

Sustainable Airport Development In Indonesia's Border Areas: Challenges and Future Prospects Case Study of Letung Airport, Regency Anambas Islands Riau Islands Province

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ABSTRACT

The research purpose to find out sustainable airport development in indonesia's border areas: challenges and future prospects. The construction of airports in Indonesia's border areas has a strategic role in supporting connectivity and economic development in border areas. This study uses survey methods and interviews from several respondents in the district of Anambas Islands, Riau Islands Province. Several findings related to the challenges and prospects of airport development in the border area have a positive impact on the community on the border, especially in the Riau Islands Where this area is almost 96% consisting of interview data which shows that 90% feel the benefits and 10% provide input for the next development, making the essence of the airport in the border area very much needed. However, the question is still how sustainable the airport development is. Whether it is completed with the operation of an airport or is it still being developed to continue to provide benefits to the community as the main target. The ability to analyze and take concrete and effective steps is needed in assembling all organizational goals and aligning with the vision and mission of the central government.

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Introduction

The policies of the Joko Widodo-Jusuf Kalla government tend to prioritize the development of infrastructure in border areas (Rusdiyanta, 2020). According to online media Kompas in 2023, the central government has budgeted approximately Rp 7.7 trillion for development on the borders of all Indonesia. This is in accordance with the Jokowi government's program to carry out economic equity and decentralised development in cities. The budget for border development is to build villages, cross-border posts and access to the region. By carrying out development that is not centralized in the city, the Jokowi administration hopes that economic restructuring throughout Indonesia can be achieved. Minister of Transportation.

Following up on the direction from President Jokowi through the Minister of Transportation, the construction of facilities and infrastructure is carried out to open access to the border and facilitate access for people living in the region. In this case, not only Papua Province needs special attention, but all border areas in Indonesia also need special attention to transport development.

The Riau Islands are geographically very strategic and close to several neighboring countries including Singapore, Malaysia, Viet Nam and Cambodia. The Riau Islands area, which consists of 96% of the waters, makes connectivity very important and absolutely needed. Infrastructure development is needed to support people with economic activities from one region to another

This need becomes absolute when faced with the position that they are the same Indonesia citizens who are entitled to receive services from the government. The government must be present in real life so that existing problems can be resolved. The role of the central government, the Provincial Government, the Regional Government and stakeholders in a region urgently needs synergy to support the acceleration of development in border areas. The ability to finance infrastructure development can be supported together between the center, provinces, regions or with the concept of cooperation with the private sector.

The acceleration of the development of transportation facilities and infrastructure is the beginning of the construction of advanced infrastructure in border areas. After the port is built, it will be easier to move and mobilize people and goods from and to an area. Coastal areas that are vulnerable to weather conditions on the high seas can be supported by the development of Bdnara as an alternative to marine transportation.

Airports in terms of transportation in addition to being fast, safe, effective and efficient make airports very central in supporting airport development on the border. Thousands of people will find it easier to come and go using airport services so that the economy will be formed. The economy will grow along with the number of people who come and of course supported by MSMEs. The multiplier effect will have an impact on everything. In accordance with the President's Directive, the construction of the airport has been massively carried out. There are 5 (five) new airports managed by the Directorate General of Civil Aviation of the Ministry of Transportation and 2 (two) International Airports managed by Business Entities. It is located 150 nautical miles (278 km; 173 miles) northeast of Batam Island in the North Natuna Sea between mainland Malaysia in the West and the island of Borneo to the east. (Wikipedia).

Research Methods

The research methods used in this study involve various integrated approaches to deeply understand the challenges and prospects of sustainable airport development in Indonesia's border areas. The research approach applied is a qualitative approach using the case study method. The qualitative approach was chosen because it allows researchers to gain a comprehensive and in-depth understanding of the phenomena being studied, including the social, economic, and environmental dynamics involved in the construction of airports in border areas. The case study method was chosen because it allows researchers to conduct detailed analysis of specific cases of airport construction in the Riau Islands Province area, so that it can provide rich and contextual insights into the challenges and prospects faced.

The data for this study were obtained through various sources, including secondary data and primary data. Secondary data is obtained from various relevant sources, such as

government reports, academic literature, and publications related to infrastructure development in Indonesia's border areas. This secondary data includes information on government policies related to airport development, statistical data related to the socio-economic conditions of border areas, and previous research that is relevant to the research topic. Primary data was obtained through observation techniques, in-depth interviews, and focus group discussions (FGD) with various stakeholders involved in the construction of the airport in Anambas Islands Regency, Riau Islands Province. Through in-depth interviews and FGDs, researchers were able to gather first-hand insights and experiences from experts, practitioners, and local communities involved in the airport's construction process.

Data analysis is carried out in an integrated and comprehensive manner by utilizing a qualitative approach. Qualitative data obtained from interviews, observations, and FGDs were analyzed inductively using thematic analysis techniques. The analysis process begins with data coding, where relevant data is identified, labeled, and categorized based on the main themes that emerge. Furthermore, the findings are analyzed and interpreted to identify patterns, trends, and relationships between relevant variables. Quantitative data obtained from secondary sources are also analyzed descriptively to provide a comprehensive picture of the condition of Indonesia's border areas and the role of airports in economic development and regional connectivity. The integration between qualitative and quantitative analysis is carried out to obtain a deeper and holistic understanding of the challenges and prospects of sustainable airport development in Indonesia's border areas.

Results and Discussions

The interviews were conducted by selecting samples from the sub-district government, village governments, and the surrounding community who were directly and indirectly affected by the existence of Letung Airport, totaling 53 respondents. From the Regent, sub-district head to business actors became the interview sample. Interviews are conducted by visiting the office or the community directly so that the results obtained are more valid and reliable. The data from the interviews was collected and analyzed. From the results of the analysis, conclusions can be drawn and implications can be given.

From the results of the analysis of the interviews conducted, the local government and the people of Letung Island are very supportive of the existence of the airport. They welcomed positively with the construction of the airport on Letung Island. According to respondents, the existence of an airport on Letung Island can facilitate transportation access for those who are going to or come to Letung Island. With the existence of airplanes, it greatly cuts the travel time to go to Batam or Tanjung Pinang, so that the community is greatly helped by the existence of the airport. Entering November – February will experience a high wave season which has an impact on ships not being able to sail, so this aircraft is an option in the use of transportation modes for the people of Letung Island.

During the construction and development of Letung Airport which is carried out in 2023, there will be no rejection and protests by the community, this is certainly a good thing for further development and development. In terms of the environmental impact carried out by Letung Airport, the government and the local community 90% have no objection and do not feel the impact caused. As for the remaining 10%, they only provide input and suggestions for further development so that the environmental impacts caused during development are always prepared to take steps to counteract this.

From several responses submitted by the speakers, the existence of Letung Airport has a very positive impact on the development and improvement of the economy of the surrounding community. With planes landing at Letung Airport has a significant impact on transportation service providers, lodging and restaurants, this increases the economic turnover on Letung Island. In addition, with the airport, there are also immigrants from outside the island who come to work at the airport or to carry out security on the island. Of course, this also encourages economic improvement for the people of Letung Island.

The response or response given by the respondents for the future, the local government and the surrounding community hope that ticket prices can be reduced. For Wings Air ticket prices with the Batam – Letung, Letung – Batam flight route, the price is considered very expensive for the local community, seeing the economic condition of the people of Letung Island, the ticket price is very burdensome. Therefore, they hope that Wings Air ticket prices can be adjusted to the ability of the people of Letung Island. In addition, for pioneer flights using Susi Air on the Tanjung Pinang – Letung route, Letung Tanjung Pinang can be increased flight frequency. With the routes that are currently available with a frequency of 2x a week, it is still not enough to meet the needs of the community. Seeing Tanjung Pinang as the capital of the Riau Islands Province, the flow of people moving to Tanjung Pinang is very high and the use of aircraft transportation modes is faster than using ships, so airplanes are the main choice of transportation modes to go to Tanjung Pinang. In addition, there are 30% of respondents who expect an additional flight route to the surrounding islands in the Anambas Islands.

An analysis of the challenges of airport development in Indonesia's border areas reveals various complexities that are obstacles in efforts to build and manage aviation infrastructure in these remote areas. Border areas often have geographical characteristics that are difficult to reach and limited accessibility, being the main challenges faced in building airports there (Bhattacharyay et al., 2012). The first challenge that arises is the limited supporting infrastructure around the border area (Sreenath et al., 2021). Limited infrastructure and lack of adequate land transportation networks can make it difficult to access airports, both for locals and for the distribution of goods (Ollivaud & Haxton, 2019). This limitation not only affects the mobility of the population but also limits the economic potential of the region, by hindering the flow of goods and investment to the border areas.

Environmental challenges are also a critical aspect that must be considered in the construction of airports in border areas. The process of developing airport infrastructure often has the potential to damage natural habitats, threaten the sustainability of the ecosystem, and trigger conflicts with local communities that depend on natural resources (Adrian et al., 2017). Border regions are often home to high biodiversity and sensitive environments, such as tropical rainforests and coastal ecosystems. The construction of airports that are not properly managed can cause habitat damage, biodiversity loss, and damage ecosystems that are vital for the survival of local communities and environmental sustainability. Therefore, in the context of airport development, it is important to pay attention to environmental conservation efforts and ensure that the development process is carried out taking into account its impact on the local ecosystem (Grundy-Warr et al., 1999).

Another challenge that arises in the construction of airports in border areas is the conflict of interest between economic development and environmental sustainability. While airport construction is expected to improve connectivity and economic growth in border areas, it is often at odds with efforts to preserve the environment and conserve

nature. Infrastructure developers must address this dilemma by finding a balance between sustainable economic development and environmental protection. This demands an integrated and sustainable approach to planning, where economic needs are considered together with possible environmental impacts. The active participation of local communities in the decision-making process is also key in addressing this conflict of interest, by ensuring that their interests and aspirations are accommodated in the planning and implementation of airport development. Thus, these challenges must be overcome with mature thinking and comprehensive solutions to ensure that the construction of airports in border areas can be carried out in a sustainable manner and have a positive impact on all parties involved.

Factors that affect the sustainability of airport development projects in Indonesia's border areas are crucial aspects that require serious attention in planning, implementing, and managing this infrastructure. Understanding the dynamics involved in these factors is key to achieving sustainable and effective development. First of all, sustainable financing and financial management are the main foothold in maintaining project sustainability. In this context, an efficient and transparent financing strategy is needed, which involves strong collaboration and partnerships between the government, the private sector, and financial institutions (Zainol et al., 2019). Experience shows that the involvement of the private sector and financial institutions can expand access to the financial resources needed to support airport development, while partnerships with the government ensure good coordination between the public and private sectors in planning and executing these projects.

In the context of project sustainability, risk management and disaster mitigation are other crucial factors. Border areas are often vulnerable to natural disasters such as floods, landslides, and earthquakes, which can threaten the sustainability of airport construction projects. Therefore, it is important for stakeholders to conduct a comprehensive risk analysis and integrate disaster mitigation strategies in project planning and execution. This effort involves identifying potential threats, determining appropriate mitigation measures, and building community capacity in dealing with and responding to disasters (Adrian et al., 2017). Sustainable planning is also an important factor in maintaining the sustainability of the project (Lovina, 2017). Careful and integrated planning from the beginning of the project to the post-development stage can reduce the risk of waste of resources, conflicts of interest, and negative impacts on the environment and local communities (Adrian, 2017). By taking these aspects into account, airport development projects can run more efficiently and effectively, with a more positive and sustainable impact on border areas.

Active community participation also plays an important role in maintaining the sustainability of airport development projects in border areas (Lovina et al., 2017). Involving local communities in every stage of a project, from planning to implementation and evaluation, can increase understanding, acceptance, and support for the project (Ollivaud & Haxton, 2019). Community participation also allows for better identification of local needs and aspirations, so that projects can be designed and implemented according to existing social, cultural, and economic contexts (Bainus & Sudiar, 2017). Community participation is also one way to strengthen local capacity in managing and utilizing airport infrastructure in a sustainable manner. By involving the community in the management and maintenance of the airport, a sustainable relationship can be created between the project and the local community, which in turn can improve the quality and sustainability of the infrastructure in the long term.

By paying attention to these factors, the development of airports in border areas can be directed to achieve broader goals in supporting economic growth, regional integration, and sustainable development. It is important for stakeholders, both from the government, the private sector, and local communities, to work together in an integrated and sustainable manner in overcoming challenges and taking advantage of existing opportunities. With a holistic and sustainable approach, the development of airports in border areas can be one of the main drivers in realizing the vision of inclusive, equitable, and sustainable development for Indonesia.

The prospect of sustainable airport development in Indonesia's border areas marks a journey towards sustainable economic and social progress. However, in grasping opportunities, we must also understand and face the challenges that come with them carefully. Sustainable airport development will not only be a key driver in improving regional connectivity, but will also pave the way for inclusive economic growth and resilient infrastructure development in border areas (Liem & Purwanto, 2022). Efficient and sustainable airports will expand the reach of accessibility, strengthen economic ties between regions, and provide an impetus for new investments that can penetrate marginalized sectors (Susilo & Harliantara, 2023). In other words, sustainable airports are not only a means of transportation, but also a catalyst to build a sustainable economic ecosystem in border areas (Berawi, 2018).

The potential of sustainable airports as a development engine is not only limited to economic aspects, but also includes social and environmental dimensions (Sungkono, 2022). Airports that operate efficiently will open the door for better access to public services, such as health and education, which can improve the quality of life of people in border areas (Dewi & Krisdiyanto, 2023). Environmentally friendly airports will ensure that infrastructure development does not damage sensitive natural habitats and exacerbate the impacts of climate change. By paying attention to these aspects, the sustainable development of airports in border areas has the potential to create a balanced environment between economic growth and social welfare, while maintaining the biodiversity and natural beauty that Indonesia has (Berawi, 2018).

To achieve the full potential of sustainable airport development, a solid commitment from various stakeholders is needed (Saputra et al., 2024). The government has an important role in creating policies that support and direct the development of airports in a sustainable manner (Bhattacharyay et al., 2012). This includes sustainable planning, environmental regulation, and ensuring the availability of adequate financial resources. Meanwhile, the private sector has a responsibility in providing the necessary investment and collaborating with the government to ensure that development is carried out efficiently and transparently. Local communities also have an important role to play in ensuring that airport construction accommodates their needs and interests, as well as empowering them to be involved in the development and management process (Lovina et al., 2017). Finally, international institutions can provide the necessary technical and financial support to strengthen sustainable development capacity in border areas.

By overcoming challenges and optimizing factors that affect project sustainability, sustainable airport development in Indonesia's border areas has great potential to provide significant benefits for economic and social development (Iswardhana, 2023). The success of sustainable airport development cannot be achieved instantly. It takes joint efforts, patience, and perseverance to realize the vision of inclusive and sustainable development for all levels of society in border areas. With strong determination and solid cooperation, Indonesia can move forward towards a better future, where sustainable

airport development is one of the main pillars in bridging the gap and realizing prosperity for all (Abdoellah, 2016).

In addition to the above factors, collaborative and adaptive leadership patterns have been proven to have a positive impact on team performance and airport innovation. By building strong relationships, facilitating open communication and encouraging active participation from employees, collaborative leaders can create a work environment that supports creativity and shared success. The ability of airport leaders to translate and implement appropriate and targeted work plans is expected to synergize with the needs of the surrounding community. The development at each airport will certainly be different according to the needs for transportation services in their respective regions. Understanding sustainable airport development in accordance with sustainability will be able to build an effective and efficient work pattern. Good communication skills from the airport leadership will form a pattern of coordination and communication in many directions, not only with suit users but with all stakeholders involved. It is hoped that active communication and coordination with all parties can minimize the potential risks that exist. At least early warning if there are conditions that can interfere with the operation of an airport, it has prepared the right steps. In addition to creating and providing the best service to air transportation service users, the ability of airport leaders to see and read potential risks, of course, is very supportive in sustainable airport development. In the future, training and improving the competence of airport leaders and staff must be carried out massively and continuously. It takes joint efforts, patience, and perseverance to realize the vision of inclusive and sustainable development for all levels of society in border areas. With strong determination and solid cooperation, Indonesia can move forward towards a better future, where sustainable airport development is one of the main pillars in bridging the gap and realizing prosperity for all.

Conclusion

Apart from external factors such as supporting facilities, effective and efficient financial management, collaboration and commitment of policy makers to the environmental impact on the existence of the city itself, there are factors that need serious attention, namely the factor of the leadership pattern of airport operators. The ability to analyze and take concrete and effective steps is needed in assembling all organizational goals and aligning with the vision and mission of the central government. Minimizing potential risks and challenges in the field is very important and makes a planning concept in sustainable airport development. This will be easier if regular training is held to continue to monitor the dynamics in the field.

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