

## Research Article

# Governance Dynamics in Indonesia's Salt Industry: Evidence from Jeneponto

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**Abstract.**

This study examines the dynamics of governance in the Indonesian salt industry with a particular focus on Jeneponto Regency, one of the central salt-producing regions in Indonesia. Using a systematic qualitative literature review approach supported by NVivo-based thematic mapping, it aims to identify dominant patterns, institutional challenges, and epistemic gaps in academic discourse on salt sector governance. Two analytical tools, namely comparison by coding references and items clustered by word similarity, are used to explore the density of themes and semantic linkages among selected literature. The analysis results show that the literature focuses on technical production issues, farmer income inequality, and national policy interventions. However, the results of semantic clustering reveal deeper mismatches between the national regulatory framework and local implementation, especially regarding access to capital, distribution mechanisms, and institutional performance. This study also highlights the limited academic attention to participatory governance models, regional innovation, and bottom-up institutional strengthening, indicating a top-down policy bias in the literature and practice. The Jeneponto case shows that governance is still fragmented and asymmetric, constrained by weak institutional capacity, limited coordination between stakeholders, and weak consistency in policy implementation. This study recommends applying a systems thinking approach that integrates technical, institutional, and policy dimensions into a coherent and inclusive governance model to address these challenges. This article contributes conceptually and practically to the development of coastal resource governance and provides strategic insights for evidence-based policy reform in the Indonesian salt sector.

**Keywords:** salt industry governance, local institutional capacity, participatory governance, policy implementation

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## 1. Introduction

Coastal natural resource management is one of the strategic issues within the framework of sustainable development, especially in developing countries such as Indonesia [1], [2]. As an archipelagic country, Indonesia has abundant coastal resource potential, with the salt sector strategically supporting the needs of industry, households, and national food security [3]. Salt is not only an economic commodity but is also closely related to the socio-ecological aspects that shape the lives of coastal communities [4], [5].



Jeneponto Regency, South Sulawesi, is one of the main areas producing community salt in Indonesia, and this dynamic is empirically reflected.

Although the salt sector has great potential as a driver of the local economy, the national salt industry still faces classic problems such as dependence on weather conditions, low productivity due to traditional production methods, limited supporting infrastructure, and high dependence on import policies [3], [6]. Dependence on imported solutions as an answer to the long-term domestic production deficit worsens the bargaining position of smallholder salt farmers [7], [8]. This situation shows that the challenges in the salt industry are not merely technical but also include institutional dimensions and multilevel governance [9].

Various efforts have been made to reform the salt sector, the approach tends to focus on increasing production volume through technological interventions and national revitalization programs [9]. This technocratic approach has not been able to capture the complexity of problems at the local level, where social factors, institutional structures, and unequal access to resources remain the main obstacles. Previous studies have shown that many policies designed top-down without considering local socio-economic realities widen the gap in policy implementation [10]. In Jeneponto Regency, although national programs such as PUGAR (Revitalization of People's Salt Business) have been introduced, productivity stagnation, weak institutional capacity, and minimal improvement in farmer welfare remain significant challenges [11]. Thus, there is an urgent need to re-examine the governance of the salt industry more systemically and adaptively.

The problem to be answered in this study is how the gap between national policy design and local implementation contributes to the ineffectiveness of salt industry governance in the Jeneponto Regency. Specifically, this study seeks to analyze the dominant thematic patterns in the academic literature on salt governance in Indonesia, identify semantic relationships between technical, institutional, economic, and environmental themes, and evaluate institutional barriers that exacerbate the fragmentation of governance at the local level. In addition, this study aims to develop recommendations based on a systems thinking approach to support the development of a more adaptive, collaborative, and local needs-based salt industry governance model [12].

So far, the literature on the national salt industry has been primarily dominated by technical-productive studies that emphasize production efficiency, evaporation technology, and modernization of production methods [3], [13]. On the other hand, studies that critically discuss aspects of institutional governance, the role of local actors, and

multilevel governance interactions in the salt sector, especially with a case focus on Jeneponto Regency, are still minimal. In addition, it is still rare to find studies that adopt the Systematic Qualitative Literature Review (SQLR) approach based on NVivo software to systematically explore semantic relations between themes in the salt governance literature. This gap in substance and methodology shows significant room for contribution to enriching Indonesia's discourse on coastal resource governance.

This study offers a novelty on two fronts. First, regarding methodology, integrating SQLR and NVivo-based thematic mapping allows for a deeper analysis of semantic relationships between themes in the literature, which was previously missed by conventional qualitative approaches. Second, in terms of context, this study specifically examines the case of Jeneponto Regency, an important empirical area that has not been widely covered in academic literature. The justification for this study lies in the effort to develop a salt industry governance model that can integrate technical, social, economic, and institutional dimensions in a cohesive framework. Through the results of this study, theoretical contributions will be obtained to enrich the literature on coastal resource governance while also providing practical recommendations for evidence-based policy reform in the Indonesian salt sector.

## 2. Methods

This study uses the Systematic Qualitative Literature Review (SQLR) approach to analyze the dynamics of salt industry governance in Indonesia, focusing on Jeneponto Regency as a local case study. This approach was chosen to explore thematic representations, institutional challenges, and discourse constructions that develop in academic literature related to salt sector governance. This qualitative study integrates thematic content analysis methods and support for qualitative data analysis software, namely NVivo 12 Plus. This approach allows researchers to identify the frequency of issues that appear in the literature and trace semantic relationships between themes visually and systematically.

The data sources in this study consist of scientific journal articles obtained through Scopus and Google Scholar, published from 2018 - 2024, and written in English and Indonesian. The selected articles are relevant to the topic of salt industry governance. In addition, articles that explicitly connect to the Indonesian context, especially those discussing Jeneponto Regency, are a priority for selection. The selection process is carried out in stages by screening titles, abstracts, and content reviews. This process

obtained 35 articles that met the criteria and then entered into the NVivo database for further analysis.

The analysis procedure was carried out through several stages. First, the documents were imported into NVivo and categorized based on the initial themes developed inductively and deductively. Next, an open coding process was carried out to mark text units. After that, two types of visual analysis were carried out using the NVivo feature, namely Comparison by a number of coding references to identify dominant themes and items clustered by word similarity to map semantic relationships between topics. The results of this analysis were then synthesized into analytical narratives and integrative tables and contextualized with the empirical conditions of Jeneponto Regency to assess the suitability between scientific discourse and local governance practices. The validity of the analysis was maintained through the triangulation procedure of coding results between documents and thematic confirmation with secondary literature. The use of NVivo in this study provides advantages in maintaining the consistency of the coding process and transparency of data processing.

### 3. Results and Discussion

#### 3.1. Result

##### a. Treemap Analysis: Distribution of Dominant Issues in the Literature

The treemap visualization shown in Figure 1, which is the result of analysis using the NVivo application with the “Compared by Number of Coding References” approach, displays the distribution of coding frequencies for various key themes in the literature studied. The analysis results show that salt production and low income for salt farmers are the most dominant issues in the literature; this reflects that the main challenges of the salt industry in Jeneponto lie in the traditional production aspects and the low welfare of salt farmers. The existing literature raises many issues of conventional production methods, limited access to modern evaporation technology, and the suboptimal application of production innovation.

In the Low Income of Salt Farmers category, most coding references point to the low selling price of salt, lack of institutional support, and farmers’ dependence on an unfair distribution system. This finding confirms that farmers’ price instability and weak bargaining power are the main obstacles to improving their welfare. Another central theme that emerged was the National Policy Agenda, especially related to salt

import policies, food security, and commodity price stability. The literature highlights how national policies have the potential to create pressure on the local salt industry in Jeneponto, which is still unable to compete in terms of quality and production efficiency (Figure 1).

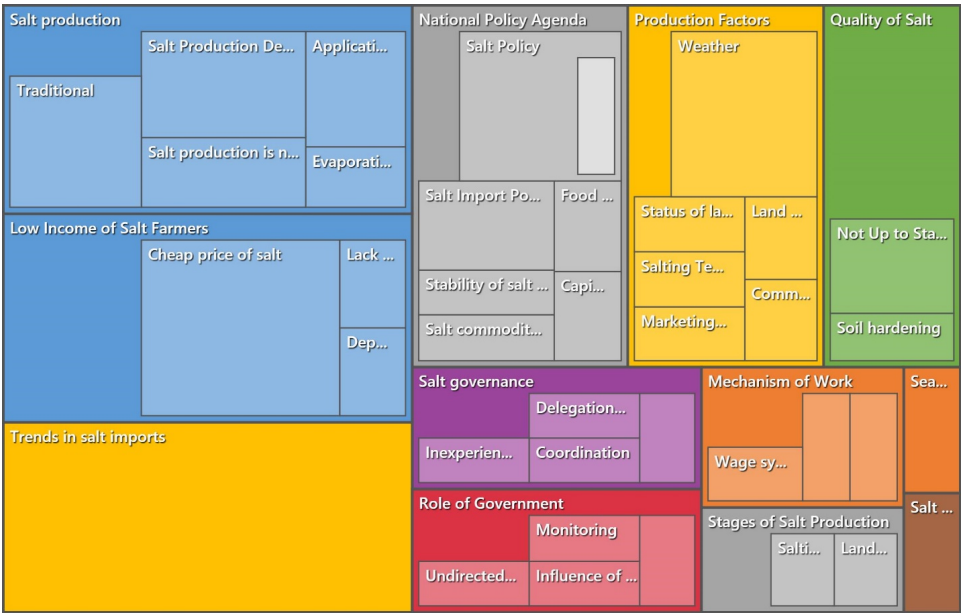


Figure 1: Compared by Number of Coding References.

Production factors such as weather, land ownership and use status, sowing techniques, and marketing channels also receive considerable attention. This confirms the importance of an agro-climate and spatial planning-based approach in developing a sustainable salt production model. Meanwhile, the Quality of Salt is identified as a technical issue related to the quality of production results that do not meet industry standards. Factors such as soil hardening and traditional production processes are the leading causes of low salt quality.

Institutional issues emerged in Salt Governance and the Role of Government, reflecting weak coordination, lack of technical experience, limited supervision, and focused policy direction. This indicates an urgent need to strengthen the role of local governments in regulating, facilitating, and fostering the community salt industry. In addition, the Mechanism of Work and Stages of Salt Production also emerged as important themes, indicating the need to reform the work system and remap production stages to be efficient and responsive to local challenges. Finally, the Trends in Salt Imports theme reflects concerns about the high volume of imported salt that directly affects the bargaining position of Jeneponto’s local salt in the national market.

Overall, these findings indicate that the challenges of salt industry governance in Jeneponto Regency are multidimensional, encompassing technical, economic, policy, and institutional aspects. Therefore, strengthening integrative governance based on deliberative policies is very important to encourage the sustainability and competitiveness of the local salt industry.

b. Analysis of Issue-Relatedness Patterns in Literature.

Visualization of the Items Clustered by Word Similarity feature in NVivo represents semantic relations between categories based on word similarities in coding literature on salt industry governance in Jeneponto Regency (Figure 2). Connecting lines indicate similarity or linguistic relatedness between issues that often appear together in one discourse context. From this visualization, there appear to be naturally clustered word groups, reflecting substantive relationships between key issues in salt governance. For example, categories such as “Salt Production is not Fulfilled,” “Salt Production Decline,” and “Salting Techniques” form a cluster that indicates technical problems in the production process that are dominant topics in the literature. This relatedness shows that the decline in productivity cannot be separated from traditional production techniques and the inability of farmers to meet national salt quality standards (minimum 94% NaCl).

Another cluster emerged from the relationship between “Lack of capital,” “Inexperienced employees,” and “Lack of understanding of the external environment,” indicating structural barriers in terms of human resources and access to financing. This confirms that weaknesses in the internal capacity of local actors are a barrier to implementing effective and adaptive management strategies.

Public policy issues also form their clusters, such as in the items “Salt Import Policy,” “Stability of salt prices,” and “Government monitoring.” This indicates that the state’s role in regulating market and distribution mechanisms is crucial, especially in the context of price interventions and import policies that directly impact local producers’ fate. In addition, the relationship between “Seasonality,” “Weather,” and “Quality of salt” reflects the importance of environmental factors in influencing the quality and quantity of salt production. This finding is very relevant for Jeneponto Regency, which has a seasonal production pattern and highly depends on climate conditions.

Overall, the results of this clustering strengthen the argument that the problems in salt industry governance are cross-dimensional, covering technical, structural, policy, and environmental aspects, which interact with each other in a complex policy ecosystem.

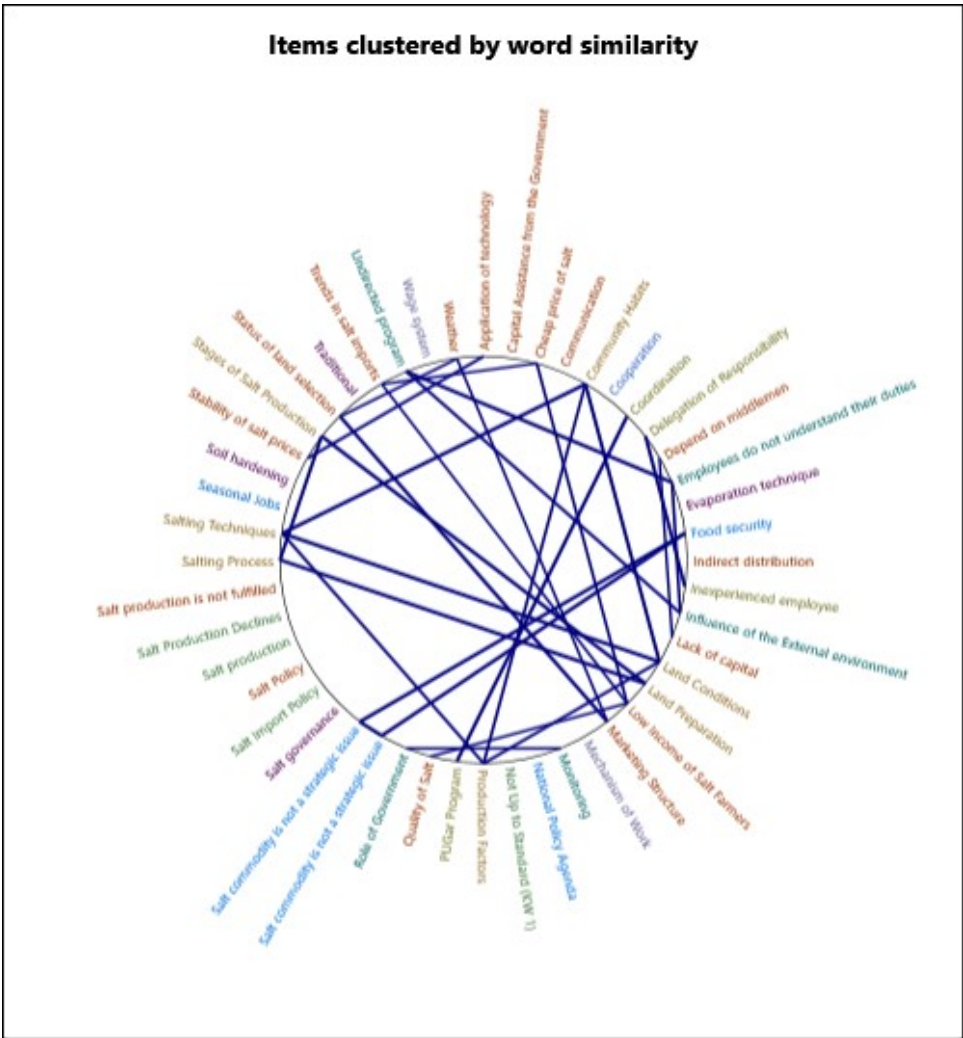


Figure 2: Items Clustered by Word Similarity.

These findings emphasize the importance of implementing collaborative and cross-sectoral governance, which allows for the development of synergy between various actors and institutions at the local and national levels. This approach must also be supported by a deliberative, participatory, and evidence-based decision-making process so that every policy and intervention can holistically address the interrelationships between key factors in salt industry governance (Figure 2).

c. Synthesis of Findings Table

To provide a more structured understanding of the results of the literature analysis, Table 1 below presents an integrative synthesis between the dominant themes that emerged in the coding visualization treemap, semantic grouping based on word similarity clustering, and analytical interpretations of each theme. This Table 1 aims to



combine thematic frequency dimensions with deeper conceptual relationships to clarify the narrative structure that develops in the literature related to salt industry governance.

TABLE 1: Synthesis of Literature Analysis Findings.

| Main Theme                  | Sub Topic Code (Treemap)  | Semantic Cluster Related   | Interpretation of Findings   |
|-----------------------------|---|--|--|
| Salt Production             | Traditional methods, Application of technology, Evaporation, Production gap | Salt production is not fulfilled, Salting techniques, Salt workers | The literature places great emphasis on technical and operational aspects. However, technological solutions are still minimally discussed. |
| Low Farmer Income           | Cheap price of salt, Lack of access, Dependency on buyers                   | Wage system, Seasonal work   | Structural microeconomic issues dominate, indicating market pressures on salt farmers.   |
| National Policy Agenda      | Salt import policy, Salt commodity stability, Food policy                   | Indirect distribution, Influence of government, Capital limitation | Studies often link national policies to their impacts on local production and commodity prices.  |
| Production Factors          | Weather, Land ownership, Marketing, Status of land                          | Environmental conditions, Marketing challenges                     | Dependence on external factors is high, reinforcing the need for climate and land risk mitigation.   |
| Salt Quality                | Not up to standard, Soil hardening  | Quality issues (isolated in cluster)                               | Quality is rarely discussed in the literature despite its importance for markets and exports.  |
| Salt Governance             | Delegation, Inexperience, Coordination                                      | Employees do not understand their duties, Unexperienced employee   | Weaknesses in local human resources and organizational capacity are at the root of poor field governance.                                  |
| Government Role             | Monitoring, Undirected programs, Policy influence                           | Government role, Policy inconsistency                              | The literature is critical of policy direction, indicating fragmentation and weak systematic interventions.                                |
| Work Mechanisms and Systems | Wage system, Work stages  | Mechanism of work  | Aspects of work structure, wages, and division of labor are discussed only partially, indicating a lack of systemic design                 |

Source: Author's Processing, 2025

Most of the literature from the synthesis constructs salt industry governance through technical and structural approaches. Still, few have raised aspects of local participation, institutional innovation, or integration of actors across levels. This indicates the need for a more systemic and inclusive expansion of the governance analysis framework in future studies.



### 3.2. Discussion

The findings from the literature analysis show that the governance of the salt industry in Jeneponto Regency, as also reflected in recent studies [3], [14], cannot be understood separately from the broader national institutional and policy framework. The dominance of themes such as salt production and low farmer incomes in the literature reflects that technical and economic issues are still the center of attention, while participatory, innovative, and collaborative aspects of governance have not been explored in depth. This is reinforced by the findings of Yudhonegoro (2020), which show that the long distribution chain and the weak bargaining position of farmers are consequences of a non-inclusive governance design and minimal participation of local actors in policy formulation [10].

The treemap visualization highlights that academic literature is still focused on technical and structural issues. Meanwhile, the results of semantic clustering show that the relationship between production factors, policies, the environment, and institutional actors is complex and interrelated. This strengthens the argument that a linear approach to understanding salt governance is no longer adequate. This finding is supported by the study by Riza and Wijaya (2022), which shows that multipolar interactions between actors and policies in the salt sector require a more adaptive and system-based understanding, especially to overcome the mismatch between central policies and local implementation [9].

Several referenced studies also show that an approach based on production efficiency alone has not been able to answer the systemic challenges faced by salt farmers, especially in a context like Jeneponto. For example, dependence on climate, minimal access to capital, and unfair distribution are forms of problems that require a cross-sectoral and cross-scale policy approach. A study by Yang et al. (2024) shows that a technical intervention model without institutional structural support tends to fail to create sustainable community salt businesses [15]. In addition, research by Kim et al. (2022) confirms that policies that focus too much on productivity do not consider farmers' social and economic obstacles in coastal areas, including in Jeneponto [16].

The results of this analysis are in line with the value chain governance framework (Gereffi, Humphrey, & Sturgeon, 2005) [17], which emphasizes the importance of relations between actors in the value chain and also reflects the condition of governance asymmetry, namely the imbalance in roles and influence between local and national actors in the decision-making process. In the context of Jeneponto, this asymmetry can

be seen from the weak capacity of local institutions to access resources, influence policy direction, or respond to market dynamics independently. In addition, these results also support the importance of adopting a systems thinking approach (Meadows, 2022) in understanding local resource-based commodity governance because it can capture the complexity of the relationships between elements in the governance system [12]. Using NVivo-based visualization, this study identifies dominant themes and reveals semantic relationships between themes, which conventional approaches have missed so far.

The limitations of the study on community participation and institutional innovation, which are also consistent gaps in previous literature, are important notes that need to be followed up by future research. Academic literature that tends to be top-down without considering the unique local dynamics poses a challenge to evidence-based policy reform efforts. A study by Webster et al. (2022) emphasized that policies that do not meaningfully involve local stakeholders often fail in implementation in the field [18]. Likewise, a study by Senghor et al. (2023) showed that exclusive resource governance without participatory institutional innovation exacerbates socio-economic inequality in coastal areas [19]. Therefore, the findings in this study provide a conceptual contribution to developing a more inclusive and adaptive governance model in the local context, such as in the Jeneponto Regency.

Thus, the results of this study emphasize the need for a paradigm shift from technocratic governance to collaborative and deliberative governance. This approach allows for formulating policies that are responsive to technical challenges, strengthen local institutional capacity, and empower key actors in the salt sector to be actively involved in decision-making. Therefore, local governments, the Marine and Fisheries Service, and community support institutions must encourage cross-sector coordination forums, strengthen local needs-based training, and integrate salt farmers' feedback into the policy formulation and evaluation process. from technocratic governance to collaborative and deliberative governance. This approach allows for policy formulation that is responsive to technical challenges, strengthens local institutional capacity, and empowers key actors in the salt sector to be actively involved in decision-making.

## 4. Conclusion

This study reveals that the governance of the salt industry in Jeneponto Regency is still faced with multidimensional and cross-sectoral challenges. The dominance of technical issues such as traditional production methods and low salt quality, accompanied by

structural problems such as unfair distribution and weak local institutional capacity, shows that the governance approach that has been applied so far still tends to be technocratic and fragmented. The results of the literature analysis using the NVivo tool strengthen that most studies emphasize aspects of production efficiency and national policies, with limited attention to local community participation and institutional innovation.

This finding emphasizes the importance of a more systemic, deliberative, and collaborative governance approach. The Jeneponto context shows that the imbalance between national policies and local practices, reflected in the form of governance asymmetry, also weakens the effectiveness of policies. For this reason, a governance model that integrates technical, social, and institutional dimensions into a cohesive framework is needed. The systems thinking approach is relevant to capture the complexity of interactions between actors and factors in the interrelated salt industry.

Conceptually, this study broadens the understanding of local resource-based commodity governance in coastal areas. From a practical perspective, the results of this study provide recommendations for policymakers to strengthen local institutional capacity, build participatory cross-sector forums, and design evidence-based policies that are responsive to specific challenges in the field. Further research is recommended to explore in-depth collaborative governance practices and innovative models that grow from the grassroots as a basis for developing sustainable and inclusive salt industry policies.

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