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Societal Green Economy and its Impact on Sustainable Development

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ABSTRACT

The research uses a descriptive experimental methodology based on the study of the experiences of countries to benefit from them as an applied method of transition to the green economy in the project of a new city in Samawah. The use of analyzing developmental potentials method, the SWOT model and the spatial interaction of the reality of the situation Using modern GIS technologies have also been employed. The first section dealt with the conceptual framework of the green economy and its importance and comparison with the conventional economy, sustainable development, its goals and the obstacles it faces in attempting to understand the relationship between them and extract indicators, as well as shed light on the challenges facing the transition to a green economy and the achievement of sustainable development. Then, in the third section, the study shall be carried out in such a way as to develop the potential for the reality of the situation in the target area and to employ them to achieve the desired results a for the establishment of the proposed city in Samawah.

1. INTRODUCTION

Attention and concern for the green economy appeared to be an environmentally friendly economic activity and one of the ways to achieve sustainable growth, beginning at the 1992 Earth Summit of the RIO and 20 years later at the RIO+20 United Nations Conference on Sustainable Development (UNCD) in Rio de Janeiro.

A number of studies describe sustainable development as 'development that responds to the needs of the present without compromising the ability of future generations to meet their needs.' This concept indirectly focuses on two main ideas: the idea of needs, in particular the essential needs of the most vulnerable social groups, which require considerable attention; and the idea of limited capacity. in general, development has three main dimensions: economic, social and environmental.

According to Lorek and Spangenberg [1], the economy is sustainable only if it simultaneously caters human needs, in particular the essential needs of the world's poor, and accepts the limitations imposed by the need to sustain the environment's ability to meet present and future needs.

Morrow [2] concluded that the inability to meet human needs is socially unsustainable and the use of resources beyond environmental capability is environmentally unsustainable. The basic needs are not substitutable and the limits specifically apply to the environment and not to natural capital.

OECD [3] and Rockstrøm et al. [4] confirm this meaning. They reported that human activities push the Earth system outside the stable environmental state of the Holocene, with consequences that are detrimental or even catastrophic for large parts of the world. Pop et al. [5] stated that social responsibility is a crucial strategy for generating new jobs and sustaining economic development. They also highlighted that the promotion of a more resource-efficient, greener and more sustainable economy is one of the overarching goals of the Europe 2020 strategy. Jackson [6] has studied some social aspects of the transition to a sustainable economy and has shown that there is a need for a profound transformation of the economic system itself. Song et al. [7] stated that there is much more that must be done to achieve societal sustainability in natural resource management. In addition, they underscored why environmental protection-related investments should be encouraged. Loiseau et al. [8] claimed that the green economy covers a lot of diverse concepts and its links with sustainability are not always clear. Kantola et al. [9] have shown that there is so much more waiting to be done for sustainable societal development. They also stated that the people need to change their minds and really cooperate for a better future.

According to the above survey, there is need to further studies to achieve societal sustainability in natural resource management.

It can be said that the problem is the possibility of applying effective strategies for greening the economy in the selected area through the better use of alternative resources represented in renewable energy sources such as: wind energy and solar energy. On the other hand, achieving sustainable development and spatial interaction, implementing effective strategies and preserving natural and human resources means running out and reducing the societal gap.

Therefore, the objective of this work is to transitioning from the brown or underdeveloped economy to the green economy. Also, to finding effective ways and strategies to implement a green economy that protects the health of the community environment in order to achieve sustainable development. In other words, this work tries to benefiting from the experiences of countries in shedding light on the best ways and rational measures that help reaching sustainable development in the light of a green economy in the study area (Samawah city).

2. THEORETICAL CONCEPTUAL FRAMEWORK

2.1 Definition of green economy

It is the economy in which an improvement in human welfare, quality of life and social equality is produced while notably reducing environmental risks, ecological scarcity of resources, carbon emissions and increasing resource efficiency, according to the United Nations Environment Program [10]. We can look at the green economy in the simplest form, as an economy with less carbon emissions, more efficient use of resources and energy, prevents loss of biodiversity and ecosystem, and improves income and job growth for all social groups [11]. It is one of the new paradigms of fast-growing economic development, which is mainly based on a good knowledge of the environment in which one of its most important goals is to address the interrelationship between societal economies and the natural ecosystem. "It is the result of the close partnership between the United Nations Environment Program (UNEP) and the International Labor Organization" ILO [12]. Accordioning to Diana [13] the abbreviation of the word Green denotes:

i. Generating and storing renewable energy.
ii. Recycling existing materials.
iii. Energy efficiency for manufacturing, manufacturing distribution, Construction, installation, and maintenance.
iv. Education, compliance and awareness.
v. Natural and Sustainable product manufacturing.

There are many entities concerned with the green Economy, we summarize the most important of them through Table 1 as follows:

Table 1. Concerned parties of the green economy [14]

Alternative energy	Solar energy, wind and bio fuels
Green buildings	Environmentally friendly materials. Control / reduce energy and water consumption.
Sustainable transport	Cars that run partly on electricity, public transport
Water management	Water reuse, rainwater harvesting
Waste management	Recycling, toxic waste treatment
Land management	Organic cultivation, reforestation

The green economy report indicates that there are three main results of the transition to a green economy which is Figure 1 [15]:

1) Greening the economy not only generates an increase in wealth, but in particular, it gains in ecological commons or natural capital.
2) The green economy represents the indissoluble link between poverty eradication and preservation and maintenance of ecological commons.
3) There are new jobs that are created when moving to a green economy.

Also, the idea of the green economy concept is due to the motive of avoiding traditional economic paths. Table 2 shows a comparison between the traditional economy and the green economy.

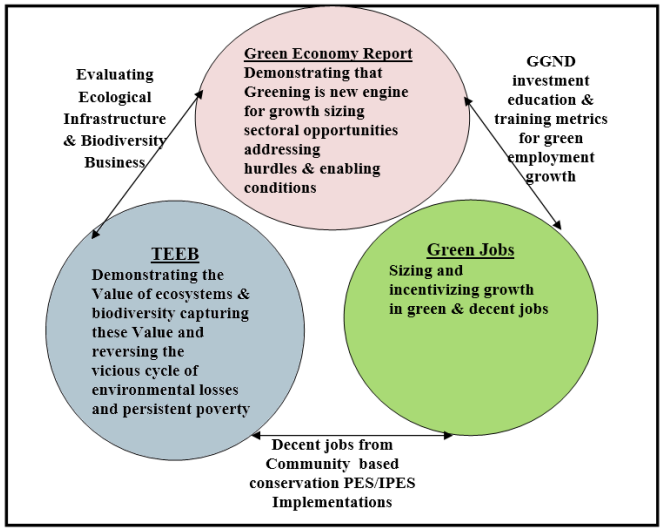

Figure 1. The Green Economy Initiative: A family of initiatives

Table 2. Comparison between the traditional and green economies [16]

The face of comparison	Traditional economy	Green economy
Energy resources	Mainly depends on fossil fuels extracted from the ground (coal, petroleum, gas)	It depends mainly on renewable energy of all kinds, such as solar energy and wind energy
Exploitation of Natural resources	It does not care about natural Capital, and its natural resources suffer from abuse	A major reason for its Existence is the better utilization of natural resources so that it does not exceed their ability to regenerate
The environmental dimension	no importance is given as its main goal, the economic dimension, therefor, high levels of pollution have affected ecosystems	Balances the economic, social and environmental dimensions
Economic growth	It is keen to achieve high rates of growth at the expense of the environment, regardless of fairness in distribution	It is keen to achieve sustainable growth that is effective in using natural resources and reduces the impact of pollution and environmental risks.
Technology	It depends on production-intensive technology that achieves economic returns regardless of natural resources, their depletion, and pollution levels.	It is based on clean technology that preserves natural resources and recycles what is used, which does not result in high pollutants
Social Justice	The problem of unemployment and poverty is increasing despite economic growth rates, due to the lack of social justice in distribution	It mainly aims to create green job opportunities to address poverty, as ecosystem goods and services represent the largest source of income for the poor.

2.2 Importance of the green economy

The Green Economy is of great and clear importance for the conservation of the environment [17]. By this way, it attempts to create sustainable development that leads to enabling social justice while taking care of economic prosperity at the same time, by adopting projects concerned with sustainability such as clean production, renewable energy, rational consumption, organic agriculture, and waste recycling. In addition, this strategy reduces harmful gas (carbon) emissions due to replacing fossil fuels with renewable energy sources, which has a significant impact on improving the environment. This can be clarified through the following points [18]:

a) Facing environmental challenges: It does so by reducing GHG emissions, improving management and efficient use of resources, reduce the volume of waste, and protect biological diversity.

b) Stimulating economic growth: It does so by raising green investments to outpace population growth rates.

c) Eradicating poverty and creating job opportunities: The transition to a green economy provides green job opportunities in various sectors, especially in the agricultural sector, where investments in it are more environmentally friendly and to alleviate rural poverty and reduce the displacement of rural people to cities, and it contributes positively to the problem Food security, as the green economy contributes to alleviating water poverty and energy poverty through strategies aimed at rationalizing the consumption of natural resources and reducing investment in green infrastructure such as renewable energy services, drinking water and sanitation.

2.3 Definition of green economy

2.3.1 Definition of sustainable development

It is an integrated development with different dimensions, as it is not based on the environmental aspect, but also includes economic and social aspects, and these dimensions are overlap and interrelated with each other. Also, it is not permissible to deal with it in isolation from each other, as it works in an interactive framework characterized by preciseness, organization and rationalization because they all devote my principles and sustainable development methods according to social justice as shown in Figure 2.

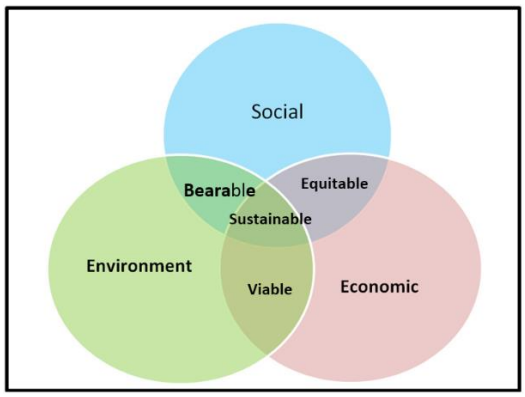

Figure 2. Sustainable development

It can define as a promoting the society's standard of living in a civilized manner that achieves the steady development of human potential on the basis of knowledge, innovation and development, exploitation of local capabilities, investment and equality, while rationalizing consumption and preserving the balance between urban expansion and the environment, and between quantity and quality [19]. Accordingly, "development that meets the needs of human beings at the present time without compromising the ability of future generations to achieve their goals, and focuses on sustainable integrated economic growth, the environmental dimension and Social responsibility.

Thus, it can be said that sustainable development is the product of an interactive framework of a series of basic and sub dimensions (economic, social, environmental, human, cultural, policies) which depends on empowerment strategy, social justice, equality, applicability as basic concepts in support of bridging Developmental and bilateral spatial gap. Figure 3 shows the circles of sustainability.

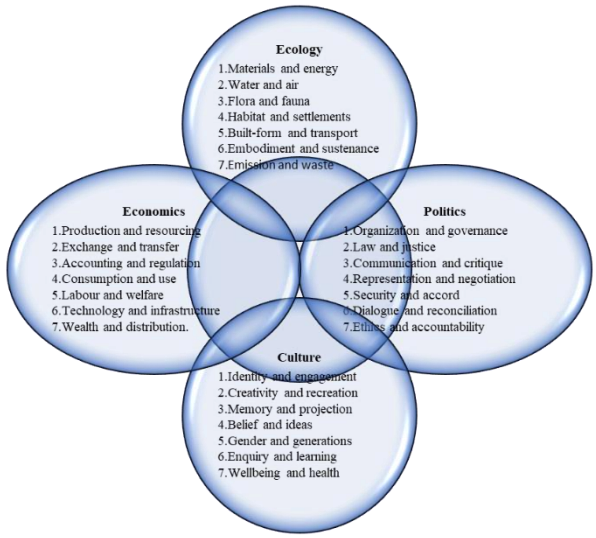

Figure 3. Circles of sustainability

2.3.2 Sustainable development goals and their obstacles

Sustainable development, through its mechanisms and agencies, seeks to achieve a series of goals to achieve comprehensive development, including [20]:

1) Improving and building effective capacities that are able to consciously manage natural resources to achieve a better life for all segments of society in a balanced and fair manner.

2) Respecting the natural environment by regulating the relationship between human activities and elements of the environment and not harming it, in addition to enhance environmental awareness of the population towards the environmental problem.

3) Ensure that environmental planning is included in all stages of development planning, in order to achieve rational and conscious exploitation of natural resources to prevent them from being depleted or destroyed.

4) Using modern technology and knowledge, and linking it to what serves society's goals, environmental challenges, and with effective community participation.

5) Achieving a better life for the population, through planning and implementing development policies, by focusing on how to achieve a balanced growth of society in all economic, social, and environmental dimensions.

6) The ability to meet the necessary needs and in all aspects to provide a decent life and achieve societal well-being.

But there are also some obstacles that challenge Sustainable Development and its fulfillment. These obstacles are as follows [21]:

a) Poverty and the accumulation of debts: which drain more than half of the national income.
b) Internal wars: the instability, lack of security and the arms race that countries are speeding up against, which leads to the waste of a lot of money that can be used in the development process.
c) Weak technical capabilities and technical expertise: This is due to the migration of many active human energies, which led to the weakness of the human element and led to the widening of the knowledge gap.
d) Population growth and the decline of the economic sector: which led to widespread unemployment and weak levels of economic development.
e) Environmental pollution: which threatens health in addition to the lack of security and environmental awareness, which is represented in the provision of clean lifestyles and an environment free from damage and pollution**.**

2.4 Indicators of sustainable development and a green economy

In order to clarify the green economy, we must know its appropriate indicators and use them at the Macro Economic level. Recently, there has been an increase in conferences and seminars related to this regard. Most of them focused on achieving a common vision and principles in preserving and developing the community's environment, as well as discussing ways to encourage governments and international organizations to do what is necessary to protect and improve the environment Among the most important of these indicators are [22]:

1) That sustainable development is centered on the human being and taking care of him.
2) Providing the material and human capabilities to achieve sustainable development.
3) The contribution of governments, the private sector and NGOs to the transition to a green economy to ensure environmental protection, with a focus on eradicating poverty and achieving social justice.
4) The principle of green economy does not replace sustainable development. Rather, achieving sustainable development is entirely based on reforming the economy, and until we move to a green economy, it requires enabling conditions.
5) Extending the use of renewable energy sources, which can significantly reduce carbon emissions.
6) Improving ways to conserve natural and water resources in order to promote development and combat desertification

2.5 The challenges of transformation and transition to a green economy

There are many challenges in the transition to a green economy (clean energy), including [23]:

a) Lack of tight planning in the area of development policies.
b) The change in employment from one sector to another, as the increase in employment in some sectors is offset by a decrease in the number of jobs in other sectors, especially during the transitional era. Consequently, unemployment increases in society and may be within a specific community group.
c) The transition to green economy and clean energy is an expensive option that may not lead to equal and automatic gains on the economic and environmental levels. On the other hand, this shift may have negative effects on other aspects of development.

3. A STUDY AND ANALYSIS OF EXPERIENCES FROM THE COUNTRIES OF THE WORLD IN RENEWABLE ENERGY

3.1 Singapore experience

Fifty years ago, Singapore was a backward country, with a population in dire poverty and a high level of unemployment. 70% of the population lived in congested areas, in extremely poor conditions. Also, the unemployment rate was 14 per cent, GDP per capita was less than $320, and half of the population was illiterate. Today, it is one of the fastest growing economies in the world, and GDP per capita has risen to $60,000, making it the sixth highest GDP per capita in the world, with an unemployment rate of 2%. This is through the adoption of policies for the efficient use of renewable energy such as: the use of solar energy and wind. Singapore was able despite constraints and challenges, and with its small size of 719 km^2 to become a leader in global trade [24]. Singapore has undertaken many existing projects on clean, environmentally friendly energy: which works to find solutions to civilization problems in Singapore, through the Economic Development Board in Singapore (Economic Development Board) and the Public Utilities Council (PUB), and the Solar Energy Research Institute in Singapore (SERIS), and among the most important products of these Projects [25]:

i. Drinking Water and Sanitation management New water. It is one of the water treatment units using advanced membrane technologies, and the treatment of water in Singapore is called blue gold, as Singapore faces the problem of its lack of safe water supplies. It is seeking to solve this problem by establishing a sewage treatment plant.
ii. Floating Solar panels. Singapore relies on solar energy to extract energy and is considered the largest of its kind in the world in being floating on freshwater tanks. Also, the solar panels will prevent some sunlight from some creatures that live in the reservoir, and affect the biological diversity in the water.
iii. Connecting the derived electricity from solar energy with the electrical power grid. As it worked to connect the electricity derived from solar energy to the electric power grid for the first time, in the context of the country’s endeavor to reduce gas emissions and prepare to fully liberalize the electricity market, and the government plans to increase the electric capacity to 350 megawatts by 2020.
iv. The level of carbon dioxide emission has decreased in Singapore. Through its efforts, Singapore managed to reduce polluting emissions by 2% despite the growth of its economy this year by 5.7%. That is, the rate of reduction in emissions intensity that reached 48 million tons of carbon dioxide amounted to 30%, and the forestation, forest protection and care policy contributed to reduce emissions, as the contribution of forests reached 0.5%.
v. Measures taken to combat global warming. Several

measures have been taken to combat global warming. The use of private vehicles has been determined by raising their costs and imposing additional fees to rid the cities of congestion. On the other hand, one of the best integrated transportation systems in the world has been developed with extensive use of buses and public trains, which also include transportation to and from the country's neighboring regions. A forestation programs were also launched in the middle of the island of Singapore to the northwest, particularly in Phuket Patok and around water tanks.

vi. Waste-to-energy conversion stations. It is one of the environmentally friendly companies in addition to containing advanced waste treatment technologies and it works to re-create the balance between the environment and development, where solid waste is converted into heat or electricity and is an economical way of costs to recover energy.

3.2 The experience of the United Arab Emirates (Abu Dhabi)

Masdar city is the first city that relies on clean and renewable energy in the world and it is a sustainable residential community that was created to use the Energy Template, which is a huge project in Abu Dhabi. Masdar city is the most technocratic city and the first carbon-free project in the world. It is located in Abu Dhabi, about six miles from the historic district in Abu Dhabi and close to the international airport. The temperatures in the streets will reach between 15 and 20 degrees Celsius, so they will be cooler than the surrounding desert.

This is due to the construction of Masdar City, which is unique in its temperature difference. The wind tower will be A 45 meters (148 feet) high, similar to traditional Arab designs that absorb air from above and push the breeze to cool down the streets of Masdar. The site is raised above the surrounding land to create a slight cooling effect. Buildings are concentrated close together to create streets and lanes protected from the sun. Masdar City has enough space to start attracting a large number of residents. It is expected that the population will grow between 1000 - 4000, and it is expected that the source city will attract the population of the city to reach 10,000. This city has relied, in moving its economy to a green economy, on exploiting the development potential and transforming it into a set of main factors that help in that [26].

3.2.1 Transportation system

Mobility in Masdar city takes place through a network of electric vehicles for the Rapid Personal Transport System, and it consists of driverless electric vehicles for up to six people. The passenger determines his destination, and the vehicle takes him to the point he wants quickly as shown in Figure 4.

3.2.2 Masdar institute

The Masdar Institute for Science and Technology is the institute that focuses on alternative energy, environmental sustainability, and clean technology for the research university at the graduate level. The Masdar Institute was behind the engineering plans for Masdar City, which is at the center of research and development activities. Which uses the institute's building (whose walls are made of airbags made of a plastic material that insulates the air. The roof of the institute is covered with photovoltaic panels to produce electricity, shading the building and roads at the same time) and developed in cooperation with the Massachusetts Institute of Technology, 51% less electricity and 54% less potable water than traditional buildings in the UAE, and it is fitted with a metering system that observes its energy consumption.

Figure 4. Electric vehicles for the rapid personal transport system

3.2.3 Agriculture and energy production with seawater system

The research facility "Seawater and Energy Production System" is an initiative launched by the "Sustainable Bioenergy Research Consortium". It aims to support the first experiences in the Middle East region for the production of environmentally friendly biofuels, in addition to providing innovative methods that enable the UAE to enhance its agricultural production and balance its interconnected needs of water, food and energy. This system relies on sea water to raise fish and shrimp for food purposes, while seawater rich in nutritional components resulting from this process is used as fertilizer in the cultivation of Salicornia plants, rich in oils and characterized by their tolerance to the salinity of sea water. The Salicornia plants are then harvested to produce aviation biofuel and some other biochemicals. The last stage of this system is to divert wastewater to mangrove forests, which naturally filter water and purify the air from carbon emissions. The Masdar Institute for Science and Technology established the "Seawater and Energy Production System".

3.2.4 Electrical energy storage solutions center

Most renewable energy sources are affected by natural phenomena that may disrupt the electricity supply. The storage of the produced electrical energy, Figure 5, whether for a few seconds, minutes, hours or days, contributes enhancing the efficiency of renewable energy by providing a flexible and continuous supply of energy.

Masdar has already embarked on this urgent need at the global level, and the city is working in cooperation with the Masdar Institute for Science using electricity storage systems in a number of its projects. In response to this urgent need at the global level, Masdar is working in cooperation with the Masdar Institute of Science and Technology today to design and develop an electric energy storage center in Masdar City with the aim of advancing energy storage technology and promoting affordable energy storage solutions.

The center brings together external testing facilities and in-house laboratories to develop and improve research in electric energy innovations in partnership with the relevant sectors. The test facilities provide real-time simulation of various mini-power grid scenarios, encouraging researchers and stakeholders to take advantage of this to improve their

inventions and ensure the feasibility of using their applications effectively in the real world.

3.2.5 Construction waste management in Masdar city

Construction process waste management in Masdar City continues to work on reducing waste by reusing and recycling all steel, concrete and wood waste. Therefore, contractors take the majority of these wastes to the Material Recycling Center, where the waste is separated, and wood is stored for reuse, or treated by Wood chipper for use in green spaces. Steel, metals and plastic are collected and sent away for recycling, while concrete waste is crushed with a crushing machine for reuse in construction. In conjunction with the continued expansion of Masder city, the construction waste management program is contributing to support the receipt of materials from other construction projects.

There are cities that have come to replicate sustainability in light of a green economy, and one of the goals of the Dubai Plan 2021 is to make Dubai a smart and sustainable city. To achieve this vision, Dubai is currently adopting a number of sustainable cities, namely:

i. The Sustainable City.
ii. The City of Desert Rose.
iii. The south of Dubai region.
iv. Dubai Silicon Oasis.

Figure 5. Energy generation and storage

4. THE EXPERIENCE OF NEW CITIES IN IRAQ FROM THE PERSPECTIVE OF THE SOCIETAL GREEN ECONOMY / THE CITY OF SAMAWAH AS A MODEL

Based on the approach of these countries that have achieved development, an attempt comes to benefit from the experiences of these countries to achieve sustainable development. On the other words, given the urgent need to solve multiple crises, including the housing and random housing crisis in Iraq, the initiative to establish new cities with a green societal economic perspective was based on the indicators of countries' experiences in greening the economy, and for the availability of natural and human development potentials.

4.1 The vision

Establishing an expansion area for the city of Samawah as an applied case for the transition to a Green Economy that includes providing housing, spaces for investment opportunities, green job opportunities, and connecting parts of the city to a modern road network based on smart transportation technologies [27]. In addition, bypassing the basic design negatives and working to create a Green Economic basis for industry, agriculture and service to take advantage of the natural and human development potentials in the region and the surrounding areas to achieve sustainable development. Figure 6 shows the proposed of new city (i.e. Samawah).

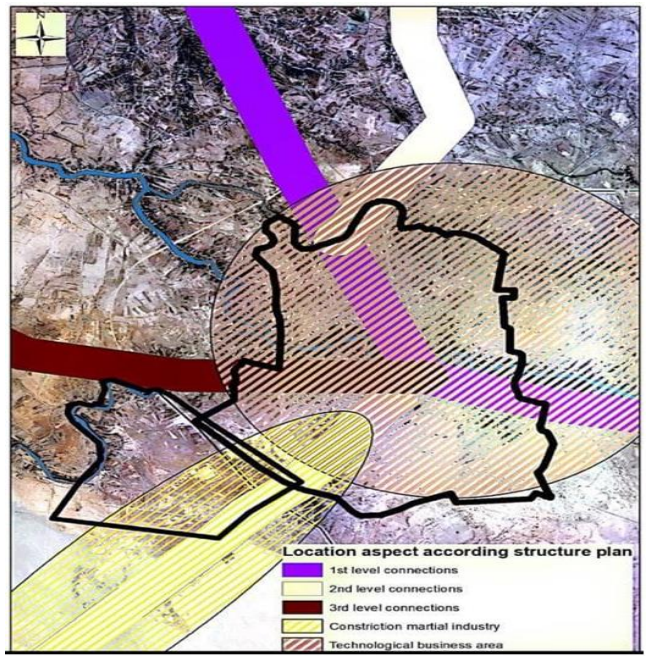

Figure 6. The proposed of new city (Samawah)

4.2 Study area location

The study area is located in the southwest of the center of the city of Samawah and outside the boundaries of its basic design. It has an area of 3100 hectares within the territory of the province 5 Umm al-Tulul and the 16th district of Western Partnership, at a rate of 38.75% of the area of the center of Samawah amounting to 8000 hectares. It is extended between two viewing areas (07.29-42.31) North and linear (46.37-43.5) length.

4.3 Reality indicators and development potential

It can be summarized in the following:

1. Poverty rate ranges between 41-48% for the study area, which is the result of high unemployment rates, lack of services and low educational, health and living standards of the population.
2. The total area of the proposed site for the new city is 3100 hectares, 30% of the area has been defined for residential use with an area of 930 hectares, the number of housing units is 18600 housing units with an average area of 250 square meters per unit, the expected population is 120,000 people.
3. Green belts along the northern and southern edges of the agricultural area, according to the structural plan for Samawah and the location of the new city, will be within the green borders, Figure 7.
4. Huge potentials that help to establish renewable energy projects in the northern region and the Al-Salman desert

region, according to environmental standards, and the possibility of its contribution to supplying electricity to remote areas with electricity. also, the ability to benefit from wind energy.

5. The possibility of developing green and recreational areas, and greening agriculture, as the area of green areas within the proposed design reaches 488 hectares, or 16.26% of the total area of the city, and utilizing them in the urban area to reduce pollution and create a green environment.
6. The roads adjacent to the study area from the southern side is part of the development of the transport and trade path to link Samawah with the borders of Kingdom of Saudi Arabia to support commercial and social exchange and improve the economy, Figure 8.
7. The location of the new city within the targeted areas for applying the modern waste collection system.
8. The Agricultural and Animal Production Zone in the southwest of the region, with an area of 81 hectares, provides expected employment opportunities of 900.
9. Tourist potential through:

i. Archaeological sites represented by Al-Warka, the unique and important archaeological site.
ii. Lake Sawah, which is located on the western edge of the borders of Al-Muthanna Governorate with Najaf, which is a Salt Lake, with an area of about 10 square kilometers.
iii. Safat region: It is located on the Euphrates River in the southern part of the city of Samawah, it was originally a river bend, but it was cut by the river, surrounded by orchards, palms and passes through the Samawah – green tourist road and can be invested as a tourist resort.
iv. Sulaibat Canal: a low water area of 2.08 hectars and water depth of 5, 2m. There are species of birds, fish and aquatic plants that have a distinct natural landscape.

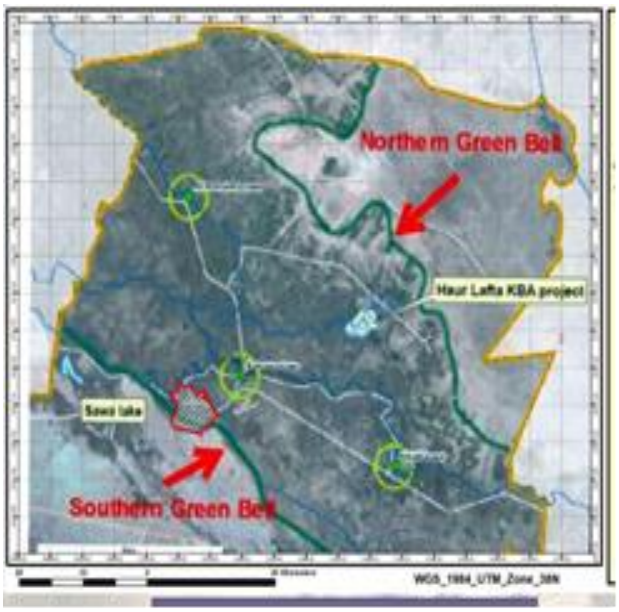

Figure 7. The Green border

4.4 Development capabilities analysis of the study area

The development potential analysis method, as shown in Figure 9, was applied based on modern technology (GIS). In other words, the method depended on the determination of the concentration of potential development sites after calculating the weighted value of the potentials by dividing the study area into (Grid) squares at a scale of 2.5. Then, it is dropped on a special map of the study area to display the necessary spatial forecast for the development of a new green city.

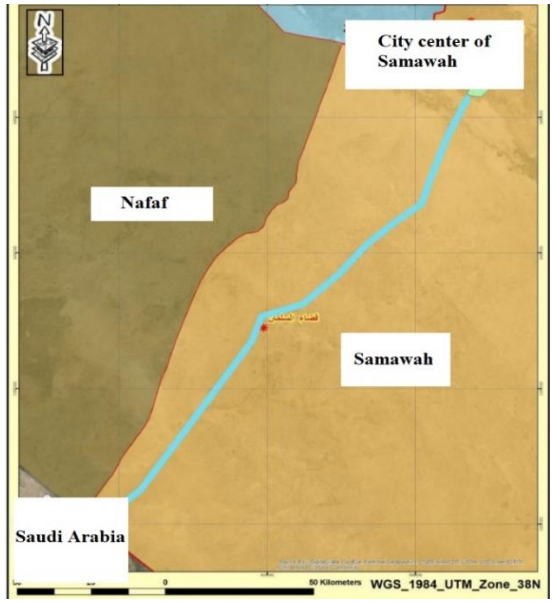

Figure 8. The borders with Saudi Arabia, transport and trade lines

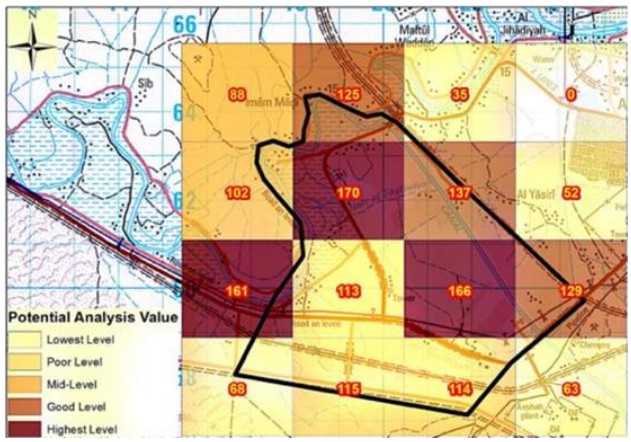

Figure 9. Matrix of potential

After that, a SWOT strategic analysis and spatial interaction were conducted for the most important weaknesses and strengths in the internal environment of the study area, opportunities and threats to the external environment, as shown in Figure 10. It can be said that the interaction with the results of the quantitative analysis of the development potential method leads to reaching the goals and choosing the appropriate strategies (strategic position) to achieve the vision and goal. Depending on the reality of the situation indicators, it became clear that the southern region has great potential compared to the rest of the regions, as shown in numbers in Figure 9. This gives it priority as a better alternative to the spatial signature of the new green city project, to create a green economic basis that attracts residents, and provides housing and job opportunities that help reduce the poverty and unemployment gap. Figure 11 shows the location of the proposed new city in Samawah.

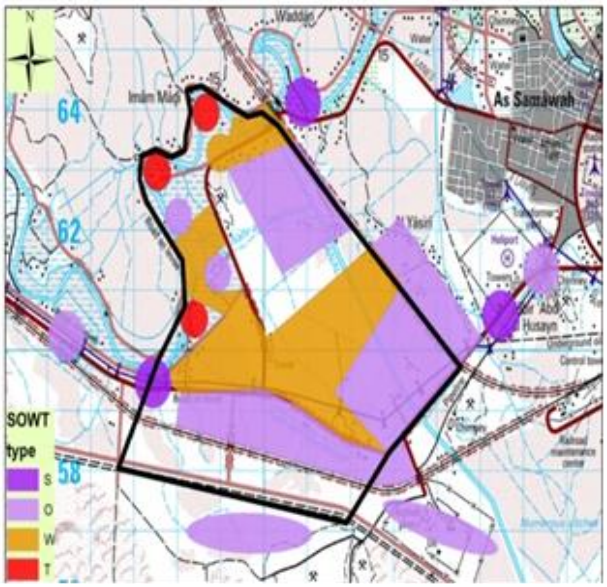

Figure 10. Strategic analysis

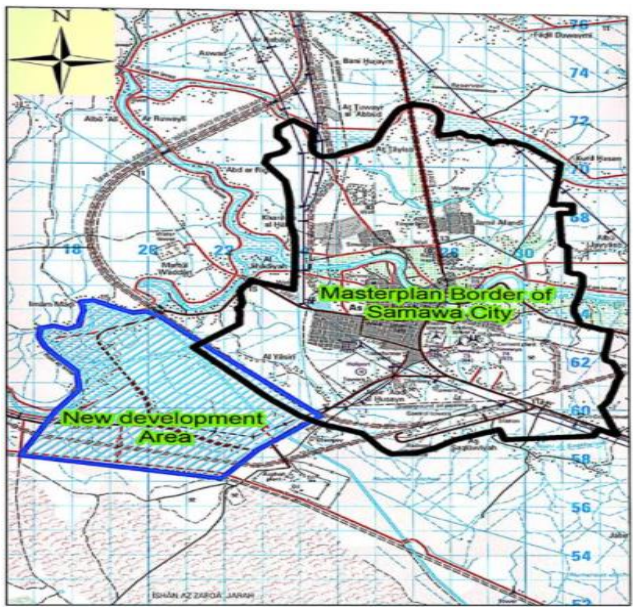

Figure 11. The location of new city in Samawa

5. RESULTS

Depending on the Descriptive and Experimental Analytical Method of countries 'experiences in the field of Green Economy, and the quantitative analysis of the capabilities in the study area, we reached the following main results:

1. The availability of renewable energy sources, solar energy and wind energy in the study area, which is one of the most important sources of assistance to get out of many economic and social crises, but what is important is the availability of legislation and laws that stimulate this.
2. The move towards a green economy has the potential to achieve sustainable development, through the best exploitation of any available place in the study area and the eradication of poverty by employing the unemployed and attracting manpower in the projects necessary to establish the new city. It is expected to provide 2334 green job opportunities Through the establishment of projects (industrial, agricultural) as a green economic basis and 7002 service jobs.
3. Renewable energy is of great importance in protecting the environment, as clean non-polluting energy, and its use is also expanding, thus reducing the use of traditional energy sources (known for its bad impact on the environment, because of the pollution and carbon emissions it creates). Especially since the cost of generating electricity from Renewable energy sources is decreasing, and from it can be achieved one of the sustainable development goals, which is to maintain a clean environment and achieve economic development.
4. Benefiting from experience of using renewable energy in Singapore for the new city in Samawah, which worked to reduce poverty, as it became one of the first energy-exporting countries in the region. This led to an increase in the GDP by 1.5%.
5. Benefiting from the experience of using clean energy in Singapore and undertaking projects in that field to a decrease in the level of unemployment, where the unemployment rate reached 2% after it was 14%.
6. Singapore's progress in the field of sanitation technology has made it an important guide for countries, and from them one can benefit in this field.

6. RECOMMENDATIONS

Through the results of the availability of potentials and renewable energy sources research, it has become necessary to:

1- Providing the empowered conditions for the principle of the green economy, Figure 12, of this through the establishment of the office of supporting the green economy to provide information and technical advice to industrial and service institutions in general for the green economy and achieving the principles of sustainable development and improving the state of human welfare and social equity in accordance with the following criteria:

a) Establishing a sound legislative framework.
b) Determine the priorities for investment and government spending in the areas that call for greening the economic sectors.
c) Reducing spending in areas that deplete natural capital.
d) Using market taxes to transform consumer tastes and encourage community green investment and innovation.
e) Investing in capacity building and training to provide effective human resources.

2- Holding educational and technical workshops that assist all targeted sectors, decision-makers, and relevant policy makers in implementing green economy procedures and techniques.

3- Create a website that includes the following:

a) A review of laws, regulations, instructions, and guides on environmental matters.
b) Present previous case studies concerned with applying the concept of cleaner production and the green economy.
c) Providing solutions to environmental problems.
d) Provide technical assistance.

4- Encouraging the public sector and the private sector to

enter into renewable energy projects, by providing incentives and facilities such as reducing taxes, providing support, and facilitating establishment procedures.

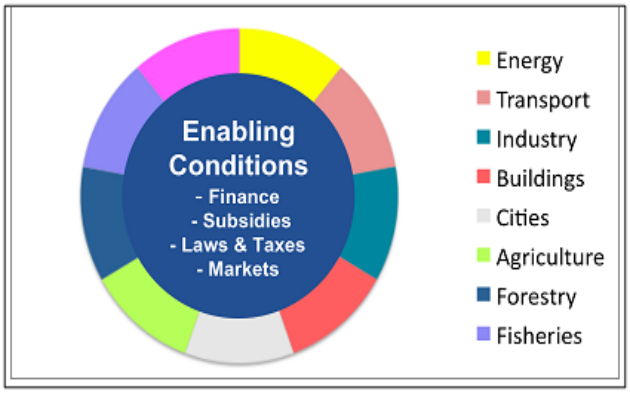

Figure 12. The proposed enabling standards for a green community economy

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