



# Analysis Of Sustainable Development Indicators and Iraq's Position in International Green Economy Indicators

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## Abstract

The green economy is a new model that aims to link the requirements of achieving development of all kinds with environmental protection and the creation of green jobs in many sectors such as agriculture, industry, construction, renewable energy, and others. Hence, the green economy is one of the new models of rapid economic development, which is based mainly on new knowledge of the environment, and one of its most important goals is to address the reciprocal relationship between human economies and the natural ecosystem. The green economy also promotes its ability to save the global economy from a long period of stagnation. This is what made the developed world in general and Iraq in particular move rapidly towards it for the purpose of achieving sustainable development and environmentally friendly projects based on modern technology. The transition to a green economy has its social and economic justifications. Therefore, the Iraqi government is keen to green the basic economic sectors to move sustainable economic development.

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institutions together. This requires rapid action to build plans and policies to enhance recovery opportunities and create new opportunities for the green economy at a time when the Iraqi

## the introduction

The Iraqi economy has suffered from complex conflicts and crises, which have left structural effects on society and state



### **Research hypothesis.**

The research stems from the hypothesis that there is a relationship between sustainable development indicators and the green economy indicator and its future implications for the growth of the green economy in Iraq.

### **The first requirement: sustainable development and the green economy, a conceptual and cognitive framework.**

#### **First: the concept of sustainable development.**

The concept of sustainable development is one of the most important topics that the world has taken care of in the economic, social and political arena, as sustainability has become a developmental thought that is spreading in most countries of the developing and developed world alike, where summits and conferences were held for it, which contributed since its inception, in the eighties of the last century in dealing with many serious environmental problems that threaten forms of life on the planet, and this was natural in light of the neglect of development of environmental aspects over the past decades, so it was necessary to find a new development philosophy that helps in overcoming these problems, and resulted in International efforts for a new concept of development known as sustainable development, and this concept was crystallized for the first time in the report of the World Commission for Environment and Development titled Our Common Future and published for the first time in 1987, and this committee was formed by a decision of the General

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government has announced its commitment to the 2030 Sustainable Development Goals. Many challenges must be overcome to meet future increases in electricity demand. And that renewable energy is not used sufficiently at the present time, but these energies can play an important role in the future of the interrelationship between the green economy and indicators of sustainable development in Iraq.

### **Research problem.**

Here lies the research problem in the following questions:

- 1- Are the indicators of sustainable development and the urban economy in Iraq still low.
- 2- Has Iraq achieved positive indicators in the transition of the energy sector to a green economy.
- 3- Is there an intertwined interrelationship between indicators of sustainable development and the green economy that reflects an optimistic future vision for this new development model.

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### **Search goal.**

- 1- Analysis of concepts and indicators of sustainable development and the green economy in Iraq.
- 2- Analysis of the interrelationship between the sustainable development indicators and the green economy index in Iraq.

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world.

d- The ratio of debt to gross national product. It means the ratio of the total external debt to the gross national product, which is a measure of the degree of indebtedness, and this indicator helps in assessing the external debt situation (and debt sustainability) of the country.

C- Percentage of consumption of renewable energy resources. It refers to the percentage of a country's total energy consumption from renewable energy sources. This indicator also measures the energy mix ratio between renewable and non-renewable energy resources.

Second: the social indicator, where the social indicator includes several indicators, the most important of which are:

a- The percentage of the population living below the poverty line. A good picture of poverty can help reveal a number of aspects of poverty reduction policies, such as regional or sectoral priorities for public spending.

b- Gini index of income inequality. It is intended as a summary measure of how different the actual distribution of income, consumption expenditure, or a related variable is from a hypothetical distribution in which each person would receive a similar share.

C- The unemployment rate. It refers to the ratio of the unemployed to the labor force.

Assembly of the United Nations in December / December In 1983, it was chaired by Brundtland, the Prime Minister of Norway, and the membership of (22) personalities from the ruling political and economic elites in the world. (1).

Stoddart defines sustainability as the efficient and equitable distribution of resources between generations and between generations with the operation of social and economic activities within the confines of a limited ecosystem.(2)

On the other hand, (Ben-Eli) sees sustainability as a dynamic balance in the process of interaction between the population and the absorptive capacity of their environment so that the population evolves to express its full potential without irreversible negative effects on the absorptive capacity of the environment on which it depends. (3).

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### **Second: indicators of sustainable development.**

First: the economic indicator, as the economic indicator includes several indicators, the most important of which are:

A- Per capita gross domestic product. Per capita GDP levels are obtained by dividing annual or period GDP by current market prices by population.

The trade balance of goods and services. It refers to the difference between the value of exported goods and services and the value of imported goods and services. This indicator shows the relationship of the economy with other economies in the



coastal area on economic development.

Fourth: the institutional indicator, as the institutional indicator includes several indicators, the most important of which are:

A- Spending on research and development as a percentage of the gross domestic product.

b- The number of Internet and telephone subscribers per 1,000 residents. Internet subscribers are those who pay or create subscription accounts to enable access to the Internet. The indicator is derived by dividing the number of Internet or telephone subscribers by the total population and multiplying it by 1000. The subscribers may be either individuals or institutions. This indicator is the broadest and most common measure of the degree of development of communications in a country. (4).

### **Third: the concept of green economy.**

The current discussions have led to a common understanding of the green economy as "a concept that brings together a set of policies to promote investment in sectors of environmental importance while contributing to the pursuit of sustainable development and poverty eradication. Deriving from a set of economic approaches, concepts, ideas and principles, the green economy has historically been understood as An economic system compatible with the natural environment and therefore environmentally friendly. Today, the concept of green economy has evolved to also take into account social issues. And by

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D - the rate of population growth. It means the average annual rate of change in the size of the population during a specific period. In other words, it measures the rate of population growth and the speed of change in the size of the population.

Third: the environmental indicator, where the environmental indicator includes several indicators, the most important of which are:

A- Greenhouse gas emissions (GHG). This indicator measures the six major greenhouse gas emissions that have a direct impact on climate change, not to mention the removal of the main carbon dioxide through sequestration as a result of land use change and forestry activities.

b- The area of arable and permanent land. This indicator shows the amount of land available for agricultural production, the amount of agricultural land available for food production and the extent of fertilizer use in agriculture per unit area of agricultural land and the use of pesticides per unit area of agricultural land.

The land affected by desertification. Desertification is a central problem in sustainable development. While many dryland ecosystems have generally low levels of absolute productivity, combating desertification is central to sustainable development in large areas of the world and is a major obstacle to sustainable development.

d- The percentage of the total population living in coastal areas. It means the percentage of the total population who live within 100 km from the coast. This indicator represents the impact of population and population growth in the

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defined goals, and how experts evaluate this performance. The GGEI performance index uses quantitative and qualitative indicators to measure how well each country is performing on four main dimensions: leadership and climate change, efficiency sectors, markets and investment, and the environment. It will require countries aiming to achieve new targets for emissions reduction and sustainable development and a vision to identify the best paths to a low-carbon economy. In the country and its performance, the GGEI is also used to measure performance, inform the ESG investment strategy on areas for improvement, and educate diverse stakeholders. Here are some points learned at the state level from the new GGEI:

A- This new indicator includes three social indicators: income equality, gender equality in the workplace, and gender equality in governance. While efforts to achieve gender equality are generally improving, income equality has not, with some of the 160 GGEI countries seeing income inequality increasing between 2005 and 2020.

B- In terms of success in decarbonization (i.e. buildings, electricity, heating, manufacturing, construction, transport, waste and resource efficiency), the story is the same: With the exception of Germany and the UK, the world's top emitters play a poor role.

C- GGEI results look different, indicating market momentum in countries where

using clean technology and clean energy.

Karl Burkart defines a "green economy" based on six major sectors: renewable energy, green buildings, clean transportation, water management, waste management and land management. Taking into account the three pillars of sustainability, social, economic and environmental and ultimately used as a means to measure the level of progress towards creating an effective green economy, all other definitions address one or more of these sectors depending on the specific interest. (5).

While the Organization for Co-operation and Development (COECD)The green economy is green growth, which is the guarantee of the continuity and continuity of natural resources and thprovision of environmental resources and services on which the well-being of societies depends. To achieve this, investment and innovation must be entitled, which supports steady growth and provides good economic opportunities (6).

#### Fourth: Green Economy Index.

It measures the Global Green Economy Index (GGEI), which was prepared by (Dual Citizen Inc) and issued in its first version in 2010, after which it witnessed an important systematic development over the years. In its latest version, it was applied in the year (2020) to (160) countries through (18) development indicators. It is globally recognized for environmental sustainability, the distance of each indicator from the globally



B- The ratio of investments to the gross domestic product.

The role of the private sector is still marginal in the Iraqi economy, as government investment still dominates the largest share of the total investment, which depends entirely on the oil rent revenue, which constitutes more than 95% of the revenues of the general budget of the government, so it is exposed to fluctuations in oil prices and developments in the market oil. Despite the foregoing, the ratio of investments to output amounted to 17.9 as an average for the period 2004-2020, which is a weak percentage compared to Arab countries, which reached nearly 30% in the UAE and Jordan, and reached more than 25% at the level of Arab countries. Despite the urgent need for the Iraqi economy to increase what is allocated for investment for reconstruction and construction.(9)  
 c- the ratio of exports to imports.

This ratio reflects the state of the country's trade balance of goods and services. The data in Table (1) indicates that the coverage ratio of exports, of which oil constitutes more than 98%, to imports is high, reflecting Iraq's ability to continue importing throughout the period 2004-2020, except for the years 2014 and 2020. This indicator also reflects the high degree of openness of the economy to the outside world.

overall performance may be weak: if we focus only on country progress, two MENA countries, China, Uruguay and Solomon Islands are all in the top ten.(7)

**The second requirement. Analysis of sustainable development indicators and Iraq's position in green economy indicators.**

**First - the driving force indicators.**

**.1- Economic indicators**

A- Per capita gross domestic product.

Per capita GDP increased significantly during the period (2004-2013), rising from \$1,392 in 2004 to \$6,045.5 in 2011, and achieved its highest in 2013, reaching \$7,076.6. As for the period (2014-2020), the trend of the Iraqi per capita share of GDP was downward in most of its years, as it decreased from 6637.7 dollars in 2014 to 4985.5 dollars in 2017, and the largest decrease was at the end of the period, as it reached 4583.7 dollars in 2020, as shown in Table (1). This decline is due to the dual crisis that afflicted the Iraqi economy, namely the drop in global oil prices after the second half of 2014 and the occupation of one-third of Iraq by terrorist groups. In addition to the compound crisis in 2020, which is the decline in global oil prices, the Covid-19 pandemic, and the internal financial crisis. Iraq is among the middle-income countries, according to the classification of the Human Development Report for the year 2020.(8)

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Table (1) Economic indicators of sustainable development in Iraq for the period 2004-2020

Year	GDP per capita	The ratio of investment to GDP	The ratio of exports to imports
2004	0,87	0,87	0,87
2005	0,89	0,89	0,89
2006	1,34	1,34	1,34



2007	1,7	1,7	1,7
2008	1,7	1,7	1,7
2009	1,06	1,06	1,06
2010	1,19	1,19	1,19
2011	1,66	1,66	1,66
2012	1,69	1,69	1,69
2013	1,98	1,98	1,98
2014	0,71	0,71	0,71
2015	1,3	1,3	1,3
2016	1,5	1,5	1,5
2017	1,57	1,57	1,57
2018	1,61	1,61	1,61
2019	1,59	1,59	1,59
2020	0.65	0.65	0.65

Source: - Central Statistical Organization, Environment and Sustainable Development Priority Indicators in Iraq, Baghdad, 2011, pg. 7, Millennium Development Goals in Iraq and a look beyond 2015, multiple pages, Sustainable Development Goals: Statistical Report, 2021

for the same year.

b- the mortality rate of children under the age of five

The statistics of this indicator indicate that the rate reached 44 deaths per 1,000 births for the year 2008. Despite the improvement in the indicator, it is still below the required level. In the years 2011, 2014, 2018, 2020, it reached 37, 18, and 21. 34.3, respectively, and may reflect some efforts to improve the level of primary health care. Except for the covid-19 pandemic.(10)

Figure (1) The unemployment rate in Iraq for the period 2010-2020

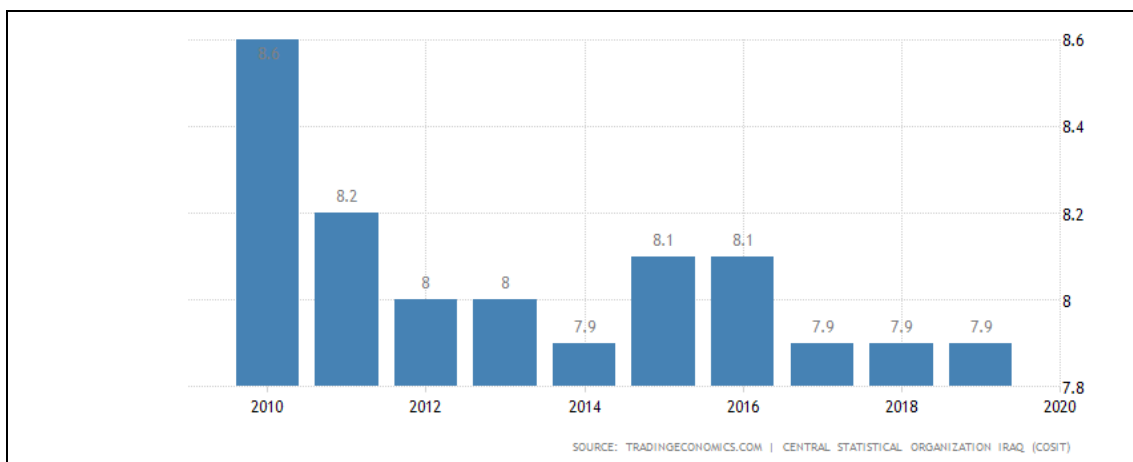
## 2- social indicators

### A- Unemployment rate

It is clear from Figure (1) that the unemployment rate decreased relatively in 2012, reaching 8%, after it was 8.6% in 2010, then it decreased to 7.9% in 2014, and the largest decrease was in 2020, when it reached 16.5%, but the level of unemployment is still High relative to the countries neighboring Iraq, as the youth unemployment rate for ages 15-24 for males increased from 17% in 2014 to 20.1% in 2018 and 25.1% in 2020, while it decreased for females from 64.8% to 38%

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Source: Republic of Iraq, Central Statistical Organization, annual reports for different years

**Status indicators:**

It is noted from the table (2) that the ratio of debt / output has exceeded the permissible ratio, which is 60% according to the Maastricht Treaty during the years 2004-2007, when the ratio was very high, specifically during 2004, when it reached 251.2%, and is due to the accumulation of debt from previous years and the country's inability to pay its debts. This is due to the inflexibility of the Iraqi economy, and after 2008, this percentage decreased to less than the specified standard percentage, except for the years 2016 and 2020, which is the year of the internal financial crisis. This is a positive indicator of the financial surpluses achieved for the period 2005-2013, which contributed to debt reduction.

**A. Economic Indicators:**

First- Debt / Gross Domestic Product.

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**Table (2) Public debt / GDP of Iraq for the period (2004-2020)**

2020	2019	2018	2016	2014	2012	2010	2008	2006	2004	السنة
64	54	55	60	30	29	47	42	100	251	النسبة

Source: From the researcher's work based on the Ministry of Planning, National Accounts for the years 2004-2021 and the Central Bank of Iraq, General Directorate of Statistics and Research, annual reports

**B. Social Indicators.**





Al-Qadisiyah governorate with 44%. As for the northern governorates, it achieved the lowest percentage, reaching 2% and 3.6% for each of the governorates of Sulaymaniyah and Erbil, respectively. It was found that the governorate of Al-Muthanna is still in the last survey.(11) In 2020, it occupies the first place with the highest poverty rate (52%). The poverty rate in the rest of the governorates was distributed as Dohuk 8.5%, Sulaymaniyah 4.5%, Erbil 6.7%, Nineveh 37.7%, Kirkuk 7.6%, Diyala 22.5%, Anbar 17, Salah al-Din 18%, Baghdad 10%, Babil 11%, Karbala 12%, Wasit 19%, Najaf 12.5%, Diwaniyah 48%, Dhi Qar 44%, Maysan 45%, Basra 16%. Table 3 shows the percentage of the population living under The poverty line is distributed between urban and rural areas.

### The population living below the poverty line.

The percentage of the population living below the national poverty line reached 23% in 2007, which is a high percentage in a country characterized by its richness and abundance of natural and human resources. This percentage varies from one governorate to another, and the Muthanna governorate recorded the highest percentage, amounting to 45%, while the lowest percentage was in the Erbil and Sulaymaniyah governorates, which amounted to 3% and 3.4%, respectively. This percentage decreased in 2012 by 5%, with a rate of 18%, and the share of rural areas was 31%. As for the governorate level, the situation has not changed. Al-Muthanna still occupies the first place with a rate of 53%, followed by

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**Table (3) Percentage of the population living below the poverty line in Iraq**

Years	% urban	%the countryside	%the total
2007	16,2	40,1	23%
2012	13,8	31	18%
2014	-	-	23%
2018	11,7	28,1	20%
2019	19.8	35	26.8
2020	25.7	41	31.7

Source: Central Statistical Organization, priority environmental and sustainable development indicators in Iraq 2018 and the Millennium Development Goals in Iraq for 2021



### C. Environmental Indicators:

#### I- The percentage of arable land

One of the important elements of sustainable development is agriculture because it provides food for the population. The percentage of actually cultivated land compared to arable land fluctuated during the period (2004-2020), reaching the highest rate in 2007, when it reached 48%, then it decreased to 38% in 2012 and 28% in 2012. 2014, then the percentage improved slightly in 2018, achieving 31%, then it decreased again in 2020, reaching 30%. The reason for this is largely due to the phenomenon of high land salinity, in addition to the continuous phenomenon of land desertification, and the lands affected by this phenomenon reached 40% in 2018.

#### (2) Proportion of protected areas (biological diversity

Reserves are land or water of competitive, scientific or tourist value that are placed under legal protection to protect their environmental wealth and to sustain their development. The total areas proposed as natural reserves in Iraq amounted to about 283,923 hectares, or about 2,847 km<sup>2</sup>, or 0.67% of the total area of Iraq. This measure is one of the important measures to identify the extent of the country's commitment to its natural heritage.

### D. Institutional indicators.

#### 1) The number of telephone lines per 1,000 inhabitants

This indicator displays the extent of development and ease of the communication process, the extent of benefiting from digital economy technologies, and also reflects the degree of development of communications within the country. Iraq witnessed a remarkable development during the period (2004-2018), as it increased from 2.17% in 2004 to 72% per 1,000 people in 2010, and according to the results of the Households and Individuals ICT Use Survey for the year 2020, the percentage of individuals who use a mobile phone at the level of Iraq was 70 Of which, 76.5% are males and 59% are females. Basra was the highest governorate in Iraq with mobile phone usage by 82%, and Muthanna was the least governorate with 44%. Despite this increase, Iraq is still relatively far from the numbers of neighboring countries.

#### 2) The number of Internet subscribers per 1,000 inhabitants

This indicator reflects the extent of the Internet service. This indicator achieved a remarkable increase in the number of Internet subscribers from 0.9% in 2004 to 2.5% in 2010. The percentage of subscribers at the governorate level was 13.3% males and 8.8% females. The highest participation rate in the governorates was in Sulaymaniyah 19.8%, and the lowest participation rate in the governorates of Al-Qadisiyah and Muthanna was 6.7%. In general, it is a very modest percentage compared to other Arab countries.(12)

### **The third requirement: Iraq's position in international green economy indicators**

#### **.(13)Firstly . green economy index**

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The Global Green Economy Index (GGEI) measures the performance of the green economy in 160 countries across 18 indicators. Its measurement approach takes into account two considerations: the progress made on each indicator from 2005 to the present and the distance between each country's current performance and the performance needed to reach global sustainability goals. You can learn more about this new measurement approach in the annual reports for the indicator. GGEI is defined by four main dimensions.

- Climate change and social justice
- Decarbonization of the sector
  - Investing in markets and environmental, social and institutional governance.
  - Environmental health.

The GGEI was the first Green Economy Index, launched in 2010, and today it is the most referenced product of its kind internationally, used by policy makers, international organizations, ESG investors, and corporations to assess and understand the links between a nation's green economy performance and its own. Private business or organizational agendas. Like many indices, the GGEI is used to measure performance, inform ESG investment strategy, flag areas for improvement, and educate diverse stakeholders on how they too can foster progress. The GGEI is also useful as a basis for creating custom sustainability measurement frameworks for a variety of stakeholders. Learn more here about signing up for GGEI or making use of the template to create custom sustainability frameworks. GGEI is published by Dual Citizen LLC, a US-based private consulting firm. The Global Green Economy Index (GGEI) is a trademark of Dual Citizen LLC. Iraq did not enter this indicator until 2020, and its contribution was weak, and there was not much information available for the sub-indicators, so that it was not estimated to rank among the participating countries and was left blank, like Oman, Syria and Yemen. Table(4) shows green economy indicators by Asian region and the rank obtained. Japan ranked first in Asia, Lebanon ranked first in the Arab world, and fifteenth in Asia. And Iraq achieved 35.7 blisters in the natural capital protection indicator, which is the lowest score achieved on theAt the level of Asia, in the Social Inclusion Index and the Efficient and Sustainable Resource Indicator, it achieved approximately 68 points and 75 points, respectively, which is a good result if we know that Japan is the first in Asia to achieve 82 points and 80 points.

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**2020Table(4) green economy indicators by region and rank**

Country	Ranked by region (Asia)	Natural capital protection index	Green Economic Opportunity Index	index of social inclusion	Resource efficiency and sustainability index
Japan	1	71.1	44.88	82.16	79.94
Lebanon	15	56.1	24.49	51.56	71.89
Saudi Arabia	21	35.75	30.75	65.27	66.7
Jordan	25	47.37	13.04	67.16	71.82
Kuwait	27	43.88	11.79	57.28	67.87



Qatar	28	36	12.66	55.69	63.99
Oman	-	41.63	29.1	-	60.33
Iraq	-	35.7	-	67.57	75.11
Syria	-	39.09	-	54.64	74.01
Yemen	-	37.81	-	-	91.86

Source:GGGI , Green Growth Index 2020, GGGI technical report no. 16,December 2020, p 1-77

### secondly. Environmental performance index

The 2020 EPI ranks 180 countries on 32 performance indicators across 11 issue categories covering environmental health and ecosystem vitality. These metrics provide a measure at the national level of how close countries are to specific environmental policy goals. Since 2006, the EPI has been released twice annually by the Yale Center for Environmental Law and Policy (YCELP) and the Center for International Earth Science Information Network (CIESIN) at Columbia University. EPI meets quality standards for statistical integrity and EPI is recognized as a reliable composite indicator for measuring environmental performance worldwide. The 2020 report shows a number of striking findings from the EPI rankings and indices:

1-Good policy outcomes are linked to wealth (Gross Domestic Product per capita), which means that economic prosperity makes it possible for countries to invest in policies and programs that produce desirable outcomes. This trend is particularly true for categories of issues under the environmental health umbrella, as building the necessary infrastructure to provide clean drinking water and sanitation, reduce ambient air pollution, control hazardous waste, and respond to public health crises leads to significant returns to human health.

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Being.

2-The pursuit of economic prosperity - manifested in industrialization and urbanization often means more pollution and other pressures on ecosystem vitality, especially in the developing world, where air and water emissions remain significant. But at the same time, the data suggests that countries need not sacrifice sustainability for the sake of economic security or vice versa. In every category of issue, we find countries outperforming their economic peers. Policymakers and other stakeholders in these pilot countries are showing that focused attention can mobilize societies to protect natural resources and human well-being despite pressures associated with economic growth. In this regard, indicators of good governance—including adherence to the rule of law, vibrant journalism, and fair enforcement of regulations—have strong relationships with higher EPI scores. Third, while the top performers in the EPI concern all areas of sustainability, their lagging peers tend to perform unevenly. Denmark, which ranks first, has achieved strong results on most issues with leading commitments and results in terms of climate change mitigation. In general, high scorers show long-term policies and programs to protect public health, conserve natural resources, and reduce greenhouse gas emissions. The data also shows that countries that make a concerted effort to decarbonize their electricity sectors have made the largest gains in combating climate change, with associated benefits for ecosystems and human health. However, we note that every country - including those at the top of the EPI rankings - still has issues to improve. No country can claim to be on a fully sustainable path



3-Laggards must redouble national sustainability efforts on all fronts. A number of important countries in the Global South, including India and Nigeria, come near the bottom of the ranking. Their low scores on the Environmental Performance Index (EPI) indicate the need for more attention on the spectrum of sustainability requirements, with a high priority focus on critical issues such as air and water quality, biodiversity, and climate change. Some other laggards, including Nepal and Afghanistan, face broader challenges such as civil unrest, and almost all of their low scores can be attributed to poor governance .

4-Iraq ranked 106th in the world and 6th in the Arab world, where Kuwait topped the Arab countries, and Japan ranked 12th in the world and the first in Asia.(14)

**Table 5 Average rank of countries by EPI 2020**

Intermediate level	Country	Rank	Intermediate level	Country	Rank
104(103,111)	Iraq	106	1(1.1)	Denmark	1
110(106,122)	Oman	110	2(2,2)	Luxembourg	2
125(104,147)	Qatar	122	3(3,4)	Switzerland	3
135(126,144)	Sudan	131	12(11,12)	Japan	12
145(140,148)	Nepal	145	46(45,47)	Kuwait	47
155(150,158)	Nigeria	153	48(46,50)	Jordan	48
170(166,174)	India	169	83(78,89)	Algeria	84
178(176,197)	Afghanistan	178	96(85,98)	Egypt	94
			100(94,102)	Morocco	100

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Source: European Commission, JRC statistical audit of the 2020 Environmental performance index, Luxembourg: Publications Office of The European Union, 2020, p 22-23

### Third. Climate change performance index

THE CLIMATE CHANGE PERFORMANCE INDEX (CCPI) tracks countries' efforts to combat climate change. Recognizing the urgent need for immediate action to protect the global climate, COP 21, held in December 2015 in Paris, made a groundbreaking achievement in adopting the target of reducing warming temperature to 'well below' 2°C and follow-up efforts to limit warming to 1.5°C. Under the Paris Agreement, for the first time climate action is anchored in the context of international law. This requires countries to make their unique contribution to preventing dangerous climate change. The next critical step to follow through on this agreement is the swift implementation by the signatories of concrete measures to deliver



their individual contributions to the global goal. For the past 13 years, the Climate Change Performance Index (CCPI) has been tracking countries' efforts to combat climate change. The changing initial attitudes, interests, and strategies of many countries make it difficult to distinguish between their strengths and weaknesses, and the CCPI has been an important tool in contributing to a clearer understanding of national and international climate policy. To show more precisely the current measures and to encourage steps towards an effective climate policy, this year the CCPI design is assessed with many achievements: for the first time, it monitors the evolution of all greenhouse gas emissions in the 56 countries and the European Union that are assessed in the CCPI. In addition, the indicator is now better suited to measuring the extent to which countries are achieving the global goals of the Paris Agreement. It does this not only by comparing countries through their development and recent trends in the three categories 'greenhouse gas emissions', 'renewables' and 'energy use', but also by aligning with 2°C their current status and future targets in each of these categories. The index also continues to assess countries' ambition and progress on climate policy. And Iraq has not yet entered with the countries included in the index, and the overall results and general performance of the countries evaluated by CCPI 2020 appear. No country was strong enough in all categories of the index to achieve a very high overall rating. So again the top three remain empty and Denmark is again the top ranked country, as in last year's CCPI, but it doesn't do well enough to achieve a very high overall rating and with India (8th) and the UK (8th) 11) and Germany (16th), only three G20 countries were among the top performers in CCPI 2020. The G20 bears a special responsibility for mitigating climate change, as its members emit more than 75% of the world's greenhouse gas emissions.

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Canada, Russia, South Korea and Saudi Arabia are the worst performers of the G20 countries.(15)

### **conclusions**

1- Iraq has huge potential in the field of green energy, but it lags behind its regional and other counterparts in terms of the use of green technology. Note that he does not currently have a clear and specific strategy for the green economy, and there is no clear approach for the transition to renewable energy.

2- The electricity infrastructure in Iraq requires large investments to expand its total capacity and upgrades to improve efficiency, in addition to focusing on increasing the capacity of generating energy from renewable resources.

### **Recommendations**

1- Preparing a comprehensive and integrated strategy for the requirements of the transition towards a green economy as a method for achieving sustainable development in Iraq, and nominating leading sectors for this transformation, such as the energy sector and the agricultural sector.

2- Achieve mutual, competitive, environment-friendly development for the public and private sectors in Iraq, and enhance national and international economic and environmental potentials and opportunities in the field of green energy.



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