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MULTI-ACTOR COLLABORATIVE GOVERNANCE MODEL FOR SUSTAINABLE FISHERIES MANAGEMENT IN JEMBER REGENCY, INDONESIA

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Abstract: This study investigates a multi-actor collaborative governance model for sustainable fisheries management in Jember Regency, Indonesia. Using a qualitative phenomenological approach, the research explores the experiences and institutional dynamics among key stakeholders—including local government, private firms, village-owned enterprises (BUMDes), fish farmers, and financial institutions—in managing freshwater aquaculture. Fieldwork focused on the "One House, One Biofloc Pond" initiative, which serves as a case of inclusive innovation in fisheries governance. The findings reveal several systemic barriers, including fragmented institutional design, weak facilitative leadership, and limited stakeholder trust. However, the study also identifies successful elements of collaboration, such as intersectoral cooperation, adaptive regulation, and community empowerment, that contribute to sustainable resource management. The study proposes a refined governance model emphasizing inclusive stakeholder mapping, regulatory clarity, adaptive management, and continuous learning. The research contributes theoretically by extending Ansell and Gash's collaborative governance framework with empirical insights from a decentralized, resource-constrained context. Practically, it offers a replicable model for inclusive and sustainable policy interventions in the fisheries sector. This integrative approach demonstrates that well-structured collaboration can address institutional fragmentation and enhance environmental, economic, and social outcomes in rural fisheries governance.
Keywords: Public Collaborative governance, fisheries management, multi-actor model, aquaculture

INTRODUCTION

The governance of fisheries is a critical area of public administration, particularly in regions where natural resources play a significant role in community livelihood and economic sustainability. In Indonesia, and specifically in Jember Regency, the governance of the fisheries sector faces persistent challenges related to productivity, environmental sustainability, and institutional capacity. These challenges are compounded by fragmented coordination among actors, limited adoption of sustainable aquaculture technologies, and low levels of community engagement. The complexity of these issues necessitates a shift from traditional top-down governance approaches to more inclusive and integrative models. Collaborative governance, as conceptualized by Ansell and Gash (2008), offers a promising theoretical and practical framework to address these problems by emphasizing multi-actor participation, consensus-driven decision-making, and adaptive policy implementation.

Fisheries in Jember Regency, especially in the freshwater aquaculture subsector, remain underperforming despite substantial natural resource potential. Statistical data from the Jember District Fishery Agency (2024) reveal that the total annual freshwater fish production is approximately 5,200 tons, with dominant commodities including Nile tilapia, catfish, gourami, and carp. However, this production level is significantly below the region's estimated optimal capacity. The average productivity per hectare remains stagnant at around 10 tons, regardless of increases in the cultivated area. This inefficiency suggests a combination of technical, structural, and institutional issues that undermine the potential of the sector.

Technological stagnation is one of the primary factors contributing to low productivity. Despite the availability of modern aquaculture technologies—such as biofloc systems, automatic water quality monitoring devices, and formulated feed—their adoption remains limited. Small-scale fish farmers often lack access to these innovations due to financial constraints, limited knowledge, and weak institutional support. Consequently, traditional farming methods dominate the sector, leading to high fish mortality rates, suboptimal

growth performance, and excessive resource use. The lack of targeted training and education programs further exacerbates the problem, creating a knowledge gap between best practices in aquaculture and their practical application at the grassroots level.

Beyond technical constraints, institutional and governance weaknesses further impede the effectiveness of fisheries management. Fragmented coordination among government agencies, private actors, and civil society organizations results in overlapping roles, policy inconsistencies, and inefficient resource allocation. The absence of a shared governance framework leads to duplication of efforts and a lack of accountability in policy implementation. Furthermore, regulatory and financial support for fisheries development is often inadequate, sporadic, or poorly targeted, limiting the ability of actors to respond to emerging challenges.

Community participation in fisheries governance is another area of concern. Many fisheries programs are designed and implemented without meaningful involvement of local stakeholders, particularly fish farmers, village-owned enterprises (BUMDes), and women's groups. This top-down orientation undermines ownership, reduces legitimacy, and weakens the sustainability of development initiatives. Empirical findings from Jember suggest that low public awareness, insufficient stakeholder engagement mechanisms, and weak participatory planning processes are among the reasons for limited community involvement in fisheries policy. Without active citizen engagement, public policies risk being misaligned with local needs and realities, thereby reducing their effectiveness and long-term viability.

Environmental sustainability presents yet another critical dimension of the problem. The intensive use of chemical inputs, inefficient feed management, and poor waste disposal practices contribute to aquatic pollution and ecological degradation. Runoff from fish farms often leads to nutrient overload, eutrophication, and the proliferation of harmful algae blooms, adversely affecting water quality and aquatic biodiversity. These environmental risks not only threaten fish productivity but also undermine the broader sustainability of local ecosystems and public health. As climate variability and resource competition intensify, the need for environmentally sound aquaculture practices becomes more urgent.

Against this backdrop, the concept of collaborative governance offers a compelling alternative for fisheries governance in Jember. This model emphasizes voluntary cooperation among public agencies, private enterprises, and civil society actors to jointly make and implement policy decisions. Collaborative governance involves shared responsibility, mutual accountability, and deliberative problem-solving, enabling a more holistic and adaptive approach to complex policy challenges. In the fisheries context, such collaboration can facilitate technology transfer, capacity building, co-management of resources, and inclusive policy formulation.

In recent years, a noteworthy example of successful collaborative governance has emerged in Jember through the initiative led by PT Timur Mandiri Akuakultur (TMA) in partnership with local BUMDes and Bank Rakyat Indonesia (BRI). Their "One Household, One Biofloc Pond" program exemplifies how cross-sectoral collaboration can enhance productivity, reduce environmental impacts, and empower local communities. The biofloc system used in this program significantly improves survival rates, optimizes water use, and integrates aquaculture with sustainable agriculture practices. Moreover, the clear delineation of roles among actors—TMA as the facilitator and technical lead, BUMDes as community liaison, and BRI as financial supporter—demonstrates how institutional design can influence the effectiveness of collaborative arrangements.

However, despite these encouraging developments, there remain gaps in the broader implementation of collaborative governance principles. Government institutions still rely heavily on ad hoc, trial-and-error approaches, lacking a comprehensive framework for policy experimentation and feedback. Monitoring and evaluation systems are weak, hindering the ability to learn from pilot projects and scale successful models. Furthermore, coordination among line agencies remains inconsistent, and community engagement continues to be reactive rather than proactive.

The existing literature on collaborative governance in fisheries tends to focus on macro-level regulatory reforms or isolated case studies, often without connecting empirical insights to theoretical refinements. This study seeks to bridge that gap by developing a locally adapted model of multi-actor collaboration in fisheries governance. It integrates empirical evidence from fieldwork in Jember with the theoretical dimensions proposed by Ansell and Gash—namely, starting conditions, institutional design, facilitative leadership, and collaborative processes. In doing so, the study advances the theoretical discourse on collaborative governance by incorporating contextual variables such as local power dynamics, trust-building mechanisms, and adaptive policy learning.

The significance of this research lies in its contribution to both theory and practice. Theoretically, it refines the collaborative governance framework by introducing the concept of adaptive policy experimentation and highlighting the importance of local institutional ecosystems. Practically, it offers a scalable and evidence-based model that can inform policy interventions not only in Jember but also in other regions facing similar governance and sustainability challenges in the fisheries sector.

In conclusion, the governance of fisheries in Jember Regency stands at a critical juncture. Persistent productivity gaps, environmental concerns, and institutional weaknesses underscore the urgency of adopting more integrative and participatory governance models. Collaborative governance provides a promising framework to navigate these complexities by aligning stakeholder interests, enhancing policy responsiveness, and promoting sustainable development. This study sets out to analyze and propose a multi-actor collaborative model

that is empirically grounded, contextually relevant, and theoretically innovative, with the aim of transforming fisheries governance in Jember into a more inclusive, effective, and sustainable system.

LITERATURE REVIEW

The increasing complexity of public policy issues, especially in resource management sectors like fisheries, necessitates governance models that transcend traditional top-down bureaucratic paradigms. The collaborative governance framework has emerged as a compelling response to these challenges, promoting shared authority, participatory processes, and adaptive solutions. In the context of fisheries governance in Jember Regency, Indonesia, this model is particularly relevant due to the multifaceted roles played by government, private sector, community organizations, and local communities. This literature review aims to critically examine theoretical foundations and prior studies relevant to multi-actor collaboration in governance, identify existing research gaps, and justify the contribution of this study to the broader field of administrative science and collaborative public management.

2.1 Theoretical Foundations of Collaborative Governance

Collaborative governance, as conceptualized by Ansell and Gash (2008), refers to a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative. This model presupposes that no single entity possesses sufficient authority or resources to address complex policy problems effectively. Hence, governance must involve a cross-sectoral interaction that fosters mutual trust, joint ownership of outcomes, and shared responsibility.

The key components of collaborative governance include initial conditions (e.g., power imbalances, historical conflicts), institutional design (e.g., rules of engagement), leadership (particularly facilitative leadership), and the iterative collaborative process (dialogue, trust-building, commitment). Additionally, other scholars have highlighted complementary principles such as adaptive management (Folke et al., 2005), accountability (Emerson & Nabatchi, 2015), and network interdependence (Rhodes, 2016), which provide both structural and behavioral conditions for effective governance.

This theoretical paradigm aligns with the New Public Service (NPS) perspective, which emphasizes democratic engagement, citizen empowerment, and co-production of public goods (Denhardt & Denhardt, 2015). In contrast to the efficiency-oriented logic of New Public Management (NPM), NPS and collaborative governance prioritize normative values such as inclusion, transparency, and sustainability. In the context of fisheries governance, this means that resource users—fishers, aquaculture farmers, cooperatives—should not merely be treated as policy targets but as co-creators of governance systems.

2.2 Prior Research on Multi-Actor Collaboration in Fisheries

The collaborative governance approach has been applied in various studies on natural resource and fisheries management, each demonstrating varying degrees of success. Yusuf (2016) examined institutional arrangements in freshwater fish farming groups (Pokdakan) in Banyumas, highlighting the critical role of governmental support and political will in strengthening food security and agribusiness development. His findings underscored the importance of local entrepreneurship and bottom-up initiatives.

Similarly, Harte (2017) explored collaborative research frameworks in New Zealand's fisheries management, emphasizing egalitarian stakeholder involvement to balance ecological sustainability with economic needs. Harte's research revealed that capacity-building among fisher communities was vital in achieving sustainable harvests and participatory governance.

In another study, Nopriono and Suswanta (2019) investigated collaborative governance practices in Kulon Progo Regency, where institutional arrangements led to measurable improvements in productivity and income. They utilized Ansell and Gash's model to demonstrate the importance of facilitative leadership and institutional trust. However, this study focused on an already-functioning collaboration model and did not address how such models could be adapted to regions where collaboration is nascent or constrained by systemic issues.

Arrozaaq et al. (2020) applied Social Network Analysis to identify communication inefficiencies in Ambon's aquaculture governance. They found that intra-organizational collaboration was often fragmented, suggesting the need for improved information flows and centralized coordination actors. While valuable, this study was limited to internal bureaucratic structures and did not encompass broader stakeholder networks.

These studies provide rich insights into the application of collaborative governance in fisheries; however, they predominantly examine operational aspects of collaboration or evaluate existing frameworks without proposing adaptable models that address local socio-political dynamics.

2.3 Identified Research Gaps

Despite the proliferation of studies on collaborative governance in natural resources, several gaps remain:

a. **Local Adaptation and Contextualization:** Most studies adopt a normative framework without sufficiently addressing how collaborative governance can be adapted to specific socio-political environments, especially in rural or semi-rural contexts where formal governance structures are weak and community participation is historically low.

b. **Experimental Policymaking and Feedback Loops:** Few studies incorporate experimental or data-driven approaches in designing and iterating collaborative governance policies. The absence of feedback mechanisms limits the ability to adjust strategies dynamically.
c. **Community Empowerment in Practice:** Although many studies advocate for community participation, empirical evidence on how participatory practices translate into improved governance outcomes remains scarce. In particular, how local knowledge and indigenous practices are integrated into formal governance structures is under-explored.
d. **Integration of Private Sector Actors:** While the role of government and civil society is often emphasized, the integration of private actors—such as agribusiness firms or financial institutions—into collaborative governance frameworks is insufficiently theorized and tested, especially in contexts where such actors play dominant roles in economic activities.

2.4 Theoretical and Practical Contributions of the Current Study

This study by Sugiyarto seeks to bridge these gaps by proposing a model of collaborative governance in fisheries that is explicitly adapted to the local dynamics of Jember Regency. By employing a phenomenological qualitative method, it captures the lived experiences, perceptions, and motivations of various stakeholders involved in freshwater fish farming initiatives, particularly in the innovative "One House One Pond" program using the biofloc system.

Theoretically, the study refines the collaborative governance framework by integrating adaptive management strategies and emphasizing data-driven policy experimentation. It argues that collaborative governance should not be a static set of principles but must be flexible enough to respond to local conditions, including infrastructural constraints, social capital variances, and power asymmetries.

Practically, this study contributes a model that can be applied in other districts with similar socio-economic profiles, offering detailed mechanisms for institutional design, stakeholder mapping, role distribution, and feedback systems. It also emphasizes the integration of private actors and development banks (e.g., BRI) as co-drivers of policy innovation—something rarely addressed in previous literature.

In conclusion, this literature review establishes a robust theoretical and empirical foundation for understanding multi-actor collaboration in fisheries governance while identifying significant research gaps. The current study contributes by offering a locally grounded yet theoretically informed model that advances both the academic discourse on collaborative governance and the practical implementation of inclusive and sustainable fisheries management.

METHODS

This study used a qualitative methodology with a phenomenological approach to explore the experiences and perspectives of various actors involved in multi-stakeholder fisheries governance in Jember Regency, Indonesia. The phenomenological perspective was chosen to understand how meaning is constructed through collaboration among public, private, and community actors in complex governance settings. It enabled the researcher to capture how participants perceive and engage in collaborative processes within their real-life social contexts.

Designed as an exploratory-descriptive study grounded in interpretivism, the research focused on describing and interpreting how collaborative governance takes shape and evolves in the fisheries sector. Rather than measuring outcomes quantitatively, the study emphasized the subjective experiences and institutional dynamics that influence policy implementation. This approach allowed for a deeper understanding of the values and interactions driving cooperation among stakeholders.

The research centered on the freshwater aquaculture sector in Jember, particularly the "One House One Biofloc Pond" program initiated by PT Timur Mandiri Akuakultur. This initiative connects government agencies, private companies, BUMDes, local communities, and financial institutions in efforts to improve fishery productivity and ecological sustainability. The program was selected as a case study for its relevance in illustrating local-level collaborative innovation and institutional challenges.

The main unit of analysis was the institutional network involved in fisheries governance. This included actors from local government, PT Timur Mandiri Akuakultur, BUMDes leaders, fish farmers, and representatives from Bank Rakyat Indonesia. Informants were selected purposively based on their active roles, knowledge, or influence in the program, with additional participants identified through snowball sampling. The goal was to gather insights from those directly involved in designing, implementing, or supporting collaborative efforts in the field.

RESULTS AND DISCUSSION

This research investigates the dynamics of multi-actor collaboration in fisheries governance in Jember Regency, East Java. The study addresses the complexity of cross-sector interactions by using a phenomenological approach to uncover the contextual barriers, institutional weaknesses, and coordination gaps among stakeholders. The empirical findings are analyzed through the lens of collaborative governance theory, particularly the framework developed by Ansell and Gash (2008), which encompasses four central dimensions: starting conditions, institutional design, facilitative leadership, and the collaborative process.

4.1 Starting Conditions: Structural Imbalances and Policy Uncertainty

The initial conditions within Jember's fisheries governance landscape are marked by notable asymmetries in actor capacities. Small-scale fishers typically operate under severe constraints in terms of financial capital, access to modern technology, and formal representation in decision-making forums. In contrast, large-scale private enterprises exert disproportionate influence over policy formulation and resource allocation.

Moreover, the legacy of past conflicts between communities and governmental bodies has cultivated a deep sense of mistrust. This distrust undermines collaborative efforts, particularly when government interventions are perceived as top-down or politically motivated. Compounding this problem is the implementation of experimental policies lacking empirical support, which has contributed to confusion and policy volatility. These trial-and-error approaches to regulation diminish actor confidence and reinforce the fragmentation of collaborative platforms.

4.2 Institutional Design: Fragmentation and Lack of Procedural Clarity

The institutional frameworks underpinning fisheries governance in Jember remain underdeveloped. There is no universally agreed-upon protocol for defining roles, responsibilities, or the scope of stakeholder involvement. Institutional fragmentation is reflected in overlapping mandates, poorly articulated legal instruments, and ad hoc coordination structures.

The research found that collaborative efforts frequently falter due to the absence of integrated monitoring systems and performance benchmarks. Institutional inefficiency is further exacerbated by inconsistent interagency communication and insufficient legal harmonization between local and national regulations. The absence of clear rules of engagement has hindered the consolidation of long-term strategic plans for sustainable fisheries governance.

4.3 Facilitative Leadership: The Missing Mediator

Effective collaborative governance depends significantly on the presence of leadership that can bridge institutional divides and foster mutual trust. In the context of Jember, the lack of credible facilitative leadership has impeded conflict resolution and delayed consensus-building processes.

The research identifies leadership weaknesses in mediating between competing stakeholder agendas. Leadership structures tend to be overly bureaucratic, lacking agility in managing crises such as environmental shocks, declining fish stocks, or community unrest. As a result, trust among stakeholders remains low, particularly between civil society actors and government agencies.

4.4 Collaborative Process: Challenges of Building Trust and Achieving 'Small Wins'

One of the key barriers to collaboration in Jember's fisheries governance is the failure to generate quick, tangible outcomes—what Ansell and Gash term "small wins"—which are essential for building momentum and trust in collaborative frameworks. Frequent policy reversals, coupled with unclear accountability mechanisms, discourage consistent participation.

Despite these constraints, the research identifies efforts to create feedback loops through workshops and community meetings. However, these mechanisms often lack continuity and follow-up evaluation. The absence of routine performance monitoring and shared learning processes hinders the institutionalization of best practices, making the collaborative process unstable and reactive rather than strategic and proactive.

4.5 The Existing Model: Empirical Diagnosis of Systemic Weakness

The existing collaboration model, based on partnerships between local governments, village-owned enterprises (BUMDes), private firms (such as PT Timur Mandiri Akuakultur), and financial institutions (e.g., BRI), highlights both potential and pitfalls. The empirical data point to productive cooperation in specific initiatives—most notably the "One House One Biofloc Pond" program—aimed at increasing aquaculture productivity through efficient water use and low fish mortality rates.

However, the broader model lacks systemic integration. Stakeholder roles are inconsistently defined, and there is no central coordinating body. Infrastructural limitations—such as outdated fishing gear, inadequate storage facilities, and poor transportation networks—continue to impede scalability. Moreover, limited human resource capacity restricts innovation and hinders effective knowledge dissemination throughout the fisheries community.

4.6 Recommended Model: A Structured and Adaptive Collaboration Framework

In response to these challenges, the research puts forward a refined model of multi-actor collaboration that integrates empirical findings with the theoretical framework of collaborative governance. This model is built upon several interrelated components that together form a comprehensive approach to improving fisheries governance. At its core, the model emphasizes the importance of inclusive stakeholder mapping to ensure that representation within the governance process reflects the diversity of interests and actors involved. This inclusive approach is complemented by the development of policies that are informed by reliable and timely data, aiming to reduce uncertainty and improve the precision of decision-making.

Furthermore, the model incorporates adaptive management strategies that allow governance systems to remain flexible and responsive to shifting environmental and economic conditions. In this context, leadership plays a pivotal role; hence, the model calls for a form of facilitative leadership that can effectively mediate

between conflicting interests and foster cooperation. To support the institutional foundations of collaboration, the model stresses the need for formalized institutional design that provides legal certainty and procedural clarity, thereby minimizing ambiguities in roles and responsibilities.

Finally, the model integrates continuous monitoring and evaluation as a core mechanism for institutional learning and the consolidation of best practices. Through this structure, the refined model extends the collaborative governance paradigm by embedding adaptive governance principles, thereby enhancing the system's ability to adjust strategies in response to the dynamic nature of socio-ecological systems.

4.7 Theoretical Implications: Advancing Collaborative Governance Theory

The research contributes theoretical novelty to the collaborative governance literature in several ways. First, it emphasizes the role of experimental policy environments and their unintended consequences on stakeholder trust and engagement. Second, it expands the institutional design dimension by demonstrating how systemic fragmentation can be empirically diagnosed and strategically addressed.

Third, the model operationalizes adaptive governance as a dynamic component of the collaborative process. This perspective allows for iterative policy-making based on real-time data and multi-actor feedback. In doing so, the study offers a pathway for applying collaborative governance theory in highly volatile, resource-constrained settings like local fisheries sectors in developing countries.

4.8 Practical Implications: Toward Sustainable Fisheries Governance

From a practical standpoint, the proposed collaboration model offers a roadmap for restructuring governance in Jember's fisheries sector. The focus on community empowerment, capacity-building, and cross-sector investment paves the way for achieving food security, economic resilience, and environmental sustainability. The integration of biofloc technology, institutional learning mechanisms, and inclusive policy dialogue represents a promising foundation for long-term development. Furthermore, establishing localized governance platforms—such as fisheries councils or multistakeholder forums—can provide continuity and stability to collaborative efforts.

CONCLUSION

This study has examined the dynamics and implications of a multi-actor collaborative governance model for sustainable fisheries management in Jember Regency, Indonesia. Employing a qualitative phenomenological approach, the research uncovered the structural, institutional, and relational challenges facing fisheries governance, while also identifying practical innovations such as the "One House, One Biofloc Pond" program. The findings reveal that sustainable improvements in freshwater aquaculture are contingent upon inclusive stakeholder engagement, context-sensitive institutional design, and adaptive policy experimentation.

The study effectively addressed the research questions by demonstrating how collaborative governance, when properly structured, can overcome entrenched fragmentation and low community participation. Through empirical analysis, it was found that successful collaboration depends not only on stakeholder diversity but also on the presence of facilitative leadership, transparent role delineation, and iterative learning mechanisms. The refined model proposed by this study enhances the theoretical framework of collaborative governance by incorporating adaptive management strategies and emphasizing local institutional ecosystems.

From a theoretical perspective, the study contributes to the literature by extending Ansell and Gash's model with empirical insights into context-driven collaboration, experimental policymaking, and trust-building in resource-constrained environments. Practically, it offers a replicable model of governance that integrates private sector participation, community empowerment, and data-informed decision-making to foster ecological and socio-economic sustainability.

In conclusion, the research demonstrates that a structured, adaptive, and participatory approach to fisheries governance can effectively address complex public policy challenges. The study recommends institutionalizing collaborative platforms, strengthening local capacities, and embedding feedback loops in governance processes to ensure long-term resilience. These findings not only inform future policy interventions in Jember but also provide broader implications for sustainable fisheries governance in similar rural and semi-rural contexts globally.

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