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# The role of scientists in forest fire media discourse and its potential influence for policy-agenda setting in Indonesia\*



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#### ABSTRACT

Forest fire is one of the most important issues discussed in international and national news media, because of its significant human and environmental impacts; these fires generate social, economic, and ecological problems that spread across national borders. Mediating these problems requires effective and applicable policy, formulated from a sound base of evidence. Thus, the quality of information is of primary importance in formulating appropriate forest fire combating policy. While the media is obligated to provide credible information, it often does so without scientific expertise. This study indicates that most interviewed stakeholders believe that scientists can deliver reliable information in policy agenda-setting, and therefore, the voices of scientists in the media have the potential to influence policy agenda-setting through their role as "issue advocates". This study, however, confirms that the news media does not recognize the knowledge of scientists as the most reliable reference in forest fire discourse. The weak "knowledge utilization" of news' substance is reflected in the minimal coverage of scientists in media discourses. This study examines the presentation of scientists in forest fire media discourse and stakeholders' perceptions of this presentation, in order to analyze the role of scientists in forest fire media discourse and its potential to influence and set policy agendas in Indonesia.

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#### 1. Introduction

Forest fire is a global concern. With 300-400 million hectares of forests and other lands annually affected by fires (Goldammer, 2010), consequences of environmental degradation from forest fires, such as erosion, loss of nutrients, disturbance of vegetation, smoke and haze, threaten human wellbeing across geopolitical boundaries. Southeast Asia, and particularly Indonesia, is a global region with very large and frequent cases of forest fire (Narendran, 2001). Chokkalingam and Suyanto (2004) report that due to frequent cases of forest fire, Indonesia is a major source of the annual haze blanketing Southeast Asia and greenhouse gas emissions contributing to global warming. They report that in the 1997/1998 El Nino event, Indonesian wetland fires accounted for 60% of the regional haze and emitted 0.81-2.57 Gt of carbon, making Indonesia one of the largest air polluters in the world at the time. Syaufina (2008) shows that forest fire in 1997/1998 burned approximately 10 million ha of Indonesian forest and caused 10 billion USD of damage to the country. The negative impacts of those forest fires are not only of local concern but are also of concern across towns, across provinces, and across national borders (Goldammer, 2010).

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To address the problems of forest fire, effective and applicable policies are needed. Good policy requires a sound evidence base. "Vaguely formulated goals cannot be realized for lack of information. The quality of information is, thus, an important aspect for recognizing the possible impact of forestry programs" (Krott, 2005, p. 28), including problems concerning forest fires. Soroka et al. (2013, p. 204) hold that, "mass media can, and often do, play a critical role in policymaking." The media usually matters in the early stages of the policy process by contributing to agenda setting, but also may play role throughout the policy process, "which is then adopted and dealt with by politicians, policymakers, and other actors." (Soroka et al., 2013, p. 204). Sadath and Krott (2013) hold that different political actors discuss forest issues in the media, with different influences on forest policies.

As with the arguments of Krott (2005) on the importance of information quality, reliable information on forest fire in the news media must be utilized for further policy-making processes that seek to manage and combat fires effectively. Coronel (2003, p. 3) argues that "... in many new and restored democracies, the media has contributed to public education and enlightenment...", which appoints the importance of the quality of the substance of news. In this context, a scientist can become an actor in the discursive arena of the media and play an important role in policy process as an "issue advocate" (Dunn, 2000; Pielke, 2007), assuming that the presentation of scientists in media discourse can improve the reliability of media information. The complexity of the relationship between experts and policymakers may be elucidated

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under instrumental and legitimating functions, in order to provide reliable answers to problems (Weingart, 1999).

"An acknowledgement of the systematic nature of differences in perception and communication can introduce a much needed reflexivity into the closely coupled communication between science, politics, and the media" (Weingart et al., 2000, p. 280). Referring to Kleinschmit et al. (2009) and Grundmann (2009), the international and national media spheres are important factors in policy agenda-setting. They also argue that when certain issues are framed, information is brokered and then, in this way expertise is communicated affecting the policy agenda. This study, thus, examines four questions related to the role of scientists in forest fire discourse of international and international media, and its potential influence to the policy process in Indonesia. The first question focuses on the evaluation of the presentation of scientists as "speaking actors" on forest fire media discourse in international and national news media. The second question elicits the perception of stakeholders about the important actors, which influence policy agenda-setting on forest fire in Indonesia. The third question examines the conformity of problem definition on forest fire (i.e. causes and solutions) based on media discourses and the views of stakeholders. The fourth and final question evaluates the potential influence of scientists as "issue advocates" to set the forest fire policy agenda, by taking into consideration the presentation of scientists in media discourse and stakeholder's perception.

#### 2. Theoretical framework

#### 2.1. Framing and policy agenda-setting

"Framing" refers to the selection of certain aspects of a perceived reality that, in turn, makes these aspects more salient in a communication text, in order to present a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described (Semetko and Valkenburg, 2000). McCombs et al. (1997) argue that framing is regarded as an extension of agendasetting, and it naturally has an impact in audience interpretation of news. As with Feindt and Kleinschmit (2011), Sadath et al. (2013b p. 2) argue that "medialisation models suggest that political actors implant their agenda in frames in a condensed manner to reach specific effects in a given audience".

While an agenda is a "list of things to be discussed at a meeting" (Manser, 1995, p. 8), a setting is the "place in which something is fixed" (Manser, 1995, p. 377). Thus, the agenda-setting process is an ongoing competition among proponents of an issue to gain the attention of the media, the public, and policymakers (Dearing and Rogers, 1996). McCombs and Shaw (1972) define agenda-setting as the creation of public awareness and concern of salient issues by the media. They describe the powerful influence of media that reflects the ability to tell audiences which issues are important.

Furthermore, McCombs and Shaw (1972) argue that the two most important elements of agenda-setting are awareness and information. To investigate the agenda-setting function of the mass media, they attempted to assess the relationship between what people in a certain community said about the important issues and the actual content of the media messages. They conclude that the media exerted a significant influence on what people considered to be major issues.

According to Severin and Tankard (1992), agenda-setting is one of the ways in which the mass media can influence public opinion. Usually, different media outlets have different agenda-setting functions and therefore, analysis of agenda-setting is appropriate to understand the pervasive role of different media outlets. They also argue that the news media, by choosing what to report as news, can determine which issues the public will think and talk about. Referring to this agenda-setting theory, if people or speaking actors are exposed to the same media, they will place importance on the same issues and

therefore, their influencing role to set policy agenda could be predicted (Ekayani, 2011).

#### 2.2. Media and policy making

Media is one of the most important sources of information (Kleinschmit and Krott, 2008) and plays important roles in directing the opinions of society as well as influencing policy processes (Palmer, 2004). Referring to Soroka et al. (2013, p. 204) "... media can draw and sustain public attention to particular issues. They can change the discourse around a policy debate by framing or defining an issue using dialogue or rhetoric to persuade or dissuade the public". Rivers et al. (2003) argue that the role of media in driving public opinion is strongly determined by the perspectives of media related to the individual behaviors, aspirations, expectations, and fears of people. Sadath et al. (2013b) assume that the media reflects public opinion and therefore could play an important role in presenting the general perception of certain issues. "The public discourse on critical events in environmental and forest issues that is supported by the media has a chance to influence policy decisions" (Sadath and Krott, 2013, p. 2) as well as to set policy agenda (Kleinschmit, 2012; Wibowo and Giessen, 2012).

According to Soroka et al. (2013), media plays a critical role in policymaking, particularly in the early stages of the policy process. They can help to set an agenda, which is considered and then adopted by policymakers. Furthermore, Soroka et al. (2013) also argue that although media usually is often most influential at the beginning of policy process, through policy agenda-setting, in some situations media can also exert influence throughout the policy-making process. "Indeed, mass media are in the unique position of having a regular, marked impact on policy, but from outside the formal political sphere, often without even being recognized as a policy player" (Soroka et al., 2013, p. 204).

#### 2.3. The role of scientists in policy process

Science plays an important role in defining the problems on the political agenda and scientists take part in setting the policy agenda, particularly if other actors, such as the media, are interested in their pronouncements (Weingart, 1999). Increasing the role of scientists in media discourse may serve to improve the reliability of information in policymaking, as it can draw attention to scientific issues within the policy process. Media can also aid their cause by highlighting their role in policymaking and helping to convey scientific-based information to policymakers (Coronel, 2003; Soroka et al., 2013). "With the backing of consensual science, the political discourse brought about a specific problem frame that transformed the scientific hypothesis into a political problem that called for urgent action." (Weingart et al., 2000, p. 274).

Many policymakers emphasize that the quality of policy is greatly determined by the reliability of information and thus, they call for more science-based information within the policy process (Steel et al., 2004). Although the reliability of information in policy making is an indubitable need, not all scholars believe in the important role of scientists in policy process. Many scholars argue that increased presentation of scientists in policy processes can improve the quality of complex policy decisions. These critics disagree with the assumption that scientists can facilitate policymaking by providing objective scientific information to policymakers (Mazur, 1981). Further, other views argued that scientists are just one source of information and increasing involvement of scientists will not necessarily lead to better policy (Steel et al., 2004).

Scientists could influence policy process, if they communicate with the public because politics is a communication activity among people (Roelofs in Nimmo, 2004). One of the natural obligations of the media is to educate people by providing comprehensive information (Kobre in Rivers et al., 2003). To improve the comprehensiveness and credibility of information, "scientists" need to share their voices in the media. However, not all scientists are interested in shaping policy processes.

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