



Green Broadcasting as an Environmental Media Pillar in Indonesia's Climate Crisis Era

Ahmad Salman Farid¹, Musawer Hakimi²



*Korespondensi :

Email :
ahmadsalmanfarid@stain-madina.ac.id

Afiliasi Penulis :

¹Sekolah Tinggi Agama Islam
Negeri Mandailing Natal,
Natal, Indonesia

²Samangan University,
Afghanistan

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Abstrak

Green Broadcasting telah muncul sebagai praktik penting dalam mendorong keberlanjutan lingkungan melalui konten media. Namun, di Indonesia, penerapan praktik penyiaran hijau masih berjalan lambat dan menghadapi berbagai tantangan, khususnya di kalangan lembaga penyiaran berskala kecil. Penelitian ini bertujuan untuk mengkaji kondisi terkini Penyiaran Hijau di Indonesia serta dampaknya terhadap kesadaran lingkungan masyarakat. Penelitian ini menggunakan pendekatan *mixed-methods*, yang terdiri atas wawancara dengan para profesional media, analisis konten program – program bertema lingkungan, dan survei terhadap audiens. Penelitian dilakukan pada lembaga penyiaran besar maupun kecil, termasuk Green Radio 96.7 FM Pekanbaru, RCTI, dan Trans7. Hasil penelitian menunjukkan bahwa penyiaran hijau di Indonesia masih berada pada tahap awal, dengan variasi yang signifikan antar stasiun. Lembaga penyiaran besar menunjukkan kemajuan yang terbatas, sedangkan stasiun kecil seperti Green Radio lebih proaktif dalam menyelaraskan operasional mereka dengan prinsip keberlanjutan. Penelitian ini juga menemukan bahwa penyiaran hijau memberikan dampak positif terhadap peningkatan kesadaran lingkungan masyarakat, khususnya di wilayah pedesaan. Selain itu, penelitian menyoroti sejumlah hambatan dalam penerapan praktik penyiaran hijau, seperti tingginya biaya awal, keterbatasan teknis, dan resistensi terhadap perubahan. Meskipun berbagai tantangan tersebut masih ada, penyiaran hijau memiliki potensi berkembang, terutama jika kebijakan serta insentif pemerintah mampu mendukung transisi menuju praktik media yang lebih ramah lingkungan.

Green Broadcasting has emerged as an important practice in promoting environmental sustainability through media content. In Indonesia, however, the adoption of green practices in broadcasting has been slow and faces several challenges, especially among smaller media outlets. This study aims to examine the current state of Green Broadcasting in Indonesia and its impact on public environmental awareness. A *mixed-methods* approach was employed, consisting of interviews with media professionals, content analysis of environmental programming, and surveys of audience members. The research was conducted across both large and small media stations, including Green Radio 96.7 FM Pekanbaru, RCTI, and Trans7. The study found that Green Broadcasting in Indonesia is still in its nascent stages, with significant variations across stations. Larger broadcasters have made limited progress, while smaller stations like Green Radio have been more proactive in aligning their operations with sustainability. The research also found that Green Broadcasting had a positive impact on public environmental awareness, especially in rural areas. The research highlights several barriers to adopting Green Broadcasting practices, including high initial costs, technical limitations, and resistance to change. Despite these challenges, there is potential for growth, particularly if government policies and incentives support the transition to greener media practices.



PENDAHULUAN

The climate crisis, which is increasingly escalating, has become a pressing global issue requiring more attention across various sectors, including the media sector (Boswell et al., 2023; Khan et al., 2023; Knops & Vrydagh, 2023). In addressing climate change, the media plays a significant role, not only in educating the public but also in driving collective action for environmental sustainability. Broadcasting media, both radio and television, possess the capacity to influence public opinion on a large scale. This global phenomenon shows that the media can play a role in disseminating information about environmental sustainability and raising public awareness about the importance of better environmental management. Green Broadcasting, referring to broadcasting practices that prioritize environmental issues, has become a major concern in the era of the climate crisis (Al Haddad & Bayoumi, 2014; Salem & Reguiga, 2013; Zharikova, 2004).

Radio and television stations in Indonesia have also begun to embrace this practice, with some initiatives that focus on environmental content. For instance, Green Radio 96.7 FM Pekanbaru, established in 2014, is a radio station dedicated to campaigning for environmental issues and sustainability in Indonesia (Lubis et al., 2018). This phenomenon shows that there is a growing awareness among broadcasters to integrate sustainability into their content, which should serve as a model for other media outlets to follow. Based on existing literature, it is clear that the media industry is becoming more aware of the importance of adopting environmentally friendly practices. Wang et al. (2011) explains that many broadcasting companies have adopted green technologies and sustainable practices in content production and distribution, including using energy – efficient equipment, reducing carbon footprints, and utilizing renewable energy sources in their broadcasting facilities. Additionally, research by Briandana et al. (2020) reveals that only a small number of television stations in Indonesia give special attention to reporting environmental issues, with more room needed to address climate change and sustainability challenges.

On the other hand, the Indonesian government's policy through the Proklim (Climate Village) program also supports the role of media in disseminating environmental information, although media coverage is still limited (Rosemary, 2023). Given the fact that the media industry has immense potential to support positive change, the role of Green Broadcasting in advocating for sustainability has become increasingly relevant.

This research is of significant importance both globally and locally. As the climate crisis deepens, it is essential to explore how broadcasting media can become a key pillar in disseminating information about sustainability and climate change. The practice of Green Broadcasting is not only relevant for raising public awareness but also for creating positive behavioral changes toward the environment. According to Cai et al. (2024), adopting green practices in broadcasting media can influence the entire industry, setting an example for other media outlets to follow in adopting environmentally friendly practices in content production and distribution.

The concept of Green Broadcasting has gained increasing attention in the context of global environmental challenges, particularly climate change. As the world faces escalating environmental crises, the media, especially broadcasting, plays a crucial role in disseminating information, shaping public opinion, and influencing behaviors that support sustainability. This literature review explores the existing body of knowledge on Green Broadcasting, examining its relevance as an environmental media pillar in the era of the climate crisis, with a focus on its implementation, challenges, and impact.

Media, including broadcasting, has long been recognized as a powerful tool in shaping public perception and driving action on environmental issues. According to Mittermeier et al. (2025), the media serves as a bridge between scientific knowledge and public understanding, enabling people to engage with complex environmental topics such as climate change. The role of media extends beyond mere information dissemination; it also influences public behavior and policy by framing environmental issues in ways that resonate with audiences. This is particularly significant in the face of the climate crisis, where timely and accurate communication is essential in mobilizing global action (Rudel, 2024).

In Indonesia, the role of media in environmental communication has been particularly noteworthy, with some broadcasting stations, like Green Radio 96.7 FM Pekanbaru, leading the way by creating content focused on environmental sustainability. These media outlets aim to educate the public about environmental challenges and advocate for sustainable practices (Lubis et al., 2018). The increasing frequency of climate-related programming in Indonesian media highlights a growing recognition of the need for media to address environmental issues systematically.

Green Broadcasting refers to the integration of environmental sustainability into the media production and broadcasting process. According to Ostovar et al. (2021), broadcasting stations have begun adopting various practices to reduce their environmental footprint, such as using energy-efficient equipment, minimizing carbon emissions, and switching to renewable energy sources. Additionally, the adoption of sustainable production methods, such as reducing waste and promoting eco-friendly materials, is becoming a standard practice in many media organizations. These actions are not only aimed at improving the ecological impact of the media itself but also serve to reinforce the importance of environmental stewardship through the content being broadcasted.

Siderska (2018) further emphasizes the importance of adopting green technologies, such as cloud broadcasting and virtualized production, which can significantly reduce energy consumption in the broadcasting sector. These technologies provide broadcasters with tools to minimize their operational environmental footprint while continuing to deliver high-quality content to audiences.

The effectiveness of Green Broadcasting in raising public environmental awareness has been a subject of increasing interest in recent years. Research indicates that when media outlets incorporate environmental issues into their

programming, they are more likely to influence public attitudes and behaviors toward sustainability. In their study, Kozłowska–Adamczak (2024) found that broadcasting stations that promoted environmental topics witnessed a positive shift in public attitudes towards eco–friendly practices, such as recycling and reducing carbon footprints.

Furthermore, studies like those conducted by Martinho (2022) have shown that environmental programming, such as climate–focused news and sustainability documentaries, has a measurable impact on public knowledge and behavior. However, the research also highlights the need for more consistent and engaging environmental content that can hold the audience's attention and encourage long–term changes in behavior.

Despite its potential, the implementation of Green Broadcasting faces several challenges. One major obstacle is the financial cost associated with transitioning to more sustainable practices. Many broadcasting stations, particularly smaller ones, may face difficulties in affording the necessary green technologies and training for staff. According to DeHanas (2009), although the long–term benefits of green broadcasting are clear, the initial investment can be prohibitive for smaller or budget–constrained media outlets.

Another challenge highlighted in the literature is the lack of comprehensive regulatory frameworks to guide media organizations in adopting green broadcasting practices. In many countries, including Indonesia, while environmental sustainability is a growing concern, policies specifically targeting the media sector's environmental footprint are often underdeveloped. This gap in policy can hinder the broader adoption of green practices within the industry.

While challenges remain, the role of Green Broadcasting as a catalyst for environmental change cannot be understated. As the media sector increasingly embraces sustainability, it has the potential to inspire other industries to follow suit. According to Luo et al. (2013), the broadcasting industry's commitment to green practices can serve as a model for other sectors, showcasing the feasibility of integrating sustainability into business operations. Additionally, the broad reach of media allows it to influence government policy and corporate strategies, amplifying the impact of environmental advocacy.

From a theoretical standpoint, the concept of Green Broadcasting can be analyzed through the lens of Diffusion of Innovations Theory (Rogers et al., 2019), which explains how new ideas and practices spread within a social system over time. In this context, green–oriented broadcasting functions as a communication innovation that introduces environmentally conscious values to audiences through mass media channels. Broadcasters act as change agents, disseminating sustainability messages that influence public attitudes and accelerate the adoption of eco–friendly behaviors. Early adopters such as environmentally themed radio stations and television programs serve as pioneers whose practices can be imitated by other media institutions, leading to a wider institutionalization of environmental communication norms. This diffusion process aligns with the theory's key stages: knowledge, persuasion, decision, implementation, and confirmation. When broadcasting institutions integrate

sustainability into both production practices and content framing, they not only innovate internally but also contribute to shaping collective ecological consciousness within society. Thus, Green Broadcasting operates as a medium of innovation diffusion that bridges environmental communication and behavioral transformation at the societal level.

The Indonesian government's Proklim (Climate Village) program provides an example of how media can play a pivotal role in promoting sustainability at the grassroots level. By partnering with local media outlets, such as Green Radio, the program has been able to disseminate vital information about climate change adaptation and mitigation to a wider audience. As more media outlets embrace Green Broadcasting, the potential for widespread environmental change becomes more achievable.

However, despite the growing recognition of the media's role in environmental sustainability, there are gaps in research regarding the application of Green Broadcasting in Indonesia. Previous research has been limited to theoretical studies on environmental communication without exploring in –depth how Green Broadcasting is implemented in Indonesia's broadcasting industry. For instance, while stations like Green Radio Pekanbaru have adopted this concept, there is limited research that examines the impact and challenges faced in implementing these practices in other media outlets.

Another gap in research is the lack of studies assessing the direct impact of Green Broadcasting on public awareness and behavioral changes regarding environmental sustainability. While there is research connecting media communication with public behavior, few studies specifically link the implementation of Green Broadcasting with the success of environmental programs promoted by the media.

This study presents several novel contributions to the field of environmental communication, particularly in the context of Green Broadcasting as an environmental media pillar in the era of the climate crisis. While Green Broadcasting has been explored globally, particularly in Western contexts, limited research has focused on its implementation and impact in Indonesia. This study fills this gap by examining how Indonesian media, including radio and television, adopt sustainable practices in their broadcasting operations. By focusing on local examples such as Green Radio 96.7 FM Pekanbaru, this research provides valuable insights into how Green Broadcasting can be implemented within Indonesia's unique media landscape, characterized by diverse cultural and environmental challenges.

Unlike existing studies that primarily address either environmental communication or broadcasting practices separately, this research integrates both by exploring how broadcasting practices themselves can become an integral part of environmental advocacy. By examining the operational aspects of Green Broadcasting and their direct link to environmental sustainability, this study highlights how media practices can contribute to both public awareness and the broader goal of climate change mitigation.

So far, no research has empirically examined the impact of Green Broadcasting practices on the environmental awareness of Indonesian society. Many studies have focused on the role of media in disseminating environmental information, but few have empirically analyzed the impact of Green Broadcasting on public environmental awareness and behavior, particularly in the context of developing countries. This study aims to fill that gap by evaluating how Green Broadcasting influences public perceptions of climate change and encourages behavior changes toward sustainability, making it a pioneering study in this regard (Irawati et al., 2023; Junaidi & Syaifurahman, 2022; Natasha, 2022).

This research goes beyond theoretical discussions of Green Broadcasting by identifying practical factors that influence the success or failure of green practices within media organizations. The study provides a comprehensive analysis of the financial, technical, and regulatory barriers faced by Indonesian broadcasting stations in adopting green practices, offering a nuanced understanding of the challenges in the local context. This approach will help inform future policy recommendations and guide media outlets looking to adopt more sustainable practices.

One of the key novelties of this study is its focus on providing actionable recommendations for the media industry in Indonesia. By analyzing the current state of Green Broadcasting, the study will offer policy suggestions aimed at facilitating the transition toward more sustainable media practices. These recommendations will be based on empirical evidence gathered through this research, making them directly relevant to both media organizations and policymakers in Indonesia.

The aim of this study is to examine the role of Green Broadcasting as an environmental media pillar in Indonesia, particularly within the context of the ongoing climate crisis. This research seeks to analyze the implementation of Green Broadcasting in Indonesian media, encompassing both radio and television, and to identify the factors that influence its success or failure. Additionally, the study will assess the impact of Green Broadcasting on public environmental awareness and behavior in Indonesia. Based on the findings, the research will provide recommendations for other media outlets in Indonesia to adopt green practices in their broadcasting operations. Ultimately, this study is expected to contribute to the development of environmental communication theory and serve as a valuable reference for the media industry to enhance its role in supporting sustainability and tackling the climate crisis.

Despite the growing recognition of sustainability within the broadcasting industry, there remains a limited understanding of how Green Broadcasting practices influence public environmental awareness, particularly within the Indonesian context. Existing studies tend to focus on the adoption of green technologies or environmental content production, yet few have examined their actual social and behavioral impact. As of now, no research has empirically investigated how green-oriented broadcasting initiatives shape audience knowledge, attitudes, and actions toward sustainability in Indonesia. This research, therefore, seeks to address that gap by exploring the extent to which

Green Broadcasting can serve as an environmental media pillar in the era of the climate crisis. Accordingly, the central research question guiding this study is: "How does Green Broadcasting contribute to enhancing environmental awareness and promoting sustainable behavior among Indonesian audiences?"

METHOD

In this study, a mixed – methods approach was employed to explore Green Broadcasting as an environmental media pillar in Indonesia, particularly within the context of the ongoing climate crisis. The research combined both qualitative and quantitative methods to provide a comprehensive understanding of the implementation, challenges, and impact of Green Broadcasting practices. This dual approach was designed to capture both the operational aspects of Green Broadcasting in media organizations as well as the public's response to environmentally focused media content (Akalili, 2020; Sitabuana & Estevania, 2022; Surjati et al., 2017).

The first phase of the research involved qualitative data collection through semi – structured interviews with key stakeholders, such as station managers, content producers, and environmental advocates from selected radio and television stations. These interviews aimed to understand the motivations behind adopting Green Broadcasting practices, the challenges faced during implementation, and the perceived impact of these efforts on environmental awareness. Additionally, focus group discussions (FGDs) were conducted with audience members to gather insights into how environmental media content influenced their perceptions and behavior towards sustainability. The content of environmental programs was also analyzed using content analysis, which involved examining the types and frequency of environmental content aired by selected media stations.

Quantitative data was collected through a survey administered to listeners and viewers who regularly engage with Green Broadcasting content. The survey assessed the level of public awareness about environmental issues before and after exposure to such content, as well as any changes in environmental behavior, such as increased recycling or energy conservation. This survey provided valuable data on the direct influence of Green Broadcasting on public environmental attitudes and behaviors. The survey responses were analyzed using descriptive and inferential statistics, enabling the researcher to determine patterns and correlations between media exposure and behavioral changes.

To ensure the accuracy and consistency of the quantitative data, the research instrument, comprising a structured questionnaire underwent a validity and reliability assessment prior to full – scale distribution. The validity test was conducted using Pearson's Product – Moment Correlation to determine the degree to which each item accurately measured the construct of environmental awareness and perception of Green Broadcasting. Items with correlation coefficients (r – count) greater than the critical value (r – table, $p < 0.05$) were deemed valid and retained for further analysis. The reliability test employed

Cronbach's Alpha to evaluate internal consistency, with coefficients exceeding 0.70 considered acceptable, indicating that the items within each construct were measuring the same underlying dimension (Cortini, 2014).

Data obtained from the survey were analyzed using descriptive and inferential statistical techniques. Descriptive statistics (mean, percentage, and standard deviation) were used to summarize respondents' demographic profiles and levels of environmental awareness. For inferential analysis, multiple regression analysis was applied to examine the relationship between exposure to Green Broadcasting content and changes in environmental attitudes and behaviors. The statistical analysis was performed using SPSS (Statistical Package for the Social Sciences) version 26, allowing for the identification of significant predictors of environmental awareness among Indonesian audiences. The integration of these quantitative results with qualitative findings from interviews and focus group discussions provided a comprehensive understanding of the role of Green Broadcasting in shaping public engagement with environmental sustainability.

For the data analysis, qualitative data from interviews, FGDs, and content analysis were examined through thematic analysis, identifying key themes and patterns related to the implementation and effectiveness of Green Broadcasting practices. This approach allowed for a deep understanding of the factors influencing the success or challenges faced by media stations in adopting environmentally sustainable practices.

Table 1. Research Informants

Category	Role	Description	Number of Informants
Broadcasting Station Managers	Key decision – makers	Individuals responsible for the overall management and operational decisions at broadcasting stations.	5
Content Producers	Content creators	Professionals involved in creating and producing environmental content, such as programs, news, and campaigns.	10
Environmental Advocates	Experts and influencers	Individuals or organizations involved in environmental advocacy, offering insights on media's role in sustainability.	5
Radio and Television Audiences	Regular viewers/listeners	General public members who engage with Green Broadcasting content regularly.	100
Focus Group Participants	Audience members	A selected group of audience members who participate in discussions on how environmental media content affects their behavior.	20

Table 1 show the study adhered to ethical guidelines, ensuring participants' confidentiality and obtaining informed consent before participation. The research faced some limitations, such as sampling bias, as the selected media outlets may not fully represent all broadcasting stations in Indonesia (Adrianjara & Andrini, 2023; Sukoco et al., 2022). Additionally, the self – reported nature of the survey

data may introduce some response bias. Nevertheless, this mixed – methods approach provides valuable insights into the current state of Green Broadcasting in Indonesia, its impact on public awareness, and the practical challenges faced by media organizations in adopting sustainable practices.

Results

Implementation of Green Broadcasting in Indonesian Media

The research found that Green Broadcasting in Indonesia is still in its early stages, with varying degrees of adoption across different media stations. Larger broadcasters have started making strides toward incorporating sustainable practices, while smaller, local media outlets face significant challenges in implementing green broadcasting due to limited resources. For example, Green Radio 96.7 FM Pekanbaru, which has been proactive in aligning its content with environmental issues, is reducing its carbon footprint by using energy – efficient technologies and focusing on sustainability in its programming. As the Station Manager of Green Radio 96.7 FM Pekanbaru explained, *"At Green Radio, we've focused on providing content that educates the public about environmental issues, but we've also tried to make our operations as green as possible. We're aware that it requires investment, but we believe that in the long run, it will pay off not just for the environment but for our listeners as well."*

However, for many smaller stations, implementing Green Broadcasting is a difficult challenge. Many face financial constraints, which prevent them from upgrading their equipment or adopting more sustainable production practices. Smaller outlets often struggle to afford the upfront costs associated with transitioning to green technologies. One content producer at a local station mentioned, *"The financial burden is a big issue for us. While we understand the importance of going green, the cost of new equipment and the training required is something we simply can't afford at the moment."* This illustrates the financial barriers faced by smaller stations, which are often unable to invest in the necessary infrastructure for green broadcasting.

In contrast, larger stations such as RCTI and Trans7 have made initial steps toward adopting green practices, including the introduction of environmental segments in their programming. While their efforts are still limited, these broadcasters have integrated eco – friendly content and have started exploring sustainable production methods. As a producer at Trans7 noted, *"We've started introducing eco-friendly segments on our channel. It's a slow process, but it's a step in the right direction. The challenge is ensuring we can continue doing this without compromising the quality or profitability of our programming."* This highlights the ongoing struggle larger stations face in balancing sustainability goals with the need for commercial viability.

Despite these efforts, the implementation of Green Broadcasting remains hindered by resistance to change within many stations, particularly those that have traditionally followed conventional broadcasting practices. Employees at larger stations sometimes resist adopting new green technologies because they

are more accustomed to traditional methods that are perceived as more straightforward or cost-effective. As a senior producer at RCTI explained, *"Resistance to change is always a challenge. Some of our staff are used to the old ways of doing things, and switching to more sustainable practices is seen as an added complication. It's not just about the equipment; it's about shifting mindsets."*

The lack of government incentives and clear regulatory frameworks further complicates the situation. In other countries, broadcasters often receive financial incentives or benefits for adopting environmentally friendly practices, but such policies are not yet well established in Indonesia. As one station manager mentioned, *"Without the right support from the government, it's difficult for us to prioritize green practices. Financial incentives or guidelines would help us move towards sustainability more effectively."* This statement reflects the need for more robust policies and government support to help media organizations make the transition to greener practices.

Despite these challenges, there is optimism about the future of Green Broadcasting in Indonesia. Stations like Green Radio 96.7 FM Pekanbaru, which have taken proactive steps to reduce their carbon footprint and promote sustainability, serve as examples of how smaller media outlets can contribute to the environmental cause. The growing public demand for eco-conscious content also provides encouragement for broadcasters to prioritize green practices. As the Content Producer at Green Radio stated, *"There are definitely challenges, especially when it comes to financial resources. But we're starting to see the benefits of incorporating green practices into our content. It's been a learning process, but the response from our audience shows that people care about sustainability."* This response suggests that, despite financial and technical challenges, there is a significant opportunity for smaller stations to build an audience around environmental content.

Table 2. Implementation of Green Broadcasting Practices Across Media Stations

Media Station	Green Practices Adopted	Challenges Faced	Content Focus
Green Radio 96.7 FM Pekanbaru	Use of energy-efficient broadcasting equipment; environmental content creation	Limited budget for green technology; outreach to rural areas	Environmental news, climate change, sustainability
RCTI (National TV)	Incorporation of environmental segments in existing programming	Lack of dedicated resources for environmental programming	Climate change awareness, eco-friendly campaigns
Trans7 (National TV)	Adoption of paperless reporting and eco-friendly advertising	Resistance to change from traditional production methods	Green lifestyle, eco-tourism, sustainable living
Local Radio Stations	Community-driven environmental awareness programs	Limited access to green technologies and professional training	Local environmental issues, waste management

Table 2 show the research shows that Green Broadcasting in Indonesia is in its early stages but has the potential for significant growth. The findings suggest that as the demand for environmental programming increases, media stations,

large and small, will need to adopt more sustainable practices. This can be achieved with the right support from government policies, industry incentives, and continued public engagement. With more initiatives like those at Green Radio Pekanbaru, the media sector in Indonesia could play a key role in raising environmental awareness and promoting sustainability on a larger scale.

Impact of Green Broadcasting on Public Environmental Awareness

The research revealed that Green Broadcasting plays a significant role in raising environmental awareness among the public, particularly in areas where there is more exposure to content focused on environmental issues. The survey data highlighted that individuals who regularly engaged with environmental media content exhibited noticeably higher levels of awareness regarding key environmental topics such as climate change, sustainability, and eco – friendly practices. This trend was consistent across various regions, but the impact was especially pronounced in rural areas, where the availability of environmental education is often limited. The media, therefore, became a primary source of information on these critical issues for many individuals in these areas.

In urban areas, respondents showed an increase in environmental awareness after being exposed to Green Broadcasting content, with **85%** of participants reporting heightened knowledge of climate change and sustainability. The exposure to well – structured environmental segments in news broadcasts and sustainability – focused programming encouraged urban dwellers to adopt eco – friendly practices. These practices included energy conservation, waste reduction, and an overall more conscious approach to daily habits. The study found that 65% of urban participants reported engaging in more sustainable practices such as recycling and reducing energy consumption after being exposed to environmental programming.

However, the most significant impact was observed in rural areas, where 40% of participants had low environmental awareness before exposure to Green Broadcasting content. After consistent engagement with environmental content, awareness in these areas rose dramatically to 78%. Rural communities often lack access to formal education on environmental issues, and Green Broadcasting content served as a crucial tool in bridging this information gap. The increase in environmental awareness was accompanied by changes in behavior, with 50% of rural participants adopting energy – saving practices at home, and 55% beginning to separate waste for recycling, marking a significant behavioral shift.

In suburban areas, where participants had a moderate level of prior awareness, the exposure to Green Broadcasting content also led to a noticeable improvement in environmental consciousness. Awareness in suburban areas increased from 45% to 70%, and while the behavioral changes were less dramatic than in rural areas, there was still a positive shift. About 30% of suburban respondents reported an increase in participation in sustainability programs, reflecting the growing concern for environmental issues, even if the behavior changes were less pronounced than those seen in urban and rural communities.

Table 3. Impact of Green Broadcasting on Public Awareness

Location	Pre – exposure Environmental Awareness	Post – exposure Environmental Awareness	Change in Behavior
Urban Areas	60%	85%	65% engaged in recycling, energy conservation
Rural Areas	40%	78%	50% adopted energy – saving practices, 55% separated waste
Suburban Areas	45%	70%	30% increased awareness, 30% engaged in eco – friendly practices

Table 3 show survey results indicated that 88% of respondents who regularly engaged with Green Broadcasting content experienced a significant increase in environmental awareness, especially concerning climate change and sustainability. Additionally, 72% of these respondents reported adopting more eco – friendly behaviors, such as reducing waste and recycling. In urban areas, pre – exposure awareness was at 60%, which increased to 85% after exposure to environmental programming. Furthermore, 65% of participants in urban areas reported engaging in more sustainable practices, such as energy conservation and recycling.

In rural areas, pre – exposure awareness was lower, at 40%, but this rose to 78% following exposure to environmental content. About 50% of rural respondents adopted energy – saving practices at home, and 55% started separating waste. In suburban areas, pre – exposure awareness was 45%, which increased to 70% post – exposure. The behavioral change in suburban areas was more moderate, with 30% of participants increasing their participation in sustainability programs, but the overall behavior change was less pronounced compared to urban and rural areas.

Barriers and Challenges in Adopting Green Broadcasting Practices

The research highlighted several barriers and challenges to fully adopting Green Broadcasting practices in Indonesia, with the most significant obstacles being high initial costs, lack of technical expertise, and resistance to change from traditional broadcasting methods. These barriers were particularly pronounced for smaller, local media outlets that had limited resources and struggled to make the necessary investments in sustainable technologies. The financial burden of transitioning to energy – efficient equipment, coupled with the costs of producing eco – focused content, left many smaller media stations in a difficult position. As one station manager noted, *"The cost of upgrading to green technology is simply too high for our station. We are barely covering our operating costs, and the financial commitment required to transition to more sustainable practices is overwhelming."* This reflects the difficulty faced by smaller outlets in balancing financial sustainability with environmental responsibility.

For many broadcasters, especially smaller stations, the initial investment required for green technologies was one of the largest barriers to adopting

Green Broadcasting. The transition from conventional equipment to energy – efficient alternatives requires a significant upfront financial outlay, which many smaller stations could not afford. Many stations expressed concern that such investments would not yield immediate returns, further deterring them from pursuing green upgrades. A content producer from a local radio station explained, *"We understand the environmental benefits of using energy-efficient equipment, but the upfront cost is simply not feasible for us at the moment. We're struggling to keep up with basic operational expenses, let alone invest in green technologies."*

In contrast, larger broadcasters, while having more financial resources to implement green practices, also faced challenges in ensuring that green practices did not compromise the quality or profitability of their content. For larger media outlets like RCTI and Trans7, there was a concern about how to balance sustainability efforts with the need to maintain competitive, high – quality content. A senior producer at RCTI shared, *"It's a delicate balance. On one hand, we want to reduce our carbon footprint and be more sustainable, but on the other hand, we cannot afford to lower the quality of our programming or reduce our commercial profitability. We need to find ways to integrate green practices without affecting the content we deliver."* This sentiment underscores the challenge of maintaining the high standards expected by viewers while adopting more sustainable broadcasting methods.

Additionally, technical expertise emerged as another key barrier to the widespread adoption of green broadcasting practices. Many smaller media stations struggled with the technical aspects of implementing green technologies, such as using energy – efficient broadcasting equipment or understanding how to produce content that aligns with sustainability principles. One station manager remarked, *"While we are committed to sustainability, the technical know-how required to make these changes is simply not available in-house. We need proper training for our staff to understand how to integrate these new technologies into our daily operations."* This lack of technical expertise made it difficult for stations to transition effectively to greener practices, even when they were willing to do so.

For larger broadcasters, the challenge was somewhat different but no less significant. While they often had access to the technical knowledge and infrastructure required to implement green technologies, there was still a lack of specialized expertise in integrating these new systems effectively across the entire organization. As a senior technician from Trans7 explained, *"We have the resources to invest in green technologies, but we face challenges in implementing them across all departments. There's a lack of trained personnel who can manage and maintain these new systems, which hinders our ability to go fully green."* This illustrates the need for specialized training and ongoing support for media professionals to fully integrate sustainable practices.

Another significant challenge identified in the study was resistance to change from traditional broadcasting methods. Many media professionals,

particularly those in larger, more established stations, were hesitant to adopt green practices because they were more accustomed to traditional, established ways of producing and distributing content. A producer at RCTI noted, *"There's a natural resistance to change. People are used to the way things have always been done, and introducing new, greener methods can be met with reluctance, especially when they are seen as more complex or uncertain."* This resistance to change was seen as a major obstacle to the implementation of green broadcasting practices, especially in stations where staff members were not fully convinced of the benefits.

The study also found that organizational culture played a significant role in how green practices were adopted. Media stations with a strong organizational culture that prioritized sustainability were more likely to adopt green broadcasting practices, while those with a more traditional focus were less inclined to make such changes. One interviewee, a senior content producer at a national broadcaster, explained, *"In organizations where sustainability is not part of the core values, it's harder to push for changes. Green Broadcasting needs to be part of the company culture for it to succeed."* This reflects the importance of leadership and organizational commitment in driving the adoption of green practices.

Despite these challenges, some broadcasters have managed to implement green broadcasting practices through incremental changes. Larger broadcasters like RCTI and Trans7 have made gradual steps, such as incorporating eco-friendly segments into their programming and reducing waste in production. However, these changes were often implemented as pilot projects rather than full-scale operational overhauls. A manager from Trans7 noted, *"We started small, with a few eco-friendly segments here and there, and gradually worked toward incorporating green practices into our day-to-day operations. It's a slow process, but every step counts."* This incremental approach allowed broadcasters to test the feasibility of green practices before making larger commitments.

Furthermore, lack of governmental incentives was cited as a barrier to adopting green broadcasting practices. Unlike in some countries where media organizations are encouraged or incentivized to implement sustainability practices through grants, tax breaks, or subsidies, Indonesia lacks comprehensive policies or incentives for media outlets to go green. A station manager explained, *"In other countries, media outlets receive financial incentives for adopting green practices. In Indonesia, there are no such incentives, which makes it harder for smaller stations to justify the costs of transitioning to sustainable practices."* This gap in governmental support makes it more challenging for broadcasters, particularly smaller outlets, to make the transition to greener practices.

Table 4. Barriers to Implementing Green Broadcasting

Barrier	Description	Impact
High Initial Costs	Financial investment needed for green technologies and eco – friendly content creation	Delays in implementation; limited adoption in smaller media stations
Lack of Technical Expertise	Insufficient knowledge on how to incorporate green technologies and sustainability into broadcasting	Difficulty in adopting best practices for energy efficiency
Resistance to Change	Traditional production methods and attitudes toward environmental sustainability	Slower adoption of green practices in larger, established stations

Tabel 4 show the research revealed that high initial costs, lack of technical expertise, and resistance to change are the primary barriers to the full adoption of Green Broadcasting practices in Indonesia. While larger broadcasters have made some progress in integrating sustainability into their programming, smaller media outlets face significant challenges in implementing green practices due to financial constraints and a lack of specialized knowledge. Overcoming these barriers will require not only financial support and technical training but also a cultural shift within media organizations that values sustainability as an integral part of broadcasting. As the interview with a senior technician from Trans7 pointed out, *"If we want to see true change, we need to see green broadcasting as a long-term investment that benefits both the environment and the media industry."* This highlights the need for a more comprehensive approach that involves both financial and educational support for broadcasters of all sizes.

DISCUSSION

The findings of this study provide a deeper understanding of how Green Broadcasting functions as a catalyst for environmental awareness and behavioral change within Indonesian society. The integration of sustainability – oriented content and eco – friendly broadcasting practices demonstrates that the media's role in environmental communication extends beyond mere information dissemination. In light of Diffusion of Innovations Theory (Rogers et al., 2019), these results indicate that Green Broadcasting operates as an innovation that gradually spreads through media systems and social structures, influencing public perception and promoting environmentally responsible behavior. The early adoption of green initiatives by certain broadcasting outlets such as Green Radio 96.7 FM Pekanbaru illustrates how media organizations can serve as change agents who introduce and normalize ecological values in the public sphere.

Theoretically, these findings enrich the field of environmental communication by highlighting the intersection between technological sustainability and message framing within broadcasting. They suggest that the effectiveness of media in addressing climate change depends not only on the frequency or visibility of environmental content, but also on how that content is contextualized within culturally resonant narratives. By linking sustainability messages to local values, traditions, and everyday experiences, Green

Broadcasting strengthens audience identification with environmental causes, thereby enhancing message credibility and retention. This insight expands the theoretical scope of environmental media studies by positioning broadcasting not merely as a channel, but as an active agent of ecological transformation.

From a practical standpoint, the study underscores the need for media policy and institutional commitment to embed sustainability principles into broadcasting operations. The implications are twofold. First, media regulators such as the Indonesian Broadcasting Commission (Komisi Penyiaran Indonesia) could incorporate environmental performance indicators into their licensing and evaluation criteria. Second, broadcasting institutions should invest in capacity – building programs that enhance journalists' and producers' literacy in climate communication. This will enable them to craft narratives that not only inform but also inspire behavioral change. In this sense, Green Broadcasting becomes a form of media –based environmental governance a soft power mechanism that mobilizes social participation in climate mitigation.

Furthermore, the study's results imply that the media sector can complement government –led initiatives such as Proklam by expanding public outreach and enhancing community engagement. When broadcasting platforms collaborate with environmental agencies, NGOs, and academic institutions, they can foster multi –stakeholder partnerships that accelerate the diffusion of sustainable practices. This synergy illustrates the potential of media to act as an environmental policy amplifier, bridging communication gaps between policymakers and citizens (Boswell et al., 2023; Cai et al., 2024; Khan et al., 2023).

In a broader sense, the study reinforces the notion that addressing climate change is not solely a technological or political endeavor, but also a communicative one. By promoting sustainability both in production practices and narrative content, broadcasting institutions contribute to the social construction of environmental responsibility. Therefore, Green Broadcasting should be recognized as a strategic component of Indonesia's climate change mitigation framework one that transforms environmental awareness into collective action.

Conclusion

This study concludes that Green Broadcasting in Indonesia remains in its formative stage, characterized by varying levels of adoption among different media organizations. Major television networks such as RCTI and Trans7 have begun implementing eco –friendly production practices, ranging from paperless reporting systems to energy –efficient technologies while integrating environmental themes into their programming. Meanwhile, smaller outlets like Green Radio 96.7 FM Pekanbaru demonstrate a stronger institutional commitment by embedding environmental education and sustainability narratives in their content. Despite these promising developments, the study identifies persistent barriers such as financial limitations, inadequate technical expertise, and cultural resistance within media organizations. Moreover, the lack of

government incentives and standardized regulations further constrains broader adoption. Nevertheless, stations with strong leadership and sustainability – driven vision have shown that environmental broadcasting can effectively enhance public awareness and behavioral change, especially in communities where media remains a primary source of information on climate and environmental issues.

From a policy perspective, the findings underscore the urgency of establishing a national Green Broadcasting framework to standardize and incentivize sustainable media practices. The Indonesian Broadcasting Commission (KPI) and Ministry of Environment and Forestry (KLHK) could collaboratively develop a Green Media Certification System to evaluate and reward environmentally responsible broadcasting operations. Such initiatives would align Indonesia's media sector with international sustainability standards outlined in SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action). Additionally, incorporating environmental ethics and Islamic ecological values (*khilafah fil ardh*) into public broadcasting can strengthen cultural and moral engagement with sustainability messages. Academic institutions are also encouraged to include Environmental Communication and Sustainable Media Practices in their curricula to prepare future communicators who are environmentally literate and ethically aware, ensuring the long – term continuity of sustainable media movements. Ultimately, this study emphasizes that Green Broadcasting represents both a communicative and moral imperative positioning Indonesia's media as an essential pillar in the nation's collective effort to confront the climate crisis.

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