies to protect natural resources from pollution to meet current and future concerns.
- The necessity of managing and developing water resources and enhancing renewable and nonrenewable sources for their sustainability and preservation.
- Assisting in the transfer of environmentally friendly technology and adopting safe and clean production techniques.
- Supporting plans that reduce environmental pollution (water, air, soil) and addressing issues of desertification and water scarcity.
- Organising conferences that discuss the environmental situation through cooperation between the Ministry of Environment and Iraqi universities.

Conclusions

The results showed that the shift towards a green economy is no longer just a need but has become an urgent necessity due to the impacts of climate change. This means that serious attention must be given to future generations and ensuring they receive their share of natural resources through preservation and prudent use. As the goal of sustainable development is pursued by all countries, green finance is considered one of the most important tools to achieve it. Green sukuk and bonds have also proven effective as financing means that allow investment diversification at low costs, as they link development requirements with environmental protection.

On the other hand, the results indicate that green finance is based on improving environmental conditions, which ultimately leads to the improvement of economic conditions. This means that the world faces significant environmental and economic challenges due to rising population growth rates, depletion of natural resources, and climate change. Moreover, green finance is considered a practical tool that contributes to creating new job opportunities, reducing the depletion of natural resources, and most importantly, addressing climate change.

The results also showed that green Islamic bonds are considered a modern tool, differing from conventional bonds in that they share in profits and losses, and are more

effective as they promote sustainable development. Accordingly, the experiences of China and the United Arab Emirates are among the most successful in the field of green finance due to supportive legislation and advanced financial institutions. Iraq, however, is still in the early stages of transitioning towards a green economy.

Islamic banks in Iraq suffer from a lack of support and limited interest in sustainable development projects, which requires the contribution of the few projects that use green technology in Iraq, contributing to the banks' reluctance to provide financing.

Recommendations

Based on the research findings, several recommendations can be made, including the necessity of benefiting from successful global experiences in the field of green finance and sustainable development. Attention should also be focused on awareness and education programmes and promoting the culture of environmental preservation. In addition, environmentally friendly projects should be supported, with a serious and complete shift towards the green economy.

It also requires the necessity of implementing legislation and laws that support the transition to a green economy and environmental protection. This leads to the need to support Islamic banks in Iraq to play their role in financing projects for the transition to a green economy. This means that there are untapped natural resources in Iraq that need attention, such as solar and wind energy. In addition, there is a need to increase green technology projects in Iraq and provide direct support for them.

Based on the recommendations provided, the surveyed sample should develop future directions focusing on the necessity of taking accelerated steps in Iraq's transition to a green economy to keep pace with other countries in the world and to protect the environment and natural resources. This requires addressing the challenges facing the transition to a green economy in Iraq through proper planning, combating financial and administrative corruption, and establishing specialised financial institutions. In addition, efforts should be made to build new generations that believe in environmental safety and the optimal use of resources.

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