

Ecological Reconciliation: Laudato Si' Ecological Conversion as a Framework for Sustainable Development of IKN Nusantara

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Abstract. This study examines the gap between the ecological vision in the Laudato Si' encyclical and the development practices of Indonesia's new capital city (IKN) Nusantara, focusing on the application of the concept of ecological conversion in large-scale development. Through critical analysis of relevant literature and documents, the study identifies six main gaps, including the approach to economic growth, community participation, the relationship with nature, the role of technology, the scale of development, and the integration of spiritual values. The study also explores the challenges of implementing ecological conversion on a large scale and how to balance economic and environmental needs. The results show a significant difference between the holistic vision of Laudato Si' and conventional development practices, concluding that the implementation of ecological conversion requires a fundamental transformation in the understanding of development, progress, and humanity's relationship with nature.

1. INTRODUCTION

The global ecological crisis has reached a critical point that threatens the sustainability of life on Earth. In the Indonesian context, relocating the National Capital City (IKN) to East Kalimantan is a crucial momentum that requires a comprehensive approach from the physical and economic development perspective and the spiritual-ecological dimension. This situation reflects what Pope Francis, in his Encyclical Laudato Si' (2015), calls an ecological crisis that requires collective ecological conversion.

Ecological conversion, as defined in Laudato Si', refers to a fundamental transformation in how humans view and behave towards nature, from an attitude of domination and exploitation towards harmonization and care of creation (Francis, 2015: par. 216-221). The relocation of IKN, with its massive scale and impact, represents both a challenge and an opportunity to implement the principles of ecological conversion in sustainable development.

Laudato Si offers a unique perspective on the relationship between development and environmental conservation. It does not simply describe the ecological crisis as a technical problem but underscores its inherent moral and spiritual dimensions (Berry, 2016). The ecological conversion advocated in Laudato Si calls for a fundamental transformation in how humans perceive and treat nature, from an exploitative paradigm towards harmonization with creation (Taylor, 2019). Previous studies on the implementation of Laudato Si' in Southeast Asia have shown the relevance of this document in the context of regional development. Sulisty's research (2022) revealed that the principles of Laudato Si' have been adopted in various environmental policies in Indonesia, although implementation is still limited.

In Indonesian culture and spirituality, especially Kalimantan, the concept of ecological conversion strongly resonates with local wisdom. For example, The Dayak indigenous people have the Adat Pali concept, which regulates the harmonious interaction between humans and nature (Rahmawati, 2023). This concept aligns with Laudato Si's ecological conversion, emphasizing respect for nature and human responsibility as caretakers, not rulers, of ecosystems. This integration between ecological conversion and local wisdom has the potential to create a more holistic and contextual approach to the development of IKN.

The development of IKN in East Kalimantan presents its complexities from an ecological perspective. Data from the Ministry of Environment and Forestry (2023) shows that the IKN area of 256,142 hectares covers a variety of sensitive ecosystems, including 60% of high-biodiversity forest areas. The study by Wong et al. (2023) identified 158 species endemic to Borneo in the area, with 23 categorized as endangered according to the IUCN Red List. An environmental impact assessment by

the Strategic Environmental Assessment Team (2023) underscores the potential for drastic changes to local ecosystems if development is not managed with strict sustainability principles.

From a socio-economic perspective, the relocation of IKN also has significant implications. Bappenas projections (2023) estimate that the project will create around 1.2 million new jobs and boost regional economic growth by 0.5-0.7% annually. However, Saputra et al. (2024) warn of the potential marginalization of local communities and increased social inequality if development is not managed inclusively. Integrating these socio-economic considerations with ecological conversion principles is crucial to achieving sustainable and equitable development.

The gap between Laudato Si' ecological vision and the reality of IKN's development can be seen in several critical aspects. Martinez (2021) identifies that although the IKN master plan emphasizes the concept of a forest city, its implementation still prioritizes aspects of physical infrastructure over ecosystem preservation. This reflects what Laudato Si' calls a technocratic paradigm that needs to be transformed through ecological conversion (Francis, 2015: par. 101). Widodo and Rahman (2023) found that ecological conversion as a theological concept has not been fully integrated into national development planning, a gap that becomes more glaring in megaprojects such as the relocation of IKN.

The novelty of this study lies in integrating the theological-ecological perspective of Laudato Si' with the specific context of IKN development in Indonesia. In contrast to previous studies that focus on the implementation of Laudato Si' in general or the study of sustainable urban development (Wijaya et al., 2022). This study offers an analytical framework that links ecological conversion with concrete development practices. The significance of the study is strengthened by its contribution to presenting the spiritual-theological dimension in the discourse of sustainable development in Indonesia. As Prawiro (2023) argues, a theological approach can enrich the understanding of sustainability by going beyond mere technical-economic considerations.

It should be recognized that applying the concept of ecological conversion in large-scale development projects such as IKN is not without challenges. Critics of this approach, as expressed by Suharto (2023), highlight the potential conflict between economic development imperatives and strict environmental conservation principles. However, in this context, ecological conversion can offer a transformative middle ground, encouraging innovation in development practices that meet human needs and maintain ecosystem integrity. The main objective of this study is to critically analyze how the principles of ecological conversion from Laudato Si' can be implemented in the context of IKN development. Specifically, this study aims to (1) identify key elements of ecological conversion relevant to sustainable urban development in the Indonesian context; (2) analyze the gap between the ecological vision of Laudato Si' and the practice of IKN development; and (3) formulate concrete recommendations for integrating the principles of ecological conversion in IKN development.

Through this study, it is hoped that a conceptual framework relevant to the development of IKN can be produced and applied more broadly in Indonesia's sustainable development context. By integrating ecological conversion into the development planning and implementation process, a development model that is truly holistic, respectful of ecological balance, and in harmony with the spiritual and cultural values of the Indonesian people can be created.

2. METHODS

This research uses the systematic literature review (SLR) method to analyze and synthesize literature related to the implementation of Laudato Si's ecological conversion principles in the context of the development of IKN Nusantara. The SLR process follows the stages recommended by Kitchenham and Charters (2007): planning, implementation, and reporting. In the planning stage, a search protocol was developed with the main keywords: ecological conversion, Laudato Si', sustainable development, and IKN Nusantara. Databases used included Scopus, Web of Science, Google Scholar, and Indonesian Scientific Journal Database (ISJD). Inclusion criteria included peer-reviewed articles, books, and official government reports between 2015-2024. The implementation phase produced an initial 1237 articles, which, after the selection process, resulted in 87 relevant articles for in-depth

analysis. Data was extracted using a standardized form, followed by thematic analysis (Braun & Clarke, 2006).

To ensure quality, two researchers conducted the data selection and extraction process independently, with study quality assessment using the CASP tool and JBI checklist (Hannes et al., 2010). Data synthesis used a narrative approach with elements of meta-ethnography (Noblit & Hare, 1988). The limitations of this method are recognized, including potential publication bias and language limitations. However, with strict protocols, this study sought to provide a comprehensive synthesis of ecological conversion in the context of IKN Nusantara development.

3. RESULTS AND DISCUSSION

Principles of Ecological Repentance in the Context of IKN Nusantara

Identification of fundamental principles of ecological conversion from Laudato Si

Laudato Si, Pope Francis' encyclical published in 2015, offers a revolutionary perspective on humanity's relationship with the environment. It outlines fundamental principles of ecological conversion beyond mere environmental concerns, integrating social, economic, and spiritual dimensions in a holistic approach to the global ecological crisis.

Table 1: Key Principles of Ecological Conversion from Laudato Si

Expert & Year	Concept	Explanation
Pope Francis (2015).	Awareness of Ecological Interconnectedness	Everything is interconnected, and we human beings are united as brothers and sisters in a fantastic pilgrimage woven by God's love for each of his creatures (LS 92).
Christiana Peppard (2016).	Integral Ecology	Understand the intrinsic connections between environmental, social, and economic justice as part of a holistic view of ecology (Peppard, 2016).
Pope Francis (2015).	Conversion from Excessive Anthropocentrism	Paradoxically, modern anthropocentrism has placed technical reason above reality, as humans no longer perceive nature as a valid norm (LS 115).
Willis Jenkins (2013).	Anthropocentrism	A shift from anthropocentrism to an understanding of the place of humans in the broader web of life (Jenkins, 2013).
Pope Francis (2015).	Global Solidarity and Intergenerational Justice	We need a new universal solidarity (LS 14).
Dale Jamieson (2014).	Intergenerational Environmental Ethics	emphasizes the importance of considering the impact of our actions on future generations and the most vulnerable communities (Jamieson, 2014).
Pope Francis (2015).	Respect for Biodiversity	Since all creatures are interconnected, every single one of them should be cherished with love and admiration (LS 42)
E.O. Wilson (2016).	Life Library	affirms biodiversity as a vital resource that must be protected (Wilson, 2016).
Pope Francis (2015).	Changes in Lifestyle and Consumption Patterns	Many things must change direction, but humanity must first change (LS 202).
Herman Daly (2014).	Stable Economic Conditions	Advocates a shift from models of unlimited economic growth to models that respect planetary boundaries (Daly, 2014).
Pope Francis (2015).	Healing Relationships with Nature and Others	We have forgotten that we are the dust of the earth and that our bodies are made of planetary elements (LS 2).
Sallie McFague (2013).	Earth as the Body of God	Proposes a theological view that encourages respect and compassion for nature (McFague, 2013).

Expert & Year	Concept	Explanation
Pope Francis (2015).	Ecological Spirituality	We need an 'ecological conversion', where the impact of our encounter with Jesus Christ becomes evident in our relationship with the world around us (LS 217).
Thomas Berry (2009).	Earth Spirituality	Develops a concept of spirituality that recognizes the sacredness of nature and places humans into the broader earth community (Berry, 2009).

The fundamental principles of ecological conversion identified in Laudato Si' and reinforced by ecologists offer a comprehensive framework for understanding and addressing the global environmental crisis. They integrate scientific understanding, environmental ethics, social justice, and spirituality, challenging us to fundamentally change how we relate to nature and our fellow human beings. Implementing these principles requires significant individual, societal, and global transformation, demanding mindsets, policies, and changes in economic systems. While these challenges are significant, the vision offered by Laudato Si' provides hope and direction for creating a more sustainable and just future for all living beings. The following graph provides a visual representation of the key data and trends discussed in the study. It highlights the gaps between the ecological vision of Laudato Si' and the conventional development practices in IKN Nusantara, offering insights into areas such as economic growth, community participation, environmental integration, and technological advancements. By examining this data, we can better understand the extent of these gaps and the potential impact of applying ecological conversion principles in large-scale development projects. The graph also serves as a tool to illustrate the balance between economic and environmental needs, supporting the analysis of challenges and opportunities for sustainable development.

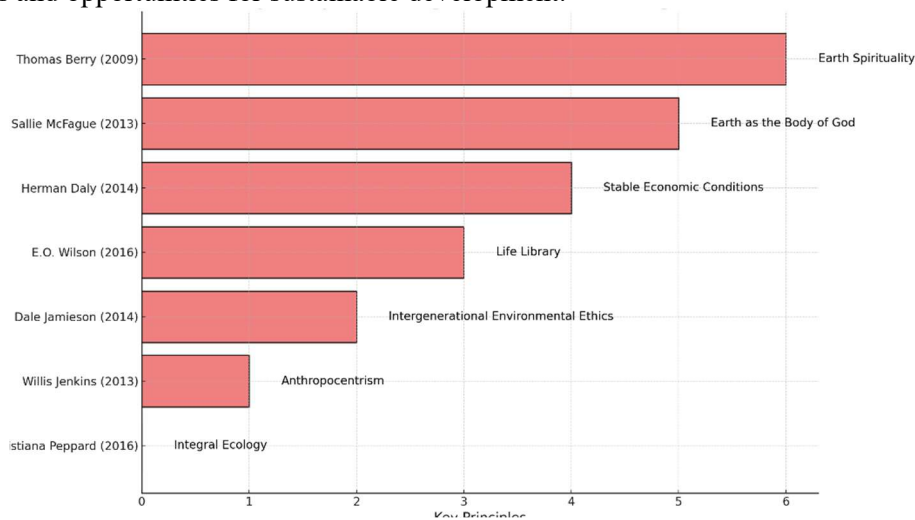


Figure 1. Key Principles of Ecological Conversion from Various Experts

Figure 1 clarifies the key concepts in ecological conversion presented by various experts, providing a perspective on how humans and the environment are deeply interconnected and how our actions today affect future generations and biodiversity. This graphic provides more space to explore other important concepts, such as Christiana Peppard's "Integral Ecology" that emphasizes the connection between environmental, social and economic justice, and E.O. Wilson's "Life Library" that emphasizes the importance of protecting biodiversity. Figure 1 also shows that ecological conversion not only includes environmental issues, but also involves social ethics, economics, and justice for future generations, highlighting the importance of cross-disciplinary perspectives to achieve sustainable solutions for this interconnected world.

Analysis of the relevance and application of the principles in the development of IKN

The Laudato Si principles offer a holistic framework for sustainable development that is highly relevant to the IKN project. However, as Folke et al. (2016) emphasized, integrating an understanding of social-ecological systems into urban planning is a major challenge. IKN has a unique opportunity to implement this approach, but significant changes in conventional planning practices are required. While the principles are theoretically ideal, their implementation in the context of IWRM development faces practical challenges. For example, balancing development needs with biodiversity conservation, as proposed by Wilson (2016), requires difficult compromises between economic and ecological interests.

Applying Laudato Si's principles in the development of IKN demands a paradigm shift in urban development. Jackson's (2017) concept of prosperity without growth and Beatley's (2011) biophilic city offer attractive alternatives, but their implementation requires fundamental changes in economic policy and urban design. While the principles of Laudato Si' are universal, their application in the context of IKN must consider Indonesia's local conditions. Sachs (2015) emphasizes the importance of adapting sustainable development principles to the local context. IKN must balance the ambition to become a global model with local needs and values.

The development of IKN provides an opportunity to apply the latest technologies in sustainable development. However, as Pope Francis reminds us in Laudato Si', technology must be used wisely and not become an end in itself. The principle of solidarity in Laudato Si' emphasizes the importance of community participation and social justice in development. Applying this principle in the context of IKN requires robust mechanisms to ensure that the voices of local communities and marginalized groups are heard in the planning and development process.

The principles of ecological conversion from Laudato Si' are highly relevant and can provide valuable guidance in developing IKN. However, their implementation requires strong political commitment, urban planning and design innovation, and a fundamental development paradigm shift. IKN has a unique opportunity to become a global model of a sustainable city that integrates the principles of ecology, social justice, and spirituality. The challenge is translating this vision into practical reality, considering the social, economic, and ecological complexities of building a new city in an era of climate change and global biodiversity crisis.

Integration of local wisdom (such as Adat Pali) with ecological conversion

Integrating local wisdom with ecological conversion is an essential aspect of efforts to overcome the global environmental crisis. Laudato Si' emphasizes respecting and learning from traditional wisdom in managing the environment (Francis, 2015). In the Indonesian context, Adat Pali, the Dayak people's belief system and traditional conservation practices in Kalimantan, offers a concrete example of how local wisdom can contribute to ecological conversion.

Adat Pali, which regulates people's interaction with nature through taboos and rituals, aligns with the principles of ecological conversion outlined in Laudato Si. This system reflects a deep understanding of ecological interconnectedness and respect for nature, which aligns with Pope Francis' call for integral ecology (Francis, 2015). Muller (2016) observed that practices such as Adat Pali serve as a conservation mechanism and strengthen people's spiritual ties with their environment.

Integrating local wisdom, such as Adat Pali, with ecological conversion can enrich our approach to sustainable development. Berkes et al. (2000) argue that traditional ecological knowledge offers valuable insights into adaptive and sustainable resource management. In the context of IKN development, considering and integrating practices such as Adat Pali can help create a more holistic and contextualized development model.

However, this integration process is not without challenges. Pierotti and Wildcat (2000) caution that romanticizing or oversimplifying traditional practices can be risky. Understanding local wisdom in the context of complex social-ecological dynamics is essential. In addition, Dudgeon and Berkes (2003) emphasize the importance of avoiding knowledge extraction approaches that can ignore these practices' cultural and spiritual context. Laudato Si calls for a dialog between modern science and traditional wisdom (Francis, 2015). In this context, Mistry and Berardi (2016) propose a transdisciplinary approach that combines scientific knowledge with local wisdom in environmental management. Such an

approach can enrich our understanding of social-ecological systems and pave the way for more effective and sustainable solutions.

Integrating local wisdom with ecological conversion also has a significant ethical dimension. Whyte (2013) argues that recognition and respect for local wisdom are part of environmental justice and an integral aspect of ecological conversion, as Laudato Si outlines. In the context of IKN development, this means not only adopting sustainable practices but also ensuring the participation and empowerment of local communities in planning and decision-making processes.

Finally, integrating local wisdom with ecological conversion offers opportunities to strengthen social-ecological resilience. Folke et al. (2005) emphasize the importance of local knowledge in building adaptive capacity to environmental change. Integrating practices such as Adat Pali into development strategies can help create more resilient and sustainable systems in the context of global climate change and intensified development pressures.

Integrating local wisdom, such as Adat Pali, with ecological conversion offers a promising path toward more sustainable and contextualized development. However, this process requires a cautious approach, respecting the complexity of social-ecological systems and ensuring the active participation of local communities. In the context of IKN development, this integration can be an innovative model combining modernity with traditional wisdom, creating an ecologically sustainable city deeply rooted in Indonesia's cultural heritage.

The Gap between Ecological Vision and Development Practices

Analysis of the main gaps between Laudato Si's vision and IKN's development practices

The first gap lies in the approach to economic growth. Laudato Si' criticizes the technocratic paradigm and the obsession with unlimited economic growth (Francis, 2015)—the encyclical calls for slowing down the pace and adopting a more holistic development model. In contrast, the IKN project, like many other large-scale development projects, is still heavily focused on economic growth and global competitiveness. Meadows et al. (2004) have long warned about growth's limits, an argument Laudato Si reinforces. However, as observed by Gellert and Lynch (2003), mega infrastructure projects such as IKN are often based on the assumption of sustained economic growth.

The second gap relates to community participation and social justice. Laudato Si' emphasizes the importance of listening to and involving local communities in decision-making (Francis, 2015). However, large projects such as IKN often face criticism for the lack of meaningful participation from local communities. Cooke and Kothari (2001) warn that even when participation is recognized as necessary, it often becomes a tyranny that legitimizes predetermined decisions. In the context of IKN, the challenge is how to ensure that the voices of indigenous peoples and marginalized groups are genuinely heard and influence development decisions.

The third gap relates to the approach to nature. Laudato Si' advocates a more biocentric view, recognizing the intrinsic value of nature and emphasizing the interconnectedness of all beings (Francis, 2015). Meanwhile, large development projects often adopt a more anthropocentric approach, seeing nature primarily as a resource to be utilized. Wackernagel et al. (2017) emphasize the importance of considering the ecological footprint in development, a concept that is in line with Laudato Si' but often not fully integrated into conventional development practices. The fourth gap relates to technology and innovation. While Laudato Si' accepts technology, it warns against a technocratic paradigm that can neglect ethical and social dimensions (Francis, 2015). The IKN project, like many other smart city projects, relies heavily on technological solutions. Hollands (2008) warns that an excessive focus on technology in urban development can overlook fundamental social and political issues. The challenge is integrating technology to support, rather than replace, social and ecological values.

The fifth gap relates to the scale and pace of development. Laudato Si' calls for a slower and more thoughtful approach to development (Francis, 2015), while projects like IKN are often pursued at high speed and large scale. Scott (1998) has criticized large-scale development projects that fail to consider local knowledge and social-ecological complexity. In the context of IKN, the challenge is balancing the need for rapid development with careful ecological and social considerations.

The sixth gap relates to spirituality and values. Laudato Si' emphasizes the spiritual dimension of the ecological crisis and calls for ecological conversion (Francis, 2015). Meanwhile, conventional development projects tend to focus on material and economic aspects. Taylor (2016) argues that integrating spirituality into the environmental movement can strengthen motivation and commitment to change. NI's challenge is integrating spiritual values and environmental ethics into the generally secular planning and development process. These gaps show that despite efforts to make IKN a sustainable city, there is still a significant gap between Laudato Si's holistic vision and conventional development practices. Addressing this gap requires a fundamental paradigm shift in understanding development, progress, and our relationship with nature. As Raworth (2017) emphasizes in his concept of the doughnut economy, we need to find ways to meet the needs of all people within planetary boundaries. For IKN, this means pursuing economic efficiency and growth and actively striving for ecological regeneration, social justice, and holistic well-being.

Identification of challenges in the implementation of ecological conversion on a large scale

Implementing ecological conversion on a large scale, as advocated in Laudato Si', faces several significant challenges. The following critically analyzes the main challenges. One of the main challenges is overcoming resistance to change in established economic and political systems.

Laudato Si calls for radical changes in our production and consumption (Francis, 2015). However, as Naomi Klein (2014) argues in her book *This Changes Everything*, powerful interests in the fossil-based economy often impede the transition towards more sustainable practices. This challenge is compounded by what Giddens (2009) calls the Giddens paradox, where people tend not to act on long-term risks such as climate change because the impacts are not yet directly visible.

The second challenge relates to the gap between environmental awareness and behavior change. While awareness of the ecological crisis increases, this does not always translate into meaningful behavior change. Kollmuss and Agyeman (2002) identified various factors contributing to this gap, including a lack of external incentives, behavioral inertia, and distrust of environmental information sources. In ecological conversion, the challenge is changing people's minds, hearts, and habits.

The third challenge is to address complexity and uncertainty in social-ecological systems. Laudato Si' emphasizes the interconnectedness of all aspects of ecosystems and human society (Francis, 2015). However, as Ostrom (2009) argues, managing complex social-ecological systems requires adaptive and multi-scale approaches that are difficult to implement within existing governance structures. This challenge is further compounded by the uncertainties associated with climate change and its impacts, as discussed by Dessai and Hulme (2007). The fourth challenge relates to justice and equity in the ecological transition. Laudato Si' emphasizes that the ecological crisis and poverty are closely intertwined (Francis, 2015). However, as Schlosberg and Collins (2014) argue, efforts to address climate change and environmental degradation often fail to address the justice dimension fully. This challenge involves not only the distribution of costs and benefits of environmental policies but also the recognition of multiple perspectives and meaningful participation of all affected groups.

The fifth challenge is to overcome the fragmentation of knowledge and action. Laudato Si calls for an interdisciplinary approach to the ecological crisis (Francis, 2015). However, as Max-Neef (2005) observes, existing academic and policy structures often encourage narrow specialization rather than holistic understanding. This challenge is compounded by what Rayner (2012) calls willful ignorance, where inconvenient information is often ignored or hidden to avoid conflict with established interests.

The sixth challenge relates to the scale and speed of change required. Rockström et al. (2009) have identified planetary boundaries that we must not exceed to avoid catastrophic environmental change. However, the speed of social and political change often does not match the urgency of the ecological crisis. This challenge is compounded by what Gardiner (2011) calls the perfect moral storm of climate change, where the global and long-term nature of the problem makes it difficult to mobilize effective action.

Finally, integrating the spiritual dimension of ecological conversion into public policy and practice is challenging. Although Laudato Si' emphasizes the importance of spirituality in addressing the ecological crisis (Francis, 2015), integrating this perspective into secular policy frameworks can be

challenging. Taylor (2016) argues that while there is potential for greening religion, there is still tension between religious and secular worldviews in the environmental movement.

Addressing these challenges requires a holistic and transformative approach. As O'Brien (2018) proposed, we need a deliberate transformation involving changes in technologies and policies and underlying values, beliefs, and power structures. This aligns with Laudato Si's call for an integral ecological conversion encompassing human life's personal, social, and spiritual dimensions.

Implementing ecological conversion on a large scale does face significant challenges, but it also offers opportunities for profound social transformation. By recognizing the complexity of these challenges and working collaboratively across disciplines and sectors, we can move towards a vision of a more sustainable and just world as envisioned in Laudato Si.

Balance of Economic Development and Environmental Preservation

Analysis of how ecological conversion can balance economic and environmental needs

As Laudato Si' outlines, ecological conversion offers a unique perspective in balancing economic and environmental needs. A critical analysis of how this concept can bridge the gap between economy and ecology reveals several essential aspects. First, ecological conversion invites us to re-understand the concepts of prosperity and progress. Laudato Si' criticizes the obsession with consumerist lifestyles and calls for a more holistic understanding of quality of life (Francis, 2015). This is in line with economists such as Tim Jackson (2017), who argues that we need to redefine prosperity beyond GDP growth in his book *Prosperity without Growth*. Jackson suggests focusing on well-being, happiness, and fulfillment of basic human needs as more meaningful metrics for economic progress.

Second, ecological conversion encourages the development of more sustainable economic models. The circular economy concept promoted by the Ellen MacArthur Foundation (2013) is in line with Laudato Si's vision of an economy that respects planetary boundaries. This model aims to eliminate waste and maximize the use of resources, creating a more efficient and sustainable economic system. Stahel (2016) argues that transitioning to a circular economy can create new economic opportunities while reducing environmental impacts.

Third, ecological conversion emphasizes the importance of social justice in ecological transition. Laudato Si' explicitly links environmental degradation to global inequality (Francis, 2015). This aligns with the concept of a just transition advocated by Newell and Mulvaney (2013), who emphasize the importance of ensuring that the transition to a low-carbon economy does not exacerbate existing inequalities. They argue that environmental policies should be designed with the impact on vulnerable groups in mind. Fourth, ecological conversion encourages sustainability-focused technological innovation. Although Laudato Si warns against the technocratic paradigm, it also recognizes the potential of technology to address environmental issues (Francis, 2015). This is in line with the concept of responsible innovation proposed by Stilgoe et al. (2013), which emphasizes the importance of considering the ethical and social implications of technological innovation. This approach can encourage the development of technologies that are not only economically profitable but also ecologically sustainable.

Fifth, ecological conversion invites us to reconsider our financial system. Laudato Si' criticizes unbridled financial speculation and calls for a more ethical financial system (Francis, 2015). This aligns with Fullerton's (2015) argument in *Regenerative Capitalism*, which proposes an economic model that aligns the financial system with ecological principles. He argues that we need to develop financial instruments that support, rather than damage, the natural systems that sustain our economy.

Sixth, ecological conversion emphasizes the importance of a long-term approach to economic decision-making. Laudato Si' criticizes the short-term focus of many economic policies (Francis, 2015). This is in line with Stern's (2007) argument in *The Economics of Climate Change*, which emphasizes the importance of considering the long-term costs of climate change in current economic decision-making. Stern argues that investing in climate change mitigation now will yield significant long-term economic benefits.

Ecological conversion invites us to integrate spiritual and ethical values into economic thinking. Laudato Si' emphasizes the importance of the spiritual dimension in addressing the ecological crisis

(Francis, 2015). This aligns with Zsolnai's (2015) argument in *The Spiritual Dimension of Business Ethics and Sustainability Management*, which argues that integrating spiritual values into business practices can encourage more ethical and sustainable behavior.

Balancing economic and environmental needs through ecological conversion is no easy task. It requires fundamental changes in understanding prosperity, managing resources, and interacting with nature. However, as Raworth (2017) shows in his donut economy model, meeting everyone's needs within planetary boundaries is possible. Ecological conversion, emphasizing the interconnectedness of all aspects of life, offers a robust framework for achieving this balance. Implementing this vision will require cross-sector collaboration, policy innovation, and individual and institutional behavior changes. However, by adopting the principles of ecological conversion, we can move towards a development model that is ecologically sustainable, socially just, and economically viable.

Socio-economic implications of an ecological conversion approach

As Pope Francis' encyclical *Laudato Si'* outlines, the ecological conversion approach has significant socio-economic implications. It integrates an understanding of ecology with social and economic justice, challenging the conventional development paradigm. According to Leonardo Boff, liberation theologian and ecologist, ecological conversion demands a radical transformation in how we view the relationship between humans and nature. This implies restructuring the economic system that has tended to exploit natural resources. Boff emphasizes the importance of an economy that respects planetary boundaries and distributes resources more fairly.

In his analysis of *Laudato Si'*, Economist Jeffrey Sachs highlights that ecological conversion requires a shift away from GDP-focused models of economic growth towards more holistic indicators of well-being. This includes measuring environmental sustainability, social equality, and quality of life. The implication is the need for economic policies that prioritize investments in clean technologies, ecosystem protection, and poverty alleviation. From a theological perspective, Christiana Peppard explains that ecological conversion has a deep spiritual dimension. It demands changes in consumption patterns and lifestyles, which will affect production and distribution structures in the economy. Peppard emphasizes that this conversion is not just an individual matter but requires a systemic transformation in social and economic institutions.

Environmental sociologist John Bellamy Foster argues that this approach has social implications, including the need for environmental justice. This means addressing inequalities in exposure to environmental risks and access to natural resources between different social groups. Foster highlights that ecological conversion must involve redistributing power and resources to achieve equitable sustainability. Overall, the ecological conversion approach challenges the dominant development model, promoting better integration of environmental sustainability, social justice, and economic well-being. The implications include fundamental changes in economic policies, business practices, and consumer behavior to create a socio-economic system better aligned with planetary ecological limits and principles of social justice.

4. CONCLUSION

Based on the analysis, it can be concluded that applying the principles of ecological conversion from *Laudato Si'* in the development of IKN Nusantara holds strong potential to foster sustainable and equitable development, though its implementation faces various challenges that require a holistic and transformative approach. Recommendations for effective planning include integrating local wisdom, such as Adat Pali, into urban planning by involving Indigenous communities in decision-making, adopting holistic well-being indicators beyond GDP to measure development success, applying circular economy principles in infrastructure and urban resource management, and developing public education programs on ecological conversion and sustainable development. Additionally, creating economic incentives for sustainable business practices and building cross-sector coalitions among government, business, academia, and civil society will be essential for driving systemic change. Legal and policy frameworks supporting ecological conversion, interdisciplinary research, adaptive policy implementation, and a strong narrative on the long-term benefits of this approach will help overcome

resistance. This paradigm shift can influence national development by encouraging stronger integration between economic, social, and environmental policies, prioritizing investment in renewable energy and biodiversity conservation, and strengthening community participation in planning. Indonesia's long-term vision as a global model for sustainable development by 2050, with IKN Nusantara leading the way, will require a fundamental transformation, cross-sector collaboration, and a commitment to environmental justice, renewable energy, and community-driven policies. However, the study acknowledges certain limitations, such as reliance on existing literature and the lack of direct empirical data from stakeholders, recommending future research to include field studies, comparative analyses with other sustainable city projects, quantitative assessments of ecological conversion impacts, and further investigation of local wisdom integration.

REFERENCE

- Cooke, B., & Kothari, U. (2001). *Participation: The new tyranny?* Zed Books.
- Dessai, S., & Hulme, M. (2007). Assessing the robustness of adaptation decisions to climate change uncertainties: A case study on water resources management in East England. *Global Environmental Change*, 17(1), 59-72.
- Ellen MacArthur Foundation. (2013). *Towards the circular economy*. Ellen MacArthur Foundation.
- Francis, Pope. (2015). *Laudato Si: On care for our typical home*. Vatican Press.
- Fullerton, J. (2015). *Regenerative capitalism: How universal principles and patterns will shape our new economy*. Capital Institute.
- Gardiner, S. M. (2011). *A perfect moral storm: The ethical tragedy of climate change*. Oxford University Press.
- Gellert, P. K., & Lynch, B. D. (2003). Mega-projects as displacements. *International Social Science Journal*, 55(175), 15-25.
- Giddens, A. (2009). *The politics of climate change*. Polity Press.
- Hollands, R. G. (2008). Will the actual smart city please stand up? *City*, 12(3), 303-320.
- Jackson, T. (2017). *Prosperity without growth: Foundations for tomorrow's economy* (2nd ed.). Routledge.
- Klein, N. (2014). *This changes everything: Capitalism vs. the climate*. Simon & Schuster.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally, and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-260.
- Max-Neef, M. (2005). Foundations of transdisciplinarity. *Ecological Economics*, 53(1), 5-16.
- Meadows, D. H., Randers, J., & Meadows, D. L. (2004). *Limits to growth: The 30-year update*. Chelsea Green Publishing.
- Newell, P., & Mulvaney, D. (2013). The political economy of the 'just transition'. *The Geographical Journal*, 179(2), 132-140.
- O'Brien, K. (2018). Is the 1.5°C target possible? Exploring the three spheres of transformation. *Current Opinion in Environmental Sustainability*, pp. 31, 153-160.
- Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. *Science*, 325(5939), 419-422.
- Raworth, K. (2017). *Doughnut economics: Seven ways to think like a 21st-century economist*. Random House.
- Rayner, S. (2012). Uncomfortable knowledge: The social construction of ignorance in science and environmental policy discourses. *Economy and Society*, 41(1), 107-125.
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., ... & Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461(7263), 472-475.
- Schlosberg, D., & Collins, L. B. (2014). From environmental to climate justice: Climate change and the discourse of environmental justice. *Wiley Interdisciplinary Reviews: Climate Change*, 5(3), 359-374.
- Scott, J. C. (1998). *Seeing like a state: How specific schemes to improve the human condition have failed*. Yale University Press.

- Stahel, W. R. (2016). The circular economy. *Nature*, 531(7595), 435-438.
- Stern, N. (2007). *The economics of climate change: The Stern review*. Cambridge University Press.
- Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, 42(9), 1568-1580.
- Taylor, B. (2016). The greening of religion hypothesis (part one): Lynn White, Jr. claims that religions can promote environmentally destructive attitudes and behaviors to assert that they are becoming environmentally friendly. *Journal for the Study of Religion, Nature & Culture*, 10(3), 268–305.
- Wackernagel, M., Hanscom, L., & Lin, D. (2017). Making the sustainable development goals consistent with sustainability. *Frontiers in Energy Research*, 5, 18.
- Zsolnai, L. (2015). *The spiritual dimension of business ethics and sustainability management*. Springer.