

Deforestation, Media, And Governance: A Discourse Network Approach to Indonesian Online News

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Abstrak

Deforestasi menjadi isu penting di Indonesia. Hal ini disebabkan oleh alih fungsi hutan menjadi lahan industri, perkebunan, infrastruktur, dan ekstraksi sumber daya. Media massa memainkan peran penting dalam membentuk opini publik, pembentukan kebijakan, dan perdebatan global tentang isu-isu lingkungan. Penelitian ini memetakan arsitektur wacana deforestasi di media online Indonesia dan menilai bagaimana aktor, konsep, serta bingkai isu saling terhubung. Menggunakan sampel 40 berita dari delapan portal (periode 2024–2025), studi ini menerapkan analisis jejaring wacana untuk menautkan kemunculan aktor dan konsep, serta membaca peran mereka melalui indikator keterhubungan dan kepadatan jaringan. Hasilnya menunjukkan dua blok besar yang berkompetisi—lingkungan versus ekonomi-pembangunan—namun tetap berjumpa pada simpul tata kelola (misalnya kebijakan pengelolaan hutan, hutan produksi, dan keamanan perkebunan sawit). Konsep Forest Management Policy bertindak sebagai poros, sementara Food and Energy menjadi koridor yang merajut klaim produktivitas dengan klaim ekologis (coupled framing). Dalam konteks aktor, pemerintah menjadi pusat wacana, NGO mengartikulasikan kritik ekologis, dan akademisi berperan sebagai broker yang menjembatani dua blok dengan rujukan berbasis bukti. Temuan ini menegaskan logika agenda-setting: aktor yang paling sering dikutip dan lintas-isu lebih menentukan arah percakapan publik. Implikasi kebijakan mencakup kebutuhan penguatan transparansi data, ruang media bagi suara pinggiran, dan peran ilmuwan sebagai penghubung argumen efisiensi produksi, ketahanan pangan/energi, dan batas ekologis.

Kata Kunci: Deforestasi, Analisis Jejaring Wacana, Tata Kelola Hutan, Framing Lingkungan Pembangunan

Abstract

Deforestation in Indonesia remains a critical environmental issue. This is mainly due to the conversion of forests toward industrial land, plantations, infrastructure, and resource extraction. Mass media play a significant role in shaping public opinion and policy on deforestation. Media narratives can impact public opinion, policy formation, and the global debate on environmental issues. The study maps the discourse architecture of deforestation in Indonesian online media and assesses how actors, concepts, and issue frames are interconnected. Using a sample of 40 articles from eight portals (2024–2025), discourse-network analysis is employed to map the co-occurrence of actors and concepts. It interprets their position by connectivity and network density. The findings indicate two predominant competing blocks—environment versus economy-development—though they ultimately converge at the governance node (e.g., forest management policy, production forests, and palm oil plantation security). The Forest Management Policy operates as the axis, while Food and Energy serves as the corridor where consistent productivity claims are woven with ecological claims (coupled framing). At the level of actors, the government promotes the discourse, NGOs highlight ecological concerns, and academics act as brokers, providing evidential references to connect both blocs. These results validate the logic of agenda-setting: actors who are most prominently mentioned and cross-cut issues wield more influence in shaping the trajectory of public discourse. Policy implications are discussed, including enhancing data openness, providing space for diverse voices in the media, and defining better roles for knowledge users as connectors between arguments about production efficiency, food/energy security, and ecological boundaries.

Keywords: Deforestation, Discourse Network Analysis, Environmental Framing of Development, Forest Governance

1. INTRODUCTION

Deforestation in Indonesia remains a critical environmental issue. Deforestation rates continue to rise. This is mainly due to the conversion of forests toward industrial land, plantations, infrastructure, and resource

extraction. According to the Regulation by the Minister of Environment and Forestry (LHK) Number 7 of 2017 on Procedures for Reducing Emissions from Deforestation and Forest Degradation, when deforestation happens, it permanently changes an area from one that is

designated a forest to one that is not. Indonesia's natural forest of 93.8 million ha exists. That was at about half of its total land area as of 2020. However, by 2024, the country lost 259,000 hectares of natural forest, leading to an estimated release of 194 million tons of carbon dioxide (Global Forest Watch, 2024). On the other hand, regarding Indonesia's net deforestation, there was a decrease from 113,000 hectares to 104,000 hectares during the 2021-2022 period. (Kementerian Lingkungan Hidup dan Kehutanan, 2023). Net deforestation is the continuing loss of forest cover when forest regrowth or afforestation (FWI, 2024). The figure is the difference between the gross deforestation and the reforestation rate. This reflects the area that has been deforested, and is in effect an indicator of how well the forests are managed in Indonesia.

Deforestation occurs in almost all regions of Indonesia. Parts of Indonesia that are at risk of deforestation include Kalimantan, Papua, and Sumatra. Based on field observations by the AT and AN Team, deforestation in Kalimantan reached 129,896 ha in 2024, while the situation in Sumatra reached 91,248 ha. Concurrently, Papua experienced a decrease in deforestation to 17,341 ha (Manurung et al., 2025). That decline places Papua as the best-performing province in Indonesia in terms of reducing deforestation for 2024. Sepus M. Fatem, lecturer and member of the Faculty of Forestry, UNIPA's research conducted in the field across four villages in three districts in West Papua (Tambrau District: Hopmae village; South Sorong tegeime: Haha and Bariat village, Fakafak Regency: Kokas village) from 2020 pointed out three factors affecting the decline rate in West Papua: no large-scale corporate operation implemented, forest-friendly agricultural system, and effective management of Village fund. Moreover, increasingly, the public is much more aware of environmental issues that have come to attention through social media viral campaigns (like "All Eyes on Papua," which opposes shifting customary forests into palm oil plantations, or "SaveRajaAmpat," a denunciation of nickel mining in the tourist hotspot Raja Ampat). This viral campaign has eventually precipitated enough actions to force the government to revoke mining permits from four companies

operating in Raja Ampat Regency (Lumbanrau, 2025).

The media play a significant role in shaping public opinion and policy on deforestation. One such example may be the highlighting of specific issues in the mass media, such as in agenda setting, that could shape the public opinion towards deforestation (Prawira et al., 2023, 2021). Media narratives can impact public opinion, policy formation, and the global debate on environmental issues. Despite the diverse rates of deforestation in different parts of Indonesia, media coverage of deforestation issues has co-evolved, spreading multiple stories that reflect regional interests, world views, and stakeholder perspectives. In addition, politicians often rely on newspapers to gauge public opinion and also to make political decisions, thus permitting media content to influence the formation of national and international policies over forests and deforestation (Mangani, 2021). As a result, the public finds it difficult to understand who is involved, what the main issues are, and indeed the interests at play. The disparity in tone between national and local media, along with opposing viewpoints from both sides, means the public is not always clearly informed about deforestation in Indonesia.

The discourse around REDD+ (Reducing Emissions from Deforestation and Forest Degradation) in Indonesia has changed significantly: optimism about the possibilities for change has given way to a more nuanced understanding of how effective local policy making is not possible. The need for institutional reform thus occupies a central place in media coverage of the REDD+ process (Cronin et al., 2016; Moeliono et al., 2014). In Brazil, mainstream media have been critical to shaping REDD+ policy, redirecting attention from efficient carbon market architecture towards equity and implementation safeguards. The lack of evidence here has led to a change in media attention, indicating national fears and influencing policy decisions in the federal government. It demonstrates the potential of the media to push for policy change by reframing environmental issues (Gebara et al., 2017). Moreover, in South Korea, the media is a place of debate and a political actor, having an important impact on forest protection.

Journalists work with sources to manage information and thus influence public opinion and government policy (Park, 2013). The media do not just inform the public; they can also influence politics and power relations in deforestation and environmental conservation.

Discourse analysis may reveal the role of key agents in deforestation policy and provide valuable insights for policy-makers. This study clarifies the economic and environmental impacts that are typically overlooked, including biodiversity degradation and ecosystem disturbance due to rapid infrastructure development (Suhandano et al., 2024).

2. RESEARCH METHOD

This research into Discourse Networks in Indonesian Deforestation Reporting employed a method called discourse network analysis (DNA). This approach is instrumental in the social sciences for understanding complex social processes from a discursive point of view. The idea of DNA is to decode the conceptual connections of stories and translate them into structured semantic networks, which are, in turn, amenable to quantitative measurements that naturally arise from social network analysis, such as factions and clans. This approach allows the mapping of interactions between heterogeneous actors in a conversation and thus offers an excellent tool to analyze communication and social behavior (Barranco et al., 2022; Bossner & Nagel, 2020).

One distinctive feature of DNA, unlike more traditional approaches in network research, is the emphasis on textual data and language as a form of social action. Unlike most traditional social network analyses, which focus mainly on how structural connections and movements flow through networks, DNA is concerned with the process by which actors develop and disseminate discourse within a network (Wessa et al., 2013). It allows DNA-relevant use in a variety of settings.

Researchers collected all news articles from the online news sources with the term "Deforestation" for 2024-2025. The selected news portals were Kompas. Com, Detik. Com, Tempo. Co, Merdeka.com, Mediaindonesia.com, Tribunnews.com, Pikiranrakyat.com and Okezone.com. News articles were later screened based on comments

from parties concerned with deforestation in Indonesia. From this subset, five news texts considered representative of deforestation reportage were scraped from each portal. The excerpt from the statements was matched to similar news articles. An individual news article may contain multiple figures, for example, interviewees. In all, 40 news articles were analyzed through DNA testing.

Table 1. Spreading Issues

Issue	Disseminations/Related Tags
Sustainable Industry	Renewable-energy Green technology
Processing Industry	Palm oil export Chocolate industry Mining
Food Estate	Food estate
Economic Policy	Economic policy
Food Security	Food security
Production Forest Legality	Production forest legality
Production Forest	Production forest
Ecological Disruption	Ecological disruption
Forest and Crop Balance	Forest and crop balance
Protecting Natural Resources	Reforestation budget Forest restoration Forest conservation
Human Resource Protection	Human resource protection
Forest Management Policy	Forest management policy
Biodiversity	Biodiversity
Agrarian Conflict	Agrarian conflict
Increased Deforestation	Increased deforestation
Palm Oil Not Deforestation	Palm oil not deforestation
Palm Oil Causes Deforestation	Palm oil causes deforestation
Palm Oil A Valuable Commodity	Palm oil a valuable commodity
Oil Palm Farm Security	Oil palm farm security
Adding Palm Oil Fields	Adding palm oil fields
Palm Productivity	Palm productivity

3. HASIL PENELITIAN DAN DISKUSI

The Configuration of Deforestation Issues in The Mass Media Discourse Network

Among articles of deforestation in eight online media portals (totaling 40 news) the most common issues are *Food and Energy*, *Productivity Forests* and *Forest Management Policies*. It suggests that the media emphasizes aspects of national economic growth, natural resource utilisation, and ecological

sustainability. As a result, the reporting trend is generally to frame deforestation and its coverage in relation to national development, legal forest area and forest management laws.

Network Structure & Key Actors

Visual analysis of discourse networks by way of Discourse Network analysis (DNA) reveals that stakeholders reporting on deforestation in Indonesia can be categorised into three main subgroups: government, non-governmental organisations (NGOs), and academics or experts.

The government cluster would also be established as the most well-connected and important hub in this discussion network. The likes of Prabowo Subianto, Airlangga Hartarto, Raja Juli Antoni, the Ministry of Environment and Forestry, and Budi Setiadi are all key players in this network. It shows that the government has much power to influence the narrative around deforestation (particularly when it comes to economic development, agricultural estates, food production, and energy). This network exhibits strong links between politicians, as can be observed from the convergence of mass media narratives.

The second group represents NGOs with people like Uli Arta Siagian, Arta Siagian, Nadia Hadad, Iqbal Damanik, and Sahat Sinaga. It is a smaller network than the government's, but it remains determined to manipulate narratives around this problem. These NGO representatives address themes of deforestation, biodiversity loss, agrarian conflict, and the safeguarding of local communities. They typically establish an independent bloc that is seldom directly associated with governmental entities. Moreover, it highlights the gulf in rhetoric between the government, which is pro-development mainly, and NGOs that primarily campaign on environmental issues.

Eccentric scholars such as Herry Purnomo, Sadino, Gigih Prihantono, and Budi Mulyanto represent the odd assembly of the cluster. These agents also play a "broker" role between the two different zones of debate. They have strong links with governments and non-governmental organizations (NGOs), but they are more directly attached to the state. This role demonstrates that academics frequently serve as impartial sources in media reporting,

articulating narratives substantiated by facts and research that are palatable to all parties.

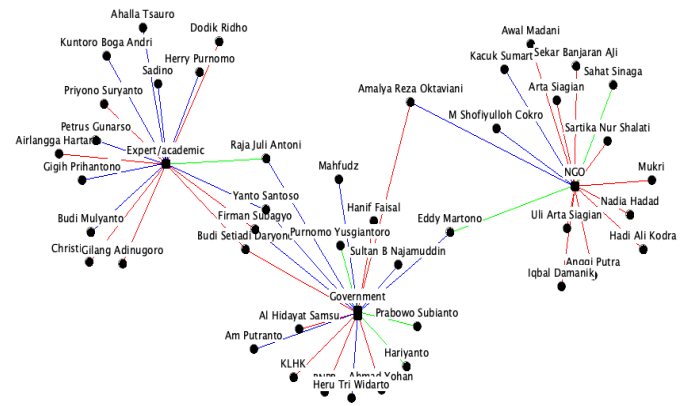


Figure 1. Affiliate Network

Mapping Actors & Discursive Connections

Figure 2 depicts the stakeholder network in the discussion of deforestation in Indonesia. Every dot represents an actor, personal or corporate. At the same time, lines between points represent discursive connections: comparables based on stories, alignments of policy, or mutual referencing in texts and media. This diagram represents a dense graph that corresponds to a high level of contact and interchange between agents.

Actors are presented in the center of the map, and their numerous levels (reflected by the number of lines linked to them) can be interpreted as indicating a considerable impact on discourses or as key actors in the policy and discourse network on deforestation. The leading actors are Petrus Gunarso, Eddy Martono, Budi Mulyanto, Firman Subagyo, Prabowo Subianto, and the Ministry of Environment and Forestry (KLHK). It represents institutions that are often invoked in the media and policy regarding deforestation. They are often referred to, spoken to, or read for information.

Institutional, Academic/ Research can categorize the actors appearing on the visual, and Political/Government Elite: Institutional Groups (KLHK & BNPB) belong to a bureaucratic organization; Academic or Research Groups represented by Christina Intania and Amalya Reza Oktaviani are identified as scattered and grouped across categories; Political/Government Elite groups

that belong to both various strategic nodes (Prabowo Subianto & Airlangga Herlambang). However, there are also outliers in the network, e.g., Ahalla Tsauro, Dodik Ridho, Awal Madani, and Hariyanto. They are identified as Peripheral Actants. Finally, peripheral actors significantly influence the DNA of the discourse network, contributing to its structure and dynamics from a non-central yet influential position. They often form factions that may support or oppose central policies, increasing the polarization of the speech (Schaub & Metz, 2020). It enables them to refocus on pivotal concerns and be included as stakeholders in the development of policies that impact policy direction in general (Sung et al., 2024).

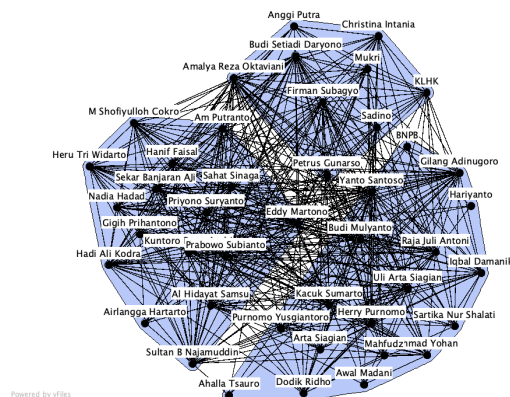


Figure 2. Actor Network

Issue Configuration and Discourse Blocks in Online Media

Figure 3 shows a map of the discourse network about deforestation in Indonesian online media. Two key (and visually conflicting) discourse blocks clash. The first block (environment) revolves around the claim *Palm Oil Causing Deforestation*, which is closely connected to most of the topics in *Impact of Deforestation*, *Forest Damage*, and other relevant subjects like *Biodiversity*, *Ecological Disruption*, and *Increased Deforestation*. The strong connections among these nodes indicate the strength of media framing in addressing the ecological effects of palm oil expansion.

The second block deals with palm oil productivity and industrialization. The latter is reflected in the nodes *Palm Productivity*, *Processing Industry*, *Sustainable Industry*, *Economic Policy*, and the program unrolled under the name of *Food Estate*. The counter-

narrative *Palm oil not deforestation* is related to *Forest Management Policy, Protecting Natural Resources, Forest Restoration, and Reforestation Budget*, portraying attempts of policy and industry players to frame governance and restoration storylines contesting the claims of deforestation.

In between the network, bridge nodes *Forest and crop balance*, *Food and Energy*, *Production Forest*, and *Oil palm farm security* interconnect the two blocks. This third-party position suggests a space of policy agreement over the role of the media in mediating between conservation values and food/energy security rationales. The *Forest Management Policy* appears to be a meeting point where both sides argue their case: environmentalists focus on legality and biodiversity protection, while developers emphasize production efficiency and plantation security.

In sum, this network reveals that palm oil is a topic of contested debate: media coverage tells the story of deforestation not only as an ecological impact but also through a policy lens that includes economic arguments, food and energy security, legal production forests, and the restoration agenda. A dense cluster toward environmental claims highlights reporting on impacts as dominant, while counterclaims and policy bridge nodes suggest contestation and reframing by pro-development actors.

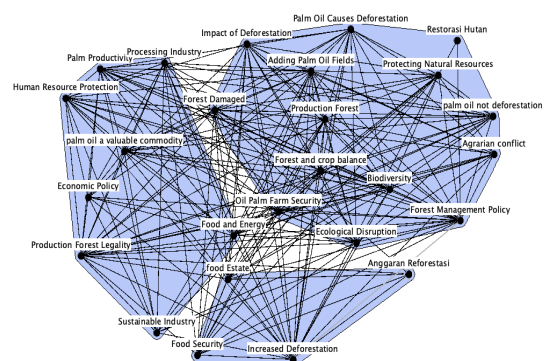


Figure 3. Discourse Network Graph

Network Topology & “Coupled Framing” Across Policy Nodes

Figure 4 shows the network topology of deforestation news reporting on Indonesian internet media. This dense network with a clear dominant community also implies that the media in Morocco does not treat environmental and development issues as separate. However,

instead, they merge into one unified ecosystem of discourse. At the centre of the network are policy and balance nodes, including *Forest and Crop Balance*, *Food and Energy*, *Food Security*, and *Forest Management Policy*, which enable the reconciliation or negotiation of pro-environmental versus industrial views.

Palm Productivity and *Sustainable Industry* is to the right of the block and connects with Palm Oil Initiatives: deforestation and palm oil. No deforestation includes: Close also means contestation; everyone knows the effects of deforestation, or they would not have to be so quickly contained in discourses of efficiency, productivity, and partial negative dialectics. The conservation block to the left, which includes *Forest Restoration*, *Protecting Natural Resources*, and *Reforestation Budget*, highlights initiatives focused on improved governance and restoration. The two realms of science and policy converge, demonstrating that legitimacy extends beyond both scientific and economic questions, constituting the primary question of meaning.

Taken together, it is a pattern of “coupled framing” of media content that links deforestation to food and energy security, the legality of forest production, and restoration. As a result, reporting is generally not polarized, but is instead only loosely connected through policy nodes that justify palm oil expansion while displaying mitigation commitments. This formation of discourse explains why narratives around palm oil deforestation can appear contradictory yet coherent in media coverage: the contradiction is maintained, yet it sustains itself through a policy description.

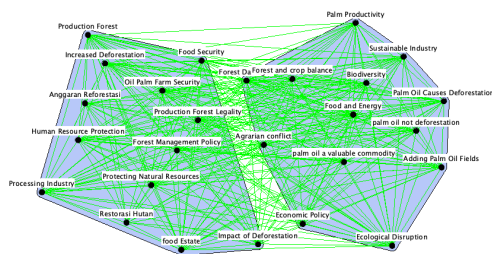


Figure 4. Network Configuration Concept

Governance at the Core: Centrality, Pathways, and Coupled Framing

Figure 4 and Table 2 illustrate that deforestation reporting occurs within a complex and interrelated discourse ecology. The centrality analysis shows that the discourse on deforestation in Indonesia is governed by a closely interconnected structure, in which governance functions as the main axis of legitimacy. The concept of *Forest Management Policy* occupies the most central position (degree 6.11%, indegree 61.11%, betweenness 14.93%), acting as the main reference point connecting economic and ecological narratives.

Furthermore, *Production Forests* and *Production Forest Legality* (degree 3.05%) reinforce the legal and development dimensions in the discourse, while *Food and Energy*, with very high betweenness (793.36), acts as the main pathway connecting expansionist themes such as *Palm Oil Land Expansion* and *Palm Oil Land Security* with ecological concerns such as *Biodiversity* and *Ecological Disturbance*. This shows that the rhetoric of food and energy security serves as a communication bridge that eases tensions between industrial growth and environmental preservation.

Raja Juli Antoni and Prabowo Subianto appear as key actors who set the agenda, while Al Hidayat Samsu and Uli Arta Siagian serve as intermediaries connecting policy and environmental clusters. It is reinforced by secondary connectors such as Budi Setiadi Daryono and Amalya Reza Oktaviani. While the allegation that *Palm oil does not cause deforestation* is only a peripheral concern and a defensive gray literature narrative, rather than a core framework or ecological statements like *Palm oil causes deforestation*, it more accurately reflects the nature of conservationist concepts. The fact that it appears to protect natural and human resources indicates the growing acceptability of restorative or moral-legal discourse often expressed by academics and NGOs. These findings, in combination, suggest a process of “coupled framing” where discourses about deforestation, governance, and food-energy security are bundled together in an ostensibly coherent but highly contested policy narrative. This narrative is constructed by powerful actors and privileges certain understandings of what constitutes valid environmental and development priorities in public discourse.

Table 2. Affiliate Centrality

Name	variable	frequency	degree (%)	betweenness (%)	Closeness (%)	Indegree (%)
Airlangga Hartarto	person	2	0.55	0.051	1.17	3,85
Al Hidayat Samsu	person	9	1.94	24.98	16.37	19.44
Food and Energy	concept	51	4.72	793.36	1.82	47.22
Sustainable Industry	concept	6	1.11	0.29	1.35	11.11
Processing Industry	concept	5	0.83	0.34	13.65	5,78
Economic Policy	concept	6	1.38	0.83	1.33	13.88
Food Security	concept	11	0.83	0.43	1.37	5,78
Palm oil not deforestation	concept	17	0.83	0.19	1.40	5,78
Palm Oil Causes Deforestation	concept	7	1.38	1.82	14.38	13.88
Herry Purnomo	person	9	1.66	0.90	15.27	16.66
Palm oil a valuable commodity	concept	23	1.94	16.96	15.18	19.44
Oil Palm Farm Security	concept	18	1.66	23.16	15.18	16.66
Adding Palm Oil Fields	concept	28	3.05	28.18	16.67	30.55
Palm Productivity	concept	14	1.66	0.90	14.85	16.66
Production Forest Legality	concept	13	3.05	4.05	16.47	30.55
Production Forest	concept	34	3.05	2.82	16.47	30.55
Forest Damaged	concept	11	1.38	0.53	15.18	13.88
Ecological Disruption	concept	9	2.22	2.81	15.71	22.22
Forest and crop balance	concept	11	1.11	0.49	14.85	11.11
Protecting Natural Resources	concept	11	1.94	17.45	14.85	19.44
Human Resource Protection	concept	11	1.94	12.77	14.85	19.44
Forest Management Policy	concept	34	6,11	14.93	19.84	61.11
Biodiversity	concept	13	2,22	17.86	1.55	22.22
Agrarian conflict	concept	6	1,11	0.32	1.37	11.11
Increased Deforestation	concept	11	2,5	3.11	16.27	02.05
Impact of Deforestation	concept	8	1,66	22.66	14.85	16.66
Raja Juli Antoni	person	57	3,33	6.62	18.87	33.33
food Estate	concept	6	1,66	1.030	1.453	16.66
Arta Siagian	person	1	0,27	0	12.58	1,92
Uli Arta Siagian	person	12	2,22	23.49	15.98	22.22
Yanto Santoso	person	47	3,611	6.43	1.914.	36.11
Petrus Gunarso	person	6	1,11	0.33	13.72	11.11
Mukri	person	6	1,66	22.62	13.45	16.66
Anggaran Reforestasi	concept	1	0,27	0	101.04	1,92
Prabowo Subianto	person	55	2,22	27.73	16.77	22.22
Anggi Putra	person	4	0,55	0.09	12.58	3,85

Name	variable	frequency	degree (%)	betweenness (%)	Closeness (%)	Indegree (%)
Budi Setiadi Daryono	person	14	1,94	19.90	16.57	19.44
M Shofiyulloh Cokro	person	4	0,83	0.22	14.01	0.83
Awal Madani	person	1	0,27	0	1.13	0.27
Nadia Hadad	person	4	0,83	1.67	13.86	0.83
Restorasi Hutan	concept	1	0,27	0	10.33	0.27
KLHK	person	4	0,83	0.17	13.19	0.83
BNPB	person	1	0,27	0	10.87	0.277
Gilang Adinugoro	person	7	1,66	17.91	1.58	16.66
Hanif Faisal	person	2	0,55	0.09	13.72	0.55
Kuntoro Boga Andri	person	7	1,38	0.89	15.62	13.88
Priyono Suryanto	person	13	1,94	2.21	15.98	19.44
Dodik Ridho	person	5	1,11	0.35	13.19	11.11
Sahat Sinaga	person	3	0,55	0.10	13.86	0.55
Purnomo Yusgiantoro	person	3	0,55	0.11	12.94	0.55
Am Putranto	person	2	0,55	0.10	13.86	0.55
Budi Mulyanto	person	15	1,38	0.64	1.58	13.88
Kacuk Sumarto	person	8	1,66	12.03	15.98	16.66
Firman Subagyo	person	7	1,66	13.10	15.10	16.66
Sadino	person	3	0,83	0.23	13.06	0.83
Heru Tri Widarto	person	2	0,27	0	13.32	0.27
Hadi Ali Kodra	person	2	0,55	0.09	14.15	0.55
Sultan B Najamuddin	person	4	1,11	0.71	15.10	11.11
Ahalla Tsauro	person	2	0,27	0	1.06	0.27
Sekar Banjaran AJi	person	5	1,11	0.60	15.62	11.11
Iqbal Damanik	person	5	0,83	0.26	13.45	0.83
Ahmad Yohan	person	6	1,11	0.436	13.45	11.11
Christina Intania	person	5	1,11	0.40	13.45	11.11
Mahfudz	person	5	1,11	0.33	1.28	11.11
Eddy Martono	person	5	1,11	0.75	15.44	11.11
Hariyanto	person	2	0,27	0	11.04	0.27
Amalya Reza Oktaviani	person	7	1,94	19.09	17.42	19.44
Sartika Nur Shalati	person	2	0,55	0.02	12.35	0.55
Gigih Prihantono	person	3	0,55	0.18	13.72	0.55

Power Relations and Narrative Domination

This discourse network analysis shows that actors related to deforestation in Indonesia involve not only institutional and government agencies but also individuals from various backgrounds, such as politicians, bureaucrats, academics, and community leaders. The obtained network is dense and complex, showing strong narrative connections across the agent's population. This scenario shows that the deforestation discourse is not fragmented but is instead organized into several clusters with strong connectivity.

Key findings depict centers of authority, including Petrus Gunarso, Eddy Martono, and Firman Subagyo, as well as institutions like the Ministry of Environment and Forestry. These players are in central nodes, indicated by their relatively high connectivity and the number of links to other nodes. This position highlights the power of narratives to influence public debate, policy, and opinion regarding deforestation in the mass media and public debates. It is consistent with the agenda-setting model, where powerful actors can frame objectives for public attention and influence legislators. (Eichel et al., 2022).

The identification of specific discourse communities in the network constitutes narrative segmentation regarding institutional and social roles. Governmental and bureaucratic organisations are most strongly connected to policy actors, while more diffuse linkages connect academics and researchers with different types of organisations. It highlights that while academic narratives may not always prevail in terms of raw numbers, they nevertheless serve as a connective tissue among different kinds of discourses.

On the other hand, peripheral members of the network, for example, Ahallla Tsauro, Dodik Ridho, and Awal Madani, play a narrower discursive role. However, they remain influential as the embodiment of counter-stories or counter-narratives to dominant narratives. In so doing, their stance epitomises peripherally originated concepts that may escape consideration in policy debates, but are necessary to maintain the diversity of opinions in deliberative democracy (Kim, 2024).

The density of ties in a network indicates the inclination towards consensus or coalitions for

certain discourses. The inescapable embrace is not necessarily the embodiment of inclusivity; rather, it is an exercise in hegemony or the promotion of a dominant discourse framework where only one set of players gets to play, and counter-narratives are silenced. In the field of media and communication, such a process could lead to the homogenization of media views, where development and commercial interests largely overtake discourses on sustainability or conservation.

These results highlight the significance of discovering actors and their discursive interactions in order to comprehend how environmental issues are constructed, circulated, and consumed by the public. This study contributes to the DNA approach as a method that identifies players' (possibly contrasting) positions in how forces of power, legitimacy, and influence are developed across complex story-networks.

4. CONCLUSION AND SUGGESTION

The research indicates that Indonesian internet media create a discourse ecosystem where narratives of environmental and economic development coexist through interconnected framing. The strategy for managing forests is the key source of legitimacy, and the frames for food and energy often support the growth of oil palm. In this setup, the state is the leading player in development rhetoric, NGOs push for environmental protection, and academics operate as middlemen between the two. These patterns show that a small group of powerful policy nodes defines the agenda.

These results suggest that policy communication needs to be more open and accountable, and that media coverage should include more communities on the fringes and dependent on forests. Academics can enhance their involvement in reconciling ecological issues, production efficiency, and food-energy security discussions. Future research should expand the dataset and temporal range, assess network sensitivity, and incorporate independent validation via satellite data or field observations.

REFERENCES

- Barranco, O., Lozares, C., & Muntanyola-Saura, D. (2022). A Network Discourse Analysis with Mixed Methods for the interpretation of qualitative interviews. *Papers*, 107(4), 1–33. <https://doi.org/10.5565/rev/papers.3081>
- Bossner, F., & Nagel, M. (2020). Discourse networks and dual screening: Analyzing soles, content and motivations in political twitter conversations. *Politics and Governance*, 8(2), 311–325. <https://doi.org/10.17645/pag.v8i2.2573>
- Cronin, T., Santoso, L., Di Gregorio, M., Brockhaus, M., Mardiah, S., & Muharrom, E. (2016). Moving consensus and managing expectations: media and REDD+ in Indonesia. *Climatic Change*, 137(1–2), 57–70. <https://doi.org/10.1007/s10584-015-1563-3>
- Eichel, A., Lapesa, G., & im Walde, S. S. (2022). Investigating Independence vs. Control: Agenda-Setting in Russian News Coverage on Social Media. *2022 Language Resources and Evaluation Conference, LREC 2022*, 5314–5323.
- FWI. (2024). *Persoalan Deforestasi di Indonesia: Sebuah Polemik Berkelanjutan*. [https://fwi.or.id/persoalan-deforestasi-di-indonesia-sebuah-polemik/#:~:text=Deforestasi Netto adalah perubahan secara,tertentu \(FWI%2C 2020\)](https://fwi.or.id/persoalan-deforestasi-di-indonesia-sebuah-polemik/#:~:text=Deforestasi Netto adalah perubahan secara,tertentu (FWI%2C 2020))
- Gebara, M. F., May, P. H., Carmenta, R., Calixto, B., Brockhaus, M., & Di Gregorio, M. (2017). Framing REDD+ in the Brazilian national media: how discourses evolved amid global negotiation uncertainties. *Climatic Change*, 141(2), 213–226. <https://doi.org/10.1007/s10584-017-1896-1>
- Global Forest Watch. (2024). *Indonesia*. <https://www.globalforestwatch.org/dashboards/country/IDN/?lang=id>
- Kementerian Lingkungan Hidup dan Kehutanan. (2023). *Laju Deforestasi Indonesia Tahun 2021-2022 Turun 8,4%*. <https://www.menlhk.go.id/news/laju-deforestasi-indonesia-tahun-2021-2022-turun-8-4/>
- Kim, J. (2024). Distributive Justice in Collaborative Outputs: Empowering Minority Viewpoints Through Deliberation. *Journal of Public Administration Research and Theory*, 34(1), 1–15. <https://doi.org/10.1093/jopart/muad012>
- Lumbanrau, R. E. (2025). *Kisah perempuan Papua di balik peristiwa viral Save Raja Ampat – “Biarpun ditangkap, saya tetap berjuang.”* <https://www.bbc.com/indonesia/articles/c4g312x23plo>
- Mangani, A. (2021). When does print media address deforestation? A quantitative analysis of major newspapers from US, UK, and Australia. *Forest Policy and Economics*, 130. <https://doi.org/10.1016/j.forpol.2021.102537>
- Manurung, T., Sukmara, D., & Younastya, A. (2025). *Status Deforestasi Indonesia 2024*. <https://simontini.id/id/status-deforestasi-indonesia-2024>
- Moeliono, M., Gallemore, C., Santoso, L., Brockhaus, M., & Di Gregorio, M. (2014). Information networks and power: Confronting the “wicked problem” of REDD+ in Indonesia. *Ecology and Society*, 19(2). <https://doi.org/10.5751/ES-06300-190209>
- Park, M. S. (2013). The dual role of the media in environmental communication as a public sphere and as political actors. *Forest Science and Technology*, 9(1), 33–38. <https://doi.org/10.1080/21580103.2012.759162>
- Prawira, I., Evelina, L. W., Irawan, R. E., & Rizkiansyah, M. (2023). Media agenda building to contribute to forest fire handling and prevention in Indonesia and Malaysia. *AIP Conference Proceedings*, 2594. <https://doi.org/10.1063/5.0110204>
- Prawira, I., Irawan, R. E., Evelina, L. W., & Rizkiansyah, M. (2021). The media agenda-setting on Indonesian forest fires: Content analysis study on three Indonesia online news media. *IOP Conference Series: Earth and Environmental Science*, 729(1). <https://doi.org/10.1088/1755-1315/729/1/012082>
- Schaub, S., & Metz, F. (2020). Comparing discourse and policy network approaches: Evidence from water policy on micropollutants. *Politics and Governance*, 8(2), 184–199. <https://doi.org/10.17645/pag.v8i2.2597>
- Suhandano, S., Firmonasari, A., & Isti’annah, A. (2024). Infrastructure discourse in Indonesian media: An ecolinguistic perspective. *World of Media*, 2024(3), 36–59. <https://doi.org/10.30547/worldofmedia.3.2024.3>
- Sung, B., Chen, H., & Park, S. D. (2024). Who Drives Policy Discourse of China’s Energy Transition: Considering Time Series Perspective, Network and Core-Peripheral Analysis. *SAGE Open*, 14(2). <https://doi.org/10.1177/21582440241240862>
- Wessa, P., Poelmans, S., & Holliday, I. E. (2013). Analysis of constructivist, network-based discourses: Concepts, prospects, and illustrations. In *Innovative Methods and Technologies for Electronic Discourse Analysis* (pp. 19–41). <https://doi.org/10.4018/978-1-4666-4426-7.ch002>