

Institutional Dualism in Community-Based Octopus Fisheries: Interactions Between Customary Governance and Economic Institutions in Wakatobi, Indonesia

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ARTICLE INFO

Keywords: Customary Governance, Economic Institutions, Institutional Dualism, Community-Based Fisheries, Wakatobi

Received : 15 June

Revised : 20 July

Accepted: 31 August

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ABSTRACT

This study examines institutional dualism between customary governance and economic institutions in community-based octopus fisheries in Wakatobi, Indonesia. Using an exploratory qualitative case study, interviews, field observations, documentation, and institutional records were analyzed in NVivo through open coding and thematic analysis. Findings show that Parimpari, deliberation, social monitoring, and customary sanctions regulate access and collective compliance, while financing, marketing, and price relations remain largely buyer-mediated. The two domains are functionally connected but weakly integrated in decision-making, information exchange, and market coordination. Fisher collectives, transparent market information, diversified finance, and collective marketing are identified as potential interfaces for stronger coordination without displacing customary authority. The study demonstrates how resource governance and economic exchange can coexist under distinct institutional rules and actors

INTRODUCTION

Small-scale fisheries (SSFs) are governed not only by ecological conditions and fishing practices but also by institutions that define access, authority, exchange, and the distribution of economic opportunities. In many coastal communities, locally embedded rules coexist with market institutions that organize finance, purchasing, and product distribution. Understanding how these institutional domains interact is therefore important for explaining how community-based fisheries function in practice (Béné et al., 2016; Chuenpagdee & Jentoft, 2018; North, 1991).

Octopus fisheries provide a useful setting for examining this institutional interaction because they combine community-based resource stewardship with commercially valuable production. Periodic closures and locally recognized access rules can regulate harvesting, while fishers simultaneously depend on financing, first-sale arrangements, product quality requirements, market access, and bargaining relationships (Indrabudi et al., 2025; Sauer et al., 2021; Willer et al., 2023). The same fishery can therefore be governed by different institutional logics at the resource and market levels.

In Indonesia, fisheries governance combines formal policy with decentralized and community-based practices. Participatory octopus governance and customary open-close systems demonstrate the continuing importance of local authority in regulating resource use. Evidence from Banggai Laut, Wakatobi, and South Sulawesi also indicates that local institutions increasingly interact with fisher organizations, buyers, government agencies, and other formal actors (Dudayev et al., 2023; Hasuba et al., 2025; Isman et al., 2025; Jumiati et al., 2024; Tarigan et al., 2019).

Despite this institutional plurality, the literature often treats resource governance and fishers' economic organization as separate analytical problems. Governance studies emphasize rules, participation, legitimacy, monitoring, and compliance, whereas socioeconomic and value-chain studies emphasize financing, market access, price formation, intermediary dependence, and bargaining power (Dudayev et al., 2023; Gereffi et al., 2005; Indrabudi et al., 2025; Jumiati, 2012). This separation leaves an important question unresolved: how do customary governance arrangements interact with the economic institutions through which fishers finance production and sell their catch?

Accordingly, this study examines the interaction between customary governance and fishers' economic institutions in community-based octopus fisheries in Wakatobi. It addresses three questions: how customary institutions organize access, resource-use rules, monitoring, and collective compliance; how economic institutions shape financing, market access, price formation, and value distribution; and where the principal institutional interfaces or gaps occur between these two domains.

The study contributes empirically by documenting the functional division between customary resource governance and market-oriented economic institutions in a Wakatobi octopus fishery. Conceptually, it uses institutional dualism to explain how two domains can be connected through the same production system while remaining governed by different rules, actors, decision

rights, and accountability mechanisms. This perspective draws on institutional theory, common-pool resource governance, embeddedness, and value-chain governance (Gereffi et al., 2005; Granovetter, 1985; North, 1991; Ostrom, 2010).

LITERATURE REVIEW

Customary Governance and Common-Pool Resource Institutions

Institutions shape who may access resources, how collective rules are formulated, and how compliance is monitored and enforced (North, 1991; Ostrom, 2010). In small-scale fisheries, locally legitimate rules, collective-choice arrangements, monitoring, and socially recognized authority can sustain community-based governance when they are aligned with local ecological knowledge and institutional legitimacy (Chuenpagdee & Jentoft, 2018; Ostrom, 2010). Indonesian evidence further shows that participatory governance and customary practices remain important where local authority is recognized and linked to formal actors rather than displaced by them (Dudayev et al., 2023; Jumiati et al., 2024; Nakamura et al., 2021).

Economic Institutions, Embeddedness, and Value-Chain Governance

Economic exchange is also institutionally organized. Informal relationships may reduce uncertainty and transaction costs, yet they may simultaneously reproduce unequal bargaining positions when finance, information, and market access are concentrated among intermediary actors (Granovetter, 1985; North, 1991). Value-chain governance theory emphasizes that actors controlling market access, coordination, and information can exercise disproportionate influence over transaction conditions and value distribution (Gereffi et al., 2005; Ponte et al., 2019). Evidence from fisheries and agricultural value chains in Indonesia shows that intermediary dependence, limited financing alternatives, long marketing channels, and asymmetric information can weaken producer bargaining power, whereas social capital can facilitate reciprocity, informal credit, and information exchange without necessarily eliminating structural inequality (Indrabudi et al., 2025; Irna et al., 2026; Jumiati, 2012; Jumiati et al., 2026).

Institutional Dualism and Institutional Interaction

This study uses institutional dualism to describe a condition in which resource-use governance and economic exchange are functionally connected but organized through different rules, actors, and decision processes. Customary institutions may define access, timing, monitoring, and compliance, while economic institutions organize finance, purchasing, marketing, information, and price relations. Institutional dualism therefore does not imply that the two domains are isolated. Rather, it highlights their coexistence and the possibility that coordination remains incomplete at the points where resource decisions meet market transactions. This interpretation is consistent with North's (1991) emphasis on institutions as rules of interaction, Ostrom's (2010) analysis of collective governance, Granovetter's (1985) concept of embedded economic action, and value-chain research on control over information, coordination, and market access (Gereffi et al., 2005; Ponte et al., 2019).

METHODOLOGY

Study Design and Data Sources

This exploratory qualitative case study was conducted in a customary-based octopus-fishing community in Wakatobi, Southeast Sulawesi, Indonesia. Data were obtained through in-depth interviews, field observations, documentation, and review of customary and economic institutional records. Informants represented customary leaders, fishers, buyers or collectors, fisher-group administrators, and village-government representatives, capturing positions involved in resource governance, production, finance, marketing, and local administration.

The available study record does not preserve complete metadata on participant numbers by category, recruitment, fieldwork dates, interview duration, saturation, ethics documentation, or NVivo version. These details were not reconstructed retrospectively; this limitation is reported explicitly because it constrains procedural replicability.

Analytical Strategy

Qualitative material was analyzed in NVivo using open coding, thematic categorization, matrix coding queries, and word-frequency analysis. Descriptive codes on rules, actors, monitoring, finance, marketing, prices, market access, and collective organization were developed into three higher-order analytical categories: customary governance, economic institutions, and institutional interfaces. NVivo supported transparent data management and retrieval rather than replacing researcher interpretation (Maher et al., 2018).

NVivo outputs were treated as descriptive analytical aids, not inferential statistics. Word frequency guided closer reading, while node links and matrix outputs were interpreted as thematic association rather than numerical relationship strength. Accordingly, the analysis reports institutional patterns without claiming causal effects, population prevalence, or statistically significant change (Maher et al., 2018). Figures 1-3 retain the original NVivo outputs to make the analytical trail visible.

Analytical Definitions and Evidence Boundaries

To improve analytical transparency, empirical claims were matched to appropriate qualitative evidence and explicit reporting boundaries (Table 1). Because the source material lacks longitudinal catch, biomass, price, income, and quantified coding data, the study does not infer causal ecological or economic effects. Instead, the analysis focuses on institutional functions, recurring interaction patterns, and identified coordination gaps.

Table 1. Evidence-to-claim matrix used in the revised analysis.

Analytical theme	Pattern represented in the study material	Institutional interpretation	Reporting boundary
Parimpari access rules	Open-close timing and location are organized through collective agreements.	Locally legitimate access and resource-use governance.	No causal estimate of biomass or catch change.

Analytical theme	Pattern represented in the study material	Institutional interpretation	Reporting boundary
Deliberation and compliance	Rules are described as collectively discussed and socially accepted.	Procedural legitimacy and collective-choice capacity.	Participation and compliance are not quantified.
Monitoring and sanctions	Social monitoring, reprimands, disapproval, and access restrictions are described as enforcement mechanisms.	Community-based monitoring and socially embedded enforcement.	Frequency and deterrent effect of sanctions are not measured.
Buyer-mediated finance and marketing	Buyers or collectors are described as purchasing catch and providing operational inputs or finance.	Bundled market-and-finance relationship consistent with patron-client dependence.	No contract, loan, or transaction panel is available.
Fisher groups and cooperatives	Collective organizations are described as having limited marketing and financing functions.	Weak collective economic coordination.	Organizational performance is not benchmarked quantitatively.
Price and bargaining position	Limited market alternatives and buyer influence over first-sale prices are recurring themes.	Price-taking vulnerability and asymmetric market power.	No longitudinal price series or counterfactual price is available.

Note. The matrix distinguishes qualitative institutional interpretation from ecological, economic, or causal claims that would require additional quantitative or longitudinal evidence.

RESEARCH RESULTS

Customary Governance of Octopus Resource Use

The study material portrays octopus fishing in Wakatobi as embedded in local social and cultural institutions. Customary governance defines expectations about access, timing, rule-making, monitoring, and responses to non-compliance. This pattern is consistent with common-pool resource theory and South Sulawesi evidence showing that legitimate local institutions can remain central when coordinated with formal actors (Jumiati et al., 2024; Ostrom, 2010).



Figure 1. NVivo word-frequency visualization of recurring institutional vocabulary in the coded material.

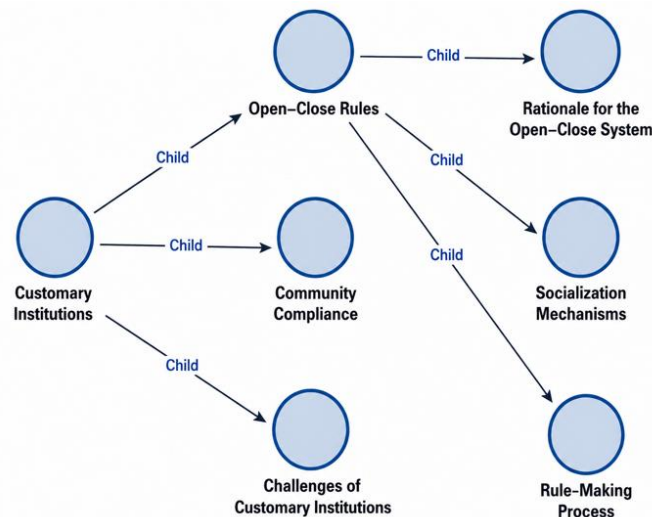


Figure 2. NVivo coding hierarchy for customary institutions and open-close governance themes.

Note. 'Child' is the NVivo hierarchy label linking parent and child nodes; it does not indicate relationship strength, direction, or statistical significance.

The word-frequency output highlights recurring vocabulary concerning fishers, cooperation, institutions, regulations, customary governance, rules, economy, and community. It is used only to guide thematic reading; substantive interpretation remains grounded in coded context and transparent coding decisions (Maher et al., 2018).

Parimpari is the central access-governance mechanism identified in the customary domain. It regulates fishing timing and designated areas through collectively recognized open-close arrangements. The evidence supports an interpretation of local legitimacy and organized restraint but does not establish the magnitude of ecological recovery or catch change. Comparable Indonesian studies likewise emphasize legitimacy, participation, compliance, and institutional support in periodic-closure systems (Dudayev et al., 2023; Hasuba et al., 2025; Jumiati et al., 2024).

Decision-making is described as deliberative, with customary leaders, fishers, and community members contributing to rule recognition. Social monitoring includes reprimands, social disapproval, and restrictions on fishing access. These mechanisms show how compliance is embedded in everyday social relations and resemble collective-choice and monitoring principles described in common-pool resource scholarship (Jumiati et al., 2024; Ostrom, 2010).

Trust, solidarity, and kinship are repeatedly associated with rule observance and cooperation. Such social capital can lower coordination costs and support information sharing and informal agreements (Granovetter, 1985; Jumiati et al., 2026). Yet customary governance remains concentrated on access and stewardship rather than marketing, finance, price negotiation, or benefit distribution, illustrating a functional boundary between resource and economic institutions (Akbar et al., 2024; Jumiati et al., 2024).

The NVivo hierarchy groups customary-institution coding around Open-Close Rules, Community Compliance, and Challenges of Customary Institutions,

with subsidiary themes on rationale, socialization, and rule-making. These links represent coding structure rather than causal strength (Maher et al., 2018).

Overall, the customary domain shows comparatively developed resource-use governance but a narrower economic mandate. This is a qualitative comparison of institutional functions, not a quantified ranking of effectiveness (Akbar et al., 2024; Jumiati et al., 2024).

Fishers' Economic Institutions and Market Dependence

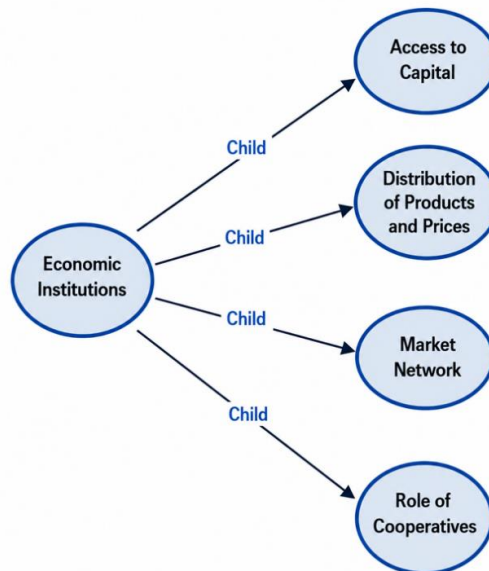


Figure 3. NVivo coding hierarchy for fishers' economic institutions.

Note. 'Child' is the NVivo hierarchy label. The diagram shows coding organization only and is not evidence that one economic relationship is stronger than another.

The economic domain is organized through fisher groups, informal financing, and buyer or collector networks. These arrangements enable production and sales but do not consistently provide independent market access or collective bargaining. Similar constraints arise where patron-client finance, long marketing chains, and information asymmetry tie working capital to specific outlets and weaken producer bargaining (Indrabudi et al., 2025; Irna et al., 2026; Jumiati, 2012).

The economic coding hierarchy groups access to capital, product distribution and prices, market networks, and cooperatives. These themes align with value-chain research in which control over information, coordination, and market access shapes the distribution of power and value (Gereffi et al., 2005; Irna et al., 2026; Ponte et al., 2019).

Buyers occupy a central position because purchasing and operational support are often bundled. Collectors may provide outlets, fuel, supplies, or short-term capital, linking access to production inputs with access to markets. This pattern is consistent with patron-client dependence, although the study cannot estimate debt intensity, contract terms, or prevalence. Comparable evidence from East Java and South Sulawesi identifies similar intermediary dependence (Indrabudi et al., 2025; Irna et al., 2026; Jumiati, 2012).

Price formation is another recurring concern. Limited buyer alternatives and weak collective marketing reduce fishers' room to negotiate first-sale prices,

producing price-taking vulnerability rather than a measured price effect. Information asymmetry and restricted finance can reinforce this position, while trusted networks may improve information exchange without eliminating structural inequality (Irna et al., 2026; Jumiati et al., 2026). Fisher groups also remain limited in independent finance, aggregation, collective marketing, and multi-buyer negotiation (Gereffi et al., 2005; Jumiati, 2012).

Buyer-mediated relationships also provide liquidity, inputs, and market outlets. Their institutional effect is therefore dual: they reduce short-term transaction constraints while potentially reinforcing dependence and unequal bargaining, consistent with institutional theory and Indonesian octopus-fishery evidence (Indrabudi et al., 2025; North, 1991).

Institutional Dualism Between Resource Governance and Value Distribution

Customary and economic institutions are connected through the same fishery but perform different functions. Customary governance organizes rules, access, monitoring, and compliance; economic institutions organize finance, purchase, distribution, and price relations. Their connection is functional rather than institutionally integrated, a coordination problem also identified in South Sulawesi institutional studies (Akbar et al., 2024; Jumiati et al., 2024).

This division constitutes institutional dualism: one domain governs harvest conditions, while another governs how harvest is financed, sold, and converted into income. The study did not identify a routine mechanism connecting customary decisions to collective marketing, diversified finance, transparent price information, or negotiated benefit sharing. Comparable supply-chain and fisheries studies likewise identify weak cross-institutional coordination as a source of intermediary dependence (Irna et al., 2026; Jumiati et al., 2024).

Table 2. Functional division between customary governance and economic institutions.

Dimension	Customary governance	Economic institutions	Observed interface gap
Resource access	Defines open-close timing and fishing areas through Parimpari.	Responds to available catch and market demand.	Resource decisions are not routinely linked to market planning.
Decision-making	Community deliberation and customary authority.	Individual or buyer-mediated transactions; limited collective negotiation.	No standing joint forum for resource and market decisions is identified.
Monitoring	Social monitoring and customary sanctions.	Transaction oversight is largely relational and informal.	Ecological compliance information is not systematically connected to sales information.
Finance	Not a principal customary function.	Operational support may come through buyers; independent finance is limited.	No institutional mechanism links stewardship performance to diversified finance.

Dimension	Customary governance	Economic institutions	Observed interface gap
Marketing and price	Outside the core customary mandate.	Buyer/collector networks dominate first-sale access.	No collective price-discovery or multi-buyer mechanism is identified.
Benefit distribution	Resource rules apply collectively.	Economic returns depend on market relationships and bargaining position.	Collective stewardship and economic benefit distribution remain institutionally separate.

Note. The table summarizes institutional functions described in the qualitative material; it does not imply that one domain is statistically stronger than another.

The principal finding is therefore a patterned separation between resource governance and economic exchange. Customary institutions regulate when, where, and under what social rules harvesting occurs, whereas market actors and economic relationships largely determine how production is financed, sold, and priced. The interaction between these domains is visible, but routine mechanisms for sharing information, coordinating decisions, and strengthening collective bargaining remain limited.

Institutional Interfaces for Greater Coordination

The proposed integration framework is interpretive and proposition-generating rather than an empirically validated causal pathway. It identifies the principal interfaces needed to connect customary resource governance with economic organization, drawing on evidence concerning organizational capacity, fisheries co-governance, and stakeholder coordination (Akbar et al., 2024; Ismail et al., 2026; Jumiati et al., 2024).

The framework retains customary authority over Parimpari, access rules, and community monitoring, while fisher groups or cooperatives act as bridging organizations for aggregation, market information, collective marketing, and diversified finance. Government and external actors can support legal recognition, technical capacity, quality systems, finance, and market connections without replacing community decision rights (Akbar et al., 2024; Irna et al., 2026; Ismail et al., 2026; Jumiati et al., 2024; Jumiati et al., 2026).

Three principles distinguish this interface approach: explicit decision rights, traceable information and benefit flows, and practical criteria for assessing coordination. Closure calendars, landing and quality records, market offers, financing terms, and sales proceeds need to move across institutional boundaries if interaction is to become more transparent and less dependent on informal mediation.

Table 3. Proposed institutional interface mechanisms, decision rights, flows, and assessment criteria.

Interface mechanism	Primary decision rights	Information or benefit flow	Proposed assessment criteria
Access-rule coordination	Customary institution sets Parimpari rules; public actors support recognition and policy alignment.	Closure boundaries and timing are communicated to fishers, buyers, and support agencies.	Documented rule clarity; compliance records; number of unresolved rule conflicts.

Interface mechanism	Primary decision rights	Information or benefit flow	Proposed assessment criteria
Landing, quality, and traceability protocol	Fisher collective manages records; customary institution verifies consistency with access rules.	Landing date/area, grade, quantity, and buyer information move from fishers to collective and market actors.	Share of sales with complete records; rejection or downgrade rate; traceable lots.
Collective marketing and price discovery	Fisher collective aggregates product and negotiates; individual fishers retain agreed participation rights.	Competing market offers and price information flow to fishers; sales proceeds flow back transparently.	Share sold collectively; number of active buyers; price spread; payment time.
Diversified finance	Fisher collective selects transparent financing options; finance providers set disclosed terms.	Capital flows to production without automatic exclusivity to one buyer; repayment terms are recorded.	Share of independent finance; financing cost; concentration of buyer-linked debt.
Benefit-transparency mechanism	Fisher collective records deductions, service fees, and distributions.	Price, cost, and net-return information is shared with members.	Timeliness of disclosure; member access to records; disputes over deductions or payments.
Joint review and adaptive feedback	Customary leaders, fisher representatives, and enabling public actors review agreed indicators.	Ecological observations, compliance information, market outcomes, and grievances feed into revised rules or services.	Regularity of review; decisions implemented; documented response to ecological or market signals.

Note. These are proposed criteria for subsequent empirical validation. They are not measured outcomes of the present study.

DISCUSSION

Customary Governance as a Common-Pool Resource Institution

The Wakatobi case supports the proposition that small-scale communities can organize resource use through locally legitimate rules, collective choice, and social monitoring. Parimpari resembles Ostrom's (2010) common-pool resource logic and parallels Indonesian participatory octopus governance and South Sulawesi fisheries institutions (Dudayev et al., 2023; Jumiati et al., 2024). The evidence supports an institutional interpretation, not a biological effectiveness claim, because no independent stock assessment or longitudinal catch analysis was available.

The key analytical issue is therefore not whether customary governance is 'traditional' or 'modern,' but how its authority connects to other institutions. Evidence from Sombano and Lake Tempe shows that customary or local arrangements can be strengthened through fisher-group capacity and formal institutional linkages without displacing community authority (Hasuba et al., 2025; Jumiati et al., 2024).

Trust, kinship, deliberation, and social sanctions embed resource-use decisions in social relations (Granovetter, 1985). South Sulawesi evidence similarly shows that trust and reciprocity facilitate informal loans, information

exchange, and compliance with informal agreements (Jumiati et al., 2026). However, socially embedded governance does not automatically provide specialized functions for finance, market intelligence, aggregation, certification, or price negotiation (Akbar et al., 2024; Jumiati et al., 2024).

Economic Institutions and Value-Chain Inequality

The buyer-mediated structure in Wakatobi is consistent with value-chain theory: actors controlling market access, information, and coordination can influence transaction conditions and value distribution (Gereffi et al., 2005; Ponte et al., 2019). Bundled finance and purchasing provide short-term services but may increase switching costs. Indonesian octopus fisheries and South Sulawesi marketing studies report similar patron-client relations and intermediary dependence (Indrabudi et al., 2025; Jumiati, 2012).

Comparable research reports long supply chains, price variability, patron-client finance, and limited market access in Indonesian small-scale fisheries (Indrabudi et al., 2025). Export-standard studies in Kendari and supply-chain evidence from Gowa further show that quality requirements, information control, and limited finance can weaken producers' bargaining positions (Irna et al., 2026; Jumiati, 2012; Listiani, 2013). The Wakatobi findings therefore reflect a wider problem of participating in valuable markets without controlling the institutions that determine value capture.

Periodic closures can create ecological and commercial opportunities, but sustainable resource management alone does not determine who captures additional value. That outcome depends on first-sale arrangements, quality grading, finance, aggregation, buyer competition, and market information (Dudayev et al., 2023; Gereffi et al., 2005; Irna et al., 2026; Jumiati et al., 2024; Willer et al., 2023).

Institutional Dualism and the Governance-Market Interface

Institutional dualism captures the study's central contribution: customary and economic institutions are linked through the same production system but differ in decision rights, authority, and accountability. Collective rules govern when and where octopus may be harvested, whereas market relationships largely govern financing, purchasing, information, and price formation. The analytical significance lies in the institutional boundary between these functions rather than in treating either domain as independently sufficient.

This finding also clarifies why participation in a valuable fishery does not necessarily give fishers control over the conditions of exchange. Fisheries policy and blue-justice scholarship emphasize access to resources and markets, participation, and benefit distribution (FAO, 2024; Jentoft & Chuenpagdee, 2022; Said & Chuenpagdee, 2019). In Wakatobi, customary rules provide locally legitimate resource governance, while economic transactions remain more strongly shaped by buyer-mediated finance, market access, and information.

The key institutional risk is therefore weak coordination between stewardship decisions and economic transactions. When closure decisions, landing information, financing arrangements, market offers, and price information are not routinely linked, fishers may remain dependent on

intermediaries even where customary governance is socially robust. This interpretation is consistent with evidence on intermediary dependence and weak cross-institutional coordination (Indrabudi et al., 2025; Irna et al., 2026; Jumiati et al., 2024).

From Institutional Coexistence to Institutional Coordination

The interface framework moves beyond a simple actor list by specifying how customary decisions and economic transactions could be connected. Closure calendars and customary rules require recognized communication channels, while fisher organizations require capacity for aggregation, quality assurance, price information, transparent deductions, market comparison, and non-exclusive finance (Akbar et al., 2024; Irna et al., 2026; Ismail et al., 2026).

A second requirement concerns accountability. Customary authorities retain responsibility for resource-use rules, collective economic organizations account for marketing and financial services, and government supports recognition, conflict resolution, technical assistance, finance, and market connections without replacing local authority (Ismail et al., 2026; Jumiati et al., 2024).

Coordination can be assessed through practical institutional indicators such as rule clarity, compliance records, regularity of joint review, buyer diversity, finance concentration, collective sales, access to market information, payment conditions, and member access to transaction records. These indicators translate the interaction framework into propositions that can be tested in subsequent research.

CONCLUSIONS AND RECOMMENDATIONS

This study shows that community-based octopus fisheries in Wakatobi are governed through two connected but functionally distinct institutional domains. Customary governance organizes Parimpari, access, deliberation, monitoring, and compliance, while economic institutions organize finance, purchasing, marketing, and price relations. Their coexistence creates institutional dualism because the same fishery is governed by different rules and actors at the resource and market levels.

The central finding is not that the two domains operate independently, but that their interaction is weakly institutionalized. Resource decisions are not routinely linked to market planning, ecological compliance information is not systematically connected to sales information, independent finance remains limited, and collective price discovery is weak. As a result, customary authority may be strong in resource governance while fishers remain dependent on buyer-mediated economic relationships.

The proposed interface framework identifies fisher collectives as potential bridging organizations between customary authority and economic actors. Their roles may include aggregation, market information, transparent price discovery, collective marketing, and access to diversified finance. Government and external actors should support legal recognition, capacity building, traceability, market access, and transparent financing without displacing customary decision-making.

For policy and practice, strengthening institutional coordination is more important than replacing one governance system with another. The priority is to create transparent interfaces through which customary rules, production information, financing terms, market offers, and transaction outcomes can be communicated and reviewed across actors.

FURTHER STUDY

Several limitations bound inference. This exploratory case study does not estimate the prevalence of institutional arrangements across Wakatobi. The available record also lacks complete metadata on participant numbers, recruitment, fieldwork timing, interview duration, saturation, ethics documentation, and NVivo version. In addition, no quantified network, transaction, price, or bargaining data are available. The study therefore identifies institutional patterns and interfaces but does not estimate their causal strength or prevalence (Maher et al., 2018).

Future research should test the institutional-dualism framework across Wakatobi and other Indonesian octopus fisheries using process tracing, social-network analysis, transaction data, price series, and participatory validation. Particular attention should be given to decision and information flows among customary institutions, fisher collectives, buyers, finance providers, and government actors, as well as to whether stronger interfaces improve bargaining capacity and reduce dependence on single market intermediaries.

ACKNOWLEDGMENT

The authors acknowledge the customary leaders, fishers, buyers or collectors, fisher-group administrators, and village-government representatives whose participation and local knowledge contributed to this study.

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