CHAPTER 1

INTRODUCTION

"FIRE IS a powerful symbol of chaos, often marking the destruction of order in both the social and the natural worlds" (Matthews 2003:1)

1.1 Forest Fire Discourses in Media

Media have important roles in directing opinions of the society as well as influencing policy-making processes of the government sector. Moreover, media can also be used as key socialization agents, particularly in developing countries. The term socialization refers to an ongoing process by which people learn attitudes, values, and behaviours consistent with their social setting. In a developed society, the media are considered among person's key socialization agents. This role is largely determined by the extensive penetration of the media into daily life. It implies that people's actions and attitudes are principally shaped and influenced by media content (Palmer 2004).

Gerhards *et al.* (1998) stated that public statements in the media are important as a strategy of the integration of collective symbols. Symbols are ways of simplifying. In fact, it is the requirement of the media to represent simplified complex circumstances since they address themselves to a public (Krumland 2004:37). The use of the media to influence belief systems is not unique to the government. Likewise, NGOs and media themselves affect the value system using publicity campaigns and developing relationships with media organizations as a means of raising public awareness. The task of getting this information to the public is best accomplished through the use of public media (Turner 2004 *in* Palmer 2004). Accordingly, the media become the key socialization agent, which influence decision-making and change value systems.

In environmental protection (included forest), media have been evaluated as prominent entities that socialize the general public to include environmental understanding and consideration into their value systems. When evaluated as an instrument to influence public opinion and overall belief systems, the effects of media socialization vary in relation to the entity controlling the information source (Palmer 2004:4). As sources of information, each media has specific targets. Accordingly, an international media has particular targets to influence international lobby groups as well as global society, while a national media usually gives priority to the news related to national interests.

Pluralists perceive society as a complex of competing groups and interests, none of whom is predominant all of the time. Media in a democratic country, on the other hand, can be seen as a bounded system, enjoying an important degree of autonomy from the state, political parties and institutionalized pressure groups. In a democratic country, freedom is assured by the law and, therefore, control of the media is said to be in the hands of autonomous managerial elites who allow a considerable degree of flexibility to media professionals (Gurevitch *et al.* 1982 *in* Chandler 2000).

Chandler (2000) cited that according to Marxists' view, the media are seen as parts of an ideological arena in which various class views are fought out. The ultimate control is increasingly concentrated in the monopoly capital. It is assumed that the media can and is used to socialize into and internalize the norms of the dominant culture. The media send to sound the interests of the dominant classes. Media institutions are regarded as being locked into the power structure, and consequently, as acting largely in tandem with the dominant institutions in society. The media, hence, reproduce the viewpoints of dominant institutions, not as one among a number of alternative perspectives, but rather, as the central and obvious perspective (Curran *et al.* 1982 *in* Chandler 2000). Similar arguments are also given by Eriyanto (2005:11), that media belongs to and is dominated by strong groups of society and tends to marginalize the weak ones.

Forestry, similar to other sectors, is not sterile to media influences. The informative performance of media, such as the one of political programs, varies

greatly in quality (timely and validity of information). 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 2001:28). Forest fire issues usually receive high attention from various media because they have caused a large catastrophe and become very serious problems both at global and national levels. Severe problems of environmental degradation threatened humans, such as erosion, loss of nutrients, disturbance of vegetation, smoke and haze, are the consequences of forest fires.

The largest areas worldwide regularly affected by fire are the tropical open forests and savannas which are characterized by intermix of seasonally flammable grass layer and more or less open cover of trees and bushes. A major portion of the areas are burned regularly. Prehistorically, fires in these areas were caused by lightning (natural factors). Currently, however, the relative share of fires caused by human intervention (anthropogenic factors) has been rapidly increasing. Fire-return intervals depend on the productivity of ecosystems. It is estimated that several hundred million ha of savannas and open tropical forests are burnt annually. Major problems arise at the interface between fire savannas, residential areas, agricultural systems and forests, which are not adapted to fire. Although fires are not always bad, many important resources are often destroyed by uncontrolled fires (GFMC; Syaufina 2008).

1.2 Problems' Definition

Many issues concerning sustainable forest management emphasize mostly on technical rather than policy aspects. Since sustainable forest management can never be achieved without proper policies, it is very important to conduct studies focussing on the various aspects of forest policies, e.g. regulation, fiscal, administration, and information. Such aspects are information that hold a pivotal role to deliver bottom-up aspirations to the policy makers as well as to disseminate results of policy making process in a top-down way. One of the most important tools in delivering information and making communication of any forestry issues is the media.

Issues concerning forestry are often highlighted in the media, i.e. biological diversity conservation, forestland tenure, illegal logging, poverty situation around forest, and forest fire. Forest fire is one of the most interesting issues discussed in the media both at global and national levels because of its large impacts. The issue of forest fire is more relevant to be discussed by focusing on the highly relevant countries experiencing forest fires, such as Indonesia. However, reliable information on forest fire, especially in the media, has to be understood for further policy making process to manage and combat fires effectively.

Forest fires are a complex problem, related to various aspects of environment, socio-economic, and political situations. Therefore, the active role of scientists is needed to help decision makers in identifying causes of forest fire as well as in finding the best solutions. It follows the arguments of Dunn (2000) about the importance of knowledge utilization in policy-making and Pielke (2007), who argued for the different role of scientists in policy-agenda setting as well as decision-making process. This study, thus, evaluate the role of scientists in forest fire discourses in media and stakeholder's perception towards scientist's influence in policy-making.

Another concern of this study is to understand asymmetrical information due to the domination of powerful groups of society over media Eriyanto (2005:26). Under such situation, he believed that any study on media discourses, which emphasizes on the evaluation of biased information due to imbalance access of information and domination of public and scientific media discourses by strong groups of society will be very significant.
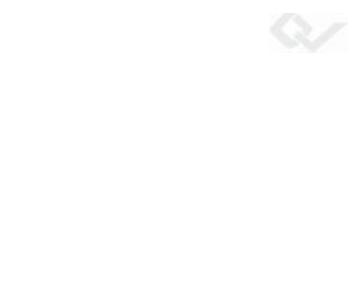
1.3 Outline of the Study

This study is organized into six chapters. Chapter 1 provides an introduction and background of the issues evaluated in the study, problem's definition, and outlines of the study. Chapter 2 explores the previous study of forest fires in Indonesia and their global consequences. It consists of reviews of the characteristics of forest fire in Indonesia, El Nino phenomenon, nature and human factors causing forest fire and impact of forest fires to green house

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gases emissions. To lay the theoretical basis for the inquiry, Chapter 3 presents the theoretical backgrounds of the study, comprising the theory of media, discourse, the role of scientists in policy making, interests, information and power, globalization, framing and agenda setting, policy instruments, policy making, and research questions.

Chapter 4 deals with the study frameworks and the research methods used for the study, while Chapter 5 explores the results of study concerning forest fire discourses in media and journals, and discusses the common and different features of those discourses, as well as compares perspectives of media discourse and stakeholder's perception.

Finally, Chapter 6 presents the conclusions of the study. It concludes the results of study according to four research questions, i.e. the portrayal of forest fire discourse in the global and national media, the investigation of the imbalance perspectives in forest fire discourse between global and national news media as well as international and national journals, the role of scientists in media discourse and knowledge-utilization considered in policy-making concerning forest fire, and evaluation of the asymmetrical perspectives between media and stakeholders.

CHAPTER 2

INDONESIAN FOREST FIRE AND ITS GLOBAL CONSEQUENCES

2.1 Indonesia as the Focused Country's Study

Southeast Asia, particularly Indonesia, is one of regions with very large and frequent cases of forest fire in the world. Narendran (2001) summarized major forest fires by countries within the year 1988 to 1998 (**Table 2.1**).

Table 2.1. Major Forest Fire Occurrences by Countries 1988-1998

Country	Year	Causes	Burnt Area	Source
North America (Yellow Stone National Park)	1988	Human, Climate variations, lightning	> 250.000 ha	Ecological Monographs, 1997
Israel	1995	Incendiaries	8,153 ha	IFFN-15
Mongolia	1996	Human	3 million ha	UNEP
Canada	1997	Human, lightning	620,471 ha	NRC, Compendium of Canadian Forestry Statistics, 1998
Brazil	1997	Human, climatic variations	3,3 million ha	INPA, UNEP
S-E Asia (particularly Indonesia)	**1997**	**Human, climatic variations**	**4,5 million ha**	**UNEP**
Russian Federation	1998	Human, climatic variations, lightning	2 million ha	UNEP, UNDAC, National Forest Fire Centre of Russia
Greece	1998	Human	100.000 ha	WWF

Source: Narendran (2001)

In Indonesia, those repeated fires led to the formation of fire climax grasslands of low productivity and short-return interval fires. Severe problems of environmental degradation such as erosion, loss of nutrients, disturbances of vegetation, smoke and haze are the consequences of fires in these forests.

The country contains a large area of peat and peat-swamp forests, covering approximately 19 million hectares. Most of these peat-lands are located in three islands, i.e. Papua, Sumatra, and Kalimantan (Borneo). These peat-lands are naturally covered by closed forest; however, they have suffered extensive fire damage in some El Niño years. In the 1997/98 El Niño event, forest fires dried-out peat and wetlands accounted for 2.1 million ha or 18 percent of the total area burnt in Indonesia. As would be expected, much of the burning occurred in logged or drained peat forestlands. Fires are also common in non El Niño years but are smaller in scale and restricted to accessible areas along rivers, streams and lakes. Deforested and drained peat lands are, however, becoming major annual fire flashpoints, such as in Kalimantan Island and, more recently, in Riau Province (Chokkalingam and Suyanto 2004)

Moreover, Chokkalingam and Suyanto (2004) reported that due to frequent cases of forest fire, Indonesia became a major source of both the annual smoke haze blanketing in Southeast Asia and the greenhouse gas emissions contributing to global warming. In the 1997/98 El Niño 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. In Kalimantan and Sumatra, recurrent fires and associated disturbances in wetlands have led to widespread deforestation, forest degradation and biodiversity loss. In East Kalimantan, repeatedly burnt degraded forests are ultimately transformed into open floodplains and shallow lakes as the peat collapses with vegetation removal or is lost with burning.

Besides the climatic factors, forest fires are often caused by human activities such as land clearing for oil-palm and other crops plantation as well as timber estate, logging, and forestland encroachment (Syaufina 2008:65). Fire is also considered as a cheap and effective community agricultural land management tool in Indonesia, and is a major cause of fire ignition in much of the Sumatra and Kalimantan forests. Fire is used by communities to clear vegetation and improve access into the forestlands for harvesting fish, timber, and other products, to clear land for cultivation, to generate fresh grass for cattle, and to ward off insects and chilliness while camping. Burning is not controlled because communities do not perceive the need to control them. In non El Niño years, community fires are

generally small and create no problem, except in the case of drained peat-lands. In El Niño years, in contrast, intensified community activities and dry conditions lead to more widespread fires (Chokkalingam and Suyanto 2004).

2.2 El Nino Phenomenon and Forest Fire

Historically, fire has been present in Southeast Asian biota since the Pleistocene. Long-term climate variability (glacial vs. non-glacial climate) and short-term climate oscillation are caused by ENSO, events that have repeatedly caused rain forest to be subjected to wildfires (Goldammer 1998). Climatic factors strongly influence the occurrence of forest fire, because they will determine the availability and flammability of fuel material, long-period of drought, as well as humidity (Syaufina 2008:49). A climatic variability, which is supposed to be highly responsible for forest fire in Indonesia, is El-Nino. The El-Nino Southern Oscillation (ENSO) phenomenon is regarded as one of the most striking examples of inter-annual climate variability at a global scale. It is caused by complicated atmospheric-oceanic coupling which is not yet entirely understood. The event is initiated by the Southern Oscillation, which is the variation of pressure difference between the Indonesian low and the South Pacific tropical high. During a low pressure gradient, the westward trade winds are weakened, resulting in the development of positive sea surface temperature anomalies along the coast of Peru and most of the tropical Pacific Ocean. The inter-tropical convergence zone and the South Pacific convergence zone then merge in the vicinity of the dateline, causing the Indonesian low pressure to shift its position into that area. Subsequently, during a typical ENSO event, the higher pressure over Malaysia and Indonesia leads to a decrease in rainfall. The severity of the dry spells depends on the amplitude and persistence of the climate oscillations (Goldammer 1998).

Strong El Nino conditions were associated with heavy precipitation in some areas and exceptionally dry condition in others. Anomalous temperatures and atmospheric circulations were also observed, where in Indonesia long-term dryness persisted over the region, despite the scattered heavy rains. The 1997/1998 El Nino was one of the strongest on record, developing a higher temperature rise than ever recorded. The warming effect of El Nino was

considered as a major factor contributing to the record of high global temperature in 1997 (Winarso 1997; Goldammer 1998; Mori *et al.* 1999).

2.3 The Characteristics of Indonesian Peat Forests

Indonesia contains more than 17 million hectares of peat land, the largest tropical peat-lands in the world (Syaufina 2008:196). Consequently, Seiler and Crutzen argued that a considerable part of the biomass exposed to fire remains unburned, mainly as dead organic matter and charcoal. Whereas the dead organic matter is gradually decomposed by microbial activity, the charcoal cannot be metabolised in significant amounts by micro-organisms and therefore, remains in the soil for a long time. Charcoal or charred organic material is formed during each normal burning process and will, therefore, be present in each area where biomass is regularly burned such as in Kalimantan, Indonesia.

Syaufina (2008:203) stated that there are three types of forest fire: ground fire, surface fire, and crown fire. The peat fire is usually involved in the type of ground fire, where fire spreads under surface and burning organic material slowly (smouldering). In the rain forest biome, a prolonged drought drastically changes the fuel complex and the flammability of the vegetation. Once the precipitation falls below 100 mm per month, and periods of two or more weeks without rain occur, the forest vegetation sheds its leaves progressively with increasing drought stress. In addition, the moisture content of the surface fuels is lowered, while the downed woody material and loosely packed leaf-litter layer contribute to the build-up and spread of surface fires. Aerial fuels such as desiccated climbers and lianas become potential fire ladders resulting in crown fires or "torching" of single trees (Goldammer 1998).

2.4 The Natural Factors as Cause of Forest Fire

Syaufina (2008:49-55) reported that there are several natural factors, both climatic and biomass characteristics, that influence the occurrence of forest fire. The climatic factors, such as sun radiation, air temperature, relative humidity, precipitation, wind, and lightning, are very important factors in determining forest fire. Besides climatic factors, Goldammer and Seibert (1989) stated that