



Environmental Degradation in Sustainable Urban Development

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Abstract. Urban development can change the face of the living environment that is different from the original. For this reason, there must be careful planning by making good and healthy spatial planning by looking at the environmental conditions around it. Urban development that does not see spatial planning can cause environmental degradation. Environmental degradation is a decrease in the carrying capacity or quality of the environment due to the taking and over-utilization of environmental resources. Environmental degradation can cause several problems, such as natural disasters, drastic climate change, the emergence of diseases, and environmental pollution. Two factors cause environmental degradation, namely: Natural and human factors. Natural factors such as floods, tsunamis, climate change, and others, while human factors can be in the form of increasing the population that needs land for their habitat and life, excessive exploitation of natural resources, and other money. Several ways can reduce the occurrence of environmental degradation due to sustainable urban development, namely by paying attention to the spatial plans that have been made, and improving the community's economy, and community cultural culture.

Keywords: Environmental degradation · sustainable development

1 Introduction

We already understand that to advance a country there must be developed in all fields, both economic. Social, cultural, infrastructure facilities, and infrastructure. Development in all fields needs to be carried out to increase the per capita economic growth of a country, both developments are carried out in villages and cities. Urban development is needed to improve the standard of living of people in the city. Urban development must be carried out by the plans that have been made in the long-term development plan.

Urban development can change the face of the environment that is different from the original. For that, there must be careful planning by making a good and healthy city spatial plan by looking at the environmental conditions around it. Urban development can make cities good and can even damage a well-organized living environment, for that there is a need for sustainable urban development. Sustainable development according to Article 22 point 1 of the Republic of Indonesia Law No. 11 of 2020 concerning Job Creation are [1]: “Sustainable development is a conscious and planned effort that

integrates environmental, social and economic aspects into a development strategy to ensure the integrity of the environment as well as the safety, capabilities, welfare, and quality of life of present and future generations.”

Environmental changes that occur in urban areas can be caused by increasing population growth. Unplanned population growth and meeting the needs of urban communities are the main problems of changes and decreases in the quality of the environment. Urban planning should emphasize the study of sustainable cities that protect and use natural resources wisely and sustainably. Sustainable city indicators can be identified from the International Urban Sustainability Indicators List (IUSIL) by looking at indicators from environmental, economic, social, and governance aspects.

Urban development can cause changes in environmental conditions around it, so it can cause environmental degradation or a decrease in environmental quality. Urban development is driven by the human need to improve welfare and economic growth and strive to meet basic human needs. Environmental degradation or a decrease in environmental quality in urban areas is the cause of disasters in urban areas such as floods, water pollution, air pollution, and climate change.

According to Sulaeman: “environmental conditions that have decreased in quality are known as environmental degradation caused by development activities that result in environmental functions not working as they should and environmental degradation largely due to excessive human involvement in environmental balance” [2]. Environmental degradation causes a temporary or long-term decline in environmental productivity. “The cause of the declining environmental capacity is caused by conditions and problems of social and economic conditions arising from poverty and diminishing land so that there is a causal circle between increasing population, decreasing land, increasing poverty rates, and environmental degradation” [3].

Environmental degradation can occur because of the desire of the state to increase the growth and economic development of society and to meet basic human needs. Environmental degradation and poverty have a significant relationship with the occurrence of environmental degradation and influence each other, in the sense that environmental degradation arises due to poverty so that people can damage the environment or vice versa because of environmental damage, poverty arises. This causal correlation can be continuous and form an endless and endless cycle.

Poverty is one of the factors causing environmental degradation or a decrease in the quality of the environment. Insufficient resources to meet the needs of life encourage many people to exploit and destroy the resources around them to maintain their survival. Ridena states:

“The existence of poor people living in urban areas tends to cause more environmental damage than poor people in rural areas. This is driven by differences in living standards between the urban poor and the rural poor, between the urban and rural poor both use natural resources, but the poor in urban areas due to economic pressure and limited capabilities and resources available. Available and many who work in the informal sector produce a lot of piles of garbage which results in a decrease in the quality of the environment, such as the activities of street vendors” [4].

The impact of increasing population in big cities can also cause problems with environmental degradation, one of which is the disposal of household waste. Household

waste is one of the causes of environmental degradation. In the past, rivers had natural organisms that could treat waste naturally to prevent pollution, but with the increasing population living on the banks of the river and having bad habits by disposing of household waste and garbage in rivers, the rivers became polluted. As a result, natural organisms found in rivers will die and are unable to treat waste properly. The declining quality of the environment in urban areas will have an impact on the decline in the quality of the environment in urban areas.

Two factors cause environmental degradation, namely: natural and human factors. Natural factors include earthquakes, volcanic eruptions, tsunamis, hurricanes, and others. When degradation is caused by nature, nature will also return the environment to a balanced state, also known as the homeostatic concept. Human factors can also cause environmental degradation, many human activities can cause environmental degradation. But the main human activity that causes environmental degradation is deforestation. Deforestation can be defined as forest loss, such as forest exploitation, forest logging, forest burning, and so on.

Environmental degradation is one of the causes of the decline in environmental quality due to community activities, so that the components that make up the environment do not function normally. Excessive human intervention in the environment causes environmental degradation, such as environmental degradation in urban areas.

Environmental degradation in urban areas raises the question, how is the cause of environmental degradation in sustainable urban development? This paper attempts to answer this question by describing each of the causes of environmental degradation in urban areas.

2 Findings and Discussion

1. Environmental Degradation

The environment is an important part of sustainable development in urban areas and will be taken into account in all policies, programs, activities, and funding as well as human prosperity. Therefore, environmental degradation has become a global concern and has attracted significant attention to development. “The continuous use of natural resources originating from the environment can cause damage, for example: land certification, forest deforestation, damage to marine ecosystems, air pollution, and environmental degradation. The consequences of such damage are not easy to recover” [5].

The environment is one aspect that is very important for human life and the continuation of human life. Over time, the environment slowly degrades. This degradation causes losses to human life. Environmental degradation will hurt humans and other living things. Environmental degradation will result in decreased productivity, migration, food insecurity, danger to resources and basic ecosystems, as well as loss of biodiversity through habitat change both at the species and genetic level. In addition, environmental degradation will have an impact on the socio-economic life of people who depend on the environment as a source of livelihood.

Reporting from the book *Complete Dictionary of Geography Terms* by the Panca Aksara Team, environmental degradation is:

“The decline in the carrying capacity or quality of the environment due to excessive extraction and use of environmental resources. Environmental degradation can cause several problems, such as natural disasters, drastic climate change, the emergence of diseases, and environmental pollution” [6].

“Environmental degradation can occur due to damage to the environment through the depletion of resources such as air, water, and soil, as well as damage to ecosystems, habitats, and the extinction of wildlife due to pollution. It is also defined as a change or disturbance to the environment that is harmful or undesirable” [6]. Environmental degradation is one of the ten threats officially warned by the High-level Panel on Threats, Challenges and Change or the United Nations high-level panel on threats, change, and challenges. The ten threats warned by the High-level Panel on Threats, Challenges, and Change, are: “(1) poverty, (2) infectious diseases, (3) environmental degradation, (4) war between countries, (5) civil war, (6) genocide, (7) weapons of mass destruction, (8) terrorism, (9) organized crime, and (10) other violence (trafficking in women and children, organ theft)” [6].

The United Nations Office for Disaster Risk Reduction (UNDRR) also defines environmental degradation as:

“Reduction of the capacity of the environment to meet social needs and ecological goals. Types of environmental degradation include destruction of natural habitats, depletion of natural resources, and environmental destruction. Efforts to overcome this include resource management and protection of the environment” [7].

Environmental degradation can occur due to excessive land use and the entry of solid or liquid pollutants into the environment where these materials are not part of the original environmental component. Environmental degradation can also occur as a result of the exploitation of land and soil, as occurs in the mining of tin, gold, coal, and so on. Naturally, the soil will only be polluted if there is erosion, but this natural pollution is always balanced by the process of weathering natural products and the formation of new soil. Just as water has water quality, so does soil, the quality of soil in one place and soil in another is not necessarily the same. Differences in soil quality are generally assessed from the condition of the humus layer resulting from weathering and decay of plant remains on the soil surface. The more diverse living organisms found on the soil surface, the better the quality of the soil. This can happen because in the soil or on the surface of the soil there are also various living organisms.

If humans do not destroy the environment, environmental degradation will only occur due to natural causes. Because degradation can also be caused by natural phenomena or events that result in rapid environmental changes, thus affecting the balance of the environment. Some examples of disaster cases due to environmental degradation in several parts of the world:

- a. In 1950, there was pollution by mercury (Hg) from industrial waste, and by cadmium (Cd) from zinc mining waste (Zn). People who eat fish from the sea are poisoned. The disease is known as Minamata, after the place where it occurs [8].
- b. Air pollution in London in 1952 due to industrial smoke from coal which caused health problems for the population [9].

- c. The World Food Program (WFP) stated that from 2010 to 2012 there was a drought in Somali, around 250,000 people died of hunger in Somalia, and half of the victims killed were children [10].
- d. The tidal flood that hit the coast of Semarang and its surroundings on May 23, 2022, became a danger alarm for cities on the north coast of Java. This land subsidence in coastal areas causes increasingly extreme weather and sea level rise due to global warming becomes more dangerous [13].

Thus, environmental degradation is a series of events from a decrease in environmental quality or a decrease in the carrying capacity of the environment caused by humans or caused by nature. Environmental degradation by humans is more dangerous than environmental degradation caused by nature. Environmental degradation carried out by humans can be interpreted as a decrease in environmental quality caused by human activities on development which is characterized by not functioning properly the functions of environmental components as they should (environmental quality has changed unlike before the development was carried out). Environmental degradation is caused by excessive human intervention or interference with the natural existence of the environment.

2. Sustainable Urban Development

Under the pretext of accelerating the national development process to catch up with developed countries, the Indonesian state carried out various maneuvers in achieving high economic growth without conducting further studies of environmental changes that occurred. All sectors are directed to accelerate economic growth without taking into account the sustainability of environmental functions. This desire ignores the various negative effects that will arise from environmental damage, especially moral damage and conditions of environmental degradation that are increasingly acute. All of this stems from the assumption that nature is the only source of capital that is easily exploited and promises income and prosperity for the community quickly. We forget that all of this creates new, more complicated, and complex problems, both in the short and long term. At the very least, it will cause the community's relationship with nature to become increasingly stretched.

National development in particular should be more directed at improving people's welfare, as mandated in the opening of the 1945 Constitution of the Republic of Indonesia, namely [11]:

“to protect the entire Indonesian nation and the entire homeland of Indonesia and to promote public welfare, educate the nation's life, and participate in carrying out world order based on independence, eternal peace, and social justice...”.

Protecting is not merely fighting against colonialism, liberalism, and radicalism, but further protecting and preserving the nature contained in this motherland itself. This is following Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states that: “Earth and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people” [12].

In observing urban development which is increasingly forgetting the environment and nature conservation, according to Firmansyah: “it is necessary to have further studies on the extent to which the use of the environment as natural capital is efficient, what are the consequences of environmental degradation, how is the concept of environmental sustainability associated with policies or regulations? to minimize the occurrence of environmental degradation in the context of sustainable development” [13].

The sustainable development goals or Sustainable Development Goals (SDGs) according to the Presidential Regulation of the Republic of Indonesia Number 59 of 2017 concerning the Implementation of the Achievement of Sustainable Development Goals, are: “a plan document that contains strategic policies for the stages in achieving sustainable development goals in 2017 to 2030 by with national development goals” [13].

According to Mohan Munasinghe, identifying sustainable development requires [14]:

- a. Good understanding of the physical, biological and social impacts of human activities.
- b. Better estimation of the economic value of environmental damage which will help to improve the design of policies and projects, and lead to environmentally friendly investment decisions.
- c. Development of policy tools and strengthening of human resources and institutions to implement appropriate strategies and sustainably manage natural resources.

A city is a place for many people as a place to live life, and have activities, and is the center of the struggle to earn a living human life. The city is also a center of creativity and culture that symbolizes social and economic progress. The definition of a city can be viewed from several different perspectives based on the required scientific studies. According to Evianto: “The first approach is based on the morphology of the city and the second is based on an administrative legal/juridical approach. The definition of a city can be approached based on six perspectives, namely: (a) a juridical-administrative approach; (b) morphological physical approach; (c) population size approach; (d) population density approach; (e) a functional approach within the region; (f) socio-economic approach” [15].

Sustainable urban development requires long-term development planning which is a continuous process consisting of decisions or choices of various ways to use existing resources in the area, to achieve certain goals in the future. To create sustainable urban development, there will also be an idea to create a sustainable city. “Sustainable urban development according to United Nations (UN) Habitat is closely related to three complementary dimensions of sustainable development: (1) social development and inclusion, (2) sustainable economic growth, and (3) environmental protection and management” [15]. This means that in the development of the city it has a continuous supply of natural resources by taking into account the carrying capacity, capacity, and sustainability.

In planning, there are several choices in making decisions by using limited resources to achieve future goals. One of the objectives in development planning is related to

Town and Country Planning (Land-use planning, physical planning, urban and regional planning) which is related to land allocation from various functions/activities in the area.

3. Environmental Degradation Due to Sustainable Urban Development.

The development and growth of cities have an important impact on environmental changes globally, especially those originating from growth in production, consumption, and environmental degradation resulting from urban development activities. Poor urban development without careful planning will result in environmental degradation. For that, we need Short Term Planning, Medium Term Planning, and Long Term Planning. Planning according to Law No. RI. 25 of 2004 concerning the National Development Planning System, is: “a process to determine appropriate future actions, through a sequence of choices, taking into account available resources” [16].

In carrying out sustainable urban development, it is necessary to have a Spatial Plan (RTR) that has been made to minimize the occurrence of environmental degradation. According to Ervianto, to realize sustainable urban development, the following things need to be considered [17]:

- a. “Built with care and attention to natural environmental assets, pay attention to the use of resources, minimize the negative impact of activities on nature.
- b. Sustainable cities are at the regional and global level, regardless of whether they are large or small, their responsibilities transcend city boundaries.
- c. Covers a wider area, where the individual is responsible for the city.
- d. Requires that environmental assets and their impacts are more evenly distributed.
- e. A sustainable city is a city of knowledge, a city of togetherness, a city with an international network.
- f. Pay attention to conservation, strengthen and prioritize matters related to nature and the environment.
- g. Have more opportunities to strengthen local, regional and global environmental quality”.

The spatial plan is one of the embodiments of the results of spatial planning, to produce a spatial plan that produces a general spatial plan and a detailed spatial plan, including planning about the living environment. Based on Article 17 of the Republic of Indonesia Law No. 11 of 2020 concerning Work Creation, spatial planning is: “a process to determine the spatial structure and spatial pattern which includes the preparation and determination of the spatial plan”.

In carrying out spatial planning concerning urban development planning, it is necessary to pay attention to:

- a. The physical condition of the territory of the Unitary State of the Republic of Indonesia which is prone to disasters;
- b. The potential of natural resources, human resources, and artificial resources, economic, social, cultural, political, legal, defense and security and environmental conditions as well as science and technology as a unit;
- c. Geostrategy, geopolitics, and geoeconomics.

Urban development activities that do not see spatial planning and do not take sides with the environment will cause environmental degradation which has an impact on ecosystem damage, land, pollution, and environmental damage. Here, urban development activities have contributed to causing environmental degradation in urban areas, such as intensive use of land and land in the watershed, disposal of industrial waste in rivers and agricultural areas, construction of settlements in river bodies, and soil erosion due to agricultural activities, deforestation. Forests, and low public awareness about environmental conservation. All things related to community activities that are not environmentally friendly, such as agricultural activities using urea chemical fertilizer, housing developments that do not pay attention to the city's spatial plan, and others can have an impact on environmental degradation.

The problem of environmental degradation can be illustrated by the large environmental burden on community activities on the environment and community activities that contribute to environmental pollution and damage, followed by low community participation in preserving the environment in controlling pollution and environmental damage. Urban development should not cause environmental degradation, what is the use of development if it causes more damage and negative externalities to the environment, including harming the community and our children and grandchildren in the future? According to Mohan Munasinghe, there are three main concepts of sustainable urban development to avoid environmental degradation, namely: "containing: economic, ecological, and socio-cultural criteria. These three concepts must work synergistically in creating environmentally friendly development or natural models" [18].

Macroeconomic and industrial sector policies have played an important role in creating environmental degradation. Fiscal policies, monetary, and structural regulatory programs aimed at the environment affect environmental degradation. The government and entrepreneurs should find a win-win solution in carrying out policies that lead to the environment and exploitation of natural resources by looking at the ability of the environment to create balance. There should be a social contract between all parties in preserving the environment and the balance of the ecosystem in it, this is rarely done by the government and entrepreneurs before carrying out environmental management activities.

3 Conclusion

From the various descriptions above, we can conclude that sustainable urban development is not synonymous with economic growth alone, but sustainable urban development is a way of improving people's welfare and people's comfort while maintaining good environmental conditions. A sustainable urban development that does not see the city's spatial planning can lead to environmental degradation. Several ways can reduce the occurrence of environmental degradation due to sustainable urban development, namely by paying attention to the spatial plans that have been made, and improving the community's economy, and community culture.

Economic growth needs to be pursued, but with various calculations and a shared commitment to preserving the environment. In this case, entrepreneurs as one of the economic actors who are very influential on development, need to increase awareness in

paying attention to the various impacts that will be caused by the development activities that will be carried out.

The government must firmly provide alternative solutions in the form of efforts to anticipate environmental damage caused by polluters, both from industries and the local community. The provision of strict sanctions against perpetrators of damage and respect for those who continue to preserve the environment is an effort to minimize the occurrence of pollution and environmental damage. Communities whose capacity is to become the object of development must begin to have mutual awareness and commitment, to preserve the environment and the balance of the ecosystems in it. It is the role of the community that determines the success or failure of environmental degradation, so that all components can jointly enjoy environmentally friendly development, and that is the development that all parties want.

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