



Framing “Climate change” and “Global warming” in Indonesian mass media (2013–2022): Corpus-assisted ecolinguistics

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Abstract

The terms ‘climate change’ (CC) and ‘global warming’ (GW) are frequently utilised interchangeably within mass media. Both are often frequently linked to ozone depletion, melting glaciers, or prolonged drought. It can be contended that the two terms exhibit both parallels and distinctions in their meanings and frames in mass media. This study involved a specialised corpus gathered from two prominent online Indonesian news sites. It employed Bootcat as the data collection tool and corpus-assisted ecolinguistics as the analytical framework. The analysis reveals that Indonesian media portrays CC and GW through three primary frames: scientific phenomena, global impacts, and mitigation-causation. In the context of the Global South, Indonesian mass media plays a significant role in shaping the discourse on CC and GW. While there are certain resemblances to previous research, the media in Indonesia constructs the institutionalisation of CC and GW discourse by actively engaging international organisations and communities in mitigation efforts. Moreover, the media strongly emphasises incorporating expert opinions to frame CC and GW scientifically. From an ecological lens, Indonesian mass media express an eco-ambivalent discourse by ‘taming’ CC and GW since human agency is concealed through nominalisation and passivisation.

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Introduction

Climate change (CC) and global warming (GW) are often used interchangeably and viewed as synonymous when discussing environmental concerns. Climate change is frequently contrasted with the rapid growth of infrastructure, migration, and the resulting socioeconomic and ecological consequences (Rukikaire, 2021). In the context of environmental science, it is worth noting that a close correlation exists between global warming and the increase in temperature, which can be attributed to ozone depletion. The discussion of CC is frequently centred on the Global North, primarily due to the presence of industrialised democracies (Manzo & Padfield, 2016). Conversely, GW in the Global South is commonly linked to factors such as greenhouse gas emissions, forced migration, and political-economic instability (Ahmad & Hossain, 2015; Brock, 2012; Penz, 2017). Thus, it can be said that both CC and GW are caused by a similar global issue: industrialisation. The consequences of CC and GW are inextricably found in similar phenomena, such as increased average global temperatures over a period of time and carbon pollution on Earth (Penz, 2017).

Language in mass media also plays an important role in shaping the readers' opinions, facilitating public comprehension, and defending assumptions (Bohr, 2020; Kramar, 2023). On one side, CC and GW are perceived as natural occurrences that can be mitigated through technological advancements. Conversely, it is widely acknowledged that CC and GW are pressing issues with significant human-induced impacts that necessitate urgent attention (Boykoff & Boykoff, 2004; Kirk-Browne, 2021).

Scholars in the Global North examined media coverage in many countries, such as the United States (Kirilenko & Stepchenkova, 2012; Liu & Huang, 2022), Germany and France (Schmidt et al., 2013), the United Kingdom (Carvalho, 2005), and Russia (Boussalis et al., 2016). Conversely, only a few studies have been undertaken in countries like Malaysia (Manzo & Padfield, 2016) and India (Keller et al., 2020). Nevertheless, in the Indonesian context, no study has investigated news media representations of CC and GW. Therefore, this study aims to examine the frames of CC and GW in Indonesian news articles in a ten-year period (2013–2022) within a corpus-assisted ecolinguistics approach.

Literature Review

Corpus-assisted ecolinguistics is the interwoven application of the corpus method and ecological paradigm in criticising discourse of (non)environment (Poole, 2022). The corpus approach is utilised in ecolinguistic research because it offers analytical techniques for identifying recurring and prominent language usage patterns built as common beliefs, influencing human perceptions and actions in relation to the environment. The utilisation and prevalence of prominent linguistic patterns in our surroundings contribute to the formation of individual and collective cognitive processes. Baker (2006) exemplifies how collocation, co-occurrences of two or more words, becomes legitimised and unquestioned.

Corpus-ecolinguistics works similarly to corpus-discourse studies but addresses social problems that expand to non-human voiceless agents and future generations (Stibbe, 2015). Ecolinguistics considers the role of language in shaping the way we think, talk about, and treat our environment (Stibbe, 2015). Therefore, it is the language that plays a significant role in shaping our perception of the world around us. For example, Poole (2016) investigated how language used by the copper mining company in Arizona legitimises the industry by compensating for environmental damage by providing scholarships. Another study investigated digital simulation games to uncover how they eventually perpetuate neoliberalism by transforming the environment and animals into goods and ownership (Poole, 2020). The legitimization of corporations' activities is also evident in corpus-ecolinguistic research on company social responsibility reports (CSRs) (Rajandran, 2016). Those studies exemplified how discourses around us normalise and legitimise particular language patterns to centre human activities that do not always benefit our environment. The taken-for-granted language eventually constructs destructive discourse since human stewardship is continuously (re)produced in discourses around us.

Recent examples of frames in CC and GW include Kramar's (2023) study of agency representation in CC English media discourses, Norton and Hulme's (2019) scrutiny of CC and GW constructions in the UK editorials, Manzo and Padfield's (2016) examination of CC frames in Malaysian media, and Almaghlouth's (2022) study of CC and GW representations in Arabic mass media. Comparative studies have also been conducted by Grundmann and Krishnamurthy (2010) and

Grundmann and Scott (2014). They compared the frames of CC issues in news media in the US, UK, France, and Germany and found different representations in these countries, indicating differences in national climate change policies. This might emphasise the context-dependent nature of how CC and GW are portrayed in the media, indicating that these frames can evolve across diverse geographical contexts.

Methodology

This study employed a mixed-method research design to examine the representation of CC and GW discourse in Indonesian news over a ten-year period (2013 to 2022). The quantitative analysis involves the application of corpus linguistic methods, while the qualitative dimension is grounded in the ecolinguistics framework, entailing the use of discourse analysis techniques that involve a critical and contextual examination of the discourse (Poole, 2022).

The data of the research was a corpus of news articles written in the Indonesian language that refer to CC and GW. These articles were published in *Kompas.com* and *Detik.com* from 2013 to 2022. The rationale for selecting these two news websites lies in their inclusion among the most highly frequented news platforms, garnering an average of over 100 million monthly visits (Similarweb, 2023). Furthermore, both of these news sites are under the ownership of prominent Indonesian media companies, which arguably positions them as representatives of the prevailing landscape of Indonesian press coverage (Fajri et al., 2023). The typical readership of *Kompas.com* comprises urban, middle-class, secular individuals who predominantly support the ruling government (Ahlstrand, 2021). This seems similar to *Detik.com*, which is recognised as a benchmark for online news platform in Indonesia and is purportedly supportive of the ruling government (GeÇEr & FadİLLah, 2020).

The corpus was built by using BootCat, which is “a suite of perl programs implementing an iterative procedure to bootstrap specialised corpora and terms from the web” (Baroni & Bernardini, 2004, p. 1313). First, URLs of news articles featuring any of the search terms, “*perubahan iklim*”, “*krisis iklim*”, “*pemanasan global*”, published from January 2013 to December 2022 were collected. Subsequently, the BootCat software autonomously extracted the news texts from the supplied news URLs. This process yielded a total of 1,509 news texts, collectively comprising 771,867 words, as detailed in Table 1.

For the data analysis, this article generally relied on Baker and McEnery’s (2015) corpus-assisted discourse study (CADS) approach. Poole (2022, p. 23) highlights that CADS’ array of analytical techniques effectively detects subconscious linguistic patterns that serve to normalise and sustain various “attitudes, ideologies, practices, and dispositions” related to “the environment and non-human animals”, contributing to the climate crisis and associated environmental issues. The first step of analysis was the identification of language patterns, achieved through a keyword analysis. Keywords are words that exhibit higher frequency in one corpus compared to another, serving as indicators of prevalent discourses (Fajri, 2019; Love & Baker, 2015). Keywords reflect and pertain to the subject matter under discussion, in this case, climate change/crisis and global warming, and analysing them has emerged as a potent technique for discerning the central theme of discourse (Hamed, 2021). The analysis of keywords was performed through the CQPweb corpus tool with the log-likelihood metric (Hardie, 2012) by contrasting the CC corpus with the LCC Indonesian 2023 corpus (Goldhahn et al., 2012), an Indonesian reference corpus accessible through CQPweb. Only the highest-ranking 100 keywords based on their keyness, with grammatical words excluded, were taken into consideration. Then, brief analyses of 100 random concordances for each keyword were conducted to thematically classify them and ascertain their respective topics.

The subsequent phase of the analysis encompassed the interpretation of the language patterns, which was then followed by placing the descriptive findings within a wider socio-political framework specific to Indonesia. These stages possessed a qualitative nature as they involved collocation and concordance analyses of the keywords, aiming to enhance the interpretive depth of the keyword list. In addition, a detailed examination of concordances was also employed to examine how news writers justified their assertions, drawing from van Leeuwen’s (2007) categories of legitimization, and to analyse how the news media depicted social actors, utilising van Leeuwen’s (2008) social actor network. The final phase entailed a critical assessment, which involved highlighting the implications of these linguistic practices and the formulation of recommendations for best practices (Baker & McEnery, 2015).

Table 1 Corpus information of CC and GW frames in Indonesian mass media

News media	Articles	Words
Kompas.com	777	408,516
Detik.com	732	363,351
Total	1,509	771,867

Results and Discussion

Before examining the frames of CC and GW in the past ten years, it is worth showing the frequency of articles per year (Figure 1). It can be seen that, overall, there has been a gradual increase in the number of articles, with some minor fluctuations.

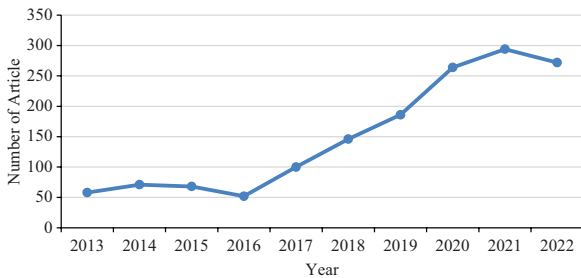


Figure 1 Frequencies of news articles per year (2013–2022)

During the last decade, the year 2021 features the most articles. This surge in coverage can be attributed to the occurrence of the 26th UN Climate Change Conference of Parties (COP26) held in Glasgow, UK, during the same year. Moving to the keywords analysis, Table 2 exhibits the keyword lists derived from the CQPweb, following thematic categorisation, representing the initial stage of the analytical process. Upon closely scrutinising the semantic categories of the keywords, it

becomes apparent that three primary themes concerning CC and GW emerge: science, impact, and mitigation-causation (as shown in Table 2).

The discussion of keywords in the following sections becomes a central analysis in a corpus-assisted ecolinguistics framework. In CADS, the (re)production of wordings in mainstream mass media plays a significant role in constructing a common-sense language that eventually constructs readers' perception of CC and GW. Keller (2020) argues that language in mass media influences public discourse and people's perceptions and behavioural intentions towards CC and GW. Therefore, the presentation of keywords in the following subsections does not merely work at the surface level, yet we argue that keywords are forms of discourse (re)production of mass media or public discourse in shaping readers' attitudes. Keywords in the corpus were investigated in context or concordances regarding the mass media's justification and legitimization strategies (van Leeuwen, 2007). The linguistic patterns where the keywords are used reveal how news writers construct the agency and legitimization of portraying CC and GW in the media.

Impact of CC and GW

Climate change and global warming are depicted as processes with far-reaching consequences extending beyond human beings. This is evident through the inclusion of topics such as 'ecology' and 'wildlife',

Table 2 CC and GW Frames in Indonesian mass media, 2013–2022

Frames	Topics	Keywords
Impacts	ecology, wildlife, disaster, threat	<i>antartika</i> 'antartica', <i>pesisir</i> 'coastal', <i>karang</i> 'coral reef', <i>paus</i> 'whale', <i>ekosistem</i> 'ecosystem', <i>everest</i> 'everest', <i>hutan</i> 'forest', <i>fosil</i> 'fossil', <i>glasier</i> 'glacier', <i>es</i> 'ice', <i>nyamuk</i> 'mosquito', <i>laut</i> 'sea', <i>salju</i> 'snow', <i>spesies</i> 'species', <i>permukaan</i> 'surface', <i>cuaca</i> 'weather', <i>saurapoda</i> 'sauropods', <i>paus</i> 'whales', <i>hiu</i> 'sharks', <i>migrasi</i> 'migration', <i>binatang</i> 'animals', <i>piton</i> 'pythons', <i>kungkang</i> 'sloths', <i>leming</i> 'lemmings', <i>bencana</i> 'disaster', <i>kekeringan</i> 'drought', <i>kepunahan</i> 'extinction', <i>kebakaran</i> 'fire', <i>banjir</i> 'flood', <i>fenomena</i> 'phenomena', <i>tenggelam</i> 'sink', <i>punah</i> 'extinct', <i>dampak</i> 'impact', <i>mencair</i> 'melting', <i>polusi</i> 'pollution', <i>ancaman</i> 'threat'
Science	meteorology, temperature	World Meteorological Organization 'WMO', <i>falak</i> 'astronomy', <i>awan</i> 'cloud', <i>matahari</i> 'sun', <i>cuaca</i> 'weather', <i>siklon</i> 'cyclone', <i>iklim</i> 'climate', <i>celcius</i> , <i>derajat</i> 'degree', <i>udara</i> 'air', <i>atmosfer</i> 'atmosphere', <i>karbon</i> 'carbon', <i>perubahan</i> 'change', <i>CO2</i> 'CO2', <i>bumi</i> 'earth', <i>emisi</i> 'emission', <i>energi</i> 'energy', <i>ekstrim</i> 'extrem', <i>gas</i> 'gas', <i>global</i> 'global', <i>panas</i> 'hot', <i>lapisan</i> 'layer', <i>metana</i> 'methane', <i>planet</i> 'planet', <i>terbarukan</i> 'renewable', <i>peneliti</i> 'researcher', <i>ilmuwan</i> 'scientists', <i>suhu</i> 'temperature', <i>pemanasan</i> 'warming', <i>gelombang</i> 'wave', <i>atmosfer</i> 'atmosphere', <i>suhu</i> 'temperature'
Mitigation and Cause	humans, politics, cause	<i>terbarukan</i> 'renewable', <i>peneliti</i> 'researcher', <i>ilmuwan</i> 'scientists', <i>mangrove</i> 'mangrove', <i>deforestasi</i> 'deforestation', <i>GRK gas rumah kaca</i> 'GHG' greenhouse gas, <i>kehutanan dan lingkungan hidup (kementrian)</i> 'Ministry of Environment and Forestry', <i>planet</i> 'planet' COP26, COP27, <i>negara-negara</i> 'countries', G20, SGDs, PBB 'UN', <i>dunia</i> 'world', Australia, IPCC, <i>mitigasi</i> 'mitigation', SDGs, ESG, COP26, CCT, <i>komite</i> 'committee', PBB, COP, FAO, Paris, INDC, SMMF, APEC, REDD+

which highlight the influence of CC and GW on non-human species. From 2013 to 2022, the Indonesian mass media has continuously featured the themes of 'ecology', 'global', and 'impact'. Upon further examination through collocation analysis, it is evident that the term 'impact' is frequently associated with nominal, verbal, and adjectival collocates, indicating the adverse effects of climate change (CC) and global warming (GW) on the environment. The ten collocates with the highest Log-likelihood value are *perubahan iklim* (n) 'climate change', *terkena* (v-passive) 'affected', *pemanasan* (n) 'warming', *global* (adj) 'global', *mengurangi* (v) 'to reduce', *buruk* (adj) 'negative', *memberikan dampak* (v) 'impact', *mengatasi* (v) 'to overcome', *lingkungan* (n) 'environment', and *merasakan* (v) 'to feel'.

Climate change and global warming are portrayed as phenomena with significant global consequences that are palpable to individuals. The presence of the passive verb collocates, as exemplified by the term *terkena* 'affected', indicates that climate change is the agent responsible for influencing both humans and the environment. The term 'affected' exhibits the highest Log-likelihood value compared to other collocates such as 'reduce' and 'overcome', indicating that humans and the environment are adversely impacted. The findings corroborate the observations made by British and American newspapers about the victimisation of individuals within the discourse surrounding climate change (Kramar, 2023).

By examining the concordances, the Indonesian media portrays climate change and global warming from a scientific perspective by referencing terms such as 'study', 'scientist', and 'research'. The utilisation of this particular approach of legitimisation is commonly observed within media contexts, as legitimacy is established by invoking impersonal sources of authority (Fajri et al., 2023; van Leeuwen, 2008). The selection of nominalisation *dampak* 'impact' and passive voice *terkena* 'affected' also frame CC and GW as natural phenomena, as shown in examples [1] and [2] below.

1. ... *penelitian ...memperingatkan populasi mamalia. susut lantaran dampak perubahan iklim*.
... recent research . warns that the population of this mammal will decline due to the impact of climate change. (whale mammal)
2. ... *Greenpeace . lebih dari 15 juta orang dapat terkena dampak kenaikan permukaan laut dan banjir pada tahun 2030*.

. report from Greenpeace . more than 15 million people could be impacted by sea level rise and flooding by 2030.

The statistical relevance of the CC and GW framing is demonstrated by the close association between the terms 'environment' and 'impact', which also extends to non-human animals. The findings presented in this study are consistent with previous research, as evidenced by the inclusion of local Indian newspapers that discuss environmental concerns in their news articles (Keller et al., 2020). Collocates referring to business, corporates, and humans are not statistically evident in the corpus. Some other non-human species mentioned in the corpus keywords are *kungkang* 'sloth', *terumbu* 'reefs', *lemming* 'lemmings', *hiu* 'sharks', and *spesies* 'species'. The categorisation of 'species' demonstrates the presence of non-human animals as living beings in an ecosystem. This linguistic strategy aligns with ecological philosophy that does not centre human stewardship but ecological equilibrium involving non-human species and the environment (Poole, 2022). This finding has important implications for developing types of environmental impacts available in mass media, particularly in the Global South context.

The inclusion of human beings as agents in framing CC and GW also shows a positive ecological impact. Instead of portraying CC and GW as 'threats', Indonesian media problematise CC and GW as shared responsibility and challenge. Some keywords like *menjaga* 'to keep', *peduli* 'care', and *melestarikan* 'to preserve' are directed to humans as responsible agents in the mitigation. Some political and community organisations are mentioned as the keywords in the corpus, such as 'APEC' (Asian Pacific Economic Cooperation), 'FAO' (Food and Agriculture Organization), 'COP' (Conference of Parties), UN (United Nations), 'IPCC' (Intergovernmental Panel on Climate Change), 'SDGs' (Sustainable Development Goals), and 'G20' (Group of 20 of the intergovernmental forum). Mentioning those communities illustrates a functionalisation strategy in constructing the CC and GW agency (van Leeuwen, 2008). Those institutions are mentioned for their global roles, functions, and responsibilities in mitigating CC and GW. In contrast to earlier findings, however, no evidence of action verbs like 'address', 'confront', or 'tackle' are detected in showing political organisations' agency (Kirk-Browne, 2021). Therefore, it can be generally concluded that Indonesian mass media do not construct CC and GW as phenomena requiring radical mitigation. The global impacts of CC and GW are tamed as challenges, not threats.

CC and GW as Scientific Phenomena

This study confirms earlier works on CC and GW in the Global North (Kirilenko & Stepchenkova, 2012; Pascoe et al., 2019), shown by keyword analysis, that Indonesian mass media also frame CC and GW as scientific phenomena. Indonesian mass media demonstrate CC and GW with lexemes referring to scientific agents, such as *ilmuwan* 'scientist' (793) and *peneliti* 'researcher' (830). Delving more deeply into the collocation analysis of the keywords *suhu* 'temperature' and *emisi* 'emission', we found three significant topics that frame CC and GW as scientific phenomena: characteristics, cause, and mitigation of the temperature rise.

Despite involving scientific agents such as 'scientists' and 'researchers', Indonesian mass media present CC and GW with particular numeral collocates to indicate the temperature rise and particular year that it happened in the past or the year predicted in the future. The findings of this paper resonate with previous studies on CC frames in Indian news media that capture CC as a phenomenon characterised by changes in temperature (Keller et al., 2020). Below are some examples.

3. ... *kajian itu menyebutkan gelombang panas di seantero Eropa bisa terjadi setiap tahun sampai 2040-an, dengan kemungkinan suhu rata-rata meningkat 3C hingga 5C pada 2100.*
... the study says heat waves across Europe could occur every year until the 2040s, with the possibility of average temperatures increasing by 3C to 5C by 2100.
4. *Pada 2015, rata-rata suhu udara alami kenaikan satu derajat, yakni mencapai 23,6 derajat celsius.*
In 2015, the average air temperature increased by one degree reaching 23.6 degree Celsius.
5. ...*beberapa wilayah Arktik dan Timur Tengah merekam kenaikan suhu lebih dari 2C*
...some Arctic and Middle East record temperature rise of more than 2C...

Example [3] above is selected to report a study about European heat waves. The scientific discourse is proven lexically by the lexemes 'study', 'temperature', and 'celsius'. Furthermore, the media also shows the researcher's prediction of the number of temperature increases in the 2040s and 2100. Examples [4] and [5] above have a similar pattern involving the number of degrees and years predicted to have a temperature rise in the past and future. The other numeral keywords

found in the corpus are 1850, 1950, 1980, 2015, 2016, 2019, and 2023. Based on the collocation analysis, the keyword 'temperature' co-occurs with the following words: *kenaikan* (n) 'rise', *udara* (n) 'air', *rata-rata* (n) 'average', *peningkatan* (n) 'increase', *bumi* (n) 'earth', *panas* (adj) 'hot', *global* (adj) 'global', *derajat* (n) 'degree', *rekor* (n) 'record', and *ekstrim* (adj) 'extreme'.

The other remarkable keyword that shows the scientific phenomenon of CC and GW is *emisi* 'emission' (1541). Observed further in collocation and concordance analysis, 'emission' is used in Indonesian mass media to frame the cause and mitigation of CC and GW. Among others, the nominal collocates *rumah kaca* 'greenhouse' (546) and *gas rumah kaca* 'greenhouse gas' (103) are used to talk about the cause of CC and GW, as shown in the examples below.

6. ...*emisi GRK juga dihasilkan dari proses pembusukan sampah organik yang menghasilkan gas metana*
...GHG emissions are also produced from the process of decomposing organic waste which produces methane gas.
7. ...*tim peneliti...mengatakan produksi buah, sayur, olahan susu, dan seafood...menghasilkan emisi gas rumah kaca (GHG) per kalori lebih banyak.*
...research... says fruit, vegetable, dairy and seafood...produce more greenhouse gas (GHG) emissions per calorie.

Example [6] refers to the exclusion of human agency by selecting the nominalisation *proses pembusukan sampah organik* 'process of decomposing organic waste'. The agent contributing to the greenhouse gas emissions is not mentioned explicitly in the media. The nominalisation is used to obscure human agency causing greenhouse gas emissions. Nominalisation intersects with strategies used in academic discourse to provide sufficient and sophisticated information (Billig, 2008; Gray & Biber, 2013; Heidari Kaidan et al., 2021). However, in a critical lens, nominalisation is also perceived as a strategy to conceal CC and GW agency (Kramar, 2023). Indonesian mass media legitimises its language to portray CC and GW as natural phenomena whose agency causing its impact is concealed (van Leeuwen, 2008). Example [7] also shows the authorisation strategy by mentioning 'research' about overconsumption and poor waste processing. Even though the collocation analysis of this study echoes the environmentalist viewpoint as proven in the Malaysian media (Manzo & Padfield, 2016), Indonesian media tend to legitimise the news by referring

to scientists and research to construct greenhouse gas emissions as leading factors of CC and GW. This finding contradicts with how the UK media portray CC as an opportunity for the industry to provide certain products to mitigate the CC (Broadbent et al., 2016).

Based on the discussion above, it can be said that despite portraying CC and GW as a threat, Indonesian mass media 'tame' CC and GW in a more assertive way. Notwithstanding the verbal collocates such as *mengurangi* (v) 'to reduce' (247) and *menurunkan* (v) 'to decrease' (62), the salience of nominalisation like *pengurangan* (n) 'reduction' (117) and *penurunan* (n) 'decrease' (93) show an ambivalent discourse of CC and GW. The nominalisation genericises the agency of CC and GW mitigations. This strategy constructs an abstract issue beyond people's direct experience (Kramar, 2023). Interestingly, this finding contradicts the Global North discourse that locates CC and GW as a political and national agenda to open international negotiations among political events and communities (Kirilenko & Stepchenkova, 2012).

Mitigation and Cause of CC and GW

The CC and GW mitigation is also institutionalised in mass media by mentioning 'commitment' by the government, legal documents, and organisational movements. The involvement of global organisations and movements constructs a global 'imaginary' shared by transnational common practices (Kunelius & Eide, 2012). Some communities and movements are mentioned in the corpus, such as 'INDCs' (Intended Nationally Determined Contributions), 'REDD+' (Reducing Emissions from Deforestation and forest Degradation in developing countries, and additional forest-related activities that protect climate), 'CCT' (clean coal technologies), 'IPCC' (Intergovernmental Panel on Climate Change), 'Ministry of Public Works and Housing', and 'UNFCCC' (The UN Framework Convention on Climate Change). This institutionalisation aims to mainstream the issue into institutions and organisational practices (Pascoe et al., 2019). Below is an example from the corpus.

8. ... *dokumen Intended Nationally Determined Contributions (INDCs)*, ... *untuk mencapai 29 percent penurunan emisi GRK di tahun 2030*.
... the Intended Nationally Determined Contributions (INDCs) document, ... to achieve a 29 percent reduction in GHG emissions by 2030.

Similar to mass media in the Global North that frames political mitigation (Broadbent et al., 2016; Norton & Hulme, 2019), Indonesian mass media also involves identifying particular political movements and communities from their institution names and documents. This identification agency is palpable in Indonesian mass media to rationalise the roles and functions of those institutions (Fajri et al., 2023; van Leeuwen, 2008).

One of the notable keywords to frame CC and GW mitigation is *energy* 'energy' that co-occurs with adjectival collocates *terbarukan* 'renewable' (272), *alternatif* 'alternative' (132), *hemat* 'saving (energy-saving)' (116), nominal collocates *transisi* 'transition' (202), *sumber* 'source' (512), *penggunaan* (n) 'use' (648), *fosil* 'fossil' (253), *listrik* 'electricity' (899), and *sumber daya mineral* 'mineral resources' (25). Those collocates reveal the opportunity for CC and GW to find alternative energy instead of those produced by fossil fuels, affirming media framing in the Malaysian context (Manzo & Padfield, 2016).

The analysis found that Indonesian mass media frame 'renewable energy' as mitigation action by national/global institutions and society. The collocations of 'energy' still refer to scientific discourse that needs scientists' and researchers' roles in executing the actions. Below are examples of the concordance lines of the words *renewable* and *transition*.

9. ... *emisi karbon juga dapat dikurangi dengan menggunakan sumber **energi terbarukan** untuk menghasilkan listrik yang dibutuhkan*.
... carbon emissions can also be reduced by using renewable energy sources to produce the required electricity.
10. ... *KTT G20 ... mendukung transisi energi di sektor ketenagalistrikan di Indonesia dan konsisten menjaga batas pemanasan global di bawah 1,5°C*.
The ... G20 Summit ... supports the energy transition in the electricity sector in Indonesia and consistently maintains the global warming limit below 1.5°C.

The passivisation of renewable energy reduction in example [9] shows the erasure of agency in mitigating climate change. A similar strategy is also evident in the British and American news outlets that conceal direct agency in climate change mitigation (Kramar, 2023). Despite portraying the Indonesian government as the agent to mitigate climate change, Indonesian mass media tend to select the international community, G20, as the

agent even though the verb used, 'support', is less in strength compared to 'confront' and 'deal' used in the parliament discourse (Kirk-Browne, 2021).

Seen from an ecological lens, Indonesian mass media articulate an eco-ambivalent discourse (Stibbe, 2015). On one side, the discourse of CC and GW has involved the voiceless agents in news descriptions, but on the other side, the agency of CC and GW mitigation remains unclear. The salience of global impacts and scientific phenomena show the intertextuality framings in the Global North and Global South (Boykoff & Boykoff, 2004; Grundmann & Scott, 2014; Manzo & Padfield, 2016). The use of passivisation and nominalisation around the keywords demonstrates that the media aims to avoid emphasising the agents involved in climate change mitigation efforts. Instead, the process and results presented in the clause are staged as more prominent elements in the news articles. As a platform that can influence public perception, language in mass media constructs social cognition about climate change and global warming mitigation. As a representation of the mental model of society, language in mass media takes an essential role in shaping the readers' understanding, belief, and behaviour (Stibbe, 2015; Van Dijk, 2009).

Hence, the concealment of human involvement, including the role of government in both causing and addressing CC and GW, serves to portray CC and GW as natural phenomena over which humans have limited control. However, this narrative strategy raises critical questions about the societal implications and accountability for climate action. Moreover, the readership demographic of these news portals (*Kompas.com* & *Detik.com*), comprising urban, middle-class, secular individuals who predominantly support the ruling government, adds complexity to the discussion. It suggests that the media discourse may reflect or reinforce certain socio-political ideologies prevalent within this demographic. For instance, the alignment with the ruling government's stance on environmental issues could influence the portrayal of climate change and mitigation efforts in a manner that aligns with government narratives or policies. This underscores the importance of critically examining media representations of environmental issues, as they not only shape public perception but also influence societal attitudes and policy priorities. The failure of Indonesian mass media to promote discourses advocating for the protection of life-supporting systems further emphasises the need for a more nuanced and proactive approach to environmental communication that fosters ecological awareness and collective action.

To promote an eco-beneficial discourse, Indonesian news media should foreground stories on direct mitigation by society. Stibbe (2015, p. 30) asserts that eco-beneficial discourse "conveys ideology that can actively encourage people to protect the systems that support life". The institutionalisation of CC and GW discourse by foregrounding international communities excludes the society's responsibility and actions in adapting the CC and GW. Despite masking the agency in mitigation, mass media can broadcast stories on risks and resilience in climate change adaptation (Bevitori & Johnson, 2022). Mass media should employ language as a tool to construct an understanding of the cause, impact, and mitigation of CC and GW. Hence, the social cognition about CC and GW constructed through mass media will shape people's behaviour and actions in the CC and GW adaptation.

The ecological philosophy posits that media discourse should incorporate an ecological perspective to enhance readers' ecological consciousness and foster positive ecological behaviours, hence facilitating the advancement of ecological civilisation (Cheng, 2022). The corpus analysis revealed that non-human species have been involved in the ecosystem, voicing the co-existence philosophy, yet the agency of climate change and global warming mitigation remains vague. The incorporation of worldwide political groups and communities ultimately seeks to establish the institutionalisation of discourse surrounding climate change and global warming. Ecologically, mass media can voice the stories of how people adapt to the climate crisis and articulate a more ecological strategy to construct a collective belief and actions in climate change and global warming adaptation.

Conclusion and Recommendation

By involving the specialised corpus collected over the past ten years, this article analysed the representation of CC and GW in Indonesian news media within a corpus-assisted ecolinguistics framework. The findings showed that Indonesian mass media frame CC and GW in terms of science, impacts, and mitigation-cause. Unlike frames in the Global North, Indonesian media tend to 'tame' CC and GW by characterising the phenomena regarding temperature rise, instead of 'threat' as evident in the British newspapers. CC and GW are not portrayed as phenomena that require direct and urgent actions by the government and society since keywords referring to those actions are absent in the analysis. The Indonesian mass media did not perceive these phenomena as

'opportunities' but rather as 'challenges' necessitating collective responsibility shared among individuals, political entities, and the government. By examining media framing from an ecological perspective, we expect that Indonesian news media can foreground more stories on climate change's direct mitigation and environmental impact. Further research on corpus-assisted ecolinguistics on CC and GW can be conducted by taking big data from other sources, such as discourses produced by the government, corporations, or non-government organisations in responding to the CC and GW issues. An extended study on how people perceive news on CC and GW is highly suggested so that the discourse consumption can be further explained to assist this study. The employment of mixed-method in CDA which encompasses intertextuality and interdiscursivity of CC and GW frames will also be beneficial to provide richer study on CC and GW.

Conflict of Interest

The authors declare that there is no conflict of interest.

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