Research Article

Transformation of Health Services in 3T (Frontier, Outermost, and Underdeveloped areas) Regions: Integration of Organizational Capabilities and Community-based Collaborative Governance Models in Raja Ampat Regency

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Abstract.

The 3T regions (frontier, outermost, and underdeveloped areas) in Indonesia face significant challenges in delivering equitable and quality healthcare services. Raja Ampat Regency, as an archipelagic region in Southwest Papua, represents a clear example of these issues. This article aims to analyze the transformation of healthcare service models by integrating organizational capabilities and community-based collaborative governance. Using a qualitative case study approach, this research explores the internal dynamics of healthcare organizations and the role of local actors in building a collaborative ecosystem. The findings reveal that strengthening adaptive organizational capacity, enhancing community involvement, and fostering cross-sector synergy are key to developing responsive and sustainable healthcare services. These insights contribute to the development of contextualized healthcare models for 3T regions.

Keywords: healthcare services, 3T regions, organizational capabilities, collaborative governance, Raja Ampat

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1. Introduction

The gap in access and quality of health services remains a strategic issue in Indonesia, especially in areas classified as 3T: frontier, outermost, and disadvantaged. Difficult geographical conditions, limited infrastructure, and unequal distribution of health workers cause people in these areas to be highly vulnerable to health problems. Raja Ampat Regency with an area of 67,379.69 km2, a population of 37,499 people, administratively has [24] districts, 4 sub-districts and 117 villages. Geographically, it consists of 4 large islands and 1,847 small islands with the following administrative boundaries: South

bordering North Seram Regency , Maluku Province, West with Central Halmahera Regency, North Maluku Province, East with Sorong City and Sorong Regency, North with the Federal State of the Republic of Palau and the Pacific Ocean. As an island region in Southwest Papua, it faces unique challenges in terms of logistics, medical transportation, and sustainability of health service programs.

Transformation of the health service model in 3T areas cannot be done with a conventional approach alone. A model is needed that is able to adapt to local characteristics, strengthen the capabilities of service organizations, and integrate collaborative community-based governance. In this context, organizational capability refers to the institutional capacity to adapt, innovate, and manage resources effectively. Meanwhile, collaborative governance emphasizes the importance of partnerships between government, communities, and non-government actors in providing public services.

This article aims to explore the process of health service transformation in Raja Ampat Regency, focusing on the integration between strengthening organizational capabilities and collaborative governance model practices. The main research question is: *How can the integration of organizational capabilities and collaborative governance models improve the effectiveness of health services in the island region classified as the 3T region ?*

Through a qualitative case study approach, this article is expected to provide theoretical and practical contributions to the development of health policies in marginal areas, as well as offering a contextual and sustainable service model.

2. Research methodology

This study uses a qualitative approach with an intrinsic case study design that aims to deeply understand the process of health service transformation in Raja Ampat Regency as a representation of the disadvantaged, outermost, and remote areas (3T). Case studies were chosen because they are able to explore complex contexts holistically, especially in situations involving social interactions, policies, and institutional dynamics. The study focused on several main islands in Raja Ampat Regency that have primary health care facilities, with key informants consisting of three groups: health service providers (10 people), local stakeholders (5 people), and service user communities (7 people). The selection of informants was carried out purposively. Data collection techniques included in-depth interviews, participant observation, and document studies,

which were conducted from January to April 2025. Data were analyzed using a thematic analysis approach according to [1] through six systematic stages. Data validity was maintained through triangulation of sources and methods, as well as member checking. This study has also obtained ethical approval from the Hasanuddin University Research Ethics Committee and upholds the principles of research ethics, including informed consent, confidentiality of informant identities, and protection of participants.

3. Results and Discussion

Raja Ampat Regency is an archipelago in the Province of Southwest Papua, Indonesia, with an area of 67,379.69 km2 *consisting* of 4 large islands and 1,847 small islands, with 35 inhabited islands (Law of the Republic of Indonesia number 26 of 2002). Inter-island transportation access depends on small ships, outboard motor boats and speed boats. Health infrastructure consists of one Regional General Hospital, 19 Community Health Centers on several large islands, and Community Health Centers and Integrated Health Posts at the village level. The majority of the community depends on the marine and tourism sectors for their livelihoods. The availability of medical personnel is limited, and the distribution of health logistics is hampered by extreme weather and geography. This area is the focus of the national program to accelerate health development in the 3T areas.

3.1. Dynamics of Organizational Capabilities in Raja Ampat Health Services

The results of the study indicate that most health care facilities in Raja Ampat Regency have a simple but adaptive organizational structure. The Head of the Health Center and health workers often have multiple functions due to limited human resources. However, there are local initiatives in building organizational capabilities, such as local context-based training, development of a simple marine referral system (boat ambulance), and limited application of long-distance communication technology (telemedicine).

Waisai Regional Public Hospital faces challenges in terms of limited medical personnel, especially specialist doctors, as well as inadequate facilities and infrastructure . This has an impact on the effectiveness of health services in the area[2].

Key drivers of organizational capability strengthening include: a) Adaptive leadership at the facility level; b) Local needs-based innovation , and c) Flexibility in resource management , despite limited funds.

This result is in line with [3] concept of *dynamic capabilities* , which emphasizes the importance of the capacity to respond to change quickly and effectively.

3.2. Multi-Party Collaboration and Community Role

There is a collaborative pattern between the District Health Office, Community Health Centers, local NGOs, traditional leaders, and community members in the provision of health services. For example, routine immunization and integrated health posts are organized together by local health cadres with support from village heads and the church.

Community participation is not only limited to service recipients, but also as *coproducers* in the health system. This shows the real implementation of community-based collaborative governance as formulated by [4] where trust, shared commitment, and communication are the foundation of collaboration.

Collaboration between local government, community, and private sector has shown positive results in the management of marine conservation areas in Raja Ampat, which can be used as a model in the Health sector. In addition, training of community health cadres has been conducted to increase local capacity in health services[6].

However, challenges arise in the form of: a) *Differences in perception of roles between actors* , *b*) *Dependence on key figures* (e.g. village heads), and c) *Unequal distribution of community capacity between islands.*

3.3. Integration as the Key to Transformation

The study found that effective health service transformation in Raja Ampat requires not only changes in structure and resources, but also *integration* of *organizational capabilities* and *collaborative governance* . When organizations are able to adapt and build trust with local communities, service models become more relevant and sustainable.

This integrative model creates a service system that is: a) *Resilient* to geographical and political challenges; b) *Responsive* to community needs; c) *Inclusive* in involving various social actors.

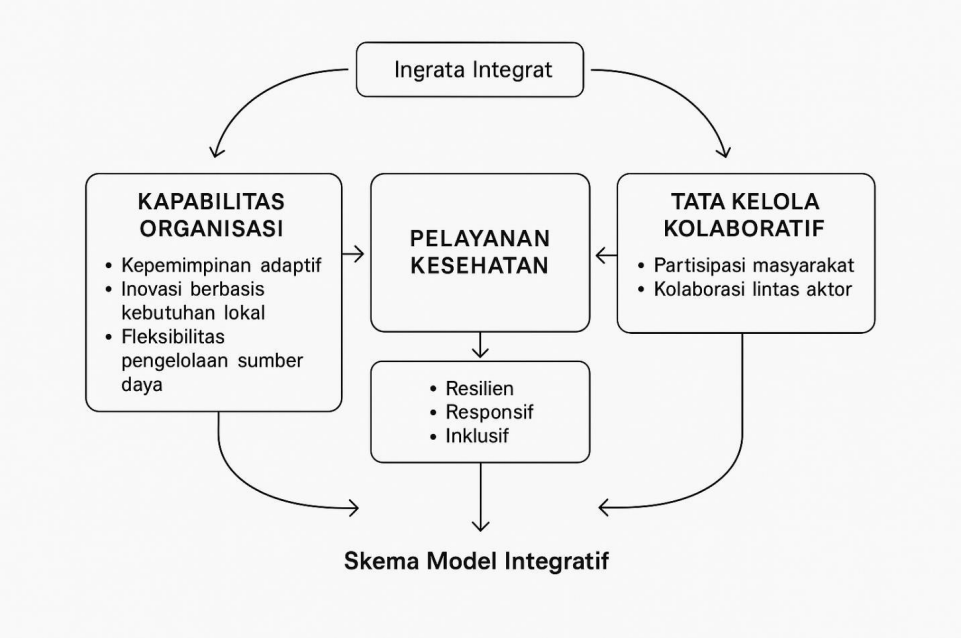

Figure 1: Schematic of the Integrative Model of Community-Based Health Services.

This Figure 1 illustrates an integrative framework in transforming health services in 3T areas such as Raja Ampat Regency. This model unites two main pillars: Organizational Capability and Community-Based Collaborative Governance , which interact dynamically.

3.3.1. Organizational Capabilities

This element reflects the internal strengths of the health service provider institution:

Adaptive Leadership : The ability of health facility leaders (e.g. heads of health centers) to respond to dynamic local conditions.

Service Innovation : Development of creative service methods to reach remote areas (e.g., sea-based services, simple telemedicine).

Flexible Resource Management : Adjusting the use of human resources and logistics according to local needs.

3.3.2. Community Based Collaborative Governance

Representing the involvement of external actors and the role of society in the service system:

Multi-stakeholder Partnership : Collaboration between local governments, traditional/religious leaders, NGOs, and the local private sector.

Community Participation : Health cadres, local leaders, and the community play an active role in planning, implementing, and evaluating services.

Social Trust : Strong social relations encourage smooth distribution of services and acceptance of health programs.

3.3.3. Integration Zone

The center point of the scheme shows *the integration zone* between the two pillars:

This is where an adaptive and contextual service model is formed , reflecting the synergy between formal systems and local socio-cultural practices.

Initiatives such as village health forums , joint cross-actor cadre training , and strengthening of community-based referral systems have emerged in this region.

Relationships Between Components: Adaptive leadership involves community participation encouraging cross-sector collaboration, which in turn enhances local organizational capabilities. This enhanced capability strengthens health transformation in the 3T region. This process is cyclical and mutually reinforcing.

3.4. Main Impact

The results of this integration are aimed at achieving: a) *Equal Access to Services* even in remote areas; b) *High Responsiveness* to local needs; c) *Sustainability of Health Programs* through participation and shared ownership.

Thus, this integrative approach not only improves the quality of services, but also strengthens the position of the community as part of the health system itself.

4. Conclusion

Transforming the health service model in 3T areas such as Raja Ampat Regency requires a contextual, integrative, and collaborative approach. This study shows that strengthening the capabilities of health service organizations, when accompanied by community-based collaborative governance practices, can create a more adaptive, responsive, and sustainable service system.

Key findings from this study include:

Organizational capabilities in the 3T region are formed through adaptive leadership, local innovation, and flexibility in resource management.

Collaborative governance encourages active community participation in the planning and implementation of health services.

The integration of these two approaches is the main foundation for transforming the health service system in island regions with structural limitations.

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