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Negotiating a Renewable Energy-Led Structural Transformation: The Cirata FSPP Case Study

A Research Paper

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Disclaimer

This document represents part of the author's study programme while at the International Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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Very special thanks to my fellow Indonesians; you made the strong winds bearable.

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Terima kasih sebesar-besarnya kepada para nelayan di Cirata yang memberikan saya izin untuk duduk bersama dan mendengar kisah anda. Terutama untuk Ibu dan Bapak yang membuka pintu rumah anda untuk mahasiswi asing ini. Saya berdoa anda sehat selalu.

Glory be to God.

Executive Summary

In 2019, Indonesia experienced a breakthrough in their renewable energy pipeline through the launch of the Cirata Floating Solar Power Plant, claimed to be the largest floating solar farm in Southeast Asia, and the third largest in the world**.** Its completion was celebrated as both a clean energy breakthrough and a hallmark for green job creation. An article published by Kompas titled "*Fishermen 'Throw Their Nets' to Become Solar Power Plant Installation Workers*" highlights a job transition training program designed by the companies to assist fishers from Citamiang and Ciroyom who lost their job site due to the presence of the power plant. While the article hailed the program as a success, a follow up article by the same media company showed a contrasting narrative: one where fishers lost their livelihood and were unable to access these promised new jobs.

The research's main objective is to better understand the dynamics behind this contrasting story which emerged from the same geography, one that has experienced a large-scale, renewable-energy driven transformation in the past. Using an ethnographic approach, the research investigates historical precedents and power structures which feed into the novel condition of Cirata today: one with clear evidence of grievance yet lack visible resistance from the impacted fisher communities. This research presents a distinct approach to conflict study, as defined by Pruitt & Rubin (1986) as "*perceived divergence of interest, or a belief that the parties' current aspirations cannot be achieved simultaneously*". It seeks to investigate the negotiation processes of Cirata as the battleground of conflict: where each stakeholders' perceptions of power, duty, and rights inform how they strategize and navigate around their second land re-organization brought by national energy development, only this time, on water.

The first section of analysis of this research will provide a thorough exposition of Cirata's first structural transformation. It delved into the first large-scale job transition program, which economic success overshadowed both the environmental and socio-economic consequences experienced by Cirata's local societies. Locked in a dwindling industry, Cirata's fishers saw the FSPP development as a potential lifeline. The second section moves slowly to the present, as it showed how loopholes in project implementation and lack of monitoring gave birth to the Broker: a figure capable of finding and exploiting opportunities in the margins of a community dependent on their success (Kahin, 1983). The final analysis will arrive at the present, where it investigates the intricacies of negotiations using the Dual Concern Model by Pruitt & Rubin (1986). Using all of the

known facts of Cirata's socio-economic structures, it then analyses how the sum of impacts caused by a structural transformation can inform the behaviors of its local societies, particularly working to dampen unionization critical for conflict escalation. This final section will give an answer to Cirata's novel condition of relative "quiet", which many are keen to push as a success story of job transition.

This research hopes to provide a nuance take on the dialogue between national renewable energy imperative and local societies' welfare. Through the unique case of Cirata, it seeks to display how even under the best of interests, lack of monitoring and participation would lead into the same mistakes repeating over the course of one lifetime. Finally, it hopes to have conveyed the voices of Cirata's fishers, and hopefully encouraged future studies and initiatives which may help level the playing field of negotiations between local communities and state-sponsored energy projects.

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Acronyms and Abbreviations

E-NDC	Enhanced Nationally Determined Contribution
NRE	New and Renewable Energy
RUPTL	*Rencana Usaha Penyediaan Tenaga Listrik* (Electricity Supply Business Plan)
PLN	*Perusahaan Listrik Negara* (State Electricity Company)
SPV	Solar Photovoltaic
MW	Megawatt
FSPP	Floating Solar Power Plant
PMSE	PT Masdar Solar Energi (*Masdar Solar Energy. Ltd)*
MEMR	Ministry of Energy and Mineral Resources
OECF	Overseas Economic Cooperation Fund (Japan)
MoU	Memorandum of Understanding
DCM	Dual Concern Model
RE	Renewable Energy
DPRD	*Dewan Perwakilan Rakyat Daerah* (House of Regional Representatives*)*
BPS	*Badan Pusat Statistik* (Central Statistic Agency)
EIA	Environmental Impact Analysis (AMDAL)
SKKNI	*Standar Kompetensi Kerja Nasional Indonesia* (National Work Competency Standards)

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1 BACKGROUND

1.1. Indonesia's solar energy development

Since its ratification of the Paris Agreement in 2016, Indonesia has positioned itself as an active participant in the global transition toward clean energy and the pursuit of Net Zero Emissions by 2060. In its Enhanced Nationally Determined Contribution (E-NDC) submission to the UNFCCC, the Government of Indonesia pledged to reduce greenhouse gas emissions by 31.8% under an unconditional scenario and up to 43.2% under a conditional scenario by 2030 (UNFCCC, 2023). One of the principal strategies for achieving these targets lies in the acceleration and scaling up of New and Renewable Energy (NRE) development. This strategic commitment was operationalized in the 2025–2034 Electricity Supply Business Plan (RUPTL), which outlines a target of achieving a 34.3% NRE share in the national energy mix (PLN, 2025, p. 4).The RUPTL, which serves as the national roadmap for power generation expansion and electricity provision for the next decade, envisioned Solar Photovoltaic (SPV) power to have the second-largest planned source of energy capacity, with a projected addition of 7,143 Megawatt (MW)[1], reflecting its estimated technical potential of 207,898 MW nationwide (p.24).

While SPV technology saw a significant reduction in capital cost in the last 30 years (p.15), Indonesia's SPV development target faced an opposition of steep capital expenditure needed for land acquisition. With its current installed capacity at only 78.5 MW (p.24), achieving the target was a monumental task. Today, this ambition became more realistic with the introduction of *floating* solar photovoltaic technology. It allows the mounting of solar panels on floating platforms and deployed on calm bodies of water such as lakes and reservoirs (IRENA, 2020), thereby bypassing the need for costly land acquisition. High-end estimates suggest that Indonesia's stable inland and maritime waters could support Floating Solar Power Plants (FSPP) with a combined generation potential of up to 180,000 terawatt-hours (TWh) per year (Silalahi et al., 2021).

[1] Base Scenario. The Accelerated Renewable Energy Development (ARED) scenario seeks for solar power to have the largest development at a target capacity of 17,062 MW. Both scenarios exclude rooftop solar panels.

In 2020, PLN Nusantara Renewables launched a tender for the development of Indonesia's first ever FSPP. After finalizing their partnership agreement with Abu Dhabi Future Energy Company PJSC (Masdar), the power plant was eventually built on the Cirata Reservoir in West Java (Silalahi & Gunawan, 2022, p.82). It occupies an estimate of 225-250 hectares (ha) of the 6,200 ha reservoir, with a current generating capacity of 145 MW (Power Technology, 2023). Cirata FSPP officially launched in November 2023, three years after the partnership was formalized. In his inauguration speech for the power plant, President Joko Widodo proudly pronounced it as the "largest floating solar farm in Southeast Asia, and the third largest in the world[2]" (Rudolph et.al, 2025). The FSPP is now legally owned and operated by PT Masdar Solar Energi (PMSE), a project company consortium between shareholders Masdar and PLN Nusantara Renewables where PLN holds the majority at 51% of share ownership.

Geographically, the Cirata FSPP is a uniquely situated site, as it captures the borders of two different regencies in West Java: Purwakarta and Bandung Barat. It is also developed right next to the Cirata Hydropower Plant, which started operation in 1988 and was the reason behind the existence of Cirata Reservoir (Nakayama, et.al., 1999). The Cirata Hydropower Plant is owned and operated by PLN Nusantara Renewables[3].

Figure 1 Cirata FSPP. (source: pmse.com)

[2] At the time of Cirata FSPP completion, the two largest FSPPs are the Dezhou Dingzhuang FSPP (320 MW) and the Three Gorges New Energy FSPP (150 MW), both in China. Source: Rudolph et.al, 2025

[3] Previously known as PT Pembangkitan Jawa Bali (PJB). Villagers would refer to both company names interchangeably.

1.2. Two stories from Cirata

In addition to delays and difficulties in procurement due to COVID restrictions (Direktorat Aneka EBT, personal interview, 2025), construction of Cirata FSPP faced an additional challenge of clearing the power plant zone from existing aquacultures and other water activities. The project required approximately 250 ha of “clear zone” water area for its 300,000+ solar panels, situated on the northern part of the reservoir close to the Cirata Hydropower Intake Station (Rudolph et.al, 2025). This was quite a contentious request, considering the size and significance of the aquaculture industry for the region. Many villages around the reservoir depended on fisheries as a main source of income. In 2023, the Department of Farming and Fisheries in West Java estimated that freshwater fishing industry in Cirata alone generated a value of IDR 2,032,018,410,000 (approximately USD 123,914,921) (Diskominfo Purwakarta, 2024).

In exchange for the disruption of their worksite, the local fishers of Cirata were offered non-monetary compensation in the form of a free job transition training program. It was first introduced to the public via an online article published in August 2024 by Kompas, titled “*Fishermen 'Throw Their Nets' to Become Solar Power Plant Installation Workers*” (Yogatama & Ritonga, 2024). The article told the story of Odang, a 35-year-old former net cage fisherman who began training as a solar panel installation operator in 2023, a few months prior to the Cirata FSPP start of operation. This free training and certification program was offered for fishers who were displaced from their jobsite by the FSPP clear zone area. Participants of this training program were taught basic skills needed for solar panel installation and maintenance work. Those who completed the training obtained a Certificate of Competency signed by the Ministry of Energy and Mineral Resources (MEMR) and was promised an opportunity to work at the FSPP. Furthermore, owning a Certificate of Competency was advertised to the community as an opportunity to get work for other solar projects across the country.

KEMENTERIAN ENERGI DAN SUMBER DAYA MINERAL REPUBLIK INDONESIA

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Nomor Register : 28300.0.2022

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Figure 2 Certificate of Competency (source: field documentation)

At first glance, the job transition training program appeared to serve as a viable exit strategy for many fishers in Cirata. While still lucrative, the aquaculture industry increasingly suffers from adverse impacts of climate change and rising cost of goods. In the past couple of years, the reservoir experienced several catastrophic hypoxic upwelling events[4], which led to mass fish deaths and millions of rupiah of monetary losses (Arfiandi, 2021, Sopiandi, 2023). In the Kompas article, Odang expressed his difficulty to continue making a decent daily income as a fisherman, sometimes only earning around IDR 75,000 (USD 4.52[5]) for a full day of work.

While Odang's story seemed to present an optimistic output on what opportunities a job transition training program can offer for workers with low formal education, a more recent publication by the same media outlet presented a contrasting account. In June 2025, another article by Kompas about Cirata was released online, this time titled *"The Other Side of Energy Transition: Waiting for a Collective Solution for Cirata's Fishers (1)*[6]*"* (Kurnia, 2025). It told the story of Sarifudin, a 52-year-old fisherman who was forced to cease fishing due to the safe zone yet allegedly excluded from the new job field as he doesn't fit the required employee profile.

The article claimed as many as 190 fishers from both Purwakarta and Bandung Barat regencies experienced detrimental impacts of jobsite displacement caused by the FSPP. Most of the fishers, especially those who were middle-aged and/or received little formal education, were left with unfavorable alternatives to joblessness. Some moved to the shore zone with a much lower fish yield, for which they had to find supplementary work to make a living wage. One fisherman named

[4] The phenomenon where cold, hypoxic water from the bottom of the reservoir rises to the top.
[5] Rates taken on October 14, 2025
[6] Original title in Indonesian: "*Sisi Lain Transisi Energi : Menanti Solusi Bersama bagi Nelayan Cirata (1)*". It's part one of a two-part article concerning Cirata FSPP post-operation.

Fahrudin, age 53, said he was forced to move to the nearby Saguling reservoir in order to continue working as a fisherman.

The struggle was not limited to fishers who were of age. The later Kompas article also told the story of Jalal, a 30-year-old fisherman who was also forced to live off a much smaller fish yield after his prior jobsite was displaced by the power plant. It is unclear from the article whether Jalal ever received an offer to join the training program or whether he ever went through with it.

1.3. Negotiating renewable energy-driven structural transformation

In their discussion of the political economy of energy transformation, Rebecca Pearse (2021) synthesized four thematic areas of (clean) energy transition and decarbonization from several leading scholars. One of these areas she identified was *space* (p.957). Renewable energy developments marks a "return to the surface", as opposed to the current "vertical" extraction of fossil fuels (Pearse, 2021, p.958). This leads to spatial reorganization and re-commodification of land, with impacts to human systems which are important be considered by the nation state (McCarthy, 2015. Cited in Pearse, 2021, p.958).

Cirata has a longstanding story of spatial reorganization, leading to its continuing process of structural transformation. It started in 1983, when PT PJB[7] constructed a dam to develop a 500 MW hydroelectric power station (Nakayama, 1999, p.444). Supported by grants from the World Bank and the OECF, the project resulted in the creation of the Cirata Reservoir through the flooding of 6,612.45 ha of productive land, including farms, rice fields, and residential areas (PLN, 1990). This abrupt geographical transformation not only disrupts the natural environment but also fundamentally reconfigures local systems and livelihoods. Agriculture lands were converted into aquaculture zones, local land ownership shifted to state-controlled water territories, and migration patterns intensified because of changing economic opportunities. Cirata FSPP makes the second event of large-scale area disruption caused by national renewable energy construction project for both the regency of Purwakarta and Bandung Barat.

In both events, Cirata's local communities are frequently cast as peripherals to the broader narrative of national clean energy development targets. Public understanding of these impacted societies is largely shaped by the labels and narratives presented in project documents and/or media publications. Beyond some insights offered in recent news stories and the newly published

[7] Now PT PLN Nusantara Renewables.

study by Rudolph et al. (2025), little is known about how the affected labor communities of Cirata have been represented, or engaged in, the negotiation surrounding the production of a state-sanctioned renewable energy project. Likewise, the underlying power dynamics and competing interests that have shaped their current circumstances remain under examined.

While the scale Cirata FSPP impact is quantitatively much smaller than the Cirata Dam development, how these transformations came to be and how it changed the socio-economic realities of humans and human settlements in the area still warrants further discussions. Even more so when recalling that these are communities of people who experienced both events consecutively within one lifetime. In addition, its scale of spatial transformation may not continue to 6remain small in comparison. Following the completion of Cirata FSPP Phase I, Masdar and PLN signed a Memorandum of Understanding (MoU) to expand the power plant capacity up to 500 MW under the Phase II development of Cirata FSPP (solartech, 2023).

2 RESEARCH OBJECTIVE AND USE

2.1 Research objective

It will be remiss for this study to not acknowledge the existence of resistance movements against RE development across the country. For just FSPP projects, local fisher communities in emerging development sites such as Singkarak (Baittri, 2025) and Kedung Ombo (Suara Muda, 2025) have publicly reject permission for entry to their water site and refused to cooperate with PLN. Representatives exclaimed that FSPP projects threaten to disrupt both their income source and the ecological balance of the reservoir.

Studies have shown how large-scale transformations caused by solar power plant projects can ignite injustices (Stock & Birkholz, 2024) and create uneven impacts to livelihoods of local communities based on the existing spatial division of labor (Pearse, 2021, pp.957-958). Such impacts are not missing from Cirata. In their examination of Cirata FSPP's procurement and operation, Rudolph et.al (2025) found claims of discrepancies between the informed ideals of economic potential and job transition possibilities and lived-in outcomes of displaced, impacted fishermen (p.11). Yet, unlike other similar development sites which shares similar grievances, there are currently no high-profile coverage about rejection or retaliation against the FSPP development in Cirata by local communities. The choice of the researcher to specifically investigate Cirata was brought by this contrast seemingly presented against other similar development sites in Indonesia. While uneven impacts to locals are proven to exist, it didn't seem to have escalated to a level of outright rejection of the project development. This raised a wonder around the reason behind its relatively "quiet" status quo proceedings.

Renewable energy transition is both contained in and implemented through space (Pearse, 2021, p.957). Examination of sustainable energy transition through its geography provides the benefit of capturing the distribution of transition processes and identifying the factors within these processes that reproduce patterns seen in other energy transition projects (Hansen & Coenen, 2014, p.95). This research is an ethnographic reflection on the negotiation process of clean energy transition, examined through a unique case study of a geography that has gone through two distinct renewable energy development projects within one lifetime. The primary objective is to provide a holistic understanding of the competing forces that operate within a renewable energy development site. It aims to analyze the historical precedence and power structures that inform these negotiation processes, the ways in which they are enacted, and the resulting intended and unintended outcomes. This will be done by dissecting the interactions and lived experiences of

different actors, with a strong focus on the labor community who were most impacted by and involved in the RE project.

2.2 Research use

Should Phase II of Cirata FSPP development approximate the infrastructure of its first development, phase II would require around 862ha[8] of additional cleared reservoir area. Considering the natural topography of the water site, the upcoming development would involve a third regency, Cianjur, which also borders the shore of the reservoir. More regional government members and local fisher communities would have to be engaged, possibly with more factors and elements to add to the impact assessment process. Most importantly, a larger-scale development would see a larger number of displaced fisher communities. Practically, this research could help inform future arbiters, local governments, and civils society groups on what could be expected from Cirata FSPP Phase II Development.

By delving deep into the process of Cirata FSPP development and job transition program, the research hopes to look beyond the generic portrayal of local societies vis-a-vis state development intervention. It wishes to provide a contemporary and relevant illustration of elements, processes, and patterns in a renewable energy-driven spatial transformation, which are often overlooked relative to their broader political economy value. It also hopes to illuminate the complex motivation and strategies of local actors, which are often boxed as an opposition due to simplified media coverage. For the scholarship of development studies and especially studies of governance and future policies, the research hopes to invoke more nuanced dialogue when designing engagement strategies with impacted locals related to large scale energy developments.

[8] Land500=250 ha/145MW × 500 MW

3 Research Questions

The main research question for this study is:

In what ways did historical events and power structures shape negotiation and strategic choices in Cirata's FSPP, which sets them apart from other FSPP developments?

This question seeks to understand the impacts of past structural transformation on the re-organization of Cirata's socio-economic structure, how it informs the recent transformation process and subsequent programs, and how it has shaped the positioning of different project stakeholders on the negotiation table of contending interests. The job transition training program will be engaged as the main tool offered to converge the point of interest divergence found from the two main stakeholders: Cirata FSPP project authorities and Cirata's impacted fishermen.

The research sub-questions are designed to sequence the main question into three distinct areas in relation to past events and power structures.

A. *What are the key events which shaped Cirata's current bargaining positions of stakeholders?*

Analyzing the history of Cirata's land reorganization allows the study to understand the advantages each stakeholder possesses as a basis for negotiating their position. For this question, the research will examine the first renewable energy project that created the Cirata Reservoir, its shortcomings and impacts, and how it creates the current predicament of Cirata's Impacted Fishermen communities.

B. *Which actors held decisive influence in the Cirata FSPP negotiations, and what were the consequences of their decisions?*

This question seeks to explore the parties possessing negotiation advantages are and how they utilize them throughout the negotiation process of the Cirata FSPP and its subsequent job transition program. In answering this question, the research will identify how unequal distribution of power led to the emergence of a "Broker" who would come to play a significant role in shaping Cirata's socio-economic sphere.

C. *What dynamics shaped the negotiation of Cirata FSPP's job transition program, and how did they influence the strategic choices of the impacted fishermen?*

Finally, the study seeks to examine historical precedents and power structures during the process of negotiation of Cirata FSPP project, specifically its job transition program. The conclusion of this question, which will link back to the main research question, will answer how the sum of these

dynamics led to the novel conditions of Cirata's impacted fishermen, setting them apart from other cases of spatial re-organization impacts by national renewable energy projects. Dynamic of these negotiations will be framed within the Dual Concern Model (DCM).

4 ANALYTICAL FRAMEWORK & RESEARCH METHOD

4.1 Analytical Framework

The focus of this research lies between the force of state-led renewable energy development and the resilience of local labor forces, situated within the geographical space of structural transformation. This arena represents a contested space where energy governance, human agency, and development imaginaries converge, revealing how sustainability agendas are negotiated and reconfigured through local socio-economic dynamics. The job transition program is the main area of the research, as it is presented as the main bargain in the negotiation process between the project owners and the impacted fishermen communities. While there are plenty of themes which could be scrutinized, this research will zoom in specifically on the background and process of negotiations: how rights and opportunities are bargained, haggled, and implemented by different stakeholders.

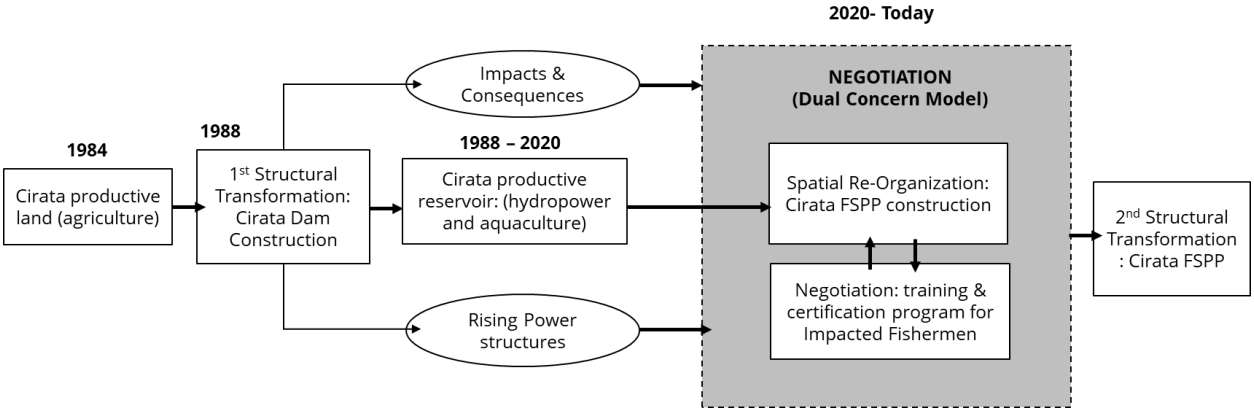


Figure 3 Analytical framework area

4.1.1 Main framework

The Dual Concern Model

As the study emphasizes the intricacies of the negotiations that led to the current status quo of Cirata's impacted fishermen, it requires a model that predicts the precursors of strategic choices made by relevant parties during discussions and bargaining, as well as their subsequent impacts. For this, the study adapts Pruitt & Rubin's Dual Concern Model (DCM) (1986, p.28-32) which has its roots on conflict analysis studies (Blake & Mouton, 1979; Gladwin & Walter, 1980; Rahim, 1983; Ruble & Thomas, 1976).

There are two necessary clarifications which should be noted before proceeding to the framework explanation. First, the term *conflict* in this context should not be understood in its colloquial sense of a "fight" between two opposing parties, as this meaning often is associated with physical confrontation. Following the definition used by the scholar, "conflict" here is defined as, "*perceived divergence of interest, or a belief that the parties' current aspirations cannot be achieved simultaneously"* (Pruitt & Rubin, 1986, p.4). Perception is a critical element within this research as it often times, factual disagreement may not be needed for conflict to manifest so long as there were perceived incompatibility in interests. The second clarification is for term *negotiation,* which in this study is classified as a manifestation of conflict, whereby parties try to resolve their divergence of interest through forms of conversations (p.27). In this research, negotiation is examined as the "battleground" where conflict is created and resolved within the context of a state-sponsored spatial transformation.

DCM provides a framework for analyzing the choices made by individuals or groups within negotiation processes, based on the degree of concern they exhibit for their own outcomes ("assertiveness") and for the outcomes of others ("cooperativeness"). (p.27-28). It serves as an analytical lens to interpret how various stakeholders navigate and position themselves between the two competing interests in a RE project-driven spatial transformation. The framework is chosen based on the assumption that competing interests lies in a spectrum, not absolute opposition. As seen in the media reports of Cirata FSPP which backgrounds this research, differences in lived-in experience of the job transition training program provided a compelling case study for this hypothesis. Based on published testimonies, it appears that the affected fishing communities simultaneously lament the loss of their traditional livelihoods while expressing interest in the prospects for upward economic mobility offered by a large-scale, state-led energy project. Similarly, national energy companies may aim to operate based on merit and efficiency while also demonstrating a willingness to invest in cultivating a local labor force.

"Assertiveness" refers to the extent to which an individual or group assigns importance to the values affected by a given situation (p. 30). For example, among fishing communities, the loss of access to traditional fishing grounds may not carry equal significance for all individuals. Some may be approaching retirement, have alternative sources of income, or possessed the skills necessary to transition into other labor forms. At a group level, assertiveness can also manifest through collective action. For instance, certain community groups may demand higher compensation from the energy companies for disruptions caused during the CFPP development, whereas others may remain passive.

Pruitt & Rubin (1986) noted several factors which may influence the intensity of assertiveness at the negotiation table, some of which are particularly relevant to the Cirata FSPP case study. The first concerns the relative importance of a specific outcome in relation to other competing concerns or objectives. Individuals have a finite capacity to sustain conflict; therefore, their level of assertiveness may fluctuate depending on the other negotiations or disputes they are simultaneously engaged in within the same timeframe (pp.30-31). Another factor is the fear of escalating conflict. Unlike Pruitt & Rubin's conceptualization of this factor being a personality-based predisposition to appease others, in this research, fear of confronting a state-sanctioned energy project is what resulted in a heightened perception of risk.

"Cooperativeness", on the other hand, doesn't necessarily mean the opposite of assertiveness. Concern for Others are primarily driven by two contrasting motivations (p.31). The first motivation is *genuine* concern; an intrinsic interest to the other party's outcome, often driven by kinship or interpersonal bonds. This type of concern not necessarily relevant for this research, as it is highly unlikely that local communities of Cirata possessed a pure attraction to the Cirata FSPP project absent to any incentives. Cooperativeness in this case study is most likely defined by the second motivation: *instrumental* concern. This form of cooperativeness is driven by the perception of dependence, in which the success of others' outcomes is perceived to yield a reward for the individual or group. Considering that the conflict surrounding the Cirata FSPP centers on the transformation of the geography's main labor site, the concern that local communities have for the state's energy project is most likely driven by the potential economic benefits it may provide for them.

For this reason, the research must adapt some elements of the presentation of cooperativeness as described by Pruitt & Rubin. In their description about the drivers of reward dependency, Pruitt & Rubin talked about possible backlash in instrumental concern should the opposing party fail to fulfill their obligation, previously agreed upon in the negotiation table. The literature talked about this backlash being a result of frustration towards an opposing party the individual is bonded to, such as a close friend or family member (p.32). This does not work in the context of negotiation between RE project owners and local communities. Any "bond" between the two parties in question would most likely be a sort of agreement or pledge (possibly formalized in a contract or MoU), and not one borne out of shared personal relationships.

Nevertheless, the negotiations of rights and duties between project owners and local communities should not be likened to a formal policy compliance exercise by the company. That is to say, stipulations in a welfare protection policy doesn't necessarily equate to the stakes bargained

between the representatives of project authorities and local societies. This element of personal relation between individuals would then agree with the characterization of the Dual Concern framework, as emotional responses such as appeasement and frustration play into actors' strategy on the negotiation table.

Figure 4 below is an adaptation of the DCM used for this research. Instead of concern about Own'/Other's outcome used in Pruitt & Rubin's conflict analysis framework, this study will take liberty to divide the negotiation of Cirata FSPP between the interest of impacted fishermen (abscissa) and the interest of RE project (ordinate). This is to focus on the job transition program offered as a point of integrated agreement, as part of the study's investigation to understand its efficacy in conflict resolution.

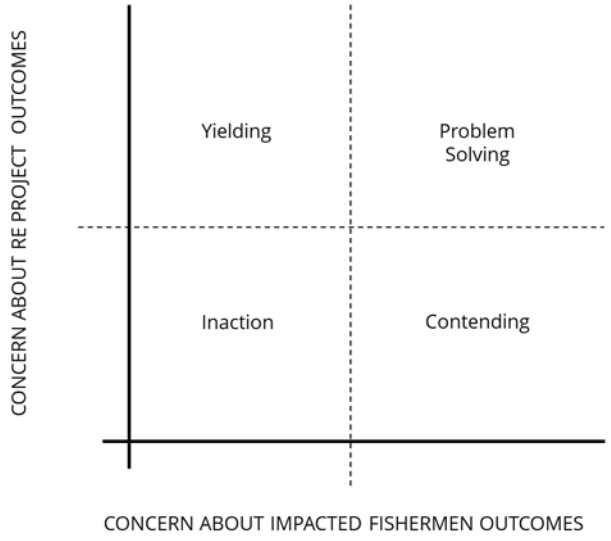


Figure 4 Adapted Dual Concern Model (source: Pruitt & Rubin, 1986. Modified)

It should be noted that the version of the DCM adapted in this study does not include the common fifth strategy called "Compromising" (Filley, 1975; Thomas, 1976). This exclusion is due to the possible ambiguous translation of what constitutes a compromising strategy, as it often amounts either to a half-hearted attempt at problem solving or, more frequently, to yielding when aspirations are perceived as irreconcilably oppositional (Pruitt & Rubin, 1986, p. 29). Moreover, compromising may obscure strategic choices driven by instrumental concern (cooperativeness) or fear of conflict escalation (assertiveness), which previously mentioned, is very likely to be done by local societies in negotiating their position in a state energy project development. In this context, such behavior is better classified as "Yielding," since it reflects one party's

accommodation under unequal bargaining power rather than a genuine, mutually agreed reduction of conflict.

Following this baseline, whenever parties perceive the program as a successful, mutually beneficial solution, it is classified under “Problem Solving.” “Contending” implies that while the program may hypothetically provide mutual benefits, its rollout was deemed unsatisfactory, prompting expressions of dissatisfaction, frustration, or outright rejection. “Yielding” notes some level of discontent with the program, yet is accompanied by a general sense of acceptance, implying that accepting the dissatisfactory program is preferable to exerting effort to go against it (due to fear of conflict or beneficial cooperation). Finally, “Inaction” reflects general indifference, viewing the program as a business-as-usual consequence of CFPP development.

Table 1 Coding sample

NODES	CODED REFERENCES
Problem Solving	“If the company cannot hire us today, they should have an annual program which provide business training or modalities.” – KII_KB
Yielding	“This [reservoir] belongs to the country.. we work here because they allow us to, but if now they want to use the space, what can we do? We’re basically guests in this reservoir…” – KII_KP
Contending	“I burned my certificate..what for? I can’t even work there” -FGD_P1
Inaction	“Pros and cons will exist anyway…” – KII_LR

Finally, DCM was adapted as an analytical framework for the research’s process-tracing data collection. Unlike the controlled experimental applications employed by Pruitt and Rubin (pp. 33–34), the model in this research has been simplified and operationalized as analytical nodes within qualitative data processing, rather than as a system of numerical score assignments as used in the original experimental design. Since the evidence was collected using semi-structured interviews, the data inevitably shows variation in length, focus, and depth of discussion across participants. Nevertheless, the adaptation of the DCM for qualitative analysis remains valuable for examining the negotiation dynamics surrounding the Cirata FSPP. Assessing the relative degrees of assertiveness and cooperativeness among key stakeholders offers critical insight into why rather than grouping into collective action, divergent interests surrounding the project maintain their own gravitational pull, thereby propelling the development forward. In addition,

historical precedence will be scrutinized to understand the background which shaped local actors' perception of their position and power at the negotiation table.

4.1.2 Complementary framework

The application of the Dual Concern Model (DCM) in this research is guided by the recognition that the primary analytical focus lies in the nuances and processes of negotiation. At the same time, it acknowledges that these processes are inseparable from the negotiators themselves, as intrinsic motivations shape how individuals internalize and express their sense of power, entitlement, and obligation. While the research initially did not intend to highlight any specific local individuals, findings from the field study showed the importance of the role of a middleman, specifically a *broker,* in the negotiation of Cirata FSPP development and job procurement. This is an individual who functions as a juncture between Cirata's local systems to the larger scheme of Cirata's structural transformation (Wolf, 1956, as cited in Geertz, 1960). Later, the research will introduce a local community member who seemingly took on this role, and the consequences which followed the figure of a 'Broker' who've gained legitimacy at a policy-making level.

4.2 Research Method

Given that the study focuses on negotiations within a process of spatial transformation, a qualitative approach with a primary focus on *process tracing* through key informant interviews (KIIs), focus group discussions (FGD), with support from secondary sources. Selection of the individuals interviewed for the research was done using the purposive sampling method prior to field findings, based on the understanding that stakeholders of Cirata FSPP development and job training program have different backgrounds and interests. Purposive sampling is used to better capture these different interests to feed the analysis of project negotiations dynamics.

Preliminary informal interviews were conducted with both *Kompas* journalists and previous researchers in the area to sense-check the study's needs and data collection methodology, as well as to ensure the general safety of both the researcher and on-ground stakeholders, particularly impacted fisher communities. Results of the purposive sampling design divides the primary data collection process into interviews with two categories of stakeholders:

- Local project stakeholders: these are stakeholders who were directly involved in the process of Cirata FSPP development and job transition program. All of them reside and/or work on the project site and are living through the structural transformation caused by Cirata FSPP. They are the impacted fishermen, project authorities, and employees for the FSPP, local governments, and other village actors. Their testimonies are the primary

accounts taking into consideration when tracing back the negotiation process of Cirata FSPP.

- Relevant peripheral stakehodlers: these are people who were not necessarily involved in the development and operation of Cirata FSPP, but who are invested in the project by virtue of their work. Engaging with these actors helped the research to cross-referenced stories from local actors, as well as providing additional information about the development of Cirata FSPP which may not be communicated locally. They are the representatives from the Directorate Generale of New and Renewable Energy, as well as researchers and journalists who've followed Cirata FSPP.

4.2.1 Process Tracing

The research adapts the *process tracing* methodology for evidence collection to obtain the full picture of events which unfold within the timeframe of Cirata FSPP development and the following operation. In general, process tracing is optimized for identifying possible causalities from evidence, which are part of a contained sequence of events or phenomena (Collier, 2011). Two principles of the process tracing tool for causal inference were applied are reflected in the research sub-questions and applied during data collection.

- Casualities *unfolds over time* (Collier, 2011, p.824). Most likely whatever causes the conduct of Cirata's fisher community is informed by past events which unfolded in that specific geography. Given that historical events are almost exclusive to its geography, it may provide clues which explained the novelty of the Cirata FSPP case study. This meant that while the construction of Cirata FSPP started in 2019, it is likely that events from further past have influences on the events of today. The research respond to this by tracing back all the way to the first structural transformation of Cirata; the development of Cirata Dam and Hydroelectric Power Plant dated back in 1882.

- The second is that while process tracing observes past events, it is not interested in creating an accurate timeline of changes, focusing instead on *process snapshots description*. Collier (2011) summarized this as an activity of finding evidence within descriptions of specific moments in history. It implied that accuracy of time (dates, sequence) is less important than the procession and/or details of the event, as experienced by the actors. This approach informs the interview design, leading to the use of semi-structured interview method. Interviewees, especially the impacted fisher

communities, were not held with a rigid interview structure, but are persuaded to always further describe their experiences and recollection of specific events.

Fortunately, through data triangulation and ongoing correspondence with multiple stakeholders involved in the project, it was eventually possible to reconstruct key events necessary to answer the main research question. Accordingly, process-tracing data collection for this research employed Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) as the primary methods, complemented by a Desk Study as a secondary source of evidence.

4.2.2 Key Informant Interviews & Focus Group Discussion

The following table details information about the KIIs and FGDs conducted for this study. Initially, the study forgoes FGD as a data collection method, as there might be risky for participants to hold conversations on a more conspicuous setting involving the gathering of multiple individuals. Interestingly, all FGDs held for this research are initiatives from respective interest groups, which was conveyed to the researcher upon arrival to on-site location/ day of the interview. There are several reasons which may factor in this invitation. The first may be of collective subjective interest: a sense of political empowerment gained through taking part as a "formal" representative (Clark, 2010). For participants from the impacted fisher community, it may be that participation in academic research carry a sense of advocacy (Wolgemuth et.al, 2015). This was evident from their willingness to not only answer research questions, but to also explain experiences beyond the scope of the question, related to events and actors involved in the FSPP construction and procurement.

While approval for name publication was given by most participants, the research decided to omit all the names of local project stakeholders. This was to ensure each participant's safety in future processes, as there is a possibility that Phase II of the Cirata FSPP will entail a process similar to the one which will be explained in this research.

Table 2 Local project actors

TYPE	GROUP	CODENAME	Village
KII	Impacted fishermen (Rep)	KII_KP	Citamiang
	Impacted fishermen (Rep)	KII_KB	Ciroyom
	CFPP Staff / Villager	KII_HP	Citamiang
	Villager	KII_IP	Citamiang
	CFPP staff / Villager	KII_OP	Citamiang
	Village Head	KII_LR	Citamiang
FGD #01	Impacted fishermen	FGD_P1	Citamiang

	Impacted fishermen	FGD _P2	Citamiang
	Impacted fishermen	FGD _P3	Citamiang
	Impacted fishermen	FGD _P4	Citamiang

TYPE	DEPARTMENT	NAME	POSITION
KII	PT. PMSE	Dimas Kaharudin	President Director

The other part of the primary data collection is a KII with the President Director of PMSE. Although technically they classify as on-site actor, the online interview session with PMSE was much more similar to interviews with the members of the Directorate Generale of New and Renewable Energy, in the sense of its formality and rigid flow. A feature of these interviews was the necessity to pre-send the questions for screening, which may have resulted in a different answer compared to on-the-spot, spontaneous answers.

Table 3 Relevant peripheral actors

TYPE	DEPARTMENT	NAME	POSITION
FGD #02	Directorate Generale of New and Renewable Energy	Hery Ferdiyansyah	Sub-Coordinator, NRE Program Planning
		Nono Suprayetno	Technical & Environment
		Fachrizaldi Kevinko	Staff, NRE Program Planning
		Hendra Setiawan	Business Services, Work, and Monitoring

TYPE	WORK / POSITION	NAME
KII	Researcher, IGES	Hamidah Busyrah
	Journalist, Kompas (active)	Erika Kurnia
	Journalist, Kompas (former)	Benediktus Krisna Yogatama

In addition to formal interviews, several casual conversations were had with various locals from the village. They were taxi drivers, small shop or *warung* owners, and fishermen wives who were mingling while their husbands were working. While these conversations were not recorded, insights were noted to help shape the details of Cirata FSPP development story.

Tensions surrounding the development of national power plants in Indonesia have long been a sensitive issue, and any inquiries conducted by external actors at the local level were typically met with caution, as both community members and companies remain wary of potential disruptions to an already delicate social equilibrium. To ensure the efficacy of the research, a local gatekeeper was identified and engaged to facilitate pre-visit communication with community

members during the preliminary stage of purposive sampling design. This helped ease interview processes and travel around the area, allowing the researcher to both conduct the interviews and obtain physical evidence of impacted fishermen's worksite post FSPP development. In addition, the following steps were also taken:

- Pre-visit communication with community representatives: Fortunately, it was possible to attain contacts of both villages' fisher community representatives through online social networking sites. This allows for introduction to be done prior to site visit, which then allows both representatives to inform their community about the research early.

- Interview sequence design: The research accounted the intricate configuration of local power relations, which was assessed prior to the fieldwork. Key Informant Interviews (KIIs) were then conducted in accordance with the locally recognized hierarchical "sequence", which helped maintain participant receptivity and ensured that the data collection process was not perceived as intrusive.

- Area accessibility check: As shown in Figure 5, both Cirata FSPP and Cirata hydroelectric power are contained within one access road, with checkpoints on each side of the hydroelectric power road and in front of the FSPP gate, which was located downhill from the gate. Prior conversation with locals was important to understand which area of the power plant were accessible and which were not, including when to best mobilize and study the area without causing unnecessary alarms to powerplant security officers.

Figure 5 Security checkpoint along the road of Cirata Hydroelectric power. Right: Restricted area, Cirata DCC (source: field documentation.)

4.2.3 Desk Study

There are two central documents in the conduct of process tracing for this research. The first is the 1997 report by Costa-Pierce titled "*From Farmers to Fishers: Developing Reservoir Aquaculture for People Displaced by Dams*." This official World Bank publication is a comprehensive account and review of the technical and administrative processes of Cirata's aquaculture industry development, given as a form of compensation for displaced agriculture communities due to the reservoir flooding. This paper was important in situating the historical context of Cirata's structural transformation, providing detailed insight into the policies that shaped the labor transition program, and the subsequent socio-economic impacts on the local community. These insights serve as a critical foundation for understanding the contemporary dynamics of renewable energy development and labor relations at Cirata, and how it compares with its second structural transformation event. Complementary papers from Nakayama et.al (1999) and JICA (2000) were also observed.

The second key reference is the recent publication by Rudolph et al. (2025), which examines the governance of solar energy and its intersections with water resources and local livelihoods, using the Cirata Floating Solar Power Plant (FSPP) as a case study. The paper offers an analysis of how the project's procurement and deployment processes interact with local communities, with a particular emphasis on the broader governance framework of renewable energy in Indonesia. It is important to note that this publication was released during this research, and further related works are expected to follow. Consequently, some degree of overlap or divergence between the field findings and subsequent publications may occur, and areas of convergence or contention may emerge as additional studies develops. One of the writers of the study was formally interviewed as a key resource person for this research (Table 3).

4.2.4 Limitations

Data Reliability

There are limitations in claiming that the process tracing methodology leads to definitive empirical evidence, one being the lack of capacity to test the validity of evidence through examining counterfactuals. This was because while Cirata FSPP is relatively new, the project began at the height of the Covid pandemic outbreak and subsequent restrictions. This caused the lack of formal documentation and segregated data. As an example, it was difficult to isolate the impact of Cirata FSPP on the region's economy, as economic growth post Covid-19 lockdowns are not going to reflect a single transformative incident. Furthermore, it is not possible to find segregated data from

official documents as at the time, both government and private institutions were on maximizing all avenues for economic recovery.

Primary data collection through interviews may also not fully reflect the true condition of Cirata FSPP development. Considering the large geographical area and the split between two different regencies, points of contact between local actors and project stakeholders were geographically scattered, and some may only be partially involved in the process. There was also a high level of migration during its construction which may influenced encounters and experiences of the local workers.

Language

Something which was understood prior to the research, but which significance wasn't realized much later during fieldwork, was the importance of understanding the Sundanese language. It was especially critical when interviewing the impacted fishermen, as they tend to switch between Indonesian (national language) and Sundanese (regional language) seamlessly. In the interest of capturing these conversations more accurately, all interviews were translated to Indonesian based on both literal and contextual approximation.

Another note regarding language is the prominent use of allusion/ aversion. For example, when [KII_IP] was asked about the role of [KII_HP] in the procurement process of Cirata FSPP, they answered, "*Sepertina aya PT nya, anu nek ieu kamana hieuna si [KII_HP].* (There may be a company, that is where that goes, that is [KII_HP])*"* (KII IP, 2025). While clarification of meaning were regularly attempted during interviews, confirmation is not something that is forced to ensure that the interviews remained neutral. Once again, inferences were done through literal and contextual reading of the answers.

Place & time

The research examined two (2) villages: Citamiang Village (Purwakarta Regency), and Ciroyom Village (Bandung Barat Regency). All impacted fishermen found in this research primarily came from both these villages, with a few small exceptions found from other villages in Bandung Barat. Citamiang was also the village situated in Palumbon Maniis sub-district, the same district where the Cirata FSPP office reside. The balance of representation between the two villages unfortunately was not ideal. Due to bad weather and the limited availability of the representative, [KII_KB], the FGD with impacted fishers from Ciroyom had to be cancelled. It was later discovered during conversations with [KII_KB] and [KII_KP] that it seems most fishers in the area were

reluctant to speak with outsiders without their respected representatives. The exact reason for this is unknown.

Figure 6 Research area, marked by transparent white color. (source: Google Earth (2025))

5 ANALYSIS

5.1 The History of Cirata's Transformation

During the boom of dam development in Asia in the late 1990s, dams were widely promoted as ideal infrastructures for providing both sustainable clean energy source and reliable water supply. Yet even then, the risks they posed to traditional agricultural livelihoods were recognized, sparking tensions between rural self-sufficiency and the nation state imperative to secure energy for urban development (Costa-Pierce, 1997, p.4) The most immediate social risk associated with dam construction were large-scale displacements. This was the case in 1982, when the creation of the Cirata Reservoir displaced 11,024 households, and the resettlement of approximately 35,000 people (Nakayama, 1999, p.445).

Based on the 1990 World Bank's Operational Directive, a Resettlement Plan was designed to help the thousands of displaced individuals find a new home and a new job. The plan included disbursement of monetary compensation, relocation assistance, and job field creation, which was the development of a floating net-cage aquaculture system (p.453). The project owners deployed a "hands-off extension approach", where instead of creating an aquaculture system design specifically for the Cirata reservoir, resettlers were given aquaculture cultivation trainings and then sponsored to learn from regions who were already successful in developing its aquaculture endeavors (Costa-Pierce, 1998, Nakayama, 1999, p.450). The industry would later be dominated by net cage fisheries.

Commercially speaking, the aquaculture transition of Cirata was a great success. At the time, local fish production in Bandung, the capital of West Java, only yield 1,575 tons annually. This was far from their estimate total demand of 40,000 tons per year (IOE, 1982, from Nakayama, 1999). From less than 1000 tons a year during its inception in 1989, the fishing industry in Cirata grew to produce up to 49,000 tons by 1997 (Local Fishery Office, Cirata, cited from Nakayama, 1999). The Resettlement Program also claimed to achieve success in transforming the locals of Cirata from a "terrestrial" to a "water" society. Surveys done by the World Bank showed that resettlers of Cirata consider cage aquaculture as an "easy, enjoyable work allowing for much leisure time." A contrast from their toil as rice and vegetable farmers. (Costa-Pierce, 1997, p.2)

Figure 7 Net Cage Fisheries (source: citarumharum.jabarprov.go.id)

Though the aquaculture development was deemed a success in terms of yield and provision of work, studies have shown that the lack of inclusion of resettlers during the negotiation process caused uninformed program design, legal loopholes, and mistrust between parties (Nakayama, 1999; IOE, 1982). The nature of this exclusion was described during an interview with [KII_KP], the representative of the fishermen's collective from Citamiang Village. Their testimony claimed that the program only offered a fishing business permit, not a water use permit, for their unit of net-cage fishery. This permit, called SIUP (*Surat Izin Usaha Perikanan*, or Fishing Permit Letter), was given to those resettlers in the reservoir area. This arrangement effectively reframes the concept of "ownership" used in the Nakayama et al. (1999) study, as there were no legal protection for these new fishing communities amid future water site re-organization.

Grounds for exploitation

A survey done by the IOE found that according to the 1992 Fisheries Department records, as much as 43% of these fishing permits were given to those who were not affected by the hydropower project (Costa-Pierce, 1997, p.40). The rest were bought or rented by wealthy capital owners from Bandung and Jakarta, even by investors from outside the island of Java, such as Sumatra and Sulawesi (Costa Pierce, 1997; FGD_P1, 2025).

There are several assumptions found in this research as to why resettlers may want to surrender their “ownership” of their net cage fisheries to investors. In the FGD, it was mentioned that this arrangement sometimes entailed monthly wages instead of payment by commission (FGD_P1; FGD_P4, 2025). While it was unclear if this was the norm, it may be attractive for locals to buy in this arrangement, as it meant they did not have to consider paying for feed, maintenance, and other operational costs. This calculation may be rational, considering cost of feed fluctuates along with market pricing (Direktorat Jenderal Perikanan Budidaya, 2023). The cost to operate a net cage fishery may be seen as “too risky” for resettlers who were just recently displaced from their agriculture livelihoods.

It was also possible that the resettlers’ decision to forgo ownership was shaped by their limited familiarity with the long-term sustainability of aquaculture-based livelihoods. As agrarian communities, their social structures and economic practices were historically and materially bound to the land (Costa-Pierce, 1997, p.5). The abrupt loss of their home and farmland, coupled with their relocation to an unfamiliar water environment, likely exerted strong influence on both their immediate responses and their long-term adaptive strategies.

The commercial attractiveness of the newly established aquaculture was not accompanied by adequate environmental safeguards or proper business management, leading to extreme overfishing. There were approximately 93,000 “*petak*”, or units, of net cage fisheries in the area by 2020 (Iqbal & Fajar, 2020), with some estimates reaching as high as 120,000 units, despite PLN’s maximum recommendation of 12,000 units (Bengen, quoted in IPB, 2025). This lack of environmental oversight, compounded by climate impacts and overfishing, has led to disasters such as mercury poisoning, turbidity, and severe water hyacinth infestations, which caused oxygen deprivation across much of the reservoir (Iqbal & Fajar, 2020; KII_KP, KII_KB, FGD#01, personal interviews, 2025). Today, many fishermen are forced to abandon their station, as fishing became no longer viable as a method to make a living[9].

[9] The 1997 Costa-Pierce study warned about the possibility of issues possibly faced by an industry built on top of a man-made reservoir. The chapter: *Transition: From tropical river to reservoir* (pp.12-15) contains an in-depth technical explanation, specifically addressing cage fisheries.

Figure 8 Left: Water hyacinth infestation (source: field documentation). Right: mass fish deaths due to oxygen deprivation (source: INews/Didin Jalaludin, 2021)

Little is known about why existing plantations never evolved into a viable livelihood option for the affected villagers. Villager [KII_IP] from Citamiang noted that the area remains surrounded by rubber trees, which, while cultivated on a small scale, never became an attractive alternative to aquaculture. Based on on-site observations, it can be assumed that villagers face significant limitations in cultivating commercially viable plantation zones. In some cases, this may be attributed to the unstable terrain caused by the dam construction, which rendered the land prone to landslides. In other areas, land access is restricted due to its proximity to operational zones of the power plants. The absence of adequate institutional or financial support for other labor alternatives led to it being a risky and costly undertaking that few villagers are willing to pursue. The fishermen of Cirata today represents the consequences of livelihood lock-in, caused by a well-intentioned yet under-maintained job transition program.

Figure 9 Warning signs against activities and possible land slide. This can be seen across all study site areas. (source: personal documentation, 2025)

No grounds for claim

One important fact often outframed in publications and reports on the Cirata Reservoir is that the entire reservoir area, along with some surrounding lands, is under the ownership of PLN. In addition, there are no available history or documentation detailing how its use has been arranged among the company, regional government, and surrounding local communities. This fact is well-known amongst villagers and was corroborated by both the President Director of PMSE (2025) and members of the Directorate General of New and Renewable Energy (FGD#02, 2025). PLN's ownership of the reservoir means that, from the outset, the aquaculture compensation provided by the Cirata Dam project owners failed to account for the absence of a usufruct legal framework to safeguard the future of the newly turned fisher communities.

Access to water for local livelihoods continued to be a point of contention in the country, which came to a boiling point in 2019 when Law No.17/2019 concerning Water Resources was published to replace its older version, Law No. 7/2004 (Failaq & Pradana, 2023). The new law is viewed to greatly diminish involvement of local actors in water management and instead placed greater importance in protecting water as a commodity for national good; prioritizing interest of urban communities and capital growth instead of regional/ local / indigenous community members who lives in near the water source (p.282). Greater national state control also applies to the previous usufructuary system, (p.279), which meant local societies now are more vulnerable to be set aside by privatization (Bakhri, quoted in Tempo, 2022). This echoes Costa-Pierce's (1997, p.4) analysis that the nation state's imperative for development stands in opposition to the local societies' livelihoods.

Meanwhile, reservoir utilization for the FSPP is explicitly written in the new State Electricity Business Plan (RUPTL) 2025-2034, which meant construction and expansions of all FSPP in the country, to an extent, is supported by the national government and relevant technical ministries' policies.

"Utilization of all suitable reservoirs for the development of Floating Solar Power Plants (FSPPs), to minimize land acquisition costs with consideration of operational and maintenance feasibility assessments."

(RUPTL, 2025–2034 / Chap. III-1 / No. 5)

This concludes the second detrimental impact of Cirata's first structural transformation: while the resettlers were compelled to turn to aquaculture for their livelihoods, they were offered no legal guarantees of its longevity and were left vulnerable to future political transformations affecting their job site. This may explain why, at the outset of Cirata FSPP development, there

were no known legal contention or council done in the impacted area (Hamidah, 2025, personal interview), as there were no grounds on which to build an objection to the project.

In conclusion

On the surface, Cirata's first RE development project appeared to have addressed all necessary considerations regarding its impact on human settlements. Under the directive of the World Bank, it implemented a straightforward resettlement program that, at the time, reflected compensation based on market prices and replacement values, providing access to sufficient, self-sustaining livelihoods (Schuh et al., 1988, cited in Nakayama, 1999, p. 445). Further learnings of spatial transformation, however, dictates that these processes shouldn't be divorced from configuration of physical infrastructures and artefacts, natural resources, and scientific and legal institutions (Hughes 1987; Rip & Kemp 1998; cited in Pearse, 2021).

Prior to entering negotiations over the Cirata FSPP, the fishermen in Cirata were already in conditions of structural vulnerability: not only were they dependent on an occupation with an uncertain future, but they also possessed limited autonomy over the production site itself, rendering them susceptible to the decision-making authority of dominant capital interests. These historical conditions will later inform the Dual Concern Model (DCM) analysis of the current experiences of impacted fishermen, which will reflect the internalization of these structural constraints, expressed within the negotiation arena.

The following chapter examines how this vulnerability intersects regional political dynamics and contributes to the emergence of an entrenched dependence on intermediary actors, referred here as *Brokers*.

5.2 Brokers and Regional Politics

In the interest of positioning relevant individuals and groups in the present day, it is important to understand who the impacted fishers of the Cirata FSPP project are. In both Kompas articles (Yogatama & Ritonga, 2024; Kurnia, 2025) and other similar publications found in online media, it was implied that those impacted are net cage fishermen who lost their jobs due to the clearing of the floating solar area.

Conversations with local fishermen, supported by satellite observations, confirmed that this was not necessarily the case. Since the completion and operation of the Cirata Dam in 1989, the water area currently occupied by the Cirata FSPP was designated as off-limits. PT PLN Nusantara Power, the company responsible for the operation of Cirata Dam, erected a "safe zone" in a form of thick vertical nets to ensure no pollutants disrupt the water debit, which may lower the efficacy of electricity generation of the hydroelectric power plant. This meant that

floating net cage fisheries, which were stationary, were forbidden within the safe-zone line. As shown in Figure 10 below, the area within the safe zone has been cleared of net cage fisheries prior to the development of the FSPP, unlike the commercial part of the reservoir, which remains crowded.

Figure 10 Top: Cirata Reservoir, 2009. Bottom: Cirata Reservoir, 2019. The yellow line marks the safe zone line installed by PT PLN Nusantara Power. A decade later, it is marked by water hyacinth infestation. (source: Google Earth, 2025.)

Yet at the same time, the job transition program offered by PMSE was targeted specifically for fisher communities directly impacted by the construction of the Cirata FSPP. This was confirmed in conversations with all interviewees, including the President Director of PMSE (2025). The contradiction between the area's status as a designated clear zone and the presence of

impacted fishermen only became clear through discussions with fishermen representatives [KII_KP] and [KII_KB]. As it turns out, there were fishers who were actively working in the area, but very few of them used net cage fishing technique. To avoid capture and disciplinary action from the dam's security team, these fishers predominantly used two methods: cast nets and *bagang* (lift nets). Cast net fishers would sail out in the morning to catch fish and return by noon, while lift net fishers worked at night, setting their lift nets in the middle of the reservoir and retrieved them in morning (KII_KB, 2025). Figure 11 (right) showed *bagang* being stored around the periphery of the safe zone area during the period of Cirata FSPP construction.

Figure 11 Left: Lift nets or Bagang, Cirata. Right: Safe zone, 2021. (source: personal documentation; Google Earth, 2025)

Assuming PT PLN Nusantara did not lack the capacity to take disciplinary action against trespassers, its "permissive" attitude raises broader questions about control, collusion, and consolidation with parts of the society under the context of capital-intensive structural transformation. More specifically, it suggests the possible involvement of an intermediary or "middleman" figure; one positioned to mediate between corporate and community interests by appeasing capital owners while ensuring that acts of trespassing were carried out with minimal disruption to the company's assets.

A 'Broker' System

Indonesia has a long-documented history and studies about "The Middleman". Records of the Dutch colonial rule notes the close relationship between Dutch Inspectors and Local *Wedonos* (district chief/ regional administrator), to the point that it supplanted institutional structures (Kahin, 1983, p.139). The continuing of a decentralized government post-independence sustains the role of these middlemen, as authorities delegate tasks to local representatives (Drooglever, 1982, as cited in Kahin, 1983).

Even though both have roots as Middlemen in Indonesia's colonial past, Brokers should not be conflated with Patrons. Brokers are not necessarily part of the governance system but rather

took on a more specialized role as a mediator in time of need as villages received increased interference from the outside (Kuitenbrouwer, 1982, Breman, 1971). These specialized role(s) are often fluid, as they mediate between different networks and toggle between economic, political, administrative, and social functions (Kahin,1983). In today's post-independence Indonesia, the possibilities for brokerage roles are vast. Brokers would then make situational decisions, with the intent to secure and increase their power and prestige (Geertz, 1960, p.230).

The process of structural transformation in Cirata is no stranger to the role of project intermediaries. One of the causes of unsatisfactory local participation during the implementation of the Resettlement Plan back in 1980s was the loss of the intermediary figure, specifically community leaders, over the course of the resettlement process (Nakayama et.al., 1999, p.455). As many of these individuals relocated after receiving compensation, village communities were left with few channels to convey their concerns to the Cirata Hydropower project authorities. Costa-Pierce (1997, pp. 36–37) highlighted this issue in the World Bank's project review, where he emphasized the need to create non-governmental representation groups, with the intention to rebuild community-based organizational structures lost during the mass resettlement process. While it wasn't clear if the recommendation was part of the Cirata Resettlement Plan, following studies of the project did not reflect ideal implementation.

The arrival of a state-owned energy company inevitably disrupted the existing social structures in Cirata. Even before the development of the FSPP, there was already a need for a leadership figure capable of mediation. This need became urgent when in 2019, Cirata FSPP project authorities began to initiate discussions with the villagers, especially the fishermen, about the project development and subsequent consequences for their aquaculture livelihoods. While local government institutions would, in principle, be expected to assume this role, conversations with their representative suggested a more passive stance—one characterized by facilitation rather than genuine mediation.

"[…]so far [villagers] have been accommodated. There will be pros and cons, there will be [villagers] who are happy or unhappy. Sometimes they come in and have a chat."

KII_LR – Village Head

In preliminary conversations with relevant peripheral actors who had visited the project site, one name repeatedly emerged as a "person of interest" (codename: KII_HP) who seemed to fit the profile of an intermediary, specifically a Broker. Participants in these conversations surmised that this individual was 1) well-known in the area as someone who was "well connected", 2) familiar with the CFPP development in its entirety, and 3) somehow involved in the labor management

of the Cirata FSPP. Their notoriety was later confirmed through conversation with local stakeholders, as their name appeared in almost all interviews.

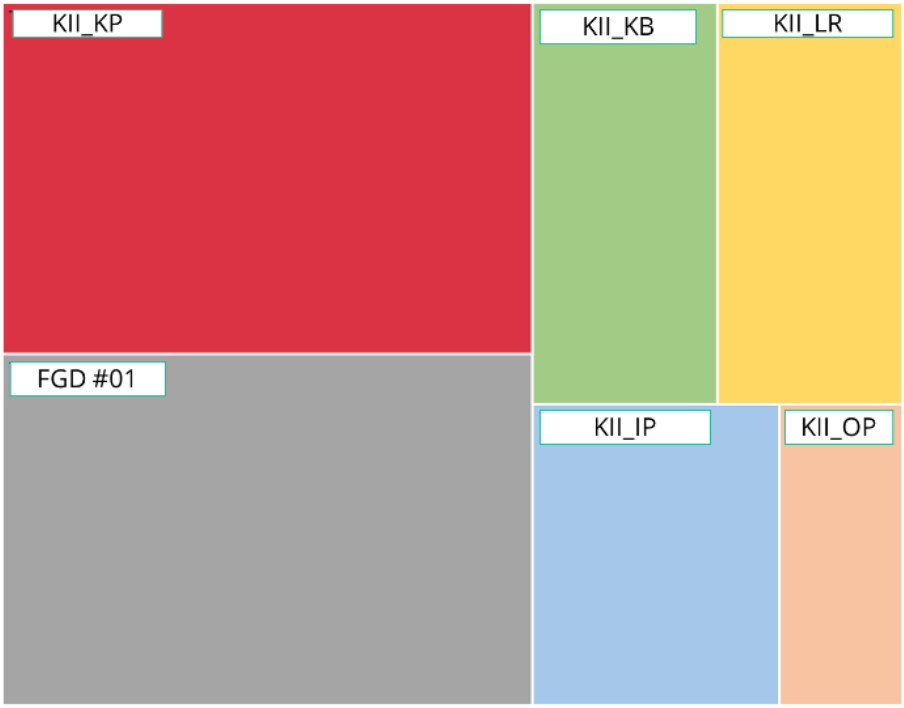


Figure 12 Comparative Frequency of [KII_HP] mentioned in interviews. Visual representation generated using NVivo.

Note that the figure shows how [KII_HP] was mentioned most frequently by the fishermen collective of Citamiang Village, Purwakarta Regency. This was because [KII_HP] is a native of the village and has apparently been involved in the Cirata FSPP project since its inception. Although interviews provided varying accounts of [KII_HP]'s official role within the overall Cirata FSPP project and subsequent job transition program, there was general agreement that they held some decision-making authority over employment at the Cirata FSPP.

Table 4 Samples of [KII_HP] mentions during interviews[10]

KII_KP	Fisherman Rep [Citamiang]	"I can work for FSPP too if I want to, [KII_HP] once mentioned to me, if I want to work, I can just ask"
KII_KB	Fisherman Rep [Ciroyom]	"There are people who work [at the FSPP] …these are people who has insider channels. Like [KII_HP]"
KII_IP	Villager	"Look at those [patrol] boats..the people who work there? [KII_HP] placed them there..I think they pay them by the month…he is responsible for [hiring] people. He "owns" the area."

[10] Quote translated and paraphrased by writer into English.

KII_OP	CFPP staff	“[Company name] works for PowerChina..this company hires the security...[KII_HP]’s place.”
KII_LR	Village Head	"[The training and certification program] prioritized those most impacted. This was arranged by [KII_HP]"
FGD #01	Impacted Fishermen	"The people who work there..they're friends of [KII_HP]"

Previously in Section 4.2.2, the study emphasized the importance of conducting interviews in the “right order” to ensure willing participation by stakeholders. As it happened, [KII_HP] was indeed the first person approached, which may influence the rest of the data collection process. The following interviews after [KII_HP] seemed to corroborate the research’s assumption, as in casual conversations, interviewees would ask if the researcher had “talked to” this figurehead. In contrast, no one raised a question on whether the researcher have talked to the Village Head or other official government representatives.

As a community figure, [KII_HP] is quite enigmatic. Conversations with villagers seemed to suggest that he owns a company which was outsourced by the CFPP authorities for worker recruitment. Further investigation into their identity and company revealed minimal information. Aside from Proof of Registration, no other online documentation about their profile and company could be found. Very little can be known about their background, other than that they were well connected to both government officials and out-of-area capital owners of Cirata’s fisheries.

It was also implied during conversations that [KII_HP]’s brokerage was one of the factors behind the permissiveness of PT PLN Nusantara Power in restricting the access of fishers inside the hydroelectric powerplant safe zone. As seen in Figure 10, most of the fishing areas outside of the safe zone were infested in water hyacinth, causing increasingly poor yields throughout the years (Fajar, 2020). The area within the safe zone on the other hand is clear from this infestation. The higher oxygen levels in this area caused it to be crowded with fish. Prior to Cirata FSPP operation, [KII_KB] claimed that *bagang* fishing within the safe zone produced up to 30-40 kilograms of fish in one night per fisherman.

While it seems in this case [KII_HP] acted for the benefit of the community, such mediation serves two principal functions which retains their power as a Broker. First, it reinforced their authority and legitimacy as a local figurehead. Second it continues to create a dependency relationship that simultaneously preserves a market network from which they may derive material benefits. Given that many net-cage owners in Cirata are personally acquainted with [KII_HP], it is highly probable that the continuity of the aquaculture enterprise constitutes both a financial and social imperative for them (FGD #01; KII_KP, personal interview).

Data also showed the opportunistic nature of the Broker's affiliation and how it shifts along with the structural changes of their enclave of control. In FGD#01, one participant said that due to the uncontrollable hyacinth infestation, [KII_HP] is going to enact a census program to limit the number of fisheries in the area using a GPS system. Whether or not this claim will be realized, it stands to show that a Broker's governance is one of a balancing act between appeasing the capital owners and ensuring local cooperation.

Conversations with [KII_HP] (2025) helped clarify their influence on some extent, though it was evident that they were withholding. When asked about their role in the development of the Cirata FSPP, they stated that they were involved in drafting the Environmental Impact Analysis (EIA) for the project, specifically regarding the 9-hectare land acquisition needed for the on-ground office, transmission line and step-up transformers. When later probed about their role in the job transition program, they mentioned that the final published EIA included a clause stipulating that at least 30% of the workforce at the FSPP should be locals.

Then, there was the matter of religious significance. In his study of the *Kyai*—or local Muslim teachers—Geertz (1960, p.230) identified the transformation they underwent to adapt to a more metropolitan, nationally oriented society, while simultaneously maintaining their traditional role as religious leaders. This adaptation allowed them to preserve their considerable social influence and authority within local communities. While [KII_HP] is no means a religious scholar, he carries the title of "Hajj"; an honorific sometimes taken by a Moslem who've done their pilgrimage to Mecca. This was the moniker by which [KII_HP] was recognized by all interviewees and the name they used to introduce themselves during their interview. Although the data collection for this research did not examine how religious status influences the legitimacy of [KII_HP] as a Broker, it was well established that Islamic institutions and traditions have historically shaped social organization in the region, dating as far back as the colonial period (p.231). Islam traditions continues to be dominant in West Java, with around 97,6% of its population registered as Moslem (Darmawan, 2025).

It may be that the title of "Hajj" gave [KII_HP] an air of erudite authority figure, which adds weight to their influence over local communities who already knew him to be well-connected with Cirata aquaculture and CFPP capital owners. His perceived sphere of influence undoubtedly affected the negotiation processes of Cirata FSPP, as he stood between the Concern of the Impacted Fishermen and Concern of the Project Outcomes.

Regional politics and their (un)Intended consequences

Although it was clear how [KII_HP] influenced the everyday politics of impacted fishermen in Citamiang Village, it is uncertain how their sphere of influence extended to fishermen in Ciroyom Village, whose job sites may overlap but who belong to a different regency. Understanding this occurrence required researching about the inception of Cirata FSPP prior to its development in 2020. Online research uncovered local Purwakarta media reports claiming that the Regional House of Representatives (DPRD) secured an agreement with Cirata FSPP's project owners to ensure that 70% of project activities take place within Purwakarta's jurisdiction. (Hamdani, 2023; Rere; 2023).

It was difficult to demonstrate either the accuracy or actual value of this claim. Publication by the Central Statistic Agency (BPS) of both region's Gross Regional Domestic Product (GDRP) per Capita showed relatively event growth during the time of Cirata FSPP development (BPS Kabupaten Purwakarta, 2025; BPS Kabupaten Bandung Barat, 2025).

Table 5 GRDP percentage comparison. (source: National Statistics Agency, 2025)

Real Gross Regional Domestic Product (GDRP) per Capita (based on Constant Price, 2010)					
	2020	2021	2022	2023	2024
Purwakarta	(-)6.90	1.92	3.77	3.56	3.32
Bandung Barat	(-)8.42	1.96	3.85	3.56	3.57

It also cannot be determined whether the decision to locate the Cirata FSPP ground office in Purwakarta resulted from political lobbying, or if the claim of a 70% share of project activities was simply a byproduct of a predetermined site choice. Considering the area's layout, it was more likely that the decision was driven by technical considerations, as both the hydroelectric power plant's operational area and control center are also located in Purwakarta.

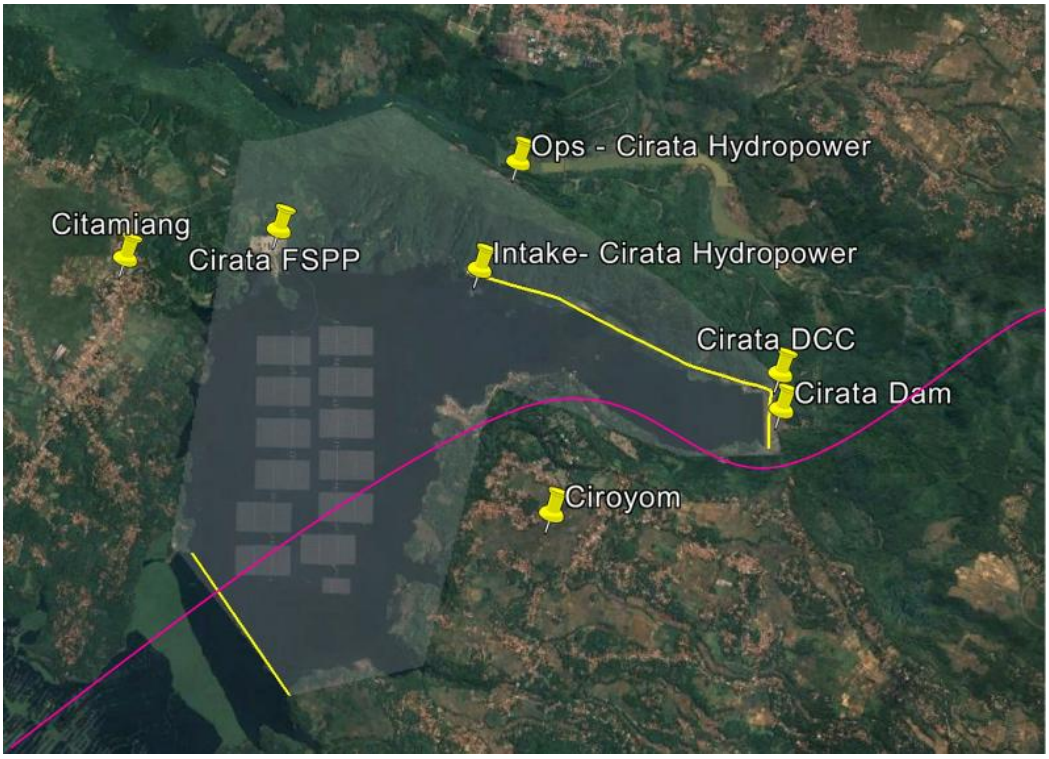


Figure 13 Cirata FSPP site. Area above the pink line is the Purwakarta region. (Source: Google Earth 2025)

Nevertheless, the local government of Purwakarta, particularly those from the Maniis sub-district where Citamiang village is situated, appeared to be more involved in discussions surrounding the Cirata FSPP than their counterparts in Bandung Barat, as confirmed by the project director of PMSE in his interview (2025). This meant the discussion about EIA, which [KII_HP] was a part of, was possibly held only with government representatives from Purwakarta.

Although somewhat minor in the grand scheme of Cirata FSPP development, impacts of this perceived preferential treatment can be seen from both fishermen representative. One simple example is their claim over Corporate Social Responsibility (CSR) activities from PT PMSE. [KII_KB] claimed that most programs were given to the people in Purwakarta (2025). They alleged that aside from two schools built in the area, no other CSR programs were done for Bandung Barat. On the contrary, [KII_KP] claimed that the company often performed activities for villagers in Citamiang, such as donation for orphans, and providing free *qurban* for Eid. A quick online search will show that a relatively recent program is done in both areas. (Admin, 2025; dinassosialkbb; 2023)

Considering the intricacies of local politics, including the presence of a strong Broker in Purwakarta, it is possible that disproportionate treatment and compensation occured over the course of the Cirata FSPP operation. Whether this is true, however, matters less than the

perception it creates, and consequently, the narrative it produces. The perception that the company treats each region differently, even when their presence generates equal adverse impacts, may stand in the way of labor unionization.

In conclusion

It may be tempting to accuse the Broker of being the "great antagonist" in Cirata's structural transformation story. This is someone who, instead of using their privilege and connections to defend the rights of Cirata's impacted fisher communities, have decided to wield it almost exclusively for their own benefit. Their behavior is like that of the "individual entrepreneur", described by Kahin (1983) in their reading of the *Papers of the Dutch-Indonesian Historical Conference Held at Lage Vuursche* (1980) as:

> *"[…] middlemen par excellence, whose livelihood depended on their ability to exploit the economic opportunities existing at the margins of the different communities and whose lives frequently depended on their success". (Kahin, 1983, p.139-140)*

On the other hand, it was their success which ensured fishers from Citamiang and Ciroyom got access to fish in a "clear zone" area, with plenty of fish and free from hyacinth infestation. It also ensured the Broker's invitation to the EIA negotiation table, where they stipulated the 30% local employment and procurement ratio. In the face of intricate regional politics compounded with the decline of the aquaculture industry, Cirata's fishers had no choice but to turn the Broker and hope that their objectives aligns with the fisher communities. Nevertheless, this dependency came at a cost of unification: effectively undermining labor collectives to unify and rally for their compensation. As such, this contrary belief is merely speculative. There were not enough grounds to assume that, in the absence of the Broker, fishers of Cirata would put up a resistance movement similar to those from other FSPP development sites in Indonesia.

It is true that the Broker may exploit loopholes found in both Cirata's RE-driven structural transformation. Exploiting loopholes, however, does not mean that the Broker created them. These are pre-existing flaws caused by a system of governance which, even with good intention, has failed to provide both legal and social frameworks for the locals of Cirata to defend their rights against disruptions caused by developments.

So far, research has shown how historical precedents left past resettlers, and now their descendants, trapped in non-sustainable livelihoods with little legal protection. These resettlers-turned-fishers were pushed to depend on the local Broker, which in turn strengthened the

Broker's legitimacy and left the fishers vulnerable to their whims. The next chapter will analyze how all these elements come together and shape the strategic choices made by the impacted fishermen in the negotiation arena surrounding Cirata's FSPP job transition program.

5.3 Negotiating Cirata's Green Job Transition

In this final analysis section, the research will observe how the sum of impacts caused by Cirata's first structural transformation influenced the perception of power, rights, and duties of local actors who negotiated Cirata's second structural transformation: one which repeats the past promise of a lucrative job transition for those displaced by the renewable energy development project.

Before proceeding with the negotiation analysis and findings of the Dual Concern modelling, this section will first establish the current Stakeholder Mapping of Cirata FSPP, followed by a detail project timeline concerning project activities, related conversations, and their proceeding outputs.

Stakeholder Mapping

Field investigation found out that there were more stakeholders involved in the Cirata FSPP job transition program than initially understood from surface-level observation. On the side of project authorities, it was discovered that sub-contractors played a more significant role than both regional and national government agencies. An interview with the Directorate General of NRE clarified that the central government's role is mostly to assist with permit acquisition and producing the training modules used in the green job transition program (FGD #02, 2025). Meanwhile, testimonies from interviewees implied that sub-contractors played a significant role in both training and hiring of local fishermen.

Unfortunately, it was quite difficult to ascertain just how many sub-contractors are involved in the project. Aside from the two main contractors, Powerchina and Sinohydro, there were no official publications detailing which companies have worked, or are still actively working, in Cirata. When asked about this, the President Director of PMSE claimed that currently, PowerChina is the sole sub-contractor for PMSE under an Engineering, Procurement, and Construction (EPC) contract. However, he also clarified that PowerChina is currently the one responsible for labour procurement, and that all sub-contractors in relation to this are registered under their company.

[KII_OP], a staff member working for Cirata FSPP, clarified that aside from sub-contractors related to the maintenance of each component of the floating solar panels, there are two other sub-contractors currently working for Cirata FSPP: HDEC, responsible for the daily panel operations and expert hires, and the company owned by [KII_HP], responsible for local human resources management. As seen in the earlier section, [KII_HP] did profess to being actively in Cirata's labor procurement but said nothing about owning a company (2025).

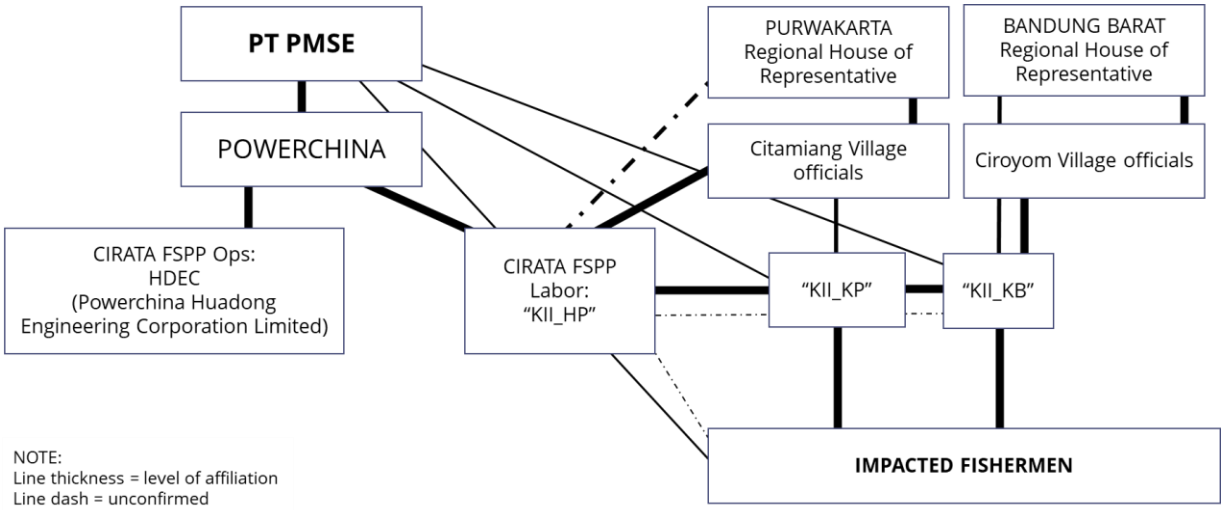


Figure 14 Stakeholder mapping, Cirata FSPP 2025

In FGD #01, the impacted fishermen of Citamiang mentioned that during negotiations around the job transition training program, they had direct conversations with staff members from PMSE. This was also the case for the impacted fishermen from Bandung Barat, as testified by [KII_KB]. Unfortunately, due to a series of mishaps and staff changes, some of these conversations were halted midway, effectively eliminating any progress made during these discussions (FGD_P1; KII_KB, 2025).

Another important point is the large number of temporary third-party actors involved in the CFPP construction and job transition program, such as youth organizations, foreign nationals, and out-of-town trainers who were assigned to help with the training and procurement process (FGD #01; KII_KP; KII_KB 2025). While they will not be considered in the negotiation analysis, the large number of migrations may have contributed to the scattered information experienced by the impacted fisher communities, which would lead in shifts of their perception.

Project Timeline

In Section 5.1, the research highlighted one critical fact on water ownership often omitted from publications about Cirata FSPP. Here, the research would like to also introduce several

additional facts about Cirata FSPP job transition program that were also missing from media publication. First, there were *two* instances of local hiring, each accompanied by a different set of negotiations and procurement process. Second, there was an escalation of conflict pushed by the impacted fisher community, which led to a settlement in the form of monetary compensation. Both facts played a critical role in understanding each stakeholder's strategic choices, and where they sit within the DCM.

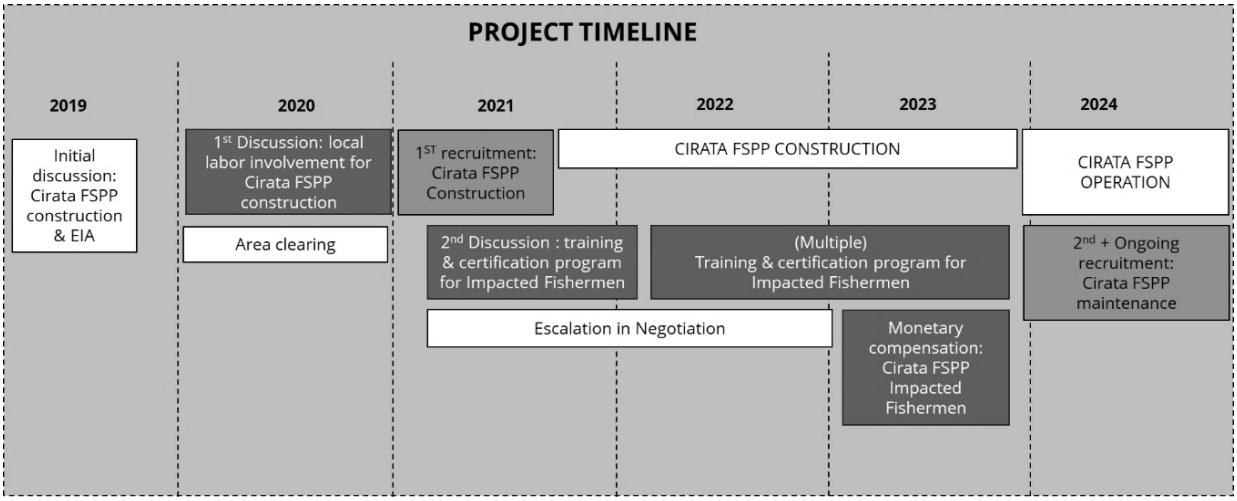


Figure 15 Project timeline & discussion points based on stakeholder accounts

5.3.1 Data Collection Result & Final Negotiation Analysis

1st Discussion & Recruitment: Negotiation Under Asymmetrical Information

Conversation with the impacted fishers of Cirata showed that more than short-term monetary loss, they were much more concerned with the long-term loss of their job site. "Work" was both the term most mentioned and the aspect most discussed during interviews with all impacted fishers.

The issue of work was initially raised in 2020, when fishers were told they can no longer fish at the project site area, as construction equipment will start to occupy the space. Following the 30% local hiring stipulation of the EIA, PMSE did provide work for the impacted fishers in the area At least, this was the case for the *1st round* of procurement, where they were looking to hire a lot of construction workers and boat captains to build the FSPP. Fishermen and villager representatives alike were told to collect the identity of all impacted fishermen in the area and have their names registered in the roster of workers needed for the construction of Cirata FSPP (FGD #01; KII_KP; KII_KB, 2025). In total there are up to 2000 workers hired to speed up the construction process (FGD #01; KII_KP; KII_KB; Dimas A, 2025). Research also corroborate a

fact found in the first Kompas publication, where workers were claimed to be paid with quite a high daily wage of IDR 200,000/day (KII_HP. 2025).

This may be the reason behind why in the beginning, the development of Cirata FSPP was relatively welcomed (KII_HP; KII_KP; KII_LR. 2025). The company, along with their construction sub-contractors, indeed employed a large amount of labor and provided a decent daily wage during the construction period. Furthermore, the project was framed to increase long-term job opportunities for local communities (KII_LR; Admin, 2025) and to provide international exposure for the villages involved (KII_LR. 2025).

Interviews with the impacted fishers, however, found that the implementation of this procurement was not ideal. Due to the sectioned and phased nature of construction, workers did not receive the same amount of work. Some workers will work up to 3-5 days a week, some more, and some much less (FGD #01; KII_KB. 2025). All of this is decided fully by the company's procurement officers. Furthermore, the work was done in shifts, which meant some people would only work half-days (FGD #01, 2025). All of this affected how much take-home pay workers were given as individuals, which could widely vary from one person to another. When asked, the company mentioned that it was necessary to shift workers to keep them safe from the harsh conditions of the reservoir (KII_KP, 2025). Workers took this in stride, as it was true that the heat from the afternoon sunlight by the reservoir have caused many to fall ill due to dehydration and sun stroke.

By the end of the construction phase, however, there were dissatisfaction brewing amongst the workers. First, they saw large disparities in the amount of pay given to different people based on their arbitrary work assignments (FGD #01, 2025). Then there was increasing awareness that construction work would cease, yet they cannot return to their former work as a fisherman in the area (FGD #01; KII_KB; KII_KP; KII_HP, 2025).

"[the construction] ended..and once again we are out of work." – FGD_P2

Yet again, escalation of conflict was mitigated when the company approached the fisher community at the end of 2021 to negotiate compensation in the form of a training and certification program, intended to enable impacted fishers to work as employees for Cirata FSPP. At this point, it was said that [KII_HP] took on a more active role in helping to choose who gets to receive this training program (KII_LP, 2025). Together with the representatives, they came up

with 60 names, 30 from Purwakarata and 30 from Bandung Barat, to take part in the job transition training program offered by PMSE (KII_KP; KII_KB; FGD#01, 2025).

Pruitt & Robin (1986) suggests that threat, key in conflict escalation, roots from the perception that aspiration from the other party are incompatible. What happened during this first round of negotiation of Cirata FSPP was exactly the opposite. During this time, representation from the renewable energy project authorities seemed to have actively engaged the community in finding a mutually beneficial solution. This perception of goodwill may have resulted in the impacted fisher communities proceeding to the second round of negotiation with relative optimism, even after they experienced failed commitments from the first one.

2nd Discussion & Recruitment: Limited benefits

In the Introduction (Section X), the study introduced the story of Odang, a trained-and-certified fisherman whose socio-economic stature greatly improved after transitioning into a solar panel installation operator. (Yogatama & Ritonga, 2024).

"Yesterday, we installed [the product] in the Cikampek area (Karawang, West Java), and we also received offers from Kalimantan and Batam. We are increasingly being valued."- Odang.

On-site investigation later found out that Odang to be the exception to the rule. While 60 impacted fishers were registered for the job transition program, not all participated in the training due to accessibility issues, even after several rounds of consultation with the community. The most fundamental issues were physical and educational threshold. First, working on a floating solar panel in any labor capacity requires a certain level of physical fitness. There was a weight limit, as people over a certain weight threshold may not be able to maneuver around the floating plant (KII_KP, 2025). Second, they must be able to withstand the blazing sunlight, as all work except for patrol was done during the day (KII_KP, FGD#01). This was why, as mentioned in the later Kompas publication, many older fishers did not qualify work at the FSPP (Kurnia, 2025; FGD#01, 2025).

Figure 16 Panel clean up photos. (Source: field documentation)

Then there was the issue of the education threshold. To ensure legibility, the training program used the Indonesian National Work Competency Standards (SKKNI) modules, designed and published by the Directorate General of New and Renewable Energy (FGD #02; Dimas K, 2025). These modules were primarily optimized for vocational schools, meaning they were intended for individuals who had at least completed junior high school education. Furthermore, the training course was very short, spanning only about two weeks per module (FGD #01; KKP_KP, 2025). The fishers from Cirata were mostly elementary school graduates or elementary school dropouts who never obtained their graduation certificate (FGD #01, 2025). When asked why, they said to see no reason as they see themselves as being fishermen for the rest of their lives, echoing the lack of option as a consequence of Cirata's first structural transformation (Section 5.1). Eventually, the company agreed to lower the threshold and allow people without education certificates to enter, as long as they can read and write (FGD_P1, 2025).

Even after lowering the threshold, it was still difficult for many fishers to finish their training. While the first course of training only revolved around safety protocols (which involved swimming lessons that the FGD participants found redundant), the second course of training involved basics of electrical engineering, which participants found quite difficult (FGD #01, 2025) The

company then set a policy where in the event registered impacted fishers cannot join the training, they have the right to pass their “slot” to their next of kin; be it their sibling, children, or close relatives. While this serves to continue the job transition training program, it failed its initial commitment to ensure job availability to those whose work were displaced by the CFPP. 65In the end, many impacted fishers forgo their right to training and either went out of work, moved away from the area to fish somewhere else, or moved to the edge of the restricted area and fish under unfavorable circumstances (FGD #01; KII_KB; KII_IP; 2025).

Figure 17 A raft making station and Bagang at the edge of the safe zone. Source: field documentation.

It is at this point that the research sees a condition which echoes a similar circumstance with the Resettlement program from Cirata’s 1st renewable energy-led structural transformation. While the solution was designed to compensate for the capital loss of those most impacted, a program which design doesn’t involve its direct constituents will eventually be subject to commandeered by those with more power (Nakayama, 1999). In the past, powerful capital owners expropriated fishing permits from the resettlers of Cirata’s hydropower development. Today, the training and certification program failed to generate employment opportunities due to the perceived or factual lack of competency among the fishermen affected by Cirata’s FSPP development.

There were two speculations identified in the interviews for the reason behind this lack of labor procurement. The first being that the company was pressured to hire experienced workers from out of the area to avoid possible extravagant costs or insurance litigation over broken equipment This was the reasoning company representatives gave impacted fishermen collectives whenever asked for a job placement availability (KII_KP; KII_KB; FGD#01, 2025).

"They say that [the FSPP] is still under warrantee, that it's not fully under PMSE. So, they can't bring in locals […]"[11] *– KII_KP*

The claim that Cirata FSPP is not fully under PMSE might be partially true. At present, PowerChina and its subcontractor HDEC are the ones responsible for the day-to-day operation of the FSPP, including panel maintenance (Dimas A; KII_OP, 2025). It may be that these subcontractors decided to not hire underexperienced maintenance workers to avoid possible liabilities, especially if their contract stipulates full responsibility over costs incurred by damages.

The other speculation was related to collusion and nepotism done by [KII_HP], who allegedly gave away jobs and training slots for their acquaintances as a form of leverage (FGD #01; KII_KB, 2025). Their alleged official sub-contractor status as a labor contract management company have [KII_HP] almost full autonomy over worker procurement and security against scrutiny from other stakeholders. Whether these speculations are true or not, fishermen who didn't receive the promised "better work" seemed to take these speculations as another obstacle they were forced to contend in the midst of navigating their job displacement.

Relative proximity to project area and imbalanced socialization also continued to exacerbate information asymmetry. In their interview, [KII_KB] (2025) stated that none of the 30 impacted fishers registered from Bandung Barat were ever called to join the training, and that they had no information whether there were any representatives from Bandung Barat participated at all. A similar case also happened to the fishermen of Purwakarta. When asked if they knew if anybody out of the 30 registered fishermen for training ever worked for the CFPP, they only gave one name (FGD #01, 2025).

At the time of the interview, both fisher community representatives reported that the company had stated there will be more stable employment after the two-year warrantee period elapsed (KII_KP; KII_KB; 2025). As in the first round of discussion, this assurance appears to function as a form of appeasement; an attempt to deter conflict escalation by signaling a willingness to pursue mutually compatible solutions.

Today: flawed perceptions, yielding, and conflict de-escalation

The two discussions on the Cirata FSPP job transition demonstrated a recurring failure by renewable project authorities to achieve an integrative agreement; one that could converge the interest of the project and the welfare of the impacted fisher communities. While short-term

[11] Quote translated by writer into English.

conciliatory measures helped prevent conflict escalation, the final piece in understanding the lack of resistance at Cirata emerged only when considering the perspectives of all on-site stakeholders together.

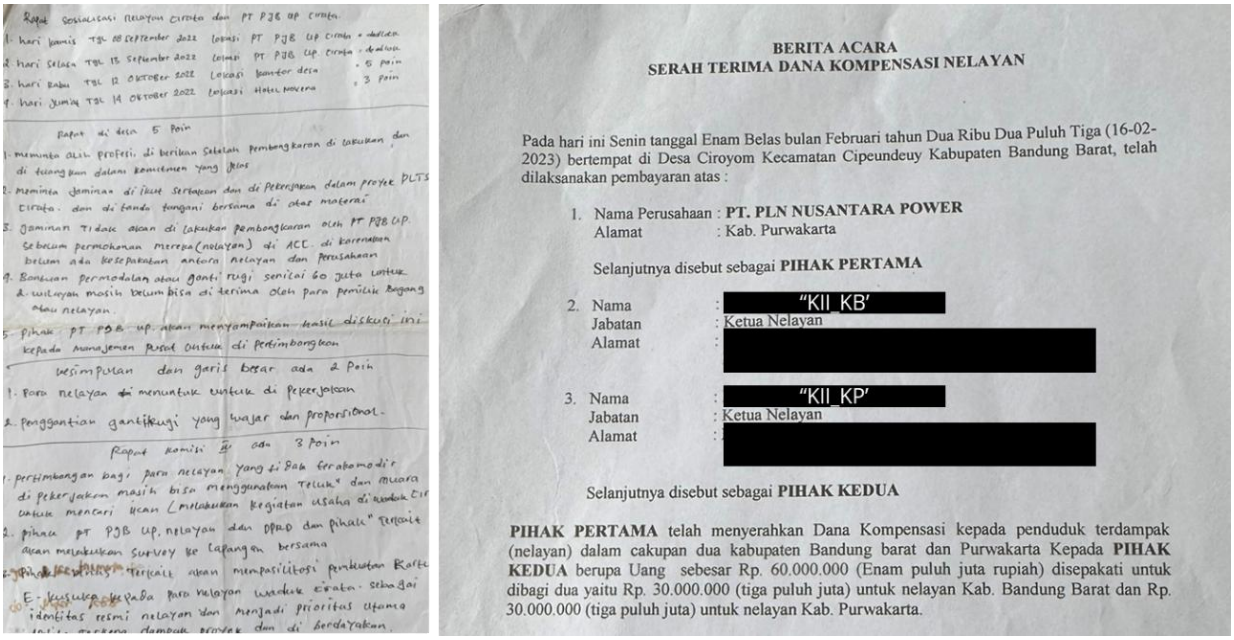
The following table presents the results of the DCM, based on references drawn from each interview with relevant on-site actors.

Table 6 Dual Concern coded references. Generated by NVivo

	A : Contending	B : Inaction	C : Problem Solving	D : Yield
KII_KB	8	0	8	4
KII_KP	2	0	5	15
KII_HP	0	0	3	0
KII_LR	0	1	1	0
FGD #01	2	1	4	4

Formation of a unified struggle group, while not mandatory for conflict escalation, is critical to retain aspirations on a conscious level (Pruitt & Rubin, 1986, p.16). This is especially critical in the case of Cirata FSPP, where both information and access asymmetry exist. Ideally, both impacted regions should band together to escalate the conflict and push for accountability.

By the end of 2022, the representative from Bandung Barat did try just that. In their interview, [KII_KB] told a story of how his community of 120 fishermen was not satisfied with the training program offered as a form of compensation, especially when the number is restricted only to 30 people (2025). They escalated the issue to both the company and their sub-contractors, eventually ended up with a formal complaint and demand for financial compensation. This complaint was later brought to the Bandung Barat Regional House of Representative.



BERITA ACARA
SERAH TERIMA DANA KOMPENSASI NELAYAN

Pada hari ini Senin tanggal Enam Belas bulan Februari tahun Dua Ribu Dua Puluh Tiga (16-02-2023) bertempat di Desa Ciroyom Kecamatan Cipeundeuy Kabupaten Bandung Barat, telah dilaksanakan pembayaran atas :

1. Nama Perusahaan : **PT. PLN NUSANTARA POWER**
   Alamat : Kab. Purwakarta

Selanjutnya disebut sebagai **PIHAK PERTAMA**

2. Nama : "KII_KB"
   Jabatan : Ketua Nelayan
   Alamat : [redacted]

3. Nama : "KII_KP"
   Jabatan : Ketua Nelayan
   Alamat : [redacted]

Selanjutnya disebut sebagai **PIHAK KEDUA**

PIHAK PERTAMA telah menyerahkan Dana Kompensasi kepada penduduk terdampak (nelayan) dalam cakupan dua kabupaten Bandung barat dan Purwakarta Kepada **PIHAK KEDUA** berupa Uang sebesar Rp. 60.000.000 (Enam puluh juta rupiah) disepakati untuk dibagi dua yaitu Rp. 30.000.000 (tiga puluh juta) untuk nelayan Kab. Bandung Barat dan Rp. 30.000.000 (tiga puluh juta) untuk nelayan Kab. Purwakarta.

Figure 18 Left: A handwritten formal complaint dated October 2022. Right: financial compensation for both fishermen collective, dated February 2023. (source: field documentation)

This escalation led to a four-day meeting with representatives from the company, mediated by the local government, to come up with a financial settlement for both impacted fishermen communities (KII_KB, 2025). While eventually getting some level of settlement, the amount was far from satisfactory. In their interview, [KII_KB] mentioned that in the beginning, the amount of settlement was calculated based on the cost fishers would incur to construct a new lift net / *Bagang*, as their existing equipment would become obsolete if they changed occupation or relocated. This was translated into monetary compensation valued at IDR 3-5million per person. Eventually, company representatives managed to haggle and settle at IDR 30million for each collective.

The reason why the negotiations did not work in favor of the collective can be traced back to history of Cirata, which fact remained ever present in the perception of [KII_KP]: *fishers have no right over the water area*. On Table 6, most of the "Yielding" found from [KII_KP] refers to the fact that they believed fishers were mere "guests" on the area, and it was due to the company's tolerance that they are ever allowed to work there in the first place.

Table 7 Quotes from KII_KP. Translated to English by writer.

"[our people] are stubborn, refuse to understand. Yes, we are all impacted by the project..but the problem is [the site] has to be sterile..if anything happens the company had to be responsible"

"if we follow the whims of everyone, we will not see the end of it. As long as we can work..at least for physical labor jobs..we can still work"

"I told the people [who want to protest] do what you want..the problem is, we are guests here. This site belongs to the country, and [FSPP] is a national project, directed from the President.."

"This land is not ours..what right do you have to demand [for compensation]?

Considering Purwakarta's higher leverage at the negotiation table, the lukewarm support from its representative may have contributed to the de-escalation of conflict necessary to advance the impacted fishers' collective aspiration. This dynamic was further exacerbated by [KII_KP]'s proximity to the Broker, which may act as a deterrent, as escalating conflict with such an influential figure is not desirable.

Earlier, this research mentioned the reluctance of fishers from both villages to speak without the support of their representatives. While the research did not find the exact reason, a lot of assumptions can be drawn from what is known about the power and socio-economic dynamics of Cirata. One of these assumed reasons could have to do with information asymmetry. Fishers with no connection or networking power were less likely to be present in the negotiation process and therefore will not have necessary information needed to contend against project authorities. Most of the time, fishers receive information regarding the job transition training program through social networking apps, depending on who they know and who was willing to forward the information (FGD #01, 2025). This may have caused a dependence on their representatives, which in turn were also dependent on the Broker and/or company representatives to further their demands. This chain of dependencies would be a strong deterrent to conflict escalation, as one side of the competing force (impacted fishers) were much slower and fractured in their group assertiveness.

One other assumption which may impact the efficacy of the impacted fishers in pushing for integrated solution was the perception towards their own educational background. The Cirata FSPP was sold by the then President of Indonesia as a clean, modern enterprise; the first of its kind not only in the country, but in the region (Power & Technology, 2023). This image is further pushed by the presence of foreigners and novel technologies during the construction period. This may have caused hesitation among some members of the collective in expressing their opinions. In many interviews with the fishermen, particularly during the FGD, quite often they would use demeaning descriptors for themselves.

"The test involved writing […] well, many of the fishers here are stupid.." (FGD_P1)

The word “stupid”, “uneducated”, and “little” are used to reflect their identity and condition (FGD #01; KII_KP; KII_KB, 2025). This idea that they cannot argue against project authorities of a “national project” may become a self-contained deterrence, and once again prevent escalation and reach a unified resistance.

In conclusion

Upon understanding the dynamics of negotiations surrounding Cirata FSPP development and job transition program, the research is now able to answer its main question of, “*In what ways did historical events and power structures shape negotiation and strategic choices in Cirata’s FSPP, which sets them apart from other FSPP developments?”*

First, the research observed that the displacement caused by Cirata’s first structural transformation intensified vulnerabilities of an already struggling community, which, in navigating its transition, made short-term decisions that ultimately produced long-term losses for future generations. The research also observed how the failure of program monitoring led to irreversible environmental damage, which further pushed the community of Cirata into a labor-lock trap. Next, the research found the existence of a Broker who managed to accumulate a bargaining power large enough that they were able to determine the livelihoods of displaced workers, in the aftermath of both Cirata’s first and second structural transformation. Their sphere of influence effectively created another line of dependency, further reducing the negotiating power of local villagers, especially fisher communities.

Finally in this section, the research discovered how all these elements came into play during the process of negotiation of Cirata’s second renewable-energy driven structural transformation. It showed how historical precedents implanted perceptions in community representatives, rendering them malleable to the forces of capital owners and project authorities. It showed how the existence of a Broker can disrupt possible integrative solutions. Most importantly, it showed how information asymmetry and perceptions of power influenced the negotiation table, allowing project authorities to appease repeatedly without a proper follow up of their commitment. The sum of these elements eventually caused the unwilling silence of Cirata’s fisher communities. This lack of opposition may falsely signal a lack of conflict, therefore allowing conclusions of “success” to be drawn. It happened for Cirata’s first structural transformation, it is now happening for its second.

The story of Cirata may be novel, but the conflict between renewable energy developments and local societies’ livelihoods can be seen across the nation. Unless equal grounds to bargain is

granted for those displaced by energy projects, people will continue to witness the decline of societies, who will continue to lose in the “battleground” of negotiation against the nation state’s development imperative.

6 Final Conclusion and Recommendation

The famous quote by philosopher George Santayana, *“Those who cannot remember the past are condemned to repeat it*”, is frequently echoed by world leaders and political figures as a call to evaluate past conducts and make better decisions moving forward. While the sentiment is compelling, the challenges faced by local communities in the context of ongoing development suggest that breaking cyclical patterns may require more than historical recollection alone. Within a single lifetime, the people of Cirata underwent two structural transformations driven by renewable energy development. In both instances, labor site displacement forced community participation in job transition programs outside their established skill sets. Both times, their livelihoods were marked by structural vulnerability, as dependence on a middleman enabled the consolidation of power and control over these transformations. Left with insufficient structural support to assert their rights, villagers were contended to yield on the negotiation table, despite losing substantial resources and opportunities.

The ongoing consequences experienced by the resettlers of Cirata underscore the importance of applying a multilevel perspective in renewable energy transition projects (Pearse, 2021, p. 953), as energy technology innovation can generate systemic transformations that reshape power relations (Barca, 2011, cited in Pearse, 2021). This is by no means a novel observation. Studies on the impact of Cirata Hydropower development (Costa-Pierce, 1997; Nakayama et al., 1999) have consistently called for more participatory processes—ones that not only focus on economic revitalization but also support the design of new social structures that empower local communities to engage meaningfully in development decision-making. As the development of clean energy continues to be a national priority, the local fishermen of Cirata will face another round of large-scale transformation, one which will impact the livelihoods of many more communities. While precedents set by history may not be modifiable, there are several actions which can be done by Indonesia’s renewable energy governance institutions to even the level playing field of negotiations, with Cirata as a case study.

The first is to ensure that the distribution of information is conducted effectively, through accessible and consistent formal channels that are widely available to the impacted communities. This approach helps to mitigate information asymmetry and reduce dependence on brokers or

party representatives, enabling local communities to engage in informed discussions about their options, rights, and demands with greater clarity.

The second is to facilitate the involvement of NGOs or civil rights advocates in negotiation processes, where they can actively document and safeguard agreements reached during meetings. Lessons from the negotiation processes of both Cirata renewable energy developments demonstrate the detrimental effects of losing key figureheads and community representatives in sustaining compensation negotiations. The presence of a stable and formal third-party intermediary can ensure continuity in discussions, even amid changes in individual participants.

Finally, central governments should take a more active role in documenting the processes of renewable energy transformations, including those that appear to proceed smoothly. While the absence of overt resistance or protest may not immediately signal a priority, valuable lessons can be drawn from processes that are seemingly “successful” and economically profitable. Such systematic data collection can enrich analyses of renewable energy transitions and potentially inform solutions that are viable for environmental, economic, and social systems alike.

This research was motivated by a desire to document the experiences of the fishermen of Cirata, amplifying their quiet discontent to illuminate the power relations that have hindered the possibility of a fair and just energy transition. It remains hopeful that future renewable energy transitions need not replicate the tensions between national development imperatives and local livelihood sustainability. However, it argues that achieving this outcome requires energy project authorities to concede certain imperatives. After all, a two-way dialogue is meaningful only when both parties are equally informed and capable of compromise