Claims, Frames, and Blame: Coverage of Climate Change in ASEAN’s English-Language Newspapers, 2002-2012

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Abstract

As economies in Southeast Asia develop, there is renewed interest in the impact such growth has on nature. This study seeks to investigate how environmental issues have been covered in the English-language press of the region. Are some countries providing greater print news coverage versus others? Are there detectable patterns or noticeable biases in the coverage? What sources are relied upon in the print media stories? And what frames do we see in the coverage? This study identified general coverage patterns of the environment over a 10-year period (2002-2012), in several of the region’s English-language newspapers. News stories were analyzed to discern the nature of the coverage, coding for several variables as indicated by previous literature. Results indicate that use of the term climate change became preferred over that of global warming. In addition, coverage increased greatly starting in 2006. Government officials were most often the sources quoted within stories (Claims). Articles contained more “judgments” about the issue than “solutions” (Frames). Finally, though most articles eschewed mentioning a specific actor as causing climate change, “man” was implicated in a number of stories more often than simply “nature” (Blame).

Keywords
media, climate, ASEAN, newspaper coverage, environment, content analysis

Introduction

Environmentalism and coverage of the environment and its associated movements have reached a certain level of maturity in the United States and Europe. The same has not generally been true of Asia, or specifically Southeast Asia. Yet, Southeast Asia is a region full of rapidly developing economies with increasing geo-political relevance. The Association of Southeast Asian Nations (ASEAN), a supranational organization with a combined membership of 10 countries, has seen increased mentions in the global arena over the past several years. Much of the attention has been focused not only on political issues but also in the area of economics—as business and trade agreements rapidly proliferate. One concern when economies grow substantially is the potential for compendium growth of negative externalities—that is to say, does the economic growth come at the expense of the environment? When it comes to issues of the environment in the region, we see that although “environmentalism in its various manifestations in Southeast Asia has taken on the role of a social movement” (Hirsch & Warren, 1998, p. 2), we also find that “[e]nvironmental advocacy is growing but is still new and largely unappreciated by government” (Boyle, 1998, p. 95). In conducting this investigation, this study joins a growing call to explore more closely the issues of environmentalism in developing countries (Takahashi, 2011) as well as to move beyond the national level with a transnational, cross-cultural comparison (Brossard, Shanahan, & McComas, 2004)—in this case by examining print media treatment of the subject among ASEAN member states.

As an organization, ASEAN has often been compared with the European Union (EU). Such comparisons are inevitable and probably understandable, even though when it comes to many issues, the comparisons do not quite hold up. For one, there is no common currency among ASEAN nations, and for another, the treatment of environmental policies is somewhat dissimilar. The EU has an important effect on the way in which environmental policies are framed and implemented in Europe (Volkery, Withana, & Coolsaet, 2011) and beyond Europe (Knill & Tosun, 2009) as environmental problems transcend borders. ASEAN however, though growing rapidly as an economic trading power, is not yet at the same stage. Although it regularly addresses various issues including the
environment, Asean lacks an institutional device for enforcing decisions. Its goal is worthy, “The house of Asean was built by states in order to keep the region stable and secure and inspire political, economic, and cultural development” (Villanueva, 2013, p. A11), but where does the environment fit in to its plans? The countries of Asean each have their own list of sovereign and shared environmental issues. Some of the common regional environmental concerns would be smoke haze due to land fires, deforestation, rapid population growth, and “massive soil erosion, loss of biodiversity and the destruction of marine and fresh water coastal areas” (Nguyen, 2004, p. 3).

The goal of this study is to examine one part of the larger puzzle of Asean advancement, to provide an analysis of climate change print media coverage in the press. It is meant as a preatory study on the issue, allowing the greater research community to think more about environmentalism in Southeast Asia. Newspapers are one agent involved in the process, with the public, the government, and industry being the others—their interactions lead to policy initiatives (usually within individual countries, but in the case of the EU also beyond country borders). By examining the newspaper coverage of this topic in Southeast Asia, we are thus learning how the region has been and is currently approaching issues surrounding climate change. Studies will also be necessary to link the various initiatives by the players; for now, we take on one facet of the issue—the comparison of newspaper coverage in several of the countries that make up Asean.

Literature Review

When it comes to media coverage of the environment and specifically climate change, there is no shortage of available literature from which to select. The subject matter has been tackled by, most notably, environmentalists and mass communications researchers, but many other disciplines as well, including sociology, business, and political science. When it comes to the air we breathe and the water we drink, it is only natural that most every faculty is interested. Although multi- and interdisciplinary approaches are called for on such a widespread and important topic, finding patterns among the various literature (and the traditions and nuances in each) is challenging, except to say that very likely the majority of scholars are concerned enough about the issue that the research endeavor is more than creating good scholarship; it is also, to many, a chance to participate in a growing dialogue (with the public and policy makers) on what is happening to our planet and why.

For the average audience member, becoming aware of and learning more about climate change, and other environmental risks, is perhaps not very much different from other issues in their daily media diet, though there is arguably a greater import to the matter. Several studies have investigated this area of how we find out about the environment (risks and problems included) and how we are likely to process such information (Corbett & Durfee, 2004; Olausson, 2009; Taylor & Buttel, 1992; Wakefield & Elliott, 2003). In many ways, we come to know about the environment through media portrayals, and yet historically, media coverage tends to focus only on a small fraction of the issues and problems (Major & Atwood, 2004). The issue of climate change, and the earlier associated term global warming, itself is often politicized and thus becomes unduly controversial (Boykoff & Boykoff, 2004), and due to the nature of commercial media in some countries, and government intrusion in others, the stories told do not always provide the full background necessary to understand the issue in proper context (Olausson, 2009). The reality of climate change is global and knows no geo-political boundaries. However, for most people, the problem only becomes an issue in the short term through primary experience often understood piecemeal at the nation-state or local level (Stamm, Clark, & Eblacas, 2000); the wider connections are not always successfully made, and without coverage clarifying this and making connections, the issue may not be holistically confronted over a longer term (Stehr & von Storch, 1995). Mass communication research tells us that the public’s perception of reality is shaped by both reality itself and the “reality” as portrayed by the media (McCombs & Bell, 1996)—and on the issue of global climate change, there is a disconnect (Boykoff & Mansfield, 2008). Furthermore, “[c]limate change is an unobtrusive issue, which is not generally visible to the public except through the media” (Howard-Williams, 2009, p. 29); and “[i]t is often difficult to perceive environmental problems directly, because they are remote and not directly observable for most of the general public” (Mikami, Takeshita, Nakada, & Kawabata, 1995, p. 209). K. M. Wilson (1995) suggested that people may rely on the media as their main source for information concerning climate change. Finally, Sampei and Aoyagi-Usui (2009) showed “dramatic increase in newspaper coverage of global warming . . . correlated with an increase in public concern for the issue” (p. 203).

Newspaper coverage has an influence on how the public and policy makers come to be aware of, and think about, an issue (Soroka, 2002). The ways that issues are framed in newspapers, and how this relates to government policies and people’s awareness, attitudes, and actions, offer us insight into the mechanisms by which a society operates and, for instance, the relative freedom that journalists have to report on issues. That the way journalists frame newspaper stories (media frames) affects reader’s perceptions of issues (audience frames) is well established (see, for example, Shoemaker & Reese, 1996; for distinction between media and audience frames, see Schuefele, 1999). Several studies have confirmed effects of media coverage on the issue of climate change at the national level (McGeachy, 1989; Mikami et al., 1995; Sampei & Aoyagi-Usui, 2009) and at the international level (Mazur, 1998). Framing occurs on several levels and, for example, an article’s overall frame narrative can often be supported by sources.
quoted within the story (among other variables), and this provides us with another clue in exploring the treatment of a topic (Iyengar, 1993). In addition, special interests (often working with public relations agencies) can have an impact on the creation of environmental news items in local newspapers (Beder, 2004). Thus, the media offer a mediated platform, interpreting what the researchers have to say on a given phenomenon and deciphering it for the wider audience. But what impact does this have on “climate change” whose magnitude and repercussions stretch beyond one nation’s borders? If one nation benefits by ignoring negative externalities of a process, and does not see a need to act for a greater whole, what then? This is an interesting question, especially in areas where supranational organizations (EU, Asean) exist and may lend assistance (or hindrance) to the cause. The following research questions (RQs) are suggested:

**RQ1:** Concerning global environmental risk coverage, which of these two terms, climate change or global warming, appear most often in Asean newspaper stories?

Over the years, global environmental risks have been known by different names. The two terms that have come to dominate the mediated discourse of general global environmental risk are undoubtedly global warming and climate change. Causally related, the terms are not synonymous—though many people conflate the two. In the case of “global warming,” its use was popular in the 1980s and 1990s but fell out of favor as critics would raise and ridicule the term anytime that a regional weather front contained excessive snow or extremely cold temperatures. The broader term climate change began to acquire greater cache by the mid to late 2000s. This term encompasses not only global warming but also the environmental risks or “side effects” of warming. We are interested to find out whether newspapers in Asean have followed the trend in moving toward the usage of the more informative and all-encompassing term climate change versus global warming. The terminology is important, because talking about one symptom is arguably not as significant as talking about the larger malady.

**RQ2:** How is the issue of “global warming/climate change” framed in Asean English-language newspapers?

Although use of one term or another may itself be indicative of a prejudice (or lack of knowledge) in some manner, the overall story frame has potentially greater consequence as we know that the public relies on the media to inform them about things in the world with which they do not or cannot have personal experience. How has climate change been portrayed in Southeast Asia? What types of frames and meanings appear in the media discourse on environmental matters in the region? The issue of how to detect and classify framing in journalism is not a settled matter; many researchers have written in this area (McGeachy, 1989, Neuman, Just, & Crigler, 1992; Semetko & Valkenburg, 2000; Trumbo, 1996; Valkenburg, Semetko, & de Vreese, 1999). Hertog and McLeod (2001) cautioned that too often scholars are generating “a unique set of frames for every study” (p. 151). Given this advice, Trumbo’s (1996) classifications (based in turn on Entman, 1993) were selected to identify four frame types: problems, causes, judgments, and remedies. The detailed explanation of each frame category is discussed in the “Method” section, along with how the newspaper articles were collected and coded on this dimension.

**RQ3:** What sources are utilized and quoted most in Asean print media coverage of climate change?

One of the more prominent discussions within framing (and notably public relations) research is the degree to which sources influence the messages and themes that are found within news stories, especially if the sources are directly quoted (Conrad, 1999; Pan & Kosicki, 1993). The pattern is clear: Sources are indeed able to influence news stories, and they can become linked to certain frames. For example, Trumbo (1996) discovered that on the issue of climate change, “scientists tend to be associated with frames emphasizing problems and causes, while politicians and special interests tend to be associated with frames emphasizing judgments and remedies” (p. 269). We must also note that sources are not always quoted accurately or in context (Bell, 1994), but the kinds of sources represent an important element in shaping coverage patterns.

**RQ4:** Do the newspaper stories state clearly who or what is to blame for “global warming/climate change”?

Understanding that the national media is a product of the society in which it evolves, we are interested in comparisons among the Asean nations’ newspapers in terms of the patterns in coverage of climate change where they may be made. Here, we are looking at the numbers of stories that appear on “global warming/climate change”—and what remarks can be made about the general coverage among the nations being studied through their newspapers. Do the articles place blame, and if so, do they implicate “man” (by way of corporations or individuals), or is this simply a natural phenomenon? We also want to investigate the timeline of environmental issues that came to the fore during the time period of our investigation in an effort to discover which items and events may have played a role in coverage. For example, environmental conferences have been held, weather crises have occurred, and the issue of “Haze” (smoke created by farmers clearing land) has affected Asean countries over the years.
To examine environmental coverage in ASEAN, several newspapers were selected for the study: Singapore’s Straits Times, Malaysia’s New Straits Times, Brunei’s Borneo Bulletin, Cambodia’s The Phnom Penh Post, Indonesia’s The Jakarta Post, the Philippine Daily Inquirer, Vietnam’s News Agency Bulletin, and Thailand’s The Nation. These papers represent a cross-section of print media from the region. They share the English language in common, and they were also searchable using the Factiva database for the time periods under investigation. The use of English-language papers has been defended previously: They use a language more common among ASEAN peoples than individual country languages, certainly read by expats, diplomats, and the elite within these countries, and in a way, they represent the country to external others—their influence reaches beyond their own borders (see circulation figures in Figure 1). In addition, surveys report that newspapers have been one of the main ways that people find out about environmental issues (Stamm et al., 2000). However, due to low article population sizes in some of the papers, the sampling method was altered. In the year 2008, for example, Cambodia’s The Phnom Penh Post had only a total of 10 relevant articles on the subject of climate change. This was the lowest number for all of the papers in all of the years, thus a sample size of 10 articles from each paper for each of the 5 years was decided upon to have equivalent numbers for comparison across the years and papers. As there were eight papers, over 5 years, the total number of articles under review equaled 400 (sample size).

To gather the articles from the 5 year period, the keyword “climate change” was utilized to uncover articles being written on this subject. Due to the preliminary prima facie results in looking at the “hits” between 2002 and 2012, it was clear that the term global warming was falling from favor by 2008. In addition, the study wished to examine the issue of climate change, of which global warming is merely one indicator. Articles that were determined to be relevant (explained below) were assigned a number, and a random number generator was utilized to “pull” 10 articles from the bunch. In some cases, this figure represented all (100%) of the articles available (again, Cambodia 2008); in others, it represented just 6%—depending on the newspapers’ total relevant coverage in a given year. Although not ideal, previous studies have indicated that a sample of 5% to 7% of the available population is acceptable (Kaid & Wadsworth, 1989). In any case, 10 articles ended up representing on average about 20% of the relevant articles available in any given year among the papers—enough to make an assessment.

An iterative process was used to train coders in analyzing the relevant stories that mentioned the keyword “climate change.” Specifically, the coding scheme was developed to capture precise aspects of the news coverage: (a) sources, quoted or otherwise mentioned (Claims); (b) a priori frame (Frames); and (3) blame treatment/responsibility (Blame). Preliminary coding trials were conducted on articles from the year 2007, 1 year prior to the articles that were used in the study. Three trials were necessary before reliability testing was conducted, at which point, two further tests were necessary (results reported in a following section). Informed by previous studies, a coding sheet was designed and developed, edited, revised, and finally used for the study’s 400 collected articles, which were divided evenly between the coders (200 each).

### Keywords and Relevance

For the initial search, the Factiva database was used to examine news coverage to discover the number of stories that contained the keywords “global warming” or “climate change.” The goal was simply to find out how many articles had appeared on this subject matter in the eight newspapers selected for the study. Due to the widespread use of the terms, the number of initial hits was quite large for the time period under investigation (as reported in Figure 2). Again,

### Method

#### Newspapers

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### Sampling Frame and Size

The time frame of 2002 to 2012 was originally selected; however, it quickly became apparent that the archives for each newspaper were incomplete over that period. Thus, due to lack of availability of some papers, the sampling frame was narrowed down from 10 to 5 years—between 2008 and 2012. The Factiva database showed that the newspaper archives were mostly complete for that time frame, but not entirely. Articles that had been previously retrieved proved beneficial for the preliminary intercoder agreement trials.

To answer the RQs, initially a 2-constructed-week sample for each paper was proposed for the years 2008 to 2012. However, due to low article population sizes in some of the papers, the sampling method was altered. In the year 2008, for example, Cambodia’s The Phnom Penh Post had only a total of 10 relevant articles on the subject of climate change. This was the lowest number for all of the papers in all of the years, thus a sample size of 10 articles from each paper for each of the 5 years was decided upon to have equivalent numbers for comparison across the years and papers. As there were eight papers, over 5 years, the total number of articles under review equaled 400 (sample size).

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the term “climate change” was clearly favored from 2008 onward. At the start of the research, two terms were used: “global warming” and “climate change.” The initial search was to simply “count” the number of times each word was used in the entire search of the database. This was mainly done to answer RQ1—which was simply to uncover the number of times each term was used. Between the years 2002 and 2007, it was clearly necessary to use both terms—as the number of articles trended low on this topic. However, after 2007, the term “climate change” was clearly favored by the newspapers.

Once the answer as to which word was used more and when, the study then moved on to utilize the term “climate change” (from 2008 onward) to be able to discover the available articles, and to then pull articles for the main portion of the study—and the remaining RQs.

From the total pool of articles found using the search term “climate change,” a filtering process was necessary to make sure that a given article truly dealt with the issue of climate change and was not merely mentioning the term in passing. For an article to be deemed relevant, it had to, of course, mention the term “climate change” (ideally more than once), and the majority of the article—roughly 50% of the text or more (as determined and agreed to by the two coders) had to deal directly with the stated topic. In this process, articles were separated into three piles: (a) relevant, for articles which dealt with climate change, the causes, and its consequences; (b) not relevant, for articles which did not deal with climate change, or only mentioned it in passing; and (c) questionable, for articles that were on the borderline, or on which the coders disagreed. Thus, only articles that both coders agreed were about climate change were kept; this generally still meant a large total pool from which to sample.

Relevant articles were then collected from the database and placed in the “article pool” for further analysis, whereas those that were placed into the latter categories were discarded. An article that was determined to be relevant, for example, was The Phnom Penh Post’s article “Climate Change Threatens Food Security, Warns UNDP” where the headline clearly defined climate change as the main thrust of the article. Another article was “Economy or Environment?” which dealt with carbon emissions and climate change. Among the sources quoted were authorities involved in the environmental scene, such as the project coordinator of the United Nations Framework Convention on Climate Change. An example of an article determined to be irrelevant was The Phnom Penh Post’s article “Universal Declaration Turns 60,” which had nothing to do with climate change and mentioned it only once in passing as a challenge for countries.

Sources
Sources represent a rich area when examining news reports (Anderson, 1991; Hansen, 1991; McCallum, Hammond, & Covello, 1991). The study’s source categories are based on information provided by Trumbo (1996) and McGeechay (1989). Trumbo referred to sources as “claims-makers” and identified the following: “university scientists, government scientists, other scientists, Congresspersons, Presidential administrations, officials of other nations, environmental interest groups, and business and industry groups” (p. 272). McGeechay referenced nine classifications from Sandman et al. (1986) and added two categories for sources that were loosely similar to Trumbo, with the possible exception of: experts or authors (we might include scientists here, but it could also be non-scientists—for example, media pundits), ordinary citizens, unattributed or mixed, and historical figures this included people who “were no longer alive but whose writings or observations are referred to in the article as a source” (p. 8).

Based on an assessment and discernment of the earlier studies, the current study adapted the list, and ended up coding for six specific source types:

- Scientists/researchers
- Politicians/government officials
- Industry/business representatives

Figure 2. Total number of article hits across the study’s eight newspapers, 2002-2012.
• Interest/advocacy groups
• Citizens
• Experts/authors/historical figures.

In the case of government officials or politicians, the source was further coded according to whether they were “domestic, from Asean, or international.”

Frames

As mentioned, the current study adopted the frame categories as identified and utilized by Trumbo (1996, pp. 272-273). The four frame categories are as follows:

- Problems—“Define problems: impacts of climate change. These stories deal with what will happen as a consequence of this phenomenon. Impacts may be negative (coastal flooding), positive (improved regional agriculture), or debated.”
- Causes—“Diagnose causes: evidence as to the reality of climate change as a problem. These are typically presentations of scientific findings that support the idea that there is a problem (evidence of rising sea levels), refute the idea that there is a problem (evidence that changes are within limits of natural variance), or present the argument that the nature of the problem is unknown.”
- Judgments—“Make moral judgments: action statements. These stories present general statements calling for action or reporting action taken (the USA should sign a treaty, did sign a treaty), arguing against action or reporting action blocked (emission standards not needed, scientific testimony altered), or present the argument that a course of action is not clear.”
- Solutions—“Suggest remedies: provide specific information about how solutions should be implemented. These stories report specific solutions that have been proposed or implemented (tougher emission standards), solutions that have been rejected or deemed inadequate (voluntary programmes), or present a debate about a specific solution or solutions. Note that the specificity of the solution—a statement of exactly how the solution should be carried out—is an important distinction between an action statement and a solution statement.”

In cases where there appeared to be some difficulty in determining which frame was to be assigned, the decision was to go with the dominant frame of the story. This meant that in borderline cases, the coders had to return to the headline and scrutinize the full text to discern the intent of the article. This was not always easy, and in several cases, agreement was not reached (examples discussed in the “Results” section).

Blame

For the final coding category regarding blame “treatment/responsibility,” the interest was to see if the news article took on the issue of whether or not humans were causing or contributing to climate change. The term that is often used in the environmental literature for humans as the cause of climate change is “anthropogenic” and would include human activities such as deforestation and burning fossil fuels. Although it is often debated in media news reports, scientific research indicates the existence of climate change; furthermore, a substantial majority of those in the academic community find it to be man-made (Cook et al., 2016). Does coverage of climate change in Asean newspapers indicate this consensus? Finally, if humans were implicated, the coding also asked as to where the locus of responsibility was placed, if at all, with the newspaper’s country of origin or other countries listed as choices.

Results

RQ1: Global Warming or Climate Change?

RQ1 concerned the issue of simple terminology for coverage of the environment in the Asean region—which term dominated: “global warming” or “climate change”? There has been considerable debate about these two terms—with each term introducing its own advocates and detractors. The time frame selection of 2002 to 2012 was important, because the search result showed that the use of the terms in question “global warming” and “climate change” increased and changed in usage during the time period. In looking at the use of these two terms over the decade (2002-2012), Asean newspapers followed the general global news trend to shift away from “global warming” and toward use of the term “climate change”; a steady increase in the number of stories as the decade progressed is also evident. Finally, the keyword “ASEAN” was added in a post hoc search to see how many stories might be connected in this way; as Figure 2 shows, some, but not many.

In looking at Figure 2, it is quite evident that the number of articles increased considerably in the years 2006 and 2007. There are a number of possible explanations for this. In these 2 years, a number of high profile stories came to the attention of the news media. The list of events is potentially a long one, depending on how one examines it. In 2006, for example, Al Gore’s book and film called An Inconvenient Truth came out, the Clinton Climate Change Initiative started, and Cyclone Mala hit Myanmar and Northern Thailand. In 2007, Live Earth Concerts were held, the World Wildlife Fund launched “Earth Hour,” a number of weather-related crisis occurred, and the United Nations Climate Change Conference was held in Bali, Indonesia (to name only a few occurrences).
For RQ2, the focus was on the framing that was used in the Asean newspapers concerning the topic of climate change. Trumbo’s (1996) classifications of four frame types were utilized, again those are: Problems, Causes, Judgments, and Remedies (or Solutions).

Coders for the current paper studied elements from previous literature in this area, and took written examples of frames and their explanations under consideration. All four categories were discussed extensively during the pilot test (utilizing articles that were published in 2007 and not part of the final study). For this variable, following and benefiting from the previous descriptors, intercoder agreement was recorded at 90% between two coders; correcting for chance agreement was done using the Scott’s pi formula, with a resultant reliability statistic of .86, indicating that the coding protocol, and not chance, was likely governing the coding decisions.

For the 5 years investigated, the “Judgments” frame predominated climate change coverage in the Asean newspapers with a descriptive total of 45% of the news stories from the sample falling into this category (Figure 3). Trumbo (1996) indicated that when government officials tend to be quoted as sources, the articles become more about judgments than when scientists are quoted. In the cases when scientists are quoted more, the “Causes” frame tends to lead. In the next section, the issue of sources will be reported; however, it is no surprise to say here that government officials got more article space in Asean newspapers—thus, the larger preponderance of the “Judgments” frame would confirm, and is in line with, previous findings. An example comes from an article in Indonesia’s The Jakarta Post:

Public opinion is needed to push the government to act to mitigate climate change, but a new survey shows that many of the nation’s students believe climate change is God’s will and that humans can do nothing to stop it. (“Climate Change,” 2009)

The “Problems” category was found in 26% of the sampled articles. This frame category captured news stories where the concerns and costs of climate change were dominating in the text. An example from the Vietnamese press in 2008 serves to illustrate this type of frame: “In addition to storms, floods and severe droughts, coastal low-land regions will be submerged and sea water will inundate the Mekong delta” (“Vietnam’s CO2 Emissions,” 2008). Another example where impacts were mentioned and debated comes from Malaysia:

For Malaysia, there will be risks as well as opportunities associated with climate change. The risks specifically involve impact on the yields of oil palm, rubber and other food crops. While on the plus side, there will be the lucrative potential of selling carbon credits since Malaysia does have many carbon reduction projects to offer. (“Tapping Into,” 2011)

For “Causes,” this category was not often found in the articles sampled, only gathering a 7% score. An example from the articles collected from the Brunei’s Borneo Bulletin:

Although one might initially feel that this article could be placed in the “Problems” category, it more correctly goes under “Causes” because it includes a scientific report “highlighting biophysical and geophysical risks” or causes of the phenomena. It does not merely present the problems. In this article, a report by the World Wildlife Fund (WWF) was reported on, so this article goes a step further by presenting a report supporting the idea that there is a problem—and diagnosing the cause—climate change.

The “Remedies” category, or “Solutions,” had an occurrence of 22% in Asean papers. This frame had stories that were specifically discussing solutions that were being proposed or implemented. An example comes from the Philippines:

The government must invest in agriculture infrastructure if the Filipino farmer is to be helped to weather the effects of climate
The government should also pour money into “hardware” that would reduce the vulnerabilities of the agricultural sector and mitigate farmer losses in the event of severe weather situations. (“Build Infrastructure,” 2011).

Unsurprisingly, there was not full agreement on all coding decisions. The disagreements occurred when a story contained wording that could be construed as fitting into more than one of the content frame categories—and a dominant frame was difficult to parse. An example from a February 2010 Straits Times article illustrates the situation: “Singapore needs to slap a punitive price tag on carbon emissions . . . Gradually adjusting energy prices upwards to reflect the true cost to the environment does not go far enough, economists say.” In this article, although a solution is suggested in the first part, it also makes a judgment about an action in the second. Thus, coders disagreed on putting the story into the “judgment” versus the “remedy” frame category. After analyzing the full article again, and discussion, ideally, this story would have fit into the “remedy” category. This of course is the dilemma with human content coding—full agreement is not always achievable. This also indicates that the frame categories can still benefit from further discussion and refinement.

RQ3: Sources (Claims)

As mentioned, the choice of which sources to use in a news story carries a good deal of significance. The sources that are tapped to appear in the newspaper stories give us several indications about the press. RQ3 asked about this “source” issue. What kinds of “sources” are we seeing in the Asean newspapers? Figure 4 shows the findings. Based on the results, we see that the category which included politicians and government officials held the largest percentages for sources utilized in the Asean print media. Just a little less than half of the sampled news reports on climate change included a government source. Looking closer at the “source” variable, the majority of the articles referenced only one source (n = 393), roughly half cited two sources (n = 161), and only a few articles went beyond naming two or more sources (n = 37). Trumbo (1996) found, as mentioned, that “political and special interests are strongly associated with the judgment frame while scientists are strongly associated with the causes frame” (p. 277). This would lead us to conclude that political and special interests would more often be sources for the news stories in this study’s sample—this is the issue addressed by RQ3.

RQ4: Blame

RQ4 dealt with the issue of blame—here, we looked at two dimensions to this—both treatment and responsibility—did the journalists indicate in one manner or another what was causing climate change? The stories that were included in this study were not likely to pin the blame on a particular source. In the vast majority of the articles sampled, no blame was placed. In the roughly 10% or so of articles that did place blame, “man” (42 out of the 400 sampled articles) was likelier to be named rather than “nature” (only eight out of the 400 articles examined).

Discussion

The way different newspapers present the same news can vary enormously depending upon the newspaper in question. When we add to the mix different countries and cultures, the differences become noteworthy and offer insights into how each society views and potentially deals with environmental concerns. One of the first items that stands out with regard to coverage of global warming and climate change is the spike in stories referencing these terms between the years 2006 and 2008. It is very clear that the issue took on greater import during this time span. Two items immediately came to mind that may have prompted this increase: Al Gore’s film “An Inconvenient Truth” came out in 2006, and there was a climate change conference in Bali in 2007. It turns out there were several items and events that occurred during the time span of our study. The appendix shows a timeline which includes prominent events that showed up in press reports during the time of our study. It is also true that the term “climate change” began to see greater usage in the Asean newspapers during this time period.

Presented here are some general findings, though that may provide for interesting discussions and ideas for future research. Certainly, the issue is not going away anytime soon. As a result, it is important to conduct these kinds of studies to prepare the landscape for closer inspections of the way the media are covering the topic of climate change as it occurs and affects the member countries of Asean in Southeast Asia. There are several acknowledged limitations of the current study. For one, use of newspapers alone in

Figure 4. Frequency of source usage in ASEAN newspapers, 2008-2012 (N = 400).

Note. ASEAN = Association of Southeast Asian Nations.
content analysis studies is becoming anachronistic as media shift toward a global, digital, fragmented reality. At the same time, use of English-language papers is also an issue. Ideally, a consensus of articles could be used in future studies—and this may require computer-automated textual analysis.

It is not easy to generalize about the way that the topic of climate change has been treated in all of these newspapers. The portrait is in many ways a “mixed bag.” That is to say, the coverage varied tremendously and there was not a common and clear direction about the coverage. We do see patterns, however, in the course of this study, and those are reported in relation to the study’s RQs. There is an aversion to writing about the issue of “blame” in the pages of these newspapers. What can be further said is that the topic took on greater importance in and around 2007. More stories were generated and showed up in the pages of these newspapers. For the most part, the news stories can be seen as gradual shifting over the years to taking on and discussing the issue of climate change more seriously. In some cases, the stories provided background and tied the topic in with the “larger picture” so to speak, yet this was not always the case. For the most part, the newspapers tended to cover the topic when an event took place that had climate change as a theme, or where climate change was considered relevant to the story—whether it be a conference, or seminar, or a weather-related event.

One could argue that it is necessary to include more input from the scientific community into the news stories to increase attention to the “problems” and “causes” of climate change and its repercussions. At the same time, it is not surprising that government officials tend to dominate when reporters are writing their stories—as this is quite common for reporters who are merely following the routines of their jobs and reaching out to the usual suspects when they prepare their stories for their local media market. The way in which the media operate as a business may not always be “in sync” with the needs of the greater global community when it comes to discussions of climate change. What can be hoped is that as the topic matures, the oft-quoted officials will shift away from judgments and blame and instead seek to offer more specific and detailed remedies and solutions to the issue of climate change. At the same time, reporters need to always bring in the larger picture, so to speak, of how events and conditions are tied together—harkening to the “thematic” versus “episodic” issue of news coverage that has been raised in previous research. In this manner, we, as a global community, will benefit.

Appendix

Timeline of Climate Change Events, 2002 to 2012

2002:
- United Nations (UN) Climate Change Conference held from October 23 to November 1 in New Delhi
- Bangladesh cyclone in November 10 to 12, affected India and Bangladesh
- Oman cyclone in May
- Four typhoons contributed to heavy rainfall and led to floods in the Philippines in July 2002
- Mindano earthquake, with magnitude of 7.5, struck the Philippines in March
- Earthquake of magnitude 7.3 hit Sumatra in November
- Heatwave in India in May

2003:
- UN Climate Change Conference held from December 1 to 12 in Milan
- Typhoon Imbudo hit China and the Philippines in July
- Typhoon Nepartak hit China and the Philippines in November
- Typhoon Soudelor hit the Philippines and Taiwan causing heavy flooding and landslides
- Bachu earthquake in China in February
- Earthquake in Hokkaido (magnitude 8.3) in September

2004:
- UN Climate Change Conference held from December 6 to 7 in Buenos Aires
- Cyclone Onil hit India, Pakistan, and Bangladesh between September and October
- Typhoon Aere hit Taiwan and China in August
- Tropical Storm Chanthu hit the Philippines, Vietnam, and Thailand in June, leading to heavy flooding
- Typhoon Conson hit Japan and the Philippines
- Typhoon Muifa hit Vietnam, the Philippines, and Thailand in November
- Typhoon Nida hit Japan and the Philippines in May
- Indian Ocean earthquake struck Sumatra, on December 26, leading to a tsunami

2005:
- The European Union Emissions Trading System (EU ETS) launched
- UN Climate Change Conference held November 28 to December 9 in Montreal
- Flooding in Gujarat from June to July. Just 1 month later, Maharashtra hit by floods
- Earthquake of magnitude 6.6 hit Fukuoka in March. Later in August, Miyagi earthquake hit Japan (magnitude 7.2)
- Hindu Kush earthquake of magnitude 6.7 hit India, Afghanistan, and Pakistan in December
- Kashmir earthquake in Pakistan, India, and Afghanistan in October
- Earthquake in Sumatra (magnitude 8.6) in March
2006:

- Al Gore’s book *An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It* published, in conjunction with the film. He also set up the Alliance for Climate Protection and The Climate Project (these would merge in 2010, the new organization later renamed The Climate Reality Project in 2011)
- Bill Clinton started the Clinton Climate Change Initiative
- UN Climate Change Conference held November 6 to 17 in Nairobi
- Kampung Pasir landslide in Malaysia in May
- Cyclone Mala hit Myanmar and northern Thailand in April
- Java earthquake (magnitude 6.2) in Indonesia in May, and later a 7.7 in July
- Flooding from December 2006 to January 2007 hit Malaysia, due to Typhoon Utor which hit the Philippines and Vietnam. Singapore and some parts of Indonesia also flooded.

2007:

- Live Earth benefit concerts started in July 2007, founded by Al Gore and Kevin Wall
- 2007 Nobel Peace Prize shared by the Intergovernmental Panel on Climate Change (formed in 1988) and Al Gore.
- Earth Hour organized in 2007 by World Wildlife Fund and Leo Burnett—led by Sydney. Other cities followed in 2008
- Asia-Pacific Economic Cooperation Leaders’ Declaration on Climate Change, Energy Security and Clean Development adopted in September 2007
- UN Climate Change Conference held from December 3 to 15 in Bali.
- Cyclone Yemyin hit India, Pakistan, and Afghanistan in 2007
- Cyclone Akash hit Myanmar and Bangladesh in May
- Cyclone Sidr hit Bangladesh and India in 2007
- Jakarta floods in February
- South Asian floods in India, Bangladesh, Nepal, Bhutan, and Pakistan in July to August
- Chittagong mudslide in Bangladesh in June
- Sumatra earthquakes in March and September

2008:

- UN Climate Change Conference held from December 1 to 12 in Poznan
- Indonesia established a Climate Change National Council (Dewan Nasional Perubahan Iklim [DNPI])
- Floods in Vietnam in October to November
- Cyclone Nargis hit Myanmar, India, and Sri Lanka in April to May
- Sulawesi earthquake in November
- Sichuan earthquake in May
- Landslide in Malaysia in December

2009:

- Philippine’s Climate Change Commission formed after they passed the Climate Change Act of 2009
- UN Climate Change Conference held from December 7 to 18 in Copenhagen.
- Climate Change: Global Risks, Challenges and Decisions scientific conference held in March in Copenhagen as well.
- Activists in Siem Reap organize “International Day of Climate Action”
- Cyclone hits India and Bangladesh in May
- Cyclone hits Myanmar, India, and Bangladesh in April
- Sumatra earthquakes in September and August
- West Java earthquake in September

2010:

- UN Climate Change Conference held from November 29 to December 10 in Cancun. The Green Climate Fund formally established during this.
- International Monetary Fund proposes Green Fund for
- Cyclone Giri in Myanmar and Bangladesh in October
- Cyclone Jap in Malaysia, Sri Lanka, and India in October to November
- Northern Sumatra earthquake in May
- Sumatra earthquake in April
- Sumatra earthquake and tsunami in October
- Haiti earthquake in January
- Thailand floods in October to November
- North Malaysian floods in November
- Drought and dust storms in China
- Flash floods in Singapore in 2010, 2011, 2012
- Southeast Asian floods in Thailand (in March, July-January), Cambodia, Vietnam, and Malaysia

2011:

- UN Climate Change Conference held from November 28 to December 11 in Durban
- Hulu Langat landslide in Malaysia in May
- Earthquake and tsunami in Tohoku in March
- Earthquake in Myanmar in November
- Earthquake in Fukushima in April

2012:

- UN Climate Change Conference held from November 26 to December 8 in Doha
During this, the Philippine Envoy Naderev Sano (a member of the Philippine’s Climate Change Commission) spoke out, calling for action to halt climate change after the Philippine’s was battered by a climate-changed enhanced typhoon

- Indian Ocean earthquakes in April, affecting Bangladesh, India, Indonesia, Malaysia, Maldives, Singapore, Sri Lanka, and Thailand
- Floods in the Philippines in August

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