



# Contextualizing sustainable development frameworks in oil and gas projects: Cultural adaptation and community prosperity

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## ABSTRACT

**Background:** Different local communities around the world whether it is indigenous or communities who has been lived in the area for several generation, have experience economic growth or challenges due to oil and gas facility development. Indonesia, an archipelago with large reserves of oil and natural gas, has become one of the regions experiencing significant development of oil and gas facilities in areas with diverse local cultures. Some communities have success stories, while others left with suffering. Observation indicate that this is due to cultural differences and inherent characteristic of people in different region. **Methods:** This study will be based on the literature study and writer's observation in various communities around oil and gas development project in Indonesia. **Findings:** The numerous issues of inequality caused by development have led investors concerned with equitable community welfare to agree on issuing a sustainable development framework. One aspect often overlooked by developers and investor syndicates is that developers' plans to improve local community welfare frequently use generic templates without considering the specific conditions and situations of the local community. A single development framework cannot be universally applied to all projects. Factors such as culture, lifestyle, the character of the local population, and customary norms play a crucial role in planning an appropriate approach for developing local communities in tandem with project progression. **Conclusion:** It is anticipated that the findings of this study will assist future oil and gas development project stakeholders and the government of Indonesia in devising and planning a suitable approach to engage with local communities, ensuring their prosperity from the industry without compromising their cultural practices. **Novelty/Originality of this article:** This research offers originality by emphasizing the contextual adaptation of development frameworks to local cultural settings instead of applying a universal model.

**KEYWORDS:** development project; environmental development; indigenous; local communities; oil and gas.

## 1. Introduction

Indonesia is rich in natural resources. It possesses not only biological resources, such as diverse flora and fauna, lush tropical rainforests, and rich marine ecosystems, but also significant reserves of minerals, oil, and gas. The growing demand for electricity, driven by the increasing global population, has greatly influenced the exploration and extraction of oil and gas, which remain key fossil fuels for power generation (Kabeyi & Olanrewju, 2022; Lirong et al., 2022; Salem et al., 2022). Given this substantial demand, the oil and gas industry continue to be regarded as highly lucrative, offering significant profits to its

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operators. This profitability has attracted numerous foreign investors from developed nations, who actively compete to explore and exploit Indonesia's natural wealth for substantial financial gains.

To benefit the Indonesian people, the government invites foreign investors to exploit these resources through profit-sharing schemes. In theory the development of oil and gas fields can significantly impact a regional economy by creating jobs and attracting investment from other areas and countries (Alharthi et al., 2024; Krawchenko & Gordon, 2022). Both the initial development phase and ongoing operations can lead to substantial local economic activity through employment and the purchase of locally sourced goods and services (Cust & Poelhekke, 2015). In Indonesia, as most of the natural resources exploration and processing facilities located in rural or remote area, local communities are the most impacted by development of this industry. The oil and gas project often generates controversy. Although the project's objective is to meet the nation's energy needs for development, it may face criticism for causing environmental damage and disrupting the lives of local communities. The oil and gas development project that supposedly advancing human capital by bringing development and higher living standard to the local communities, often lead to suffering rather than prosperity, as approaches fail to align with local culture and perspectives.

During the 1950s and 1960s, the prevailing perspective on development was shaped by modernization theory. This theory, in essence, viewed development as the transformation of traditional, simple societies in the Third World into modern, complex, Westernized ones. However, in recent decades, a new development paradigm has emerged. This paradigm emphasizes poverty reduction, environmental protection, social justice, and human rights. It recognizes that development brings both benefits and costs, with one of the most significant costs being the involuntary displacement of millions of vulnerable individuals (Robinson, 2003). The inception of socially oriented research on local impacts from oil and gas project in rural areas during 1970s and 1980s in Western United States led to the development of 'Boomtown Impact Models' which proposed that community become overwhelmed by the scale of the projects and particularly construction worker arrivals and their impacts on community amenity, security and lifestyle (Taylor, 2014).

Development can cause human displacement (Cernea, 1996). Development Induced Displacement (DID) occurs when people are forced to abandon land or relocate because of development (Drydyk, 2007). Infrastructure and industry projects as well as modernization may displace local residents, forcing them to seek employment elsewhere. However, development can also create new job opportunities that attract migrants from other regions. Migration associated with economic opportunity is a common phenomenon. For most projects, project development and operations will induce, and indeed are sometimes dependent upon, the in-migration of labour. The oil and gas project utilized high technology to ensure the plant's safety, necessitating skilled workers. Many projects commit to hiring local workers through preferential employment policies. However, the term "local" often refers to national citizens (IFC, 2009), and the required skilled workers are rarely found among the local rural population. Consequently, local people typically secured supporting roles, such as administrative and blue-collar jobs.

In the context of oil and gas development projects, local communities often hope to benefit through an improved standard of living, though they may not always be fully aware of the potential impacts of such projects. Areas previously inhabited exclusively by local residents suddenly become bustling with construction workers. Initially, the arrival of these workers is expected to bring economic advantages, as they require food and accommodation. The local economy in the development area experiences significant growth, with new businesses emerging to cater to the needs of the project workers. However, on the other hand, negative consequences may arise, including the establishment of entertainment venues to serve the workers' demands. This can lead to the emergence of practices such as prostitution, which starkly conflict with the norms and cultural values of the local community.

Proper strategies involving local communities can improve their living standards and foster harmonious relationships between the state, industrialists, and surrounding communities. Oil and gas industry then has started to integrating sustainability approached, in particular to manage risk on environmental and social impact on their operation (Ali et al., 2024; Jagoda & Wojcik, 2019; Mahmood et al., 2023). A set of requirements specified by International Finance Corporation (IFC) now become compulsory to be implemented in dealing with the finance institution to support the project financing (Asmoro et al., 2020). One of the eight components of the IFC sustainability framework focuses on indigenous peoples, with the objective of promoting sustainable development benefits and opportunities for them in a culturally appropriate manner (IFC, 2012).

Since Indonesia have a vast array of different community culture spread from Sabang at the outer west of Indonesia to Merauke located in the farthest east of Indonesia, there is no one simple strategy to be implemented. Strategies use in one area, might not be suitable to be implemented in other areas. This could be seen from what already happen in Indonesia. Some community did thrive with the arrival of oil and gas project, others are not as fortunate.

Social disparities often arise in interactions among communities surrounding oil and gas development projects (Chijioke-Churuba, 2023; Nkem et al., 2022). Typically, this occurs between migrant workers and local residents. It is undeniable that the development of oil and gas facilities requires a substantial workforce. Often, the demand for skilled labor cannot be met by the local population, necessitating the recruitment of workers from other regions or even from abroad. As experts, these workers earn significantly higher wages compared to local residents, who usually occupy positions as manual laborers on these projects, as in the projects located in remote areas, the educational level of the local population often does not meet the qualifications required for more desirable positions (Taylor, 2014). Consequently, this leads to further marginalization of local communities in their own regions. Naturally, local residents, who view the natural resources in their area as their inherent wealth, often feel that they deserve better opportunities and positions in these development projects. This perception frequently results in social conflict between migrant workers and local residents.

This study compares several cases of the impact of oil and gas facility development on local communities. Most research publications primarily discuss the negative impacts of oil and gas facility development projects. However, in some regions of Indonesia, these projects have demonstrably provided economic benefits to the local population. The research gaps identified in this article involve a comparison between projects that have adverse effects on local communities and those that enhance the living standards of local communities. The case studies presented will illustrate that this is largely influenced by the willingness of oil and gas companies and local government policies to advocate for the rights of local communities to maximize the benefits from development in their areas. This is also influenced by the more adaptive cultural characteristics of the local population.

The findings are based on literature reviews and the author's observations from working on various oil and gas projects in different areas. The findings of this study will assist future oil and gas development project stakeholders and the government of Indonesia in devising and planning a suitable approach to engage with local communities, ensuring their prosperity from the industry without compromising their cultural practices.

## 2. Methods

This study will be comparing the impact of 3 different oil and gas development project in different major island in Indonesia to local communities with different cultural practices and different typical character of people. One project located in Bayung lencir, Musi Banyuasin Regency in Jambi, South Sumatera, another in Bojonegoro, East Java and lastly in Bintuni Bay, Papua.

The first project JM Gas Processing Facility is located in Bayung Lencir district, Musi Banyu Asin Region. The project itself is a medium size project, and the current operating

company is PT P which is a government own Company. It was chosen because the people of Jambi represent the characteristics of Malay descendants and still include traditional communities that isolate themselves from modern civilization. Research will be based on writer's observation during project development back in 2009 to 2011, and current condition based on literature review and article in public media. The difference impact of the Plant between development project phase and the calmer situation during operation phase will be presented and discussed.

The second facility, the BU Oil Exploration and Processing Facility, is situated in Bojonegoro, East Java Province. It is categorized as a major project and managed by a subsidiary of a foreign company headquartered in Houston, USA. Positioned between two small yet developed urban areas, the surrounding communities are characterized as somewhat modern, well-informed, and largely educated. The research will also be based on the writer's observations during the facility's development between 2013 and 2015, as well as an analysis of current conditions drawn from literature reviews, media publications and inputs of local people who benefited from the project.

The last facility, Tangguh LNG, is a large gas processing and liquefied natural gas (LNG) production facility situated in a remote area of Bintuni Bay, Papua. It is managed by a subsidiary of a foreign company headquartered in London, UK. The indigenous communities living near the facility are characterized by traditional customs, including resolving disputes and conflicts through tribal warfare. The research will also draw on the writer's observations during their involvement in the construction phase of the most recent LNG Train from 2019 to 2022. Additionally, it will incorporate an analysis of current conditions based on literature, journal reviews, and media publications. The effect of local people who are indigenous Papuans being displaced to provide land for the mega LNG Plant to the current condition of this local people will be discussed as well and compared from the perspective of employee of the LNG Plant who are Papuan coming from the other region of the island.

### 3. Results and Discussion

JOB-PTJM is a gas processing, it is now wholly owned by PT PHE, a state-owned company. Located in the Bayung Lencir district of the Musi Banyuasin region as part of South Sumatra Province, the facility comprises two plants separated by the Lalang River. The gas processing facility is situated in the Sungai Kenawang area, while the production well is located in the Pulai Gading area. The processing facility is close to Bayat Village and a nearby transmigration community originally from Bali, called Mendis Village.

The processing plant is strategically located near the river to facilitate the shipment of equipment. The Lalang River is also used for transporting logs from the nearby logging industry. Access to the production well in Pulai Gading is via the Lalang River by boat. Construction workers accessed the processing plant through the Sumatera Main Access Road and Bayat Village. A private access road was constructed from the main public road to the plant. During the project, workers from various regions were employed at the construction site. As the plant was partly owned by the Canadian company Talisman, some of the workers were foreigners. These expatriate workers along with Company's national workforces and main contractor workforces were staying inside the private development Plant area, having their temporary living camp complete with it's mess hall to cater for their daily meals. These workers mostly went to Bayat Village only to have occasional meal in one of the restaurants. It is a different story for several thousands of sub-contractor workforce. They were mostly staying in an accommodation nearby the project, and apart from lunch meal provided by the project management during afternoon breaks, they rely on the restaurant, warung, and catering service provided by local communities in Bayat Village area.

The presence of the JM project, thus significantly boosted economic activity in the Bayung Lencir district. Numerous boarding houses were built to accommodate construction workers, new restaurants emerged, and local agricultural produce was used to feed the

project workers. Additionally, a local boat rental business thrived due to the increased demand for boat rentals along the Lalang River. In contrast to the economic benefits experienced by the urban and village communities, the indigenous Jambi people, *Anak Dalam Tribe* specifically the Batin Sembilan tribe living along the Lalang River, did not directly benefit economically. They resided in houseboats on the river and relied on fishing for their sustenance. During the construction phase, the increased number of boats used by workers, and the shipment of construction material including large equipment, disrupted the tranquil lives of this tribe. This tribe is categorized as an isolated community in Indonesia because they live in relatively remote areas and have minimal interaction with the outside world. The *Anak Dalam Tribe* are known for steadfastly maintaining their primitive way of life amidst the rapid modernization occurring outside their community.

The completion of the facility construction led to a rapid reduction in the number of workers and, consequently, a decline in economic activity in the surrounding villages. While thousands of workers were present during the construction phase, only about 100 operational staff remained at the Jambi Merang natural gas processing facility during its operational phase. With a calmer situation and the plant operations underway, the company then can begin to focus on the implementation of community development plans that were established prior to the project's commencement. Based on Ministry of Environment and Forestry in 2017, JOB JM, in implementing its social and environmental responsibility program, has actualized the cultural values of local communities through the *Barisan Selempang Bumi* Initiative.

By the end of 2015, the Corporate Social Responsibility (CSR) program of JOB-PTJM began to focus its attention specifically on the *Anak Dalam Tribe* community residing in the region. The *Anak Dalam Tribe* are dispersed throughout the forested areas of Jambi and South Sumatra Provinces. Living far from external civilization makes them difficult to approach. The Batin Sembilan settlement of the *Anak Dalam Tribe* can be reached from Tujuh Hamlet, Muara Medak Village, which is not far from the JOB PTJM location. Consequently, this indigenous community was incorporated into the community development program. Upon initial engagement, the CSR JOB-PTJM included their program, Jambi Merang Mengajar, for the illiterate *Anak Dalam Tribe*. However, due to time constraints, they sought more effective methods. In collaboration with SEAD (*Sobat Eksplorasi Anak Dalam/Anak Dalam Tribe* Exploration Buddy), two initial teachers were dispatched to live directly within the *Anak Dalam Tribe* environment, prioritizing education for children (Nanda, 2019).

Apart from supporting children education, JOB-PTJM introducing a program which integrates the empowerment of riverbank communities with efforts to improve the river environment, known as the eco-riparian concept, using education as the primary approach, aimed at achieving independence and sustainability in education, economy, social aspects, health, infrastructure, and the environment. The ecological maintenance efforts by JOB-PTJM include the conservation and cultivation of river fish, providing fish cages to 12 households, and distributing fish seedlings to 12 households. Additionally, patin fish seedlings were released into the river near the *Anak Dalam Tribe* settlement. This initiative can preserve the fish population in the river, preventing their extinction. Furthermore, to enhance the community's economy, it provides training in salted fish processing and fish cage cultivation. This Ministry of Environment and Forestry program has successfully improved the community's economy by providing a stable income to those who previously had no steady income.

The second facility, the BU Oil Exploration and Processing Facility situated in Bojonegoro, East Java Province, is a mega project developed within 2011 to 2016. In 2020 the Plant produce 30% of the total national oil production (Priadi, 2021). This project was established on a 2000-hectare area that was originally owned by local residents and indigenous communities. The compensation for the land in the form of money has caused conflicts within the community (Hilson, 2002; Song et al., 2016). The emergence of many new wealthy individuals, who were initially farmers, and their lack of knowledge and mental preparedness in managing substantial material resources, led some beneficiaries of

the land compensation to live extravagantly without planning (Jiang et al., 2021). Humvees frequently passing through the villages around the development project became a common sight for some time. Some of the new wealthy individuals squandered their money in Surabaya, the capital of East Java Province. Social issues arose with the establishment of entertainment venues that did not conform to religious norms, catering to the needs of workers from outside the area (Brugere et al., 2023; Hariani & Hanafiah, 2024).



Fig. 1. (a) *Anak Dalam Tribe* live on the move; (b) getting to know books and education (Nanda, 2019)

The descendants of Bojonegoro who have pursued education and careers outside the area are now returning to their hometown to establish new enterprises. New hotels, restaurants, and sports facilities are emerging in the town of Bojonegoro and the nearby town of Cepu, developed by the next generation of Bojonegoro and Cepu descendants. Their advanced education enables them to plan effectively and prosper from their businesses. Additionally, several small eateries (*warung*) and boarding houses have sprung up around the villages surrounding the Plant. As the workforce from the company, main contractor, and subcontractors integrate with the local community, the economic benefits for the local communities have been substantial during the project's duration.

To maximize the benefits from the development, the regional regulation established by the Regent of Bojonegoro at that time played a crucial role in involving the local community in the BU Oil Exploration field development project. S, who served as the Regent of Bojonegoro for two terms from 2008 to 2018, issued Regional Decree No. 23/2011, which mandates the involvement of local Bojonegoro subcontractors as suppliers for project needs. The decree further stipulates that,

*"Every company operating in the region is required to prioritize the employment of local workers according to their competencies and skills as an effort to enhance community participation in regional development."* (S, the Regent of Bojonegoro)

It explicitly specifies that all blue-collar jobs must be allocated 100% to local Bojonegoro residents. Companies are required to seek trained labor from local Bojonegoro residents by consulting data from the Ministry of Manpower, establish training centers for Bojonegoro residents to become skilled laborers, and contribute to ongoing projects as well as during the operation of the plant.

This certainly put the Contractor in difficult situation as many of local people at the time were a farmer with no specific required skill to work on the project. Training centres were then established to provide necessary training for local people to the extent that they understand all the safety requirements for working inside the development area which is become a basic knowledge, even for workers doing general helper job.

While the issuance of the Decree delayed the Project as the Contractor could not commence work immediately, it proved beneficial for the entire population of Bojonegoro. High school and vocational school graduates from Bojonegoro were selected by the operating company to receive further education at AKAmigas Cepu and undergo on-the-job training at several branches of the operating company that were already in operation. This

preparation aimed to ensure they were ready to become operators and maintenance personnel at the BU Oil Exploration Plant once the facility was ready for operation.

The Corporate Social Responsibility (CSR) program of the operating company also implemented catering business training for local residents, enabling them to provide the catering services needs to accommodate the thousands of project workers, thereby gaining economic benefits and skills in managing money to achieve economic sustainability. The regional government's strategy at that time proved effective and supported the residents' livelihoods for economic improvement.

In addition to supporting human resource development in the region, the project also addresses longstanding environmental challenges that have affected the area. The city of Bojonegoro and the planned processing facility are situated within the Bengawan Solo River Basin, which is home to the largest river on the island of Java. As one of Indonesia's key rice-producing regions, Bojonegoro faces unique challenges in ensuring successful rice harvests. Although the Bengawan Solo River is expected to provide sufficient water for agricultural activities, it often falls short during the dry season, leading to water scarcity for irrigation. Conversely, during the rainy season, the river's tributaries frequently overflow, causing floods that threaten surrounding agricultural lands.

To promote environmental sustainability in the agricultural zones surrounding the BU Oil Exploration processing facility, the operating company has designed the plant to include a large reservoir. This reservoir is intended to meet the facility's water needs by drawing water from the Bengawan Solo River. The water is stored and treated to meet the plant's quality standards. This reservoir system was developed in accordance with the Environmental Impact Assessment (EIA)/*Analisis Mengenai Dampak Lingkungan Hidup* (AMDAL) agreement, which stipulates that water from the Bengawan Solo River may only be extracted during the rainy season, when river discharge is high. Water extraction is strictly prohibited during the dry season. The design aims to support sustainable environmental development in the region by mitigating flood risks during the rainy season and alleviating water shortages during the dry season. Additionally, it seeks to ensure that agricultural activities in the vicinity of the project site can continue without disruption, thereby contributing to long-term environmental and agricultural resilience.

Another oil and gas facility being observed in this research is Tangguh LNG Project located in Bintuni Bay, Papua which is a major LNG production facility operated by BP an operating company based in London, UK. This LNG Plant was started to be developed in the early 2005 by a consortium of Japanese and US Engineering Procurement and Construction (EPC) Company. Building this huge LNG production facility involving removal of a village from its original location in Tanah Merah.

In 2004, all residents of Tanah Merah Village were relocated to a newly developed settlement situated not far from their original place of residence. This relocation was undertaken to support the construction of the Tangguh LNG refinery. The construction of the new settlement itself has been commenced in February 2003, with the relocation process taking place in mid-2004. Of the 127 families residing in Tanah Merah, 101 opted to relocate to the new settlement near Saengga Village, while 26 families chose to move closer to Onar Village. The relocation brought significant changes to the community, particularly in social, economic, and cultural aspects. Although there was an initial improvement in the quality of life. The company has implemented numerous initiatives focused on development and community empowerment, including programs in healthcare, micro-economics, gender training, and governance. Several infrastructure projects were also developed, such as road construction, electricity supply, and clean water provisions have also contributed to the well-being of local residents (Setiadi & Sumini, 2023).

Unfortunately, in the subsequent years, residents faced increasing challenges that contributed to a decline in their overall living conditions. Numerous individuals relocate to Bintuni Bay, moving closer to the Project site, to seek economic opportunities. These individuals who relocated to Bintuni Bay Regency have established restaurants and lodging businesses, further stimulating the local economy through supplementary services. Despite migrating from various parts of West Papua, these individuals were still regarded as

outsiders by the local tribal community. Their different dialects often led to communication difficulties.

Another source of conflict or jealousy has emerged among the residents of Bintuni Bay. The LNG facility was constructed on the southern coast of Bintuni Bay, and the residents of Tanah Merah village, along with other villages affected by the construction, were provided with new locations built by the company. These new locations included large houses, educational facilities, and healthcare services. In contrast, the residents of the northern coast of Bintuni Bay did not receive as much attention, despite the gas reservoir being located beneath their area. As a result, the northern coast residents feel that they are the rightful owners of the gas.

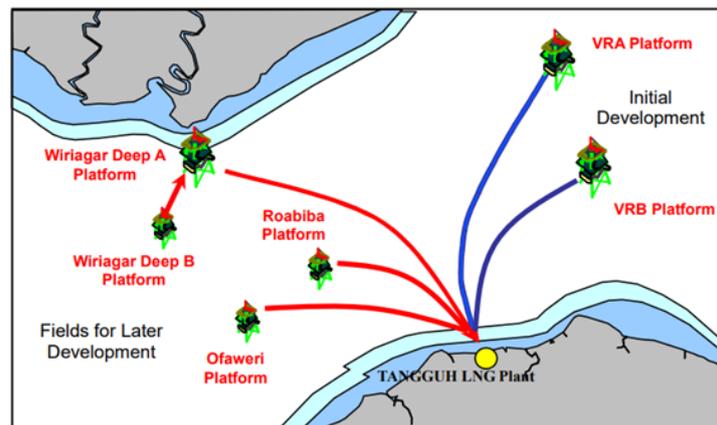


Fig. 2. Tangguh LNG plant location and offshore gas wellhead platform location

The Company keen to demonstrate the project could be an environmental showpiece the consortium undertook several measures overlooked by an environmental steering committee. The Tangguh Independent Advisory Panel (“TIAP” or “the Panel”) provides independent, external advice to the Company decision-makers regarding non-commercial aspects of the Tangguh LNG Project. The original Panel was created in March 2002. Recent Panel reports in 2023 showed the improvements in the villages around Bintuni Bay are less noticeable. In the north shore villages, the housing and infrastructure remain primitive, there are few roads, limited agriculture, many villages do not have grid-based electricity and most commerce is by small boat. Fishing remains the primary commercial activity (BP Global, 2023).

Babo is a small village that serves as the final airport destination for workers traveling to the Tangguh LNG site. From this location, workers must embark on a boat journey to complete the last leg of their trip to the site. Despite being twenty years into the development of the Tangguh LNG Plant, the village has experienced minimal progress in terms of infrastructure and economic growth. The primary economic activity observed within the village is concentrated near the jetty, where local residents sell fresh seafood to workers returning from their rotation period at the site.



Fig. 3. Seafood vendor at Babo Jetty

The company operating the plant endeavoured to fulfil their obligations as outlined in their EIA commitments, including employing local Papuan youth by developing and training them to become operators at the Tangguh site. However, the majority of individuals recruited were not from the Papuan regions directly adjacent to the plant but rather from larger cities in Papua, such as Jayapura or Sorong.

The Tangguh Independent Advisory Panel (“TIAP” or “the Panel”), established with noble intentions, ultimately failed to achieve the desired impact. This was largely due to the fact that many of its members, being foreign nationals, were unable to fully comprehend the unique cultural dynamics of Papuan society. In contrast, local government officials and community leaders are better equipped to understand the needs of local populations. However, the competitive and at times conflict-driven culture among the tribes in Papua has made it challenging for individuals from different tribes to receive equitable treatment from the Papuan regional government. As a result, priorities continue to be influenced by collusion and nepotism.

Although the Tangguh Plant has yet to significantly enhance human resource development across the surrounding region, the company enforces strict environmental regulations, particularly in the protection of local wildlife species. In the supporting areas around the plant, outside the core processing facilities, there is no clear separation between forested zones and residential or office areas used by employees. As a result, the plant’s presence has minimal impact on local wildlife habitats.

It is not uncommon to observe groups of deer grazing along the plant’s access roads or near the LNG tank area. Wild boars are frequently seen crossing paths, and cassowaries are often spotted foraging near the camp. Various bird species, including eagles and cockatoos, are also regularly observed in the vicinity of the plant. To preserve the natural behaviour of these animals, the company strictly prohibits employees from disturbing or feeding them. Violations of this policy are met with severe consequences, including permanent removal from the plant premises and a ban on future access. These measures are intended to maintain the ecological integrity of the area and ensure that the surrounding environment remains as undisturbed as possible.

The three projects compared demonstrate differing approaches in improving the well-being and economic conditions of communities surrounding oil and gas field development projects. Individual-led, personalized approaches are considered more impactful, as individuals tend to exhibit greater empathy toward local communities. Cultural similarities between decision-makers involved in Corporate Social Responsibility (CSR) initiatives and the local communities they aim to serve are regarded as factors that can facilitate the development of approaches with a positive impact on the local population.

For instance, the approach undertaken for the indigenous communities near the Jambi Merang plant, which operates on a corporate scale, involved company employees based at the plant site and engaged specialized communities dedicated to the welfare of indigenous groups. This method proved effective in building trust and contributing positively to the quality of life of both indigenous and nearby communities. The presence of Pertamina, a national oil and gas company with shared interests in JOB Jambi Merang, plays a crucial role in efforts to improve the welfare of the affected local population. As a government-owned national company, Pertamina can act as an extension of the government in promoting equitable welfare distribution among the community.

Meanwhile, local governments in smaller administrative regions, such as Bojonegoro Regency, which are attuned and committed to the welfare of their citizens, can deliver significant and meaningful positive impacts. It is evident that factors such as the education level of local communities and the communal culture of cooperation and solidarity among Javanese indigenous groups contribute significantly to the comprehensive progress of areas affected by oil and gas processing facility development. Additionally, the proximity of project sites to major cities tends to result in communities being more receptive to development and modernization, as well as more aware of their rights. Local government regulations requiring residents to be trained as operators at the BU oil exploration and treatment facility have increasingly benefited the Bojonegoro region. Young people from

the area are securing better positions within the company as their experience in its operations grows. The ownership of shares by the Regional-Owned Enterprises (BUMD) in this project also plays a significant role, as it grants BUMD a voice in advancing their region. By promoting local capacity building, these programs support sustainable development goals, ensuring that communities can thrive independently in the long term.

Conversely, the remoteness of a project site often correlates with a lack of awareness among local populations regarding their rights, as well as a scarcity of highly educated individuals within the community. Large administrative regions may also result in diminished empathy from local government officials, particularly when those holding office do not originate from areas directly adjacent to the project site. In addition to being a remote area, Papua is also known for being conflict-prone, which discourages many Indonesians from voluntarily relocating there without substantial remuneration. Due to Papua's reputation as a conflict zone, remote facility areas are heavily guarded, and interactions between workers and the local population are more restricted. Consequently, empathetic social relationships between incoming workers and the surrounding community are not established.

To ensure an appropriate approach to local communities in future projects, it is essential to foster a comprehensive understanding among all stakeholders, including the Indonesian Central Government comprising various ministries, regional governments, investors, and operating companies. While most current oil and gas projects in Indonesia are offshore, several onshore projects are being planned, which will coexist with local communities (Amelia et al., 2021; Triatmodjo et al., 2025). The Tangguh site in Papua is being expanded to accommodate production from new exploration wells and additional carbon capture facilities. In another part of Papua, a smaller gas exploration project is also under development.

Additionally, a large-scale LNG plant is being planned in Maluku Province. Although this province is located in eastern Indonesia, adjacent to Papua, its local communities have distinct cultures and ways of life compared to those in Papua. Lessons learned from previous oil and gas field developments, particularly in terms of interacting with and involving local communities, should be considered to develop an appropriate approach for environmental impact assessments which will includes developing local communities.

#### **4. Conclusions**

Research on development-induced migration and its effects on indigenous people has been conducted for several decades. The numerous issues of inequality caused by development have led investors concerned with equitable community welfare to agree on issuing a sustainable development framework. IFC implements safeguards to protect social and environmental interests before approving investments. This includes ensuring that projects do not cause significant negative impacts on the community and surrounding environment. Projects funded by IFC must meet internationally recognized social and environmental standards. IFC ensures that their investments not only generate financial returns but also contribute to socially and environmentally sustainable development. The IFC framework indirectly encourages oil and gas facility developers to adhere to sustainability principles for the communities affected by their projects. Developers' plans to uphold justice and improve community welfare are factors evaluated by investors, who are often large bank syndicates, before agreeing to invest in their projects. This IFC Framework pushed developers to be ready with a comprehensive plan to fulfil the sustainability principles for the communities as well as preserving the environment as much as possible.

One aspect often overlooked by developers and investor syndicates is that developers' plans to improve local community welfare frequently use generic templates without considering the specific conditions and situations of the local community. This often occurs in developments purely undertaken by foreign companies that do not understand local culture. The research, which examines three distinct project locations with varied local

community cultures in Indonesia, reveals differing impacts on the local communities and varied responses from different indigenous groups. This indicates that a single development framework cannot be universally applied to all projects. Factors such as culture, lifestyle, the character of the local population, and customary norms play a crucial role in planning an appropriate approach for developing local communities in tandem with project progression.

The research also revealed that environmental concerns are relatively easier to address through dialogue and consensus-building, compared to the more complex issues of human resource development and the preservation of indigenous or local cultural practices. Human behaviour, shaped by diverse values, beliefs, and social dynamics, presents a far greater challenge to understand and manage. As such, addressing these human-centered issues requires deeper insight and a more nuanced, context-sensitive approach to ensure that development strategies are both appropriate and respectful of local ways of life.

While the research provides a perspective on how different locations and cultures necessitate varied engagement approaches, it is primarily based on literature review and the author's observations. Including developers and government officials as key informants could potentially enhance our understanding of the development of the Plan and their expectations. Further comprehensive research comparing more area of oil and gas development and lessons learned from previous oil and gas field developments, particularly in terms of interacting with and involving local communities would be beneficial to assist future oil and gas development project stakeholders and the government of Indonesia in devising and planning a suitable approach to engage with local people, ensuring their prosperity from the industry.

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### **Author Contribution**

The author solely conducted all stages of this research, including the study design, data collection, analysis, interpretation, and manuscript preparation.

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Not available.

### **Conflicts of Interest**

The author declare no conflict of interest.

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