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Cleaner Production As A Mechanism To Support The Trend Towards A Sustainable Green Economy

الإنتاج الأنظف كآلية لدعم الإتجاه نحو إقتصاد أخضر مستدام

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Abstract

This study aims to know the effective role of cleaner production in supporting the trend towards a sustainable green economy, and this study showed that positive integrations and overlaps between green economy and cleaner production in sustainable development..

The study also recommended the need to pay more attention to environmentally sensitive concepts such as cleaner production by economic institutions because of their role in supporting the trend towards a sustainable green economy, and it also promotes environmental awareness in business organizations as the main engine of development and sustainability through the effective use of resources and the pursuit of environmental protection and thus building sustainable economies.

Keywords : Cleaner production, green economy, sustainable development.

ملخص

تهدف هذه الدراسة إلى معرفة الدور الفعال للإنتاج الأنظف في دعم التوجه نحو إقتصاد أخضر مستدام، وأظهرت هذه الدراسة أن التكاملات الإيجابية والتداخلات بين الإقتصاد الأخضر والإنتاج الأنظف في ظل التنمية المستدامة.

وكما أوصت الدراسة بضرورة بذل المزيد من الإهتمام للمفاهيم الحساسة بيئيا مثل الإنتاج الأنظف من قبل المؤسسات الاقتصادية بسبب دورها في دعم التوجه نحو اقتصاد أخضر مستدام، كما أنه يعزز الوعي البيئي في منظمات الأعمال بإعتبارها المحرك الرئيسي للتنمية والإستدامة من خلال الإستخدام الفعال للموارد والسعي إلى حماية البيئة وبالتالي بناء إقتصادات مستدامة.

الكلمات المفتاحية: الإنتاج الأنظف، الإقتصاد الأخضر، التنمية المستدامة.

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INTRODUCTION

With increasing economic disruptions, environmental risks and social crises at the global level, traditional concepts for addressing these disorders are no longer successful and effective. As part of its future strategies, it neglects the environmental dimension and, in turn, new economic concepts have been formulated to better correct environmental imbalances and achieve economic stability.

The transition to a green economy has become one of the main objectives of the world's countries, which will contribute significantly to the revitalization of the global economy through new environmentally friendly projects and technologies in clean energy (cleaner production) and thus a green economy Sustainable.

- **The Problematique:** Through the above, the problematic features of this study are highlighted as follows:

How cleaner production can support the trend towards a sustainable green economy?

- **Hypothesis of the study:** In order to address the problem of this study, the following hypothesis can be formulated: **"Cleaner production effectively supports the trend towards a sustainable green economy".**

- **The Importance of the study:** The importance of the study can be summarized in the following points:

- Study of theoretical concepts on sustainable development;

- Study the theoretical framework of green economy and cleaner production and their role in achieving sustainability.

- **The objectives of the study:** The core objectives of this study can be summarized as follows:

- The government's policy of "protecting the rights of the child" is a key issue for the government;

- Identify the theoretical framework of the green economy and cleaner production and their role in achieving sustainability.

- **Methodology of the study:** This study was based on the descriptive analytical approach to clarify and interpret the various theoretical concepts concerning the concept of sustainable development and the green economy, in addition to the concept of cleaner production, as well as the integrations

and overlaps between them and their role in achieving sustainable development.

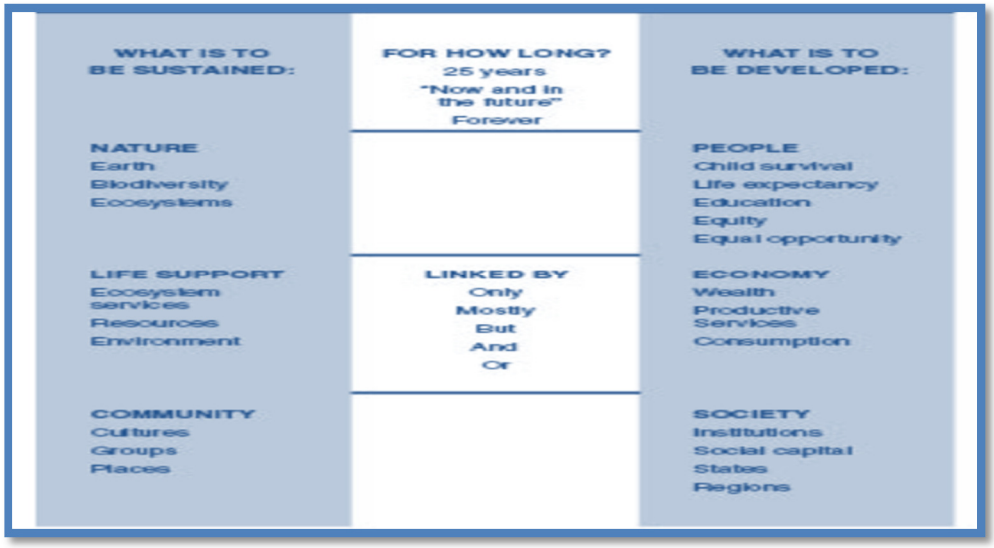
1- Theoretical Concepts On Sustainable Development

1-1- Definition of sustainable development:

- In 1992, the Rio de Janeiro declaration on Environment and Development described sustainable development as long-term continuous development of the society aimed at satisfaction of humanity's need at present and in the future via rational usage and replenishment of natural resources, preserving the Earth for future generations .

- In a definition presented by Pearce in 1993, sustainable development is related to the society's development whose costs are not placed on future generations, or at least efforts are made to compensate for such costs (Environmental Challenges in Farm Management). This ethical necessity not to make the development a burden for future generations and to guarantee these generations' possibilities analogous to those available to previous generations should be seen as a normative basis of sustainable development, (Remigirus & others, 2009, p. 29) The definition of sustainable development can be clarified through figure **N° 1**:

Figure N° 1: Definition of sustainable development



Source: (Robert W, 2016, pp. 02-03)

The role of sustainable development of society has been noted since 1992 the Earth Summit in Rio de Janeiro and reiterated at the World Summit Sustainable Development in Johannesburg in 2002. Without

environmental protection cannot ensure sustainable development. Sustainable development includes environmental protection, while environmental conditions sustainable development. The European Union requires a new approach to global environmental problems linked to environmental effects and pressure of all socio-economic consequences. Realizing the need for continued economic and social development, it is imperative to protect and improve the state of the environment represents the only possibility to create and maintain the welfare of both the present generation and those to come; this balance was the factor that can and should ensure the development of society as a whole. This is the key issue of sustainable development. In the last century, economic and technical progress has led to the neglect and deterioration of natural resources systems. The global economy, however, is now structured and non-renewable resources with a strong impact on the environment, exceeding the capacity of different ecosystems. Examples are: the decimation of forest areas, reducing the area of farmland per person, reduction of drinking water, global warming, melting glaciers and extinction of animal and plant species. Environmental issues and how man / human communities affect ecosystem concerns have been part of human society from the beginning. It is believed today that many prehistoric societies have developed rules and taboos regarding the use of certain common resources so as to protect or ensure their rational exploitation. The natural resources and ecosystems supporting everyday life were represented in many traditions and rituals of communities living in close contact with nature.

In this context, sustainable development is of fundamental importance because: (Dan Cristian Duran, 2015, pp. 808-809)

- The use of renewable resources does not exceed their rate of regeneration with emphasis on preservation of natural resources. In this eco-centric approach, natural resources are assigned an intrinsic value, independently of their usefulness to human beings. It is a romantic vision that sees nature as an antidote to industrialized society.
- The use of renewable resources cannot exceed the replacement rate. In this case the emphasis is on conservation of natural resources. This approach is deeply anthropocentric - nature has value to the extent that sustains life and human activity is prevalent even today.

- The release of harmful substances shall not exceed the capacity of natural systems to absorb and compensate. In this case the general welfare of the ecosystem should be the first priority, and human aspirations and needs to be resized and re-evaluated by the fact that they are not a priority, but a small element among many other items.

1-2- The 17 Sustainable Development Goals: These objectives can be summarized below: (Nations, 2019, pp. 04-20)

- End poverty in all its forms everywhere;
- End hunger, achieve food security and improved nutrition and promote sustainable agriculture;
- Ensure healthy lives and promote well-being for all at all ages;
- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all;
- Achieve gender equality and empower all women and girls;
- Ensure availability and sustainable management of water and sanitation for all;
- Ensure access to affordable, reliable, sustainable and modern energy for all;
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation;
- Reduce inequality within and among countries;
- Make cities and human settlements inclusive, safe, resilient and sustainable;
- Ensure sustainable consumption and production patterns;
- Take urgent action to combat climate change and its impacts;
- Conserve and sustainably use the oceans, sea and marine resources for sustainable development;
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss;
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels;

- Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

1-3- Dimensions of sustainable development: The dimensions of sustainable development can be explained in figure N° 2:

Figure N° 2: Dimensions of sustainable development

Source: (Christopher, 2018)

Through the previous Figure N° 2 the dimensions of development can be illustrated in the following: (Christopher, 2018)

1-3-1- Environmental Sustainability: In a truly sustainable environment, an ecosystem would maintain populations, biodiversity, and overall functionality over an extended period of time. Ideally, decisions that are made should promote equilibrium within our natural systems and seek to encourage positive growth. Unnecessary disturbances to the environment should be avoided whenever possible. If there is a disturbance, it should be mitigated to the maximum practicable extent. When decisions are made, one part of the discussion should always be the environmental impacts of the proposed outcome or result.

There are several items that are directly related to environmental sustainability. One of the concepts that is of the utmost importance is the proper management of our natural resources. Using the Z-squared approach to sustainability, we can minimize our impacts to the environment. In some cases we can even promote habitat restoration and preservation as means to negotiate a successful solution to a problem.

1-3-2- Economic Sustainability: Similar to environmental sustainability, economic sustainability involves creating economic value out of whatever project or decision you are undertaking. Economic sustainability means that decisions are made in the most equitable and fiscally sound way possible while considering the other aspects of sustainability. In most cases, projects

and decisions must be made with the long term benefits in mind (rather than just the short term benefits). Keep in mind that when only the economic aspects of something are considered, it may not necessarily promote true sustainability.

For many people in the business world, economic sustainability or growth their main focal point. On the large scale (globally or even locally), this narrow-minded approach to management of a business can ultimately lead to unsatisfactory results. However, when good business practices are combined with the social and environmental aspects of sustainability, you can still have a positive result that is for the greater good of humanity.

There are several key ideas that make up economic sustainability. For example, governments should look to promoting "smart growth" through no-nonsense land use planning and subsidies or tax breaks for green development. Strong financial support for universities, education programs, and research & development is an important part of economic sustainability as well. In addition to this, an emphasis should also be placed on other areas such as reducing unnecessary spending and cutting red tape.

1-3-3- Social Sustainability: Social sustainability is based on the concept that a decision or project promotes the betterment of society. In general, future generations should have the same or greater quality of life benefits as the current generations do. This concept also encompasses many things such as human rights, environmental law, and public involvement & participation. Failing to put emphasis on the social part of decision or action can result in the slow collapse of the spheres of sustainability (and society as well).

One great example of social sustainability is the passing of the Clean Water Act in 1972 (and amendments in 1977) and the Safe Drinking Water Act in 1974. Overall, these sets of laws were great pieces of legislation that set minimum water quality standards for both surface and drinking water. This had the effect of positively promoting the health and well-being of everyone in America. The clean water act also served to protect our nation's water supply by making it essentially illegal to discharge pollutants in adjacent rivers, lakes, and streams. This period of time in our nation also saw many other improvements in our environmental laws. All of these laws (and other factors as well) lead to the overall betterment of society for Americans. The graph below illustrates the correlation between the passing

of this kind of legislation and the average life expectancy for citizens of the United States.

1- The Theoretical Framework Of The Green Economy And Cleaner Production And Their Role In Achieving Sustainability

2-1- Definition of a Green Economy:

- The 'green economy' is: "An economy that results in improved human well-being and reduced inequalities over the long term, while not exposing future generations to significant environmental risks and ecological scarcities," United Nations Environment ". (Development, 2017, p. 04)

2-2- Principles of a green economy: A transition to a green economy requires changes within all sectors of the economy. For any sector to support a green economy, it is necessary to first understand the basic functioning of that sector, This understanding is crucial for ensuring that the sector is aligned to operate in a way which is compatible with the principles and objectives of a green economy. In the lead up to Rio+20, several organizations (the Green Economy Coalition, the Stakeholder Forum Bio Regional and Earth Charter, International Chamber of Commerce and a number of others) attempted to develop a universal set of green economy principles. The United Nations Department for Economics and Social Affairs identified and consolidated the most common green economy principles, from a review of eight published sets of principles, as follows: (Constania Musvoto, 2015, p. 03)

- The Green Economy is a means for achieving sustainable development;
- The Green Economy should create decent work and green jobs;
- The Green Economy respects planetary boundaries or ecological limits or scarcity;
- The Green Economy is resource and energy efficient;
- The Green Economy uses integrated decision-making;
- The Green Economy measures progress beyond GDP using appropriate indicators/metrics;
- The Green Economy is equitable, fair and just – between and within countries and between generations;
- The Green Economy protects biodiversity and ecosystems;
- The Green Economy delivers poverty reduction, well-being, livelihoods, social protection and access to essential services;
- The Green Economy improves governance and the rule of law. It is inclusive, democratic, participatory, accountable, transparent and stable;

- The Green Economy internalizes externalities.

These principles highlight that the focus of the green economy is not simply on the link between the economy and the environment (as the term 'green economy' might imply). Instead, the principles place as much emphasis on the social as on the economic and environmental dimensions of sustainable development. The principles highlight that in the green economy context, the economy has to be conceived in a broader sense than that recognized by neoclassical economics, as including a range of formal and informal economic activities involving reproduction, production, distribution, exchange and consumption. The economy also has to be conceptualized as extending beyond the cash economy into a wider set of linked social and material processes including lab our, work, material flow, energetic exchange and value creation. Green economy principles highlight the strong linkages between social and economic systems. Economic sociology emphasizes that the economy is socially embedded, and according to the concept of socio-materiality, the social and the material are considered to be inextricably related – there is no social that is not also material, and no material that is not also social.

2-3- Green Economy Goals: The green economy aims to achieve a number of objectives: (Szyi, The Role of the State in Creating Green Economy, 2016, p. 211)

- increase in energy and raw materials efficiency;
- reduction of greenhouse gases (especially carbon dioxide);
- reduction of the level of pollution resulting from production processes;
- increase in energy security;
- mobilizing the innovative potential;
- Acquiring new competitive advantages.

Implementation of these purposes is linked to the performance of green industrial revolution, which will generate global demand and create jobs through the development of clean and efficient technologies, increase in the use of renewable energy, and promotion of environmentally friendly transport systems, among others.

2-4- Key Competencies for a Sustainability Economy:

The "Declaration on Green Growth" adopted by the OECD affirms that "in order for countries to advance the move towards sustainable low-carbon economies, international co-operation will be crucial in areas such as

the development and diffusion of clean technologies, for example carbon capture and storage, renewable energy technologies, and application of green ICT for raising energy efficiency, and the development of an international market for environmental goods and services". In this context, "the efforts to improve resource efficiency and de-carbonize our energy supply and production systems has given rise to the term 'green economy', and a new suite of terms such as 'low-carbon economy', 'green jobs', 'eco-literacy' and 'green skills'". This is the definition of the term "green economy" used in this paper, while other authors define it as an economy that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities".

The concept of "sustainable economy" entails a broader area. It is used in reference to the sustainable development of the economic dimension of society, and includes industrial processes, financial relationships, and employment structure and consumption patterns. This means that green economy is a subset of a sustainable economy; it contributes to a sustainable economy but, on its own, it is not enough to achieve it.

Both in a green economy and in a sustainable economy, individuals will need to have basic (general) competencies in sustainability. Additionally, in the case of green economy, competencies of a technical profile are required in order to perform the green jobs.

The existence of a qualified workforce, which possesses the required professional education, is a prerequisite for a green economy. For this reason, it is necessary to direct formative efforts towards training in specialized technical skills expressly sought after by this job market; this issue is particularly relevant for the STEM (science, technology, engineering, and mathematics) disciplines.

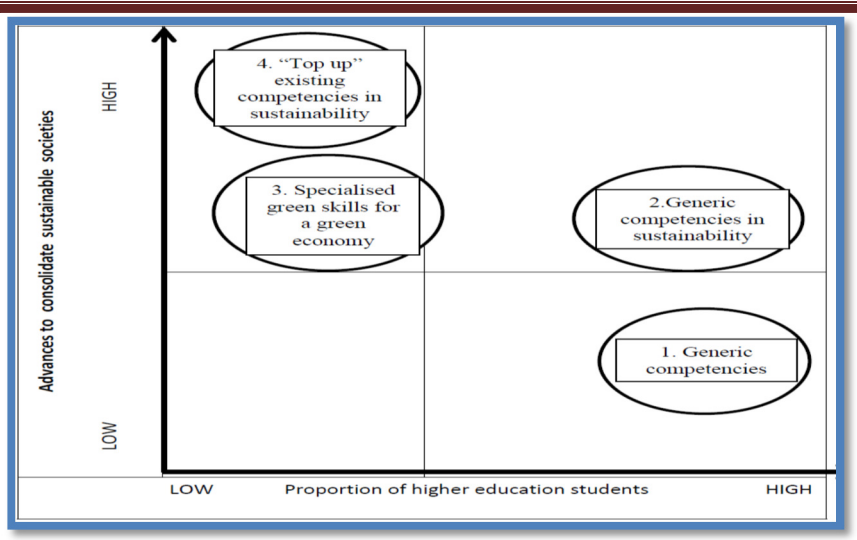
However, the green economy is not only concerned with eco-activities or those jobs considered "green." Promoting efficiency in the use of natural resources and fossil fuels, as well as the decrease in polluting emissions or waste, brings about a pattern of production–consumption that has potential effects on every sector of the productive activity. The more traditional sectors, owing to this "green" tendency, feel encouraged to adapt to the new conditions and circumstances in the market, dictated by the requests of competitiveness. A transformation across all sectors is, therefore, initiated

via "green growth" and, in that sense, it can be stated that such a transformation affects all professions more or less intensively.

The above interpretation can be made because, on the one hand, the transition towards a sustainable economy anticipates an increase in jobs in the green economy sector; for instance, those jobs related to waste collection and recycling, renewable energies, or the management of natural spaces demand professionals who are equipped with specialized competencies to perform such tasks. On the other hand, this transition will imply that professionals currently holding traditional jobs will need to update themselves to acquire the new competencies necessary in the context of sustainable development. It should also not be overlooked that the overall population—potential recipients of green products and production processes—likewise need to possess competencies in sustainability to be able to value the advantages offered by the new economic model. The latter competencies, indispensable for any citizen belonging to a sustainable society, could be even more relevant than those more specialized technical competencies (green skills) distinctive of a particular productive sector, because, by leading to changes in mentality, they modify the social patterns and lifestyles, hence favoring the change in the production-consumption economic model and providing the necessary conditions for the development of the green economy.

There are four types of key competencies for a sustainable society, The first type corresponds to the traditional general competencies—of instrumental, interpersonal or systemic profiles—that can be applied to the situations of everyday life. The second type contains those competencies required for the social behaviors and styles that reinforce a sustainable economy, The third type are the competencies that make the performance of the green jobs technically possible, and are specific of each productive sector of the green economy, while the fourth type contains those that derive from the processes of continuous education for updating professionals. All four of them are part of the required knowledge that the citizens should have in order to achieve the future viability of our societies, and figure N° 3 shows that as follows:. (Murga-Menoyo, Learning for a Sustainable Economy: Teaching of Green Competencies University, 2014, pp. 2976-2978)

Figure N° 3: Competencies and skills needs for a sustainable economy



Source: (Murga-Menoyo, Learning for a Sustainable Economy: Teaching of Green Competecies University, 2014, p. 2977)

The four types of competences are depicted in Figure N° 3, which shows in the vertical axis the progress from a traditional society to a society characterized by sustainability in its development. From this point of view, the generic competencies are on a first level of advancement, and they are the basis for the other three types. On top of them are the generic competencies in sustainability, which are equally necessary for every citizen. A third level contains the specialized green skills, which are of a technical profile and not applied to the whole population. Finally, a level to "top up" existing competencies in sustainability is required for a dynamiting leadership in social processes of sustainable development. The horizontal axis in Figure (03) shows the degree of specialization of the different types of competencies and, consequently, the amount of presence they need to have among the university students. Both the generic competencies and the generic competencies in sustainability should be acquired by the totality of the students. The specialized green skills and the "top up" of existing competencies in sustainability, however, are reserved for graduates of certain specific programs.

2-5- The concept of cleaner production

2-6-1- Definition of cleaner production:

- Cleaner production is known as is a "systematically organized approach to production activities, which has positive effects on the environment. These

activities encompass resource use minimization, improved eco-efficiency and source reduction, in order to improve the environmental protection and to reduce risks to living organisms". (Peter Gavic, 2007, p. 1879)

2-6-2- Benefits of Cleaner Production: The most important benefits of cleaner production are the following: (Ministry of Environment, 2016, pp. 05-06)

2-6-2-1- Less use of raw materials and energy: The most convincing benefit of cleaner production is its ability to reduce the consumption of resource and materials. Savings in energy and materials bring direct reductions in production costs, which again make the company more competitive. With increasing cost of raw materials, energy and water, no company can afford to lose these resources in the form of waste.

2-6-2-2- New and improved market opportunities: Increasing consumer awareness of environmental issues has led to a spurt in demand of green products in the international market. Consequently if you put in conscious efforts towards cleaner production, you open up new market opportunities and produce better quality products, saleable at a higher price.

2-6-2-3- Better access to finances: Investment proposals based on cleaner production contain detailed information on the economic, technical and environmental feasibility of the planned investment. This gives a very solid basis for achieving financial support from banks or environmental funds. On the international market, financial institutions are awakening to the problems of environmental degradation, and are now scrutinizing applications for loans from an environmental angle.

2-6-2-4- ISO 14000 & ISO 50001: Cleaner production will make it much easier to implement an environmental management system such as ISO 14000 and energy management system ISO 50001, because most of the initial work already has been carried out through the cleaner production assessment.

2-6-2-5- Better working environment: Apart from improving the economic and environmental performance, cleaner production can also improve the occupational health and safety conditions for the employees.

Favorable working conditions can boost the morale of staff and at the same time foster a concern for controlling waste. Such actions will help your company gain a competitive edge.

2-6-2-6- Better compliance with environmental regulations: Meeting the regulatory standards for discharge of wastes (liquid, solid and gaseous) requires often installation of expensive and complex pollution control systems like wastewater treatment plants.

With cleaner production the treatment of residual effluents normally becomes easier and cheaper. This is because cleaner production leads to an all-round reduction in wastes: volume-wise; load-wise; and even toxicity-wise!**.**

2-6-3- Impact Of Cleaner Production: Implementation of CP has successfully providing the promising effects to the manufacturing firms. The appropriate implementation of CP will influences the economic, environmental and manufacturing competency and provide as a basis practice of the circular economy. Through the proactive action, manufacturing firms could create additional business opportunities to establish the new way to manufacture the product for the sustainable development. In new sustainable manufacturing paradigm, CP can be fairly implement at the beginning stage of product development Literature shows that the implementation of CP can offer three main impacts on the sustainability development as follows: (Yusub, 2013)

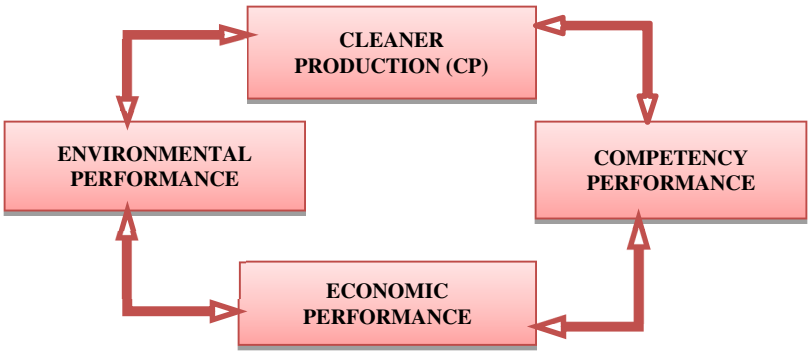
- Impact on competency performance;
- Impact on environmental performance ;
- Impact on economy performance.

These performance elements were the basis in providing a sustainable manufacturing system where the performance level identified influence by the successful implementation of CP. The relationships between CP practices with the three performance elements identified are illustrated in Figure (04).

The implementation of CP through the meticulous strategy provides a direct impact on the level of environmental and competency performance, thus contribute to the improvement in economic performance as illustrated in Figure (04.) Factors that mostly influence the competency performance are from the strict enforcement of laws and the increasing global awareness on environmental. This has urged manufacturing firms to take a proactive action to address any issues arising from their operations activities. Proper translational process towards CP primarily through successful innovation process will enhance this performance level, particularly through the development of environmentally friendly products. This further motivated

the manufacturing firm to provide the best facilities and production system to meet the critical elements in product development and production stage. Integration of employees in this process will urge them to increase their knowledge and skills in ensuring the innovation processes are fully achieved. This will provide a better product design, better process optimization, better monitoring, better training and management in achieving sustainable manufacturing practices, The impact of cleaner production on sustainability performance can be demonstrated, through the following Figure N° 4**:**

Figure N° 4 The impact of CP on sustainability performance



Source: (Yusub, 2013)

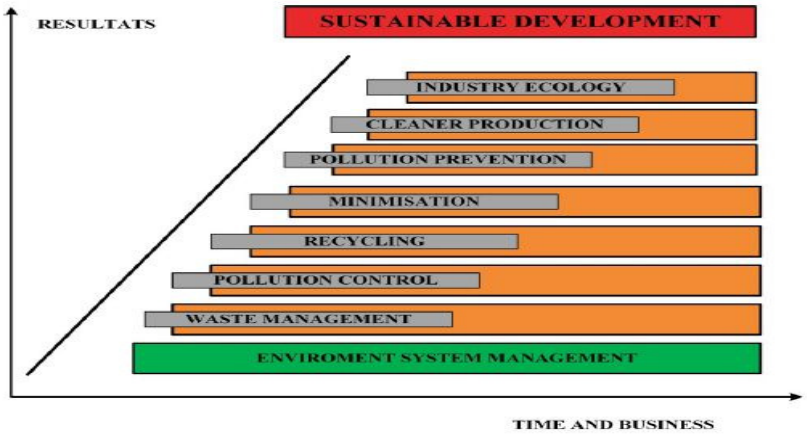
Meanwhile, the increasing of environmental performance was mainly affected from the worthy practice in managing the environmental issues. Integration of each environmental requirements and laws in every stage of product development and production will lead to a new paradigm of sustainable manufacturing. Efficient use of recycled materials in material composition of products and selection of appropriate manufacturing system will reduce the consumption of natural resources and energy. This will ensure waste and pollution generated from the manufacturing activities will be minimized. Attain the higher level of energy and resource management will improve the environmental performance continuously from a proper establishment of manufacturing process standard.

High performance in both environmental and competency elements will directly influence the level of economics performance. Reduction of material use in production and careful planning in the selection of efficient technology and equipment will reduce the total investment cost. Reduction in raw material, energy costs and waste disposal costs will provide a beneficial economic impact to the manufacturing firm. Trade-off between

sustainability cost and technology of proper CP practice will benefit to the economic growth. Manufacturing firms with good financial performance will have ability to provide additional budget and make additional investments in equipment, technology and provide more training to enhance the skills of their employees with new approach in dealing with environmental legislation requirement. The worthy level of economic will become the main input in improving the environmental and competency performance of the manufacturing firm.

2-7- Cleaner production as a step in the success of sustainable development: Through Figure N° 5 , the process of cleaner production can be highlighted as one of the steps of success of sustainable development as follows:

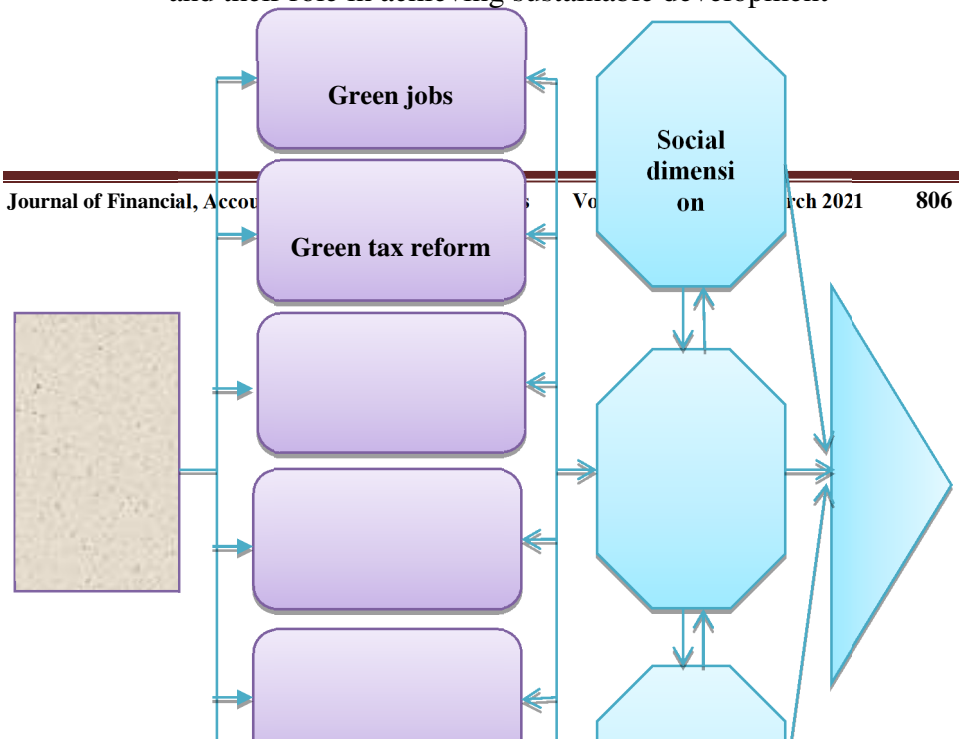
Figure N° 5: Steps of success of sustainable development



Source: (Tanic, p. 03)

2-8- The complementary relationship between green economy and cleaner production and their role in achieving sustainable development: The overlaps and integration between the green economy and cleaner production and their role in achieving sustainable development can be highlighted through figure N° 6**.**

Figure N° 6: Positive overlap of the green economy and cleaner production and their role in achieving sustainable development



Source: From the preparation of researchers based on theoretical aspect data.

Through figure N° 6 we note that cleaner production has an effective role in strengthening the green economy through green products and services, green investments, green sectors of the economy and green public procurement, as well as green tax reform and green jobs, which work on The replacement of environmentally friendly materials and the adoption of technologies for use and recycling as well as focus ing on product designs efficiently and environmentally safe, and development in manufacturing processes, which enables cleaner production by providing projects, innovations and green products that maintain and take into account both the environment and nature, Thus, moving towards a green economy that cares about the environmental dimension without forgetting the complementary economic and social dimension that is helping to achieve sustainability**.**

3- CONCLUSION

The research hypothesis is correct: **"Cleaner production effectively supports the trend towards a sustainable green economy"**, Where the

cleaner production is one of the contemporary concepts that has been popular and interested among researchers and interested in all fields, as well as practitioners in the business sector, and countries and businesses are looking for competitive advantages focused on cleaner production, which has become a pillar The fundamentals on which the various economies of the world depend for sustainable green economies, due to their positive effects by pushing for the promotion of such innovations and clean green productions and work on their success and providing the necessary requirements in order to reduce pollution rates through Improve the management and efficiency of resource use, reduce the volume and better management of waste and protect biodiversity, thereby building outstanding economies that achieve sustainability.

3-1- Study results: Through this study, a series of results were reached, the most important of which are:

- Sustainable development is a continuous long-term development of society aimed at meeting the need of humanity now and in the future through rational use, the renewal of natural resources, and the preservation of land for future generations.

- Sustainable development aims to end poverty in all its forms everywhere, eradicate hunger, achieve food security, improve nutrition and promote sustainable agriculture, as well as ensure a healthy life and promote well-being for all at all ages... And so on.

- The green economy is an economy that improves human well-being and reduces long-term inequalities, while not exposing future generations to significant environmental risks and ecological scarcity.

- The green economy aims to increase energy efficiency and raw materials, reduce greenhouse gases (particularly carbon dioxide), as well as reduce pollution from production processes and increase energy security.

- Cleaner production plays an active role in strengthening the green economy through green products and services, green investments, green sectors of the economy and green public procurement... and others, thereby achieving sustainability through natural resources and biodiversity.

3-2- **Study recommendations:** Through this study, a series of proposals were reached, the most important of which are:

- The need to pay more attention to environmentally sensitive concepts such as cleaner production by economic institutions because of their role in supporting the trend towards a green and sustainable economy.

- Working to spread environmental awareness among business organizations as the main engine of development and sustainability through efficient use of resources and the pursuit of environmental protection and thus building sustainable economies.

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