

The role of the green economy in reducing climate change and achieving sustainable development



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Introduction

We have become in a world of many challenges; Most notably, development challenges and environmental challenges, such as pollution, desertification, climate change and economic challenges, such as declining economic growth rates and social challenges resulting from other challenges.

The reason for the crystallization of these challenges is that, with the frequent use and total reliance on non-renewable resources, this has led to their near entry into force and caused scarcity of resources, which has successively adversely affected people's economic growth, human development and standard of living rates in general.

The term "green economy" has given rise to much strangeness and has begun to deepen understanding of the green economy, its means of application, the search for its positive impacts and opportunities to apply the green economy strategy in various developed and developing countries.

The policy paper attempts to shed light on the "green economy", its strategies, its benefits and State traders in the meantime, and attempts to present several alternatives and assess them in a manner commensurate with the Egyptian State and according to its potential in the light of the use of leading international experiences in the green economy.



First: What is a green economy?

A green economy based on respect for the environment and rationalization of consumption of non-renewable energy resources, which relies primarily on renewable sources of energy such as solar and wind energy and is therefore environmentally friendly, producing no carbon emissions or polluting the environment, as opposed to a brown economy based on fossil fuels such as oil and coal; This causes environmental problems such as air pollution, increased global warming and resource depletion.

The green economy has its main objective: to reach sustainable development but with very limited negative impacts on the ecosystem.

To illustrate the importance of relying on a green economy for the future of nations and its influential role in sustainable development, the United States President (**Barack Obama**) said in this regard:

"We need to get behind the innovation. This is how America will lead the world in clean energy. the nation leading the world in clean energy, will lead the world economy in the twenty-first century "

The green economy is also of great importance in supporting Egypt's Vision 2030 and achieving the sustainable development goals; It also supports the energy sector by supporting and increasing investments in new and renewable energy

.

Green economy policies are divided into:

(Market-based economics): policies aimed at reducing fossil fuels such as fines for causing pollution and waste.



(Non-market economics): legislative policies formulated by the delegated authority and criteria for assessing compliance with the sustainable development plan, and facilitating project actions that serve the environment .

Implications of the need to replace the brown economy with the green economy

A-Population increase

The population is growing steadily and is estimated at 8 billion, specifically Egypt's population is increasing continuously, reaching some 102.3 million people; Egypt suffers from the problem of increasing the population census.

Needless to say, the problem of population growth is a thorn in the back of the sustainable development process. It is self-evident that the larger the population, the greater the population's need and the greater its consumption of different resources; As a result, resources are scarce and individuals struggle to cover all their needs. In particular, with our consumption and total dependence on non-renewable resources such as oil and coal, dependence on the import of commodities and lack of production; This impedes the achievement or even the initiation of sustainable development goals.

Experts emphasize that, as the population increases, energy demand will increase, water supply will decrease, industrial waste causing environmental pollution will of course increase, and CO2 emissions will increase.

B-Impact of the COVID-19 pandemic on the global economy

The Covid-19 pandemic has had a negative impact on global economic growth rates; This has led to a global economic crisis that has plagued the world's nations in the face of the pandemic. The pandemic has negatively affected oil prices, and mineral prices have fallen, in addition to affecting jobs as many companies and workplaces have laid off their employees. Owing to the lack of capacity to cover staff members' salaries; This has caused the loss of individuals' job and economic security.



On the other hand, the pandemic has negatively affected people's food and health security. Hence, the vision has evolved around the connectivity and importance of the green economy to restore high economic growth rates in order to see countries threatened by the lack of energy security resulting from the pandemic. The need and planning for the implementation of green economy strategies to overcome the global economic crisis and to achieve economic growth has increased, as dependence on a green economy will lead to a trend towards the use of renewable sources of energy and thus reduce dependence on non-renewable sources of energy such as oil.

All the above factors will hamper all avenues of development that nations try to generalize and apply. They will lead us to a society where diseases and epidemics are rampant. Unemployment rates will rise and crime and insecurity will be followed. Developing countries will become increasingly dependent on developed countries for the import of all goods and technological technologies, which will delay economic growth rates and the country will become non-productive locally and not self-sufficient.

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c. Global economic fatigue

Analysts expect economic crises to worsen due to climate changes; Inequality will increase and global growth rates will decrease.

We have seen several examples of states actually being affected by the impacts of climate changes, for example in the United States of America in 2021 suffering from **hurricane Maria**, wildfires in California, and the

polar ice wave ravaging Texas. The United States suffered very vital economic losses and natural resources.

Turkey's economic, human and natural losses in 2021; when fires engulfed Turkey's forests; The number of such fires reached 100 in the forests in Turkey's southern governorates.

Arab States have not recognized the impacts of climate change; The fires have affected **Morocco's** forests in 2021; The fire caused an estimated 200 hectares of forest. **Algeria, Greece and Spain** also suffered human and economic losses and loss of natural resources due to the fires, in which climate experts stressed that the cause was unprecedented warming; Thus, if the polluting thermal emissions of the environment persist; It will lead to severe consequences for all the world's nations, loss trillions of dollars and a major economic crisis; Climate change is therefore not only a topic of political debate, but also a major issue with implications for all areas.

D - The collective awareness of the seriousness of the effects of climate change

The high voice of the European population and the emergence of green movements in abundance in Europe greatly affected the awareness and perception of the European population, and even attracted the attention



of the residents of other countries. Their strong support for environmentally friendly policies and their criticism of policies that are not environmentally friendly.

It should be noted that in an opinion poll conducted by the European Investment Bank in 2019, it was revealed that the vast majority believe that climate change has a significant impact on their daily lives, and the results of the poll were as follows **(Europe 75%), (USA 72%) and (China) 94%)**

Citizens of some European countries (Hungary, Malta, Spain, Germany, France and Luxembourg) believe that green policies should be supported and that solving the climate crisis is an integral part of economic recovery.

In a survey conducted by the European Investment Bank in 2020-2021, about **57%** of Europeans were strongly supportive of green recovery measures, especially after the effects of the Covid-19 pandemic.

90% of Chinese believe that China should lead the campaign against climate change, and 66% of Europeans believe that the European Union should lead the campaign against climate change.

Hence the urgent need to take effective measures to reduce the risks resulting from climate change, even if the cost of the measures is high, but if ignored, it will lead to more costs and losses and is almost devastating for the whole world.



“Priority alternatives to be taken into account to reach a green economy and achieve economic growth, and the most important challenges for these alternatives”

First: green bonds and sustainable investment

Sustainable investment has become closely linked to sustainable development. In the event that sustainable development and its objectives are mentioned, sustainable (green) investment must be called, and stakeholders are invited to green investment.

Sustainable investing is investing money to work on issues that are directly affected by climate change; The main objective of green investment is to mitigate climate change, preserve biodiversity, and improve the environment and quality of work.

In this regard, sustainable (green) investment should gradually replace traditional investment; So that it occupies more space, because sustainable investment balances achieving profitable returns and achieving sustainable economic, social and environmental development.

Hence, the idea of (green bonds) arose, and the World Bank defined them as fixed-income securities whose profits are used to obtain financing for sustainable projects related to the environment and climate, such as clean energy projects, environmental preservation, sustainable waste management, and others, and the new in green bonds, they are obligated to spend the resulting funds on green projects.



Examples of green bonds include; These are the bonds offered by the International Capital Market Association (ICMA), which identified the areas of green financing and investment in the following projects (reducing pollution - relying on renewable energy sources - wise management of natural resources - financing green transportation projects - water and sanitation management - support Financing environmentally friendly goods - greening buildings - preserving biodiversity on land and sea).

Green bonds have become the talk of the hour for governments when talking about sustainable development and ways to address environmental issues. This is because of its great importance. Green bonds will contribute significantly to changing the compass of the economies of global markets and changing the concept of investment; Where all countries have begun to develop their own vision classifications for green investment fields and projects, such as **China and the European Union**; Especially after the countries' commitment to the Paris climate agreement, which included the need to achieve the zero emissions level as soon as possible, to limit the average global temperature rise by **1.5** degrees; as it is the first global agreement that calls for countries to adopt effective strategies to reduce carbon emissions.

Green bonds also contribute to reviving the economy after it went through stages of weakness that affected all governments due to the Covid 19 pandemic, as it was estimated about 10 billion euros on governments to revive economic growth again during the next two years; Therefore, the global trend of financing green initiatives and projects has crystallized and made them a priority over traditional investments.



The green bonds come within several motives for their issuance, including: the desire to include new investors with different visions other than traditional investment to achieve sustainable development goals, and the expectation of an increasing demand for green bonds and sustainable investment with the global trend in this regard.

Traditional and green bonds

Conventional bonds for their fixed returns and progression compared to green bonds are safer for investors; It is not tainted by many risks and investors are not afraid of losses in the event of moving to green bonds and bearing the losses and returns of their traditional bonds. But on the other hand, traditional bonds may have low and stable returns over time, and the solution may lie in green bonds that are committed to financing green projects that achieve material, environmental and developmental profit, and thus be more effective.

Another advantage of green bonds is the orientation of world governments, global banks and supranational corporations to address environmental issues related to climate change and biodiversity conservation; It has become an urgent necessity that does not require delay or neglect. Thus, this guarantees investors - surely sooner or later- the introduction of profits and returns that may be worth more than the returns from its counterpart traditional bonds.

According to a report issued by the World Bank, green bond investors were able to sell at higher prices than traditional bonds; Thanks to the lack of green bonds and their modernity, the World Bank has estimated in the future - according to market trends and supply and demand - that the need for green bonds will increase, and their preference value will be higher and their returns are more than their traditional counterpart.



Green bonds help issuers find new investors and reduce dependence on a particular market; It helps issuers to broaden their interests and thus raise awareness of issuers' environmental programs and plans and their accessibility to investors. Green bonds also help issuers - with their plans and programs - in networking with the development plans of governments and relevant stakeholders in implementing and facilitating the procedures of targeted development plans to improve the conditions of local communities and improve the living conditions of citizens, which improves their lives and makes them feel more responsible towards their communities.

It is worth noting that the percentage of green bonds has increased; The number of countries issuing sovereign green bonds increased **to 23 in 2020 from 11 in 2019**. The United States, Germany, France and China recorded the highest rate of issuance of sovereign green bonds during 2020. **In 2021**, the interest of several countries appeared the same emerging developing economy in issuing green bonds, including (Egypt - Poland - Fiji - Nigeria - Indonesia - Lithuania - Seychelles - Chile - Hungary). emerging to follow its path.

In order to issue green bonds, this process goes through several stages, which can be summarized as follows:

- Obtaining government approval
- Establishing work teams for development, social and green bonds to contribute to decision-making and the development of executive plans for green projects.
- Determining the expenditures required for spending on eligible projects that are compatible with the UN Sustainable Development



Goals, as did China and the European Union, where they defined green projects eligible for financing resulting from green bonds.

- Announcing project plans and providing all their details to investors and relevant government agencies in order to enjoy transparency; In order to make investors aware of the extent of the achievement and progress of green projects.

From the above, we conclude that the process of issuing sovereign green bonds aims to rely on the largest number of investors in addition to diversifying the markets; They are not all oil investments or in the stone industry sector, but rather green investments. It achieves the goals of sustainable development, and brings profit to all parties, whether the investor from profitable returns and deeper interaction in different markets and countries. It also benefits countries due to the increased rates of economic, social and environmental development resulting from green projects. It also contributes to improving the living conditions of individuals and providing citizens with green job opportunities resulting from the implementation of these projects.

Legislative amendments to activate green bonds

Needless to say, the urgency of global governments and the need to move to the green economy and make it a priority to combat environmental issues, and this creates an obligation for countries to take serious and effective steps by building programs and activating strategies in this regard. A significant part of the responsibility lies with the parliaments of states and the amendment of their legislation; To ensure the validity and implementation of these strategies.



Hence, the role of the legislative and executive authority comes in promoting green bonds by reducing the investment value of fossil fuel-based subsidies, and amending legislation to reduce carbon emissions resulting from industrial and economic activities; Thus, this contributes to tempting investors to invest in green projects and encourages pioneers and exporters to come up with new project ideas to reduce climate change and address environmental issues. According to World Bank estimates, over recent years, the growth of the green bond market since 2014 has tripled over the previous world.

Egyptian green bonds

In 2020, the Egyptian government announced the issuance of green bonds worth 750 million dollars as the first sovereign issuance in the global market, making Egypt the first country in the Middle East and North Africa region. These sovereign bonds lead to:

- Increasing and multiplicity of funding sources
- Opening the way for new investors in the Egyptian market
- Achieving Egyptian leadership in adopting policies to promote green investments, and achieving real results in the climate change crisis
- Financing and success of many environmentally friendly Egyptian projects, such as (the El-Dabaa nuclear project, the Benban solar energy project in Aswan, the Gabal El-Zayt wind power plant).



Second: green transportation

One of the disadvantages of fossil transportation is that it causes a huge percentage of pollution in the world, and in Egypt in particular. As the means of transportation that depend on fossil fuels, in addition to causing pollution from car exhaust, are also in a severe lack of regular maintenance, especially public transportation, as it is old-fashioned and has existed for years without modernization or development, which doubled the negative impact of fossil fuels.

In addition to the pollution caused by car exhaust; We find that over time and years, traffic jams increase, especially after the increase in various delivery services, which exacerbated the crisis, and traffic jams are not only on the roads; But also at busy ports and airports for the movement of people, goods and raw materials.

This prompts us to search for alternatives to pollutants that lead to increased carbon emissions and negative climate changes. With regard to transportation in general, it is necessary to adopt a culture of reliance on bicycles and to allocate special roads for them; So that it is safe for cyclists. This is an alternative that will never cost anything other than allocating the infrastructure for bicycles from their own roads, signals and parking, and this alternative is characterized as (environmentally friendly - inexpensive - saves time consumed in traffic jams - physical exercise, which positively affects the health of individuals (

Finally, it is an environmentally friendly alternative that does not cause any pollution or carbon emissions, as in cars and fossil public transportation.



With reference to bicycles, we see the experience of (Japan) the best evidence of this, as Japan adopts the culture of bicycles and relies on it as a basic transportation for individuals, and individuals of different social ranks ride it.

The second option in this regard is to develop and restructure the public transport system in line with the UN sustainable development goals and Egypt's Vision 2030; This development is achieved through the inclusion of an environmentally friendly transportation system that does not run on fossil fuels, and it also applies to private cars used by individuals.

It is necessary to open the field and innovation for the private sector, individual talents and the government to cooperate in the design of (electric cars and transport vehicles) that run on electricity. With regard to this, there are several challenges facing this alternative represented in the following:

- The high prices of these cars
- Scarcity of private charging stations and infrastructure for electric vehicles
- The length of time it takes to charge electric cars
- Lack of incentives to actually encourage their purchase
- Unavailability of spare parts and lack of knowledge of their maintenance methods
- Lack of clarity about insurance issues
- Doubt regarding matters of sale after purchase
- Unavailability of types of electric cars locally



All of these reasons represent challenges for the Egyptian government to provide electric cars, as they need a well-prepared infrastructure, and call for the concerted efforts of the private sector, the government, and graduates of specialized colleges in this field, such as engineering, computers and business administration; Because they are able to design electric cars and they have effective initiatives to cover the gaps in this dilemma related to electric cars.

As we reviewed the challenges of the electric car alternative, it is necessary to review its advantages and returns:

- Electric cars are far cheaper than fossil cars and transportation; It has a modest cost
- It will not cost the same amount of fuel as fossil fuel cars in terms of fuel costs.

On the other hand, although electric cars at the present time have a high cost in terms of establishing their own infrastructure, including charging stations, road repairs, and incentives offered to individuals to attract them to buy them; But it will be less in terms of cost and fuel with the progress in supporting this technology. There is no denying its costs, but there is no denying its importance and benefits, especially at this critical time when the world is suffering and is searching for solutions to mitigate climate impacts and preserve the environment.

In this regard, we recall the efforts of the Egyptian government regarding the availability of electric cars, in cooperation with China in this context, in order to reduce pollution and heat emissions, and it was reached:

- **Battery Electric Vehicles (BEVs):** Vehicles that use 100% battery power.



- **Plug-in Hybrid Electric Vehicles (PHEVs):** They are used to start the electric motor and then the car runs on electric energy until the battery runs out and automatically switches to fuel (such as gasoline) to power the internal combustion engine. The batteries of these cars can be charged using a wall socket or charging equipment and electric car manufacturers confirmed that it will be developed to have a charging time of about 40 minutes.

Priorities to enhance the electric vehicle industries and their revenues

1. Stimulating the economy

In the wake of the COVID-19 pandemic, countries have incurred heavy losses. Where, according to estimates by the International Labor Organization, more than 14 million workers have been affected in the United States and Europe alone; certainly in the developing countries, which were affected more than twice as much as the developed countries; Many workers lost their jobs. Accordingly, creating infrastructure and manufacturing electric cars will increase the chances of creating new job opportunities, and thus stimulate sustainable economic activity.

2 . Maintain a clean environment

Electric cars are environmentally friendly; It has zero carbon emissions, which contributes to reducing air pollution and reducing health risks.

2. Encouraging foreign investment and leading the local industry

The provision of electric vehicles may be a factor in motivating investment companies to open projects for electric, economical and



environmentally friendly transportation. Which contributes to the establishment of the infrastructure for electric vehicles from charging stations.

May be a catalyst for encouraging local entrepreneurship; After the manufacture of electric vehicles in Egyptian hands; This may lead to the creation of Uber-style passenger carriers that may be government or private companies; Which will provide job opportunities for young people and reduce the unemployment rate; achieve the public good; They facilitate services for citizens and also be environmentally friendly vehicles; It will also reduce the inflation rate and increase economic growth rates.

In this regard, the question may be raised about **"how to encourage the government to produce electric cars."**

A. Establishment and development of transportation infrastructure

The lack of sufficient readiness to establish charging stations, electric mini batteries, maintenance companies for electric vehicles, and paving and repairing roads will hinder the production and promotion of electric vehicles. Therefore, it is necessary to establish and equip the infrastructure for electric vehicles with high efficiency; It is also necessary to link the infrastructure to the electricity companies to feed it.

B. Decision makers formulate incentive packages for the adoption of electric vehicles

These packages aim to encourage the purchase and circulation of electric vehicles between buyers and business owners, such as the German stimulus package of about 15 billion euros to support the



purchase of electric vehicles and reduce taxes imposed on their purchases.

C-Drafting effective legislation and enactment of laws to impose fines on those responsible for increasing global warming emissions

Decision makers must compel companies and car consumers to reduce emissions; Fines are imposed on cars and vehicles that cause pollution; to gradually shift to the consumption of electric cars instead of fossil fuel cars.

In light of the Egyptian state's belief in the danger of carbon emissions emitted from car exhaust, it began looking into partnerships with various companies to solve this crisis. Indeed, Egypt managed to agree with the **Chinese company BYD** to provide electric public transport vehicles in Alexandria and Cairo, with a gradual expansion to cover all governorates. Egypt has embarked on expanding the provision of electric charging stations for cars until it reaches 130 stations in different governorates with capacities that comply with international standards.

The ambitions to switch to green transportation did not stop at this point, but the government began supporting local car companies such as (Al-Nasr Company) in cooperation with Chinese and Japanese partners in 2019; The car factory already contains equipment for assembling electric cars, and the government has set a reasonable price for the cost of buying electric cars, reaching 300,000 pounds, and promoting it at this price to attract taxi drivers to buy them. The Egyptian government also resolved to benefit from the experience of



local electric cars and to allow them to be exported to neighboring countries.

The Egyptian efforts cannot be overlooked in making a qualitative leap in the means of transportation, especially (the monorail project) linking the city of Sokhna and El Alamein. This encourages consumers and travelers to use it instead of fossil fuel-powered transportation. It is supposed to spread the monorail experience to connect the administrative capital with the rest of Cairo and the new cities.

In conclusion, if the Egyptian experience succeeds, Egypt will be able to take the lead and serve as a model for other countries to move towards green transport. Egypt will also achieve quantitative progress in the goals of the National Vision for Sustainable Development 2030 and the UN Goals for Sustainable Development, thus increasing the effectiveness of Egypt's regional role and enhancing its position in the Middle East and the world.

International Experiments in Electric Vehicle File

- Through green policies, **Nigeria** has achieved economic growth rates; thanks to green public transport initiatives; Green employment rates increased; About 25 thousand jobs are expected to be created thereafter. Water efficiency initiatives have also contributed to women's long-term employment and security.
- **China:** China is striving for a rapid green transformation. In this context, China is among the top selling countries worldwide, accounting for 12% of the world's total electric vehicle sales in 2021, double that of 2020.
- **Norway:** Norway is one of the most popular countries for electric vehicles, with about 80% sales in 2021



Third. Recycling waste

The culture of waste recycling has become popular and in practice in many States; In order to reduce climate change and reduce the proportion of carbon emissions emitted by waste, "waste" ranked fourth in Egypt after energy, agriculture and industry. Carbon emissions from waste, incineration and landfill **were estimated in 2016 to be about 8.6%** of total emissions, or **about 27 million tons** of carbon dioxide equivalent. In recent years, daily solid waste volumes in Greater Cairo alone have been estimated at about 15 thousand tons (**5 million and half tons per year**), and the proportion of solid waste exceeds **80 million tons per year in the rest of the Republic.**

In detail, we review the effects of solid waste if it is not recycled

- If the waste is buried and burned, it contains several elements that paralyse the environment (plastic, leftovers, beverages, metals, etc.). All of this generates methane and carbon dioxide, which actually contributes to higher temperatures, increased respiratory diseases of organisms, and increased air pollution rates following burning. Hence the need for greater attention to waste file and recycling; They can be exploited and reaped gains that benefit the State's economy and individuals.
- Waste pollution is not only air-based but leads to water pollution; Garbage accumulates in water banks, groundwater, groundwater wells and seas, contaminating them and rendering them unsuitable for human use.



- The burial and burning of solid waste leads to the potential for fires and natural disasters such as earthquakes and others; This waste accumulates in the Earth's subsoil and with rising temperatures may lead to geological reactions that may lead to serious consequences.

- A feature of civilized peoples is hygiene, a sense of responsibility and, in the absence of such a culture and the spread of rubbish on the streets, the State and its landmarks lose their chime, which has a negative impact on the tourism sector; Tourists may be averse to the spread of rubbish in the streets, specifically near tourist attractions, and we know the importance of the tourism sector in generating hard currency and its impact on the State's economy.

- Health: Garbage accumulation leads to the spread of reptiles, infectious animals and diseases so that garbage accumulation becomes a safe haven for rodents, rats and insects resulting in widespread pollution.
- Waste affects the quality of agricultural production, as used irrigation water becomes contaminated and spoils the crop or hampers its growth. Agricultural production is affected by extreme temperatures.

Based on the reviewed impact of solid waste on the environment, the solid waste management file has become not a welfare but a necessity that drives economic, social, cultural and environmental development; They must be identified by Governments as a priority in the sustainable development agenda.



In this regard, the collection, separation and recycling of wastes must be systematic, planned, overseen by the public and private sector, and involve individuals to raise their awareness.

Concerned	Role
Legislative Authority	<ul style="list-style-type: none"><li data-bbox="862 667 1471 1793">✚ The file is seriously examined and made debatable among members of parliament and climate and energy experts, especially in light of Egypt's commitment to the Paris Climate Agreement and the state's keenness to take real steps to reduce climate change, and it is necessary to manage this file wisely that a law be enacted to establish a competent body to supervise and control waste management Egypt; To enrich this body, it must be made up of a specialized elite of (climate experts, development project consultants, energy experts, engineers, and leading waste collection and recycling entrepreneurs).<li data-bbox="862 1801 1471 1894">✚ The role of the legislature also involves enacting laws to



criminalize the burial and burning of waste without following a systematic or indiscriminate plan, causing high pollution rates or waste of resources

Executive Authority

- + The role of the executive branch is to create a general climate for investors in the waste management file and provide them with all the facilities to invest and finance waste management projects.
- + It is important that the executive implement laws enacted by the legislature with regard to fines for those who burned and buried waste in unallocated places or personally benefited from recycling it.
- + Construction of landfills to be used for energy use; such waste can be generated by biogas that may be used to generate electricity or heat.
- + Support small businesses and entrepreneurs that put forward ideas or design models worth implementing in relation to waste management in Egypt
- + Using international expertise and experience in this area; seeking advice and assistance



from leading waste management and recycling countries.

- + Launch government initiatives such as "A Decent Life" as an initiative aimed at raising awareness and promoting the need to recycle waste, make the most of it and how resources are exploited.

- + Issuing decisions for graduates to perform the public service period adopted by the Ministry of Social Solidarity to be based on the optimal exploitation of the capacity of young people to design projects or help perform their public service in a development project or government development initiatives, to enrich knowledge and acquire values to build and develop society.

Private sector

- + The private sector can play a vital role in this area, especially in financing entrepreneurs' projects if models are designed to manage solid waste.

- + Grant grants to green entrepreneurs, especially in this file.



- + Directing and assisting the Oversight and Supervision Authority for Waste Management;
- + Training young people in development projects related to waste recycling.
- + Of course, the private sector will reap wide profits from its financing and support for development projects, and may gain a high position and meet global standards for the follow-up and financing of environmentally friendly projects.

Civil society

- + Civil society is a link between government and individuals, and therefore plays a vital role and is focused on raising awareness of development policies, allowing ideas about creative individuals to be received and trying to find ways to apply them either in the form of initiatives or finding someone to embrace the idea. Especially at that time, the Egyptian political leadership was giving way to civil society organizations and engaging them in promoting and implementing all policies.



University students and graduates

- + Young people and graduates are the most energy, creative and willing to start and achieve achievements, so their potential must be absorbed and guided on track by (gaining knowledge and learning about international experiences in waste recycling).
- + Participation in initiatives and awareness-raising activities on the need to reuse and recycle waste
- + Focusing the attention of their studies, especially their research and graduation projects on development projects, especially the file of management and governance of the waste file, especially students (engineering, computers and information-science- agriculture - business administration - politics and economics) to attach waste management to the field of their studies.



Egyptian efforts in solid waste management and recycling file

Recognizing the seriousness of carbon emissions from waste, the Egyptian leadership has made several determined efforts to advance and make a development difference in waste management and recycling. We review Egyptian efforts in this regard:

A. Initiative (Get Ready for The Other)



An initiative launched by President Abdel Fattah al-Sisi as part of Egypt's Sustainable Development Strategy (Vision Egypt 2030) aimed at spreading environmental awareness and changing bad practices toward the environment, the main purpose of the initiative is to raise awareness about (the importance of afforestation, waste recycling, reducing the use and circulation of plastics, and rationalizing food and energy consumption).



Highlighting the "Prepare for Green" initiative, it is based on:

- The initiative is trying to address about 36 environmental issues by raising a special logo for each month since its launch, with a special attention to waste disposal and reducing greenhouse gas emissions. The initiative focuses specifically on young people and focuses on protecting the environment by reducing air pollution from solid waste by 50% by 2030.

The initiative aims to strengthen the Egyptian economy, enhance competitiveness and create new jobs in response to Egypt's international and regional commitments.

To enrich the role of the awareness initiative, the Ministry of Environment has signed a protocol of cooperation with the Ministry of Higher Education to integrate environmental development issues into the curriculum and will expand to include schools.

B. The Ministry of Environment supports the mechanisms of companies to convert waste to energy

As part of the Egyptian leadership's interest in the waste management file, there is a real effort to come up with a successful model of waste conversion projects for energy in Egypt, where The Minister of Environment (Yasmine Fouad) Governor of the Central Bank (Tarek Amer) discussed ways to support mechanisms to convert waste to private energy after the launch of the first phase, which includes projects for eight companies in eight provinces worth \$325 million and up to \$390 million during the first phase after a meeting between the prime minister



and companies, which stressed the need to overcome the obstacles in this file. The Ministry of Environment has taken steps to provide financing packages for waste-to-energy projects following the entry of the private sector, investment incentive and a plan covering 27 provinces across the Republic.

The new waste system is to be implemented on three tracks: the construction of the system's infrastructure (waste collection, transport and recycling), then the legislative structure and the enactment of waste laws, and the executive regulations as a fundamental guarantee of sustainable management. The Ministry of Environment acts as a follow-up and control through the Waste Management Regulatory Agency; its role involves concluding the contract between localities and private companies and then measuring performance and following up, implementing and operating the system.

A. The start of legalizing the conditions of garbage collectors and joining them to work in the waste management system

, the Egyptian law is legalized to the problem of waste collectors, where the law obliges any person who practices waste work to possess a license to practice the profession, and this will become effective after the application of the executive regulations of the law to avoid applying fines to them, so the Ministry of Environment helps garbage collectors and facilitates the procedures for their official accession to the waste management system in cooperation with the Ministry of Social Solidarity, to provide them with social insurance and the right to form their own community association, and indeed numbers of garbage



collectors. Those who know their situation are increasing, with more than 2,200 people.

b. Establishment of the Waste Management Regulatory Agency



It is a body of the Ministry of Environment, established by Prime Minister's Resolution 3005 of 2015 and follows the Ministry of Environment.

- Organizing and monitoring waste management operations at the central and local level to achieve environmental advancement.
- Encourage and attract investments in the field of collection, transportation, recycling, handling and safe disposal of irregularities.
- Support relations between Egypt and other countries and international organizations in the field of waste and recommend legal action to join international and regional agreements on waste.
- It conducts training courses and workshops for children and young people on how to recycle waste and how to reuse resources.



c-Building waste recycling plant

In May 2018, Egypt signed a memorandum of understanding with an Italian company to build a waste recycling plant aimed at converting about 600-1,100 tons of waste into electric power and gas.

D. Establishing a solid waste management system

The aim of this system is to develop the infrastructure for the rehabilitation of waste bins and to establish new landfills for waste, which will cover all collection, sorting, transportation and recycling operations and also include organic waste.

Despite these efforts, the methods of collecting waste in Egypt are still not unified despite all the above-mentioned consensual solutions, where there is a whole neighborhood where informal garbage collectors are called the "scavengers' neighborhood", where they carry out sorting, recycling and exporting away from the state system, and all the profits achieved as a result fall under the informal parallel economy.

Many countries have been able to achieve sustainability in accordance with their past strategies, with the EU experiencing a 6% increase in green jobs in waste recycling sectors.



Leading international experiments in the green economy

In light of the interest of all countries and governments in sustainable development, specifically related to reducing the effects of climate change and global warming, many countries have conducted several pioneering and successful experiments in the green economy, and in this section will highlight the most prominent of these experiences to take advantage of the experiences of these countries and try to apply them to achieve the desired development results.

1. European Green Agreement

In 2019, the EUROPEAN Union launched a comprehensive regional plan for sustainable development, called the "Green Europe Deal", aimed at transforming the EU economy into a low-carbon economy to carbon neutral by 2050, and in order to reach the core goal, the plan included several actions in which all sectors, including

- Investing in environmentally friendly technologies
- Introducing green transportation for the public and private sector
- Enhancing building energy efficiency
- Decarbonization of the energy sector
- Strengthening international partnership in line with global environmental standards
- Subject the EU budget to periodic review to ensure that its spending helps the environment
- Encourage companies to make risky green investments through loan guarantees from the European Investment Bank thanks to its pledge to phase out loans to fossil fuel projects.



- EU financial support and technical assistance to those most affected by the transition to the green economy by pumping around €100 billion from (2021-2027) in the most affected areas

2. Pakistan's Experience of Green Transformation

Thanks to the Covid 19 pandemic and the resulting economic recession, Pakistan saw the opportunity to recover from the economic recession by transforming the green economy through the adoption of a "green fiscal stimulus" program to protect nature and create green jobs.

This program was not Pakistan's only action, but launched the "**One Billion Trees Tsunami**" initiative between 2014 and 2018, encouraging the green economy as an alternative to the brown economy.

Pakistan has adopted a plan to finance its green projects and initiatives, including **three key stages** of funding

1. Budget allocation for green projects, providing about 85,000 paid daily jobs in nursery cultivation and forest protection

2. Launch of the "Restore the Ecosystem" Fund to allow public and private shareholders to join the green transition with confidence.

3. Follow a barter system (debt for nature) in order to ease Pakistan's debt burden with countries that support the green economy



Pakistan has not stopped there but has announced the suspension of stone energy projects such as the 2,600 MW imported coal generation project and its replacement with 3,700 mega-projects in hydropower projects .

3. United Kingdom

The United Kingdom relies on educating individuals and changing the prevailing culture to a culture supporting the green economy in order to integrate individuals into the conservation process, as evidenced by the growing interest in solar panels and their affordable availability and the solar system -4 becoming more commonly used among families.

Interest in electric vehicles is increasing in the UNITED Kingdom and reducing the consumption of fossil fuel cars.

4. Saudi Arabia

Saudi Prince (Mohammed bin Salman) announced the Green **Middle East** initiative, which aims to plant nearly 40 billion trees in the Middle East, reducing greenhouse emissions to 2.5%.

Saudi Arabia is not only dependent on afforestation, but also interested in recycling waste of all kinds, and supports and encourages factories and companies to produce environmentally friendly products.



Recommendations and conclusion

Progress and initiation of planned green projects expected to contribute to sustainable development have become necessary and cannot be postponed. Therefore, it is best to take alternatives as a plan for each step to go beyond and apply them as a consistent system.

Here it should be noted that Egypt's start-up should begin with the launch of \$750 billion in sovereign green bonds to attract funding and investment for its green projects, which contribute to reducing pollution and global warming; and then achieve regional leadership by using international expertise and experience and transportation to local companies, to promote and use electric vehicles, especially public transport vehicles, and provide them with affordable prices for independents. Finally, it's important to pay attention to the waste and solid waste management file and try to make the most of its recycling, as it is a treasure that may achieve economic momentum, as happens in **Scandinavia** if properly exploited, and the resulting adhesion also opens up new economic prospects and thus creates green jobs.

Needless to say, the Egyptian state's efforts and efforts to try to provide reliance on renewable energy such as solar, hydroelectric and wind power to generate electricity and spread it to public roads, factories, companies and others.



Expected benefits to the state from the green economy

There is no doubt that any country that follows a successful and effective strategic system that leads to its progress in all aspects (political, economic, environmental, social, etc.) Also, if the Egyptian state advances in the implementation and implementation of its green projects, it will certainly receive countless benefits, the most prominent of which can be summarized as follows:

- **Opening up areas for new markets** following seawater desalination, waste recycling, sewage recycling, transportation, agriculture and industry projects.
- **Creating a huge amount of green jobs:** unemployment rate now is 7.5% and green economy will contribute in reduction in unemployment among Young Egyptians, especially after the ILO noted that the transition to low-carbon economies will create about 60 million jobs by 2030.
- **Improving Egypt's economic situation**, especially after the issuance of green sovereign bonds, which attracts investment and capital, especially after Egypt's regional leadership in offering green bonds and starting to implement green projects in various fields.
- **Promoting health security:** The impact of climate change and environmental pollution on citizens' health is indisputable. Pollution leads to serious diseases (lung diseases - hepatic and kidney disease - cancers - as well as many viruses) that may lead to death, and the real contribution to a qualitative shift in green projects in all areas certainly helps to ensure the health of citizens and reduce their incidence of diseases if organic fertilizers are used in agriculture instead of genetic



hybridization and soil corruption, Electric vehicles instead of car exhausts that cause allergies and lung diseases - clean water to be drinkable; the green economy also preserves the right of current generations to be healthy, making them eligible to raise future generations while enjoying health safety.

- **Enhanced food security:** With a huge population increase, Egypt faces an unduplicable crisis to meet the food needs of future generations, particularly because of soil fertility, increased soil pests and pesticides causing malnutrition, poor food supply and disease outbreaks. From recycling waste and upgrading irrigation systems and recycling wastewater in enhancing and securing food security.
- **Strengthening water security:** The issue of water security has become highly sensitive for the Egyptian state; it is also seeking alternatives to rely on different sources of water; the green economy seeks to enhance water security by caring for the water sector, desalination of seawater and drainage, and spreading a culture of rationalization of consumption and reducing pollution through canal lining projects to ensure unhindered water access and reduce evaporation.
- **Increasing Egypt's role regionally:** Through Egypt's current energy partnerships, Egypt seeks to enrich its regional leadership by moving to the renewable energy sector and diversifying its sources of clean energy, to make Egypt a hub for energy trading and to strengthen its position in Africa, Asia and Europe, where Egypt has contracted several countries to generate electricity from renewable energy sources.



In conclusion, climate change has become a scourge of danger that warns all countries of the world and citizens against persistent or complacent containment of the crisis; Pollution and climate change could lead to the loss of States and cities, especially coastal cities; There may be no future if the crisis is denied. In addition, disease outbreaks and epidemics that will dissipate biodiversity; It is therefore essential that the profile "Reducing the Effects of Climate Change, Sustainable Development and the Green Economy" occupy the priorities of Governments and States and individuals must unite in the responsibility of protecting their environment because it has an impact not individually but as dominoes in the event that they fall over the rest in a glimpse. It is imperative that individuals be held responsible for the development of their country and the improvement of their behaviours with regard to the rationalization of consumption and environmentally friendly culture; to achieve sustainable development quickly.