



## **LITERATURE REVIEW: SUSTAINABILITY MANAGEMENT: STRATEGIES AND APPROACHES**

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### **Abstract**

*Environmental management for business is needed against the exploitation of natural resources by industrial sector players that endanger the sustainability of these natural resources. The Purpose of study was to review about Sustainability management. Environmental management for business is carried out to ensure the sustainability of the company's operational activities, meaning that the company's activities that heavily rely on natural resources are in line with the*

*carrying capacity of nature. In addition, environmental management is needed so that natural resources to meet certain needs do not interfere with other needs. The main finding In business, sustainability refers to business practices sans negative impacts on the environment, community or society as a whole. Sustainability in business generally addresses two main categories: (1) the impact of business on the environment and (2) the impact of business on society.*

*Keywords: Sustainability Management, Strategies, Green Intellectual Capital*

## **INTRODUCTION**

According to The Earth Chapter Initiative cited in Smith (2011), the definition of sustainability is an activity in “a sustainable global society based on respect for nature, universal human rights, a just economy, and a culture of peace”, and according to the World Summit UN General Assembly which quoted from the same source, the definition of sustainability is “Reconciliation of environmental, social and economic demands as the three pillars of sustainability”. In addition, the meaning of sustainability according to Das cited in Akisik and Gal (2011) is: "...sustainability is a process that ensures the development of all aspects of human life, namely harmonizing activities in achieving economic prosperity, environmental quality, and social equality simultaneously that known as the triple bottom line (TBL) concept.....". TBL was first introduced by Elkington in 1987, in his book entitled *Cannibals with Forks*, Elkington describes TBL as economic prosperity, environmental quality, and social justice (Elkington, 1998 p.ix).

Thus, the implementation of sustainable management practices in real life as individuals and company operations is to harmonize real efforts in preserving the environment (nature) in order to gain benefits in economic prosperity, so that each party will get sustainable social justice. To maintain sustainability, appropriate strategies and approaches are needed so that they are optimal in preserving the environment to achieve a comfortable living environment to live in because nature remains sustainable for the shelter of current and future generations. Remember, that the earth we live in is a mandate from future generations for us to protect and care for.

The global awareness of the environment was first raised by the Swedish representative at the United Nations Economic and Social Council meeting on 28 May 1968. Furthermore, the discussion of environmental issues was again discussed at the United Nations Conference in Stockholm (Sweden) on 5 - 16 June 1972 which gave birth to Declaration of the United Nations Conference on the Human Environment. With the Stockholm Declaration, a togetherness was

created to deal with environmental problems as a whole, including the legal aspects, namely the existence of new attitudes and responses to the environment. The substance that is shared is that environmental problems that arise must be faced and handled together in an integral and comprehensive manner.

In line with this spirit, pro-environmental initiatives were initiated, one of which was the 1997 Kyoto Protocol which also discussed relevant environmental issues, namely efforts to reduce gas emissions that cause global temperature increases. The 1997 Kyoto Protocol, which was later updated with the 2016 Paris Agreement, was attended by representatives from 195 countries. The Paris Agreement contains a statement of the commitment of all countries to actively participate in efforts to prevent extreme global climate change. In an apparent effort to significantly reduce the risks and impacts of climate change, the agreement sets out to limit the current average global temperature rise to 2100 to stay below 2°C.

As a follow-up to the Paris Agreement, at the end of 2018 the Intergovernmental Panel on Climate Change (IPCC) issued a special report entitled “Special Report: Global Warning 1.5°C”. This special report generally aims to raise awareness of the urgency of action that needs to be taken immediately to address climate change. This report also provides a measurable benchmark value, especially for decision makers, regarding the limits that must be maintained to maintain the condition of the planet Earth in a relatively safe state from the negative effects of climate change.

Pro-environmentally sustainable development was popularized through the Our Common Future report prepared by the World Commission on Environment and Development (1987), also known as the Brundtland Commission. The key points in the Brundtland Commission report are (1) proposing a long-term environmental strategy to achieve sustainable development starting in 2000 and (2) identifying how the relationship between people, resources, environment, and development can be integrated in national and international policies. The Brundtland Commission consists of representatives from developed and developing countries, and holds meetings to discuss environmental issues for common solutions.

According to Wijanto Hadipuro (2020), the phenomenon of global warming is an aspect that is directly related to the protection of the atmosphere. Nature has limited carrying capacity, regeneration capacity and accommodating capacity. Without excessive human intervention, nature actually can survive with its own capabilities. All natural processes exist in a closed cycle; through the carrying capacity, regeneration capacity and accommodating capacity of nature, the process is carried out without recognizing waste. Carbon dioxide (CO<sup>2</sup>) which has been questioned as the cause of the greenhouse effect, global warming and climate change,

actually without excessive human intervention can be converted by nature into oxygen ( $O^2$ ) which is useful for life.

Solar energy that enters the earth: 26% is reflected back into the atmosphere, 19% is absorbed by clouds and particles. The remaining 55%; 4% is reflected again and 51% reaches the earth's surface. The problem is that 51% of the sun's energy is reflected on the earth's surface by the greenhouse effect, causing global warming. In Press Release 15 of the World Meteorological Organization, 2016 was the hottest year on record, however, on average the earth's temperature rose by around 1.2°C per year compared to the pre-industrialization period as shown in Figure 1.

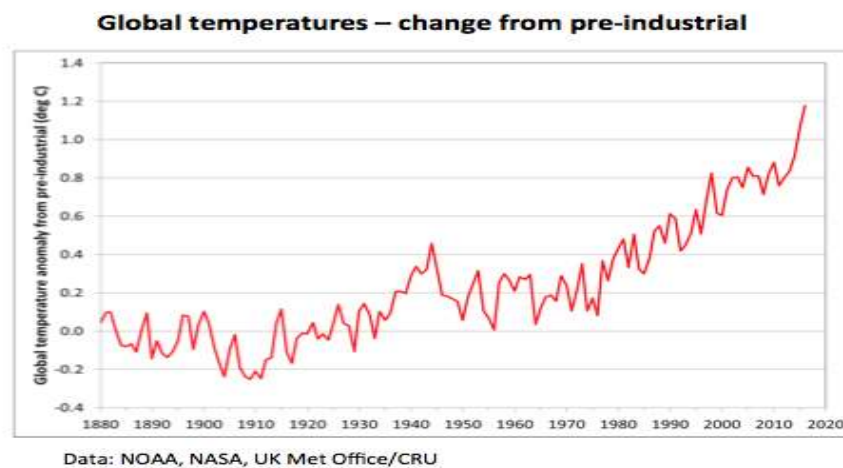


Figure 1. Changes in Earth's Temperature 1880 – 2016

Based on Figure 1 above, it can be stated that although various efforts have been made to mitigate the causes of global warming, the fact is that the trend of increasing earth's temperature continues to occur and this is the gap phenomenon. The basic cause of climate change is the effect of greenhouse gases, namely the imbalance of total energy input and output on the surface of the planet earth. The energy flow of planet earth is a description of what energy enters and leaves the surface of the planet earth. The dominant source acting as input for planet earth is solar radiation which is the main energy source in the solar system. In reality, not all energy that comes from the sun is returned to space, because there are factors that play a role in holding solar thermal energy in the atmosphere, namely the greenhouse gas effect, causing the average temperature on the earth's surface to continue to increase, leading to what is called global warming.

The greenhouse gas effect based on the definition from the Encyclopedia Britannica in Putri Setiani (2020: 10) is all gases in the atmosphere that have the property of absorbing

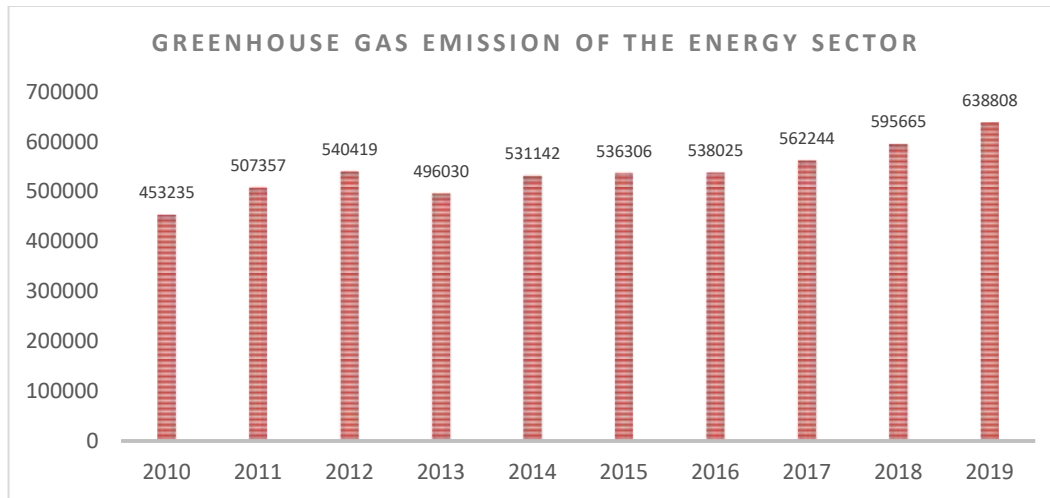
infrared radiation (heat energy) emitted from the earth's surface and radiating it back to the earth's surface. Greenhouse gases have the ability to trap heat so that they are stuck on the earth's surface and cannot be passed back into space. The more greenhouse gases that accumulate in the atmosphere, the more heat will be retained, this is what causes an increase in the average temperature of the earth's surface.

Based on data from the Ministry of Environment and Forestry (KLHK), there are four types of greenhouse gases that have a significant impact on increasing the average temperature of the earth's surface, namely carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrogen oxides (N<sub>2</sub>O). In the last 100 years, the concentration of these three types of gas has continued to increase along with the increase in emissions from industrial sector activities (KLHK, 2014) in Setiani Putri (2020). According to data from the Intergovernment Panel on Climate Change (IPCC) or better known as the "international panel on climate change", the proportion of greenhouse gases emitted into the atmosphere consists of: CO<sub>2</sub> (fossil fuels and industrial processes) of 65%, CH<sub>4</sub> by 16%, CO<sub>2</sub> (other) by 11%, NO<sub>x</sub> by 6% and Fluorescent Gas by 2%, so it can be concluded that 76% of all greenhouse gases are CO<sub>2</sub>, mainly from fossil fuel combustion (IPCC, 2014b) in Setiani Putri (2020).

Related to the various scenarios drawn up by the IPCC, in general there are two main groups of efforts to deal with climate change problems: (1) reduction/limitation of carbon emissions into the atmosphere or called decarbonization and (2) regulation of the amount of radiation entering the earth's surface. Decarbonization efforts consist of: (1) preventive efforts, carbon emissions into the air are prevented before the gas is produced either through engineering efforts (engineering approach) or lifestyle adjustments (socio-economic approach) and (2) curative efforts, actions taken related to with an effort to reduce the concentration of carbon that has been produced.

Based on the data from the IPCC mentioned above, the dominant factor causing greenhouse gas emissions is CO<sub>2</sub> with 76%, so, this must be the focus of control by all parties to the planet earth; both as individuals and as corporate entities. These efforts have begun to be carried out simultaneously and together with the targets set based on international agreements. At the 15th Conference of Parties (COP) in 2009, the Government of Indonesia has stated a commitment to reduce GHG emissions by 26% with its own efforts and by 41% if it receives international assistance by 2020. Post-2020, Indonesia plans to increase the target beyond the reduction commitment GHG emissions in 2020. Referring to the latest study listed in the Nationally Determined Contribution (NDC) document regarding the level of GHG emissions, Indonesia has set a new target of 29% with its own efforts up to 41% with international assistance by 2030. Efforts to achieve emission reduction targets in the energy sector continue

carried out through the implementation of various mitigation actions and an accurate GHG inventory. Based on the 2020 greenhouse gas inventory report, from the Ministry of Environment and Forestry of the Republic of Indonesia, data on greenhouse gas emissions from the energy sector can be presented in Figure 2 as follows:



Graph 2. Greenhouse Gas Emission of the Energy Sector

Source: KLHK report, 2020

Based on Figure 2 above, the trend of greenhouse gas emissions continues to increase from year to year, where greenhouse gas emissions in 2010 were 563,235 Gg CO<sub>2e</sub>, and in 2019 increased to 638,808 Gg CO<sub>2e</sub>, an increase of 13.41% over the period ten years, while Indonesia has set a new target of 26% with its own efforts up to 41% with international assistance in 2030 and this condition is called a gap phenomenon.

Currently, entities, ranging from suppliers, customers and other stakeholders (employees, regulators, media, etc.), are increasingly concerned and paying attention to real efforts in company sustainability (Freeman et al. 2020). In addition, a sustainable mindset and action pattern are important factors for future business success. Pro-environmental sustainable development was popularized through the Our Common Future report prepared by the World Commission on Environment and Development (1987), also known as the Bruntland Commission. The key points in the Bruntland Commission report are (1) to propose a long-term environmental strategy to achieve sustainable development starting in 2000, and (2) to identify how relations between people, resources, environment and development can be integrated into national and international policies. The Bruntland Commission consists of representatives from

developed and developing countries, and holds meetings to discuss environmental issues for common solutions.

The idea of sustainable development in Indonesia has been pursued in environmental management programs and strategies as stated in the Indonesian Agenda 21 document. Further elaboration of Agenda 21 was produced at the Earth Summit in Rio de Janeiro in 1992. Agenda 21 Indonesia formulates a national strategy for sustainable development which is divided into four areas, namely: (1) community services, (2) waste management, (3) land resource management, and (4) natural resource management.

The national strategy for sustainable development that is directly related to protecting the environment is the aspect of waste management. This aspect is formulated primarily with the aim of improving the condition and quality of the human and natural environment and preventing the overall process of environmental degradation. There are five main target aspects of waste management, namely: (1) atmosphere protection, (2) toxic chemical management, (3) hazardous and toxic waste management, (4) radioactive waste management, and solid and liquid waste management (Bruce Mitchell, et al. 2016).

The company's business objective in general is to play a dominant role with a superior position in competition in the market and exist sustainably. To achieve this goal, the company must be able to boost its competitive advantage. Therefore, business strategy is a decision to direct the company to maintain and improve its competitive position, by continuously making efforts to improve efficiency, and develop appropriate technology.

Competitive advantage strategy by considering the decision making of the utilization of the company's resources and capabilities, within the structure of the industry involved. The established business strategy must be able to direct the achievement of efforts to maintain a sustainable competitive advantage by continuously increasing satisfaction and loyalty to customers. Changes will continue to occur because they are influenced by technology, the social environment and life and the needs and desires of customers will always change. In this regard, in order to maintain a sustainable competitive advantage in the industry, the company is obliged to maintain a balance between profit sustainability, population welfare (people) and environmental sustainability (planet).

In an effort to gain a long-term competitive advantage, company managers must have a global mind-set so that they are able to identify resources and capabilities that can match global interests and the current trend is environmental issues related to efforts to reduce carbon content in the earth's atmosphere. The phenomenon of global warming is basically an increase in the earth's temperature called the greenhouse effect caused by increased emissions of

carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons, causing solar energy to be trapped in the earth's atmosphere.

According to Bombiak et al. (2018) in (Dewi and Nawangsari, 2019), the company starts all its activities with a comprehensive plan with a firm vision of sustainability involving all stakeholders inside and outside the company. With this approach, the company ensures that all economic, social and environmental considerations are carefully considered as the basis for business development. Sustainable business expands products and services through broad and deep interests in economic, social and environmental corridors.

Meanwhile, Yusoff et al. (2019) defines business sustainability as an organizational goal for profit and increasing social development while taking into account environmental aspects. Sustainable business originates from the notion of sustainable development which comes from the understanding and belief of the community that nature is very limited. If the limits of nature are exceeded then humans are in danger of a terrible human tragedy. Companies that run businesses are one of the determinants of human success in saving the environment in extending the ability of nature to sustain business through the supply of resources and neutralizing the rest of economic activity (Purnama dan Nawangsari, 2019).

Based on the research of Chow & Chen (2012) in (Yusoff et al., 2019) which revealed that business sustainability is an effort made by companies to minimize negative impacts on the environment and social for the present and the future, company sustainability is divided into three aspects, namely economic, social, and environmental.

Based on the opinion of the research results, there are three main dimensions that must be met to describe the sustainability of a company, namely the ability to achieve prosperity (economic aspect/profit), the ability to protect the environment (environmental aspect/planet) and the ability to improve social life (social aspect/people), with indicators such as companies improving welfare, cost efficiency, profitable business, occupational safety and health, mitigating environmental risks, educating resource efficiency, and preserving biodiversity in the environment.

The company's obligation in operational governance for the continuation of its business is to comply with all environmental regulations with high responsibility and to make the green environmental management program a movement of self-awareness and internal company needs. With this paradigm shift, the company's role in proactively preserving the environment will be sustainable. The harmony of sustainable development is the synergy between human efforts to manage optimal survival (profit), while preserving the environment (planet) and the welfare of the whole human being (people). The determining factors to maintain a balance between people's welfare, planetary sustainability and profit optimization so that it is sustainable



are; intellectual capital, the commitment of all parties and the role of regulators in making regulations that will affect the green environmental strategy.

According to Richard Welford (2014) in Wijanto Hadipuro (2020), there are several alternative positions that companies can choose to achieve sustainable competitive advantages related to the environment, namely developing clean technology, implementing resource efficiency, developing products with the cradle-to-cradle concept, and take advantage of the green consumerism movement.

According to O'Riordan (1971) in Wijanto Hadipuro (2020), green environmental management is defined as the process of allocating natural resources so that they can be used optimally in meeting basic human needs and, if possible, for an unlimited time with minimal impact on the environment. The natural resources in question are the category of economic goods for business purposes to maintain the sustainability of the industry in the company.

Environmental management for business is needed against the exploitation of natural resources by industrial sector players that endanger the sustainability of these natural resources. Environmental management for business is carried out to ensure the sustainability of the company's operational activities, meaning that the company's activities that heavily rely on natural resources are in line with the carrying capacity of nature. In addition, environmental management is needed so that natural resources to meet certain needs do not interfere with other needs.

According to Welford (2014) in Wijanto Hadipuro (2020) some of the company's responses to environmental pressures are as follows:

- a) Companies assume that caring for the environment is a moral obligation, a responsibility because they have an obligation to carry out economic ethics (Nugroho, 2001), namely a change from business ethics. Future generations also have the same rights as the current human generation to enjoy the environment with a minimum quality equal to the current quality.
- b) The company views the environment as a determining factor for the company's success, how to make company activities in line with nature, the real effort is to control production waste and energy efficiency,
- c) The company considers that caring for the environment will only increase costs and waste time. Companies like this usually do not try to reduce waste, but are forced to process the waste they dispose of because there are regulations that force it.

To achieve a competitive advantage, there are four options for companies:

- (1) improve production processes and at the same time reduce negative impacts through the application of clean technology,

- (2) improve the production process while maximizing excellence through increasing the productivity of resources,
- (3) improve products and at the same time minimize negative impacts on the environment by applying the cradle-to-cradle concept,
- (4) improve products and at the same time maximize excellence, through the use of the green consumer movement. Green consumers are consumers who choose products from companies that care about environmental sustainability. Environmental management for business is needed when the exploitation of natural resources by business people endangers the sustainability of these natural resources. Environmental management for business is carried out to ensure the sustainability of the company's operations, meaning that the company's activities related to natural resources are in line or in harmony.

Based on the discussion and phenomena mentioned above, it can be inferred that there are serious problems related to the preservation of nature as our living environment. For this reason, presenting a green environment is a mandate and obligation of the current generation to future generations as a legacy. Practice and implementation of management sustainability: strategies and approaches to achieve sustainable manufacturing which will be influenced by green intellectual capital, green technology, green energy, eco-efficiency, green-preneurship, green business and green consumerism. Then it will be equipped with a literature review and discussion in the form of implementation practices, with a conceptual sustainability.

In order to meet the necessities of life that we need, both basic needs and other complementary needs, at first it was sourced from nature, but after that most of it went through a process related to from the activities of the manufacturing industry. The manufacturing industry has a significant impact on global growth and development, therefore the population and demand for products to improve quality of life are increasing, even though resources are limited. Therefore, manufacturing plays a very important role in both the economic and social systems as it contributes to job creation and also increases the standard of living (Haapala et al. 2011). Currently, sustainable manufacturing is a very important issue among industries around the world. The concept and implementation of sustainable manufacturing has been recognized as a major need due to the reduction in non-renewable natural resources, strict regulations related to the environment, occupational health and safety, and the increasing consumer choice for more environmentally friendly products (Amrina & Vilsu, 2015) in Zuhria et al. (2019). The United States Department of Commerce (2010) defines sustainable manufacturing as the process of making products, which in its application are able to reduce negative environmental

impacts, save energy and natural resources, are safe for employees, communities, and consumers and are economical.

Based on the elaboration and facts mentioned above, it can be conveyed that the concept of sustainable manufacturing is in line with sustainability management, because the manufacturing industry practices and activities are in the process of producing products that are needed by the earth's population in order to maintain harmony between “benefits” with the preservation of natural resources and the welfare of the community.

## **LITERATURE REVIEW**

Grand theories that serve as the basis for implementing eco-green to support company sustainability include the Ecocentrism Environmental Ethics theory, the Triple Bottom Line theory and the Resource Based View theory (Agus Sugiarto *et al.* 2021).

### **Ecocentrism Environmental Ethics Theory**

According to Arne Naess (1973), a Norwegian philosopher, the theory of ecocentrism is a deeper understanding of the environment and moral concerns broadly to include the entire ecological, both biotic and abiotic environments. The theory of ecocentrism continues to be expanded into: (1) Deep ecology, which demands a new ethic that is not centered on humans only, but centered on the whole of life with efforts to overcome environmental problems. Deep ecology is also a real movement to create a harmonious life cycle between living things and the universe that can influence people's perspectives, mindsets and lifestyles. (2) Deep ecoshopy, namely the culture of regulating life in harmony with nature. At this stage, humans with full awareness of their own impulses build culture that life and life are always in relationship and dependence on each other with the entire contents of the universe and that it becomes a lifestyle that is in continuous harmony with nature.

### **Triple Bottom Line Theory**

The second theory that the author uses as the basis for this dissertation research is the Triple Bottom Line theory (Elkington, 1988) which develops concepts with the terms economic prosperity, environmental quality and social justice. The basic concept of Elkington is that if the company is going to maintain its business sustainability, then the company must accommodate the “3Ps”, which is in addition to targeting profit, the company must also meet the welfare of the community/workers (people) and proactively contribute to preserving the environment (planet).

In its development, the TBL theory has added components to assemble the 3Ps and complete them with procedures, so that the concepts of profit, people and planet are integrated

sustainably based on procedures to make them more optimal. Thus, the 3P concept developed into 4P, so that in its application it is combined with the components in ISO 26000 which provides an outline of the core principles and areas that must be managed by the organization, to ensure the organization can identify and control certain social responsibility risks and their impacts. Sustainability needs to be seen as an opportunity for companies to continue to innovate so that they can achieve competitive advantage, which has a positive impact on the sustainability of the company itself in the future (Christofi et al. 2012). In other words, company activities related to sustainability are an opportunity to create value (value creation) and should not be considered a burden (Smith & Sharicz 2011). With this change in mindset, it is hoped that the TBL report will no longer be dominated by the financial component and there will be no separate thinking about the three TBL components.

### **Contingent Resource Based View - Corporate Environmental Strategy Theory**

Barney (1991) developed the concept of a resource-based view, which states that an organization will achieve a sustainable competitive advantage if it has valuable, unique, rare and difficult to imitate resources. The resource-based view of the company provides a theory to explain that competitive advantage as a result of developing organizational capabilities, such as continuous innovation, organizational learning, and stakeholder support is related to pro-environment strategies (Hart 1995; Sharma & Vredenberg 1998). Studies on the resource-based view show that organizational resources and organizational capabilities link environmental strategy and organizational performance (Marcus & Nicols 1999). Meanwhile, Aragon-Correa (2003) emphasizes the importance of the business environment in generating dynamic capabilities from pro-environment strategies in generating competitive advantage with the Contingent RBV model of Proactive Corporate Environmental Strategy.

Several theories of factors that influence the practice of sustainability management include the following:

#### ***Green Intellectual Capital***

Green Intellectual Capital is an intangible asset that is very important for the company because it contributes optimally to survive, grow, and develop, or is called corporate sustainability. Chen (2008) revealed that investment in Intellectual Capital has a close relationship with environmental protection or what is known as Green Intellectual Capital (GIC). GIC can make enterprises not only meet the improvement of environmental management, but also enhance competitive advantage. Research on GIC conducted by Rahmawati et al. (2017) revealed that GIC has a significant positive effect on improving company performance which

can ensure the sustainability of its business. This result is also in line with the research conducted by Susandya *et al.* (2019) which revealed that GIC; GHC and GSC have a positive effect on competitive advantage while GRC has no effect on competitive advantage. In addition, according to research results that Green Human Capital and Green Relational Capital have an influence on Business Sustainability, while Green Structural Capital has no effect on Business Sustainability (Josephine *et al.* 2020).

The issue of green intellectual capital was first endorsed by Chen (2008) as a result of the increasing trend of green politics. Chen (2008) proposes a definition of green intellectual capital as the total and all intangible assets owned by the company, knowledge, capabilities, and relationships regarding environmental protection and green innovation both at the individual and organizational level of a company. Green intellectual capital enables companies to comply with strict international environmental rules and to increase customer environmental awareness and also to create corporate value. Erinos and Rahmawati (2017), Yahya, Arshad, and Kamaluddin (2015) categorize green intellectual capital into human capital, structural capital, and relational capital.

According to previous research, intellectual capital is one of the most important aspects for a company because it is able to maximally create value added and competitive advantage, which in turn will affect the sustainability of the organization (Arshad *et al.* 2016; Omar *et al.* 2017). From the point of view of the resources of the organization, developing strong intangible assets can provide opportunities for organizations to improve business performance, gain competitive advantage, innovation and as the survival of the organization (Yusoff *et al.*, 2019). However, there are no studies exploring whether intellectual capital on environmental management or green innovation has a positive effect on a firm's competitive advantage (Chen, 2008). The theoretical basis of the dimensions of green intellectual capital is as follows:

In line with the research of Meles *et al.* (2016) which states that human capital is the capital represented by employees to create intellectual capital through competence, ability, and agility. According to Chen (2008) in (Josephine *et al.* 2020), green human capital as an intangible asset of employees in the form of: knowledge, experience, expertise, innovation that can be empowered to achieve the company's operational environmental sustainability goals.

Based on research by Bontis *et al.* (2018), structural capital is infrastructure that supports human resources and knowledge, such as green innovation behavior, sustainability and quality certification, and corporate culture. According to Smriti and Das (2018), structural capital is organizational capital which includes systems, structures and processes, for example

databases, management processes, and company plans. According to Chen (2008) in (Josephine et al., 2020), green structural capital is the culture, organizational commitment, knowledge management system and reputation/image of the company in environmental protection its implementation in the company's operational area.

The results of this study are in line with Xu and Wang (2018) and Xu et al. (2020) which stated that human capital has a positive effect on sustainable growth, where the added value of human capital can increase the value of sustainable growth. They are also in line with Chow & Chen (2012) in (Yusoff et al., 2019) who revealed that business sustainability is an effort made by companies to minimize negative environmental and social impacts for the present and the future and divided organizational sustainability into three aspects, namely economic, social and environmental. They are also in line with the research of Josephine et al (2020) that only Green Human Capital and Green Relational Capital have an influence on Business Sustainability, while Green Structural Capital has no effect on Business Sustainability.

According to Josephine et al (2020), only Green Human Capital and Green Relational Capital have an influence on Business Sustainability. According to Bontis et al., (2018) in Agustia et al., (2021), the components of intellectual capital that have the most influence on a company's sustainable growth are only human capital and relational capital.

In the research of Josephine et al (2020), only Green Human Capital and Green Relational Capital have an influence on Business Sustainability, while Green Structural Capital has no effect on Business Sustainability.

According to Berry and Rosdinelli (1998) and Chen (2008) in (Firmansyah 2017), environmental management as a managerial activity helps companies in corporate environmental governance, comply with environmental policies, and anticipate environmental impacts, and increasing green environmental activities in principle will have an impact on the Company's Sustainability.

Based on the research of Song, W., Yu, H., & Xu, H. (2020), Green Human Resources Management (GHRM) can positively affect green innovation and managerial environmental concern. These findings also further broaden the scope of research and the theoretical and practical implications of GHRM. Research Bombiak et al. (2018) in (Dewi and Nawangsari, 2019) explains that the company starts all its activities with a comprehensive plan with a vision of sustainability that involves all stakeholders inside and outside the company. With this approach, the company ensures that all economic, social and environmental considerations are carefully considered as the basis for sustainable business development.

### ***Green Technology (Greentech)***

We can define “green technology” as an attitude towards sustainable development by using environmentally friendly systems, products and resources that will ultimately minimize the negative impacts of human activities (Bhowmik et al. 2017). Choosing green technology requires a collective effort from all stakeholders. Business industries, government policy agencies and relevant regulatory authorities are advised to adopt or voluntarily accept green technologies for environmental protection (Chu et al. 2014).

Green technology is anything that refers to the type of technology that is considered environmentally friendly based on its production process or supply chain. Green technology is one type of environmentally friendly technology. This technology can be used to carry out industrial activity processes without causing serious problems for environmental conservation.

According to the research of Choi, Gunae & Cho, Se (2021), the dynamic role of the company's green technology capabilities with strict environmental policies based on the capabilities of knowledge sources. Greentech which is also known as environmental technology (envirotech) and clean technology (cleantech) is an integration between modern technology and environmental science to better preserve the global environment and natural resources and reduce the negative impact of human activities on planet earth.

Green technology is one of the efforts to preserve or sustain life on this planet earth. Sustainability can be defined as meeting the needs of the community in a sustainable manner in the future without destroying natural resources, or meeting the needs of the present without compromising the ability of future generations to meet their own needs. Envirotech, greentech or cleantech is the application of environmental science to conserve the natural environment and resources to curb the negative impacts of human involvement. Sustainable development is at the core of environmental technology.

Green technology is the development and application of products, equipment and systems used to conserve the natural environment and resources, which minimize and reduce the negative impact of human activities on the environment. Based on the above definition, it can be concluded that Green Technology is defined as an integration between modern technology and environmental science that is applied to preserve the fulfillment of community needs in a sustainable manner in the future without changing the environment and natural resources.

### ***Green Energy or New Renewable Energy***

According to the mandate of Law No. 30 of 2007 concerning Energy, the National Energy Policy (KEN) is prepared based on the principles of justice, sustainability and

environmental insight to support the creation of energy independence and national energy security. The implication of this policy is the need for energy diversification to meet domestic energy needs, one of which is by developing new and renewable energy. Indonesia is one of 195 countries that signed the Paris Agreement and one of 164 countries plus the European Union, which ratified it. With this international commitment, Indonesia has a national target to reduce greenhouse gas emissions to 29% from business as usual (BaU) conditions in 2030 with its own efforts and a further 41% with international assistance. In addition, according to the General National Energy Plan (RUEN), Indonesia has a target of using NRE in the national energy mix of 23% in 2025 and 31% in 2050. This target is equivalent to 45.2 GW of NRE power generation in 2025, the rest is the contribution of biofuel, biomass, biogas, and coal bed methane. Thus, it is concluded that the need for new, renewable energy is driven by a number of things, namely (Syariful, 2014):

- Rising energy consumption.
- Fossil fuels will run out because they are non-renewable fuels.
- The need for fuel overwhelms production, thus, they import fuel oil.
- Indonesia's huge biomass potential is due to the high diversity of plants and can be used for fuel.
- The existence of international and national policies regarding energy.
- Potential vacant and barren lands that can be used to grow crops that can be converted into fuel.
- The potential of human resources to process, utilize and produce alternative fuels for future needs.

### ***Green-preneurship***

Business models that are only oriented to short-term financial gains are no longer relevant in a world that faces limited resources on the one hand and high population growth on the other, in the midst of environmental damage that results in various natural disasters that ultimately humans suffer the consequences. A new form of entrepreneurship that is currently starting to grow since 2016 is green entrepreneur with an environmental perspective. Citing Gerlach (2002), Allen and Malin (2006), greenpreneurs are individual innovators who adopt environmental values as their main business identity and use environmental values to achieve business sustainability. In other words, an environmentally friendly business model does not mean sacrificing the company's financial benefits, because in the long run an environmentally



friendly business not only produces financial benefits but also provides benefits to many stakeholders (Kanchan, et al. 2015).

### **Eco-Efficiency**

The concept of eco-efficiency was adopted by the World Business Council for Sustainable Development as a management philosophy in 1993 after the 1992 Rio de Janeiro Conference (Saling et al. 2002) in Wijanto Hadipuro (2020). The definition of eco-efficiency is a management concept that unites business interests in generating benefits for the welfare of the community while still showing concern for environmental sustainability. The application of eco-efficiency is carried out by conducting an ecological or environmental assessment and an economic assessment together throughout the entire product life cycle.

There are two options that management can make to implement the concept of efficiency, namely improving product performance and/or improving production processes. Product performance improvements can be in the form of more efficient products, for example energy saving; more durable products so that the waste due to worn out products is reduced; and reduce the toxicity of the product or its packaging. Meanwhile, production improvements can be made by saving raw materials, saving energy used, reducing waste generated, recycling waste, and including reusing waste/garbage, namely:

### **Green Business**

According to Eric Koester (2010:8), in their book entitled “*Green Entrepreneur Handbook*”, it is written that “*In general, green business are just like any other business in that they must create sufficient profits to continue to operate. The difference lies in what else green business concern themselves with – weighing the value of sustainability and human capital, for instance.*” He also added that a green business requires a balanced commitment between profitability (finance), sustainability (sustainability) and humanity (humanity) (Eric Koester, 2010:8).

According to Dennis D. Hrisch (2010:11), green business is defined as “*voluntary actions by a private firm that seeks to achieve better environmental performance and, simultaneously, to make the company more competitive*”.

According to Arkan (2017), green business is a concept in the business world, namely that companies in running a business besides targeting profit are also active in mitigating the impacts arising from the company's activities on the surrounding community. The impact in question is on the use of resources used, the products produced and how the company manages the human resources that become its workforce. Green business as a symbol of the

company's status and reputation, namely as more and more internationally recognized companies are becoming environmentally friendly, the idea of being environmentally friendly becomes much more lucrative.

Based on the description above, it can be concluded that the benefits of being environmentally friendly for business outweigh the downsides. The time and money needed to build and implement an environmentally friendly business will pay off with wider benefits and benefits, namely company satisfaction in contributing to environmental conservation.

### ***Stakeholder Demands for Eco-Friendliness***

Stakeholder theories say that a company does not operate for its own sake but must also provide benefits to the parties (shareholders, consumers, communities, suppliers, government, and other related parties). This means that the existence of a company is strongly influenced by the support provided by stakeholders to a company. In line with that, Calza et al. (2017) argues empirically that:

- Proactive green innovation, driven primarily by the company's internal features, leadership, culture and capabilities,
- Reactive green innovation, more related to compliance with environmental regulations and stakeholder expectations

The implementation of the green business concept in the company is certainly oriented to the demands and needs of the company's stakeholders.

### ***Green Consumerism***

Environmental management is consumer environmental awareness. According to Chen (2008), consumers' living environment is evolving around the world, and thus encourages companies to carry out corporate environmental management, because consumers are willing to choose environmentally friendly products even with relatively higher prices. According to Chen (2008), a study on intellectual capital was carried out in the early 1990s. Intellectual capital is defined as the total amount of knowledge, information, technology, intellectual property rights, team communication systems, customer relationships, and trademarks that can create corporate value (Ahlgren, 2011), (Choong, 2008).

One of the stakeholders in the company is the consumer. With the increasingly severe environmental damage, reinforced by the rapid development of information technology that encourages the creation of global consumers, it is predicted that the number of environmentally conscious consumers in Indonesia will increase rapidly. The presence of more and more environmentally friendly consumers can be a trigger for companies to do green business due to

the demands of green consumerism. Carlson (1995) defines green consumerism as consumers who pay attention to the impact of the production process and consumption of products on the environment.

In fact, the development of green consumerism behavior will contribute positively to the growth of the manufacturing movement of environmentally friendly products by producers. Thus, the products available and consumed by consumers are products that provide more benefits to users (healthy) and do not lead to environmental pollution. Nowadays, consumers are not only concerned with price and quality, but also sustainability initiatives implemented by companies (Nordin, 2014). Sustainability initiatives have become imperative as they represent a significant burden on the environment (Haapala et al., 2011). Thus, manufacturing companies are forced to change their system paradigm to accommodate sustainability needs (Bi, 2011). An overview of manufacturing evolution milestones to become a sustainability concept according to Figure 3:

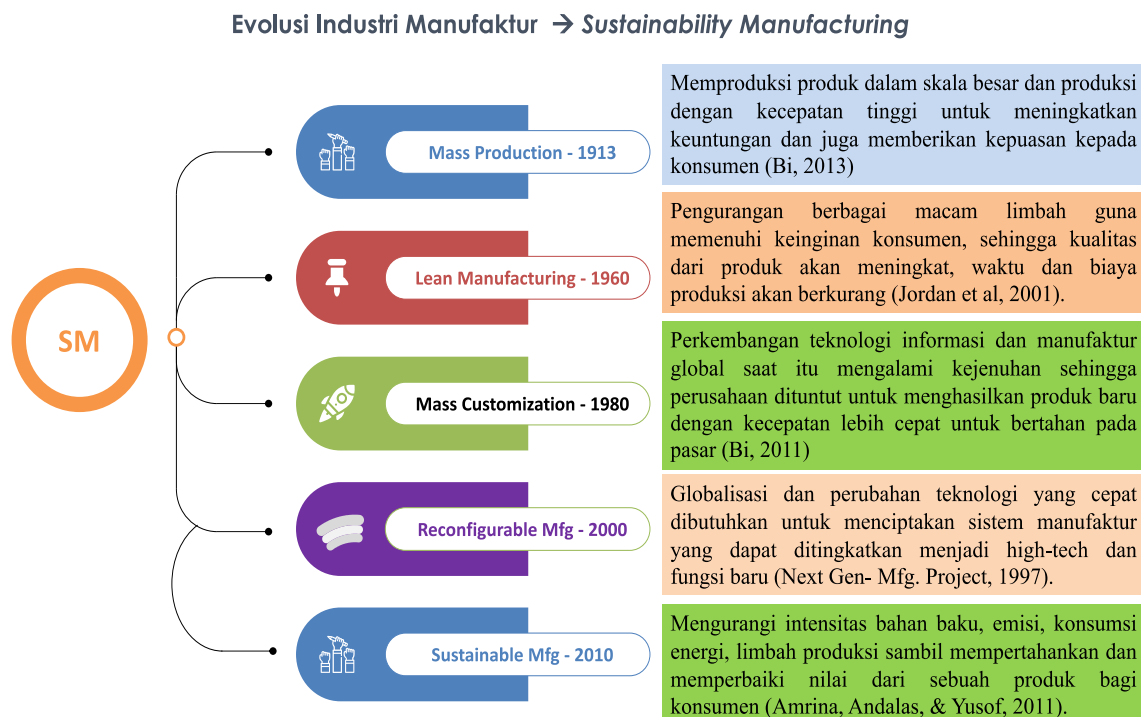


Figure 3. Manufacture Evolution

Lean manufacturing, which focuses on reducing various types of waste to meet consumer desires. By eliminating waste, the quality of the product will increase, production time and costs will be reduced (Jordan et al, 2001) with “quality” as the unlock value. The concept of mass customization allows manufacturers to produce a wide variety of products and services at

the same cost as mass manufacturing (Pine, 1993). This concept also provides flexible processes at high volumes and at low costs (Tihonen, 2017) with “cost” as the unlock value.

The concept of mass customization emerged in the 1980s due to the development of information technology. In addition, the global manufacturing market is currently experiencing saturation, causing companies to be pressured to produce new products more quickly to survive in the market (Bi, 2011). Mass customization allows manufacturers to produce a wide variety of products and services at the same cost as mass manufacturing (Pine, 1993). This concept also provides flexible processes at high volumes and at low costs (Tihonen, 2017) with “variety” as the unlock value.

Furthermore, in the 20th century, competition on a global scale and rapid technological changes are needed to create manufacturing systems that can be upgraded to new technologies and functions (Next Generation Manufacturing Project, 1997). This concept is also known as reconfigurable manufacturing (Bi, 2011) with “responsiveness” as an unlock value. Finally, the concept of sustainability manufacturing was born, because consumers are not only concerned with price and quality, but also with sustainability initiatives implemented by the company (Nordin, 2014). Sustainability initiatives have become imperative as they represent a significant burden on the environment (Haapala et al., 2011). Thus, manufacturing companies are forced to change their system paradigm to accommodate the need for sustainability (Bi, 2011) with “sustainability” as an unlock value.

Nowadays, consumers are not only concerned with price and quality, but also sustainability initiatives implemented by companies (Nordin, 2014). Sustainability initiatives have become imperative as they represent a significant burden on the environment (Haapala et al., 2011). Thus, manufacturing companies are forced to change their system paradigm to accommodate sustainability needs (Bi, 2011).

## RESEARCH METHODS

This research is a literature review, where according to Hasibuan (2007), it contains a description of theories, findings and other research materials obtained from reference materials to be used as the basis for research activities. In this study, several articles were obtained from several journal publishers, including springer.com, sciencedirect, and mdpi.com. The keywords used were “sustainability” and “green”.

In this article, the author also included reviews, summaries, and the author's thoughts on several other library sources (articles, books, and sustainability report publications) on the topics discussed from previous research, then evaluated and drew generalizations on the theme of sustainability.

## RESULTS AND DISCUSSION

Some practices and implementations of management sustainability are:

### **Green Intellectual Capital (Green Innovation)**

The practice and implementation of green intellectual capital in sustainability is the presence of green innovation in the industrial sector in an effort to manage the green environment. Therefore, industry players are required to actively and wisely use resources and technologies that are environmentally friendly so as to create effectiveness and efficiency for the sustainability of their business. In support of the energy transition, the company continues to encourage innovation and continuous research for the development of new and renewable energy (EBT). Innovation and research are also aimed at supporting towards carbon neutral, in line with environmental, social and governance management. The main innovation and research activities consist of: (1) Recovery from existing resources for optimizing resources and increasing oil and gas production, (2) Accessing new resources, including unexplored resources from untouched areas, (3) Encouraging operational effectiveness and efficiency, by maximizing the use of new technologies, and (4) Supporting business sustainability by encouraging business diversification.

### **Green Energy/New, Renewable Energy**

Companies continue to drive NRE growth to 17% by 2030 and 23% by 2025, by preparing eight initiatives according to the National Energy Grand Strategy Program and the Company's Long-Term Plan (RJPP). The growth of the energy mix will support the emission reduction target of 29% in 2030 while still meeting the national energy needs of 7 million terajoules, while strengthening national energy security and independence in the future with the following initiatives:

- Utilization of geothermal energy in Indonesia
- Utilization of green hydrogen in geothermal areas
- Electric Vehicle Battery & Energy Storage System
- Gasification - Methanol Plan Development
- Development of Dimethyl Ether (DME)
- Implementation of Carbon Economy in several areas: by doing Recycle (Biomass, Biogas), Reduce (Solar PV, EV, LNG Bunkering), and Reuse (CO<sub>2</sub> for EOR and Methanol)

## Greenpreneurship

In the early 2000s, environmental concern in business circles was still considered an idealism that did not necessarily bring financial benefits, whereas today, many businesses are excelling because of their concern for the environment. Fluorescent lamps have been abandoned in many countries and replaced by energy efficient lamps, given the increasingly scarce and expensive energy. Currently, automotive manufacturers are dominated by manufacturers that produce fuel-efficient vehicles, such as low-cost green cars in Indonesia, and there will be manufacturers that produce vehicles with environmentally friendly fuels, such as electric vehicles. It has also produced environmentally friendly fuels such as premium biodiesel with high octane. In other words, an environmentally friendly business model does not mean sacrificing the company's financial benefits. In the long term, an environmentally friendly business model can not only generate financial benefits, but also provide benefits to many stakeholders (Kanchan, et al. 2015).

The current environment is no longer considered an obstacle for business, but has become the main source for maintaining business sustainability. The perspective that states the earth or nature is a burden has begun to be abandoned. Businesses are starting to compete to become environmentally friendly entities in order to be competitive. How perspective influences business decisions can be analogized with the example of two shoe entrepreneurs who come to a developing country; entrepreneur A saw very few people using shoes and thought that it was impossible to build a shoe factory in this kind of community. Then, entrepreneur B actually said to himself, if only I was able to influence 10% of the population in this area to use shoes, then how big is the market potential in this country for the shoe factory business.

With a simple analogy as mentioned above, now is the time for the environment to be seen as a businessman B. If only 10% of the world's people could be changed to care about the environment; both in terms of consumption or behavior, the market potential for environmentally friendly products is massive. In fact, currently green consumers, namely consumers who only want to buy, continue to grow along with the increase in the level of community welfare.

## Eco-Efficiency

Eco-Efficiency is the ratio of economic creation compared to environmental damage. The higher the eco-efficiency ratio, the better the business performance. Included in the eco-efficiency concept is that the environmental performance of a business improves due to the use of fewer resources due to improved production processes. In simple terms, the concept of eco-efficiency means management's efforts to obtain financial benefits through improving environmental performance (green environmental). What this means is that we are able to

reduce the use of natural resources and/or reduce the waste that is dumped into natural systems, which also means increased economic efficiency.

Citing the book “Kamus Populer Kesehatan Lingkungan” (2002) by Hadi Siswanto, eco-efficiency aims to use natural resources as effectively as possible, so that no wasted natural resources are wasted. In the book “Ekologi Manusia dan Pembangunan Berkelanjutan” (2017) by Oekan S. Abdullah, it is explained that as the present generation, we have a moral responsibility to future generations and nature. The moral responsibility is to provide equal or even better opportunities for future generations to carry out development and enjoy the results of development. So that future generations can carry out the same development as today, the current generation needs to apply the principles of eco-efficiency. The practices and implementations of eco-efficiency for green environmental maintaining sustainability are as follows:

- The form of application of the principle of eco-efficiency in the sustainable use of land resources is to open new land for planting, utilize the land optimally, intensify the function of agricultural land, and increase the carrying capacity of the land.
- The application of the principle of eco-efficiency in meeting fuel needs includes the use of alternative renewable energy sources such as wind power, sunlight, water, biomass, and organic materials.
- The application of the principle of eco-efficiency in mining utilization includes implementing a mining system accompanied by procedures for treating mine waste, using mining technology that is energy efficient and environmentally friendly, and rehabilitating ex-mining land by means of land reclamation and reforestation.
- The application of eco-efficiency principles in daily life, such as: saving electricity usage, saving water usage, using super unleaded gasoline for vehicles, recycling unused paper, processing waste into compost or fertilizer.

### **Green Business**

Green business is a concept in the business world where companies in running their business are not only profit-oriented, but also consider minimizing and mitigating the impact on the environment. This means that the company is more oriented to “benefits” in its business, so that its existence benefits nature and the welfare of society.

According to Arkan (2017), green business is a concept in the business world where companies run their business, pay attention to the impacts and mitigate them. The impact in question includes the impact on the community around the location of the company's

operations: how the resources are used, the products produced, including how the company manages its human resources.

The benefits of implementing green business according to (Arkan, 2017 and LaMarco, 2019) in Agus Sugiarto (2021, p5-7) for companies:

- Creating a good image in society,
- Cost efficiency because it applies the green concept, so that it saves the use of resources,
- Contributing to preserving the environment for a better future,
- Increasing market share and maintain customer loyalty,
- Evidence of compliance with applicable regulations,
- Improving employee morale and mitigating turnover,
- As a symbol of the company's status and reputation.

Nielsen consultants in 2015 conducted a survey of 30,000 consumers from all over the world, and the results showed that 66% agreed that they would pay more to get products from producers who have implemented the concept of sustainability, and with the same data, 77% were millennial consumers.

### **Green Consumerism**

Bisgaard, Henriksen & Bjerre (2012) in Agus Sugiarto (2021) suggest that one of the most important drivers for companies to initiate green business model innovations is increasing consumer awareness of sustainability. All companies use a green agenda as a driver for their green business model innovation, regardless of company size or sector. Another important driver is the opportunity for companies to differentiate their products and services and create a competitive advantage by being more environmentally conscious and more sustainable than their competitors (Agus Sugiarto, et al. 2021, p23-24).

Based on the explanation above, it can be understood that the demands of stakeholders, in this case the consumer community, are one of the determinants that can encourage companies to implement the green company concept.

### **Management Sustainability: Strategies and Approaches**

Its implementation is identical to the practice of green environmental management. Green environmental management is defined as the process of allocating natural resources so that they can be used optimally in meeting basic human needs with minimal impact on the environment (O'Riordan, 1971, p. 17 in Omara-Ojungu, 1992, p. 4; in Wijanto Hadipuro, 2018,



p. 24). The resources referred to in the above definition are natural resources that are included in the category of economic goods, that is, they are limited in number when compared to human needs which continue to increase in line with the increase in the population of the earth's population. Resources are not a static but dynamic concept. For example, at one time water was not considered scarce natural resources (still abundant) because human needs were still low. This condition has changed at this time where there has been a water deficit in several areas on the islands of Java and Nusa Tenggara, especially during the dry season.

Environmental management for business is needed when the exploitation of natural resources by entrepreneurs endangers the sustainability of natural resources. Environmental management for business exists to ensure the sustainability of the company's operations, meaning that the company's activities related to natural resources are in line or in harmony with the carrying capacity of nature. Environmental management is also needed so that natural resources to meet certain needs do not interfere with the fulfillment of other needs.

The current developments, even the scarcity or limited amount of natural resources are not a determining factor whether companies need to manage the natural resources used or not, because companies are already required to implement environmental management. For example, Law no. 40 of 2007 - Limited Liability Company, Article 74, Paragraph (1) states that a Company that carries out its business activities in the field and/or related to natural resources is obliged to carry out social and environmental responsibilities.

At present, the environment is no longer a minor factor, but has become a major factor for the development of the economy as a whole and the development of companies in particular. Thus, the company's role in environmental sustainability is not solely due to pressure or coercion from laws or regulations external to the company, but is purely based on the awareness and needs of the company's internal because it is related to the sustainability of the business itself.

There is only one Earth and nature has limited carrying capacity, regeneration capacity and accommodating capacity. In fact, without excessive human intervention, nature has its own procedure to take care of itself with its natural cycle, meaning that all processes in nature are in a continuous cycle. Through its carrying capacity, regeneration capacity and accommodating capacity, nature is able to process and properly mitigate waste. Carbon dioxide (CO<sub>2</sub>) which has been blamed for being the main suspect in the greenhouse effect, global warming and climate change, in fact, without excessive human intervention (meaning, in accordance with the carrying capacity, regeneration capacity and accommodating capacity), can be converted by nature into oxygen (O<sub>2</sub>) which is very useful for life. Water that is always changing shape and quality can be purified again by nature through the hydrological cycle without excess waste generation. Dirty

water from various sources is united by rivers and flows into the sea and the sea is ready to manage according to its cycle, namely the process of evaporation of dirty water into clouds and back to earth as rainwater. Rainwater is absorbed by the soil, reprocessing into good quality groundwater. In conclusion, dirty water through natural processes can become clean water without the need for chemicals and without waste effects.

In business, sustainability refers to business practices sans negative impacts on the environment, community or society as a whole. Sustainability in business generally addresses two main categories: (1) the impact of business on the environment and (2) the impact of business on society. The goal of a sustainable business strategy is to create a positive impact in two of these areas. When companies fail to assume responsibility, the opposite can happen, leading to problems such as environmental degradation, inequality and social injustice. Sustainable business considers a variety of environmental, economic and social factors when making business decisions. These organizations monitor the impact of their operations to ensure that short-term gains do not turn into long-term liabilities. Sustainable business strategies are unique to every organization because they tie into the larger business goals and values of the organization.

For example, for example, sustainability in business can mean: Rizvi, Yasmeen & Garg, Raksha (2020) in their research have analyzed that culture is an important mediator, which have explored the mediating effect of green culture between green ability, motivation and opportunity (GAMO) and environmental performance (EP) and between green transformational leadership (GTFL) and EP. Research identifies that GAMO and GTFL, in fact, positively influence organizational EP.

Arshad et al. (2016) argues that there is a significant positive relationship between the efficiency of human capital and the sustainability of social enterprises. In line with that, Omar et al. (2017), in their research proves that there is a link between green human capital and business sustainability.

In addition, the HR function will be a driver of environmental sustainability within the organization by aligning its practices and policies with sustainability goals that reflect an environmental focus (Nawang Sari and Sutawidjaya, 2019). Based on the description above, the researcher concludes that Green Human Capital has an effect on Company Sustainability.

Based on the research of Chao-Hung Wang (2019), Organizational Green Culture (OGC) is considered a competitive resource that supports sustainability, which not only has a commitment to environmental issues, but also trains employees for green innovation. So, competitive advantage is the result of OGC, which encourages green innovation and is shared throughout the company. Therefore, it is concluded that green innovation mediates the

relationship between OGC and competitive advantage. Based on the description above, the researcher concludes that Green Structural Capital has a positive and significant effect on the Sustainability of the Company. Based on the research of Chu, Z., Wang *et al.*, (2019), customer pressure and perceived criteria are based on customer environmental requirements and concerns. Thus, they are seen as the main factor driving green innovation of third-party logistics (3PL) providers of practice (Baz and Laguir, 2017). However, previous empirical studies provided mixed evidence on the relationship between customer pressure and green innovation practices in the 3PL context. For example, when Chu *et al.* (2018) confirmed the positive influence of customer pressure on 3PL providers' green innovation practices and green innovation is now seen as a key strategic tool to address the problem (Chu *et al.*, 2018).

In addition, responding to calls for research on green innovation practices in the context of 3PL (Centobelli *et al.* 2017), this study examined whether 3PL providers develop green environmental innovation practices in response to pressure from customers' environmental concerns. In recent years, 3PL customers have begun to voice environmental concerns (Berg and Langen, 2016). Based on the elaboration above, the researcher concludes that green relational capital has an effect on sustainability.

There is a growing need today, companies are starting to adopt environmental management systems (EMSs) and the literature shows that their implementation is growing by companies, such as ISO 14001 certification, and will lead to pollution prevention, waste minimization and low-impact release to the environment (Paille *et al.*, 2014) which in turn can help in improving company performance (Abdel-Maksoud *et al.*, 2016).

Obeidat, Shatha M., *et al.*, (2020) revealed that several empirical studies found positive evidence of a relationship between environmental performance and organizational performance (e.g., Alvarez-Gil *et al.*, 2001; Arago'n-Correa *et al.*, 2008; Guenster *et al.*, 2011). For example, Chang (2015), who examined the environmental influence of financial performance using panel data on the heavy pollution industry in China, found a positive effect. In particular, Fujii *et al.* (2013) showed that the performance environment increases return on assets through sales returns and increased capital turnover. Similarly, De Burgos-Jimenez *et al.* (2013) empirically found a positive relationship between environmental performance and organizational performance.

According to Dodi Hapsoro *et al.* (2020), the higher the PROPER rating obtained by the company, the better the company's image. This will be good news for investors because companies that have good environmental performance are more attractive to investors and have an effect on increasing company value. Based on the description above, the researcher concludes that green environment has an effect on sustainability management.

Based on the study by Longoni, Annachiara & Pagell, et al., (2019), Gimenez et al., (2012), found that human capital routines have a positive impact on social and environmental performance but not operational performance. Human capital routines are defined as repetitive patterns of interdependent organizational processes or activities that protect and direct human capital and contribute to organizational goals (Wright et al., 2001). This study focused on human resource routines that can have a positive impact on all three dimensions of the Three Bottom Line (TBL) concept: routine hazard prevention procedures are processes designed to identify, analyze and reduce risks that could interfere with operational results or working conditions (Khazode et al., 2012).

According to Wang (2019), Organizational Green Culture (OGC) significantly predicts green performance and competitive advantage. Moreover, the results show that green innovation is both versatile mediating between OGC and green performance, and it has a partial mediating effect on the relationship between organizational green culture and competitive advantage under environmental demands.

According to Khalil Omar et al. (2017), Green Intellectual Capital (Green Human Capital, Structural Capital, Relational Capital) and Business Sustainability have grown and become a concern among academic researchers and practitioners and are emerging topics in emerging economies. According to Sharma and Vredenburg (1998) in George Kofi Amoako (2019) that a proactive environmental strategy calls for several intellectual capital-based abilities, for example stakeholder interaction (relational capital) and thinking skills (human capital), including corporate transformation (structural capital) that can lead to on competitive advantage for the sustainability of the company.

Clarkson et al. (2006) in (Dody Hapsoro and Rahandhika Ivan Adyaksana, 2020) defined environmental performance as the achievement of all activities or activities that have been carried out by the company in managing the negative impact of the company's operational activities on the environment. Based on this understanding, environmental performance is the company's achievement to reduce the negative impact of operational activities carried out on the environment by utilizing the company's capabilities. Environmental performance is a measure that shows the company's success in preserving the environment. Good environmental performance will increase investor interest which will affect the increase in stock prices, thereby increasing the value of the company and supporting sustainability. Based on the description above, the authors conclude that green human capital, green structural capital, green relational capital, and green environmental management simultaneously affect sustainability.

According to Rizvi, Y.S. dan Garg, R. (2020), companies are increasingly under pressure to protect the natural environment (Molina-Azori *et al.*, 2009; Freitas *et al.*, 2020). This pressure has increased significantly since the introduction of sustainable development goals by the United Nations in 2015, which required the world economy and business organizations to achieve a list of proposed goals towards sustainable development by 2030 (Modgil *et al.*, 2020).

In addition, it was also revealed that leadership and employees are important resources in environmental management (EM) organizations (Zhou *et al.*, 2018). Furthermore, environmental management itself acts as a source of competitive advantage if the challenges posed by the environment can be turned into opportunities by leaders (Chen dan Chang, 2013). Based on the elaboration above, the researcher concludes that green structural capital has an effect on sustainability through green environmental.

According to Carlos Maria Jardim and Amandio Dasilva (2017), environmental awareness is the first step in the process of organizational change for sustainable performance. The change process activates the organization's ability to adapt organizational and individual qualities to integrate the social or environmental dimensions of sustainability (Zollo *et al.* 2013).

Furthermore, in the same study, it was stated that relational capital increases environmental awareness and the impact of promoting environmental awareness is very important in business. Peng and Lin (2008) note that local responsiveness encourages a proactive attitude towards the environment. Therefore, both the law and the promotion of environmental culture by the government will support the company's environmental problems. These findings suggest that there should be consistency between the company's internal desires and the proposed external goals (Zollo *et al.*, 2013). Based on the elaboration above, the researcher concludes that green relational capital has an effect on sustainability through green environment.

The company's response to the practice of sustainability management: its strategies and technical approaches in terms of environmental pressures:

### **Paradigm Categorization**

Some of the company's responses to the pressure of environmental problems, as expressed by Welford (ed, 2014) in Wijanto Hadipuro (2020), the company's view of the obligation to pay attention to environmental issues can be categorized as follows:

- The company assumes that attention to the environment is a moral or ethical human obligation, because humans must be responsible for the environment because they have an obligation to carry out economic ethics (Nugroho, 2001). According to the view of business ethics, business ethics must turn into eco-business ethics because humans

have moral and ethical responsibilities for future generations. The future generations of humans also have the same rights as the current generation to enjoy the environment with a minimum quality equal to the current quality.

- Other companies view that attention to the environment can even provide financial benefits, for example by reducing company waste, savings can be achieved because waste is actually inefficiency. Saving on the use of fossil fuels through technology developed by the automotive industry has proven to be profitable for transportation companies and supports the mitigation of greenhouse gas emissions from burning fossil fuels.
- Companies that obtain the ISO 14001 certificate on Environmental Management Systems, will make continuous improvements related to their environmental performance. Product quality will continue to improve along with improving environmental performance, the fact is that environmental management is seen by some companies as a quality improvement effort.
- Companies' final view on the environment is that the environment is a determining factor for the company's success. The trick is to make the company's activities in line with making the company's activities in line with the natural cycle, which is called the biomimicry model. Biomimicry studies natural models and imitates or takes inspiration from their designs to find solutions to human problems using ecological standards to judge the veracity of human-developed innovations. Biomimicry means that business activities imitate natural systems, namely air conditioning with cooling sensors is the adoption of natural systems that always exist in a closed cycle. Room temperature feedback on the cooling sensor causes the air conditioner to stop at the set temperature.

## Business Responses

Not all companies or businesses perceive the environment as an opportunity, as elaborated below:

- The first category is companies, as revealed by Welford (2014), which fall into the “why me?” category. Companies that fall into this category assume that attention to the environment will only add to the cost burden. Companies like this are not trying to reduce waste, but rather are “forced” to process the waste they dispose of because there are rules that force them, which the researcher calls the concept of “forced voluntary”.
- The second category is smart movers, namely companies that cleverly take advantage of the increasing number of green consumers to gain a competitive advantage.

Companies that develop energy-friendly products are an example. The desire to be environmentally friendly because power plants are the biggest source of pollution and also the increasing cost of electricity is used by these companies to achieve competitive advantage.

- The third category is companies that are enthusiastic about the environmental sustainability movement. Companies like this not only get a competitive advantage or simply comply with government regulations, but exceed what should be or are regulated by the government, and also exceed the expectations of their consumers or beyond compliance.

### **Business Strategies Related to Environment**

There are two choices of corporate strategy related to environmental pressures:

- First, companies can excel because attention to the environment means cost savings or cost leadership through:
  - a. Savings in the use of raw materials, by reducing components, replacing raw materials, increasing the possibility of recycling, and improving product design.
  - b. Saving energy used, by replacing energy sources with savings or efficiency.
  - c. Reducing emissions, including taking advantage of the company's rights to dispose of emissions for sale or redesigning production processes.
  - d. Implementation of waste management, by redesigning products with multiple packaging, reuse.
  - e. Application of distribution management or green supply chains management
- Second, companies can use differentiation strategies or differentiating their products with those of the competitors through environmental performance.

### **CONCLUSION**

In business, sustainability refers to business practices sans negative impacts on the environment, community or society as a whole. Sustainability in business generally addresses two main categories: (1) the impact of business on the environment and (2) the impact of business on society. The goal of a sustainable business strategy is to create a positive impact in two of these areas. When companies fail to assume responsibility, the opposite can happen, leading to problems such as environmental degradation, inequality and social injustice. Sustainable business considers a variety of environmental, economic and social factors when making business decisions. These organizations monitor the impact of their operations to ensure that short-term gains do not turn into long-term liabilities. Sustainable business

strategies are unique to every organization because they tie into the larger business goals and values of the organization.

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