The Role of Leaders in The Creation of Climate Awareness in The Community For The Realization of Environmentally Friendly and Sustainable Cities

Pieter Sahertian[1], Yuli Ifana Sari[2]

[1]Universitas Ma Chung Malang

[2]Universitas PGRI Kanjuruhan Malang

e-mail: pieter.sahertian@machung.ac.id

Abstract: *Climate change is one of the global challenges affecting the quality of life of communities, especially in large cities. Air pollution, declining water quality, and the impact of increasingly intense natural disasters are issues that need to be addressed immediately. In this context, city leaders have a very important role to play in raising climate awareness among the community in order to realize environmentally friendly and sustainable cities. This paper aims to explore the role of leaders in creating climate awareness and strategies that can be applied to achieve sustainable cities. The method used in this paper is a literature review with a qualitative approach. The author collects and analyzes various sources on leadership theory, climate awareness, and case study examples from cities in Indonesia that have successfully increased climate awareness under strong leadership. The results of the discussion show that city leaders can play an important role through environmentally friendly policies, public campaigns, educational programs, and encouraging community participation. Successful leaders can create sustainable cities through renewable energy policies, clean transportation, and efficient waste management. However, political, social, and economic factors and community support are the main barriers to implementing these programs. Community climate awareness can be achieved by actively engaging the community, designing sustainable policies, and building collaboration between government and the private sector. Visionary and decisive leaders are needed to ensure the success of achieving green and sustainable cities.*

Key Words*: leadership, climate awareness, environmentally friendly cities, sustainability, environmental policy.*

INTRODUCTION

Climate change is an increasingly urgent global challenge. Its impacts include increasing global average temperatures, rising sea levels, and intensifying natural disasters such as floods and droughts. Cities are one of the most vulnerable areas to climate change due to the high level of human activities that produce greenhouse gas (GHG) emissions. A study by Seto (2014) found that more than 70 percent of global GHG emissions come from urban areas, making cities an important arena for implementing climate change mitigation policies. Air pollution is also a major contributor to climate change. Air pollution is the most pressing problem in urban areas and is caused by vehicle emissions, industrial activities, fossil fuel combustion, and other activities. Air pollution has several adverse effects on public health, particularly respiratory and heart disease, and can even cause cancer in the long term. According to WHO, cited by Yadav, Deora, Yadav, (2021), more than 90% of the world's population breathes air that exceeds safe limits, especially in urban areas. Another problem often faced by large cities is the deterioration of water quality. Domestic waste, industrial

waste, and carelessly disposed garbage are major contributors to water pollution in urban areas. According to the United Nations Development Program (UNDP, 2018), water pollution has resulted in more than 2 billion people around the world lacking access to clean water. Declining water quality not only affects the availability of safe drinking water, but also threatens the biodiversity of aquatic ecosystems and damages the balance of the environment. The global climate crisis is one of the greatest challenges facing the world today. The impacts of this climate crisis are already being felt in the form of extreme weather events, natural disasters, rising sea levels, and a decline in the quality of life for urban communities.

Without significant mitigation efforts, cities in the future will be increasingly vulnerable to serious environmental and health threats (Mubarok, 2024). Doddy S. Sukardi, Executive Director of the Indonesian Green Partner Foundation, said there are several factors that make urban areas one of the biggest contributors to the climate crisis. In urban areas, it is still common for people to use private vehicles to carry out their daily activities. Meanwhile, the private vehicles used in general are still dominated by fossil fuel vehicles. In fact, in addition to airplanes, motorcycles and cars that use fossil fuels can cause a fairly large carbon footprint. He said data from the Ministry of Transportation showed that the transportation sector in Indonesia contributed 5% of total emissions. While globally, the transportation sector contributes one-fifth of emissions from the global carbon footprint. Not only that, the Intergovernmental Panel on Climate Change or IPCC report states that 62% of fuel consumption comes from the transportation sector (Mubarok, 2024). He further said, "Imagine, in Jakarta alone, the latest data as of August 2023 shows that motorized vehicles have reached 23.03 million units, not to mention in other major cities". As a result of the high use of motorized vehicles, the total emissions released reached 81.17 million kg CO_2e.

In the effort to create a green and sustainable city, leadership plays a strategic role in building climate awareness in the community. Visionary leaders can act as catalysts to encourage changes in community behavior and the implementation of pro-environmental policies. A study by Jones and Harris (2015) shows that a participatory and community-based leadership approach contributes to the success of environmental programs, as it directly involves the community in the decision-making process. The concept of a sustainable city emphasizes the importance of integrating economic, social, and environmental development. Leaders must therefore ensure that policies are not only focused on short-term economic aspects, but also consider their environmental impact. For example, a study by Bulkeley and Betsill (2013) found that city leaders who applied a comprehensive approach to urban planning, such as increasing green space and adopting low-carbon technologies, were successful in reducing emissions while improving the quality of life for their communities. However, the challenge of building climate awareness is not easy. Many people do not yet have a deep understanding of the impact of climate change on their lives. The role of leaders as change agents is critical. Based on the results of Gifford's study (2011), one of the main obstacles in building environmental awareness is the low level of climate literacy in the community. Therefore, leaders need to prioritize an effective education and communication-based approach to overcome this obstacle. Therefore, leaders at the government and community levels have a responsibility to develop policies, raise public awareness, and

encourage behavioral changes towards a more sustainable direction. Some important roles for leaders in this context are:

- Establish environmentally friendly policies by establishing regulations that support sustainability based on their authority, such as reducing emissions and effectively managing waste. These policies not only direct changes in individual and industrial behavior, but also ensure that the city's development takes place with long-term sustainability in mind.

- Initiate environmental education and awareness programs that target the community on the importance of protecting the environment and the dangers of climate change to raise public awareness. Through campaigns, training and outreach, leaders can help the community understand the environmental issues they face and simple ways they can contribute.

- Foster collaboration between government, the private sector, and the community. Effective leadership must foster cross-sector collaboration to implement environmental policies. In this case, leaders can work with businesses to reduce carbon emissions, create green initiatives, and invite the community to participate directly in activities such as reforestation and waste management.

- Inspire and encourage behavioral change and inspire the community. For example, implementing green policies in government agencies or promoting the use of green transportation can encourage the community to become more aware of the importance of protecting the environment. Good examples set by leaders are often powerful drivers of sustainable behavior change.

Strong leadership and commitment to environmental issues have an impact on mobilizing communities to engage in climate change mitigation and adaptation efforts. A high level of collective awareness is essential so that all elements of society and their leaders can work together to create a greener and more sustainable city.

Problem Formulation

Based on the background presented above, the problem formulation in this paper is as follows:

1. What is the role of leaders in increasing climate awareness in urban communities?
2. What steps can city leaders take to encourage community participation in protecting the environment and reducing the impacts of climate change?
3. What are the factors that support and hinder city leaders in their efforts to create green and sustainable cities?

The issues raised will be the basis for discussion to identify the roles, strategies, and challenges faced by leaders in addressing environmental issues in the city.

Purpose of The Paper

This paper is expected to provide an overview to policy makers because in the study we conducted, we tried to explore the proposed topics with the aim of:

1. Analyzing the role of leaders in increasing community climate awareness and motivating them to behave in an environmentally friendly manner.

2. Exploring strategies and policies that can be implemented by city leaders in promoting sustainability and maintaining environmental sustainability in urban areas.

3. Identify the supporting and inhibiting factors that leaders face in their efforts to address environmental problems and climate change in urban areas.

Benefits of Writing

1. Academically, this writing is expected to add to the literature on the role of leadership in climate change issues and urban sustainability. With this study, it is hoped that academics can obtain references related to effective leadership strategies in promoting climate awareness and action among urban communities.

2. For city leaders, local governments, and policy makers, this writing is expected to provide concrete recommendations regarding policies and programs that can be implemented to increase climate awareness and sustainability in cities. City leaders can use the results of this writing as a guide in designing participatory, innovative, and sustainable environmental policies.

3. For the general public, this research is expected to increase understanding of the importance of the role of leaders in protecting the environment and encouraging community participation in urban sustainability initiatives. By understanding the importance of the role of leadership in environmental issues, the community can be more motivated to actively participate in environmental programs initiated by the government

Literature Review

Climate Awareness and the Role of Leaders in Promoting Environmental Change

Climate awareness refers to an individual's or group's understanding and concern about issues related to climate change and its impact on the environment and human life. This awareness includes an understanding of natural phenomena such as global warming, air pollution, sea level rise and changes in weather patterns caused by human activities, especially in urban areas (UNESCO, 2021). A high level of climate awareness is usually accompanied by a greater concern for environmental sustainability and greener behaviors, such as reducing energy use, recycling, or supporting renewable energy policies (Anderson & Bows, 2011).

According to a study conducted by Lorenzoni, Nicholson-Cole, and Whitmarsh (2007), one of the main factors that drives climate awareness in the community is education and direct involvement in programs that increase their understanding of the impacts of climate change. This study also highlights that people who are aware of the climate crisis tend to be more supportive of pro-environmental policies and are more likely to take action in their daily lives, such as reducing energy consumption or choosing greener modes of transportation. Raising climate awareness is therefore an important step in driving sustainable environmental change. Leaders have a strategic role to play in raising climate awareness and mobilizing people to take real action for the environment. According to Bass and Stogdill (1990), effective leadership is leadership that is able to influence positive change within a group or

community. In the context of environmental issues, climate-conscious leaders can initiate policies, inspire action, and promote a culture of sustainability at the community and public policy levels. For example, environmental leadership often involves concrete actions such as setting standards for clean energy, supporting green initiatives in cities, and promoting green lifestyles (Woo & Kang, 2020). One form of leadership relevant to environmental change is transformational leadership, in which leaders not only provide direction, but also motivate and change people's perspectives on the environment.

Yukl (2013) argues that transformational leaders are able to shape collective consciousness through a strong vision of a sustainable future. Such leaders invite people to recognize the importance of protecting the environment and take real steps, such as participating in greening or waste management programs (Yukl, 2013). Leaders who play an active role in environmental change usually have a strong commitment to sustainability and consistently strive to engage the community in environmentally friendly actions. For example, in a study conducted by Loorbach and Rotmans (2010), it was explained that leaders who are directly involved in the planning and implementation process of sustainability strategies are often successful in creating sustainable transitions or sustainable changes in their cities.

Northouse (2010) defines leadership as "a process by which an individual influences a group of individuals to achieve a common goal". Northouse highlights important concepts in the definition of leadership: 1) Leadership is a process: 2) leadership involves influence; 3) leadership emerges within a group; 4) leadership involves a common goal.

In this context, the role of leaders is not just to make policy, but to act as facilitators, inviting the public, private and civil society sectors to work together to create a greener future for cities. From these different perspectives, it is clear that leaders who are able to drive environmental change are leaders who not only have a clear vision, but are also able to motivate and engage the community in environmental action. High levels of environmental literacy and climate awareness among leaders and the community will contribute to the creation of greener and more sustainable cities (Avolio & Gardner, 2005).

Sustainable and Green Cities

A sustainable city is one that is designed and managed to support the quality of life of people today without compromising the ability of future generations to meet their own needs (World Bank, 2020). This concept involves the integration of economic, social and environmental aspects in urban planning and management. A green city plays an important role by prioritizing strategies to minimize negative environmental impacts through energy efficiency, emissions reduction, and protection of local ecosystems (Bibri & Krogstie, 2020). Overall, sustainable cities aim to strike a balance between development needs and the preservation of natural resources, thereby addressing issues such as climate change, pollution, and environmental degradation. According to the United Nations Environment Programme (UNDP, 2018), green cities focus on approaches that reduce the environmental footprint through the sustainable use of resources. Examples include the use of renewable energy, green public transportation, and green infrastructure that promotes environmental sustainability. Sustainable cities not only create a safe and healthy environment for residents,

but also promote social inclusion by providing equitable access to public services, housing, and jobs.

A number of indicators are used as a guide to assess the sustainability and suitability of a city in an eco-friendly context. Here are some of the most important indicators:

- Air quality and carbon emission reduction, includes the level of air pollution and carbon emissions produced by urban activities, including transportation, industry, and housing. Sustainable cities seek to reduce carbon emissions through renewable energy policies and energy efficiency. According to a study by Zhang (2018), green cities must adopt clean technologies, such as electric vehicles and low-energy-based transportation systems, to reduce overall carbon emissions.

- Energy efficiency and management sustainable cities use energy wisely, often through the use of renewable energy such as solar, wind, and hydropower (UN-Habitat, 2019). Efficient energy use not only reduces dependence on fossil fuels, but also lowers the city's operating costs. Cities that are successful in energy management also tend to have supporting infrastructure, such as green buildings, designed to reduce energy consumption and minimize energy waste.

- Waste management and recycling effective, is an important indicator of urban sustainability, where waste is processed through recycling and composting methods to reduce the amount that ends up in landfills. Bibri & Krogstie (2020) stated that sustainable cities need to develop infrastructure and policies to support recycling and waste reduction at source. Green cities tend to have an integrated waste management system that uses organic waste for composting and facilitates recycling of inorganic waste.

- Green open spaces and nature-based infrastructure, such as city parks, urban forests and ecological corridors, are important components of green cities. In addition to their ecological benefits, green spaces also have a positive impact on people's mental and physical health. According to Beatley (2012), cities with lots of green space not only help regulate temperature and air quality, but also provide recreation for people, thereby improving their quality of life and well-being.

- Sustainable transportation an environmentally friendly, is a key feature of a sustainable city, where public transportation is prioritized and bicycle and pedestrian infrastructure is developed. Zhang (2018) found that cities that prioritize sustainable transportation have been successful in reducing air pollution levels and decreasing reliance on private vehicles. These inclusive, safe, and accessible transportation facilities help reduce traffic congestion and support more efficient population movement.

- Social justice and equal cccess to public facilities is an important part of a sustainable city, where all residents have equal access to facilities such as health, education, housing and public spaces. According to Lefebvre (1995), urban sustainability cannot be achieved without considering the aspect of social justice, which ensures that each individual has an equal opportunity to enjoy the benefits of development.

Theoretically and conceptually, a green and sustainable city is one that strives to integrate sustainability into all aspects of its planning, from energy management and emissions

reduction to social equity. These efforts aim not only to create a healthy environment, but also to improve the quality of life of the community and ensure the sustainability of resources for future generations (UN-Habitat, 2019).

The Role of Leaders in Raising Environmental Awareness

Environmental awareness is one of the most important elements in climate change mitigation and sustainable development. In this context, the role of leaders is very important, both as policy makers and as inspirators who encourage community participation. As an illustration, various cities in Indonesia and around the world have shown how visionary leadership can drive positive change at the local level. The success of cities in Indonesia in raising environmental awareness and concern is the city of Surabaya, which has strong leadership. Under the leadership of Tri Rismaharini, who served as Mayor of Surabaya from 2010 to 2020, Surabaya has achieved various achievements in environmental management and has received national and international recognition. Known for her transformational leadership style, Risma initiated various programs and policies aimed not only at improving the city's environment, but also at encouraging community participation in environmental conservation (Ainun & Utomo, 2012).

One of Risma's main initiatives is the Green and Clean Program, which invites the people of Surabaya to create a clean and green environment around their homes. This program involves various elements of society, from schools to youth organizations to PKK mothers' groups. Within the framework of this program, the community is educated and supported to practice independent waste management, such as recycling and composting, and to build green parks in each RT and RW (Kumalasari, 2015). This program also introduces a reward system for areas that are able to maintain environmental cleanliness and order, which makes the community more motivated to participate. The same is true in Bandung, where the "Bandung Juara" program, initiated by Ridwan Kamil when he was mayor, has succeeded in raising environmental awareness through inclusive and environmentally friendly public space management. Initiatives such as the opening of city parks and the implementation of a community-based waste management system have not only improved environmental quality, but also increased citizen involvement in maintaining the cleanliness of the city (Noverdi, & Aryanto, 2016).

Meanwhile, Semarang is applying the concept of a resilient city to reduce the risk of climate-related disasters such as flooding. Through collaboration with the international community, such as 100 Resilient Cities, local leaders are integrating public education with adaptive infrastructure, such as building polders and increasing drainage capacity (Pemkot Semarang, 2016). Abroad, the city of Curitiba in Brazil is known as one of the pioneers of sustainable urban planning. Jaime Lerner, the former mayor of Curitiba, led a major transformation in public transportation through the development of an energy-efficient Bus Rapid Transit (BRT) system. This effort is supported by a public education program to promote the use of public transportation, which has significantly reduced air pollution in the city (Rosyidie, 2004). Another example is Copenhagen, Denmark, which has set a goal of becoming a carbon-neutral city by 2025. In order to achieve this vision, city leaders are encouraging the

use of bicycles as the primary mode of transportation. In addition, policies such as the implementation of a carbon tax system and the use of renewable energy technologies have become real evidence of how progressive and data-driven policies can bring about significant change (Pristiandaru, 2022).

The success of these cities shows that effective leaders play a role not only in strategic decision-making, but also in building awareness and working with the community. Community-based approaches, policy transparency, and the use of innovative technologies are key to creating green and sustainable cities.

METHOD

This article is researched using a qualitative method that searches for literature from various sources related to the topic discussed to provide a perspective as a result of the study that can be used as a new reference (Susanto et al., 2024). In exploring this topic so that it becomes a writing that has a scientific value that can be accounted for, the writing method will be more focused on collecting secondary data and analyzing literature to identify the role of leaders and their impact on community climate awareness. The steps to implement this method are as follows:

1. Collect literature, namely literature from academic journals, government reports, media articles, and books that discuss climate awareness, leadership, and urban sustainability.
2. Qualitative data analysis, i.e., analyzing the collected literature using content analysis to identify themes and patterns related to the role of leadership in climate issues.
3. Case studies, including, if possible, analysis of case studies from different cities that have successfully implemented green policies to enrich the discussion.
4. Synthesis and inference, i.e. synthesizing the results of the analysis to draw relevant conclusions related to the research objectives.

RESULT AND DISCUSSION

A. The Role of Leaders in Raising Climate Awareness

Leaders play a very important role in promoting climate awareness in the community. Climate awareness, which includes understanding and concern for environmental issues and climate change, often requires the encouragement of visionary leaders to be internalized by the community. Leaders can play an effective role through a variety of approaches, including public campaigns, green policies, educational programs, and increased community participation. Formal leaders directly influence team processes related to mindful organizing, such as creating shared expectations, making meaning, organizing, and managing (Gracia et al., 2020b, Weick and Sutcliffe, 2015). In his introduction at the opening of the Climate Summit (2024), the Mayor of Nice, Christian Estrosi, warned of the efforts and urgent actions needed to save the planet as a result of the continuing global warming. "The house now feels so hot, like it's on fire. This is urgent and requires immediate action to save the planet (Earth)," Estrosi said, quoting Jacques Chirac's message (Rasman, 2024). Etrosi went on to say that city

leaders around the world and regional leaders are making sustainable environmental development a priority, including issues of security and urbanism.

Climate action must be part of every country's plan. Unfortunately, the enormous influence of local governments and communities is often overlooked and underutilized. Provincial governments, district/city governments, even village governments and local communities have shown that they can and have created targets, initiatives, policies and programs to address the challenges of climate change at their respective scales. They are the first to feel the impacts of climate change and often the first to act. Furthermore, climate action requires equitable, effective and inclusive localization. Local leaders are most likely to understand the socio-economic, geographic, historical and cultural contexts of their areas. Therefore, it is critical to empower them to accelerate climate adaptation efforts (Kusuma, 2023).

1. Public Campaign

A public campaign is an effective way for leaders to introduce and reinforce the message about the importance of climate awareness. Through a targeted and intensive campaign, leaders can share information about the impacts of climate change, the importance of reducing carbon emissions, and concrete steps people can take in their daily lives. Some strategies leaders can use in a public campaign include:

(a) Leaders need to ensure that the public campaign they conduct has a strong scientific basis. The information conveyed must be relevant, based on the most recent data, and presented simply so that it can be easily understood by different levels of society. Leaders can partner with environmental experts, scientists, and NGOs to provide data on the local and global impacts of climate change. Use infographics, short videos, and social media to visualize data and make it more interesting. A real example of a successful public campaign is Earth Hour, which is supported by many leaders in different cities around the world, including Indonesia. Such campaigns encourage people to take simple actions, such as turning off the lights for one hour, to remind people of the urgency of saving energy (UNDP, 2020). At the local level, leaders can also organize campaigns through social media, public service announcements, or hold environmental events that involve the wider community.

(b) Leaders can play a role as key communicators in building a positive narrative around climate action. Rather than scaring people with the negative impacts of climate change, inspiring narratives such as green economic opportunities, improved quality of life, or the well-being of future generations are more effective in motivating action. Regional leaders can lead by example, such as using electric vehicles or participating in greening programs, to become role models for the community (No name, 2023).

(c) (Effective public campaigns require the involvement of all parties. Leaders can work with the mass media to disseminate information about climate change, with businesses to develop environmental initiatives such as plastic reduction or recycling programs, and with local communities, religious leaders, and community figures to reinforce campaign messages. For example, the "Plastic-Free Cities" campaign involving city governments, the private sector and the wider community (Aliansi Zero Waste Indonesia, 2023).

(d) (d) Use social media creatively; social media is a very effective tool for reaching a wider audience. Leaders can use platforms such as Instagram, Twitter, and TikTok to communicate climate messages through creative campaigns (Yanti, Lestari, & Fajarwati, 2024). Leaders can launch viral challenges, such as "30 days without plastic," or regularly post informational content. Greta Thunberg, a young activist who used social media to gain global attention, shows that climate campaigns can be effective when they use digital platforms.

(e) Integrate campaigns with policies; public campaigns must be aligned with policies that support real action. Leaders must not only motivate the public through campaigns, but also implement policies that support environmental action, such as subsidies for renewable energy, incentives for electric vehicles, and strict regulations on polluting industries. Such as the study by Kalogiannidis, et al (2024), which highlights the complex relationship between climate change, policy integration and regional development in Greece. This study supports the potential of regions to promote sustainability and innovation while addressing the challenges of climate change, ultimately contributing to a more resilient and prosperous future. In this way, campaign messages are not just discourse, but motivate real change.

(f) Provide education and training; leaders can promote environmental education by integrating public campaigns into school curricula or community training programs. The goal is to create a generation that is more aware of the importance of protecting the earth (Handayani, 2024). Through training programs on household waste management or compost processing at the community level, a conducive environment for sustainable social and natural life is created.

The positive impacts that can be achieved through the active involvement of leaders in public campaigns are increased public awareness, behavioral change, increased support for climate policies, and increased cooperation.

2. Green Policies

Green policies are concrete steps that leaders can take to create structural changes in resource management and energy use. Through policies, leaders can set rules that encourage the use of renewable energy, waste reduction, and the use of cleaner public transportation. For example, city leaders can enact regulations that require new buildings to meet green building standards that are energy efficient and low in emissions. Such policies not only raise public awareness of sustainability, but also encourage greater public support for sustainable environmental initiatives (Herdinta, 2024). In Indonesia, several cities have implemented green policies, such as banning single-use plastic bags in retail stores and markets, which have successfully reduced the amount of plastic waste. We all know that climate change and environmental degradation have become the focus of global attention in recent decades. Research findings by Smith et al. (2017) revealed that human activities, such as burning fossil fuels and deforestation, have caused an increase in global temperatures and chemical changes in the atmosphere. In addition, this study also highlighted that the impacts of climate change include an increase in the frequency and intensity of natural disasters, such as floods, droughts, and more intense storms.

Therefore, the need for comprehensive policies and decisive action by the government is very important in dealing with this environmental crisis. One of the real impacts of environmental degradation is the increasingly severe air pollution in large cities. A study conducted by Zhang, Zhang, Zhao, (2020) shows that air pollution can cause various health problems, including respiratory diseases, heart diseases, and even death. This study emphasizes the importance of reducing greenhouse gas emissions and particulate matter from sources such as industry, transportation, and power plants. Therefore, policies that focus on the use of clean energy sources and environmentally friendly technologies are needed to reduce the negative impacts of air pollution on human health and the environment.

3. Education Program

Environmental education programs are also an important role of leaders in promoting climate awareness. Through formal and informal education, the community can gain deeper knowledge about the importance of environmental protection and climate change. This program can be implemented in schools, colleges, and communities. Environmental leaders often work with educational institutions to incorporate environmental education into the school curriculum so that children and youth have a good understanding of climate from an early age (Gifford, 2011). In some areas, local governments and communities also run training programs or workshops on sustainable agriculture, waste management, and recycling techniques that can be directly applied by the community.

Various activities can be initiated to achieve climate awareness, including:

(1) Integrating climate education into the formal curriculum, where leaders, especially in the government sector, can encourage the integration of environmental education into the school and college curriculum. This education includes an understanding of the causes, impacts and solutions to climate change, as well as the development of relevant skills such as natural resource conservation and renewable energy. In some countries, climate change education is already mandatory, such as in Italy, where school curricula include lessons on sustainability (Samadhi, 2024).

(2) In addition to formal education, leaders can support community education programs that target local communities. These programs can include training on waste management, composting, or reforestation; education on household energy efficiency; and outreach on the dangers of greenhouse gases and the importance of using renewable energy. What WALHI has done in Indonesia through education campaigns targeting rural communities to understand the impacts of deforestation on climate change and provide training in agroforestry (WALHI, 2024).

(3) Leaders can use technology such as apps, social media, and online learning platforms to reach more people at a lower cost. Technology is enabling widespread access to information based on scientific data about climate change. "Modern leaders need to integrate digital approaches in delivering key climate change messages to reach the younger generation" (UNDP, 2024).

(4) Educational programs that involve local communities can be more effective because people feel more involved. Leaders can initiate open dialogues with indigenous groups, farmers, or fishermen to share local knowledge that aligns with modern sustainability

concepts. In Indonesia, regional leaders can work with local communities through local wisdom-based programs to protect customary forests from deforestation, as WALHI has done (WALHI, 2024).

(5) Leaders can play a role in communicating climate messages through media campaigns such as TV, radio and social media, taking advantage of global momentum such as Earth Day or the Climate Summit. The messages conveyed not only raise awareness, but also provide concrete guidance on actions that can be taken by the community. President Jokowi frequently emphasizes the importance of forest management and peatland protection as solutions to climate change in various international forums (Samadhi, 2024).

Through educational programs, leaders can create systemic change in the way communities understand and deal with climate change. The role of education leaders is very strategic because of their ability to reach the younger generation, engage local communities, and use technology and media to communicate sustainability messages. With a holistic approach to education, climate change can be addressed not only through policy, but also through the collective action of a more conscious society.

4. Encourage community participation

Community involvement is a key factor in creating sustainable climate awareness. Leaders who take an active role in environmental issues often involve the community in various environmentally friendly programs. By directly involving the community, leaders can foster a sense of shared responsibility for protecting the environment. Programs such as tree planting, river cleaning, and beach cleaning are examples of initiatives that can increase community involvement in environmental protection efforts (Pertiwi, 2017). In Surabaya, for example, Mayor Tri Rismaharini successfully encouraged community participation through the Green and Clean program, which involved residents in maintaining their surroundings. This participation not only raises awareness, but also increases the sense of ownership of the surrounding environment. The role of leaders in raising climate awareness is therefore diverse, ranging from public policy to sustainable education. Leaders committed to environmental change are able to mobilize the community through strategies that combine real action, collaboration, and increased knowledge. In this way, leaders not only raise awareness, but also lay the foundation for a more responsible and environmentally sustainable society.

B. Leadership Strategies to Achieve Sustainable Cities

To achieve sustainable cities, leaders responsible for the development of their cities must implement various strategies and policies that support sustainability. Sustainable cities focus not only on economic growth, but also on environmental protection and social well-being. Some of the key initiatives that city leaders can take include the development of renewable energy, green transportation, effective waste management, and urban greening

programs. These strategies aim to create a healthier, more efficient, and environmentally friendly urban ecosystem.

1. Renewable Energy Initiatives

The use of renewable energy, such as solar, wind, and biomass, is one of the most important strategies for achieving sustainable cities. City leaders can encourage the use of renewable energy through incentive policies, such as providing subsidies or tax incentives for households and businesses that adopt solar panels or other renewable energy technologies (Perdana, (2023). In addition, city leaders can also work with the private sector to build large-scale renewable energy facilities that can reduce the city's dependence on fossil fuels. In Indonesia, several cities, such as Bali and Bandung, have begun using solar panels to power public areas such as streets and city parks (Safitri, 2024). This move not only reduces long-term operating costs, but also helps reduce carbon emissions. With the right policies in place, this initiative can continue to grow and be supported by the community, making renewable energy an integral part of green urban life.

2. Green Transportation

A green transportation system is a key element in creating a sustainable city. City leaders can encourage the use of efficient and low-emission public transportation, such as electric buses, light rail, and bicycles. In addition to providing infrastructure, leaders can also provide incentives for people to switch from private vehicles to public transport or non-motorized transport (Chatziioannou, et al, 2023). In several cities in Indonesia, leaders such as Jakarta have implemented TransJakarta, a bus rapid transit (BRT) system that helps reduce congestion and air pollution. City leaders can also build dedicated lanes for bicycles and pedestrians to promote cleaner mobility. In addition to reducing carbon emissions, this strategy improves public health by increasing physical activity. Another successful example is the city of Bogor, which has developed bicycle lanes in several key areas of the city to encourage the use of bicycles as an alternative mode of transportation (Diskominfo, 2020).

3. Effective waste management

Effective waste management is an important component of achieving a sustainable city. City leaders can implement waste management programs that include waste reduction, recycling, and waste processing. One strategy that can be implemented is a waste sorting system at the source to facilitate the recycling and processing process (Aprilia, 2021). Programs such as waste-to-energy can also be implemented to convert waste into energy, as has been done in Bali, where several waste processing facilities generate electricity from the waste processing process. In addition, city leaders can implement policies to reduce plastic waste by banning or limiting the use of single-use plastics in retail stores, restaurants, and markets. For example, the city of Banjarmasin has successfully implemented a ban on single-use plastic bags since 2016, followed by other cities in Indonesia. This policy has shown positive results in reducing the amount of plastic waste, while also raising public awareness about the importance of good waste management.

4. Urban greening

Urban greening is a strategy that not only improves the aesthetics of a city, but also contributes to better air quality and urban temperature. City leaders can design and develop

green open spaces such as city parks, urban forests, and green corridors to provide environmental and social benefits. Green spaces act as water catchment areas, temperature regulators, and habitats for local flora and fauna, as well as providing recreational spaces for city residents (Adiyanta, (2019). In Surabaya, for example, Mayor Tri Rismaharini has increased the development of city parks in various areas to support better environmental management. These parks not only add to the beauty of the city, but also provide a place for people to socialize, exercise, and rest. With adequate green open spaces, cities are not only more comfortable to live in, but also better prepared to face the challenges of climate change.

5. Synergy of strategies for urban sustainability

Urban sustainability is a global challenge that requires an integrated approach among multiple stakeholders, including governments, communities, and the private sector. Urban sustainability strategies emphasize resource efficiency, reducing environmental impacts, and strengthening social cohesion to support urban quality of life.

Urban sustainability strategies can start by increasing energy efficiency, such as through district cooling technology or area-based energy management, which helps to significantly reduce carbon emissions (Lundberg, 2022). The city of Jakarta, for example, has integrated a nature-based approach (NBA) through multifunctional green open spaces and more natural water management to reduce the impact of flooding and support the reduction of greenhouse gas emissions.

NBA approaches, such as the integration of green and blue spaces (e.g. parks and rivers) into urban planning, play a critical role in climate change mitigation and post-crisis recovery. This approach helps cities maintain natural ecosystems while increasing community resilience to environmental risks such as floods or droughts (Primiantoro, 2022). The city of Bandung, through programs such as Safe and Sound Cities, is integrating community-based solutions to food waste management using technologies such as the Black Soldier Fly (BSF). These efforts not only reduce waste, but also empower local communities as part of the sustainability solution (No Name, (2023). Elements of a smart city include smart mobility, environmental management, and governance. A combination of these strategies is essential to achieving a truly sustainable city. Visionary and environmentally conscious leaders can implement these strategies through a collaborative approach involving communities, the private sector, and environmental organizations. By creating regulations that support sustainability, strengthening environmental education, and encouraging innovation in green technologies, cities can achieve true sustainability and have a positive impact on future generations.

C. Supporting and Inhibiting Factors in Raising Climate Awareness

A leader's success in increasing community climate awareness is highly dependent on a number of facilitating and inhibiting factors. These factors can come from the political, social, and economic environment, as well as the response and support of the community itself. Understanding these factors will help leaders develop more effective strategies for achieving sustainability goals.

1. Political factors

Strong political support is one of the most important drivers of climate change awareness. When central and local government policies are aligned with sustainability goals, local leaders have a greater chance of effectively implementing environmental programs and policies. For example, national policies that support sustainable development and renewable energy can make it easier for city leaders to obtain budgets and other resources for environmental programs. The existence of central government regulations on environmental protection and waste management can also provide a legal basis for local leaders to raise climate awareness. Political commitment can drive climate awareness through the ratification of policies that support energy transition and carbon emission reduction. For example, Indonesia has committed to achieving net zero emissions by 2060 with the support of Presidential Regulation No. 112/2022 on the Acceleration of New and Renewable Energy (WRI Indonesia, 2023).

Political leadership can play an important role in attracting climate finance investments. For example, in international forums such as COP27, developing countries receive support from global finance for climate change mitigation and adaptation (UNEP Report, 2022). Policy can create a space for collaboration between civil society, the private sector and the international community to promote climate awareness. Programs such as Cities4Forests in Jakarta, for example, are the result of collaboration between local governments and international institutions (WRI Indonesia, 2023). Political instability often slows the implementation of climate policies. Conflicts of interest, such as dependence on the fossil fuel industry, are also major obstacles. A clear example is coal mining policy, which sometimes conflicts with green energy commitments (Greenpeace Indonesia).

The lack of visionary political leadership is often an obstacle to raising climate awareness. Focusing on short-term political gains, such as delaying climate policy implementation for economic interests, undermines sustainability efforts. Opaque policies hinder the implementation of sustainability programs. For example, lack of clarity in the distribution of climate funds or failure to involve communities in policy planning can reduce the effectiveness of programs (WRI Indonesia, 2023). Political factors can act as drivers when there is strong leadership, proactive policies, and international cooperation. Conversely, politics can be a barrier due to conflicts of interest, instability, or lack of long-term vision. The solution offered is inclusive and transparent political synergy to ensure that climate awareness is a priority on the global political agenda. Climate change is a global challenge that knows no borders. It requires innovative and cross-sectoral policy solutions to ensure a sustainable future (UNFCCC, 2023).

2. Social factors

Community awareness and understanding of environmental issues are also supporting factors in the success of climate change awareness programs. The higher the level of community education and understanding of the importance of environmental sustainability, the easier it is for leaders to gain support for implementing climate change programs. In several large cities, such as Jakarta and Surabaya, people are becoming increasingly aware of the importance of protecting the environment, especially as the effects of climate change, such as flooding and severe air pollution, become more apparent. This public awareness can

be a strong driver for leaders to continue sustainability initiatives. On the other hand, if the level of environmental awareness in the community is still low, it will be quite a challenge for leaders. A culture that is less concerned about the environment or environmentally unfriendly habits, such as littering, are social challenges that hinder the implementation of climate awareness programs. In some areas, leaders may find it difficult to change long-standing community habits, especially if there is a lack of adequate environmental education (Hue & Antriyandarti, 2024).

3. Economic factors

According to Adhiem (2023), the availability of an adequate budget is one of the most important supporting factors for the success of a climate awareness program. Cities with sufficient environmental budgets allow leaders to implement sustainable programs such as urban greening, waste management, or renewable energy development. In addition, the private sector can be an important supporter through collaboration and investment in sustainable projects. For example, working with the private sector to develop green infrastructure can accelerate the achievement of sustainability goals. However, budget and resource constraints are often major obstacles for executives in implementing environmental programs. Leaders in regions with limited budgets may struggle to provide the facilities or programs needed to develop climate awareness. In addition, economic priorities that tend to favor industrial development or environmentally unfriendly investments can hinder the achievement of sustainability. Some leaders may face a dilemma between increasing economic growth and protecting the environment, especially when the pressure to generate economic growth is high.

4. Community Support

Community support is an important aspect that can drive the success of climate change awareness programs. Communities that support and are involved in various environmental programs will strengthen the implementation of policies made by leaders. Active community participation in greening activities, waste management, and carbon emission reduction shows that they share the same understanding of the importance of sustainability. For example, in cities that have successfully implemented community-based waste management, such as Surabaya, the success of environmental programs is largely determined by the active involvement of the community. However, if the community is less supportive or even rejects the program designed by the leader, the goal of sustainability will be difficult to achieve. This obstacle can arise if the program designed does not involve the community from the beginning, or if the community feels that the policy is irrelevant or burdensome to them. In some cases, the community may be reluctant to participate because they feel they will not directly benefit from the program or because they do not understand the importance of behavior change for sustainability. This low level of participation indicates that leaders need to find ways to build a sense of community ownership of existing environmental programs (Poetradewa, Wibowo, & Widiyanto, 2023).

Based on the various supports and barriers that can occur in different efforts, the success of a leader in increasing climate awareness is highly dependent on supporting and inhibiting factors that come from political, social, economic, and community support aspects.

Under ideal conditions, political support, high social awareness, adequate budgets, and strong community support can facilitate the implementation of climate change awareness programs. Conversely, political obstacles, social and economic constraints, and community resistance will make it difficult for leaders to achieve sustainability goals. Leaders who understand these factors will be better able to develop appropriate strategies to overcome challenges and maximize the potential of supporters for the success of climate change awareness programs.

CONCLUSION

Based on the description that has been discussed, it can be concluded that the role of leaders is very crucial in increasing the climate awareness of the community in order to realize an environmentally friendly and sustainable city. City leaders have the responsibility to design and implement policies that support environmental sustainability, both through renewable energy initiatives, green transportation management, efficient waste management, and city greening programs. All of these policies require support from various parties, including government, the community, the private sector, and non-governmental organizations. The role of leaders in raising climate awareness involves several strategies, such as public campaigns, the formation of environmentally friendly policies, educational programs, and encouraging community participation in sustainability efforts. Leaders who are successful in raising climate awareness will involve the community in various aspects and encourage them to play an active role in the change towards a greener and more sustainable city.

However, while there are many supporting factors, there are also a number of challenges that hinder leaders' success in achieving this goal, such as political, social, and economic constraints, as well as lack of community support. Political constraints, such as political instability, and economic challenges, such as budget constraints, are often the most significant barriers. In addition, lack of public understanding and resistance to change can also slow the achievement of sustainability goals. From all of these discussions, it can be concluded that the success of leaders in raising climate awareness is highly dependent on policy alignment, political and social support, and the ability to actively engage the community in any sustainability initiative that is undertaken.

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