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Forest-Fire-Related Environmental Issues in Indonesia

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Indonesia is an archipelagic State consisting of more than 17,508 islands of which a thousand are inhabited. The five biggest islands are Kalimantan (539,460 km^2), Sumatera (473,600 km^2), Irian Jaya (422,981 km^2), Sulawesi (189,216 km^2) and Java (132,187 km^2). It stretches from 95° to 141° East longitude and 6° North to 11° South latitude. The weather and climate of Indonesia are typical of equatorial or tropical regions, with two seasons – the dry season (April–September) and the rainy season (September–April). Seventy percent of its geographical area is comprised of water. Of the remaining 30 percent, approximately half (47 percent) is forested.

Governmentally, Indonesia is a unitary State in the form of a republic. There are three levels of government – central, provincial and municipal. Since the middle of 1997, a "political euphoria" in the country has led to a continuing increase in the number of provinces and municipalities. At present, there are 31 provinces and more than 500 municipalities and this number is expected to increase due to the growing demand for more autonomous local (municipal) governments.

Environmental problems became a national issue in Indonesia in 1972 when Indonesia responded to and participated in the Stockholm Conference on the Human Environment, which identified three problems – *i.e.*, environmental problems of human settlements, management of natural resources and environmental pollution (Rangkuti, 2005, at 59–60). Currently, attention has focused on the environmental problems related to forest fires in Kalimantan and Sumatera which, *inter alia*, caused serious transboundary air pollution, leading to formal complaints by Singapore, threatening to take its transboundary air pollution claims to the international level if the case were not seriously managed. To date, however, the problem has been settled through the Association of Southeast Asian Nations (ASEAN), on the basis of what is termed a "spirit of ASEAN". Beyond these claims, it is posited that air pollution caused by Indonesian forest fires also raises potential climate-change challenges in the ASEAN region.

Locally, Indonesian forest fires have become one of the priorities of disaster management boards; however, there is only one national legislative instrument specifically regulating forest fires: Government Regulation No. 4/2001 concerning the Control of Environmental Damage and/or Pollution Related to Forest or Land Fires. This law is a third-level legislative instrument in the country's hierarchy of laws. As such, its binding power is lower than that of either a law or a "government regulation as substitute".

Qodriyatun and Sri Nurhayati (2014) identified two main causes of forest fires: human activities (land clearing for agriculture, and resource extraction) and natural consequences from the long dry season. Sometimes, fire is used as a weapon in a land-tenure dispute between two tribes or more; in those cases, such fires can be considered as arson. Unfortunately, there are some loopholes in Indonesian legal instruments on this issue, arising both from inconsistent regulation and from lack of clarity regarding the distribution of authority among institutions.

Materials and Methods

This article describes normative legal research that applies both a conceptual and a statutory approach. The conceptual approach considers the views and doctrines developed in the study of law. The statutory approach is essentially based on the same method used by common law courts when they interpret an enactment (a statute, part of a statute, or a clause of a constitution).

Results and Discussion

Causes of Environmental Problems

Environmental problems in Indonesia have been closely related to population, poverty and policy. Population becomes a source of environmental problems when natural resources are no longer able to provide sufficient support for human needs. Thus, the rapid increase in Indonesia's population has extended beyond the carrying capacity of natural resources. It is therefore necessary to manage the population in Indonesia. Poverty, too, has added to the seriousness of environmental problems, suggesting that efforts to deal with environmental problems in Indonesia require the eradication of poverty.

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Policy can also become a source of environmental problems when it is sectoral and piecemeal in character, as in the case of, for example, agricultural policy introduced for the sake of agricultural interest only, without taking other interests into account. Similarly, policies related to mining were issued for the benefit of mining interests only, and policies on forestry, industry, human settlement, *etc*., have also been adopted with a narrow focus. In this regard, an integration of policy is indispensable for preventing environmental problems.

This is demonstrated by the role of "trade-offs" in dealing with environmental problems – a common phenomenon among environmental policies. For example, the effort to control water pollution may increase the likelihood of air or soil pollution, by adopting measures that do not solve the problem, but only move the pollution to another environmental medium.

The growth of the industrial and transportation sectors has added to the seriousness of environmental problems in Indonesia. In addition, since Indonesia is still an agricultural country, developments in the agricultural sector have also contributed to environmental problems, by adding/altering agricultural wastes, pesticides and fertilisers. In combination, agricultural, industrial and household wastes have caused or enhanced the pollution of surface water and groundwater as well as causing soil pollution – a relatively new environmental issue in Indonesia.

General Problems in Indonesian Environmental Law

Act No. 4 of 1982 – the Act on Environmental Management (1982 EMA) – was intended as an umbrella act for all environmental regulations in Indonesia, which were to be promulgated in accordance with the EMA. Existing environmental regulations that were considered no longer appropriate were to be amended and adjusted to conform to the EMA. That adjustment has been gradual. Indeed, some have not so far been amended or adjusted. For example, the existing Nuisance Ordinance (*Hinder Ordonnantie* of 1926 as amended in 1940, derived from the Dutch legal system) remains effective, based on the separate regulations of each municipal government.

Due to increasing development and other challenges, it was necessary to amend the 1982 EMA. Act No. 23 of 1997 on Environmental Management (1997 EMA) was again intended as an umbrella act for environmental regulations in Indonesia. However, some of its provisions were not followed up with the development and adoption of detailed procedures or implementing regulations so that those provisions could not be enforced. The lack of comprehensiveness thus became a striking weakness of the 1997 EMA. Hence, it was revised again, this time by Act No. 32 of 2009 on Environmental Management and Protection (EMPA). Again intended as an umbrella act, the EMPA was endowed with more comprehensive environmental regulatory functioning than before, although it has not developed a consistent relationship to the forest regulatory system. There is an immediate need to develop links between the EMPA and forestry regulation in order to have an integrated approach to environmental management in Indonesia.

Existing Environmental Legislation

In order to comprehend the environmental regulations in Indonesia, it is necessary to understand the legal hierarchy, which is set out in Act No. 12 of 2011 as follows:

- Constitution
- Assembly Decree
- Statute/Government Regulation as Substitute for Statute (in a state of emergency)
- Government Regulation
- Presidential Decree
- Provincial Regulation
- Municipal Regulation

As a hierarchy, a lower-level regulation may not contradict a higher-level one. This section considers the highest levels of legal instruments.

In Indonesia, environmental awareness only began to develop following the 1972 Stockholm Conference on the Human Environment. Accordingly, the 1945 Constitution and other regulations promulgated before 1972 did not explicitly include environmentally oriented provisions. The development of such awareness has been slow, to the point that most regulations promulgated before the enactment of the 1982 EMA did not clearly address environmental concerns, and those that did were not integrated.

The legal basis of the government's environmental management responsibility is indirectly stated in Article 33 of the 1945 Constitution, which stipulates that natural resources shall be controlled and managed by the government for the welfare of the whole nation. The second amendment to the 1945 Constitution provides a clearer legal basis for environmental concerns in Article 28(h), which states that every citizen has the equal right to a good and healthy environment.

Another legal statement of these responsibilities was adopted in 2001 – the Assembly Decree on Natural Resource Management and Agrarian Reform.

Act No. 28 of 1999 on Human Rights also mentions a right to a good and healthy environment. It attests to growing environmental concern in Indonesia.

Indonesia's Forest Fires Policy: The Loophole

Forest and/or land fires are a potential threat to sustainable development due to carbon emissions and their direct devastating impacts on ecosystems, biodiversity, human health, the economy and global climate (Harrison *et al*., 2009). In 1997–1998, the massive fires in Indonesia made international headlines. Many foreign bodies were involved in extinguishing the fires, which still emitted large amounts of carbon. Some described it as the worst environmental disaster of the century (Tacconi, 2003).

On June 2002 in Kuala Lumpur, Malaysia, the urgency of the carbon emission problem and its tie to the

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transboundary haze disaster led the Member States of ASEAN to sign an Agreement on transboundary haze. Forest and/or land fires and the resulting haze disaster, which happen on an almost annual basis, thus became the utmost priority of the Indonesia Forestry Department.

Regardless of this awareness and of significant efforts to prevent, lessen and suppress the fires, Indonesia experienced another high-level haze event, August–October 2002. In June 2013, as a result of land and/or forest fires in Sumatera and Borneo, another high-level transboundary haze affected Singapore and Malaysia. In 2015, the massive fires and resulting haze disaster again put Indonesia in the international headlines.

Fires in Indonesia, to date, mostly occur on Indonesian tropical peatlands and peat-swamp forests during dry seasons. Harrison states that, based on biological conditions, it is unlikely that Indonesian fires ignite without any human involvement. This indicates that most fires in Indonesia are man-made disasters.

Between 2011 and 2016, more than 300,000 ha of forest burned across Indonesia, as reported by the Ministry of Environment and Forestry. Greatest losses were in central Borneo, which lost approximately 200,000 ha in 2015. It was followed by South Sumatera which lost 30,984 ha of forest (Directorate PKHL, Ministry of Environment and Forestry). Thus, in nearly 20 years, this problem is still far from solved in spite of a huge number of environmental studies. Policy ambiguity, low levels of environmental education, and uncertainties about how the fires were caused have all been identified as contributing reasons for this failure.

As noted above, inconsistent regulation and lack of clarity regarding inter-institutional distribution of authority create loopholes in Indonesian legal instruments at the highest levels. Beyond this, forest fire issues are also subject to thorough examination at lower (provincial and council) levels of governance. Thus, broad-ranging collaborative work and effective coordination between governmental institutions are needed in order to solve these issues. This ideal, however, is still far from being realised.

Decentralisation in Indonesia is being applied ineffectively, so that the linkage between the various authorities remains unclear. This has resulted in internal inconsistencies in the legal products of the central and regional governments. In this case, law makers at the regional level often set aside the old principle of *lex superior derogat legi inferiori.* Legally speaking, the law prohibits any intentional forest fires in Indonesia for any purposes at any cost. Despite this provision, a Central Borneo Regional Local Government Regulation (No. 5/2003) provides, in Article 2(2), that intentional burning for land clearing may be undertaken under special circumstances and by a person who has obtained permission. Such inconsistencies demonstrate one of the legal loopholes that still exist, but need to be solved to address the forest fire problem.

Lack of clarity about the distribution of authority and responsibility is also a key legal challenge that remains unsolved. Attempts to effectively divide authority between central, provincial and municipal governments have not been sufficient, because the sector-based approach engenders ineffectiveness (Nurrochmat, 2011). Two ministerial bodies – the Ministry of Environment and the Ministry of Forestry – are empowered for legal enforcement, yet only one (the Ministry of Forestry) is directly authorised to enforce the law. This creates a loophole triggering a controversy over which Ministry should supervise and control big business groups' attitudes towards burning for land clearing. Without proper and unambiguous supervision and control, however, forest fires can hardly be controlled and prevented.

Conclusions

On the basis of the above analyses, the authors suggest the following for the Government of Indonesia in addressing legislation regarding forest fires and related environmental problems:

- To synchronise and harmonise the various existing legal instruments of forest management; and,
- To improve inter-institution management relations by establishing a so-called "One Roof Environmental System" between all involved ministerial bodies, addressing environment-related matters, including their legal prosecution and policing.

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