

E-ISSN: 2962-2816 P-ISSN: 2747-1985

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Mapping Collaborative Governance In Indonesia Climate Village Program: A Bibliometric Analysis (2022-2025)

Wahyu Adi Pamungkas^{1*}, Yuwanto²

- ¹ Universitas Diponegoro, Indonesia. 024wahyuadi@gmail.com
- ² Universitas Diponegoro, Indonesia. <u>yuwanto@lecturer.undip.ac.id</u>

Abstract: Although collaborative governance has been increasingly embraced as a fundamental approach for addressing complex environmental challenges, its application within nationwide climate adaptation programs has not been widely investigated. This paper focuses on how collaborative governance is portrayed and developed in studies concerning Indonesia's Climate Village Program (ProKlim) during the 2022–2025 period. Bibliographic information was gathered using Publish or Perish (PoP) from Google Scholar, and analyzed through VOSviewer 1.6.20 to uncover publication patterns, topic clusters, and conceptual relationships. Out of 988 records identified, 402 were selected based on inclusion criteria for detailed analysis. The thematic visualization revealed three major themes: (1) local-level climate adaptation, (2) collaboration among stakeholders and governance, and (3) institutional and policy-related frameworks. Together, these clusters indicated that collaborative governance operates as a conceptual bridge, linking grassroots adaptation actions to national-level climate strategies. However, limited references to concepts such as multi-level governance, institutional capacity, and evaluation highlighted that theoretical integration and performancebased evaluation remain underdeveloped. The results aligned with the frameworks of Ansell and Gash (2008) and Emerson et al. (2012), while underlining the significance of inclusive involvement, supportive leadership, and flexible institutional structures. Up to now, research on ProKlim in Indonesia has mostly been descriptive and focused on individual case studies. Therefore, future research is encouraged to adopt more comparative and quantitative approaches to better assess how collaborative governance influences tangible improvements in local climate resilience. This bibliometric review contributes to both theory and practice by outlining the intellectual landscape of ProKlim-related studies and offering insights into how a more structured, evidence-driven, and participatory model of climate governance can be promoted.

Keyword: Collaborative Governance, Climate Village Program (ProKlim), Climate Change Adaptation, Bibliometric Analysis

^{*}Corresponding Author: <u>024wahyuadi@gmail.com</u>

INTRODUCTION

Collaborative governance has been widey regarded as an effective aproach for local climate adaptation (Ansell & Gash, 2008), its application within nationwide programs such as Indonesia's Climate Village Program (ProKlim) has been insufficiently examined. Broad concepts of public participation or sectoral policy analysis have tended to be empasized in prior studies, while detailed paterns of stakeholder interaction and institutional coordination at the community level have been left largely unexplored (Agrawal, 2008). The effectivenes of collaborative governance is strongly influenced by local institutional capacity, leadership role, and the alignment of national objective with comunity-specific needs. A significan gap in the literature is identified by the absence of commparative study acros diverse ProKlim setting. Accordingly, a study is planned to examine how collaborative governance is implemented across different ProKlim sites and to identify the challenge and opportunity shaping local climate resilience effort.

Global climate change is being acknowledged as an urgent issue with broad impact, especially for developing nation like Indonesia (IPCC, 2022). As a result, strong and adaptable response are needed to tackle rising temperatures, unpredictable rainfall, and more frequent climate-related disaster. In this setting, community-led adaptation supported by collaborative governance has received increasing attention in scholarly and policy debates. The ProKlim government program is presented as an example of this approach, intended to allow community to reduce their climate vulnerability. In addition to enhancing adaptive capacity, ProKlim is also recognized for involving diverse stakeholder in the design and implementation of climate action.

Despite its promise, only a small number of systematic assessments have been carried out to examine how collaborative governance is applied in climate adaptation programs, particularly across varied social and institutional environments. Most existing studies have been centered on normative frameworks or individual best-practice cases, resulting in a shortage of comparative findings related to actual outcomes. Although ProKlim's community-based adaptation efforts in Indonesia have gained recognition, limited empirical analysis has been conducted on the implementation of collaborative approaches such as shared duties, inclusive decision-making, and inter-sectoral coordination across different regions. This research gap is considered significant due to Indonesia's institutional diversity and its growing climate-related risks (*Emerson et al.*, 2012; Koontz & Newig, 2014).

ProKlim's reported succes highlight the potential of collaborative approach. For instance, in Bandar Lampung adaptation effort have been coordinated with national policies through collaborative governance arrangement (Mukhlis & Perdana, 2022). These examples demonstrate that cooperation among government agencies, civil society, and local communities is necessary for community priorities to be included in policy. However, the use of collaborative strategy is often hindered by the challenge of balancing conflicting interest among multiple stakeholders (Ramdani & Mustalahti, 2023).

The involvement of local actor in ProKlim is present as a clear example of collaborative governance at the community level. By emphasizing shared decision-making, mutual trust, and wide participation, a foundation is created for including different perspective in adaptation planning. ProKlim is put into practice by enabling local government, communitie, NGO, and other stakeholders to design adaptation strategie that are relevant and inclusive for their specific context. It has been seen that integrating local knowledge helps strengthen community ownership and improves policy results (Septiarani & Handayani, 2016). However, there is still a lack of extensive empirical studies comparing how collaborative governance is applied across different regions of Indonesia. Such research is deemed important to find condition that support resilience and long-lasting local climate actions.

Regional differences are shown to create difficulties in applying collaborative governance. Although collaborative frameworks are officially part of Indonesia's climate policy, evidence from other places, like South Africa, shows that effectiveness is mainly influenced by sociopolitical factors and institutional strength (Ziervogel et al., 2017). Therefore, it is emphasized that local capacity should be strengthened and understanding of stakeholder dynamics should be improved to ensure inclusive and effective adaptation.

Oportunities and challenges alike are entwined with collaborative governance in climate adaptation. While this may foster community participation and responsive policies, these depend upon how well institutional and social obstacles have been overcome. For the case study comparison and review of current research, ProKlim in Indonesia was investigated for a comparative study of the opportunities and challenges presented by a collaborative governance approach. It is expected that as these factor are examined, the understanding of the complexitie in community-based adaptation and how far it strengthens resilience will be improved.

A bibliometric review has been carried out of the publications regarding ProKlim and collaborative governance, covering the period 2022-2025, to fill this gap. This will be useful in quantitative mapping of research trends, dominant themes, and unexplored areas in Indonesia's studies on climate adaptation. The keyword co-occurrence analysis, thematic clustering, and mapping of conceptual linkages were done using VOSviewer 1.6.20 for the quantitative visualization of the knowledge structure. Then, bibliographic data was colated from Google Scholar via the Publish or Perish software in order to comprehensively outline how collaborative governance has been conceptualized and discussed in Indonesia's academic and policy literature. As a result, a bibliometric approach was used to build an evidence-based understanding of the institutional, social, and political factors that influence collaborative practices and their role in improving local climate resilience across Indonesia's diverse regions.

The data were gathered from Google Scholar using the Publish or Perish software, enabling the creation of a broad dataset that reflects how ProKlim and collaborative governance have been framed and explored within both academic and policy-focused literature in Indonesia. Through this analysis, clear insights have been provided into how these factors shape collaborative mechanisms and contribute to climate resilience at the local level throughout various regional contexts.

The study also highlights how bibliometric analysis has supported the growth of collaborative governance research in Indonesia. As noted by Rohanda and Winoto (2019), bibliometric techniques involve the use of statistical and mathematical tools to study trends in publications, author partnerships, and topic spread in scholarly work. Similarly, Akhira et al. (2023) and Sifaiyya & Andriani (2024) used VOSviewer to map keyword relationships, author networks, and thematic clusters, helping to reveal overall research patterns and topic connections. Using these methods, the present study is able to identify both established and emerging topics in ProKlim-related research, and to offer useful direction for future studies on collaborative governance and climate adaptation policy.

The importance of examining different collaborative governance models within ProKlim has been widely acknowledged and viewed from multiple angles. Models such as state-driven, mediated, or co-produced approaches have been applied across various institutional and environmental settings (Emerson et al., 2012; Koontz & Newig, 2014). These models can be mapped to identify which forms of collaboration best promote inclusive engagement, cross-sector coordination, and sustainable outcomes. This is particularly relevant in Indonesia, where decentralization has led to diverse socio-political conditions, contributing to uneven results in climate adaptation efforts.

The value of conducting comparative studies on collaborative governance has been demonstrated in terms of both theoretical advancement in climate governance and broader public policy. As noted by Ramdani & Mustalahti (2023) and Willetts et al. (2022), a

typological method helps reveal patterns in how actors' roles, organizational structures, and power relations influence adaptation outcomes. These theoretical insights also carry practical significance, as they support the creation of governance models tailored to specific local conditions. This type of understanding is seen as essential for capacity development, enabling stakeholders to adapt, replicate, or enhance collaborative approaches. Therefore, the use of a typology in studying governance is not only critical in academic terms but also necessary for designing fair and effective climate adaptation at the community level.

By comparing different models of collaborative governance, climate governance and public policy theories can be strengthened. A typological lens makes it possible to recognize recurring trends in how actors, institutions, and power dynamics shape adaptation results, instead of treating collaboration as a single concept (Willetts et al., 2022; Ramdani & Mustalahti, 2023). These findings are directly relevant for developing governance strategies that fit particular settings. Emphasis will therefore be placed on building local capacities and helping stakeholders to apply, adjust, or scale up collaborative efforts. In this way, typology-based research is valuable for both scholarly understanding and for crafting equitable, community-driven climate responses.

METHOD

Research Design

This work therefore utilizes bibliometric analysis to review the key concepts and themes present in studies about ProKlim and collaborative governance in Indonesia. Bibliometric analysis allows an effective, quantitative investigation of scholarly publications as a means to outline publication trends, identify thematic clusters, and unfold conceptual linkages (Zupic & Čater, 2015). It is highly suitable for collaborative governance studies, which span a number of disciplines and in most cases lack integrated syntheses. The paper chose this approach to supplement qualitative studies with a data-driven perspective on research developments, trends, and gaps between 2022 and 2025.

Data Sources

Data were gathered from Google Scholar via the Publish or Perish software (POP v8), providing a broad and representative dataset of Indonesia's climate governance research. An initial compilation of 988 bibliographic records was assembled prior to screening.

Search Strategy

Data were retrieved in September 2025 via the Publish or Perish interface, which supplies bibliographic metadata from Google Scholar. The following Boolean search string was applied:

"Program Kampung Iklim" OR "ProKlim" AND "collaborative governance"

Both local and international terms were included in the query to capture relevant publications in Indonesian and English. The publication period was restricted to 2022–2025.

Inclusion and Exclusion Criteria

Criteria Type	Inclusion Parameters	Exclusion Parameters	
Language	Indonesian or English	Other languages	
Publication Period	2022–2025	Before 2022	
Subject Focus	Studies explicitly addressing ProKlim, collaborative governance, or community-based climate adaptation	Studies unrelated to ProKlim or not involving governance/adaptation concepts	

Criteria Type	Inclusion Parameters	Exclusion Parameters
Document Type	Journal articles, conference papers, theses, or reports with bibliographic data	Books without metadata, news articles, presentations
Accessibility	Documents with available title, abstract, and keywords	Incomplete or inaccessible documents

Figure 1. inclusion and exclusion criteria

These inclusion and exclusion criteria allowed us to retain only relevant, verifiable, and analyzable records for bibliometric mapping.

Screening and Selection Process

An initial search using Publish or Perish (PoP) yielded 988 records. A multi-step filtering process was applied to ensure the accuracy and quality of the dataset:

- 1. Duplicate Removal: Duplicates were automatically removed using the built-in filter in PoP, followed by manual checks in Excel to ensure completeness.
- 2. Title and Abstract Review: Each document was manually assessed to verify its relevance to ProKlim and collaborative governance topics.
- 3. Content Filtering: Records where ProKlim was only briefly mentioned (such as in environmental education without a governance focus) were excluded.
- 4. Final Dataset Formation: After these steps, a total of 402 publications were selected for bibliometric analysis.

Overall, the process followed the logic of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, adapted to bibliometric workflows.

Data Extraction and Analysis

The bibliographic data, including the names of authors, publication year, document title, and author keywords, were extracted and imported into VOSviewer 1.6.20 for quantitative analysis. The analysis was executed based on three main steps:

- 1. Keyword Co-occurrence Mapping: The most frequently occurring and highly associated keywords are located according to the full counting method, using a minimum threshold of 5 occurrences for every term.
- 2. Clustering and Mapping: Thematic clusters and network maps were created in VOSviewer that visualized relationships among research topics.
- 3. Interpretative Thematic Analysis: The emergent clusters were interpreted in light of the collaborative governance framework of Ansell & Gash (2008) and Emerson et al. (2012), focusing on stakeholder interaction, institutional coordination, and adaptive processes.

Conceptual and contextual accuracy was attained through the process of cross-reading sample papers for all the maps.

Limitations

This research is solely dependent on data from Google Scholar through Publish or Perish. These data may include materials that are non-indexed or not peer-reviewed. Thus, the resultant outcomes must be viewed as trends rather than a systematic review. With these limitations in mind, using Google Scholar and PoP allowed for a comprehensive overview of Indonesian studies to be conducted and enabled emerging research patterns in collaborative governance and climate adaptation to be identified.

RESULTS AND DISCUSSION

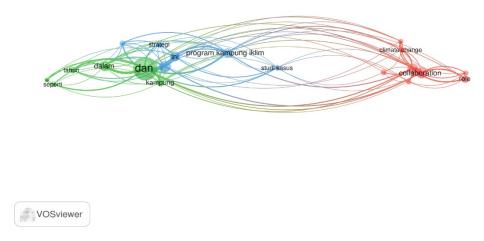


Figure 2. Bibliometric Analysis of Collaborative Governance in ProKlim

Bibliometric analysis is the scientific technique employed in the measurement and analysis of patterns of academic publication and their interrelationships using statistical mapping. In this study, the bibliometric analysis was performed using VOSviewer 1.6.20, with raw bibliographic data from Google Scholar via Publish or Perish for the period 2022–2025. The resulting visualization brings out quite clearly the structure and thematic focus of research on collaborative governance and ProKlim in Indonesia.

The network visualization exhibits that the most dominating keywords within the literature are climate change, studi kasus (case study), strategi (strategy), role, program kampung iklim, and collaboration. Within this network, these terms are located in the center of the cluster; this may suggest that research in this area is focused on community-based adaptation strategies, stakeholder participation, and processes of policy implementation within the ProKlim framework. However, some keywords, such as institutional capacity, multi-level governance, and evaluation, take the form of much smaller, less-connected nodes; this suggests that these aspects remain underexplored in current studies.

Results from the mapping also show that, overall, collaborative governance research in Indonesia's climate adaptation context is often discussed at the general level, with a few empirical studies comparing how it is implemented across regions. The fact that terms related to local leadership, inter-agency coordination, and building of trust are underrepresented means that the institutional and social dimensions of collaboration have not been fully examined. This finding exposes an important gap in the present state of research, which is an investigation into how exactly collaborative governance functions within various regional and institutional contexts of ProKlim.

The analysis also identifies that most of the publications relate ProKlim to climate change adaptation and community resilience, but only a few publications deal with governance mechanisms, decision-making processes, and policy outcomes. The small size of the nodes for policy evaluation and community empowerment shows that such perspectives remain marginal in the present body of research. This corresponds to the reasoning of Ansell and Gash (2008), that the success of collaborative governance depends on a number of conditions. This includes such key conditions as mutual trust, leadership, and shared understanding. However, according to the bibliometric evidence, the empirical study of these conditions in ProKlim is scant.

The network structure of the visual shows that most of the studies also stay at the descriptive stage, emphasizing more the existence of collaboration rather than its effectiveness. These findings imply that bibliometric analysis gives the necessary overview of how the concept of collaborative governance is framed within the climate adaptation literature in

Indonesia. By mapping keyword relationships and thematic clusters, this study demonstrates both progress and shortcomings of existing research, confirming that while the discourse on community-based adaptation and ProKlim is growing, deeper, comparative, and evaluative studies with regard to institutional, social, and political dynamics should be given due attention in determining the success of collaborative governance in strengthening local climate resilience.

The results of the analysis are presented in the following section in line with the bibliometric procedure described in the previous section. These findings are grouped into seven thematic components: an overview of the bibliometric output, keyword network and cluster structure, thematic patterns, theoretical integration, knowledge gaps, policy implications, and a summary of the findings.

1. Overview of Bibliometric Output

A total of 988 documents from Google Scholar, published between 2022 and 2025, were gathered using keywords such as "Program Kampung Iklim" and "collaborative governance." This dataset was then analyzed using VOSviewer 1.6.20, where connections between keywords found in titles, abstracts, and author-provided terms were identified. Through this process, a network map was generated, highlighting six main nodes that were strongly interconnected: "climate change," "studi kasus (case study)," "strategi (strategy)," "role," "kampung iklim," and "collaboration." These core keywords were found to represent the central themes in current research on ProKlim and collaborative governance within the Indonesian context.

2. Keyword Network and Cluster Structure

The visualization produced by VOSviewer revealed the presence of three main clusters, each representing key thematic groupings within the research field.

Cluster	Dominant Keywords	Interpretation	Illustrative Focus
Cluster 1 – Local Climate Adaptation Strategies	climate change, strategi, studi kasus, adaptation	Reflects research emphasizing local initiatives and case-specific adaptive practices within ProKlim.	Community-based adaptation, household resilience, ecosystem- based approaches.
Cluster 2 – Governance and Stakeholder Roles	collaboration, role, stakeholder, coordination, participation	Captures studies examining inter-actor relationships, coordination challenges, and collaborative processes.	Stakeholder mapping, leadership dynamics, and participatory planning.
Cluster 3 – Policy and Institutional Frameworks	program kampung iklim, implementation, policy, government	Focuses on institutional design, national program alignment, and policy integration.	Decentralization, vertical integration, and regulatory coherence.

Figure 2. The VOSviewer visualization

3. Thematic Patterns

The The visualization results indicate that Cluster 2 ("collaboration—role—stakeholder") has been positioned as a connecting point, linking research focused on adaptation with studies centered on policy. This central role suggests that collaborative governance is being understood as a linking mechanism between community-level initiatives and national climate policy. The

frequent appearance of terms like "studi kasus" (case study) and "strategi" (strategy) shows that much of the research remains empirical and case-based, with limited progress toward theoretical development or comparative analysis across regions. The absence of commonly used terms such as "multi-level governance," "institutional capacity," and "evaluation" indicates a lack of analytical depth, where the focus tends to remain on descriptive findings rather than on evaluating outcomes or performance.

4. Integration with Collaborative Governance Theory

The The identified clusters reflect key elements of the collaborative governance framework proposed by Ansell and Gash (2008), as outlined below:

- 1. Initial Conditions (Cluster 3) → The institutional and policy settings of ProKlim serve as the foundation where collaborative efforts are made possible.
- 2. Institutional Design & Facilitative Leadership (Cluster 2) → The effectiveness of shared governance depends on the roles played by local leaders, NGOs, and government actors who help facilitate collaboration.
- 3. Collaborative Process (Cluster 1) → Adaptive practices and the building of trust within communities represent the active phase of collaboration in practice.

This alignment between thematic clusters and theoretical concepts supports the idea that ProKlim operates as a real-world testing ground for collaborative governance in Indonesia's decentralized setting. Furthermore, these findings also align with the framework by Emerson et al. (2012), emphasizing the significance of adaptive capacity and legitimacy as critical performance indicators in collaborative processes.

5. Knowledge Gaps and Future Research Directions

Several less-explored areas were revealed through the bibliometric findings:

- 1. Weak theoretical connection Only a small number of studies have connected ProKlim's implementation with collaborative governance theory, beyond simply describing individual cases.
- 2. Focus on single cases Most research has been based on individual case studies, with little attention to regional differences or the long-term effects of governance.
- 3. Lack of institutional analysis How multi-level coordination (across national, provincial, and local levels) influences program sustainability has rarely been explored.
- 4. Minimal use of quantitative or mixed methods The keyword network shows limited attention to terms like "modeling," "evaluation," or "impact assessment."

To address these gaps, it is suggested that future research apply comparative case designs, network-based governance analysis, and quantitative performance indicators. This would provide a clearer understanding of how collaborative efforts lead to measurable improvements in climate resilience.

6. Summary of Findings

To conclude, the bibliometric mapping has shown that:

- 1. Since 2022, research on ProKlim and collaborative governance has grown noticeably, although the conceptual direction remains broad and fragmented.
- 2. Collaborative governance has been identified as the main connecting idea that links practical adaptation efforts with policy development.
- 3. The intellectual structure of this field is still progressing toward a more analytical and comparative focus.

In this way, the study not only identifies key themes and research gaps, but also contributes to strengthening the knowledge base needed for more policy-relevant climate adaptation research in Indonesia.

CONCLUSION

1. Summary of Findings

This bibliometric analysis has offered a structured overview of research on ProKlim and collaborative governance in Indonesia during 2022–2025. The findings show that three main, interconnected themes are guiding the discussion: local adaptation strategies, stakeholder cooperation, and institutional policy frameworks. Frequent keywords like climate change, collaboration, role, and Program Kampung Iklim indicate that attention has been focused on community-based adaptation, though most studies remain descriptive and locally centered. These patterns suggest that collaborative governance acts as a conceptual connector, linking local climate actions to broader national policy efforts. The field is still at an early stage of development, as reflected in the limited use of theory, few comparative studies, and the absence of evaluation frameworks in current research.

2. Theoritical Implications

The The results support and build upon the theoretical framework introduced by Ansell and Gash (2008) and Emerson et al. (2012). This model emphasizes that successful collaborative governance in climate adaptation relies on three connected elements:

- 1. Inclusive engagement of stakeholders and continuous trust-building;
- 2. Facilitative leadership that connects government and community actors;
- 3. Flexible institutional structures that allow for multi-level coordination.

However, the low frequency of terms like multi-level governance, institutional capacity, and evaluation shows that current studies have not yet clearly linked theory to performance analysis. This points to a gap between conceptual models and their practical use in ProKlim-related research.

3. Concluding

This study contributes to both theory and practice by outlining the knowledge structure of ProKlim-focused research and by emphasizing the central role of collaborative governance within Indonesia's community-based adaptation efforts. By using a bibliometric approach, this analysis has helped to map the current research landscape and to identify ways forward for building a more coherent, data-informed, and inclusive model of climate governance. These findings also suggest future research should include comparative designs, quantitative methods, and policy evaluations, so that collaborative principles can be turned into clear, measurable impacts on local climate resilience.

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