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Dynamics of the multi-stakeholder forum and its effectiveness in promoting sustainable forest fire management practices in South Sumatra, Indonesia

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ABSTRACT

To provide an effective institutional response to frequent forest fires, a multi-stakeholder approach was introduced in the province of South Sumatra, in Indonesia. This study examines in detail the structure, dynamics and effectiveness of a multi-stakeholder forum (MSF) at promoting sustainable forest fire management practices in Ogan Komering Ilir District of South Sumatra. Using factor analysis of multivariate techniques, we examined those factors underlying the dynamics and effectiveness of the MSF. Four factors were found to contribute positively: (1) intra-forum coordination dynamics, (2) transparency in decision making, (3) collective learning quality, and (4) decentralization within the implementation process. The analysis in this study shows that an MSF can function effectively when these four factors are in place. The study recommends that in view of the persisting fire threat and its trans-boundary implications, the MSF, which was discontinued in 2007, should be reactivated in order to further utilize its already established and proven coordination capacity.

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1. Introduction

The prevention of forest fires has become an emerging issue and global concern over the past three decades, primarily due to: (1) the growing number of fires, and the global estimate of between 300 and 400 million hectares per year being affected by fires worldwide in 2002/2003 (FAO, 2005), (2) the widespread and negative impacts of forest fires on ecosystems, biodiversity, habitats, livelihoods and economies (FAO, 2007; Qadri, 2001; Barber and Schweithelm, 2000), (3) an increased awareness of the emissions of carbon dioxide (CO₂) and other greenhouse gases by fires, and their contribution to climate change (FAO, 2007; Cochrane, 2003; Page et al., 2002), and (4) the transnational impacts of haze caused by aerosols emitted from forest fires. Forest fires are very complex phenomena with respect to their causes and effects, as is the issue of developing sustainable fire management solutions. Whether forest fires have a negative or positive impact depends, among other factors, on the ecosystem affected by them, and on their intensity and frequency.

Indonesia contains one of the world's largest tropical forests. In terms of area under forest, Indonesia ranks third behind Brazil and the Republic of Congo (Zaire), and is considered one of the foremost carbon sinks in Asia (FWI/GFW, 2002). The tropical rain forest ecosystem of Indonesia is adapted to small-scale disturbances by localized and infrequent fires (Corlett, 2009). However, due to a combination of factors, such as droughts caused by the El Niño Southern Oscillation (ENSO) phenomenon, transmigration (resettlement schemes), and economic incentives to convert forest to commercial plantations, e.g. of oil palms, using fire, parts of Indonesia have in recent decades become subject to some of the largest, most persistent and destructive forest fires in recorded history. Fire is often the only available tool for land clearing land for local people as it is cheaper and faster than mechanical methods (Varkkey, 2013; Simorangkir, 2007; Qadri, 2001; Barber and Schweithelm, 2000). For example, the large fires of 1982/1983, followed by the enormous burning that occurred during the summer of 1997/1998, destroyed 11,698,379 ha of forest, primarily in Kalimantan and Sumatra (Tacconi, 2003). According to data from the Ministry of Forestry, forest fires have decreased notably over the last 5 years (2007–2011), with a maximum area of 7619 ha being burnt in 2009, and 2612 ha in 2011 (Ministry of Forestry, 2012). However, in 2014 fires started early and, according to Greenpeace, had covered by March an area of at least 12,000 ha in Riau province of Sumatra alone (The Economist, 2014). The forest fires of Indonesia are not only a national problem, but have attained transnational significance due to haze impacting on neighboring countries such as Singapore and Malaysia (The Economist, 2013). The need to manage or prevent fires of this scale and intensity requires national and transnational collaboration, and has prompted the Indonesian Government to introduce a number of measures to reduce fire risk and improve suppression efforts, including: (1) increased collaboration with international institutions, (2) the development and improvement of new and existing institutions aimed at addressing fire management challenges, and (3) the implementation of a series of new laws and regulations related to fire management (Morgera and Cirelli, 2009; FAO, 2007; Goldammer, 2007; Tacconi et al., 2006; Simorangkir and Sumantri, 2002; Dennis, 1999).

However, past experience indicates that institutional arrangements among stakeholders involved in fire management are ineffective at preventing and controlling fires, both at the national and local levels. The reasons cited for this include conflicting roles, functions and responsibilities, overly bureaucratic procedures, a lack of cooperation and coordination at all levels, and weak law enforcement (Herawati and Santoso, 2011; Morgera and Cirelli, 2009; Simorangkir and Sumantri, 2002). These are the main problems experienced at ground level during emergency situations, especially when fire prevention and suppression is needed. Studies have, therefore, also highlighted the need to clarify fire management responsibilities and improve coordination among the agencies involved in fire management activities (Herawati and Santoso, 2011; Morgera and Cirelli, 2009; Qadri, 2001; Barber and Schweithelm, 2000). Appropriate and effective fire management needs to take multiple factors into account, including integration, inter-sectoral and multi-party cooperation, capacity-building initiatives and human resources development, with an holistic approach being needed to address all these requirements (Morgera and Cirelli, 2009; Goldammer, 2007; FAO, 2006).

Currently, at national level, there is no specific Act in place to handle forest fire management activities at national level in Indonesia. Policies, strategies and management activities related to forest

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