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# What do scientists say on climate change? A study of Indonesian newspapers

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## ABSTRACT

Scientists predict that Indonesia is likely to be one of the regions most affected by climate change. Although there are pressing concerns for the effects on Indonesia's biodiversity, the consequences of climate change are predicted to reach beyond the natural environment. Agriculture, industry, the health sector, politics and the social-economic sector, among others, are all likely to be impacted significantly by climate change in the coming years. The underlying theoretical assumption of the study is that it is of vital importance to know how the climate question has been understood and framed to assess how the general public will respond to lifestyle changes necessary for climate protection. This study examines the media coverage of climate change over one year in the Indonesian media, specifically the newspapers Kompas and Media Indonesia. Using a quantitative analysis as its central methodology, the study adopts two core frames to analyse all articles on climate change. The study found that the environmental and scientific frames were the dominant ones for news accounts of issue and that the scientific and governmental frames were the most prominent ones for individuals or organisations concerned with climate change issues. This study also found that the media tend to frame climate change news primarily for an Indonesian context.

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## 1. Introduction

At the end of March 2011, the people of the Probolinggo Regency in East Java Province were surprised: not because they received the Adipura Award, but because their trees were invaded by caterpillars. Unfortunately, the population of caterpillar pests not only invaded the trees, but they also encroached onto the walls, doors, and windows of the human population's houses. The psychological effects of the caterpillars on the community were traumatic because the insects cause itching and small bumps ([Kompas.com](http://Kompas.com), April 6, 2011).

With time, the caterpillar epidemic spread from Probolinggo to Mojokerto, Ngawi, Sumedang, Bekasi, Sumatera, Kalimantan, and other regions in Indonesia. This growth was not caused by the insects' migration or natural metamorphosis from caterpillar to butterfly. According to Totok Himawan ([Kompas.com](http://Kompas.com), April 11, 2011), climate is the main cause for the increasing caterpillar population in other regions. Moreover, currently, the climate has

changed, and the weather cannot be easily predicted ([Irwansyah](http://Irwansyah), 2011).

The caterpillar epidemic is one of the results of climate change. In Indonesia, there are many situations caused by climate change. In 2007, Jakarta suffered heavy flooding ([Kompas](http://Kompas), February 1, 2007). This disaster in Jakarta was significant because it not only occurred in the city, where flooding occurs regularly, but also in regions that had not seen flooding before. Flood disasters have consequences for economics, health, agriculture, and industry. Especially in politics, flood disasters give ammunition to the opposition to attack the government for being slow in handling the disaster.

Jakarta's flood may occur once every five years. According to experts, the flood disaster has a cycle that should be watched. Many people said that the disaster was caused by human error. However, according to Ubaidillah ([Rakyatmerdekaonline.com](http://Rakyatmerdekaonline.com), February 10, 2011), climate change greatly contributed to increasing rainfall during large flood disasters.

Climate change has not only triggered increased rainfall; it also triggered the increase in temperature known as global warming. The change of temperature itself could occur once in a decade.

[Isworo](http://Isworo) (2010) notes that in 2000–2009, the temperature increased

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by 0.013 °C. The tolerable threshold of increasing temperature is less than 2 °C (Joint Statement, 2004, in [Cramer, 2008](#)). Once the temperature rises beyond two degrees, it can be categorised as dangerous. [Weart \(2006\)](#) said that at the dangerous level, the impact of temperature change may melt the ice in the North and South Poles, causing sea levels to rise due to increasing water volume.

In Indonesia, extreme weather usually comes in contrasts. For example, a day may include hot weather followed by sudden, swift rain. According to the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program in the United States, these weather anomalies could give a “yellow light” (caution) to the growth of diseases ([Media Indonesia, 2010](#)). Some of these diseases could cause death. Globally, in 2000, the climate change could trigger the death toll of 150,000 lives. If climate change cannot be solved by 2030, a death toll of 300,000 lives is predicted ([Battacharya, 2003](#)).

Gas emissions are one of the causes of climate change, with emissions from cars and industry contributing more than 380 parts per million (ppm). According to International Climate Change (ICC), the tolerable level of gas emissions is 330–350 ppm, but most emissions are above the normal standard ([Susanti, 2010](#)). These emissions may cause holes in the ozone layer. According to [Ozone-Indonesia.org \(2010\)](#), the ozone protects the earth from sunlight by absorbing ultraviolet radiation from the sun.

As [Robert Cos \(2009\)](#) argues, the impact and causes of climate change were recognised long before environmental issues became a global trend causing collective problems. Currently, this issue invites the concern of many countries, which have convened numerous meetings to find a solution to climate change, including the following: the Geneva Convention on Long-Range Transboundary Air Pollution, 1979; the ASEAN Agreement on the Conservation of Nature and Natural Resources (1985); the United Nations Framework Convention on Climate Change, 1992; the Convention on Biological Diversity, 1992; the Convention on Civil Liability for Damage resulting from Activities Dangerous to Environment, 1993; the ASEAN Agreement on Transboundary Haze Pollution, 1993; the ASEAN Cooperation Plan on Transboundary Pollution, 1995 ([Puspitasari & Merdekawati, 2007: 473](#)).

In addition, the United Nations Framework Convention on Climate Change initiated a regular annual meeting called the Conference of the Parties (COP). Since the first meeting in 1992, 16 meetings have taken place; the 16th meeting in 2010 was held in Cancun, Mexico. Indonesia was the host of the 13th meeting in 2007, which produced the Bali Road Map. The four main points of this map are the following: (1) adaptation, (2) technology under the Reducing Emissions from Deforestation in Developing countries (REDD), (3) the Intergovernmental Panel on Climate Change (IPCC) report, and (4) the Clean Development Mechanism (CDM) for developing countries ([Unfccc.int, 2011](#)).

A remarkable COP meeting in 1997, which was attended by 160 countries, produced the Kyoto Protocol ([Unfccc.int, 2011](#)). One of its outcomes was an agreement to make significant progress towards reducing climate change by 2012. The substance of the protocol is a treaty that requires developed countries such as the United States, Japan, Germany and Canada to reduce gas emissions that impact climate change. Unfortunately, the United States did not sign the agreement because of an imbalance between developed and developing countries. In addition, the agreement rules that all countries should follow the protocol to reduce the greenhouse effect in anticipation of further climate change ([Sari, 2009](#)).

Indonesia, as a country involved in other agreements related to climate change, participates in activities that aim to reduce the causes of climate change. For example, Indonesia has a campaign for “Indonesia goes green,” which is supported by all parts of

government, the private sector, and society, including local communities. Unfortunately, climate change only receives scant attention from the Indonesian media ([Lukmantoro, 2007](#)). In addition, Lukmantoro suggests that media analysis of climate change issues is mostly partial, only informing the public about the disasters caused by climate change. As a result, these partial analyses may give society the false belief that such disasters are only natural phenomena, not a part of climate change’s impact ([Lukmantoro, 2007; Asteria, 2010](#)).

The coverage of climate change in the mass media is as important as coverage of political issues. Therefore, this study raises three questions: How do the mass media frame climate change? Who is the source for this framing in the media? And, what context do the media use to cover climate change issues? These questions guide this study’s investigation of the real situation for climate change coverage in the mass media.

## 2. Literature review: theoretical background

This study uses two concepts for its theoretical background: (1) agenda setting, which assumes the ability of the media to influence public opinion; and (2) environmental framing, which is part of environmental communication.

### 2.1. Agenda setting

Agenda setting is a theory that relates to how the media influence society. However, because the influence on society is a result, the analysis of the process is usually involved in the interpretation. Thus, the supporting analysis addresses the role and function of the media. This approach facilitates the process of re-constructing media content, which has a significant impact on a society and its culture ([McCombs and Shaw, 1972](#)).

Regarding the role of media, [Putnam \(2002\)](#) suggested that, first, the media can be a strong entity for controlling conflict. In this case, the role of the media is to calm a conflict among society’s members. Second, the media may participate in attacking or defending the status quo. This role emphasises the duty of the media in politics. Third, the media may play the role of a watchdog, giving feedback to the public on local problems. This role highlights the media’s responsibility to respond to social problems, including rising prices, diseases, technological inventions and others. In the fourth role, the media helps to set agendas, filter relevant issues, and show other positions to establish a balance of perspectives. This role is related to the neutrality of the media towards the interventions of political actors, who have economic power over the media. Finally, the fifth role of the media is to mediate celebrity conflicts and enhance them by marketing and resolving them. This role is for entertainment purposes and relates to the media being a commodity for public consumption ([Putnam, 2002](#)). Overall, the media have five functions: (1) surveillance, (2) social learning, (3) information delivery, (4) cultural transformation, and (5) entertainment ([Bungin, 2006](#)). Therefore, the roles and the functions of media are inter-related.

According to [McCombs and Shaw \(1972\)](#), agenda setting theory discusses the process and effect of mass communication in relation to society and culture. This theory shows the power, competence, and strength of the media to influence public opinion. In other words, what is important for the media will be important for the public. The theory suggests that the media change from telling a society to think to telling it to think about something ([Cohen, 1963](#)). The media influence the public in several ways. First, the media gives more airtime to a specific issue ([McCombs and Shaws, 1972](#)). Second, the location and placement of news (e.g., a newspaper headline) may guide the audience to agree that an issue is important at that time ([McQuail, 2000](#)). For example, in 2010, there were

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