

Framing environmental disasters in American and Brazilian news media: A comparison of the  
Amazon and Australian fires news coverage

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### Abstract

Building on scholarship of environmental news coverage and framing, this cross-national content analysis explores the differences in news coverage of the Amazon and the Australian fires, between two American and two Brazilian news newspapers. Research suggests that socioeconomic, cultural, and political differences have an effect on how events are framed. Therefore, we predicted both countries would use different frames in their coverage of the events. We predicted that the U.S. would focus mainly on Politics and policymaking, and Brazil would focus mainly on Ecology, with mixed results. Both countries had Opinion and Ecology as dominant frames, and Science was the least used frame in news coverage. These results could be tied to the ascending of far right and anti-science movements in Brazil and in the U.S., with the elections of Presidents Bolsonaro and Trump.

*Keywords:* Environmental communication; framing; cross-national comparison; news media; content analysis

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According to Schudson (2002), the media contribute to society by actively creating messages, meanings, and symbols. Journalists construct messages that are then consumed by a mindful public that is seeking accurate information to make decisions about socio-political issues affecting them and their families. Professional journalistic standards notwithstanding, news values are more complex than a set of industry rules or guidelines (e.g., Robie, 2012). Deuze (2005) suggests that it is unwise to expect common professional standards among journalists in different countries: “It is by studying how journalists from all walks of their professional life negotiate the core values that one can see the occupational ideology of journalism at work” (p. 458).

The purpose of this study was to investigate the frames used in the coverage environmental disasters, in countries with different socioeconomic and political backgrounds. Over decades, social scientists of diverse disciplines have attempted to define the concept of “frame,” the theory of framing, the act of “framing,” itself, and what exactly comes of it (Birkland, 1998; Chong & Druckman, 2007; Entman, 1993; Gamson & Modigliani, 1987; Giltin, 1980; Nisbet, 2009; Shoemaker & Reese, 1996; Scheufele, 1999; ). To frame is to select and make salient certain aspects of a reality, in order to promote a specific definition, interpretation, evaluation and/or treatment recommendation of it (Entman, 1993). Relying on Entman’s (1993) definition of framing theory, or any framing theory for that matter, we acknowledge that the media has significant effects on the audience consuming it (Scheufele, 1999). The theory has been applied to a diverse set of topics covered by the media: When applying it to climate change,

for example, it serves to bring to light which perspectives on the controversial subject are prevailing (Metag, 2016).

Climate has had an increase in international coverage in the past two years (Pacoma, 2019), creating the need for communication and framing research, specifically in the developing countries that are most affected by the climate crisis (Boykoff & Roberts, 2007; Metag, 2016). The United States, a developed country, occupies the fifteenth overall position in the 2019 Human Development Index, while Brazil, an emerging country, is in the seventy-ninth position. Even so, data has shown the Brazilian population to be one of the most concerned and active in environmental causes, while Americans have divided opinions consistent with partisan affiliations (Wike, 2018).

A previous study comparing the framing of climate news in Brazil, Germany, India, South Africa, and United States, for example, found that while Brazilian media frames climate change as a “catastrophe,” the American media sees it as an “ongoing conflict” (Luck, et al., 2018); another study found that American media are a lot more skeptical than Brazilian media when it comes to climate change (Painter, 2011).

These two nations are diverse, influential, and unique. Their differences directly influence the frames used by the national media, and, therefore, the population’s perception toward the issue (Hanitzsch, 2007; Kwon & Moon, 2009). Research suggests that framing research is usually done inside national boundaries (De Vreese & Semetko, 2001), and, regarding a subject of global concern such as the environment we all share, a macro-level, cross-national approach would be beneficial and useful. It broadens our understanding of how these issues are being portrayed around the world, shaping our feelings and behavior around them (Chong & Druckman, 2007; Kwon & Moon, 2009).

### **Environmental Communication and Framing**

Scholars have studied framing applied to a variety of subjects; among them, environmental and climate news (Boykoff & Roberts, 2007; Metag, 2016; Nisbet, 2009; Pacoma, 2019; Rice, Gustafson, & Hoffman, 2018; Stecula & Merkley, 2019; Walker, Kurz & Russel, 2018; Zamith, Pinto, & Villar, 2012).

Individual framing is the process in which one develops a personal conceptualization of an issue, either about something they're hearing for the first time, or a reconceptualization of their previous views (Chong & Druckman, 2007; Entman, 1993). On the other hand, media framing lies in the hands of the communication professional, and can be described as the essence that puts together and attributes meaning to a string of events, necessary for the public to make sense of unrelated bits of information (Entman, 1993; Gamson & Modigliani, 1987; Scheufele, 1999). Although they're often flying under our radar, frames shape perception, behavior, and attitude (Chong & Druckman, 2007), as they "organize the world both for journalists who report it, and, in some important degree, for us who rely on their reports" (Gitlin, 1980, p. 7).

In Entman (1993), a frame is defined through selection and salience, and performs four basic functions: 1) problem definition; 2) cause diagnosis; 3) moral judging; and 4) remedy suggestion. It presents the problem to the audience, along with what or who is responsible for it, an evaluation of the issue, and what can be done about it (Nisbet 2009). When applied to public affairs and policy especially, framing is an unavoidable aspect of the communication process: While journalists rely on frames to create compelling reports, and audiences to make sense and discuss events, "policymakers apply frames to define policy option and reach decisions; and experts employ frames to simplify technical details and make them persuasive" (p. 16). The construct of framing is central to the links between media, public opinion, and policy.

**Cross-national framing comparison**

Framing research facilitates the identification of patterns and themes in a sample, which, when compared to other samples, can disclose incredibly powerful information and insight on how different newspapers, political parties, cities, cultural groups and so on, interpret and tell the same stories (Metag, 2016). Making that comparison a cross-national one is an appropriate approach for a subject such as climate change, or the coverage of any global event, since it provides a macro-level perspective of an issue that affects us all (Kwon & Moon, 2009). Still, research has pointed out that the majority of framing research is limited to national boundaries (Boykoff & Roberts, 2007; De Vreese & Semetko, 2000; Hanitzsch, 2007).

Furthermore, scholars have highlighted a deficiency in this line of scholarship outside of North America and Europe, despite the significant global impact of some of the left-out nations, such as China, India, and Brazil, on the global landscape (Boykoff & Roberts, 2007; Metag, 2016). Part of the study of frames is the study of possible socio-structural and organized variables that influenced the creation and modification of those frames (Scheufele, 1999; Shoemaker & Reese, 1996). Each nation's journalistic practice reveals what it has in common with others, as well as its unique characteristics (Hanitzsch, 2007). Furthermore, cultural differences should be considered just as much as a country's political ideology as an influencer of frames (Kwon & Moon, 2009).

**Brazil and the U.S.** The United States, a developed country, occupies the fifteenth overall position in the 2019 Human Development Index, and Brazil, an emerging country, is in the seventy-ninth position. While it could be inferred, at first, that countries higher up on the index would be also be more aware and active towards climate change and environmental issues alike, research has shown that is not necessarily the case. Even though American public awareness of

climate change has grown over the years, and despite two decades of stronger science and coverage, Americans, especially conservatives, are still thought to be unaware of the 97 percent expert climate consensus (Nuccitelli, 2018; Nisbet, 2009).

The situation becomes even more critical when compared to Latin American and European countries—specifically, Brazil (Dayrell & Urry, 2015). Recent Pew data showed that 90 percent of Brazilians believe climate change is harming people now, while only 41 percent of Americans expressed that belief; a percentage lower than the global median of 51 percent (Wike, 2016). Another 26-nation survey conducted by the research center placed Brazil as the seventh most concerned country about climate change, and the United States in the twenty-first position (Poushter & Huang, 2019). Out of the top 10 countries most concerned about climate change, five are European (Greece, France, Spain, Germany), three are Latin-American (Brazil, Mexico, Argentina), two are Asian (Japan, South Korea), and one is African (Kenya).

While in Brazil climate change occupies the first position out of all the possible concerns (72%), followed by the condition of the global economy (66%), the report showed the top concerns of Americans to be cyber-attacks from other countries (74%), and ISIS (62%) (Poushter & Huang, 2019). An even more recent survey conducted by Gallup showed that only 6 percent of Americans cite environmental and climate issues as the nation's most important problem (Newport, 2019).

Brazil once had an outstanding reputation for the protection of its environment and green policies, having 80 percent of its energy generated by hydroelectric plants and being responsible for only 2.25 percent of global CO<sub>2</sub> emissions, compared to 14.75 percent from the U.S., while still being the fifth largest country in the world (Ge & Friedrich, 2020; Dayrell & Urry, 2015; Painter, 2011). However, Brazilians have hit a new low in satisfaction with government efforts to

protect the environment, with 30 percent of approval in 2018—before the Amazon and Pantanal fires (Archer & Ray, 2019). The increasing dissatisfaction that started in 2014 has been linked to the highest rate of deforestation and fires in the rainforest in a decade, and the 2018 election of Brazilian President Jair Bolsonaro, who has been personally fined for violating environmental regulations (Archer & Ray, 2019; Casado & Londoño, 2019). The Brazilian Minister for the Environment appointed by Bolsonaro, Ricardo Salles, was also convicted of an environmental crime, and has been involved in the dismantling of the Brazilian Institute for the Environment, and the moving of the Brazilian Forest Service from the Environment Ministry to the Agriculture Ministry (Silva, 2020).

Bolsonaro, a far-right military politician, has already gave up over 1,330 square miles of protected forest, meaning an 80 percent increase of forest-cover loss compared to a year before (Casado & Londoño, 2019). During his campaign, he promised to do so since the protected areas are, in his opinion, an obstacle to economic growth (Londoño, 2018). Similarly, U.S. President Donald Trump has also weakened environmental policy during his term, backing out of the Paris Agreement and prioritizing the building of infrastructure over environmental regulation (Colman, 2020). Both Presidents and the political ideologies they come from have set in their countries a wave of anti-scientific behavior, along distrust and hostility toward the media (Kakutani, 2018). Americans' reported views on climate change, specifically, are "sharply divided along partisan lines," with 68 percent of Democrats against 20 percent of Republicans seeing it as a serious problem (Poushter & Huang, 2019).

While it is true that both countries show political similarities as of recently, historically and culturally they still come from very distinct socioeconomic, cultural and political



backgrounds, with sharply distinct views on environmental issues. Based on the existing theory and literature, we propose the following:

**H1:** The selected American and Brazilian newspapers will report the 2019 Amazon and 2020 Australian fires through different frames.

**H2:** The selected American newspapers will report the 2019 Amazon and 2020 Australian fires mainly through the Politics and policymaking frame

**H3:** The selected Brazilian newspapers will report the 2019 Amazon and 2020 Australian fires mainly through the Ecology frame

### **Methods**

Framing research is generally guided by four main steps: (1) identification of an issue; (2) isolation of specific attitudes of the public that may have been determined by frames; (3) definition of an initial set of frames and a coding scheme, using prior work as reference; and (4) coding of the content in the sample (Chong & Druckman, 2007). The content is defined as the entire range of qualitative and quantitative information contained in mass media (Shoemaker & Resse, 1996).

The content analysis method has been widely used in environmental communication scholarship, especially in climate communication research, looking to identify pattern and key themes brought to the public's attention by the media (e.g., Boykoff & Roberts, 2007; Cook, et al., 2018; Dayrell & Urry, 2015; Han, Sun, & Lu, 2017; Kwon & Moon, 2009; Luck, et al., 2018; Metag, 2016; Nisbet, 2009; Oreskes, 2005; Pacoma, 2019; Painter, 2011; Rice, Gustafson, & Hoffman, 2018; Stecula & Merkley, 2019; Thistlethwaite, et al., 2019; Walker & Kurz, 2018 ).

### **Sample and procedure**

To address our hypotheses, we conducted a content analysis of coverage of the 2019 Amazon and 2020 Australian fires by *The New York Times* and *The Washington Post*, representing the U.S. news media, and by *O Estado de São Paulo* and *O Globo*, representing Brazilian news media. The newspapers were selected based on their nationwide reputation, and because they had the highest number of articles found on the LexisNexis database, when searching for the keywords “Amazon” and “Australia,” in English, and “Amazônia” and “Austrália,” in Portuguese. The unit of analysis for this study was the first paragraph of each article, selected from each newspaper in the specific timeframe, under the filters: “news,” for type, and “newspapers,” for publication type.

Both the Amazon and Australian fires were widely covered by international media, happened within a six-month timeframe and fit into Birkland’s (1998) definition of focusing events: sudden, receive a lot of attention, and may be key to advancing policy change. The sample includes all the articles that fit the criteria published in a week of coverage of each event: 08/19 to 08/26 for the Amazon Fires and 01/01 to 01/07 for the Australian Fires. Of the 101 articles that compose the total sample, 48 are Brazilian and 54 are American; 42 from *O Estado de São Paulo*, 38 from *The New York Times*, five from *O Globo*, and 16 from *The Washington Post*. Ideally, the coding process would have been conducted by two, unbiased coders, unaware of the projects’ purpose. However, given that time limits and the language barrier, the first author conducted the coding process.

An adapted version of Gregorio, Price, Saunders and Brockhaus’ (2013) codebook for environmental news was used in the analysis, placing the articles within the following original frames: (1) Ecology; (2) Economic and markets; (3) Politics and policymaking; (4) Civil society; (5) Governance context; (6) Science; and (7) Culture; along with three added categories: (-8)

Unrelated; (-9) No articles; and (-10) Opinion. The protocol guidelines of the original coding protocol guide were adapted to fit this project's theme (coverage of the Amazon and Australian fires), excluding themes specific to the original study about REDD policies (Gregorio, et al., 2013).

To test the hypotheses, we analyzed a week's worth of news articles from these four newspapers, through a frequency distribution (Table 1), to determine which frames were dominant overall, and ran crosstabs with chi-square tests to determine which frames were dominant during the coverage in each nation (Table 2) and each newspapers (Table 3).

### Results

H1 predicted that the selected American and Brazilian newspapers would report the 2019 Amazon and 2020 Australian fires through different frames. A frequency distribution shows that the most dominant frame across all newspapers from both countries (Table 1) is the Ecology frame (23.76%), with Opinion coming in close second (21.78%). These frames are then followed by Politics and policymaking (16.83%), Unrelated (9.90%), Civil society (8.91%), Culture (7.92%), Governance context (5.94%), Economy and markets (3.96%), and Science (0.99%). One newspapers, Brazilian *O Globo*, did not publish any articles about the Australian fires during the selected week and, therefore, was coded "missing." H1 was not supported. This finding, however, is not likely to be representative of the entire Brazilian and American media, as the results of the chi-square tests were not significant  $X^2(8)=10.3049$ ,  $Pr>0.05$ .

[Insert Table 1 here]

H2 predicted that the selected American newspapers would report the 2019 Amazon and 2020 Australian fires mainly through the Politics and policymaking frame. The American newspapers' dominant frames are also Ecology (24.07%), and Opinion (20.37%). Politics and

policymaking is third with 18.52%, Civil society and Unrelated both with 12.96%, Culture (7.41%), and, finally, no articles at all in the Science and Economy and markets categories (0.00%). H2, therefore, was also not supported.

H3 predicted that the selected Brazilian newspapers will report the 2019 Amazon and 2020 Australian fires mainly through the Ecology frame. A crosstab with chi-square test of frames by nationality, which shows the Opinion and Ecology tied in first place (23.40%) as the prevalent frames used by the Brazilian newspapers, partially supporting H3. These categories are followed by Policy and policymaking (14.89%), Economy and markets and Governance contexts also tied (8.51%), Unrelated (6.38%), Civil Society (4.26%), and Science (2.13%).

[Insert Table 2 here]

The results of the crosstab with chi-square test of frames by newspapers were significant  $X^2(24)=39.4612$ ,  $Pr<0.05$ , and are likely an accurate representation of the frames used by *O Estado de São Paulo*, *The News York Times*, *O Globo*, and *The Washington Post* in the coverage of environmental disasters. *O Estado de São Paulo* also has Opinion and Ecology tied as the main frame (26.19%), followed by Policy and policymaking (14.29%), Economy and markets, Governance contexts, and Unrelated tied (7.14%), Civil Society (4.76%), and no articles under Science (0.00%). *The New York Times* used mainly Ecology (26.32%) to frame its articles, then Opinion (18.42%), Policy and policymaking (15.79%), Civil society (13.16%), Culture and Unrelated tied at 10.53%, Governance context (5.26%), and no stories in the Economy and markets and Science categories (0.00%).

*O Globo*, with only five articles, did not publish any articles about the Australian fires in the selected time frame. The articles were evenly distributed among the Economy and markets, Politics and policymaking, Governance context, Culture, and Science frames, all at 20.00%.

There were no articles in the Opinion, Unrelated, Ecology, and Civil society frames (0.00%).

Opinion and Politics and policymaking were the dominant frames in *The Washington Post's* coverage (25.00%), followed by Ecology and Unrelated (18.75%), Civil society (12.50%), and no articles in the remaining categories.

[Insert Table 3 here]

### Discussion

Based on the literature and data, we predicted that the American newspapers (*The New York Times* and *The Washington Post*) would use different frames compared to the Brazilian newspapers (*O Estado de São Paulo* and *O Globo*), in covering the 2019 Amazon and 2020 Australian fires (H1). We also predicted that politics and policymaking frame would dominate the American newspapers' coverage (H2), while Ecology would be the dominant Brazilian frame (H3).

Scholars suggest that distinct cultural, political, and socioeconomic backgrounds have an effect on the coverage of events by the media (Hanitzsch, 2007; Kwon & Moon, 2009; Metag, 2016). The data also shows clearly the mostly cultural and socioeconomic differences, and, mainly political similarities between Brazil and the United States (e.g., Dayrell & Urry, 2015; Ge & Friedrich; 2020; Painter, 2011; Poushter & Huang, 2019; Wike, 2016). The Brazilian population has presented itself much more concerned and aware about environmental (climate change, specifically) issues over the years, despite President Bolsonaro's anti-environmental position, which is similar to Trump's standing in the U.S (Dayrell & Urry, 2015; Newport, 2019; Wike, 2016). On the other hand, Americans understand climate change much more as a political matter, with opinions varying sharply based on political party affiliation (Painter, 2011; Poushter & Huang, 2019).

Regardless of country and newspaper, the results show that even though the Ecology frame is the overall leader, meaning most of the articles were describing what happened, the Science frame, which describes the key “why it happened” and “how to fix it” aspects of it is barely utilized. Politics and policymaking also ranked high up, as the third most used frame, along with the remaining frames that are mostly related to society’s day-to-day life and culture, which can be interpreted as society’s interest lying in what affects them personally, as opposed to the state of the environment. Finally, the Opinion frame occupying the second place overall also suggests these newspapers are prioritizing opinion writing over almost every other frame, about a subject that isn’t a matter of opinion in the first place (Nuccitelli, 2018; Nisbet, 2009).

Both countries show similarities such as Opinion and Ecology being the dominant frames with little difference between the two, and Politics and policymaking in third place. However, while the frames that follow the first three in Brazil are Economy and markets, and Governance context tied with Science, the American frames that follow are Civil society and Unrelated stories (how the Australian fires affected tourism, or the Australian Open, for example). It makes sense that Economy and markets and Governance context are more dominant in Brazil as opposed to the U.S., since one of the two focusing events, the Amazon fires, happened in Brazil (Birkland, 1998). Brazilians ought to be more worried about their economy and what measures the government is taking to protect the Amazon than Americans, since it impacts them directly. This result also falls in line with what Brazilians report to be their second most pressing problem after climate change, the global economy (Poushter & Huang, 2019). Americans, on the other hand, show more interest in Politics and policymaking and their Civil society compared to Brazilians. This result illustrates how Americans are more concerned about problems that threaten the United States specifically, as opposed to global issues shared by all countries. As

mentioned earlier, Americans' top concerns are cyber-attacks from other countries and ISIS (Poushter & Huang, 2019).

Despite the fact that the initial hypotheses were either partially or not supported, these results contribute to the understanding of the environmental news coverage of two significantly influential, diverse, yet different countries, and how external circumstances such as politics and socioeconomic status can affect the functioning of the media.

Past studies have shown Brazilians to be more concerned and aware of environmental issues than Americans. However, Brazil underwent a radical change in government and political ideology only in the past year, with far-right Bolsonaro becoming President in 2019, while Americans experienced Donald Trump's ascendancy to office in 2017. What happened during this two-year gap might explain some of the growing similarities between both countries when it comes to environmentalism (Archer & Ray, 2019; Casado & Londoño, 2019).

### **Limitations and implications**

Exploring further the relationship of these results with politics can be the topic of a future study, that examines specifically how the coverage of environmental events has changed along with the Brazilian and American political climate. Even though the present results were significant enough to likely be found in the coverage of these specific newspapers, they cannot be generalized to all Brazilian and American media. The small sample size, due to time and resource constraints, was not enough to provide a comprehensive and complete view of how these two huge and complex countries cover environmental disasters. The language barrier also impacted the sample size; there was no possibility of training outside coders who speak fluent Portuguese.

A future study regarding these two countries, conducted with enough time, would benefit from finding and training other communication students and scholars who speak the language fluently, and who could conduct the coding. For more comprehensive results, more newspapers should also be added to the sample, along with a wider time frame. Future studies could even look into the differences between newspapers specifically, based on their editorial differences.

The present study also adds to the literature that uses Entman's (1993) concept of framing as problem definition, Birkland's (1998) concept of focusing events, and the area of cross-national media effects research, specifically research around Latin-American countries (Boykoff & Roberts, 2007; De Vreese & Semetko, 2001; Hanitzsch, 2007; Kwon & Moon, 2009; Metag, 2016). Researchers may also replicate this project, applying the codebook (Appendix A) and coding protocol guide (Appendix B) to other countries and other newspapers. In practice, journalists and the media in general can use information like this to inform and influence the way they cover environmental events in the future.



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Table 1

*Frequency distribution of frames*

RECODE of Frame (Frame)	Freq.	Percent	Cum.
-10	22	21.78	21.78
-8	10	9.90	31.68
1	24	23.76	55.45
2	4	3.96	59.41
3	17	16.83	76.24
4	9	8.91	85.15
5	6	5.94	91.09
6	1	0.99	92.08
7	8	7.92	100.00
Total	101	100.00	

Table 2

*Crosstab and chi<sup>2</sup>: frame by nationality*

RECODE of Frame (Frame)	Nationality		Total
	0	1	
-10	11	11	22
	23.40	20.37	21.78
-8	3	7	10
	6.38	12.96	9.90
1	11	13	24
	23.40	24.07	23.76
2	4	0	4
	8.51	0.00	3.96
3	7	10	17
	14.89	18.52	16.83
4	2	7	9
	4.26	12.96	8.91
5	4	2	6
	8.51	3.70	5.94
6	1	0	1
	2.13	0.00	0.99
7	4	4	8
	8.51	7.41	7.92
Total	47	54	101
	100.00	100.00	100.00

Pearson chi2(8) = 10.3049 Pr = 0.244

Table 3

*Crosstab and chi<sup>2</sup>: frame by newspaper*

RECODE of	Vehicle				
Frame	1	2	3	4	Total
(Frame)					
-10	11	7	0	4	22
	26.19	18.42	0.00	25.00	21.78
-8	3	4	0	3	10
	7.14	10.53	0.00	18.75	9.90
1	11	10	0	3	24
	26.19	26.32	0.00	18.75	23.76
2	3	0	1	0	4
	7.14	0.00	20.00	0.00	3.96
3	6	6	1	4	17
	14.29	15.79	20.00	25.00	16.83
4	2	5	0	2	9
	4.76	13.16	0.00	12.50	8.91
5	3	2	1	0	6
	7.14	5.26	20.00	0.00	5.94
6	0	0	1	0	1
	0.00	0.00	20.00	0.00	0.99
7	3	4	1	0	8
	7.14	10.53	20.00	0.00	7.92
Total	42	38	5	16	101
	100.00	100.00	100.00	100.00	100.00

Pearson chi2(24) = 39.4612 Pr = 0.024



## Appendix A

## Code Book

**Level 1**Story identification numberAuthorSex:

Male = 0

Female = 1

Male and female = 3

Non-applicable = -1

HeadlineDateSectionKeyword:

Amazônia = 1

Amazon = 2

Austrália = 3

Australia = 4

Nationality:

0 = Brazilian

1 = American

Newspaper:

1 = *O Estado de São Paulo*

2 = *The New York Times*

3 = *O Globo*

4 = *The Washington Post*

## **Level 2**

### Frame

1 = Ecology

2 = Economy and markets

3 = Politics and policymaking

4 = Civil society

5 = Governance context

6 = Science

7 = Culture

-8 = Unrelated

(-9) = No articles

(-10) = Opinion

## Appendix B

## Coding Protocol Guide

(1) Ecology

Deforestation

Degradation

Forest Conservation

Sustainable forest management

Afforestation and reforestation

Agriculture

Small-scale agricultural management systems

Large-scale agriculture and livestock management systems

Biodiversity

Biodiversity conservation

Other major ecological concerns

(2) Economy and markets

Economics and business

(3) Politics and policymaking

International organizations and political debates

State and bureaucratic interests

Forest policies/policy reform

Agricultural and agribusiness policies/policy reform

Infrastructure policies/policy reform

Energy policies/policy reform

Industrial sector policies/policy reform

Decentralization/regional autonomy policies/policy reform

Land tenure policies/policy reform

Policy reform in other sectors

Indigenous rights policies/policy reform

(4) Civil society

Civil society interests

Campaigns/protests

Civil law

(5) Governance context

Corruption

Illegal logging

Law enforcement

(6) Science

Scientific funding and processes

New scientific methods, fundamentals, new studies

Applied science, new technologies

(7) Culture

Knowledge and public understanding

Lifestyle

Official national culture

Minority culture

Popular culture

(-8) Unrelated

(-9) No articles

(-10) Opinion