
REPORTAGE AND FRAMING THE LINK BETWEEN CLIMATE CHANGE AND BIODIVERSITY IN THE *PHILIPPINE DAILY INQUIRER* IN 2012

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This study determines the reportage and framing of news linking both climate change and biodiversity by the leading national daily, Philippine Daily Inquirer. A total of 326 online articles from the archives of www.inquirer.net from June to October 2012 were content analyzed for length, presence of graphics or audio or video clips, treatment, and section placement. 'Frames' or the themes used by the writers to present the issue were surfaced through open and thematic coding. The research was guided by framing, the second-level of the Agenda Setting Theory by Maxwell McCombs and Donald Shaw (1972).

Only 79 (24.23%) directly linked climate change with biodiversity. These articles were predominantly presented as straight news stories under the news section of the newspaper with an average of 100 to 500 words per article. Writers used seven frames to discuss the interlinked issues, namely (in order): biodiversity for climate change; human survival; cost of biodiversity; twin environmental challenges; call to action; survival of ecosystems; and survival of species. Only a few articles used the frame 'call to action' or specifically pointed to

the need for laws, policies, or social movements that would mitigate climate change and arrest biodiversity loss.

Climate change affecting biodiversity and vice-versa must be expounded more to make the public better understand and appreciate their interdependence. Given that both climate change and biodiversity are considered as environmental challenges that pose a lot of risks, media can also focus on framing articles that would motivate policy formulation and implementation about these interlinked issues.

KEYWORDS: online journalism, framing analysis, content analysis, science communication, environmental communication, climate change, biodiversity, interlinked or interconnected issues

INTRODUCTION

Rationale of the Study

THE MEDIA ARE increasingly being encouraged to create a balance in the reportage of climate change linked with other environmental concerns. This is because environmental issues and concerns are intertwined and how these are being reported influences how these issues are understood by the public. If environmental issues are reported separately, their linkage or relationship is obscured.

In 2010, marking the celebration of the International Year of Biodiversity, the Convention on Biological Diversity launched the *Rio Conventions' Ecosystems and Climate Change Pavilion*. The pavilion provided a venue for the three Rio Conventions held during the 1992 Earth Summit to convene and address the interdependence of environmental issues. Further, the pavilion served as a platform to highlight the links among the following: the *Convention on Biological Diversity* that focuses on conserving biodiversity; the *United Nations Convention to Combat Desertification* that aims to lessen the effects of droughts; and lastly, the *United Nations Framework Convention on Climate Change* that targets the reduction of greenhouse gases in the atmosphere (Rio Conventions' Ecosystems Pavilion, 2010).

The Ecosystems Pavilion stressed the importance of integrating the biodiversity agenda with that of climate change and land

degradation. Heads of agencies and international organizations discussed the ways that all three agendas could be implemented in support of sustainable development (Rio Conventions' Ecosystems Pavilion, 2012).

A press release by CBD reiterated that climate change, biodiversity loss, deforestation, and land degradation should be addressed as single interlinked challenges rather than independent compartmentalized approaches. As His Excellency Ryu Matsumoto, Minister of Environment for Japan, pointed out: "The three conventions are inseparable. Climate-based sea level rise will cause coastal areas to suffer, including the destruction of coral reefs, mangroves, marine ecosystem, which will again contribute to further climate change" (Rio Conventions' Ecosystems Pavilion, 2010).

The need to interlink climate change reportage with biodiversity was made as early as in 2008. Dr. Ahmed Djoghlaif, Assistant Secretary General of the United Nations and Executive Secretary of the United Nations CBD, wrote for the *ASEAN Biodiversity Magazine* (Djoghlaif, 2008):

Climate change and loss of biodiversity are two major planetary threats facing mankind... loss of biological diversity is one of the most serious effects, and at the same time, driver, of climate change. The relationship between biodiversity and climate change is a two-way street. Yes climate change is an important driver of biodiversity loss. At the same time, however, the loss of biodiversity and the deterioration of natural habitats contribute to climate change. (p. 16)

STATEMENT OF THE PROBLEM

In the Philippines, the Association for Southeast Asian Nations Centre for Biodiversity (ASEAN ACB) recognizes the role of the media in disseminating information regarding environmental issues. However, during the During the 16th National Press Forum hosted by the Philippine Press Institute (PPI) on 23-25 April 2012 in Manila, the head of ACB's communication and public affairs department admitted that biodiversity loss does not attract enough media and public attention compared to climate change

and other political issues in the country (Inciong, 2012). The head pointed out that the Philippine public seems to be unaware of the connection of climate change and biodiversity.

Hence, during the National Press Forum attended by the researchers, ASEAN ACB also tapped the Philippine print media to help promote the reportage of climate change and biodiversity. The ASEAN ACB, together with the German Agency for International Cooperation (GIZ), officially launched with PPI the Special Award for Best Reporting on Biodiversity and Climate Change. This award officially became part of the Civic Journalism Awards held at the National Press Forum in June 2013. As this was a new approach and partnership to connect climate change and biodiversity, the researchers wanted to be the first to also monitor as well as to evaluate the reportage and framing of these interlinked issues within that same year (2012).

The role of the print media and all forms of media for that matter is crucial in defining certain risks specially climate change (Rhomberg, 2009). The media industry helps in making climate change and global warming a national issue. Even the entertainment industry has produced films and documentaries such as the *An Inconvenient Truth* (Guggenheim, 2006) and the *11th Hour* (Connors & Petersen, 2007) just to mainstream climate change and make it a popular issue.

Carvalho and Burgess (2005) developed a framework that describes the complexity of media coverage and science policy interactions. The first phase of news production includes the framing process. The media frames or organizes certain elements of the discourse to make certain understandings, interpretations, or perspectives more dominant than the others. After deciding on the frames of the news, they encode messages that now move on to compete for attention in the public sphere. The last phase is the consumption of news media coverage, characterized by different personal understandings and behavior.

How the media shape or frame facts and information is an important factor in increasing the public's understanding of science and their engagement and concern with many critical scientific issues (Boykoff, 2008). The role of the mass media in communicating climate change had been described by Rhomberg (2010), Boykoff (2008), Di Francesco and Young (2010), and Billet (2010). However, applying frames or framing analysis is rarely done on these news (see de Boer, 2007; Wilhelm Rechmann &

Cowling, 2010) as framing is more commonly used in analyzing sociological and political issues.

Premised on the need to enhance the reportage of climate change linked with biodiversity in mainstream media, this study may be among the first to content analyze the reportage of interlinked issues in a leading national daily. How does the newspaper really link these issues in environmental reporting?

Further, this may be the first framing analysis done on the interlinked reportage of climate change and biodiversity. How does the newspaper frame both issues? What are the concepts that usually surface in the reportage of these interlinked issues? Lastly, the analysis involves the electronically-archived online version of the PDI, unlike previous studies that content analyzed hard copies of newspapers.

The country's newspaper of record, *Philippine Daily Inquirer* (PDI), was chosen because it is the country's most-read newspaper with a national readership of 47.5 percent, according to the latest survey by the Nielsen Co. as of 2012. Founded on 9 December 1985, it boasts a circulation of 260,000 copies during the weekdays and 280,000 copies during the weekends. It had also won over 200 awards, making it the most awarded and possibly the most credible newspaper in the country today.

Objectives of the Study

This research aimed to determine how the *Philippine Daily Inquirer* (online version), the top Philippine national newspaper, covered and framed stories linking climate change with biodiversity.

Specifically, the study aimed to answer the following objectives:

1. Determine the number of articles on climate change and biodiversity, and an interlink of these two issues;
2. Determine the coverage of the interlink of the two issues in terms of [a] number of words of each article; [b] presence of graphics or audio or video clips; [c] treatment of the story; and [d] categorization of articles under PDI's sections; and
3. Surface and discuss the themes/frames used in the articles interlinking climate change with biodiversity.

Theoretical and Conceptual Framework of the Study

This study focused on framing, the second level of the original Agenda Setting Theory by Maxwell McCombs and Donald Shaw (1972). According to McCombs and Shaw, the media play a big role in shaping and filtering reality. By concentrating on some issues, they lead the public to think which ones the public should consider as more important than the others. Further, the media have the ability to influence how the public thinks about the said issues.

According to McCombs, Shaw, and Weaver (1997), agenda setting is actually composed of two levels. The first level of agenda setting is all about the media transferring the salience of issues to the public agenda or telling people what to think about. The major assumption here is that the more visible the issue is in terms of coverage, the more the public perceives them as important. The second level of agenda setting deals with the media telling people how to think about an issue. Basically, the second level hypothesizes that the way an issue is 'framed' affects the way the public thinks about it.

Framing, which can be simply defined as the way in which news is brought, is a choice made by writers. Thus, the media, through frames, can influence the perceptions of the audience towards news not only by telling them what to think about but also how to think about them (McCombs, Shaw, & Weaver, 1997). Hence, media framing becomes vital in setting public opinion.

In his paper "Framing as a Theory of Media Effects," Scheufele (1999) said that framing can be used to broaden the understanding of media effects. For instance, in reporting on climate change, some news writers might frame it as a highly political issue, while others might discuss it in an environmental way. According to Kweon (2000), factors that may affect how media frame stories include certain government policies, media type, and specificity of topics that reporters want to portray. Thus, using framing devices, media can set the agenda or portray an issue either positively or negatively.

In this study, it was presumed that the media agenda or what the media report and frame in a positive way would likely influence public agenda as being important or salient. Framing could influence and even mold public discourse and opinion, eventually influencing policy formation and implementation (Figure 1).

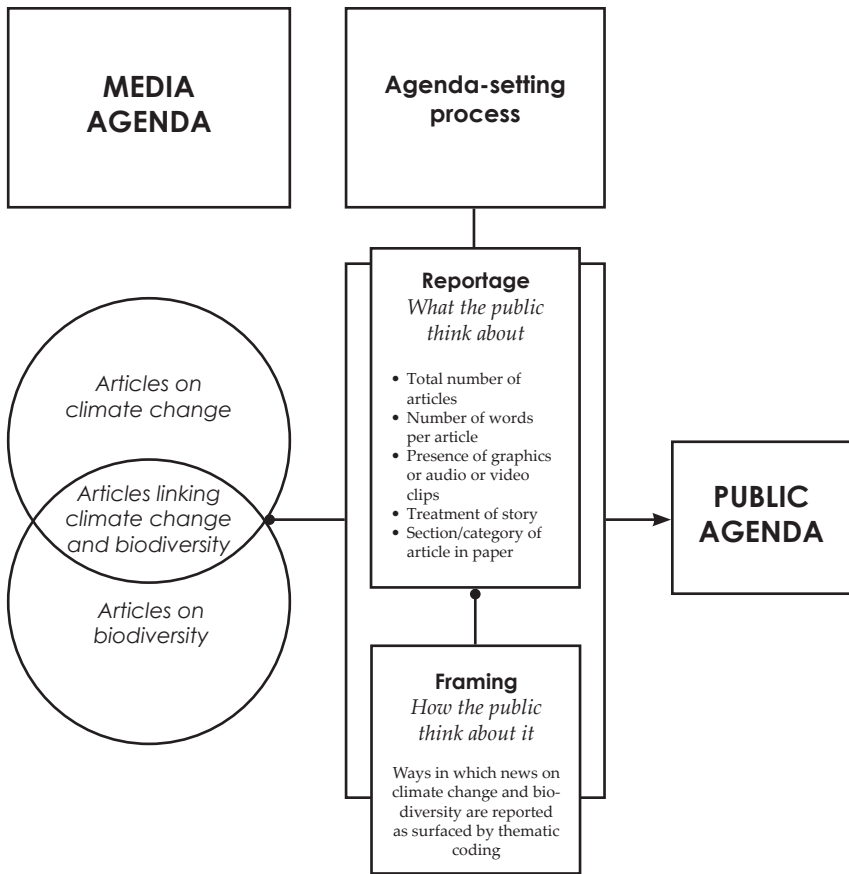


FIGURE 1. Conceptual framework of the study

METHODOLOGY

This research was a case study on a national newspaper (online version) using content analysis to determine the coverage and framing of stories linking biodiversity and climate change. Purposive sampling was done in retrieving articles on climate change and biodiversity from inquirer.net featured from June to October 2012.

The aforementioned time period was chosen because most of the important environmental events and celebrations were held within the selected months. Further, the ASEAN ACB, together with the German Agency for International Cooperation (GIZ),

have just officially launched with PPI the Special Award for Best Reporting on Biodiversity and Climate Change on 23 June 2012. Hence, this month marked the start of the engagement of the media on writing articles linking these two environmental issues if they wanted to compete in the Civic Journalism Awards for 2013.

Articles were retrieved from the news archive of PDI's www.inquirer.net using Google search optimizers. The words "inquirer.net: climate change," and "inquirer.net: biodiversity" were typed in the Google search box.

A total of 326 articles on climate change and 93 articles on biodiversity were initially retrieved and read, but only 79 articles that linked biodiversity with climate change were eventually used as the final sample.

Articles were content analyzed for reportage and framing. A coding sheet was used to generate the descriptive coding. Reportage included: total number of articles; number of words of each article; presence of graphics or audio or video clips; treatment of the story; and categorization or section of articles under PDI sections (news, entertainment, lifestyle, technology, business, opinion, and global nation, etc).

For the framing analysis, the researchers did not set a priori categories. Rather, they surfaced (or generated) the themes or "umbrella" frames based on the concepts and excerpts recorded in the coding sheets. The concepts from the articles were organized and categorized into more overarching themes or frames by looking at the similarities in the articles' lines of discussion. The final frames that surfaced included the following: biodiversity for climate change, human survival, cost of biodiversity, twin environmental challenges, call to action, survival of ecosystems, and survival of species. These are discussed in more detail in the Results and Discussion section.

RESULTS AND DISCUSSION

Reportage

Retrieved were 326 articles for the search on climate change and 93 articles for biodiversity. When these were analyzed, 79 articles linked climate change and biodiversity or 24% of the articles

on climate change and 85% of the articles on biodiversity. This indicates that only about one-fourth of the articles on climate change reported actually related the issue with biodiversity.

The increasing number of articles on biodiversity that related the latter with climate change may be a good indication that writers on biodiversity are more likely to connect it with climate change.

The highest number of articles linking biodiversity and climate change was retrieved in June (31.65%), followed by July and August (21.52% each); September (13.92%); and October (11.40%) (Table 1).

June had the highest number of articles possibly because the Philippine Environment Month was held this month along with two international events—the World Environment Day and the United Nation's Conference on Sustainable Development Rio+20. Some of the articles published during this month included “Qualified LGUs Get Php 60M in Incentives to Achieve UN Millennium Goals”; “Prosperity for all Must be at the Heart of Rio+20”; “A Sustainable Future for Filipino Children”; and “UN Summit Issues Environment, Poverty Blueprint.”

The trend in the number of published articles actually coincided with the environmental events held during the particular month. Important nationwide and worldwide events attracted high media attention especially if high ranking officials were involved. Rhomberg (2010) reported that issues get high media attention because of the involvement of Elites. Reportage of environmental issues begins to decline in terms of quantity when no events are being held or no urgent environmental concerns are being raised.

Nevertheless, political issues continued to be the highlights such as the Philippine president's choosing of the next chief justice, which was the leading news story topic in June 2012.

TABLE 1. Number of articles linking biodiversity and climate change per month, (June-October 2012)

| Month | Number of Articles | |
|-----------|--------------------|-------|
| | (N=79) | (%) |
| June | 25 | 31.65 |
| July | 17 | 21.52 |
| August | 17 | 21.52 |
| September | 11 | 13.92 |
| October | 9 | 11.39 |

Note: 24% of the 326 articles on climate change and 85% of the 93 articles on biodiversity

TABLE 2. Summary of articles linking climate change and biodiversity under Inquirer.net sections (June-December 2012)

| Inquirer.net Categories | Number of Articles (N=79) | Number of Articles (%) | Number of Words (N=51,642) | Number of Words (%) | Articles with Supplements (N=33) | Articles with Supplements (%) |
|-----------------------------|------------------------------|---------------------------|-------------------------------|------------------------|-------------------------------------|----------------------------------|
| News | 45 | 56.96 | 28,373 | 54.94 | 22 | 66.67 |
| Editor's Pick Banner Story | 1 | 1.27 | 1,152 | 2.23 | 1 | 3.03 |
| CDN Community | 2 | 2.53 | 791 | 1.53 | 0 | 0.00 |
| CDN News | 5 | 6.33 | 1,841 | 3.56 | 0 | 0.00 |
| CDN Opinion | 4 | 5.06 | 3,906 | 7.56 | 0 | 0.00 |
| Headlines Metro | 2 | 2.53 | 571 | 1.11 | 0 | 0.00 |
| Headlines Regions | 9 | 11.39 | 6,716 | 13.00 | 5 | 15.15 |
| Headlines Nation | 4 | 5.06 | 3,537 | 6.85 | 2 | 6.06 |
| Latest News Stories Regions | 3 | 3.80 | 1,139 | 2.21 | 1 | 3.03 |
| Latest News Stories Nation | 8 | 10.13 | 4,587 | 8.88 | 7 | 21.21 |
| Latest News Stories World | 7 | 8.86 | 4,133 | 8.00 | 6 | 18.18 |
| Business | 10 | 12.66 | 5,393 | 10.44 | 4 | 12.12 |
| Columnists | 1 | 1.27 | 591 | 1.14 | 0 | 0.00 |
| Headlines | 3 | 3.80 | 1,150 | 2.23 | 0 | 0.00 |
| Featured Gallery | 3 | 3.80 | 1,768 | 3.42 | 3 | 9.09 |
| Inquirer Features | 2 | 2.53 | 1,550 | 3.00 | 0 | 0.00 |
| Editor's Pick | 1 | 1.27 | 334 | 0.65 | 1 | 3.03 |
| Opinion | 14 | 17.72 | 12,281 | 23.78 | 1 | 3.03 |
| Global Nation | 6 | 7.59 | 2,726 | 5.28 | 3 | 9.09 |
| Lifestyle | 4 | 5.06 | 2,869 | 5.56 | 3 | 9.09 |
| Sunday Inquirer Magazine | 1 | 1.27 | 997 | 1.93 | 0 | 0.00 |
| Stories | 3 | 3.80 | 1,872 | 3.62 | 3 | 9.09 |

Note: Supplements mean graphics, pictures, and audio-video clips.

Majority of the articles were short as befitting straight news, and they were also featured under the news section. Over half (54.43%) of the articles contained words ranging from 501 to 1,000. Almost half (41.77%) contained graphics. More stories were written as news (41.77%), followed by opinion (24.05%), and features (18.99%).

When the articles were analyzed under the different sections of the newspaper, understandably, majority (56.96%) of the articles were clustered under the news section in the inquirer.net. Under the news section, many of the news stories were under the headline regions or a round-up of what was going on in the regions (Table 2).

The number of words followed the same trend. The news section had the most number of words (54.94%), followed by the opinion columns (23.78%), and business (10.44%) sections. Meanwhile, more articles with supplements (graphics or photos or even video/audio clips) were found under the news section (66.67%); followed by the business section (12.12%); and Lifestyle (9%) and Global Nation (9%) sections.

Framing

Seven frames that writers used in discussing the stories linking climate change with biodiversity were surfaced from the articles. Contrary to the researchers' expectation, the articles were not framed in terms of survival of ecosystems or species, which are actually the bases of the definitions of biodiversity. Biodiversity is defined broadly as the "variety of life on earth" or the variability among living organisms from terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part (International Union for Conservation of Nature, 2010).

In fact, few articles were framed as survival of ecosystems (11.39%) and survival of the species (6.33%). Rather, the predominant frame was 'biodiversity for climate change' (26.58%), followed by 'human survival' (18.99%) and 'the cost of biodiversity' (16.46%). Some articles were also framed as twin environmental challenges (13.92%) and call to action (12.66%) (Table 3).

The predominant frame used by the writers was 'biodiversity for climate change' or that biodiversity can mitigate the effects of climate change and vice-versa. The writers angled their stories

to show that conserving biodiversity or aquatic and terrestrial species could arrest climate change.

The second most used frame, 'human survival', reports on the negative effects of climate change on the services and products derived from biodiversity. The third frame, 'cost of biodiversity', shows how biodiversity and ecosystem services could possibly exacerbate the effects of climate change or could incur 'cost' because of the loss of biodiversity. The fourth frame, 'twin environmental challenges', links climate change and biodiversity as issues of equal weight or importance with no cause-effect relationship as in the previous frames. The 'call to action' frame, on the other hand, tackles policies, campaigns, and other social movements for the environment and biodiversity. 'Survival of ecosystems', the sixth frame, highlights how biodiversity loss may also negatively affect ecosystems in general. Lastly, the frame 'survival of species', shows how climate change has negative effects on the preservation of different animal and plant species. These frames are discussed with exemplars in the next section.

TABLE 3. Frames for articles linking climate change and biodiversity

| Frames | Number of Articles N=79 | Percentage |
|---------------------------------|----------------------------|------------|
| Biodiversity for climate change | 21 | 26.58 |
| Human survival | 15 | 18.99 |
| Cost of biodiversity | 13 | 16.46 |
| Twin environmental challenges | 11 | 13.92 |
| Call to action | 10 | 12.66 |
| Survival of ecosystems | 9 | 11.39 |
| Survival of species | 5 | 6.33 |

Frame 1. Biodiversity for Climate Change

This frame was surfaced from 21 articles, explaining that biodiversity can mitigate the effects of climate change and vice-versa. Concepts from the three articles include sustaining island ecosystems, endemic tree species for creating carbon sinks, and collection ponds as a natural way for flood control management.

The exemplar article written by Raoul T. Geollegue of the *Cebu Daily News* posted by www.inquirer.net on 9 June 2012, stressed the importance of trees in trapping harmful greenhouse gases that

contribute to climate change. Quoting Geollegue:

The trunk, branches, twigs, roots and leaves make up the tree's biomass which is basically cellulose made up of carbon, oxygen, and hydrogen molecules. As such, they store large amounts of carbon dioxide...

This frame was also used by Juan L. Mercado in his article entitled "Overlooked Paradox" posted on 31 July 2012. While the first one focuses on trees, Mercado, points to mangroves as mitigators. According to Mercado, coastal forests are one of the least studied ecosystems, but they are the ones that show a lot of promise in ensuring protection against the harsh effects of climate change. Mercado wrote that the role of ecosystems is one overlooked paradox.

... But the 2004 Indian Ocean tsunami and sea-level rise from global warming changed all that. They highlighted the neglected but increasingly needed 'bioshield' role of 'beach forest-mangrove belts'.

... Typhoon Frank in 2008, Tropical Storms Ondoy and Pepeng in 2009, and Typhoons Pedring, Quiel, and Ramon in 2011 exposed the lack of protective greenbelts. Beach forests thrive under full sunlight, inadequate water and poor nutrient conditions. They're also useful for rehabilitation...

Other articles using this frame pointed to the use of renewable energy as alternatives to coal and other fossil fuels that contribute to the greenhouse gases in the atmosphere. The complete list of articles using this frame is found in Appendix 1.

Frame 2. Human Survival

The theme, 'human survival', was surfaced from 15 articles. In these articles, writers discuss that climate change inflicts negative effects on the products and services derived by humans from biodiversity (e.g., food, clothing, shelter and others). Another angle is that humans, as part of biodiversity, are heavily affected by climate change in the form of natural disasters.

For instance, climate change was correlated with vector-borne diseases, pollution, torrential rains, deluges, drought, and food production.

Some excerpts from the articles that manifest this framing are as follows:

“The increase in the number of dengue cases may be attributed to the constantly changing climate brought by global warming as well as congestion in urban areas,” said a WHO report. (“DOH: Stay Clean, Observe Hygiene to Control Dengue,” 2 June 2012)

“This is already the [impact] of global warming, of climate change,” Lim told reporters here. “You might have noticed that even when it’s not raining, when there’s high tide, some parts of the city, including the [business district], are already flooded.” (“Dagupan Under Water in 15 years, Says Mayor,” 11 July 2012)

In the local scene, the Philippines too faced the threat of extreme temperature. In another article posted by *Inquirer* on September 2012, the Department of Agriculture (DA) ordered regional field units to prepare for the El Niño that was expected to hit the country in October 2012. The DA planned to create El Niño Action Teams as early as possible to oversee rice production. As quoted from the article written by Jeannette I. Andrade:

Each El Niño Action team will then assess the rice situation in each region, obtain updates from the appropriate regional or national government agencies and map out activities or intervention to the impending impact of the dry spell and other climate change-related phenomena to rice production based on various possible scenarios.

In both articles, the focus was not just on extreme heat affecting agricultural lands but on the effect of extreme climate changes on crop production. Food is one of the most important products derived from biodiversity. Food is also a basic human need, and man relies heavily on food for survival. Appendix 2 shows the complete list of articles using this frame.

Frame 3. The Cost of Biodiversity

The third predominant frame, the 'cost of biodiversity', was surfaced from thirteen articles. In this frame, the writers highlight how 'costly' is biodiversity loss as affected by climate change. In many of these articles, the writers pointed to coal mining and overpopulation as causing imbalance in the ecosystem. They also pinpointed global food production, especially livestock production, as _____.

Some excerpts from articles that used this frame are as follows:

The report also characterized the global food system as "unfair and unsustainable," saying that volatile prices make life hard for small-scale producers and consumers, the system was increasingly dominated by a small number of immensely powerful corporations, and the system was contributing significantly to climate change as well as being highly vulnerable to its impacts. ("Filipino Moms Most Concerned About Food They Serve to Families, Says Survey," 23 July 2012)

In an article retrieved from inquirer.net dated August 10, 2012, climate change was attributed to livestock and poultry rearing. Tessa R. Salazar's story entitled "Experts Link Climate Change to Animal Production Consumption," posited that animal production contributes to or exacerbates climate change.

Worldwide greenhouse gas emissions have been attributable to animal products such as cattle, buffalo, sheep, goats, camels, pigs and poultry (chicken).

Better believe it, environment experts claim the weather we have today is partly the result of our appetites. Although the causes of climate change are no doubt multifaceted, livestock propagation to meet the world's incessant appetite for animal products has been assessed to be a significant factor in environmental destruction...

The story pointed out that livestock (carabao, pig, goat, etc.) and poultry (chicken, quails, ducks, etc.) contribute to the amount of greenhouse gases in the atmosphere. The writer backed this up by citing a report done by the *World Watch Magazine* entitled

“Livestock and Climate Change,” revealing that farm animals and their by-products contribute at least 32.6 billion tons of carbon dioxide per year and can account for more than half of the annual greenhouse gas emissions worldwide.

Other articles tried to prove this contention such as follows:

According to recent analysis, the lifecycle and supply chain of livestock products is actually responsible for at least 51 percent of all anthropogenic greenhouse gas emissions (GHGs). (“Chefs Tapped to Put a Lid on Climate Change,” 19 October 2012)

Pointing to agriculture sector, especially livestock production, as a major contributor to climate change may not be expected by the consumers. Appendix 3 shows the complete list of articles using this frame.

Frame 4. Twin Environmental Challenges

This fourth frame that surfaced from eleven articles links climate change and biodiversity as issues of equal weight or importance that needs to be addressed together.

Concepts that emerged from the articles included sustainable development, addressing the issue of climate change and environmental degradation, and environmental ethics.

Excerpts from the articles under this frame are as follows:

“We... renew our commitment to sustainable development and to ensure the promotion of an economically, socially, and environmentally sustainable future for our planet and for present and future generations,” it said...The long list includes climate change, desertification, fisheries depletion, pollution and deforestation, and the danger that thousands of species will go the way of the dodo.” (“UN Summit Issues Environment, Poverty Blueprint,” 23 June 2012)

“I encourage our local leaders to push for programs aimed at addressing environmental challenges, food security and water supply,” said Angara. (“Angara Calls on LGUs to Focus on Environment, Water, Sanitation,” 13 July 2012)

In June 2012, the United Nations Conference on Sustainable Development, more popularly known at Rio+20, was held at Rio de Janeiro in Brazil. A week before the said summit, Emeritus Archbishop Desmond Tutu wrote about his thoughts in an opinion article for the PDI on what should be tackled or discussed in the upcoming Rio+20. Through the course of the opinion article, he discussed the need to achieve sustainable development and to deliver new policies or treaties to address climate change and to preserve biodiversity. He expressed the need for a strong commitment to address not only one issue but to target all of them. As quoted from the said article:

In Rio, we need strong and unequivocal political commitment to reorient the global economy to meet the needs of the poorest while respecting the earth's limits... With the right support and techniques, these small farmers can help feed our growing population without doing further damage to the environment and sending our climate out of control... We must create a future safe from the risks of climate change and water, land, and food shortages... ("Prosperity for all Must Be at the Heart of Rio+20," 14 June 2012)

The point of the article is that societal problems do not occur as highly separated problems but are linked with one another. The aforementioned article did not focus on climate change and biodiversity as entirely separate issues but these issues were presented side by side. Appendix 4 shows the complete list of articles using this frame.

Frame 5. Call to Action

The fifth frame, 'call to action,' was surfaced from 10 articles. These highlight how climate change and biodiversity are issues that need human initiative in terms of policies and campaigns or any other type of social movement. Basically, these articles embed the "call-to-action" aspect.

Some excerpts that manifest this frame are as follows:

A proposed executive order (EO) drafted by the Cabinet

clusters on climate change mitigation and economic issues laid down six points as part of the Aquino administration's mining agenda... These include the declaration of the primacy of national laws over local laws allowing small-scale mining, which has set off criticisms from governors. ("6 Points Laid Out in Aquino's Mining Agenda," 27 June 2012)

Subsequent laws such as RA 9729, the Climate Change Act of 2007 and RA 10121, the Disaster Risk Reduction and Management (DRRM) Act of 2010 require the integration of climate change and DRRM in each policy, program and project of government. This is another area where the coordination of government agencies with the local government units and the collaboration with the various stakeholders cannot be dispensed with. ("Responsive Governance," 9 July 2012)

Foreign ministers from the Philippines, Australia, Indonesia, Papua New Guinea, New Zealand, and Timor Leste expressed their strong support for the Coral Triangle Initiative (CTI), a project which aims to support the conservation and sustainable management of marine resources in the region. ("A Harmonized and Sustainable Energy Policy," 23 July 2012)

A professional organization of nutritionist-dietitians has expressed its support to the Meatless Monday campaign in the Philippines. ("Meatless Monday Gets Nutritionist Dietitians' Nod," 3 August 2012)

The Department of Environment and Natural Resources and Public Works and Highways should include the value of the services that our trees perform for us to have better quality of life. ("Trees," 20 August 2012)

An editorial entitled "Monday Greens for Earth" dated 22 September 2012 talks about the movement called Luntiang Lunes, which launched the Meatless Monday Campaign in the Philippines. The said campaign encourages people to keep themselves from eating meat products during Mondays.

Luntiang Lunes Movement is so keen to have the said campaign become a permanent occurrence in the country. The movement tapped Rep. Teddy Casiño to file House Bill 6311, which requires school management to refrain from serving meat for lunch every Monday. The article explains why the said campaign and bill are being pursued:

... eating less meat will have a long term impact in view of the massive land and resources required for the livestock industry. There is also the matter of greenhouse gas emissions—also a major cost of raising livestock—which helps raise the planet’s temperature, leading to global climate change.

Apparently, there are fewer articles written on the need for policy formulation and implementation on the link between climate change and biodiversity. Appendix 5 shows the complete list of articles using this frame.

Frame 6. Survival of Ecosystems

Survival of ecosystems, the sixth frame, was surfaced from nine articles. It links climate change and biodiversity in a way that climate change negatively affects ecosystems in general.

Ecosystems are defined as complex communities consisting of plants, animals and microorganisms interacting with one another. Biodiversity comes in the picture because it refers to the diversity of species within each ecosystem and also pertains to the diversity among ecosystems. Because of climate change, ecosystems ranging from protected areas, marine ecosystems to forest ecosystems, are threatened.

Recurring concepts from articles under this frame include the following: reef degradation, marine environment, management of resources, deforestation, bleaching, endangered sites, and devastated reef covers. Majority of the articles show the effects of rising temperatures to marine ecosystems.

Some excerpts under this frame are as follows:

The Philippines’ ancient rice terraces, carved into mountains like giant green stairs, have been removed from a UN list of endangered world heritage sites, the

UN office in Manila said Wednesday. (“Philippine Rice Terraces Off Endangered List—UN,” 27 June 2012)

Coral reefs around the world are under threat from another round of bleaching as ocean surface temperatures are expected to rise later this year, according to a leading marine scientist. (“Coral Reefs Face Bleaching Threat, Says Expert,” 11 June 2012)

Coral reefs are important ecosystems of ecological, economic and cultural value yet they are in decline worldwide due to human activities. (“Philippine Reefs at Risk: It Makes Exec Cry,” 10 July 2012)

In an article retrieved from inquirer.net dated 10 June 2012 entitled “Bleaching Brought By El Niño Threatens PH Coral Reefs—Expert,” coral reefs not only in the Philippines, but all around the world, were under threat since ocean temperature was expected to rise later that year.

The Philippines is wary of the impending coral bleaching given that the country’s tropical marine waters are included in the Coral Triangle, an area considered as the epicenter of marine biodiversity in the world. Moreover, the country already had massive bleaching back in 2012. With the impending threat, the damage already done might grow wider. This coral bleaching phenomenon is once again brought by the onslaught of climate change. As quoted from the article written by Kristine L. Alave:

According to Professor Terry Hughes, Australia’s foremost marine biologist on coral ecosystems, massive coral bleaching is “entirely likely” in some reefs including Southeast Asia due to El Niño phenomenon, which is forecast to occur in the latter part of 2012... (“Philippines Highlights Coral Triangle Efforts in Southwest Pacific Meeting,” 13 July 2012)

The two articles linked climate change as threatening the survival of different ecosystems, especially coral ecosystems. Appendix 6 provides the list of articles using this frame.

Frame 7. Survival of Species

This frame, survival of species, was surfaced from five articles. The previous frame focused on the collective; this frame focuses on a single aspect of the ecosystem—species within the ecosystem.

Writers point out the declining harvest, such as in coconut plantations, because of the failure of trees to flower from lack of bees.

Some excerpts from articles having this frame are as follows:

She used to harvest 4,000 coconuts and 200 kilos of macapuno and buko each month, earning P15,000 and above from her 2.5 hectares of farm in Barangay Balele but that was before the coconut scale insects attacked and destroyed her farm. Officials and coconut farm owners believed the devastation was brought about by climate change. (“Pests Destroy Coconut Trees in Batangas,” 8 June 2012)

“Trees fail to flower,” Aetas huddled at the Bataan mountaintop meeting told Fr. Shay Cullen. “Bees are disappearing. Storms blow away our nipa huts as never before.” (“Pests Destroy Coconut Trees in Batangas,” 8 June 2012)

On 30 September 2012, a new sea creature was discovered in the Philippines. PDI reported this by posting an article that same month entitled “Weird Sea Creature New Species Found in PH” written by DJ Yap. Called the “bubble shark,” the said species was only discovered last year by marine biologists. This relatively young species of sharks apparently also thrives in the waters of Batangas and Mindoro, specifically in the Verde Island Passage Marine Corridor (VIPMC), a world renowned area concentrated with various marine life.

The writers then used the said discovery of species to direct attention to the latter’s preservation and to the need to increase and preserve their habitat, which is already threatened:

For environmental officials, the discovery of the weird shark adds new meaning to efforts to save the Verde Island Passage Marine Corridor (VIPMC), a bustling sea-lane

renowned for having some of the highest concentrations of shore-fish and underwater life in the world.

... [I]t is said to have the largest concentration of marine life in the world, with more than 1,700 marine species recorded within a 10-square-kilometer area in the habitat. It is both a highly productive traditional and commercial fishers and a development area for coastal and marine tourism... But the saltwater highway is threatened by overfishing, pollution, and climate change

DiCaprio said climate change was already reducing many creatures' habitats and industrial fishing would further reduce their chances of survival, urging against dilution or delay of the sanctuary proposals currently before CCAMLR.

Again, just like the two earlier frames, this frame also talks about survival. The writers are saying that there is a need to protect the habitat in which the bubble shark was discovered to ensure the preservation of the said species. Appendix 7 shows the list of articles using this frame.

CONCLUSION AND RECOMMENDATIONS

The number of articles linking biodiversity and climate change covered only 24.23% of the 326 articles tagged at inquirer.net with the search words biodiversity and climate change. Further, these linked articles were predominantly straight news stories with an average of 100 to 500 words per article and appeared under the news section of the newspaper. As such, the articles linking both issues left little room for analysis, investigation, or in-depth reportage of the interconnection of these two equally important environment issues.

This was expected as it was only in June 2012 when the ASEAN ACB publicly acknowledged in a national media forum of the need to discuss about climate change with biodiversity. Hence, that same month, the policymakers of ASEAN ACB sought the help of the Philippine Press Institute to encourage all environmental journalists to link these two in their reportage. Further, they offered the incentive of receiving an award for the best reportage

of the interlinked issues of biodiversity and climate change.

While the linked reportage was still quite below the ideal, the reportage showed some positive signs. First, was the interlink of both issues in the reportage on biodiversity. In fact, the interlinked articles composed 85% of the retrieved articles on biodiversity. Second, 33 articles (41.77%) of the interlinked articles contained graphics or audio or video clips. The accompanying supplements such as photos and interview clips provided more information and emphasis, hence expounding on the mostly straight news.

Third, the predominant frames used by writers were 'biodiversity for climate change' followed by 'human survival,' and 'the cost of biodiversity'. This indicates that media portrayed the connection of climate change and biodiversity in a causal way—that one negatively affects the other. Articles framed in terms of 'survival', highlighted that biodiversity loss is an environmental problem that causes the loss of people's basic needs (food, clothing, and shelter), livelihood, and even lives. The 'cost of biodiversity' pointed not only to the manufacturing and industrial sectors as major contributors of greenhouse gases but also to agricultural production, especially the livestock sector.

However, noticeable are only a few articles used the frame 'call to action' or specifically pointed to the need for laws, policies, or social movements that would mitigate climate change and arrest biodiversity loss. Apparently, writers are still at the stage of reporting the causes and effects of both environmental issues and have not yet reached that level of knowledge or technical expertise to write how such linked problems could or should be addressed by policymakers.

Hence, balanced reportage for climate change and biodiversity is recommended. Reporters must be trained or capacitated to be able to expound more how climate change affects biodiversity and vice-versa to make the public better understand and appreciate their interdependence. Media can also give more importance to environmental stories and issues by creating a distinct section in their online archive (e.g., Environment Section). Further, given that both climate change and biodiversity are considered as environmental challenges that pose a lot of risks, media can frame articles that would motivate policy formulation and implementation about these interlinked issues. They must appreciate their role as vital advocates among policymakers by first understanding that environmental advocacies should be

holistic and integrated—with a public or policy discussion on how everything in our environment are interrelated. A follow-up study is also encouraged to monitor the improvement in reporting the linkage between climate change and biodiversity in various media platforms.

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APPENDIX 1

Articles with the frame 'biodiversity for climate change' (N=21)

| Title | Date Published |
|---|-----------------------|
| 1. Tree Planting, Clean ups for Environment Month | 2 June 2012 |
| 2. Asia-Pacific to Need \$6T for Energy: Power Demand to Double by 2030, says ADB | 4 June 2012 |
| 3. With Fewer Forests, We Lose 95% of Carbon Trap | 9 June 2012 |
| 4. WWF Urges Government: Go for Clean Energy | 25 June 2012 |
| 5. For the Birds, The Islets and the Weather | 30 June 2012 |
| 6. 15,000 Trees for Tabunan Forest | 24 June 2012 |
| 7. Tree Growing in Tabunan | 25 June 2012 |
| 8. Aboitiz To Plant 70% of 3M Trees | 21 July 2012 |
| 9. Overlooked Paradox | 31 July 2012 |
| 10. Time to Shift to Renewable Energy | 14 August 2012 |
| 11. Instant-Noodle Fix to Flooding | 19 August 2012 |
| 12. SMC Spearheads Tree Planting In Mandaue | 20 August 2012 |
| 13. 'Green' Buildings to help Mitigate Effects of Floods | 29 August 2012 |
| 14. Eco-lawyer: Common Sense Will Solve Floods | 29 August 2012 |
| 15. Like the 'Molave' In Coastal Greenbelts | 30 August 2012 |
| 16. Flood-Prone Town Loses More Mangroves to Landfill (Part 1) | 12 September 2012 |
| 17. Landfill Site Unused as One More is Built (Part 2) | 13 September 2012 |
| 18. Tree Planting Marks 3rd 'Ondoy; Anniversary: 'Emotional Scar Still There' | 27 September 2012 |
| 19. Union Energy Starts P1-B Biomass Power Project | 16 October 2012 |
| 20. Philippines is 3rd Most Disaster-Prone Country in the World—Report | 15 October 2012 |
| 21. Philippines is 3rd Most Disaster-Prone Country, New Study Shows | 16 October 2012 |

APPENDIX 2

Articles with the frame 'human survival' (N=15)

| Title | Date Published |
|---|-----------------------|
| 1. DOH: Stay Clean, Observe Hygiene to Control Dengue | 2 June 2012 |
| 2. China Tells US to Stop Reporting Beijing's Bad Air | 2 June 2012 |
| 3. Batanes Gains from Climate Change | 19 June 2012 |
| 4. Tornado Destroys Plantations in N. Cotabato Villages | 1 July 2012 |
| 5. Death Toll Hits 150 From Floods in Southern Russia | 8 July 2012 |
| 6. Unrelenting Heat Wave Bakes Half the US; 30 Dead | 8 July 2012 |
| 7. Dagupan Under Water in 15 years, Says Mayor | 11 July 2012 |
| 8. Reef Alert | 13 July 2012 |
| 9. US Drought Worst in 25 Years, Food Prices to Rise | 19 July 2012 |
| 10. A Harmonized and Sustainable Energy Policy | 23 July 2012 |
| 11. Death Toll From Heavy Rains, Floods Up to 60-NDRRMC | 10 August 2012 |
| 12. Overlooked 'Key Word' | 27 August 2012 |
| 13. Overlooked Key Word | 28 August 2012 |
| 14. Agri Dep't Order Action Teams vs. El Nino Impact on Rice Fields | 17 September 2012 |
| 15. Lessons on Diving, Marine Protection and Gender Equality | 28 September 2012 |

APPENDIX 3

Articles with the frame 'the cost of biodiversity' (N=13)

| Title | Date Published |
|---|-----------------------|
| 1. Plastic Gets New Lease on Life in Farming | 24 June 2012 |
| 2. EO 23 Stops Legitimate Logging, Favors Instead Illegal Logging | 5 July 2012 |
| 3. Filipino Moms Most Concerned About Food They Serve to Families, Says Survey | 23 July 2012 |
| 4. Nation Needs Passage of RH Bill to Resolve Problems During Calamities—Lagman | 8 August 2012 |
| 5. Philippine Floods a Man-Made Disaster—Experts | 9 August 2012 |
| 6. Lawmakers Split On Role of Overpopulation in PH Disasters | 10 August 2012 |
| 7. Experts Link Climate Change to Animal Products Consumption | 10 August 2012 |
| 8. Bangus Overproduction' Causes Sinking—Study | 24 August 2012 |
| 9. No to Dirty and Polluting Coal | 3 September 2012 |
| 10. Chefs Tapped to Put a Lid on Climate Change | 19 October 2012 |
| 11. Coal-fired power plants Stir Debate in Palawan | 24 October 2012 |
| 12. When Dugongs, Rivers go to Court | 27 October 2012 |
| 13. Aquino's Moral Imperative | 29 October 2012 |

APPENDIX 4

Articles with the frame 'twin environmental challenges' (N=11)

| Title | Date Published |
|---|-----------------------|
| 1. World Banks Sees Global Garbage Crisis | 7 June 2012 |
| 2. Qualified LGUs Get P60M in Incentives to Achieve UN Millennium Goals | 9 June 2012 |
| 3. Prosperity for all Must Be at the Heart of Rio+20 | 14 June 2012 |
| 4. Beyond Headlines | 15 June 2012 |
| 5. Gut Realities | 19 June 2012 |
| 6. A Sustainable Future for Filipino Children | 19 June 2012 |
| 7. Loans to Address Climate Change Set to Increase: Move to Ensure Global Economic Growth | 21 June 2012 |
| 8. UN Summit Issues Environment, Poverty Blueprint | 23 June 2012 |
| 9. Angara Calls on LGUs to Focus on Environment, Water, Sanitation | 13 July 2012 |
| 10. Quezon City Eco-Fiesta Preaches Gospel of Zero Waste | 22 July 2012 |
| 11. Research for Calamities and Revival | 16 August 2012 |

APPENDIX 5

Articles with the frame 'call to action' (N=10)

| Title | Date Published |
|--|-----------------------|
| 1. 6 Points Laid Out in Aquino's Mining Agenda | 27 June 2012 |
| 2. Responsive Governance | 9 July 2012 |
| 3. Meatless Monday Campaign Gains Political Ground | 14 July 2012 |
| 4. A Harmonized and Sustainable Energy Policy | 23 July 2012 |
| 5. Meatless Monday Gets Nutritionist Dietitians' Nod | 3 August 2012 |
| 6. Trees | 20 August 2012 |
| 7. World's First Meatless Lunch to be Held in PH | 7 September 2012 |
| 8. Waste Not, Burn Not | 17 September 2012 |

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|-----|-------------------------------------|-------------------|
| 9. | Vegetarians Push 'Meatless Mondays' | 18 September 2012 |
| 10. | Monday Greens For Earth | 22 September 2012 |

APPENDIX 6

Articles with the frame 'survival of ecosystems' (N=9)

| Title | Date Published |
|---|-------------------|
| 1. Bleaching Brought by El Nino Threatens PH Coral Reefs—Expert | 10 June 2012 |
| 2. Coral Reefs Face Bleaching Threat, Says Expert | 11 June 2012 |
| 3. Philippine Rice Terraces Off Endangered List—UN | 27 June 2012 |
| 4. Continue Efforts to Preserve Rice Terraces, Ifugao Solon Urges | 28 June 2012 |
| 5. Philippine Reefs at Risk: It Makes Exec Cry | 10 July 2012 |
| 6. Reef Alert | 13 July 2012 |
| 7. Philippines Highlights Coral Triangle Efforts in Southwest Pacific Meeting | 13 July 2012 |
| 8. Weird Sea Creature News Species Found in PH | 30 September 2012 |
| 9. Great Barrier Reef Coral Halved in 27 Years—Study | 2 October 2012 |

APPENDIX 7

Articles with the frame survival of species (N=5)

| Title | Date Published |
|--|-------------------|
| 1. Pests Destroy Coconut Trees in Batangas | 8 June 2012 |
| 2. Overlooked Key Word | 27 August 2012 |
| 3. Overlooked Key Word | 28 August 2012 |
| 4. Weird Sea Creature News Species Found in PH | 30 September 2012 |
| 5. Leonardo DiCarpio Urges Antarctic Ocean Sanctuary | 23 October 2012 |