

ENVIRONMENTAL QUALITY IMPACT ANALYSIS OF SETTLEMENTS BONTANG KUALA, EAST KALIMANTAN PROVINCE

Andrew Stefano¹, Triyatni Martosenjoyo^{2*}, Idawarni Asmal³, Edward Syarif⁴

Department of Architecture, Faculty of Engineering, Universitas Hasanuddin, Jl. Malino Axis
Km. 6, Bontomarannu. Gowa, South Sulawesi 92171, Indonesia^{1,2,3,4}
triyatni@gmail.com*, triyatni@unhas.ac.id*

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**Corresponding Author*

ABSTRACT

The present study seeks to elucidate the multifaceted impacts of resettlement programs on various dimensions of social and economic life within the community. The primary objectives of this investigation are threefold: 1) to assess the influence of resettlement programs on the intensity and quality of social relations; 2) to conduct a comprehensive analysis of the socioeconomic ramifications of resettlement programs; and 3) to evaluate the behavioral patterns associated with the utilization of bathing, washing, and defecation facilities. The research methodology employed in this study is based on secondary data sourced from "Bontang Dalam Angka 2023" and primary data collected through questionnaires administered to local fishermen. A random sampling technique was employed to select a sample of 50 families. The data collected, encompassing various research variables, were analyzed using descriptive analytical methods, t-tests, and Product Moment Correlation. The findings of the study indicate a significant positive impact of resettlement programs on social relations within the community. Families that promptly moved into their new residences reported enhanced levels of social interaction and engagement. Additionally, the resettlement programs demonstrated a positive influence on the socioeconomic conditions of the community, particularly in terms of the expansion of educational opportunities and infrastructural improvements. Notable improvements in learning outcomes and increased access to educational facilities emerged as key positive outcomes. Furthermore, the study reveals a marked improvement in social behaviors related to sanitation practices, particularly in the use of bathing, washing, and defecation facilities, among individuals participating in the resettlement programs. A heightened adherence to hygienic sanitation practices was observed, signifying the positive behavioral shifts prompted by the resettlement initiatives. In conclusion, the evidence suggests that resettlement programs exert a favorable influence on both the social and economic aspects of community life, while also fostering improved sanitation practices. This research contributes meaningfully to the broader understanding of the complex impacts of resettlement programs on individual and communal life.

Keywords: Facility Development, Settlement, Social Behavior, T-Test

1. Introduction

Population problems in urban areas have resulted in the emergence of various social problems that require serious attention (Ahmad, 2022; Akinyemi & Ifejika Speranza, 2022; Ansari et al., 2021). Problems of urbanization, employment, or economic problems are very related to people's welfare (Bonansea et al., 2021; Brown et al., 2020; Cavalcante et al., 2021). The phenomenon of increasing population, especially in the city of Bontang, can result in a lack of supply of industrial, agribusiness, tourism, and residential development areas (D. Chen et al., 2021; H. P. Chen et al., 2021; W. Chen et al., 2019). According to BPS 2022 data, East Kalimantan has a population of 2,707,654 people spread across 10 regencies and cities. While the city of Bontang as the provincial capital of East Kalimantan in the same year has a population density of 185,201 people. The city government is overwhelmed in improving the welfare of society as a whole (Chen et al., 2021). Efforts made by the government to improve the welfare of the people in general and fishing communities, in particular, are through a slum environment management program in urban communities (Z. Chen et al., 2021; Chiang et al., 2021; Degefu et al., 2023). As a realization of this program, the government of Bontang City implemented a healthy housing arrangement project for the fishing communities of Bontang Kuala, especially the Bajo Tribe Community. The program is a pilot project for structuring healthy housing environments equipped with adequate building and supporting facilities.

In analyzing the environmental quality impacts of the Bontang Kuala settlements, it is clear that certain critical aspects remain understudied. One major area that lacks comprehensive analysis is the social interaction patterns within the resettled community, particularly in the context of changing environmental conditions. The resettlement program has largely been assessed from a physical and environmental standpoint, but the nuanced effects of displacement on community cohesion, social networks, and daily social behaviors remain underexplored. Moreover, another gap in the current understanding is the socio-economic behavior of the relocated residents. While environmental impacts, such as waste management and resource usage, have been documented, there is limited discussion about how these environmental factors have influenced the economic activities, livelihoods, and adaptive strategies of the population. The evolving interaction between traditional fishing practices and the pressures of tourism and conservation efforts is one of the socio-economic dimensions that deserves deeper investigation. Lastly, studies have also not sufficiently examined the interplay between government policies aimed at environmental preservation and the lived realities of the residents. This includes how local governance, infrastructure development, and conservation policies affect not only the environmental quality but also the social dynamics and economic resilience of the resettled community.

Bontang Kuala is an ecologically sensitive area due to its presence in wetlands adjacent to mangrove forests. Community behavior in terms of environmental management has a great influence on the sustainability of the local ecosystem. The program can identify land use patterns, fisheries practices, and household waste management. Local knowledge about environmental conservation, including involvement in maintaining mangrove ecosystems, as well as challenges in maintaining environmental sustainability in the midst of modernization, is a key aspect in understanding community interactions with the surrounding nature.

The resettlement program for the fishing communities of Bontang Kuala, especially the Bajo Tribe Community, aims to improve the welfare of these communities. Conceptually the program is ideal and representative because physically it is prepared to build semi-permanent houses equipped with supporting facilities and infrastructure such as complex roads, lighting, clean water, education, health, and other social facilities. However, to achieve adjustment to the new environment requires the requirements of social interaction by its function (Wang et al., 2021, 2023; Wei et al., 2020). According to Parsons in functional theory, to achieve social welfare, four functions need to be achieved (Drewry et al., 2021; Du & Lin, 2023; Fernandes et al., 2021):

- *Adaptation,*
- *Goal attainment,*
- *Integration dan*
- *Laten paten maintenance.*

To enhance the introduction and clarify the relevance of Parsons' AGIL framework in the Environmental Quality Impact Analysis of Settlements in Bontang Kuala, it's important to provide a concise explanation of how each component of the framework connects to the research. Parsons' AGIL framework consists of four key functions—Adaptation (A), Goal Attainment (G), Integration (I), and Latency/Pattern Maintenance (L)—which are essential for the survival and functioning of any social system. Here's how the AGIL framework can be applied to the Bontang Kuala context:

- **Adaptation (A):** This refers to how the settlement and its residents adapt to environmental changes. In this case, the community's ability to manage and mitigate the environmental impacts of living in a sensitive coastal area (e.g., flooding, waste management, and sustainable fishing practices) is central. Analyzing adaptation can provide insights into how environmental quality is maintained or degraded and how residents adjust their livelihoods in response to environmental challenges.
- **Goal Attainment (G):** This element focuses on the goals of the community or government policies, such as achieving sustainable development, improving living standards, or enhancing tourism potential. Understanding how well these goals are being met, particularly in relation to environmental quality, is crucial for evaluating the success of the resettlement and its long-term viability.

- Integration (I): Integration pertains to the social cohesion and interaction within the community, including the relationships between residents and between the community and external stakeholders (e.g., local government, NGOs). In the case of Bontang Kuala, integration could help explain how environmental issues are collectively addressed and how the community manages the balance between traditional practices and modernization pressures, especially in a tourism-driven economy.
- Latency/Pattern Maintenance (L): This refers to the preservation of the cultural, social, and normative patterns within the community. For Bontang Kuala, understanding how cultural identity, traditions (like fishing), and social structures are maintained in the face of environmental and socio-economic pressures is crucial. This component helps analyze how long-standing practices are sustained or altered in response to the evolving environmental landscape.

By incorporating Parsons' AGIL framework, the research can frame the environmental impact analysis within a broader social systems perspective, ensuring that both the social and environmental dimensions of resettlement are adequately addressed. This provides a more holistic understanding of how the settlement functions and adapts to challenges in a way that supports both community resilience and environmental sustainability

These four requirements are better known as the concept of AGIL. Physically the city government has prepared a total of 105 housing units in preparation for the relocation of the Bontang Kuala fishing community, especially the Bajo Tribe Community, of which the government has only placed 85 heads of families. This trend shows that there are still many fishing communities in Bontang Kuala, especially the Bajo Tribe, who are reluctant to participate in government programs (Mukrimaa et al., 2022). This reluctance needs to get special attention from the government by more intensively identifying various problems and their causative factors (Gheoca et al., 2021; Gomes et al., 2021; Jallu et al., 2022). This settlement program, as described above, promises several hopes and futures, but on the other hand, the community does not show optimal support (Lei et al., 2022; Lemaire et al., 2022; Li et al., 2022). This is a social problem that needs to be studied in depth (Tarawally et al., 2019; Vane et al., 2022; Vannini et al., 2021). The focus of this research is to find out the social impact of the program on social interaction and socio-economic conditions of the community and their behavior in utilizing the facilities provided. (Staponites et al., 2022; Tan et al., 2021; Tang et al., 2020). Based on the above, it can be formulated problems in this study, namely (Mirzaei et al., 2020; Ojo et al., 2022; Ooi et al., 2019):

- What is the impact of fishing settlements on the socio-economic and cultural life of the Bajo Tribe who live in the Bontang Kuala area of Bontang City.
- What is the social impact of the program on social interaction and socio-economic conditions of the community and their behavior in utilizing the facilities provided by the Government.

To provide sufficient context about the unique socio-cultural characteristics of the Bajo people in the introduction of the Environmental Quality Impact Analysis of Settlements in Bontang Kuala, the following points can be expanded:

- Historical Background of the Bajo People: The Bajo people, often referred to as the "sea nomads," have a rich history deeply tied to maritime culture. For centuries, they have lived a semi-nomadic lifestyle, primarily relying on the sea for their livelihood. Traditionally, the Bajo people have settled in stilted houses over the water, constructing their homes and communities along coastal areas and islands. Their historical connection to the ocean is not only a key aspect of their culture but also their main economic resource, with fishing and maritime navigation forming the foundation of their way of life.
- Cultural Significance in Bontang Kuala: In Bontang Kuala, the Bajo community has a unique cultural presence that contributes to the area's identity. Their traditions, such as the construction of over-water dwellings and their maritime expertise, have influenced the social and physical landscape of the settlement. Additionally, their deep knowledge of the sea and sustainable fishing practices is an important part of the local economy, making the Bajo a critical group in the region's development. This cultural heritage adds a layer of

complexity to resettlement initiatives, as any environmental or spatial changes impact not only their economic survival but also their cultural continuity.

- Challenges Faced by the Bajo People: The Bajo community faces significant challenges, particularly in the context of resettlement programs. These challenges include:
- Disruption of Traditional Livelihoods: The resettlement program could jeopardize their traditional fishing-based economy. Moving them away from their coastal and marine environments poses a direct threat to their ability to sustain their livelihood, forcing them to adopt new forms of employment that may be culturally or practically unfamiliar.
- Loss of Cultural Identity: Resettlement often involves moving the community from their traditional water-based homes to land-based settlements. This shift threatens the Bajo people's cultural identity, which is intricately linked to the sea. The loss of their unique way of life, including the construction of over-water houses and maritime skills, could lead to a loss of cultural heritage.
- Environmental Vulnerabilities: As their settlements are often located in fragile coastal zones, they are highly vulnerable to environmental risks such as rising sea levels, coastal erosion, and pollution. These environmental challenges are compounded by the pressures of tourism and development, which may further endanger the sustainability of their settlements.
- Cultural Adaptation to Modernization and Tourism: In recent years, the Bajo people have also been impacted by the rise of tourism in Bontang Kuala. While tourism has brought economic opportunities, it has also placed pressure on the Bajo's traditional practices and the coastal environment. The resettlement program could exacerbate these pressures, potentially leading to cultural dilution or forcing the Bajo community to integrate into a broader, tourism-driven economy at the expense of their cultural autonomy. Understanding their capacity for adaptation—both socially and economically—is critical for assessing the environmental and socio-cultural impacts of resettlement.
- The Bajo People's Role in Environmental Stewardship: The Bajo's intimate knowledge of the marine ecosystem has historically made them key players in the conservation of coastal environments. Their sustainable fishing techniques and respect for natural marine cycles have contributed to the ecological health of the regions they inhabit. However, with resettlement and the encroachment of modern development, their traditional environmental stewardship may be undermined. This aspect is essential for understanding the broader environmental implications of settlement changes in Bontang Kuala.

By integrating this expanded discussion of the Bajo people's historical and cultural significance, the introduction can offer a more nuanced framework for the study. This ensures that the impact of resettlement on both the environmental quality and the socio-cultural fabric of the Bajo community is properly contextualized, highlighting the importance of balancing modernization with the preservation of their unique heritage and sustainable practices.

In this context, the introduction may only outline general social problems and government efforts to address environmental challenges in coastal areas, without explicitly explaining the specific linkages and urgency with wetland settlements in Bontang Kuala. The Bontang Kuala wetland settlement, which is known for its characteristics as a coastal area inhabited by the Bugis people who mostly work as fishermen, has its own challenges and uniqueness. These settlements are located in areas that are vulnerable to ecological changes and the impacts of increased tourism activities, so further research is essential. A deep understanding of the impact of relocation on the Bajo Tribe can also contribute to the development of housing policies and spatial planning in coastal areas. Relocation policies should consider the community's connection to the space they live in, including environmental and sustainability aspects. By studying how the Bajo tribe adjusts to the new residential environment, we can formulate a more friendly spatial planning model for community groups that have special needs and relationships with their environment. This includes considering access to the sea that remains necessary for the Bajo Tribe's economic and cultural sustainability. In the context of policy, these studies can lead to the development of better relocation and spatial planning policies, which respect people's attachment to their environment and maintain the sustainability of local culture and economy. With a more inclusive approach, the resulting policies can provide greater

protection for the rights of traditional communities, while facilitating their integration into more equitable and sustainable development processes. The majority of the people in Bontang Kuala come from the Bugis ethnicity, which is famous for their maritime traditions. Poverty in coastal areas is often influenced by limited access to resources and infrastructure, as well as dependence on natural resources that are vulnerable to climate change.

2. Literature Review

Definition of Social Groups and Settlements

A social group is a collection of several people (based on certain characteristics in common) who have a shared awareness of membership and interact with each other (Prăvălie et al., 2020; Quintas-Soriano et al., 2022; Song et al., 2022). Marginalized social groups or more precisely marginalized social groups are social groups that are part of two cultures or two societies but do not belong fully to one of these cultures or societies (Staponites et al., 2022; Tan et al., 2021; Tang et al., 2020). The exclusion of marginalized social groups from the city facility development program is also because they live in marginalized urban areas, which do not necessarily have to be located on the outskirts of the city but could be close to the city center (Prăvălie et al., 2020; Quintas-Soriano et al., 2022; Song et al., 2022). From an economic point of view, marginal/marginalized social groups are low-income people, who choose to live in marginalized parts of the city from considerations of economic value (Tarawally et al., 2019; Vane et al., 2022; Vannini et al., 2021). The definition of settlements for marginalized social groups referred to here are settlements of urban poor social groups which are housing zones whose rent is cheap, due to the most unfavorable land conditions from economic motivation, for example on the banks of the Bontang River; or geographically, areas of the city which are frequently inundated by floods in the rainy season and which are not supported by city facilities (Wang et al., 2021, 2023; Wei et al., 2020).

To strengthen the introduction and provide a compelling rationale for the necessity and timeliness of the research on Environmental Quality Impact Analysis of Settlements in Bontang Kuala, East Kalimantan Province, the following points could be emphasized:

- **Rapid Urbanization and Environmental Degradation:** In recent years, Bontang Kuala has experienced increased pressure from urbanization, tourism, and economic development. These factors have accelerated environmental degradation in sensitive coastal areas, particularly in wetlands, mangrove forests, and other natural habitats that are crucial to the ecosystem. This makes it imperative to assess the environmental quality and sustainability of the current settlement patterns to prevent irreversible damage.
- **Vulnerability to Climate Change:** Coastal settlements like Bontang Kuala are especially vulnerable to the effects of climate change, including rising sea levels, coastal erosion, and extreme weather events. These environmental threats pose significant risks to both the livelihood of the fishing community and the long-term sustainability of the settlement. Conducting a timely environmental impact analysis can provide critical insights into the community's resilience and adaptive capacity to cope with these impending challenges.
- **Balancing Development with Conservation:** As Bontang Kuala is increasingly promoted as a cultural and eco-tourism destination, there is a growing tension between development and environmental conservation. Without proper planning and impact assessments, tourism development could harm the environment and disrupt the socio-cultural fabric of the community. This research is essential to identify strategies that ensure sustainable development while protecting the local environment and traditional way of life.
- **Gaps in Existing Literature:** While there has been considerable focus on the environmental challenges in coastal regions, there is limited research that integrates social, economic, and environmental aspects, particularly in East Kalimantan. This study addresses critical gaps in understanding the interrelationship between human settlement patterns, environmental quality, and socio-economic factors in this unique coastal region, making it both timely and necessary for policy formulation.
- **Relevance to National and Regional Policy Goals:** Indonesia has set ambitious targets for environmental sustainability, including the protection of coastal ecosystems and reducing carbon emissions. This research contributes to those national and regional policy objectives

by providing evidence-based insights into how settlement patterns in coastal areas like Bontang Kuala align with broader environmental and sustainability goals. The results can inform local governance and development plans, making it timely in the context of Indonesia's push towards sustainable development.

By incorporating these points, the rationale for the study becomes clear: it addresses an urgent need to evaluate and mitigate environmental risks while balancing the socio-economic needs of the community, all within the context of national and global sustainability objectives.

Definition of Poverty

News about poverty has never escaped the attention of various mass media in Indonesia or abroad. The handling of poverty alleviation programs in Indonesia from time to time, from one regime to the last has never been successful and will never be completed (Yang et al., 2022; Zhang et al., 2022; Zhao et al., 2022). It turns out that the current level of public knowledge regarding the various faces of poverty in Indonesia is still very limited. People do not know the social structures and culture of poverty in this country. People do not know for sure who the poorest group is, where they are, and the causes of this deep poverty. The community also does not know for sure how to achieve it and the community will not be able to know it as long as knowledge about the problem of poverty is not developed systematically (Mirzaei et al., 2020; Ojo et al., 2022; Ooi et al., 2019). Absolute poverty does not allow a person to live a humane life (Gheoca et al., 2021; Gomes et al., 2021; Jallu et al., 2022). Absolute poverty means really physical and material destitution. The harsh form is premature death, whether from starvation, a disease that can be cured (Lei et al., 2022; Lemaire et al., 2022; Li et al., 2022).

Unfulfilled basic needs and minimum (for survival) is the concept behind absolute poverty (Zhao et al., 2022; R. Zhu et al., 2023; X. Zhu et al., 2019). The fulfillment of basic and minimum needs according to the International Labor Organizations includes the minimum needs of a family for food, shelter, and clothing (Wei et al., 2020; Yang et al., 2022; Zhang et al., 2022). There is a need to provide several basic services, such as clean drinking water, sanitation, transportation, health and education institutions, as well as job opportunities with reasonable remuneration for everyone able and willing to work (Vannini et al., 2021; Wang et al., 2021, 2023). It must also fulfill qualitative needs, namely a healthy, humane, satisfying environment, people's participation in all decisions concerning life and their necessities of life, as well as individual freedoms (Tang et al., 2020; Tarawally et al., 2019; Vane et al., 2022). Meanwhile, relative poverty does not only cover economic inequality as in absolute poverty but also includes inequality of opportunities and opportunities in all other forms of life (Song et al., 2022; Staponites et al., 2022; Tan et al., 2021). The same symptoms also characterize international relations, as seen in terms, of the gap between the North and the South or between the West and the East (Ooi et al., 2019; Právělie et al., 2020; Quintas-Soriano et al., 2022).

Settlements as A Social Group

In the development effort to increase the degree of a better life for social groups in these marginalized settlements, development planners and implementers are not only required to know the problems or constraints that are physical but also those related to the social and cultural situation of the community. program goals (Li et al., 2022; Mirzaei et al., 2020; Ojo et al., 2022). This is even more so about the built environment called architecture, which is heavily influenced by the economic, social, and cultural existence/conditions of the community. Architectural problems cover approximately 80% of social problems, and then the remaining 20% concerns technical and technological issues. Two main issues must be considered, namely: use and image (Drewry et al., 2021; Du & Lin, 2023; Fernandes et al., 2021). To show the advantages, utilization, and services that can be obtained from the building. Use in the original sense of the word does not only mean useful but more than that: it has the power to cause humans to live more comfortably so that performance increases. If the weather is hot, for example, an office building can be efficient" because inside it is still cool and protected so that the work atmosphere is passionate. Image refers to an image, an impression of appreciation that captures meaning for someone (Jallu et al., 2022; Lei et al., 2022; Lemaire et al., 2022).

The image of a magnificent palace building certainly symbolizes grandeur as well, the authority of a head of state. On the other hand, a rickety shack is an image that directly describes the condition of the poor inhabitants who are also in a very decrepit condition (Fernandes et al., 2021; Gheoca et al., 2021; Gomes et al., 2021). The image shows the level of culture, while the gunas point more to the aspect of civilization. Architecture is like clothing, a car must have both: use and image (Degefu et al., 2023; Drewry et al., 2021; Du & Lin, 2023). Not only must be useful, but also beautiful, attractive, personality. It has become a fact, most of the main residents of settlements in big cities are the poor, and their livelihoods are mostly from the informal sector (Cavalcante et al., 2021; D. Chen et al., 2021; H. P. Chen et al., 2021). Everyone seeks to have a small business or industry for the survival of his household economy. All types of business carried out by the urban poor villagers are nothing but forms of strategies to overcome the most basic problems of life (Z. Chen et al., 2021; Chiang et al., 2021; Degefu et al., 2023). Limited capital, limited land, and for various other considerations, the business or industry and their waste disposal is carried out within the scope of their respective homes or yards (W. Chen et al., 2019; Z. Chen et al., 2021; Chiang et al., 2021). The architectural form of the housing being built will be adjusted to the maximum extent possible to support the business, which means that the architecture will automatically image the form of the business and the economic, social, and cultural existence of the poor people who live in it (D. Chen et al., 2021; H. P. Chen et al., 2021; W. Chen et al., 2019). The general picture of the face of slums in settlements in big cities is the face of makeshift house architecture, messy building layouts with a dirty appearance, dense population of buildings with high occupancy, use of used and cheap building materials with a construction system that is far below standard standards. safety for its inhabitants, the surrounding environment is always dirty, and muddy, with poor sanitation, and polluted wells as a source of clean water (Ansari et al., 2021; Bonansea et al., 2021; Brown et al., 2020).

Research in a marginalized settlement area found that the physical environment of the villages along the Bontang River, East Kalimantan, from a socio-cultural perspective, is dialectically related to the behavior of the people in the village, in the sense of mutual influence. Physical limitations, especially in terms of area size and existing public facilities (MCK, clean water, etc.) require them to use public facilities together (Ahmad, 2022; Akinyemi & Ifejika Speranza, 2022; Ansari et al., 2021). This causes the intensity of social interaction between villagers to be high, which indirectly causes the level of social solidarity among the villagers to also become strong. Conversely, the high level of social relations and the strong social solidarity between them, incrementally (self-help motivation) requires them to make arrangements for the physical environment so that they can accommodate various types of activities and forms of their social behavior (Bonansea et al., 2021; Brown et al., 2020; Cavalcante et al., 2021). In other words, behavior and the physical environment in the village dialectically influence each other, and eventually create a specific pattern of life.

It was found that the concepts of private, semi-private, and public space, crowding, environmental pressure, stress, and others are closely related to the arrangement of spaces in the house, the space between houses, and the settlement environment as a whole. Slum settlements and the process of slums are a complex object (D. Chen et al., 2021; H. P. Chen et al., 2021; W. Chen et al., 2019). Therefore, a study of slum settlements cannot be carried out only on one subject and consider it a social problem only, only a problem of providing shelter, or only an economic and political problem. There has to be a holistic approach to reach a more comprehensive definition and interpretation (Z. Chen et al., 2021; Chiang et al., 2021; Degefu et al., 2023). Structural analysis of the pattern of slum housing includes four components, namely: cultural, behavioral, socio-economic, and spatial components (Bonansea et al., 2021; Brown et al., 2020; Cavalcante et al., 2021). Although there are four components offered in the structural analysis of slum housing, in this review the emphasis will be directed more toward the cultural component (Akinyemi & Ifejika Speranza, 2022; Ansari et al., 2021; Bonansea et al., 2021). However, other components will still be given a reasonable portion. The cultural component referred to here is the problem of a culture of poverty which causes weak social capital for development (Drewry et al., 2021; Du & Lin, 2023; Fernandes et al., 2021).

Poverty Culture and Social Culture

The culture of poverty is a theory originally put forward by Oscar Lewis, that there is a way of life that is generally the same among poor people in cities in many parts of the world (Gheoca et al., 2021; Gomes et al., 2021; Jallu et al., 2022). The culture of poverty is a way of life and perspective, which is weak and easily satisfied, and is experienced and carried out jointly by poor people (Brown et al., 2020; Cavalcante et al., 2021; D. Chen et al., 2021). The main causes of poverty lie in mentality, poor culture, and lack of social capital (Lei et al., 2022; Lemaire et al., 2022; Li et al., 2022). People find it difficult to break away from the confines of a mentality that is oriented towards what can be enjoyed today (Mirzaei et al., 2020; Ojo et al., 2022; Ooi et al., 2019). Low aspirations, weak self-control to knit a better future, no respect for time, impatience in delaying momentary desires, and more lead to a very strong fatalistic attitude, are important determinants that deplete (Prăvălie et al., 2020; Quintas-Soriano et al., 2022; Song et al., 2022). Terminology of Social Capital, such a factor is understood as the persistence of the values and culture of poverty as a consequence of a strong culture and inward-looking orientation in a community group (Staponites et al., 2022; Tan et al., 2021; Tang et al., 2020). This tendency is a big obstacle to the development of new ideas and thoughts regarding the function of time, the function of money, and various other obligations related to the enrichment of one's social life (Tarawally et al., 2019; Vane et al., 2022; Vannini et al., 2021).

Ecological conditions and government policies have a large role to play in maintaining poverty conditions, while others focus on internal factors, such as local cultural practices that may hinder economic progress. The Bajo tribe is a coastal community that relies heavily on marine resources to meet their economic and cultural needs. The poverty experienced by the Bajo Tribe is not only related to the lack of economic income, but also closely related to limited access to natural resources due to the relocation policy. The relocation of the Bajo Tribe to the mainland in Bontang Kuala brought significant changes to their life patterns. This relocation creates new challenges related to the loss of fisheries-based livelihoods and traditional skills possessed by these communities. The inability to access the ocean as they did before led to limitations in their efforts to maintain the subsistence economy on which their livelihoods depended. This impact further exacerbates the economic poverty they experience.

3. Research Methods

This research was conducted by surveying the fishing communities of Bontang Kuala, especially the Bajo Tribe Communities who had been settled in the same settlement location. The population of this study was 316 people consisting of 85 heads of families located in the Bontang Kuala area of Bontang City. The research sample was 50 heads of families using a simple random technique. The research data was obtained through Bontang in Figure 2023. This research is qualitative research to get an overview of the Impact of Fishermen's Settlements on the Socio-Economic-Cultural Settlements of the Bajo Tribe in Bontang City. The data collection method used is observation, measurement, interviews, document collection, and literature study. Observations and measurements were made of buildings in the form of traditional Makassar houses with sketches and photographs. In addition, open interviews were also conducted with several community homeowners (unstructured). The literature study is carried out through several studies that have been conducted that have something to do with Bajo ethnic settlements. The purpose of this study is to make a systematic, factual, and accurate description or picture of the relationship between the phenomena being investigated. The selection of samples was carried out purposively, namely sampling on the basis of certain objectives so as to fulfill the wishes and interests of the research (Figure 1).

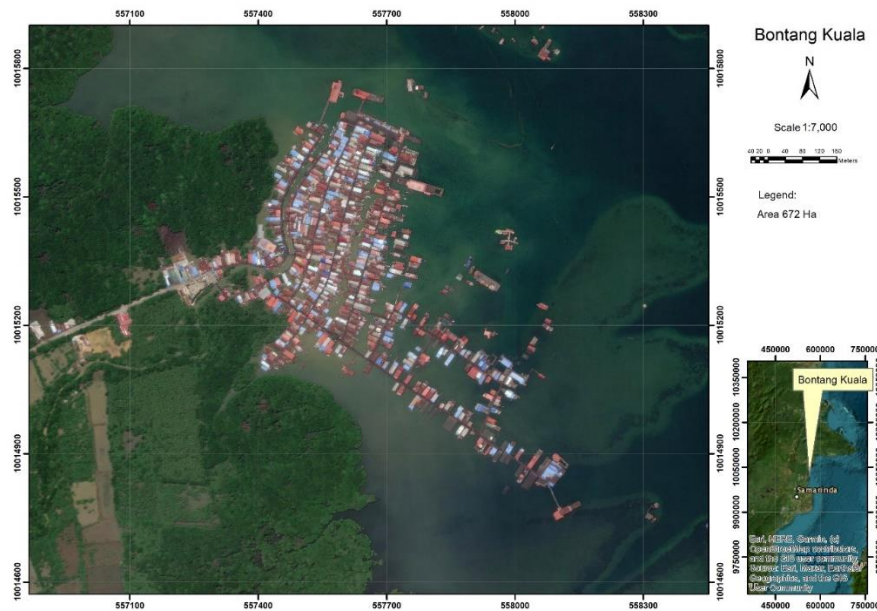


Fig. 1. Zone A Bontang Kuala Area, Bontang City

The analysis used is a combination of quantitative and qualitative analysis. The use of this analysis is used for (Wang et al., 2021, 2023; Wei et al., 2020);

- The impact of fishing settlements on the socio-cultural and economic settlements of the Bajo tribe in the Bontang Kuala area.
- To determine the social impact caused by government programs on social interaction and socio-economic conditions of the community and their behavior in utilizing the facilities provided by the government.

This study takes a multidisciplinary approach that integrates environmental, social, and policy aspects in analyzing Bontang Kuala wetland settlements. The main goal is to fill the gap related to the lack of understanding of the linkages between these aspects, by placing emphasis on local adaptation and its impact on environmental sustainability and socio-economic well-being of the community. This research will add value by revealing how these factors affect each other and provide a more complete picture of the complexity faced by communities in wetland settlements. The sampling method used is purposive sampling. The selection of this method is based on the specific characteristics of the Bontang Kuala wetland settlement, East Kalimantan Province, which has unique social, economic, and environmental dynamics. Purposive sampling was chosen to ensure that the households studied were truly representative of the phenomenon being studied, namely community adaptation to environmental challenges and socio-economic changes in wetland settlements.

The sample size chosen was 50 households, and the justification for this sample size was to strike a balance between adequate data representation and resource limitations, such as research time and cost. Research on wetland settlements tends to require direct interaction and more in-depth observation of the physical condition of the environment, so the sample must be carefully selected to ensure that the data obtained reflects various aspects of the lives of the people in the region. This sample size is considered sufficient to provide a rich and in-depth picture of the community's conditions, without overloading the data collection and analysis process. Quantitative data analysis, descriptive statistical analysis will be the main method used. These data will be presented in the form of tables, graphs, and diagrams to provide a clear visualization of the social, economic, and physical conditions of the people in Bontang Kuala. The center size (such as the mean and median) and the spread size (such as the standard range and deviation) will be used to describe the characteristics of the data. The goal is to provide a detailed and thorough picture of the situation of wetland settlements that can be used as a basis for understanding community adaptation patterns to the changing environment.

In addition to descriptive analysis, inferential statistical tests will also be performed if needed, depending on the desired results. For example, a correlation test will be used to determine the

relationship between variables, such as the relationship between the height of the building foundation and the frequency of floods experienced. This will help identify whether there are specific adaptation patterns that are highly effective against environmental risks. Regression tests may also be used to predict the factors that most affect the level of household welfare, such as the influence of education on family income.

4. Results and Discussions

Descriptive Analysis Results

The results of the descriptive analysis are intended to clarify the qualitative description of the trend of this research variable. This description is presented in the form of a frequency distribution based on the calculation of the average value, the lowest and highest scores and analysis of trends. The general description is presented as follows:

The Impact of The Settlement Program on Community Social Interaction

Based on the distribution of data obtained, the impact of the settlement program on the intensity of relations with other communities outside the location, most (46%) never had contact and only a portion (22%) had frequent contact. The intensity of the relationship with family or close relatives turned out to be mostly (46%) families who are always in contact with close family in the settlement. Meanwhile, the intensity of relationships with neighbors around their house is high (46%) and only a small proportion (4%) have never had contact. Activities participating in celebrations such as weddings, circumcision and festivities have the intensity of the relationship only (36%) who always attend and only a small proportion (10%) never participate in these activities. While social relations such as community service, repairing canals and cleaning mosques are carried out once a week, most people (50%) often attend and only a small portion (4%) never participate. The intensity of the relationship regarding attendance in social groups such as arisan and assemblies of taklim, only some (30%) always attended and some (30%) were less interested in attending the event and a small number (12%) never attended the event (Figure 2).



Fig. 2. Impact of Settlement of the Bajo Tribe in Bontang Kuala

The Impact of The Settlement Program on The Socio-Economic Conditions of The Community

Based on the distribution of data on the variable socio-economic conditions, it turns out that the indicators for the construction of educational facilities, student achievement and opportunities to obtain education after being in residential locations show that the majority (48%) of respondents stated that they were very good, and only a small proportion (2%) stated very unfavorably. The increase in monthly income after being in a residential location, most

respondents (32%) said it was very good and some (30%) stated that their income was very poor. For the adequacy of monthly income after settling, most (40%) of respondents stated that their income was still lacking, and some (24%) stated that monthly income was sufficient or even very sufficient. Ownership of assets both in the form of goods and in the form of money, it turns out that only some (22%) have a lot of assets, most (38%) still have less assets. For community employment opportunities and opportunities, the majority (34%) stated that there were many opportunities and opportunities and only (14%) respondents stated that they were very lacking in getting a job. As for increasing the equipment used in fishing, the results of processed data show that most (36%) are still lacking in equipment ownership and the other part (32%) of respondents stated that they already had good and adequate equipment.

Community Behavior in The Use of Building Facilities, Especially Toilets

Research on traditional societies has obtained various results, including the assumption that changing the culture or habits of a community requires adequate environmental adaptation. At this residential location, room facilities (MCK) have been prepared. However, in previous locations this kind of place was rarely found so that people felt strange. For MCK purposes, most of them were carried out in open places. The behavior of using these facilities will be described as follows: Based on the distribution of data regarding the behavior of using MCK facilities in each family, the processed data on the behavior of using the bathroom within a week shows that the majority (80%) of respondents always use the bathroom provided by the household. and only a small proportion (6%) occasionally use the facility. Furthermore, the utilization of the washing area also showed results, namely the majority (78%) always used the washing area and only a small proportion (2%) did not use the facility. Besides that, most of the respondents (82%) used the disposal sites for excrement/latrine provided by the government and only a small proportion (4%) used the facility occasionally. Obstacles experienced by the community in utilizing the MCK facilities, it turns out that of the fifty respondents who gave answers, only a small proportion (8%) always experienced obstacles, some (34%) never experienced obstacles in utilizing these facilities (Figure 3).



Fig. 3. Settlements of the Bajo Tribe Community in Bontang Kuala

Hypothesis Testing Results

Based on the data analysis technique used in this study, namely using parametric statistics "Warrel Moment Correlation" and "t-test" analysis which is then processed using the SPSS program, the following results are obtained:

The Bontang Kuala Fishermen's Settlement Program Has a Positive Impact on Community Social Interaction

Calculation of the impact of the settlement program relationship (X) on community social interaction (Y1) obtained the result, namely the product-moment coefficient of determination of 0.184. Then carried out with a significance test obtained the results of an r count of 0.429. Meanwhile, the r table at a confidence level of 0.05 is 0.279. This means that the r count is greater than the r table. This indicates that the null hypothesis (H_0) which reads "there is no positive impact of the Bontang Kuala fishing community settlement program, especially the Bajo Tribe Community on social interaction" is rejected. The alternative hypothesis (H_a) which reads "The Bontang Kuala fishing community settlement program for the Bajo Tribe Community has a positive impact on social interaction" is declared accepted. Thus, it can be said that the settlement program with social interaction has a relationship.

The Impact of The Fishing Settlement Program on The Socio-Economic Conditions of The Community

Calculation of the impact of the relationship between the settlement program (X) and socio-economic conditions (Y2). the results obtained a coefficient of determination of 0.466. Then carried out with a significance test obtained the results of the r count of 0.682, while the r table at a confidence level of 0.05 obtained results of 0.279. This means that the r count is greater than the r table. As an indication of the results of these calculations, it can be concluded that the null hypothesis (H_0), which reads "there is no positive impact, the Bontang Kuala fishing settlement program for the Bajo Tribe Community on the socio-economic conditions of the community" is declared rejected. and the alternative hypothesis (H_a) which reads "the Bontang Kuala fishing community settlement program, especially the Bajo Tribe, has a positive impact on socio-economic conditions" is declared accepted. This means that the fishing settlement program has a relationship with the socioeconomic conditions of the community (Figure 4).



Fig. 4. The Impact of the Socio-Economic Conditions of the Bajo Tribe in Bontang Kuala

Differences in The Socio-Economic Conditions of The People Before and After Resettlement

Calculations regarding the differences in the socio-economic conditions of the community before and after being settled by using the "t-test". From the results of these calculations, the t count is 2.926, while the t table is at a confidence level of 0.05 with a df of 98 of 1.987. The indication of the results of these calculations shows that the t count is greater

than the t table, so it can be concluded that the null hypothesis (H_0) reads "there is no difference in the socio-economic conditions of the community before and after being settled in the Bontang fishing settlement" is rejected. This means that the alternative hypothesis (H_a) which reads "there are differences in the socio-economic conditions of the people before and after resettlement" is declared accepted.

Discussion of Research Results

The Bontang Kuala Fishing Settlement Program for The Bajo Tribe Community Has a Positive Impact on Community Social Interaction

Analysis of the impact of the relationship between the fishermen's settlement program and the social interaction of the community in the Bontang fishermen's settlement indicated that the two variables had a convincing level of relationship. Where the test results are obtained, namely the product determination coefficient of 0.184. This means that the contribution of the fishing settlement program to the social interaction of the community is 18.4%, although the contribution is small, these two variables have a significant relationship. The results obtained by the significance test, namely the r count of 0.429 is greater than the r table of 0.279 at the 0.05 confidence level. Thus the alternative hypothesis which reads that "the settlement program for the fishing community of Bontang Kuala, especially the Bajo Tribe Community, especially the Bajo Tribe Community, has a positive impact on social interaction" is accepted. The results of this study illustrate that is in line with the Bontang City government program in the context of improving people's welfare. One of the efforts to improve the welfare and standard of living of fishing communities is resettlement to a better location that has prospects and meets environmental health requirements.

Social interaction is one of the important aspects of the socio-economic life of society. Because interaction is the main requirement for social activity, such as in social, economic, political, and cultural life. If the social interaction does not go well, then it is possible for disintegration in people's lives to eventually hinder the social process itself. With good interaction, integration aspects will be possible to achieve. The results of the descriptive analysis of the settlement program with the intensity of the relationship show that most of the social relations aspects of the community in that location have a high relationship. This can be seen from the intensity of the relationship regarding the arrangement of the house and the level of relationship with the community in general in the settlement location, in fact (50%) of respondents who stated that they had high-intensity contact, namely at least 4 times a month and only a small proportion (6%) stated that the intensity of contact was less, namely only 1 to 2 times a month. Another indicator regarding attendance at community service was the result that (50%) of respondents said they were always present at community service activities and only a small proportion (4%) never attended.

Based on the conditions at the research location, the high level of community intimacy is due in large part to the strong characteristics of a traditional community full of cooperation. The statement is in line with Gemeinschaft's theory of traditional societies where they have close social relations, cooperation, and cooperation without any strings attached. Regarding the intensity of relations with the community outside the settlement location, it turned out that most (46%) of respondents had never had contact with the surrounding community, and only (22%) of respondents stated that they always communicated with high intensity, that is, they had contact on average 4 times a month. This result is understandable because the resettlement of people in this location has only been going on for about two years. So they need adaptation and adjustment to the environment. Both adaptation to the natural environment and adjustment to the environment of the surrounding community.

The Impact of The Fishing Settlement Program on The Socio-Economic Conditions of The Community

Analysis of the impact of the relationship between the Bontang Kuala fishing settlement program for the Bajo Tribe Community and the socio-economic conditions of the community, in the Bontang fishing settlement, indicated that the two variables had a significant relationship. This can be seen from the test results obtained by the coefficient of determination of 0.466. This

shows that the contribution of the fishing settlement program to the socio-economic conditions of the community is 46.6%, with this result showing a significant relationship. Then carried out with a significance test obtained the results of an r count of 0.682, while the r table at a confidence level of 0.05 obtained results of 0.279, which means that the r count is greater than the r table. With the results of these calculations, it can be concluded that the alternative hypothesis which reads "the Bontang Kuala fishing settlement program for the Bajo Tribe Community has a positive impact on the socio-economic conditions of the community" is accepted. Although the results of this study have been tested statistically and as a whole have a positive impact on the socio-economic conditions of the community, in certain aspects of the descriptive analysis, there are still deficiencies and weaknesses in the socio-economic conditions. This means that certain aspects of socioeconomic conditions still have varying results. Several indicators that can be seen in the variables of socio-economic conditions include education, increased income, employment opportunities, fishing assets, and equipment.

Overall, these aspects show good results. For the development of educational facilities and children's learning achievement after settling, the majority of respondents stated that it was very good, this means that the facilities and opportunities to obtain education were very available. Because this location is supported by educational facilities ranging from Kindergartens to Public High Schools. Besides that, it is easy to reach by public transportation and not too far from residential locations. Regarding the level of income and income adequacy of respondents, most of the respondents stated that they were still good and met their needs, meaning that the income earned by respondents in an average month was Syamsuddin, Impact of the Settlement Program 53. More than Rp. 350,000. With that much income, they can meet their needs. The data also shows that there is still a small proportion of respondents stating that income and income adequacy are still lacking, namely an average maximum income of Rp. 150,000.00 per month with an income of this size it is very difficult for the head of the family to support his family members.

Differences in The Socio-Economic Conditions of The People Before and After Resettlement

Analysis of the results of calculations regarding the differences in the socio-economic conditions of the community at the time before and after being settled by using the "t-test" (Yang et al., 2022; Zhang et al., 2022; Zhao et al., 2022). The results of these calculations indicate that there are differences in the socio-economic conditions of the community before and after resettlement. The results of these calculations are obtained from a t count of 2.926, while the t table is at a confidence level of 0.05 with df 98 of 1.987. The indication of the calculation results shows that the t count is greater than the t table, so it can be concluded that the alternative hypothesis which reads "there are differences in the socio-economic conditions of the community at the time before and after settling in Bontang fishing settlements" are accepted. This means that the socio-economic conditions of the people after being resettled are better than the socio-economic conditions of the people before being resettled. The results of the descriptive analysis of the differences in socio-economic conditions show an increase after resettlement. Factors that can affect these differences, because the location of the settlement has been supported by adequate facilities and infrastructure. Both related to his profession as a fisherman, as well as locations to find additional employment opportunities for his wife and children are also available, because around these locations many agricultural produce warehouses accommodate women workers. Likewise, fishermen and youth who do not have time to go to sea often seek additional work as motorcycle taxi drivers and bricklayers.

Improving the socio-economic conditions of the community after being resettled, apart from the availability of supporting facilities at a sufficient location, the community is no longer bound by the previous habit, namely the attachment to work between the ponggawa and the sawi. Thus enabling the community to develop and manage the fishing products that have been obtained. Community behavior in the use of building facilities such as bathrooms, washing places, and places for excrement (MCK) in the Bontang settlement location, most of them can make good use of these facilities. This means that people can accept and adapt to environmental changes, especially the differences in MCK facilities used before and after resettlement. The acceptance of this innovation illustrates that the fishing community of

Bontang Kuala, especially the Bajo Tribe Community, can more quickly adapt to the environment and change their habit of defecating in the open. The results of this study are a correction to the results of research on traditional Bajo people regarding "Traditional Culture about Environmental Sanitation". The results of this study indicate that it is difficult for the community to accept innovation regarding changes in behavior in the habit of using rivers as MCK places, because using MCK other than rivers is less clean and impractical to use, so they continue to use the river as a place for MCK, especially excreta disposal. (H. P. Chen et al., 2021; W. Chen et al., 2019; Z. Chen et al., 2021).

The results showed that there was a segment of the community whose income was declining, with the majority of respondents reporting that the livelihoods they had before resettlement could no longer be continued in their new environment. Barriers to getting a new job that may be caused by a lack of skills relevant to job opportunities in a new location, or a lack of access to adequate job training facilities. If the T-value indicates that income levels are positively related to social welfare, the detailed interpretation should address how increased income can contribute to improved welfare, whether through increased access to health services, education, or ease of participation in community social activities. Resettlement programs can have different impacts in other fishing communities depending on various factors, such as geographic location, level of access to natural resources, and local culture and customs. Without comparative insight, it is difficult to know whether this 46.6% increase reflects greater success, equity, or even less than optimal outcomes compared to other communities in similar situations. The environmental aspect of sustainability also needs to be considered. While infrastructure development has improved people's quality of life, it is important to consider the long-term impact on the wetland environment itself. Wetlands are vulnerable ecosystems, and the long-term sustainability of the physical changes resulting from resettlement programs needs to be further evaluated so that the negative impacts on ecosystems do not undermine the socio-economic benefits that communities have obtained. *Gemeinschaft's* theoretical framework can be used to understand how interpersonal relationships within the Bontang Kuala community change after the resettlement process. In traditional communities, such as the Bajo tribe in Bontang Kuala, daily life is highly dependent on togetherness and mutual cooperation. The community has a close bond, which is manifested in the form of cooperation in work, traditional ceremonies, and other social support mechanisms. This dependence is one of the main forces that allows the community to face various challenges faced, including difficult environmental conditions in wetlands.

5. Conclusion

Based on the results of hypothesis testing and discussion of the research results presented above, several research conclusions can be formulated as follows: 1) The Bontang Kuala fishermen's settlement program, especially the Bajo tribe, has a positive impact on community social interaction. This means that after they were transferred the intensity of the relationship was better and increasing, most of the people always had contact with an average intensity of more than four times a month. The intensity of this relationship can especially be seen in interactions with the general public, especially in terms of community service, celebrations, and social activities. 2) The Bontang Kuala fishermen's settlement program for the Bajo Tribe has a positive impact on the socio-economic conditions of the community. This means that indicators of socio-economic conditions have increased. This impact can especially be seen in the construction of educational facilities and infrastructure; learning achievement and ease in obtaining education; as well as opportunities and opportunities to get a job, some people say that it is good. 3) There are differences in the socio-economic conditions of the people before and after resettlement, which are better than before resettlement. This shows that the settlement program offered by the Municipal Government of Bontang needs to be supported. With the difference in improving social conditions, this can give hope to the community for an increase in their standard of living and welfare. 4) Most of the behavior of people living in fishermen's settlements is to always use available facilities such as a place to bathe, wash and dispose of feces (MCK) in their respective homes. This means they can receive, use and adapt to the facility. The habits that have been bathing,

washing in the open, and defecating in the open sea have changed. The indication of this research can be concluded that the settlement program has changed the mindset, habits, and behavior of the community.

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