

Community-Driven Collaborative Governance for Sea Turtle Conservation in Coastal Tourism Areas

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ABSTRACT

Sea turtle conservation in coastal tourism areas depends not only on ecological knowledge but also on the ability of different actors to work together. This study examines community-driven collaborative governance in sea turtle conservation at Kembar Terpadu Beach, Kebumen Regency. It employed a qualitative single-case study design. Data were collected through in-depth interviews with four informants representing site management, the media team, a local resident who also operates a micro, small, and medium enterprise, and the Kebumen Regency Tourism and Culture Office. Interviews were complemented by field observation and document analysis. The findings show that collaboration emerged from community leadership and concern over turtle-egg collection and the hunting of nesting females. This initiative generated local commitment, an internal division of responsibilities, and networks with government agencies and external partners. However, the collaboration continues to rely heavily on personal relationships and has not been fully supported by stable cross-organizational roles, funding, performance data, and leadership succession. The study demonstrates that community strength provides the foundation for collaboration, while its long-term sustainability depends on transforming local initiatives into shared institutional arrangements.

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1. Introduction

Coastal tourism destinations bring together conservation, recreation, local livelihoods, safety, and competing uses of space. Their sustainability can rarely be secured by one organization because authority, knowledge, resources, and impacts are distributed across government, community managers, businesses, residents, and supporting organizations. Tourism-governance research shows that stakeholder collaboration depends on the distribution of authority, trust, learning, and capacity for joint action (Jamal & Getz, 1995; Bramwell & Lane, 2011; Waligo et al., 2013). In community-based destinations, collaboration must also provide residents with meaningful influence and a fair share of benefits rather than treating them merely as implementers (Scheyvens, 1999; Tosun, 2000; Bichler, 2021). These challenges intensify when tourism occurs on sea turtle nesting habitat because lighting, crowds, vegetation change, waste, and coastal structures can disturb nesting females and hatchlings (Mazor et al., 2013; Kamrowski et al., 2014; Mazaris et al., 2017).

Kembar Terpadu Beach is located in Tambakmulyo Village, Puring District, Kebumen Regency. The 2024 Government Agency Performance Accountability Report (Laporan Kinerja Instansi Pemerintah, LKjIP) of the Kebumen Regency Tourism and Culture Office recorded 113,504 visits, placing the site eighth among the beach and coastal destinations listed in the report (Dinas Pariwisata dan Kebudayaan Kabupaten Kebumen, 2025). At the regency level, Statistics Indonesia (Badan Pusat Statistik, BPS) Kebumen Regency recorded 3,884,348 visitors in 2025, although several destinations were reported in aggregate and therefore cannot update Kembar Terpadu's individual ranking (BPS Kabupaten Kebumen, 2026). Ecologically, Abelino et al. (2022) found a 75.75% suitability score for ecotourism-based conservation development. Beach morphology, sediment, moisture, tides, currents, and bathymetry—not climate alone—shape the nesting conditions.

Conservation at Kembar Terpadu emerged from community initiative. Managers observed egg collection and the hunting of nesting females and subsequently developed patrols, egg relocation, semi-natural incubation, education, and hatchling release as part of destination management (Parjiman, personal communication, 2026).

This shift made conservation and the local economy interdependent. Sea turtles provide the site with identity and educational value, while tourism supports food stalls, vehicle-management services, promotion, and community activities. Yet greater human activity can also reduce habitat quality. The central issue is therefore not whether tourism or conservation should prevail, but how actors manage this tension and convert it into collective action.

Research on comparable destinations reveals similar patterns. Ecotourism collaboration in developing countries is frequently constrained by sporadic interaction, divergent goals, and unequal capacities (Wondirad et al., 2020). In coastal Suriname, community support strengthened when local users gained a regular forum for discussing management actions and resource-use conflicts (Djosetro & Behagel, 2020). Wildlife-tourism research emphasizes monitoring and institutional adjustment so that tourism growth does not undermine wildlife populations or local enterprises (Mancini et al., 2020). An assessment of sea turtle conservation in São Tomé likewise found that ecological gains may create social pressures when livelihood alternatives and benefit distribution are neglected (Vieira et al., 2024). These studies show that multiple actors and numerous activities do not automatically produce sustainable governance.

Tourism-governance studies generally examine multi-stakeholder planning, destination networks, community participation, and benefit distribution (Beaumont & Dredge, 2010; Dredge, 2006; Jamal & Stronza, 2009; Nunkoo & Ramkissoon, 2012). Coastal-resource research emphasizes adaptive co-management, local leadership, social capital, and institutional fit with social-ecological systems (Armitage et al., 2009, 2011; Berkes, 2009; Cinner et al., 2012). Research specifically on Kembar Terpadu has focused on nesting-habitat suitability and community legal awareness (Abelino et al., 2022; Kartono et al., 2024). Much less is known about the causal sequence connecting ecological-economic context, collaborative drivers, internal dynamics, joint actions, impacts, and adaptation in a destination where collaboration was initiated by the community.

The Emerson et al. (2012) framework addresses this gap by treating collaboration as a dynamic system rather than a static

collection of actors. System context may generate drivers; drivers activate a collaborative governance regime; principled engagement, shared motivation, and capacity for joint action reinforce or weaken one another; collaborative actions then generate impacts that feedback through adaptation. This sequence allows the study to assess not only whether collaboration exists, but why it emerged, how it operates, and why numerous activities do not necessarily produce measurable impacts. The approach is particularly appropriate for Kembar Terpadu because leadership originated in the community, while government has mainly functioned as facilitator and resource broker.

The novelty lies in explaining how a community-initiated regime can be operationally strong yet institutionally incomplete. The study applies the complete Integrative Framework for Collaborative Governance developed by Emerson et al. (2012) to trace the causal sequence from system context and drivers to collaborative dynamics, actions, impacts, and adaptation. It also separates immediately observable activity outputs from ecological, social, economic, and institutional outcomes that require longitudinal evidence. The study therefore asks: how do system context and drivers shape collaborative dynamics, joint actions, impacts, and adaptation in the management of Kembar Terpadu Beach?

2. Method

This study used a qualitative single-case-study design. The unit of analysis was the collaborative governance regime surrounding Kembar Terpadu Beach, rather than the community organization in isolation. The case was selected because it combines a community-managed coastal destination, sea turtle nesting and conservation, and an economic space for micro, small, and medium enterprises (MSMEs). This design enabled the researchers to trace processes, actor relationships, and causal links between context, collaborative dynamics, actions, and outcomes in a real-life setting (Yin, 2018).

Primary data were collected from June to July 2026 through non-participant observation and three face-to-face interview sessions involving four informants. The joint management session involved Parjiman, a community-management leader, and Zahra, a representative of the media-conservation team; the second involved

Mrs. Turasih, a long-term resident and MSME operator; and the third involved a technical official from the Kebumen Regency Tourism and Culture Office. Community interviews took place in the Kembar Terpadu Beach area, while the government interview was conducted at the office. A subsequent community transcript described the joint management session as lasting approximately two hours. Exact durations of the other two interviews were not retained in the field records and are reported as a procedural limitation rather than reconstructed retrospectively.

Informants were selected purposively using four inclusion criteria: direct involvement in decision-making, operations, economic use, or government facilitation; knowledge of the site’s development; representation of a distinct stakeholder position; and willingness to participate for academic purposes. Parjiman represented institutional development and external relations; Zahra represented conservation records, public communication, and project coordination; Mrs. Turasih represented residents and local business operators; and the technical official represented government facilitation, monitoring, certification, and tourism data. The four participants were treated as key informants, not as a statistically representative sample.

Table 1. Informant Profile and Inclusion Rationale

Code	Stakeholder role and inclusion rationale	Relevant experience / interview setting
I1	Community-management leader: institutional development, daily governance, and external relations.	Involved since group legalization in 2015; joint face-to-face session at the beach.
I2	Media-conservation representative: records, communication, projects, and conservation activities.	Exact tenure not recorded; joint face-to-face session at the beach.

Code	Stakeholder role and inclusion rationale	Relevant experience / interview setting
I3	Resident and MSME operator: local livelihood, benefit distribution, and business experience.	Trading since approximately 2018; face-to-face session at the beach.
I4	Tourism and Culture Office technical official: facilitation, monitoring, certification, forums, and tourism data.	Exact tenure not recorded; face-to-face session at the office.

Source: Authors' field data (2026).

The semi-structured guide covered site history, role distribution, communication, trust, resources, conflict, conservation-tourism activities, benefits, constraints, and management change. Participants were informed of the academic purpose and gave verbal consent to participate and be recorded. Recordings were transcribed and cleaned without altering meaning; unclear or inaudible passages were excluded when names, figures, or factual claims could not be independently verified. The government participant is identified by position to avoid inaccurate attribution. No institutional ethics approval number was issued because the fieldwork originated as a minimal-risk course-based study and collected no sensitive personal data; this limitation is stated explicitly.

Secondary evidence included Kebumen Regency in Figures 2026, the Tourism and Culture Office's 2024 Government Agency Performance Accountability Report (Laporan Kinerja Instansi Pemerintah, LKjIP), the National Tourism Information System (Sistem Informasi Kepariwisata Nasional, Sisparnas), official regency and village reports, original studies on habitat suitability and legal awareness, and international literature on collaborative governance, coastal tourism, co-management, and wildlife conservation. Quantitative claims and institutional information were checked against primary government sources

or original research articles; discrepancies were reported rather than resolved through conjecture.

Data were analyzed using Yin's (2018) case-study approach. Interview transcripts, observation notes, official documents, and statistics were organized into a case database. The researchers then applied codes based on Emerson et al. (2012), while also identifying themes that emerged from the data. Coding results were compared and any differences were discussed until agreement was reached. Pattern matching and explanation building were used to identify causal relationships and consider alternative explanations. The findings were checked through source triangulation and negative-case analysis. Although formal member checking was not conducted, credibility was maintained through transparent documentation, researcher cross-checking, and a clear distinction between verified evidence, participant views, and researcher interpretation.

3. Results And Discussion

3.1. System Context: Ecological-Economic Tension in a Multi-Use Coastal Space

Kembar Terpadu combines nesting habitat, recreation, food stalls, parking, cultural activities, environmental education, and an evacuation route in the same space. Economic activity can therefore strengthen and threaten the destination at once. Visitors support local income, but night lighting, crowds, structures close to the shoreline, and waste can reduce habitat quality. Parjiman explained that greater lighting and human activity near the beach at night reduces the likelihood that turtles will come ashore (personal communication, 2026). This is consistent with research on altered turtle behavior and hatchling disorientation under artificial light (Mazor et al., 2013; Kamrowski et al., 2014). The ecological-economic tension is thus not merely background context; it is the principal reason cross-functional coordination is required.

The institutional context also shapes the collaborative pathway. The management organization is rooted in a farmers' group legalized in 2015 and later divided into site management, conservation, media, business, and waste-management units (Parjiman, personal communication, 2026). This structure supports daily action and limits control of collective benefits by a single individual. A technical official from the Tourism and Culture Office viewed the shared parking-contribution box and the separation of leadership from control over business space as internal strengths (personal communication, 2026). Yet site functions have expanded faster than the cross-organizational working architecture. Relationships with the village government, regency agencies, the Natural Resources Conservation Agency (Balai Konservasi Sumber Daya Alam, BKSDA), universities, and nongovernmental organizations still operate mainly through activities, visits, and projects rather than stable joint arrangements. Internal organization can therefore act, while authority and responsibility across organizations remain only partly connected.

3.2. Drivers: Community Leadership, Interdependence, and Uncertainty

Four mutually reinforcing drivers explain the emergence of collaboration. First, community leadership transformed the observation of egg collection and the hunting of nesting females into a conservation-tourism agenda. Second, consequential incentives arose because habitat failure would erode the site's identity, while declining visits would weaken local livelihoods. Third, interdependence resulted from the distribution of resources: the community holds site knowledge and labor; government holds legitimacy, training, certification, and networks; universities provide research and volunteers; and nongovernmental partners contribute expertise and programs. Fourth, uncertainty in nesting, erosion, weather, visitors, and project funding increased the need for shared learning. This combination explains why collaboration persists despite incomplete formalization (Emerson et al., 2012).

Socioeconomic conditions reinforce this causal relationship. Mrs. Turasih reported that she had traded at the site since around 2018, when only a few stalls existed, and that visitor crowds directly affected income (personal communication, 2026). Competition and

jealousy also emerge when benefits are perceived as uneven. If conservation produces only restrictions, resident support may decline; if business expansion ignores habitat, the destination's defining attraction will weaken. This supports research showing that community support depends on perceived benefit fairness, influence over decisions, and livelihood effects (Nunkoo & Ramkissoon, 2012; Bennett & Dearden, 2014). *Kembar Terpadu's* drivers therefore do not arise from perfectly aligned interests, but from recognition that different interests cannot be achieved independently.

An open network brings expertise and resources from KEHATI, TERANGI, universities, students, and government agencies. Some relationships, however, end with the project period, leaving the community responsible for daily continuity (Zahra, personal communication, 2026). Connectedness therefore expands short-term capacity but also increases the need for a coordinating node that links agendas, data, and follow-up (Berkes, 2009; Provan & Kenis, 2008).

3.3. Collaborative Governance Regime

3.3.1. Principled Engagement

Principled engagement began when managers discovered and defined shared problems: egg collection, the killing of nesting females, waste, lighting, economic needs, promotion, and limited facilities. The problem was then reframed so that turtles were understood not only as protected animals but also as the center of destination identity, education, and differentiation. This reframing connected conservation interests with economic needs without treating them as identical. In Emerson et al.'s (2012) terms, discovery and definition prepared the basis for deliberation.

Deliberation occurs through unit meetings, communication with vendors, tourism-manager forums, government visits, and discussions with the Indonesian Biodiversity Foundation (Yayasan Keanekaragaman Hayati Indonesia, KEHATI), the Indonesian Coral Reef Foundation (Yayasan Terumbu Karang Indonesia, TERANGI), and universities. Managers described internal evaluation almost weekly or every few weeks, while the technical official described approximately quarterly monitoring and cluster meetings as the principal communication mechanism (Parjiman; technical official,

personal communications, 2026). These channels allow operational problems to be discussed and external resources to enter the site.

Communication frequency, however, does not always produce documented determination. Agreements on lighting, zoning, business contributions, nest records, and partnership follow-up still depend heavily on routines and personal relationships. Processes can move quickly when key figures are present but become difficult to transfer or verify when individuals change. Research shows that deliberation becomes productive when representation is clear, information can be tested, and decisions become monitorable responsibilities (Purdy, 2012; Ulibarri, 2015). The central weakness of principled engagement is therefore not the absence of dialogue, but the gap between dialogue and traceable cross-organizational decisions.

Power asymmetry also shapes deliberative quality. Government controls program access, certification, official data, and regulatory authority; managers control daily operations and site knowledge; business operators depend economically on the site but have less formal influence. Face-to-face meetings reduce information distance but do not automatically equalize positions. When agendas and evidence are not prepared jointly, actors with formal authority or greater speaking capacity may dominate problem definition. Principled engagement therefore requires space for vendors and field workers to explain practical consequences rather than merely receive decisions (Reed, 2008; Purdy, 2012).

3.3.2. Shared Motivation

Shared motivation grows from practical commitment and community legitimacy. Patrols, egg relocation, incubation, releases, waste management, and education are repeatedly carried out by managers and residents. Government recognition through capacity building, forums, monitoring, promotion, and facilitation of National Professional Certification Agency (Badan Nasional Sertifikasi Profesi, BNSP) certification for ecotourism guides reinforces the belief that the group has the capacity and legitimacy to manage the site (technical official, personal communication, 2026). Financial practices that avoid personal receipt of collective funds further build internal legitimacy by reducing the risk of elite capture.

Trust nevertheless remains uneven. Managers perceive village and government support as not always matching their needs, whereas government views the site as relatively independent. MSME operators acknowledge economic benefits but also expect stronger promotion and report competition among vendors. These differences do not stop collaboration, but they cause shared motivation to rely on key individuals and interpersonal relationships. Such trust is vulnerable when costs rise, projects end, or leadership changes (Edelenbos & Klijn, 2007; Leach & Sabatier, 2005).

The causal relationship is clear: transparency and working together increase legitimacy; legitimacy encourages participation; yet unclear allocation of costs, benefits, and responsibilities limits the development of rule-based trust. Shared motivation is strong enough to sustain daily work, but not sufficiently institutionalized to ensure consistency across organizations and generations. The case therefore shows that a common conservation objective does not erase differences in how actors assess support, workload, and benefit distribution.

3.3.3. Capacity for Joint Action

Capacity for joint action is produced by combining structures, leadership, knowledge, and resources. The division of units enables specialization: conservation manages patrols and incubation, media manages communication, business units organize economic activity, and waste units maintain cleanliness. Ecological knowledge comes from local experience, mentoring, and research such as Abelino et al. (2022). Government and BKSDA provide training or facilities, while universities and students contribute research and field support. Because knowledge is distributed, action becomes possible when actors complement one another.

Knowledge and data, however, are not integrated. Records of nests, eggs, hatching success, releases, visitors, income, waste, training, and partnerships are not assembled in one site-performance system. The reported increase from two nests in 2025 to five in 2026, for example, comes from media-conservation operational records and is not yet supported by a complete nest log (Zahra, personal communication, 2026). Tariff information also differs between

Sisparnas and newer official accounts, showing that inter-agency data are not updated simultaneously. Because evidence is fragmented, uncertainty that should stimulate learning instead constrains evaluation.

Financing and succession impose further limits. The site charges no entrance fee and relies on voluntary vehicle-management contributions, activities, and program support. This model preserves public access and community independence but leaves funding for patrols, incubation, care, cleanliness, media, and educational facilities unstable. Managers also noted that young people participate in activities but rarely enter the core of daily management (Parjiman, personal communication, 2026). Dependence on long-standing leaders supports short-term continuity but creates risk when knowledge is not transferred. Capacity for joint action is therefore strong in basic operational skills but weak in predictable resources, documentation, standards, and succession.

Tourism-service capacity displays the same issue. Sisparnas records an information center, evacuation route, food and beverage services, and parking capacity, meaning that governance concerns not only turtles but also safety, accessibility, cleanliness, and visitor comfort. A community group cannot reasonably carry all these standards alone. When government describes the site as independent, independence should mean the ability to initiate action rather than transfer of the entire public burden to the community. A realistic allocation places site operations with managers, standards and program integration with government, knowledge support with universities, and compliance and site contributions with businesses (Eagles, 2009; Jamal & Stronza, 2009).

3.3.4. Outputs of Collaborative Actions

Collaborative dynamics generate three groups of outputs. Routine outputs include patrols, egg relocation, semi-natural incubation, waste management, vehicle organization, vendor communication, and visitor recording. Development outputs include training, guide certification, research, digital promotion, MSME product strengthening, and facility improvement. Event-based outputs include hatchling releases, cultural activities, Geofest, student visits, and public education. These groups serve different functions: routine

work protects habitat and daily services, development activities expand capacity, and events increase visibility and networks.

The causal sequence shows that principled engagement identifies problems and sets agendas; shared motivation supplies commitment; capacity for joint action supplies people, knowledge, and resources; and together they produce action. *Kembar Terpadu*'s strength lies in converting a conservation agenda into practical work without waiting for a government-designed program. This extends the application of Emerson et al. (2012) because the initial leader of the collaborative governance regime is a community organization that subsequently attracts public and nongovernmental support.

Visible outputs can nevertheless obscure the work that determines ecological success. Hatchling releases attract media attention, but more consequential indicators include patrol nights, nests found, eggs relocated, hatching rates, causes of failure, release conditions, lighting change, and business compliance with protected space. An official July 2025 report recorded 86 hatchlings from 101 eggs prepared for release in two activities, approximately 85.1%, but the figure represents one group of eggs and cannot establish a population trend (Pemerintah Kabupaten Kebumen, 2025a). Without routine indicators, activity outputs can be mistaken for conservation impact.

Collaborative outputs also do not always form an integrated program. Each activity may have its own partner, schedule, and report, while the links among patrols, promotion, business management, and habitat evaluation remain weakly specified. A broad network can therefore become a sequence of disconnected projects. Network-governance research shows that collaborative productivity depends on appropriate coordination, information exchange, and clear accountability (Provan & Kenis, 2008; Emerson & Nabatchi, 2015). In this case, actions are diverse, but partial institutionalization makes their integration inconsistent.

The distinction between routine and event-based activities also affects resource allocation. Hatchling releases and festivals provide rapid exposure, attract partners, and increase visits. Night patrols, nest recording, facility maintenance, and waste management receive

less visibility despite determining sustainability. If success is assessed mainly through the number of events, organizational effort will shift toward outputs that are easier to publicize. Evaluation should therefore treat routine work as the foundation and events as instruments for education and network building rather than substitutes for habitat management.

3.4. Collaborative Outcomes: Impacts and Adaptation

The clearest ecological outcomes are reduced egg collection and the implementation of patrols, incubation, and releases. Available evidence is not yet sufficient to conclude that turtle populations, annual nesting success, or habitat conditions have improved. The increase in nests reported by the media-conservation officer is a preliminary signal but requires longitudinal verification. The causal claim that can be made is narrower: local commitment produces protective actions, and those actions increase the opportunity to rescue eggs; long-term population effects cannot be assessed without a time series.

Social outcomes include greater awareness of turtles as protected animals, learning spaces for students, and a village identity connecting culture and conservation. Economic outcomes are visible in the continued operation of stalls and service activities, but the study has no before-and-after income data to measure magnitude. Institutional outcomes include government recognition, academic networks, guide certification, and the group's ability to organize activities. Yet because relationships depend on key individuals and project periods, institutional outcomes have not fully become inheritable interorganizational routines.

Adaptation has occurred in practice. Residents who previously used turtle eggs or turtles have shifted toward rescue and education; the organization has differentiated its units; cleanliness and electricity contributions have been evaluated; digital media are used for promotion; and conservation activities are linked to cultural events. These changes show feedback from experience to new working practices. Adaptation remains reactive, however, because changes generally follow emerging problems rather than an indicator-based evaluation cycle. The absence of shared data prevents ecological,

economic, and institutional outcomes from regularly informing subsequent decisions.

A realistic practical contribution is to strengthen existing routines rather than create a complex new institution. The Tourism and Culture Office's quarterly monitoring can be used to agree on a one-page joint work plan and indicators among managers, the village government, relevant regency agencies, and conservation actors. A simple nest log can be connected to visitor, activity, and contribution data. Lighting, cleanliness, visitor interaction, and release rules can be incorporated into internal regulations and educational materials. Succession can begin by assigning young people to records, media, guiding, and patrols rather than immediately creating another structure. These steps fit existing capacity and directly address the gap between operational action and interorganizational institutionalization.

Impacts must also be read through distribution. The continued operation of stalls and site-based jobs shows that benefits are more than symbolic, but the study cannot determine who receives the largest gains, who carries conservation costs, or whether spatial restrictions affect particular groups. This uncertainty offers a rival explanation for business conflict: disputes may reflect differences in access and returns rather than communication alone. Distinguishing aggregate benefits from their distribution avoids assuming that the presence of MSMEs automatically indicates equitable empowerment (Scheyvens, 1999; Nunkoo & Ramkissoon, 2012).

The overall causal relationship can be summarized as follows. Tension between habitat and livelihoods creates incentives and interdependence. Community leadership translates these pressures into forums and task division. Engagement, legitimacy, knowledge, and resources then generate conservation-tourism actions. Because cross-organizational rules, financing, data, and succession remain underdeveloped, actions produce outputs faster than verifiable impacts. This limitation keeps adaptation dependent on experience and key individuals. Partial institutionalization therefore connects the case's operational strength with its weakness in long-term outcomes.

Table 2. Summary of Findings Based on Emerson et al.'s Framework

Emerson dimension	Field evidence	Strength	Weakness
System context	Turtle habitat, tourism, MSMEs, group structure, government and partner networks.	Conservation identity and the local economic base reinforce one another.	Spatial pressure, lighting, data, and cross-organizational relations remain fragmented.
Drivers	Community leadership, threats to turtles, income needs, interdependence, and uncertainty.	Collaboration is driven by directly experienced problems and benefits.	Dependence on key individuals and project support.
Principled engagement	Unit meetings, vendor communication, manager forums, monitoring, and partner discussions.	Problems can be discovered and discussed directly.	Cross-organizational decisions are not consistently documented.
Shared motivation	Patrols, internal transparency, government recognition, certification, and joint activities.	Strong local commitment and group legitimacy.	Trust and perceptions of support and benefit distribution remain uneven.
Capacity for joint action	Work-unit division, local and scientific knowledge, training, volunteers, and facilities.	Basic operational capacity is established.	Limited financing, shared data, standards, and succession.
Collaborative actions	Patrols, relocation, incubation, releases, education, waste management, promotion, and events.	Diverse and recurring practical actions.	Outputs are not integrated through a single program and indicator set.

Emerson dimension	Field evidence	Strength	Weakness
Impacts and adaptation	Awareness, business opportunities, destination identity, and organizational change.	Learning and behavioral change are evident.	Long-term impacts remain unmeasured and adaptation is reactive.

Source: Authors' analysis based on Emerson et al. (2012), interviews, observation, and documents (2026).

3 Conclusion

The principal finding is that governance at Kembar Terpadu Beach is shaped by a causal relationship between ecological-economic tension and community leadership. Threats to turtle eggs and nesting females, together with residents' dependence on tourism, created incentives and interdependence. Community managers translated these conditions into work units, forums, patrols, incubation, education, business management, and partnerships. Principled engagement, shared motivation, and capacity for joint action are sufficiently strong to generate routine action. Cross-organizational rules, financing, shared data, and succession are not yet well established. Collaboration therefore produces visible outputs faster than ecological and economic impacts can be verified, while adaptation continues to depend on experience and key individuals.

The findings extend the application of Emerson et al.'s (2012) framework by showing that community actors can function as the initial conveners of collaborative governance, while government agencies assume enabling roles through institutional legitimacy, capacity building, standard setting, and accountability. The case further demonstrates that operational strength does not necessarily correspond to institutionalization: recurring joint action can coexist with weak cross-organizational rules, data, resources, and adaptive mechanisms.

Policy implications should match existing capacity. A realistic priority is to use current forums and monitoring arrangements to develop a concise annual work plan, conservation-tourism indicators,

and role allocation among managers, the village government, regency agencies, and relevant conservation actors. Strengthening nest records, activity and visitor data, lighting and visitor-interaction rules, and specific youth assignments is more urgent than creating a complex new institution.

The study has limitations. Four informants cannot represent all vendors, the village government, BKSDA, or nongovernmental partners. Interview durations were not precisely documented, formal member checking was not undertaken, and longitudinal data on nests, hatching success, habitat change, MSME income, and network structure were unavailable. Future research should broaden actor coverage and combine repeated ecological and economic measurement to test more robustly how collaborative quality affects outcomes.

Declaration of Conflicting Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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