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The Church's Ethical Responsibilities towards *Net-Zero Carbon Emissions* Objectives

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ABSTRACT

The overuse of fossil fuels and growing industrialisation throughout the world have caused greenhouse gases to be released, raising the global temperature and posing global environmental problems. Therefore, achieving net-zero carbon emissions is imperative. Net-zero carbon emissions can be attained by balancing the entire amount of carbon dioxide or greenhouse gas emissions over a period of time and making environmentally sustainable initiatives. For environmental sustainability to be successful, it must have a means of translating into environmentally friendly attitudes and actions of humans towards the environment. The Christian faith teaches that the earth is the Lord's and that humans have moral responsibility as "stewards." Thus, Christians and the Church corporately have a basic role in achieving net-zero carbon emissions. This paper presents a systematic discussion using the Indonesian Church as a case study to look at the moral responsibilities of the corporate church in attaining net-zero carbon emissions. This work

employs the research method of "content analysis" to examine both the primary and secondary existing literature on the research topic. This essay first identifies the theological role of the church in addressing environmental issues, which implies understanding the stewardship mandate that God has placed on humans to care for the earth. This paper also discussed the educational role of the corporate church in educating its adherents. Lastly, from the practical aspect, this paper discussed how and why the Indonesian church should support the government's programmes (such as the Green Village program) to help overcome the environmental crisis.

Keywords: Church; cultural mandate; environment; holistic services; Net-Zero carbon emissions.

INTRODUCTION

The use of fossil fuels (especially petroleum, natural gas, and coal) in various fields of industry, power generation, and transportation in the world today produces exhaust gases (mainly CO₂, CH₄, or methane, N₂O), which damage the ozone layer of the Earth's atmosphere. These exhaust gases are called greenhouse gases (GHG). This GHG then triggers an increase in geothermal heat, where the earth's temperature is getting hotter. This has been going on for a long time, causing environmental damage as well as damaging the ecosystems of all living things (including humans). The increase in the earth's temperature is now known as global warming (An *et al.*, 2018). This global warming then causes an even bigger problem, namely the occurrence of climate change. Research by environmental experts shows that the temperature on the planet Earth is expected to increase by 2°C in the next two decades due to global warming. However, research indicates that if emissions (exhaust gases) are mostly replaced by greenhouse gases, this temperature rise can be reduced to 0.5 °C. This means that we need to stop making carbon-containing gases by burning fossil fuels (Frolicher & Paynter, 2015).

In addressing the climate change problem mentioned above, the United Nations (UN) has started efforts to address and control climate change by holding an annual conference between countries known as the COP (*Conference of the Parties to the UNFCCC*) since 1995. The United Nations Framework Convention on Climate Change (UNFCCC) is an international organisation set up by the United Nations to help countries around the world work together to deal with climate change. The UNFCCC programme adopted the Kyoto Protocol of 1997 (legalized in 2005) and the 2015 Paris Agreement, which entered into force in 2016 (Kuyper *et al.*, 2018). The latest meeting of the *COP26 Summit*, which took place in November 2021, was attended by 120 countries, including countries that are members of the G20. This event resulted in a joint commitment to strive to achieve net-zero carbon emissions by 2050. Each country agreed to contribute together to prevent an increase in carbon emissions in their respective countries through "Nationally Determined Contributions" (NDCs).

The goal of the NDCs is for each nation to be monitored every five years until 2030 (Ojo & Theodore, 2021), in exchange for the geothermal COP26 goal of 1.5°C by 2030 (Montek & Patel, 2021). The Church needs to know about the global environmental crisis that the world is currently experiencing, especially regarding the joint efforts of the international community to achieve net-zero emission reductions (net-zero emissions). The church must act to preserve life on this earth from carbon dioxide pollution that destroys it. Unfortunately, the church, especially the evangelicals, both the laity and the

theologians, pays little attention to social responsibility and mainly focuses on spiritual service that prioritises individual salvation (Wijaya, 2019). Church services should not only be limited to serving humans, but all creatures created by God, including environmental issues. But the church's current concern for environmental damage is very concerning (Telaumbanua, 2020). Recent research from the BRC (Numbers Research Center) representing groups of Evangelical churches shows that churches have not paid enough attention to social services (Wulandari, 2022). This environmental crisis must be the concern and responsibility of the church.

The purpose of this article is to explain how the church, as a member of the global community, should have moral obligations to society and the Indonesian government in order to contribute to the Nationally Determined Contributions (NDCs) and assist in repairing the damage caused by climate change due to excessive carbon gas emissions.

METHOD

The article uses the "content analysis" method by analysing existing literature in the field of Net-Zero Carbon Emissions *Zero Carbon Emissions*, Global Warming, Climate Change, Environmental Damage, and the Church's Role in Facing the Environmental Crisis. The resources used were from various research and scientific articles published online and offline. The discussion is then carried out by descriptively presenting the role of the church in supporting the reduction of the earth's temperature through concrete efforts to reduce the emission of carbon dioxide that pollutes the air and causes geothermal energy.

RESULTS AND DISCUSSION

The church's ethical responsibility in responding to and taking an active role in preventing and reducing environmental crises can be met by the church being aware of its role in congregational education, environmental theology, and living practise on environmental crisis issues.

The Theological Role of the Church in Responding to Environmental Issues

The church is part of the global community that should participate in giving ethical attitudes, concerns, and responsibilities in understanding global problems that occur today. One of these global problems is the issue of climate change due to global warming. Therefore, it is hoped that the church will not turn a blind eye and be apathetic to environmental issues (Tampubolon, 2020). The theological role of the church in addressing environmental issues, especially climate change, is to understand the mandate that God has placed on humans to care for the earth (Cultural Mandate), and the church is called to serve its mission holistically as follows:

Understanding the Cultural Mandate

Since the beginning of creation, humans have been given the task by God to preserve the habitat of the environment in which they live and manage natural resources in order to continue their descendants on this earth. This task is a mandate that God has placed on man's shoulders and must be carried out as a form of his responsibility to God, the Creator (Genesis 1:27-28; 2:1-25). Biblical scholars call this task mandated by God to humans the Cultural Mandate. This mandate was echoed with great appreciation and worship by the psalmist and prophets in the Old Testament, revealing that the heavens and the earth and all that is in them reflect the glory and omnipotence of God, and that humans are

empowered to manage nature with a fear of God (Psalm 8; Isaiah 6:3; 37: 16; Jeremiah 10:16; 31: 35; Amos 4:13).

Likewise, in the New Testament, Jesus alludes to the creation of cultural identity, precisely human nature, as male and female, referring to the *Cultural Mandate*, where one part of human nature is the family institution as a means of childbearing, and its existence must be preserved and must not be corrupted by human sin (Matthew 19:4-6). Nicholas Thomas Wright concluded that when discussing “*nature*” it cannot be separated from the person of Jesus, who is part of *the world of nature* (Kristanto *et al.*, 2022). Likewise, the Apostle Paul comments on the way God’s people dress in the city of Corinth, which teaches that nature reveals the cultural identity of men who are inappropriate if they have long hair because they are not in accordance with the order of God’s creation (1 Corinthians 11:15). Thus, it can be ascertained that before man fell into sin and was given the mandate to preach the Gospel by Christ, humans had been assigned by God to glorify Him through the Cultural Mandate, Genesis 1:26-28 (Kamuri, 2020).

Furthermore, one well-known Protestant reformer, John Calvin, also spoke about the responsibility of believers to the environment. According to Calvin, it is an ecological act of the church to preserve nature, which is God’s blessing for human welfare, as a form of implementation of the Cultural Mandate (Cahyono, 2021). There is another modern theologian, Alister Edgar McGrath, who raised the concept of *nature* as part of revelation so that it became an effort to make theology friendlier to the environment. Before Edgar, the discussion of the concept of nature was often separated from revelation. *McGrath’s* Natural Theology awakens the church to embrace and make peace with nature. As a theological study, it is integrated with revelation and adaptive to scientific progress and, in return, is more holistic (Kristanto *et al.*, 2022; Nassa, 2020).

The ethical responsibility of caring for and maintaining the natural environment created by God is part of the cultural mandate assigned by God to all humans living on earth as an integral part of the lives of every human being. If God still preserves his created nature, then the church, as human beings in this world, should do the same thing in an effort to reflect God’s image. Therefore, the church, as part of humanity, cannot escape the responsibility of preserving the natural environment created by God (Setiawan *et al.*, 2021).

Understanding Holistic Service

To maximise the church’s ethical functions and responsibilities in responding to the environmental crisis, the church needs to have a holistic service paradigm. This holistic service is an effort that aims to bring prosperity to humans in the form of restoring life to fully human spiritually, mentally, and socially. The church should be present and behave with a holistic paradigm by carrying out services that answer all aspects of human life, not only bringing prosperity in the spiritual aspect, where humans are saved from God’s wrath through preaching the gospel, but also mentally and socially restored. There, a person who has believed in the gospel of Christ is restored in spirit to continue their struggle in the midst of this world. Therefore, the Bible must be understood not only to answer needs and solve spiritual problems, but also to answer all the problems of human life (Tembay & Eliman, 2020). This includes taking part and participating in helping victims of natural disasters (Siahaya *et al.*, 2020), committing to building houses to Net-Zero Carbon performance globally (Aryai & Goldsworthy, 2022; Jankovic *et al.*, 2021; Pomponi *et al.*, 2021); developing zero carbon supply chains in industry and economic

activities (Nihayah *et al.*, 2022; Piontek *et al.*, 2021); and tourism (Chuenwong *et al.*, 2022).

Latumahina (2013) explained that the world community is currently facing three major problems with the main problem being environmental degradation, namely environmental pollution, and Global Warming. He states the other two world problems are social disintegration and poverty problems. For this reason, the church is called to carry out the task of Christ's messiah-ship, which is to present human welfare (Luke 4:18-19). This should be the foundation of a *holistic ministry*. This holistic ministry paradigm should be properly understood by the church so that it can become a witness of Christ and an effective agent of world transformation. The church should not only take care of its internal problems, but it should also speak out and provide real support and solutions in the social, economic, and environmental fields.

The Educational Role of Facing the Environmental Crisis

The Church Understands Net-Zero Carbon Emissions

Net-Zero Carbon Emissions is the vision of countries in the world who want to fight together to reduce the earth's temperature from global warming due to air pollution that occurs continuously throughout the world. Industrial activities in factories that still use fossil fuels such as coal, natural gas, and petroleum (oil and gas) contribute a lot of exhaust gases or waste that cause the earth to become warmer. This is in addition to the fumes of motorised vehicles that use diesel fuel, gasoline, and other fuels, such as those derived from petroleum. Exhaust gases from industrial activities in factories and motor vehicles above are in the form of CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, etc. These gases are known as greenhouse gases (GHG), the dominant ones being CO₂, CH₄, and N₂O. As a result of industrial activities and the use of various means of transportation that contribute a lot of GHG, the earth becomes warmer—the Greenhouse Effect.

Additional GHG also damages the ozone (O₃) layer. It should be understood that the ozone layer actually protects the earth from direct sunlight. When the Ozone layer is damaged by these GHGs, what happens is that the sunlight that was previously filtered by the Ozone layer to prevent excessive geothermal heat now hits the earth directly. This condition causes a significant increase in the earth's temperature, which eventually leads to changes in the earth's climate, making some parts of the earth increasingly uninhabitable and causing the polar ice caps to melt. Environmentalists refer to this phenomenon as "climate change."

Developed industrial countries such as the United States, China, Russia, Japan, Britain, and Canada, including Indonesia (which is rife with forest fires), have contributed greatly to contributing a lot of greenhouse gases, plus the use of CFC (Freon) gas in various household industries and electronics, such as gases used in air conditioners, rubber, foam plastics, booster gases in aerosol packaging, and freezers such as refrigerators (Hamaduna, 2021). With the increasingly polluted air on earth, it is not surprising that *the Intergovernmental Panel on Climate Change (IPCC)*—an agency of cooperation between the United Nations and the *World Meteorological Organization*—*predicts* that the earth's temperature will rise by 2°C every decade for the next two decades (Suhardi & Purwanto, 2015). This has then led to a shared vision and commitment from various countries in the world to work hand-in-hand to reduce air

pollution from carbon emissions to zero, or *Net-Zero Carbon Emissions*, by at least by 2050.



Figure 1: Efforts to Achieve Net -Zero Carbon Emissions

The Church Realizes Damage to the Natural Environment

The Church in England has started to launch a vision to become a church that is a net-zero carbon emitter by 2030 (Humphreys, 2021). This step needs to be followed by churches around the world, including churches in Indonesia. Taking into account the Creation Mandate, it is up to people to take care of the order of God's creation that they have exploited and damaged.

The church needs to take concrete steps to start educating congregations through seminars on the environmental crisis and sermons on reforestation efforts. So far, according to Togardo Siburian, churches have generally stayed silent in teaching about environmental issues, whereas the role of the church should be to lead the way as stewards of nature (Siburian, 2010). Marthinus Ngabalin (2020) agrees with Siburian's point of view, especially in evangelical circles where church sermons seem to focus more on salvation and less on social and environmental problems.

Ecumenical groups are a little more responsive and adaptive to social problems related to environmental issues. The PGI (Communion of Churches in Indonesia) has begun to pay attention to the problem of environmental damage that is getting worse in Indonesia at the 12th General Assembly held by PGI on adaptive measures to social problems related to environmental issues. The PGI (Communion of Churches in Indonesia) has begun to pay attention to the problem of environmental damage that is getting worse in Indonesia. In the 12th General Assembly held by PGI on October 21–30, 1994 in Jayapura, Indonesian churches were called on to proclaim the gospel, namely the good news to all creatures (Mark 16:15), including taking part in paying attention to environmental issues. Until now, PGI is still trying to motivate all church members who are members of this forum to care about the environmental crisis and not stand by as spectators but play an active role in helping the community and government overcome the environmental crisis.

Therefore, in line with the PGI mandate above, church leaders both at the synod level and at the local church level need to educate every member of the congregation to be aware of global warming and environmental pollution that is happening in Indonesia. This can be done by giving the congregation the tools and information they need to take care of the environment and help stop natural disasters in their area (Telaumbanua, 2020).

The Church's Practical Role Supports Achieving Net-Zero Carbon Emissions

The Church Supports the Government's Program to Overcome the Environmental Crisis.

In 2007, the Indonesian government launched the Green Village program. This programme is primarily aimed at people who still live in slums scattered in various cities throughout Indonesia. The goal is to create environmental conditions that are cleaner, more comfortable, and healthier for those who live there. It also hopes to protect the environment from the threat of water and air pollution, environmental damage, and to support sustainable development (Puspita & Dewi, 2013). The Green Village programme launched by the government includes how to manage waste from households, maintain cleanliness in the living environment, create open green spaces, and, of course, improve the quality of sanitation for residents in slums. In principle, the Green Village programme helps to preserve the function of the environment where citizens live. This programme

needs to get moral support and real action from all elements of the community, which in turn will reduce the impact of greenhouse gases.

The church, as part of Indonesian society, should not stand idly by and turn a blind eye to the cleanliness of the environment. The first concrete step that the church can take is to support the Green Village programme that has been proclaimed by the government. This includes supporting community reforestation programmes created by local governments to improve the cleanliness of cities and regions where residents live. This support can look like motivating church members to participate in implementing government programmes to preserve the environment.

In addition to the above, to implement environmental awareness among members of the congregation, the church can involve members of the congregation in collaboration with non-governmental organisations (NGOs) who are actively involved in the movement to preserve the natural environment, such as environmental activists. It is even possible for the church to collaborate with followers of other religions to be actively involved in cleaning activities and preventing environmental crises that occur in the community. Thus, the church can help its members learn how to become more environmentally conscious (Yuono, 2019).

Other concrete actions that can be taken by the church together with community members are improving village facilities and infrastructure by providing trash cans and garbage carts for residents in need, cleaning roads in villages, making numbering for houses for residents' houses and the manufacture of signboards for entrances or alleys where residents live. In addition, churches can be actively involved in educating community members on how to dispose of and manage waste so that it is environmentally friendly. Churches can participate in repairing village infrastructure by repairing footpaths, providing health centres and security posts, as well as repairing water sewers in villages where churches are located. The DKI church in Jakarta is already helping slum settlements (Eni, 2018). Likewise, church members can collaborate with members of the community to do community service together to clean up the environment where they live. They could also participate in groups such as the women's empowerment programme or the PKK Karang Taruna program, which make a positive contribution to the cleanliness and comfort of their environments.

On a broader scale, churches can also encourage members of their congregations to take socially responsible and ethical actions by working with environmental NGOs to combat illegal logging and excessive exploitation of natural resources. In this context, the church needs to cooperate with various elements in society, both educational institutions and the business world, in order to prevent global warming caused by carbon gas emissions (Anjaya *et al.*, 2021). The problem of environmental pollution in forests, water, or air usually involves economic, social, and political aspects. Various church organisations such as PGI, PGLII, PERSETIA, and PASTI need to work with the government, NGOs, and other service institutions engaged in the environment to make various concrete efforts. Churches should encourage church members to take various approaches with community members to find solutions to overcome the crisis in the natural environment in Indonesia. For example, churches can learn from the local community, which often has the potential to be used to protect the environment and natural resources (Pasang, 2011).

All the reforestation and nature conservation efforts that have been mentioned above lead to one goal: caring for God's earth. Steps towards increasing sources of clean

oxygen gas in the air in the form of green open areas, caring for trees, processing healthy waste to avoid air pollution, and maintaining the function of forests as lungs are all steps in the right direction. All of these efforts will automatically reduce excessive carbon dioxide emissions in this country. Of course, all of these efforts can only be successful if church groups, the government, NGOs, and other related parts of society work together.

Applying a Green Lifestyle

Excessive carbon emissions pollute the air, water, and soil, causing damage to nature and increasing geothermal energy. As mentioned earlier, exhaust fumes from factories, motorised vehicles, power plants, forest fires, burning waste (especially plastic waste), and both industrial and household activities are the main causes of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (NO₂). This is very dangerous for human health and pollutes the soil, water, and air, which causes global warming. Some types of plastic take 100 years to be decomposed by the soil! For this reason, it is necessary for the awareness of the parties concerned above, both industry players and the public, to change the paradigm and lifestyle to one that is more environmentally friendly. By using the term “green lifestyle”, local churches can be connected to a larger global goal. (Istiadji, 2011) Another great way to connect projects across the archipelago of Indonesia and across the world is through awareness campaigns (Utomo, 2017). In this way, church leaders need to be aware of how to teach their congregations to use the Green Lifestyle as the values of a Christian life in their own lives, with their families, at work, and in ministry in the church and the wider community (Wenas *et al.*, 2021).

Figure 2: contains various habits of life that need to be developed to develop a *Green Life Style* as follows:

GREEN HABITS	GREEN LIFE STYLE
- Energy saving	- Turn off electrical equipment when not in use - Reduce the use of LPG (using an electric stove) - Use alternative power sources (solar panels) - Reduce the use of air conditioning - Reduce the use of cooking oil (palm)
- Prevent Pollution (soil, water, air)	- Use motorbikes and electric cars - Don't burn trash- especially plastic waste - Separating organic and non-organic waste - Recycle trash - Reduce paper usage - Avoid piling up trash - Ferment waste that produces eco-enzymes(Rochyani <i>et al.</i> , 2020)
- Reducing Plastic Usage	- Use biodegradable plastic / recycled plastic from organic materials (Kamsiati <i>et al.</i> , 2017, p. 67).

		<ul style="list-style-type: none"> - Use reusable cloth bags when shopping at the mall/supermarket - Reduce drinking water from plastic bottles - Reduce consumption of packaged foods
- Greening the House		<ul style="list-style-type: none"> - Plant a shade tree on the front/back porch) - Plant ornamental plants - Plant fruit trees - Provide a green open area - Educate family members with <i>Green Life Style</i>
- Supporting Activities	Green	<ul style="list-style-type: none"> - Do Community Service - Clean waterways in your neighborhood - Implement the Green Village Program - Support the policy of rejecting <i>Illegal Logging</i> - Support the activities of government NDCs
- Green *business/industry players	Paradigm	<ul style="list-style-type: none"> - Accommodate the <i>People-Planet-Profit mindset*</i> - Process environmentally friendly factory waste (avoiding water, soil, air pollution)* - Apply the <i>Green Economy protocol *</i> to business - Use building materials that support carbon emission reduction (Robati <i>et al.</i>, 2019)

CONCLUSION

The role of the church in supporting the achievement of net-zero carbon emissions must be an integrated effort in the theological, educative, and practical orders. It entails church leaders, clergy, every member of the congregation, government officials, community members and leaders all working together to prevent the natural environmental crisis that has resulted in the natural environmental crisis. In the theological order, the church plays a role in understanding the Cultural Mandate and Holistic Ministry. In an educational setting, churches are educated to understand net-zero carbon emissions and to be aware of the damage to the natural environment. And in a practical setting, churches should be invited to participate in supporting government programmes to overcome environmental crises and implement a green lifestyle. Humans must work together to prevent damage to the earth due to pollution from carbon emissions in the air, soil, and water.

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