

Island of Memory: Urbanisation and Cultural Resilience in Pulau Duyong, Kuala Terengganu

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ABSTRACT

This study explores socio-economic and cultural consequences of urbanisation on Pulau Duyong, Terengganu-a locale historically renowned for its traditional boat-making craft. This transformation of the physical landscape and socio-economic organisation of the island has been brought about by infrastructure and land reclamation, along with improved connectivity to the mainland through the Sultan Mahmud Bridge. The study examines the impact of these changes on the local economy, cultural practices as well as environmental conditions, including the measures that can be taken to ensure modern development without compromising the cultural heritage. The use of historical analysis, ethnographic techniques, surveys, and observational research shows that urbanisation has resulted in the improvement of infrastructures in urban areas. Nevertheless, it has also led to the death of traditional industries and the migration of youths. Further threats to the cultural legacy of the island are the degradation of its environment through pollution and encroachment on the land. The paper designates the aspect of eco-tourism and cultural tourism as viable sources of local Malay livelihood and cultural identity maintenance. Finally, the study proposes a holistic and sustainable development policy that considers economic expansion and preservation of cultural heritage.

INTRODUCTION

Urbanisation is a radical change of the 21st century, which changes not only the geographical landscape but also alters the functioning of societies and the development of cultures all around the world. The global population growth, particularly in the developing world, makes cities increase at a high rate. The United Nations Population Fund (UNFPA) projects that the world population will grow to 9.3 billion by the year 2050, upwards of 6.1 billion in 2001 and that over 60 percent of this growth will be accommodated within

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urban centres of the developing countries (Krannich & Reiser, 2023). The rapid pace of urban development in Southeast Asia particularly affects Malaysia through strong impacts on local communities and their traditional way of life. The urban landscape of Malaysia demonstrates a special balance between economic progress and cultural heritage. The emergence of Kuala Lumpur and Penang as megacities shows a dual trend of increasing skyscrapers and growing economic development (Li et al., 2025). The modernity of Malaysian society conceals multiple challenges for Malay communities because their traditional customs, farming ways, and cultural traditions face serious threats. The expanding urban landscape that enters rural territory creates multiple critical problems, including forced population movement and destroyed agricultural fields, which damage local cultural traditions (Hasan, 2014; Titisari et al., 2024). This transition has come under serious scrutiny about the sustainability of urban development in Malaysia. Population growth means that the growing cities need affordable housing, adequate public services, and infrastructure development (World Bank, 2016). Rising property prices and gentrification push Malay families into an ever-widening housing disadvantage that cleaves the urban affluent from economically marginalised groups (Salleh, 2024). Due to larger social inequalities and social stratification (Evers, 1997, 2013; McGee, 2009), new settlements without adequate infrastructure have proliferated rapidly in cities.

Urbanisation causes profound cultural changes on top of its other effects. Malay communities create towns at the loss of culturally important historical places through urban development projects. Therefore, recent urban planning in Kampung Baru Kuala Lumpur exemplifies this struggle between the need for modern progress and the preservation of historic community roots and cultural identity (Salleh, 2023). Urban development creates urgent development issues for the urban society, and the need to have discussions where the community voices are considered in planning decisions as community participatory design. To unite the two (2) aspects at hand, including the preservation of cultural heritage and the need to address the population growth demands through inclusive practices, policymakers and urban planners must reconsider and revisit how the development is approached (Harun & Kassim, 2025). The growing rhetoric of sustainable urban development aims at reconciling the conflict between the necessity of a socio-economic development process and the maintenance of the community identity and ecosystems. Congress for New Urbanism (CNU) urban design proposes that mixed-use neighbourhoods and pedestrian-friendly streets facilitate social interactions and safeguard the environment (Larice & Macdonald, 2013). With the implementation of these kinds of principles, Malaysian urban regions will be able to attain sustainable development without compromising culture (Lim et al., 2021). This study emphasised cultural resilience as a key factor in understanding the impact of urbanisation on traditional communities. The proposed study will seek to identify how fast urbanisation has affected the achievement of sustainable planning strategies in developing the Malaysian Malay community, which takes into consideration cultural heritage and social equity. The study examines the modern patterns along with challenges for development and discusses various concepts of inclusion to promote adequate urban growth processes that consider human and environmental communities (Yasin et al., 2022; Sonet & Shahrudin, 2024).

Urbanisation on Duyong Island, Kuala Terengganu



Fig.1. Duyong Island, Kuala Terengganu

Source: Authors (2025)

Located in Terengganu, Malaysia, Pulau Duyong (see Figure 1) began its urbanisation and sociological changes under the late 19th century British colonialism. Pulau Duyong developed into an administrative centre, bringing infrastructure, economic activities, and population diversification. During colonial rule, the establishment of land policies worked against the Malay community while breaking down their established land tenure practices (McGee, 2009; Yasin et al., 2022). After independence, Pulau Duyong witnessed rapid urban growth driven by government modernisation efforts (Abdullah, 2025). The expanding economy transitioned the local economy from agricultural production to various industries, opening new business opportunities, yet many Malays maintain traditional occupations such as fishing (Harun et al., 2023). The fishing industry is a core cultural and economic element that formed Pulau Duyong's historical development (Hassan et al., 2019). The island's strategic location at the mouth of the Terengganu River made it suitable for fishing. Over time, boat building became a major cultural practice, with skilled craftsmen constructing durable boats without nails (Abdullah, 2025). This traditional practice and annual fishing festivals celebrate Pulau Duyong's fishing heritage and strengthen community bonds (Hassan, 2021; Jaffar et al., 2019).

However, the fishing industry faces major challenges from urbanisation, environmental degradation, pollution, overfishing, and the exodus of young generations from fishing (World Bank, 2016). Despite external pressures, the fishing heritage faces preservation initiatives that document boat-building methods and promote environmentally responsible fishing practices (Harun et al., 2023). The urbanisation process has created conflicts regarding Malay Reserve Land ownership rights. The worsening tension between developers and local people has become more severe due to development projects and land encroachment, requiring new land policies for resident rights protection (Rosman et al., 2021; Ishak et al., 2025). The economic difference between traditional and modern sectors creates substantial challenges for cultural preservation projects (Ismail et al., 2014). Eco-tourism and cultural tourism initiatives developed by local communities provide sustainable methods to protect the cultural heritage of Pulau Duyong against modernisation and urban migration threats (Jaffar et al., 2019). This dual method of passing on the cultural heritage skills and traditional practices on the island should be passed on to future generations to meet the economic development needs and to rectify social inequality (Salleh, 2024). Urbanisation has caused significant physical and economic transformation to Pulau Duyong in Terengganu. Pulau Duyong used to maintain a boat-building industry. However, its cultural and economic landscape has changed due to urbanisation, resulting from sedimentation, infrastructure development, and land reclamation projects. The combined island of Pulau Duyong Besar and Pulau Duyong Kecil now connects more easily to the mainland through the Sultan Mahmud Bridge, providing better access to urban facilities and economic resources (Jaffar et al., 2019; Harun, 2025). Urbanisation has improved resident lives through better services, including education and healthcare. However, it demands new challenges for residents. The traditional boat-making business that sustained local economic growth has diminished because the younger generation pursues improved opportunities in urban areas (Abdullah et al., 2022, 2025). Traditionally practiced art forms face severe decline because fewer artisans remain to carry the craft forward (Ahmad et al., 2023). Modern infrastructure has created environmental changes on the island by causing land encroachment, polluting the environment, and destroying natural habitats, diminishing the island's aesthetic value. Urbanisation has brought positive and negative effects on the socio-economic conditions of Pulau Duyong. The establishment of new infrastructure alongside tourism sector development opened the gates to economic possibilities (Abdullah, 2025). Salleh (2023) demonstrates how eco-tourism combined with cultural tourism enables the maintenance of local industries and cultural preservation through economic growth benefits (see Figure 2). The island faces two (2) major challenges: urban youth migration and local culture commercialisation. Economic inequality is worsening because modern economic opportunities work favourably for individuals who adapt. Nevertheless, traditional industry workers experience financial struggles (Shari, 2000). Urban development and cultural preservation balance require integrating cultural heritage into development plans (Aisyah, 2023). Through eco-tourism and cultural tourism, the traditional

crafts on the island can secure economic sustainability. Nonetheless, festivals and cultural events help unite the community and enhance local identity. Establishing cultural heritage sites and interactive exhibitions serves two (2) purposes: it raises awareness about the island's historical background. It allows artists to display their artistic talents (Harun et al., 2022). In conclusion, the urban development of Pulau Duyong brings forth both beneficial aspects and difficulties that need to be addressed. The advancement of modern development has increased living standards but simultaneously caused the disappearance of traditional businesses alongside cultural customs. Sustainable urban planning, along with other initiatives like eco-tourism and promoting local craftsmanship to protect cultural heritage and, at the same time, traditional practices while accompanying modern development plans, must be safeguarded. Pulau Duyong's sustainable approach will protect against the different urbanisation pressures that could potentially erase the region's traditional cultural heritage (Abdullah, 2025).



Fig.2. Economic Development on Duyong Island, Kuala Terengganu

Source: Authors (2025)

METHODOLOGY

The Development of Pulau Duyong

This paper calls for a multidisciplinary approach to the socio-economic, cultural, and environmental transformation of Pulau Duyong. The types of methodologies used, historical analysis, survey research, mixed methods, and observational practices, offer a wide-ranging scope of studying such complicated processes. The application of this case study method will enable one to show how these techniques work in practice by offering a subtle insight into how the island evolved from a colonial settlement to what it is today: a community. Historical research plays a major role in imparting knowledge on how the social and economic degeneration which characterises Pulau Duyong came into being through the colonial modes of governance, which form the origin of the causes. Through survey research, scientists gather quantitative information about population changes, migration movements, and public opinions in the community. The surveys of Pulau Duyong yield useful information regarding how demographic patterns, including urban migration of younger people, impact local economic activities and community solidarity. Ethnography serves as a qualitative approach that requires extensive field studies to research community practices as well as cultural customs and social relationships among people. When attending community-based festivals and family functions, ethnographic researchers going to Pulau Duyong can observe how residents balance cultural heritage preservation and modern development. This allows for a better understanding of how community members maintain social bonds and traditions to navigate changes in infrastructure and economy. However, in-depth interviews and focus groups provide personal stories and reflections regarding cultural and social change. Such hybridisation in the lines of research enables scientists to build a coherent vision of the impacts of modernisation in various niches of their communities. Methods of observation produce qualitative information instantly on social behaviour and the way community members interact. Because resident interactions with and perceptions of their environment are key to assessing anthropogenic effects, researchers on Pulau Duyong should consider daily life activities in addition to public events and meetings. By adopting the case study method, researchers are able to combine research strategies and develop a comprehensive account of Pulau Duyong's transformations. The study of the evolution of fishing

villages into modern settlements: parting ways with traditional growth methods yet maintaining and connecting the original culture through a combination of historical analysis, survey research with ethnography, and observation. The study involved a population of 50 residents selected through purposive sampling. Quantitative data from surveys were analysed using descriptive statistic, while qualitative data from interviews and observations were thematically analysed. Triangulation was employed to ensure validity by comparing findings across methods. The integrated methodology allows researchers to comprehensively examine changes in community-built environment features alongside residential life in the community.

ANALYSIS

Survey Data Analysis from Pulau Duyong

Research based on 50 collected questionnaires reveals important information about the socio-economic conditions combined with the cultural practices of Pulau Duyong residents. The data collected comes up with critical results, which consist of data on community duration and work specialisation, data on the opinion of the people on change and data on community barriers and engagement. These details show the modern changes that have taken place in society due to urbanisation, expansion within an economic sector, and preservation of cultural heritage projects.

Age of the Community

The term ‘age of the community’ refers to the duration of residency among respondents. With only 10 percent having lived in Pulau Duyong for more than ten (10) years, this does not represent the entire community’s age. The results of the research indicated that only 10 percent of the respondents had lived in Pulau Duyong for more than ten (10) years. The migration trend in traditional societies illustrates that the youths are more likely to go to the urban centres since they are in pursuit of education and job opportunities. The high mobility of the people is detrimental to cultural inheritance. However, it also helps to bring new ideas and expertise into the community. This renders traditional knowledge and practices that are transmitted intergenerationally less sustainable and resilient since more migration gates create more difficulty in achieving long-term stability. Thus, the indifference of the younger generation residing in the urbanised regions towards these aspects of the culture is a threat to its preservation in Pulau Duyong, who can assume that this aspect will eventually dissolve after a certain period. This is a challenge to the community leaders who are keen on maintaining the heritage of the island.



Fig.3. Interview with Residents of Duyong Island, Kuala Terengganu

Source: Authors (2025)

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Occupational Diversity

The data also reflects occupational diversity, with 20 percent of respondents seeking work outside the farming and fishing industries. The economy has diversified and moved toward greater flexibility and less reliance on a single industry. This diversity allows traditional industries, which often suffer from the pro-cyclicality of these industries, to provide a stable and reliable financial source. Traditional agricultural and fishing industries are losing dominance, causing a possible decline of cultural practices linked to these sectors. The boat-building industry of Pulau Duyong has established its reputation over a historical time. The reduction in boat builders because of rising alternative professions threatens traditional cultural elements from disappearing from this community. Keeping traditional skills intact while embracing modernisation maintains a continued challenge for the residents of Pulau Duyong.

Perception of Change

A remarkable 90 percent of respondents agreed that the community experienced major transformations throughout the previous ten (10) years. The high percentage of respondents indicates a widespread understanding of urbanisation and economic development's effects on communities. The perception of change exists on a spectrum since individuals either see it positively through enhanced infrastructure and access to services and economic growth or negatively with the loss of their cultural heritage and traditional behaviours. Residents of Pulau Duyong need to understand these changes to start discussing how to develop the island while protecting its singular cultural heritage. The acknowledgment demonstrates that the community understands that we need to find an equilibrium between contemporary development and preserving cultural traditions. Community members understand their cultural traditions the island's historical heritage, and local industries face extinction from urban development pressures.

Challenges Faced

Note that 60 percent of respondents demonstrate active awareness of their community situation by pinpointing essential issues. The respondents recognised economic difficulties, infrastructure requirements, and challenges to cultural heritage preservation because of modernisation. Traditional fishing and boat-building industries face economic competition from emerging modern economic activities. The development and expansion of rural communities often meet resistance from infrastructure demands for improved road systems, healthcare services, and educational institutions. Protecting cultural heritage remains crucial because modernisation threatens to abolish traditional practices and their associated occupational knowledge and skills. Identifying the challenge by a community represents an essential beginning toward resolving it. This willingness indicates readiness to participate in conversations about solutions and supports initiatives that maintain cultural identity during sustainable development.

Community Involvement

Data showed that 40 percent of residents participated in community events, indicating moderate involvement. A substantial portion of community members demonstrates active participation in local events, but further expansion of involvement remains possible. Community engagement establishes both neighbourhood connections and collective unity between local residents. Initiatives that target local challenges become more effective when people engage because the community actively participates. Higher participation levels can be attained by creating events that captivate diverse interests with activities that welcome everybody into the community. The preservation of cultural heritage depends on community engagement because traditional knowledge and practices need active resident participation for success. By increasing participation, Pulau Duyong can build a stronger, more united community that is better prepared to address its challenges.

Table 1. Summary of survey data in Duyong Island, Kuala Terengganu

Aspect	Key Insights	Implications/Challenges	Strategies/Recommendations
Community Longevity	- Only 10% of residents have lived in Pulau Duyong for over 10 years. - Younger generations migrate to urban areas for better educational and employment opportunities.	- The transient population makes it difficult to maintain cultural continuity. - Loss of traditional knowledge and practices due to migration. - Difficulty in integrating newcomers with established residents, leading to fragmentation in the community.	- Create programs that encourage young people to stay or return to the island, such as offering incentives for education and employment opportunities. - Organise cultural exchange programs to help newcomers integrate while preserving traditions.
Occupational Diversity	20% of the residents engage in various occupations beyond agriculture and fishing. - There is a shift from traditional industries to more modern livelihoods.	- The diversification of occupations can reduce the community's reliance on traditional industries, improving economic resilience. - Loss of traditional occupations, like boat building, could threaten the cultural heritage associated with these industries.	- Promote initiatives to preserve and revitalise traditional crafts and industries through cultural tourism or workshops. - Encourage youth engagement in traditional occupations by integrating them into modern economic opportunities, such as eco-tourism.
Perception of Change	90% of respondents believe the community has changed in the last decade due to urbanisation and economic development. This includes both positive and negative impacts on community life.	- Positive impacts include improved infrastructure, service access, and economic opportunities. - Negative impacts involve the erosion of cultural identity, loss of traditional practices, and disruption of community cohesion.	- Launch community-led discussions on balancing development with cultural preservation. - Document and promote local heritage through museums, festivals, or cultural centres to maintain cultural identity amidst modernisation.
Challenges Faced	60% of respondents identified challenges such as economic pressures, the need for improved infrastructure, and the difficulty of preserving cultural heritage in the face of modernisation.	- Economic pressures arise from the competition between modern industries and traditional livelihoods, such as agriculture and fishing. - Lack of infrastructure (roads, healthcare, education) limits development and quality of life. - Preservation of cultural heritage is at risk.	- Advocate for government support in improving infrastructure and public services. - Encourage local businesses to partner with government initiatives for community development. - Establish cultural preservation projects that can support the community's heritage.
Community Engagement	40% of respondents participate in community events, reflecting a moderate level of engagement. - There is an opportunity for improvement in participation, especially in community-driven initiatives.	A relatively low participation rate suggests some residents may feel disconnected or disengaged from community activities. The lack of strong community engagement could hinder the success of cultural preservation efforts.	- Organise community events that appeal to various age groups and interests, such as cultural festivals, sports, or educational workshops. - Ensure inclusiveness in community decision-making by engaging residents through surveys, focus groups, and workshops.
Infrastructural Needs	There is a significant need for better infrastructure, particularly in terms of	Insufficient infrastructure may limit the community's growth and quality of life and increase	Collaborate with local and state governments to prioritise infrastructure development,

Aspect	Key Insights	Implications/Challenges	Strategies/Recommendations
	roads, healthcare facilities, and educational institutions.	the migration of younger people to urban areas. Poor infrastructure also impacts access to basic services and economic opportunities.	including roads, healthcare, and education. 2. Seek funding for community-driven infrastructure projects or improvements in public facilities.
Cultural Preservation	1. There is a growing concern about preserving cultural heritage amidst rapid urbanisation. 2. Traditional industries like boat-building and local crafts are at risk of disappearing.	1. The erosion of traditional industries threatens the cultural fabric of the community. 2. Younger generations may not fully engage with their cultural heritage while pursuing modern occupations and lifestyles.	1. Establish programs or initiatives involving youth in traditional practices, such as apprenticeships or cultural workshops. 2. Promote cultural heritage through tourism and local events to attract visitors and educate residents.
Economic Opportunities	1. Some residents feel that economic opportunities remain limited, especially in traditional sectors like fishing and boat-building.	1. Limited economic opportunities can lead to dissatisfaction and further migration of residents. The need for new sources of income beyond traditional industries is apparent.	1. Develop eco-tourism or cultural tourism initiatives highlighting Pulau Duyong's unique cultural heritage. 2. Support entrepreneurship and innovation within the community by providing training and access to resources.
Social Cohesion	1. Some respondents feel that urbanisation has led to social fragmentation, with newcomers not fully integrating into community life. 2. There is a divide between younger, urbanised residents and older, traditional residents.	1. Lack of social cohesion can lead to tensions or weakened sense of community. 2. Older generations may feel their cultural practices are not being respected or passed on.	1. Implement community-building initiatives that promote social integration, such as shared cultural or recreational events. 2. Encourage dialogue between older and younger generations to bridge the gap and foster mutual understanding.

Source: Authors (2025)

Insights from the questionnaire data provide a detailed picture of the socio-economic and cultural realities of Pulau Duyong. A relatively transient population, increasing occupational diversity, widespread perceptions of change, recognition of key challenges, and moderate community engagement are all factors shaping the community's future. To address these challenges, a holistic approach is necessary—one that balances economic development with the preservation of cultural heritage. Eco-tourism and cultural tourism promotion strategies will not only give economic advantages but will also ascertain that traditional knowledge and skills get transferred to the next generations. Raising community participation is crucial since it creates a sense of collective identity and involvement in the practice of heritage preservation. Through cultural heritage, Pulau Duyong will be sustainable and resilient in the contemporary world.

FINDINGS AND CONCLUSION

Various historical, cultural, and demographic factors have caused significant socio-economic transformations in the Southeast Asian island region of Pulau Duyong. Particularly, the economy and land-use structure of the island were significantly reshaped by the British colonial administration, which introduced cash crops and tin mining into the section. The foreign economic policies under colonial rule

were responsible for the creation of modernising commercial industries on the island's terrain. However, they also laid a basis for expanding economic opportunities. These industries continued shaping land distribution, resource extraction, and settlement patterns throughout Pulau Duyong. Economic activities produced adverse environmental impacts such as land degradation and an over-reliance on specific commercial industries. Understanding historical factors driving development is critical for contemporary urban planning because it allows officials to develop policies that lessen existing problems. Post-war development, with extensive infrastructure constructions on Pulau Duyong, such as changing from subsistence farming, paved the way for economic diversification through the occupation of vessel shipyard in bringing in economic sectors. This allowed for an increase in standards of living and easy access to the island as better roads and utilities were built alongside public services. It was a transition to industrialisation with urbanisation that supplied those opportunities yet diminished simple everyday jobs. As it continues to move towards a more industrialised society, the island must find ways to balance its industrial development with preserving its cultural heritage. New growth sectors, including services and manufacturing, must be carefully managed to shield cultural traditions from development-related pressures. One of them, a paradox of the island, is infrastructure development for the economy's success.

Nevertheless, it struggles with the preservation of historical and cultural elements. It is one of the demographic transformations happening in Pulau Duyong, where the younger generations migrate to the urban areas in pursuit of better opportunities. Instead, migration has resulted in an aging population that poses social and economic challenges. Along with the associated cultural practices that would have been passed down through the generations, the younger generations' absence from the island has led to a loss of key cultural knowledge. The shifting local demographics reduce productive capacity on the island, which undermines economic growth. The demographic transition provides new opportunities for growth. In the same manner, there are local communities of elderly people who have settled on the island, and they hold valuable cultural information that should be used to save their culture. There should also be the creation of local jobs to prevent the out-migration of youths on the island and also to enhance education and incentives to attract the youths to go home. The interaction between modern economic industries and cultural heritage preservation policies leads to the creation of a force that preserves young people and acts as resident observers. In that regard, Pulau Duyong is strong to hold on to its cultural heritage in the face of the external forces which affected the area. Together with cultural festivals, family-based social networks and family ties maintain social cohesiveness in the community. The practices are very important in maintaining the cultural identity of the island and in giving it a stable base towards its sustainable development.

Besides ceremonies, local festivals are also used as a means of culture. They unite individuals into more coherent communities and make their cultural traditions live over time. The preservation of cultural heritage depends on local pride, and the reverse is the case. The practice is beneficial to the economy as well. There should be use of cultural tourism programs in Pulau Duyong to educate the local and foreign tourists on the history and tradition of the island to generate economic activities and preserve its multiple forms of identity. If done properly to avoid harming the community and respecting local traditions, sustainable tourism combined with local culture is also an excellent way to promote a region. Pulau Duyong is also strongly related to the expansion of economic activities, which is a development factor. Tourism, educational services, and service-based industries now serve as the primary generators of revenue for an island that was originally established on agricultural foundations. Diversification has reduced the island's reliance on agricultural activity and created several economic opportunities. New industries like tourism pose a new set of environmental sustainability challenges for the island. Tourism development requires closer attention if natural environments are to be retained and natural and traditional cultural practices conserved. An organic farming, local business, and eco-tourism economy leads to a sustainable economy. The economic benefits have to be shared equitably by involving local communities in tourism management methods and cultural heritage protection.

Lastly, Pulau Duyong's greatest challenge exists in the form of modern attributes versus traditional values. Such modern-day development on the island must be harmonised with the cultural and historical identity encapsulated in Pulau Duyong. Architectural elements and historical preservation must blend seamlessly with modern infrastructure development that comprises housing and road construction as well as utility services. The island needs zoning laws and urban planning plans to protect cultural sites while protecting its historical architectural elements. Successful development of Pulau Duyong can only be achieved by a very cautious combination of the most traditional and the most modern elements that preserve the cultural heritage and offer the foundation for further economic development. In that regard, the development of Pulau Duyong implies the consideration of several challenges and opportunities, all of which will be achieved by maintaining the proper balance between modernity, cultural preservation, and sustainability. Based on the analysis, the researchers recommend enhancing community based sustainable tourism, supporting traditional industries and implementing inclusive urban planning. These recommendations benefit academic research, community conservation approach and stakeholder engagement. The island must intersect in order to confront the colonial legacies through community power-building and sustainability economic plans to take it into a potential new future. Pulau Duyong can be a sustainable, prosperous island with a strong cultural community through careful planning, the participation of the people, and conservation.

Pulau Duyong has been shaped collectively by a set of historical demographics, infrastructural, and cultural factors which entail socio-economic development. The colonial period also brought in cash crops and tin mining activities that had a strong impact on the economic structure and land pattern of the island. The permissible inequality in the name of economic diversification policies under colonial rule has negative impacts on the environment, which should be corrected considering the good economics offered by further merging the past heritages with the present realities of offering development methods. Economic transformation in Pulau Duyong has also occurred as a result of infrastructure basic transformation that occurred in the post-war period, as the economy shifted to the tourism industry. Due to modern urbanisation, new challenges have arisen because it requires the need to eliminate the existing living resources and make certain cultural practices die within the breakdown of social structures. In Pulau Duyong, strategic planning is required to integrate the interior development and protection of the cultural heritage, modernity and tradition. The tendency towards urbanisation in young people creates an older population and possible inequalities in the socio-economic structure of the population. Such changing demography creates possibilities of using traditional knowledge that has been handed down through the generations to preserve the heritage of Pulau Duyong.

In order to guarantee the sustainable population growth of future generations, economic opportunities must be developed, and more youths returning to Pulau Duyong in order to assist the economic, educational and infrastructural development of the island. Pulau Duyong, a rural island on the east coast of Malaysia, has preserved its powerful cultural identity and its community remains bonded by traditional celebrations and family and tribal ties. Cultural practices are preserved, and continuity is maintained through tourism functions, leading to social integration and economic motivation through cultural tourism functions. Based on the analysis, the researchers recommend enhancing community based sustainable tourism, supporting traditional industries and implementing inclusive urban planning. These recommendations benefit academic research, community conservation approach and stakeholder engagement. Community based conservation as a development agenda is a more sustainable form of development that will delineate sustainable tourism activities in line with community empowerment and align with the economy while preserving the island's identity. Pulau Duyong demonstrates better resistance to economic challenges as it prioritises education in tourism and service-based industries. Thus, tourism development needs to be strategically managed in relation to other sectors to avoid negative impacts on environments and cultures. The rapid urban development in Pulau Duyong reflected the emerging demands of real estate and business that clashed with the need to conserve the communities. In considering how new technologies can be integrated with traditional practices, urban planning should help to protect the communities. However, it is

also necessary to embrace modernisation. A harmonious development of the island can be achieved by inclining cultural heritage through community participation and sustainable economic systems through the sustenance of erudition from the past as a means to develop in the future. Integrative approaches like these will protect the island's cultural heritage, natural resources, and historical wealth for the benefit of future generations.

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CONFLICT OF INTEREST STATEMENT

All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report. We certify that the submission is original work and is not under review at any other publication.

AUTHORS' CONTRIBUTIONS

Azli Bin Abdullah contributed to the conceptualization, methodology, original draft writing, and overall supervision of the study. Julaihi Wahid provided validation of the research content, contributed to reviewing and editing the manuscript, and offered professional insights and resources. Azrul Izwan Ismail was responsible for investigation, data curation, and visualization, supporting the study with field data and graphical representations.

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