

# Smoke-haze and Forest Fire in Kalimantan: How is the Reform regime responses?

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**Abstract.** This article examines the government's response during the Reformation period to smog haze, which often interferes with the visibility of air and sea traffic in Southeast Asia. In the history of forest fires in Indonesia, transboundary haze pollution has strong roots in the New Order regime, namely in 1982-1983 and 1997-1998. The New Order government at that time gave significant oil palm plantation concessions to domestic and foreign investors. This concession allowed the expansion of capitalism to occur on a massive scale, resulting in severe environmental degradation in Kalimantan. The smog haze has become a serious problem that gets considerable attention from international actors because it has the potential to cross national borders. To elaborate on this problem, this study answers the research question of how the reform regime after the New Order responded to forest fires in Kalimantan? In September 2014, the government ratified the ASEAN Agreement on Transboundary Haze Pollution (AATHP) as a political commitment that must be carried out together as ASEAN member countries, as well as the moral responsibility of the Indonesian government as the holder of the most extensive forest in the world.

## 1 Introduction

Until now, Indonesia is still trying to formulate a method for dealing with smog which has an impact on air pollution, both at home and abroad. Efforts to extinguish forest fires in Kalimantan that have been carried out to open new land have caused a smog disaster whose impact is very wide felt in most areas, even across countries. Several foreign mass media, such as The Strait Times and The Canberra Times, said that thick clouds and visibility problems had made people in Malaysia, Thailand and Singapore uneasy. Singapore has actively reported that smog from burning forests in Indonesia has caused nine incidents [1]. Not only that, since 1991 the presence of smog from burning forests in Kalimantan has threatened the growth of rice plants in North Sumatra, resulting in potential crop failure. [2]. Forest fires and haze have occurred massively since the New Order era, when investment permits were increasingly made easier by the government. Kalimantan is the epicenter of the

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largest smoke contributor in Indonesia. Forest fires in Kalimantan are getting worse, triggered by the condition of the subsoil containing coal and oil deposits. Vegetation fires in Kalimantan began with the start of a relatively dry season in May to June 1997 and reached their peak in September and October 1997. These fires can affect surrounding vegetation such as logged-over forests, peat swamps and grasslands. A study by Heil and Goldammer reported that the main concentration of forest burning activity in Indonesia occurred in southern and southeastern Kalimantan in September and October.

The cause of the smog is mainly due to the massive burning of forests and land for various purposes. The frequency of forest fires and the severity of land in Kalimantan have indeed increased from 1985-1997. Land use in Kalimantan also contributed to the national land degradation which reached 22 million hectares in that period [3]. Deforestation issues for the purpose of opening roads, resettlement for transmigrants, population density, and mainly the expansion of the rubber and oil palm industries. Under the New Order regime, regulations regarding the use of forest land by 75% were under direct state control, and responsibility for managing forest land was left to the ministry. This further shows that the government is taking part in regulating land use, the penetration of which is felt to be stronger and more centralized. The distribution and determination of forest land exploitation rights is actually under the government. Since 1967, various types of land use concessions have been introduced massively in Kalimantan and Sumatra, which caused catastrophic forest fires and haze in 1982-1983. It was during this period that the Government of Indonesia began to realize the importance of establishing a national institution to deal with fires and forest land degradation.

Taking into account the historical setting, the New Order regime can be considered to have inherited the destruction of forest land for oil palm concessions which at that time was considered the main target of Indonesia's future [4]. The New Order regime gave great homework in dealing with the devastating impacts of forest fires on human health and the environment, both in Indonesia and in neighbouring countries. After the fall of the New Order, the regime in power during the Reformation period struggled to find the right formulation for forest fires and haze disaster management for Indonesia and neighbouring countries. This article presents various efforts made by the government during the Reformation period to deal with the issue of land damage and haze, one of which is centered in Kalimantan.

In order to reduce the various impacts of smoke haze air pollution that has exceeded national boundaries, in a regional (Association of Southeast Asia Nation/ ASEAN) scope, it is realized that there is a need to strengthen national policies and strategies that are needed as preventive measures to reduce forest and land fires that have an impact on the emergence of fog and haze. smoke. ASEAN as a forum for regional cooperation can certainly take initiatives and steps to increase cooperation at the regional, sub-regional and national levels that are coordinated in efforts to make policy on cross-border environmental problems. This became the focus of various discussion topics within ASEAN member countries which later in June 2002 in Kuala Lumpur, an agreement was made in the ASEAN Agreement on Transboundary Haze Pollution (AATHP) [5]. This treaty regulates joint efforts in dealing with haze pollution.

## **2 Method**

This research is a qualitative research using a historical approach. The qualitative method that has been carried out is through a literature study by prioritizing the historical approach used to look at various past facts related to forest destruction in Kalimantan that have an impact on the haze disaster. These facts are obtained through news documents published both nationally and internationally, for example through Kompas, Tempo, Canberra Times, The

Straits Times, Singapore Free Press, and so on. The information obtained through media coverage was then criticized and coordinated with each other regarding the haze incident, the objective conditions of the local environment, and the efforts made by the government. The information then obtained a historical fact that is useful for comparing various policies and action steps taken by the regime in power after the New Order.

## **3 Results and Discussion**

### **3.1 Analysis of ecological conditions and air quality**

The phenomenon of land fires is part of the consequence of geographical location in the southern part of the equator with a tropical climate, so that if forest fires are not handled properly and their impacts can become a multinational disaster, as has happened since the Reformation era. Vegetation during the relatively dry season from June to October needs special vigilance. The smog disaster worsened in 2014, the fire index during 2014-2015 observed in South Kalimantan was above 15 DC (drought code) or could be considered extreme, while the drought index was above 1,000 mm, far above normal which was only 300 mm. Based on Darmawan's findings [6] that the results of the monitoring of the Banjarbaru Center for Environmental Health Engineering show that the air quality exceeds the Air Pollution Standard Index (ISPU) standard so that it is in the dangerous category and must be avoided so that it is not inhaled directly.

Meanwhile, various news reports reported that the weather quality continued to deteriorate in each period of June-September in 2000-2005. In September 2001, Kompas reported that air quality in Kalimantan was reported to continue to deteriorate. The smog from forest and bush fires makes almost the entire area in Kalimantan threatened with isolation from all aircraft flights and has an impact on air quality in neighboring countries. Several regions of neighboring countries such as Sarawak, East Malaysia, and Brunei Darussalam protested because they were affected by the smoke from Central Kalimantan. Forest and bush fires in Central Kalimantan, for example, occurred in an area of 153,560 km<sup>2</sup> and were felt to be getting worse every day. Although it has rained for three days in Pangkalan Bun, Sampit, and Palangkaraya, it has not been able to extinguish the forest fires. The maximum visibility during the day is 700 meters, while the farthest in the morning is 400 meters.

This condition is exacerbated by the burning of sawmill, serkel or bandsaw waste along the Kalimantan causeway that connects Pangkalan Bun-Sampit-Palangkaraya (449 km long). The burning of sawn waste wood in East Kotawaringin is also the cause of the smog that almost covers the entire area of East Kalimantan. On August 12, 2002, burning occurred at 427 points and increased to 612 points on August 13, 2002 [7]. Meanwhile, in West Kalimantan, the conditions in West Kalimantan, areas with large private plantation areas appear to be the most worrying. Previously it only had 29 hotspots on August 12, 2002, to 236 hotspots on August 13, 2002, and grew again to 544 hotspots the next day. Land fires in West Kalimantan have penetrated into forest areas and some have spread to the cities of Pontianak, Sanggau, Sintang, Sambas, Singkawang, and Putussibau.

Historical facts state that the regions of South, West, Central, and East Kalimantan have experienced large-scale fires in two El Nio periods, namely in 1982–1983, 1997–1998, and most recently in 2000-2005. Previously, major prolonged droughts were recorded in the Middle Mahakam peatlands in 1877–1878 and 1914, accompanied by widespread fires in 1914 [8]. In the 1997–2000 period, due to the El-Nino, approximately 72–85% of peatlands were burned, 54% of this area being forest that had not been burned for at least the last two decades. These fires burned all but the plains area amid the large peat mass and some of the

other fragments that spread over the area. Forest burning events that have occurred repeatedly every year in Kalimantan since 1997-1998 have changed some of the conditions of the burned peat forests into flood-prone areas, due to the absence of infiltration areas.

Local residents complain that many of the peatlands that are burned turn into swamps during the rainy season and cannot drain water properly. Swamp land is difficult to access and it costs a lot of money to process it into agricultural land, let alone to produce wood with high economic value. Communities burn swamps for oil palm plantations and for fishing [9].

Based on these physical conditions, the haze disaster is an annual routine disaster that can be predicted to appear in the period from June to September with wind movements in a certain direction. If the wind comes from the south, namely from Kalimantan and Sumatra, it can be ascertained that thick smog is covering Singapore. The prediction became a routine alarm for the public which was officially issued by the Meteorological Station Officer [10]. Singapore reports that the smokescreen on the island stretches at an altitude of 1,800 meters above sea level, too low to be a radioactive cloud, and more likely to be the aftermath of forest fires in the region. It is most improbable that the haze is radioactive, but we have not investigated in this direction. Reports at various times showed that the hazy situation was gradually improving, although fluctuations in visibility occurred irregularly.

### **3.2 Regime response in tackling haze: Importance of ratifying AATHP and its implementation**

Indonesia has only received pressure from countries in ASEAN, the issue of Indonesia not ratifying the AATHP has also attracted the attention of international environmental observers such as the United Nations and the World-Wide Fund (WWF). In 2006 the issue of haze experienced by ASEAN again became a big problem which was finally raised to the United Nations, Singapore raised the issue of transboundary haze in the UN general assembly, this was conveyed by prime minister Lee Hsien Loong [11].

Harmony in neighborly life is the basic reason that there have been no demands from friendly countries against Indonesia. However, at some point in the future that claim may appear. In the forest fires that occurred in the 2005/2005 period, the symptoms of the loss of patience of friendly countries began to appear through the ultimatum addressed to the Government of Indonesia, although it has not led to demands for legal responsibility in tackling the problem of forest fires. Therefore, ratifying AATHP is a good signal in responding to the ultimatum.

In general, AATHP is an agreement that regulates the prevention of transboundary haze pollution caused by forest fires. The countermeasures here are carried out with cooperation between ASEAN member countries. This agreement applies to every country that has ratified it and provides legal sanctions without binding on one of the countries. The ratification of the AATHP treaty benefits Indonesia. First, the AATHP ratification proves that Indonesia has international credibility in tackling the transboundary haze problem. Second, AATHP transfers Indonesia's sole responsibility as the only country that must be responsible for forest fire management, but together with other countries in ASEAN, that responsibility can be fulfilled. Third, Indonesia can fight for matters related to the resolution of tropical forest problems, including illegal logging in accordance with the principles of sustainable forest management which is associated with comprehensive and integrated overcoming of transboundary haze problems. Fourth, Indonesia will get assistance from ASEAN countries in efforts to extinguish forest fires from beginning to end, in the form of resources and sources of funds which of course will be hard to bear alone [12].

## **4 Conclusion**

The problem of smog that occurred in Indonesia gave a response from countries in the ASEAN region who felt aggrieved by air pollution, so that the aggrieved countries proposed the establishment of cooperation between countries to overcome the smog problem that occurred. After 11 years of AATHP being enforced, finally in September 2014 Indonesia, with the approval of the DPR-RI, finally ratified AATHP and Indonesia became the 10th country to ratify AATHP.

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