



## Environmental Harm and Decriminalization of Traditional Slash-and-Burn Practices in Indonesia

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### Abstract

Traditional slash-and-burn as a way of clearing land for farming is allowed and exempted from being a criminal offense in Indonesia. However, this exemption should not be interpreted to mean that all traditional slash-and-burn practices are sustainable. Changes in habitat and sociocultural and economic conditions can render this once sustainable practice unsuitable in certain contexts and environments. This discussion on environmental harm from traditional slash-and-burn practices is not intended to call for a total ban of the practice nor does it suggest aggressive criminal law enforcement is required. This discussion is intended to clarify which practices we should protect and which ones should be addressed through various approaches to minimize harm. Such approaches should consider the local Indigenous communities as victims of ecological discrimination rather than perpetrators of environmental harm.

### Keywords

Indigenous community; local wisdom; slash-and-burn traditional practice.

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## Introduction

Clearing land for agriculture using fire, often referred to as slash-and-burn, has a long history in many parts of the world. The practice reduces the demand for labor and machinery and helps control weeds, pests, and disease.<sup>1</sup> The practice is also closely linked to the agricultural traditions of many Indigenous and local communities, including shifting or rotational swidden agricultural systems (Kleinman et al. 1995; Myllyntaus, Hares and Kunnas 2002; Pollini 2014). It builds on traditional ecological knowledge about how to manage the use of fire based on the local environmental conditions, including weather conditions, substrate, and season (Myllyntaus, Hares and Kunnas 2002). Moreover, many small-scale farmers lack alternatives to using fire to clear land, so slash-and-burn practices are essential requirement for many subsistence and small farms (Carmenta et al. 2021).

However, agricultural burning, particularly when conducted on a large scale and for commercial agriculture, is also a leading source of greenhouse gasses and CO<sub>2</sub> emissions. Concerns are particularly high given the catastrophic agricultural fires in 2015 that cost Indonesia over US\$16 billion and triggered a disastrous haze in neighboring countries (The World Bank 2015).

In many East Asian and Southeast Asian countries, including Indonesia, agricultural burning is generally forbidden and is categorized as a criminal offense (Fox et al. 2009; van Vliet et al. 2012). The effort to eradicate this practice has led to worldwide initiatives, such as the Alternative to Slash and Burn program. Fire bans that target slash-and-burn techniques for land clearing came about, in part, due to legitimate environmental concerns but could mistakenly conflate these techniques with a range of complex, traditional agricultural systems. A total ban does not necessarily force the transformation of practices, but it does threaten the food security and cultures of Indigenous peoples (Cherrier, Maharjan and Maharjan 2018; Erni and Carling 2014).

Although some authors have suggested that slash-and-burn is not sustainable in the long term and contributes to other environmental problems—such as disruption of nutrient balance, loss of biodiversity, and carbon emissions (Food and Agriculture Organization of the United Nations 2019; Giardina et al. 2000)—another group of commentators posit that traditional, fire-based farming practices are widely misunderstood and unjustly accused of contributing to deforestation (Erni and Carling 2014; Fox et al. 2009). Nevertheless, the literature widely acknowledges that fire-based agriculture can only be sustainable under certain circumstances (Filho, Adams and Murrieta 2013; Gleave 1996; Kleinman et al. 1995; Myllyntaus, Hares and Kunnas 2002; Ziegler et al. 2012).

Indeed, we should not generalize and condemn all slash-and-burn practices because of their significant variation in practice (Myllyntaus, Hares and Kunnas 2002). Furthermore, we also should not blindly defend all traditional, small-scale fire use as there are many factors that could affect its sustainability in practice. The practice of slash-and-burn exists on a continuum of sustainability. Environmental activists are sometimes cautious about admitting the existence of unsustainable traditional slash-and-burn as it can undermine their advocacy for local Indigenous communities' access to natural resources—a group who are already marginalized by the existing natural resource policies. Meanwhile, government officials and law enforcement tend to place all slash-and-burn practices as harmful practice to legitimize their efforts to eradicate the practice (Sunderlin 1997).

This article aims to clarify the kinds of traditional practices that should be exempted from criminalization, based on their cultural importance and environmental sustainability, and discuss how we should address the environmental harm caused by practices that are not exempt. This article will attempt to answer those questions, first by describing the context of fire bans in Indonesia then by scrutinizing the practice of slash-and-burn and the actors who use it. Third, the article will discuss how we should respond to the harm while avoiding overcriminalization and revictimization of Indigenous and local communities. The data and information for this research were collected through participatory observation during my work in the Indonesian Center for Environmental Law from 2017 to 2019. I was involved in several studies and advocacies related to forest and land governance, including intervention in the judicial review case of

*Article 69 paragraph (2) of Law No. 32 Year 2009 on Environmental Protection and Management and issues concerning Indigenous people's rights.*

### **Fire Bans in Indonesia**

Since the massive forest fire of 1997–1998, Indonesia has strengthened its fire bans by criminalizing land clearing by burning, with no exception in its Forestry Law No. 41 Year 1999 and Plantation Law No. 18 Year 2004.<sup>2</sup> However, Article 69 paragraph (2) of Indonesia's Law No. 32 Year 2009 on Environmental Protection and Management provides an important exemption: the prohibition on land clearing using fire should take into account the local wisdom in each region. These legal protections provide the basis for the continued use of fire within traditional agricultural practices, potentially affecting millions of people across the archipelago. In other words, the Article provides an exemption for traditional slash-and-burn practices that are protected as "local wisdom." This kind of exemption was not stated in the preceding environmental laws, which was first enacted in 1982 and then replaced in 1997. The new law introduced local wisdom as one of the principles of environmental protection and management and emphasized the importance of recognizing and considering local wisdom as a living societal value that aligns with the goal of environmental protection and sustainable management. This exemption includes three conditions that the maximum area to be burn is of two hectares per household, local varieties will be planted on the land, and firebreaks must be used during burning.<sup>3</sup>

This Article is nevertheless controversial. Private companies criticize it as a loophole in fire prevention efforts and lobbyist seeks to have it revoked (Al Hikam 2019; Laoli 2015). Several government officials have also made public statements about revoking this Article (Ramdhani 2020; Alvin 2015). The revocation of this Article was one topic of debate during the formulation of Indonesia's new Job Creation Law, which revised many provisions in several sectoral laws.

Unfortunately, the application of this exemption may not be as clear-cut as it seems because there is still confusion as to what constitutes "local wisdom." The Indigenous Peoples Alliance of the Archipelago (AMAN) criticizes the Article, arguing that it does not guarantee protection for Indigenous peoples in practice. AMAN recorded that at least 48 Peoples in East, West and Central Kalimantan were arrested for land clearing by using fire in 2019 (BBC News Indonesia 2020; Pahlevi 2020). The total number of traditional farmers criminally charged nationwide could be much higher but cases are not well documented, and in 2019 alone, the police apprehended 416 individuals as suspects for illegal fires (Halim 2019). The enforcement of this law has been widely criticized as unjustly targeting traditional farmers who are operating according to their local wisdom rather than big corporations that cause more significant harm to the environment (Betahita 2019; WALHI 2018; Yayasan Lembaga Bantuan Hukum Indonesia 2019).

Meanwhile, there is a tendency to ban all slash-and-burn practices with the promotion of a "zero-burning policy". In 2017, the Indonesian Forest Entrepreneurs Association (APHI) and the Indonesian Palm Oil Association (GAPKI) filed a judicial review petition on Article 69 paragraph (2), arguing that the exception in this Article creates a loophole in the effort to prevent forest fire and results in companies being unfairly liable for environmental damage caused by forest and land fire (Saturi and Arumingtyas 2017). This petition was later revoked, but the idea to abolish the exemption was inserted during the drafting of the Job Creation Law.<sup>4</sup>

### **Actors in Slash-and-Burn Practices**

Importantly, slash-and-burn practices in Indonesia are often different from these traditional practices that are considered as "local wisdom." Fire is not only used by Indigenous and local communities but is also widely used as a cheap way to clear land by corporate agriculture and domestic immigrants.

### ***Fire Use by Indigenous Communities***

There are approximately 2,422 Indigenous communities across Indonesia (AMAN 2021) who might depend on fire use as a part of rotating or swidden cultivation practices. There is great uncertainty on the extent to which shifting cultivation contributes to global emission, but the study by Ziegler et al. (2012) indicates that restoring long-fallow swidden cultivation causes less and slower carbon loss compared to transitioning into other land uses (except tree-based plantations and forests). Furthermore, growing evidence shows that when shifting cultivation is discontinued, it is often replaced by intensified land use with higher environmental impact (Grogan, Birch-Thomsen and Lyimo 2013; van Vliet et al. 2012)

Agricultural activity, including the use of fire in land clearing, is not only a means of economic production but is also often an integral part of the social life and cultural and religious traditions of Indigenous communities. For example, in Indonesia's Baduy community, a whole year of cultural and social events revolve around the process of rotating crops, from choosing the land to harvesting (Ichwandi and Shinohara 2007). The Dayak Nganju people have a social unit called *handel* that manages certain landscapes surrounding creeks or canals. The timeline and mechanism of slash-and-burn for land clearing are decided and conducted by *handel* members. They conduct controlled burning, starting with the traditional ritual called *mangirau* and *manjembrup* (Hadiwijoyo, Saharjo and Putra 2017; Nopembereni et al. 2018)

The legal protections for Indigenous Peoples to use fire as a part of rotating cultivation practices are clearer than for slash-and-burn done by other local communities. The Ministry of Environment and Forestry (MoEF) Regulation No. 10 Year 2010 explicitly states that slash-and-burn is only allowed for Indigenous peoples based on their local wisdom. Yet this clear provision does not guarantee protection on the ground, as there are still cases where Indigenous peoples are arrested for practicing traditional slash-and-burn (BBC News Indonesia 2020).

Moreover, to be legally protected as an Indigenous community, a group needs to have legal recognition from the government. The road to obtaining legal recognition over their customary land is a long bureaucratic procedure that is resource intensive; it is difficult for the Indigenous peoples to undergo this procedure without assistance. First, they need to receive recognition from the local government in the form of a decree that declares the existence of those particular Indigenous peoples and indicates their ancestral land (Ministry of Internal Affairs Regulation No. 52 Year 2014). However, this decree does not automatically give legal certainty over their land tenure; customary land still needs to be registered and approved by the National Land Agency (Ministry of Agrarian/Head of National Land Agency Regulation No. 10 Year 2016), and if the land is located inside a government-designated forest area, the customary forest needs to be approved and certified by the MoEF (Ministry of Environment and Forestry Regulation No. 83 Year 2016).

### ***Fire Use by Non-Indigenous Communities***

Slash-and-burn is also conducted by local communities who have long lived in the region but are not categorized or legally recognized as Indigenous peoples. To be legally recognized as an Indigenous group in Indonesia, the community needs to prove their features that are distinct from the mainstream community, such as the existence of customary laws, customary institutions, and ancestral land (Ministry of Internal Affairs Regulation No. 52 Year 2014) as discussed in the previous section. Several local communities cannot satisfy these requirements, for instance, many traditional farmers of Java and some traditional farmers in Kalimantan (Murtadho 2016). Such communities have adopted the mainstream structure of social structure and governance; land is often owned individually or by a family, and they do not have strict customary laws enforced by certain traditional institutions. However, they do use customary and traditional knowledge in their daily life.

Fire is also used by immigrants who have moved internally across Indonesia's islands. Historically, immigration from Java and Madura islands to Sumatera, Kalimantan, Sulawesi, and Papua started in 1905 under the Dutch *kolonisatie* program. The Indonesian government officially continued this program until

1950 by using a more nationalistic name of the “transmigration” program (Ministry of Village, Disadvantaged Region and Transmigration 2015). In their designated settlement, each household was promised a piece of land that could be cultivated; much of the land in Sumatera and Kalimantan is peatland, which, at that time, was considered by the government the answer to the search for more arable land (Fearnside 1997). Outside the government-sponsored transmigration program, many immigrants have also moved voluntarily for individual reasons or have been mobilized by local elites to gain votes in local elections or grab resources through land encroachment (Qomariyah-Warsi, personal communication, June 25, 2019).

These immigrant farmers are sometimes referred to as “shifted cultivators” and are perceived as practicing a less sustainable form of slash-and-burn (Myers 1992). In their practice, fire is typically used as an affordable land-clearing mechanism in the absence of a managed agroecological system, without specific cultural or religious significance, and independent of customary institutions. Moreover, with the lack of ecological knowledge of their new environment and poor assistance from the government, immigrant farmers were often left alone to figure out how to utilize their land. Many immigrant farmers failed to grow crops successfully on peatlands whose biophysical attributes make them difficult to farm without specific expertise, and many farmers then abandoned these sites for alternative livelihoods (Suriadikarta 2009).

In addition to the negative image and distrust of their capability to practice sustainable slash-and-burn, these immigrant groups are often also victims of structural inequality and suffer reduced access to natural resources, political participation, and land tenure (Firdaus 2019; Sumarja 2019). Conversely, several case studies developed by Friends of the Earth Indonesia (WALHI) have found that immigrant communities develop their own local wisdom, such as the immigrants in Tuah Indrapura village who have banned planting palm oil in favor of a locally adapted rice variety (Murtadho 2016).

Importantly, fire policies are heavily shaped by certain stereotypes and narratives about these diverse local and Indigenous communities (Myers 1992). Slash-and-burn conducted by Indigenous communities is often perceived in the context of rotating cultivation and as an integral part of their culture and spiritual way of life in which they have a long-term interest. In contrast, the practice of slash-and-burn by immigrants and local farmers is perceived as merely a land-clearing method for their short-term needs. However, labeling one group as a “good” and the other as a “bad” might be misguided. As Purnomo et al. (2017) found, actors from both groups are involved in systematic illegal land acquisition; the land was then cleared by slash-and-burn and was sold to medium and big enterprises in Riau province. This finding demonstrates that in any community, there is always the possibility of free riders who will abuse the community’s status and privilege.

### *Corporate Fire Use*

Fire is widely used by many different stakeholders involved in medium-scale and large-scale commercial pulpwood, timber, and palm oil production. The Greenpeace Southeast Asia-Indonesia report (2020) found that 1.3 million hectares of pulpwood and palm oil plantation were burned during 2015–2019. Since 2015, at least 18 companies were or are being sued for fire in their concessions (personal data 2021).<sup>5</sup>

While some cases involve corporations blatantly violating the fire ban on corporate-owned lands, they more often include ways of circumventing the law. Such ways include buying already cleared land from local elites who organized illegal land acquisition of neglected fields, deliberately letting the land burn from fires in nearby fields by not implementing any preventative or mitigation measures, and hiding behind multilayered subcontracts of land clearing via third parties (Jelsma and Schoneveld 2016; Pasaribu and Friyatno 2008; Purnomo et al. 2017). Proving corporate criminal liability in regard to land and forest fires might be hard due to the difficulty of reconstructing a series of actions, and the layers of corporate structures makes it tricky to identify the liable person. Nevertheless, normatively speaking, the prohibition of slash-and-burn for corporations is clear: they are not allowed to clear the land by using slash-and-burn in any circumstances. Yet the “local wisdom” exception reflects a potential loophole that intended corporations can abuse. From 2001 to 2017, 46.7% of satellite-detected fire hot spots occurred within

corporate areas, 31.1% in state forest zones, and 22.2% on community land (Purnomo et al. 2019). Based on these data, the priority of law enforcement should have been to target corporations.

The discussion in this section shows the dynamics of slash-and-burn practices by local people, Indigenous communities, and corporations. We can see that understanding this practice as homogeneous could hinder a fruitful discussion on the sustainability of some forms that should be exempted from criminalization and the potential harm stemming from some other forms that need to be addressed.

### ***Ecological and Sociocultural Factors Affecting Traditional Slash-and-Burn Practices***

For decades, environmental conditions have been degrading due to the exploitation of nature, pollution from industrial activities, land use and land-use change, climate change, and other human-driven factors. Furthermore, exposure to global markets, national laws, public policies—land use, tenurial rights, conservation, agriculture, and forestry—and development projects have changed the socioeconomic and cultural conditions of Indigenous and local communities (van Vliet et al. 2012; Ziegler et al. 2012). Therefore, the discussion of a traditional practice like slash-and-burn must consider those changing conditions. When we fail to acknowledge that the Indigenous and local communities are now living in changing conditions and we romanticize their practices as always sustainable, we fail to recognize the problems created and provide a fair solution for both the community and the environment.

### ***Ecosystem-Carrying Capacity and Forced Migration***

Certain environments, like peatland, are not suitable for slash-and-burn. Fire in peatland is harder to control as the fire goes underground and could reignite several days later, emitting significant amounts of CO<sub>2</sub>. Burning peatland contributed as much as 81% of the total emissions from Indonesia's 2015 forest fire (Pribadi and Kurata 2017). Burning the biomass of peatland can result in subsidence of the peatland layer, which takes hundreds of years to develop. Furthermore, the drying of peatland could damage its hydrological function as a water reservoir (Adinugroho et al. 2005). Since the fires in 2015, Indonesia is more protective of its peatland. Government Regulation No. 57 Year 2016 on Peatland Protection and Management stated that peatland that is three meters or deeper can not be cultivated, while shallow peatland can still be utilized with restrictions on using fire.

Some Indigenous and local communities have local wisdom to avoid cultivating peatland as it is unfertile, but other communities cultivated the peatland, as that is the most available land in their area (Murtadho 2016). Indigenous peoples and traditional farmers in Kalimantan argue that they use fire in peatland with caution, starting by choosing a suitable crop (pineapple, paddy, or sago instead of palm oil), utilizing *tatas* and *beje* (traditional fish ponds of the Dayak people) as firebreaks, adjusting the cultivation time according to the tides, and employing proper canal control to avoid excessive draining of the peatland that could make it more susceptible to uncontrolled fire (Hadiwijoyo, Saharjo and Putra 2017; Nopembereni et al. 2018 Umar, Noor and Noorginayuwati 2016). Astiani et al. (2019) found that traditional knowledge on hydrological management among Indigenous local communities in West Kalimantan province reduces fire risk and biomass loss. However, another study found that traditional *sonor* cultivation in South Sumatra, in which farmers clear peatland by fire to plant paddy in the long dry season, contributed to uncontrolled fire between 2014 and 2018 (Hamzah et al. 2019).

Prior to the massive change in land use and the population increase in Kalimantan, severe fires on peatland rarely occurred (Field, van der Werf and Shen 2009). Therefore, this ancient slash-and-burn practice in peatland might have been environmentally friendly when there was little pressure on the habitat's carrying capacity. However, regardless of its sustainable history, this practice might be harmful now, considering the current conditions where land use has changed, development projects have taken place, and conditions might be exacerbated by climate change. Overall, these factors have damaged peatland severely, making it prone to fire each year.

### ***The Use of Fire: From Agroecosystem Management to a Mere Land Clearing***

The supporters of sustainable slash-and-burn practice often discuss it in the context of shifting, rotational, or swidden cultivation (Myllyntaus, Hares and Kunnas 2002; Filho, Adams and Murrieta 2013; Fox 2000; Pollini 2014). These tend to involve a complex cycle of land, fire, and resource management. Thus, slash-and-burn in rotating cultivation involves only the temporary use of forest lands, not permanent loss like in the case of permanent agriculture (Fox 2000).

The majority of research agrees that the length of the fallow period is the main factor in the sustainability of slash-and-burn practice (Filho, Adams and Murrieta 2013; Kleinman et al. 1995; Myllyntaus, Hares and Kunnas 2002). The fallow period gives time for the forest to regrow and soil nutrients to be recovered. Furthermore, the secondary forest growth during the fallow period provides habitat for wildlife and sequesters carbon. Too short a fallow period could increase the risk of erosion (Peterlian 2018) and cause a decline in biodiversity (Mertz et al. 2009; Robiglio and Sinclair 2011). However, worldwide, the fallow period of rotating cultivation is decreasing. In Ratanikiri, Cambodia, the fallow period shortened from 10–15 years to 5–6 years; in Nagaland, India, the fallow period has reduced from 15 (or more) years to 10 years; in Bangladesh, the *jums* practice only allows 2–3 years for a fallow period (Erni and Carling 2014); and in Indonesia, the Baduy community has shortened their fallow period from 7–9 years to 3–5 years (Ichwandi and Shinohara 2007).

The ideal image of rotating cultivation conducted by Indigenous communities is no longer relevant for some communities, especially those who have limited access to tenure rights and are under pressure from development and plantation expansion. The pressure on the land has shortened the fallow period, so there is not much time for the secondary forest to regrow; the shrub-fallow land is considered good enough to be cultivated again (Erni and Carling 2014). Nopemberani et al. (2018) even found that the Dayak Nanganju people residing in Mantangai Tengah and Mantangai Hilir no longer practice rotating cultivation; they are transitioning toward a more settled agriculture. Slash-and-burn practice, which used to be a part of a more complex land cycle management, has transformed into a mere cheap way of land clearing. In many communities where fire has been used traditionally, economic pressures, discrimination, regulatory pressures, and enforcement have forced communities to abandon traditional sustainable practices (van Vliet et al. 2012).

### ***Loss of Sociocultural Institutions and Systems That Enable Sustainable Practices***

Tenure security over their customary land is important to ensure that Indigenous peoples have enough space for rotating cultivation with a proper fallow period and to prevent the government from claiming resting land, which may appear to be abandoned, as state-owned. Unfortunately, Indigenous peoples have been systematically stripped of their tenure rights through the subduing of customary forest status under state forest status for the sake of conservation.<sup>6</sup> The loss of tenure right is coupled with an increase in the number of timber, plantation, and mining permits issued by the government. Indonesia's government is quick to recognize the existence of Indigenous peoples but slow to protect their customary land, laws, and institutions. From 2007 to 2020, the MoEF has only certified 578,420 hectares of customary forest (Ministry of Environment and Forestry 2020); this number was below the 7,819,409 hectares of customary forest registered voluntarily by Indigenous communities with the Customary Land Registration Agency (Badan Registrasi Wilayah Adat 2020).

Furthermore, customary law and the customary institutions that enforce them are important to ensure that the practice is conducted in accordance with local wisdom, such as the rules about which land can be cultivated, the time of slash-and-burn, and the procedure to conduct it (Agu and Neonbeni 2019; Hadiwijoyo, Saharjo and Putra 2017; Ichwandi and Shinohara 2007; Nopemberani et al. 2018). However, the enactment of Law No. 5 Year 1979 on Village Government by the New Order regime in Indonesia—which is characterized by its centralized approach—has systematically eroded the diversity of local self-governing systems run by customary institutions based on their own customary law and replaced them with a unified model of Java-centric administrative village (Phahlevy and Multazam 2018).

### **Precaution on Criminalizing Livelihoods**

It is important to note that the historical ban on fire can be read as what Goyes (2019) called “ecological discrimination,” in which Indigenous and local communities are oppressed based on modern instrumental ideas about the right way of treating and relating to the natural environment. Worldwide, fire-related practices have long been considered environmentally unsustainable, often based on assumptions and colonial notions of “proper” land management which provides the roots for contemporary bans on fire use (Kull 2002; Moura et al. 2019). Nevertheless, the same Western institutions avail even more harmful practices, such as large-scale mining, extensive husbandry, and intensive farming. In Java, Indonesia, a law banning shifting cultivation that uses fire to clear land was passed by the Dutch colonial government as early as 1874 (Fox et al. 2009). The colonial government believed the extensive, fire-based forms of farming and ranching were primitive and dangerous to economic assets and natural resources, and they should be replaced by a more productive, intensive system characterized by permanent fields and production of fodder and hay (Kull 2002; Pyne 1997). Meanwhile, for Indigenous and local communities, fire is a customary resource management tool that they have developed through thousand of years of adapting to and understanding the environment they live in—it comes with ecological knowledge of fire controls and weed and pest management. Rotating cultivation is not perceived as deforestation but as agroecosystem management that creates a mosaic of old forest, second-growth forest, and cultivated land in the landscape. This kind of integrated human–nature environment is preferable to a separation of land use from an intensive commercial agricultural system.

This practice ban is similar to the “fortress” conservation strategy, which is based on the assumption that local people use natural resources in irrational and destructive ways, so biodiversity protection is best achieved by creating protected areas that are free from human disturbance (Domínguez and Luoma 2020). In some cases, the designation of protected forest and national parks in Indonesia has turned local people’s livelihood into crimes: foraging becomes trespassing, hunting becomes poaching, and harvesting becomes illegal logging.

The change in environmental, sociocultural, and economic conditions could make slash-and-burn practices less sustainable than before. However, the way to tackle this problem is not by blaming the local Indigenous communities for the harm but instead recognizing them as ongoing victims of ecological discrimination. Therefore, a total ban and immediate criminalization of slash-and-burn are not the answer. A total ban will undermine the various traditional practices of slash-and-burn, which are still sustainable. Fire should be allowed where and when the environmental conditions are appropriate—as it does not necessarily result in environmental harm (Tacconi and Vayda 2006)—and where it is possible to implement all the precautions mandated by traditional knowledge. Therefore, we need to carefully define the scope and limitation of the traditional use of fire for land clearing that is sustainable and, thus, protected under Article 69 paragraph (2)

When the practice is harmful, we should be cautious in resorting to criminal law, especially if it is heavily connected with survival livelihoods (Barak and Bohm 1989). Instant criminalization of this traditional practice is a selfish shortcut and will result in secondary victimization of local people. They are first the victim of unfair policies and development that make their practices become less sustainable. For example, in the case of peatland agriculture, the small-scale practices of the Indigenous and local communities become less sustainable because of external pressure from previous government’s peatland development projects, concession expansion, and massive canalization by the company; these factors contribute to making the peat more flammable. Meanwhile, immigrants were victims of the transmigration policy that relocated them to peatland areas in Sumatra and Kalimantan. Criminalizing the practices of these people when they are actually victims who deserve remedy will put them through secondary victimization by the legal system labeling them as perpetrators.

The criminalization of subsistence livelihood of marginalized people when they are not provided any alternative will only create more problems such as food security, poverty, conflict, and structural injustice (Fajrini 2019; Tuokuu et al. 2020). In this context, criminal law will likely fail to satisfy its objective because

the community’s perception is of receiving an undeserved punishment (Szczucki 2018). On the contrary, people will be more motivated to continue this practice as a form of resistance to the system that oppresses them (Fajrini 2019; Kull 2002). The approach to addressing potential environmental harm of traditional slash-and-burn practice should not become another form of “green grabbing” that deprives Indigenous and local communities of their livelihoods in the name of environmental protection (Fairhead, Leach and Scoones 2012). In responding to this harm, we need to view Indigenous and local communities as victims instead of perpetrators. A layered approach needs to be devised as a more effective and therapeutic justice system for all parties; it might even need a whole-scale, societal transformation (King et al. 2009; Preston 2011).

### Appropriate Response to the Harm

This article proposes several screening processes to deal with the potentially harmful practice of traditional slash-and-burn (see Figure 1). The first step is to identify which type of practice is sustainable and, thus, protected under Article 69 paragraph (2). In this first screening step, we can differentiate which type of unsustainable practice we want to address by using a penal approach. After we filter out the types of practice that are deemed unsustainable, the second screening step will evaluate whether the type is inherently dangerous and should be criminalized at this stage or is sustainable only under certain environmental conditions. The third screening step determines whether we could fix the type by restoring the environmental conditions or whether we need to change the tradition to adapt to the current environment. If the type is still harmful after all avenues have been explored and people continue to use it, then criminal sanctions can be used.

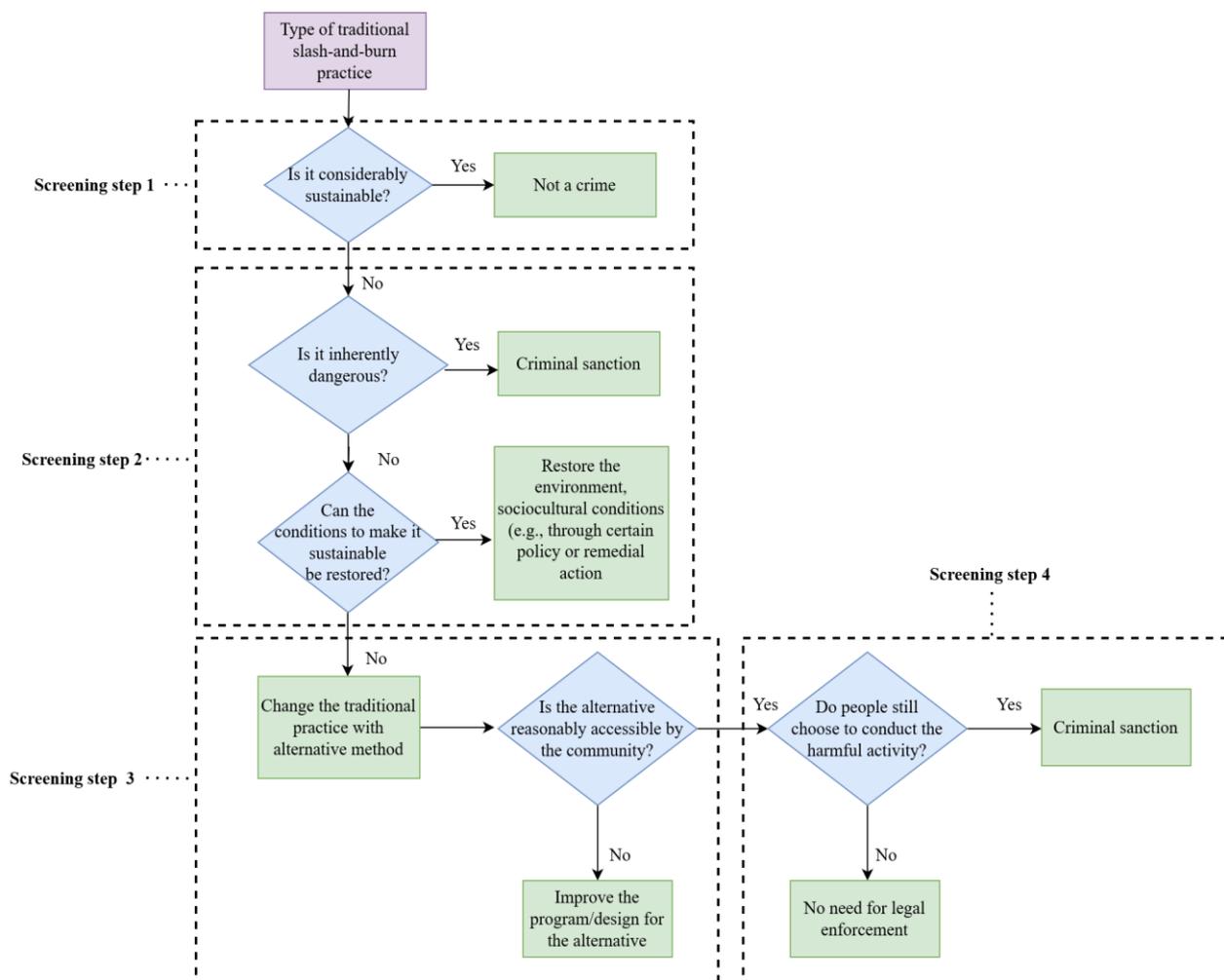


Figure 1. The screening process and actions in response to harmful slash-and-burn.

### *Screening Step 1: Which Type is Least Harmful?*

The first step of the process is to define which practice is proven least harmful and is, thus, exempted from criminal offense. For pragmatic reasons, the terms and conditions of allowed slash-and-burn in the available regulations can be used to define the types that are considered least harmful. These regulations—both at the national and local level—have sought to formalize the terms and conditions of traditional slash-and-burn practice based on expert scientific advice and acknowledged local wisdom in each region.

Based on analysis of several national and local regulations,<sup>7</sup> there are four factors are considered when categorizing slash-and-burn practices as protected local wisdom: the actor who conduct the practice, the procedure of how fire is used and when it can be used, the purpose of land clearing, and the effect of the slash-and-burn during the land-clearing process.

#### *a. Actor*

Article 69 paragraph (2) does not specify particular groups that can slash-and-burn as part of local wisdom. The law itself mentions Indigenous communities in several provisions, but when it comes to local wisdom, it does not attribute it to a certain group. The MoEF regulation narrowed the scope of this provision to be applied only to Indigenous communities. At the local level, the provisions are varied; in Central Kalimantan province, this provision only applies to Indigenous communities; in West Kalimantan province and Sintang Regency, practitioners of rotating cultivation—called *Peladang* and *Petani Tradisional*, respectively— can include Indigenous communities, local communities, and immigrants.

The constitution and the national level regulation explicitly guarantee the traditional practice for the Indigenous community. Indigenous peoples are also supported by a strong alliance with AMAN, which provides them with the power to influence law and policy. Based on these factors, it seems that Indigenous communities will receive preference under this exemption compared to traditional immigrant farmers. Nevertheless, exercising the exemption in Article 69 paragraph (2) solely based on which community group the person who conducts the slash-and-burn belongs to is not a wise strategy; Purnomo et al. (2017) have previously shown that there is always the possibility of a free rider who will abuse this local wisdom.

#### *b. Procedure*

The next aspect that must be considered is how the slash-and-burn is carried out. Article 69 paragraph (2) emphasizes this more than who is conducting the burning. Several important provisions on the practice of slash-and-burn:

- limit the scale of land clearing. Some region limit it to 1 hectare per household, while other limit it to 2 hectares per household
- limit the total cumulative area that can be burned in one day
- involve the local authority to regulate and supervise the activity
- control burning with mechanisms inter alia: create firebreaks, conduct burns in a group with the supervision of group members, prepare firefighting equipment beforehand
- prohibit slash-and-burn in peatland area
- prohibit slash-and-burn when the government declares a state of emergency (e.g., rainfall below normal, prolonged drought).

The procedure that is formalized in these regulations adopts similar Indigenous local wisdom, such as involving local institutions to regulate and supervise the activity and practicing slash-and-burn as a communal social activity instead of as an individual business. Identifying the type of slash-and-burn that is in accordance with proven, sustainable local wisdom is more sensible than just granting the exemption to certain communities.

#### *c. The Purpose*

The use of slash-and-burn is only allowed for small-scale subsistence cultivation, hence the limitation of the area. The crop to be planted is limited to local varieties or certain agricultural plants. Therefore, these parameters should exclude groups of people that cleared the land with the intention to open a plantation

or to sell the land to another investor. However, based on these regulations, slash-and-burn does not always have to be done in the context of rotating cultivation. Central Kalimantan regulation allows slash-and-burn to be done for settled agriculture. This is in line with the finding of Nopemberani et al. (2018) that the Dayak Nganju people who inhabit Central Kalimantan are transitioning into a more permanent agriculture system. West Kalimantan province and Sintang Regency regulations also allow controlled burning to be done in rotating cultivation, settled agriculture, and rice paddy fields.

#### *d. Effects*

In cases where controlled slash-and-burn become uncontrollable and result in widespread fires, the perpetrator must be liable for his negligence even though the slash-and-burn was planned according to the agreed procedure. This is the same as customary law in several Indigenous communities that imposes a fine or punishment if the fire results in harm to other parties.

Since the national law on traditional practice is open to interpretation, each local government should identify and formalize the criteria for exempted local traditional slash-and-burn practices; criteria should be more detailed than national regulation and tailored to the local context. However, the local government criteria should not be less strict than the criteria stated in national law. The four factors above can be used as a reference for local governments to develop their own regulation. Clear criteria can provide guidance for law enforcers to determine which traditional slash-and-burn practices are exempt. Unfortunately, very few local governments have already enacted such regulations.

### ***Screening Step 2: Restoring the Environmental and Sociocultural Conditions***

When the type of slash-and-burn is categorized as harmful based on the first screening step, we should further examine whether the type is inherently dangerous or was previously sustainable under certain conditions. If the type is already dangerous in nature (e.g., burning deep peatland for large-scale plantation), then it could be banned and sanctioned immediately. However, if the type was previously sustainable, we should not exclude the option to restore these environmental conditions and social factors. For example, policy on recognition of tenure rights, customary law, and customary institutions could enable communities to secure enough land to practice slash-and-burn with the proper fallow period. Conducting restorative action and limiting permits for exploitative activity near Indigenous and local communities' land can also be used to improve the habitat-carrying capacity of the land so that it could tolerate the disruption from small-scale slash-and-burn.

### ***Screening Step 3: Change in Traditional Practice***

It cannot be denied that in some cases, nature has changed—the necessary environmental conditions might no longer be there. The large-scale damage around customary land might have decreased the environment's carrying capacity, and the sociocultural change throughout the years might be irreversible. These changes certainly are not exclusively the local people's fault—in fact, they could be the victim—but it does not change the fact that the conditions have changed. Is it not the point of local wisdom to adapt to the current conditions? Local wisdom is not static and forcing Indigenous and local communities to stay the same is just as unfair as forcing them to change. In this scenario, inevitably, change to traditions should be made.

A change to slash-and-burn practice is urgently needed in some peatland areas. An alternative method of zero burning has been initiated by the government, but this method is not economically profitable for local farmers (Murniati and Suharti 2018). The zero burning method is more sustainable in the long term, but other incentives are necessary to encourage participation. Switching to alternative method might appear difficult at the beginning, but there have been several success stories where Indigenous and local communities have switched from slash-and-burn to zero burning, like the practice of *sisipan* in Jambi (Joshi et al. 2008) and the practice of paludiculture in Central Kalimantan (Susetyo 2018; Uda, Hein and Adventa 2020). It is important to note that banning the use of fire for land clearing does not automatically mean banning shifting or rotating cultivation; in some communities, land clearing for rotating cultivation can be done through slash-and-mulch (Peterlian 2018; Pollini 2014).

Economic incentives to switch from slash-and-burn might not work for a community that is motivated by sociocultural values, such as Indigenous peoples. The incentives can be misunderstood as an attack on their way of life. Since slash-and-burn in Indigenous communities has a sociocultural value, the introduction of an alternative should not ignore this sociocultural value. For example, slash-and-burn is a reflection of mutual assistance (*gotong royong*) among community members, so the introduction of a new procedure that makes the process of land clearing an individual business might not be preferable. Abolishment of slash-and-burn practice will eliminate specific rituals related to fire control like *humang lamiang* used by Dayak Nganju (Hadiwijoyo, Saharjo and Putra 2017); this effect needs to be communicated and mitigated considerably with the Indigenous community. Slash-and-burn is also related to the ecological knowledge of the community that prefers to use natural products, hence the use of ash for fertilizer (e.g., the Inner Baduy community). In this case, the introduction of chemical fertilizers might not be suitable.

#### **Screening Step 4: Criminal Sanction as the Last Resort**

A study by Carmenta et al. (2021) in Riau province found that under certain circumstances, sanctions as a deterrent play a more significant role in changing slash-and-burn practice behavior than incentives. However, over-reliance on criminal sanctions might unfairly target small-scale traditional farmers who might have the fewest alternatives and least resilience (Carmenta et al. 2013). Even though it might work in the short term, this criminal approach raises problems of justice and equity. Providing communities with alternatives for maintaining their livelihoods will be a fairer strategy and among the most effective and least controversial of all available policy options (Carmenta et al. 2017).

In the case of *State Prosecutor v Dugleas et al.* [2020 Sintang District Court] which acquitted the traditional Indigenous farmers, one consideration mentioned in the court's decision is that it will take time for the traditional farmers to afford alternatives to slash-and-burn. During this transitional period, traditional farmers should not be criminalized but should be assisted and guided by customary community leadership to integrate the recent science and technology with local wisdom.

#### **Conclusion**

Fire use is important to livelihoods and culture, particularly in Indigenous communities. It can, under some very specific circumstances, be environmentally sustainable. Therefore, we should clearly define the scope of slash-and-burn practice that is exempted as a criminal offense. For non-sustainable slash-and-burn practices that relate to subsistence livelihoods, criminal sanctions are not always an adequate response to the harm. Rather, the problem of fire use can be addressed by other means, such as land restoration and the introduction of alternative methods of land clearing or alternative livelihoods. When change is necessary to address harm, it should not be perceived as an attack on tradition; it should be seen as the ability of local wisdom itself to keep adapting to the changing world.

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<sup>1</sup> This terminology might spark debate around the idea of speciesism, which is beyond the scope of this paper.

<sup>2</sup> This law is later revoked by Law No. 39 year 2014.

<sup>3</sup> These conditions appear in the elucidation of Law No. 32 Year 2009, not in the provision of the law itself.

<sup>4</sup> The law was formally enacted on October 5, 2020. In the draft acquired by NGOs dated October 5, 2020, Article 69 paragraph (2) was deleted, which caused public uproar. The parliament secretary's excuse was that the draft was not final (Avisena 2020). Media and NGOs acquired a new version of the law on October 12, 2020, in which Article 69 paragraph (2) remained unchanged.

<sup>5</sup> Based on the data collected from Supreme Court Directory, MoEF's website and online case tracking, MoEF has filed lawsuits against 18 companies for forest fire cases, which are: PT. Kalista Alam; PT. Surya Panen Subur; PT. Bumi Mekar Hijau; PT. Jatim

Jaya Perkasa; PT. National Sago Prima; PT. Waringin Agro Jaya; PT. Ricky Kurniawan Kertapersada; PT. Waimusi Agroinda; PT. Palma Utama; PT. Kaswari Unggul; PT. Agro Tumbuh Gemilang Abadi; PT. Arjuna Utama Sawit; PT. Prana Indah Gemilang; PT. Sari Asri Rejeki Indonesia; PT. Rambang Agro Jaya; PT. Asia Palem Lestari; PT. Sumber Sawit Sejahtera; PT. Putra Lirik Domas

- <sup>6</sup> Customary forest used to be included as state-owned forest based on *Indonesia Forestry Law No. 41* (1999). This provision made it difficult for Indigenous people to assert power on self-managing their ancestral forest. Many permits were issued on the forestry forest to private sector without the consent of Indigenous people. On the other hand, some forests were designated as protected forest with a management policy that restricted Indigenous People's access to their forest. In 2013, the Indonesia Constitutional Court ruled that customary forest is a separate land title from state-owned forest, in which Indigenous peoples have the power to control and manage the area. This ruling reinforces Indigenous peoples' tenure right over the customary forest.
- <sup>7</sup> The regulations analyzed: *Article 69 paragraph (2) Law No. 32* (2009); *Ministry of Environment and Forestry Regulation No. 10* (2010) on Environmental Damage Prevention Related to Forest and Land Fire; *Central Kalimantan Provincial Regulation No. 1* (2020) on Land Fire Control; *West Kalimantan Governor Regulation No. 103* (2020); and *Sintang Regent Regulation No. 57* (2018).

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