Journal of Southeast Asian Human Rights, Vol. 8 Issue. 1 June 2025 pp. 23 - 48
doi: 10.19184/jseahr.v9i1.50756

Peasant Rights and the Struggle for Climate Justice in Indonesian Degraded Peatland[1]

Myrna Asnawati Safitri
Faculty of Law Pancasila University, Indonesia
Email: myrnaasnawati@univpancasila.ac.id

Dermawati Sihite
Faculty of Law Lambung Mangkurat University, Indonesia
Email: dermawati.sihite@ulm.ac.id

Muhammad Yusuf
Indonesian Peatland and Mangrove Restoration Agency, Indonesia
Email: muhammad.yusuf@brg.go.id

Abstract

The United Nations Declaration on the Rights of Peasants and Other Peoples Working in Rural Areas (UNDROP) recognizes and protects the dignity of peasants for their contributions to food production and climate change mitigation and adaptation. For Indonesia, signing UNDROP complements its international commitments to human rights and environmental protection, particularly climate change. Indonesia has ratified the Paris Agreement, which includes climate change mitigation in peat ecosystems as one of its agendas. At the regional level, Indonesia supports the ASEAN Human Rights Declaration and the ASEAN Transboundary Haze Agreement. The Indonesian government has established a zero-tolerance policy towards peatland burning. This policy has resulted in legal vulnerability for peasants who have a tradition of burning peatlands for agriculture. This article examines the influence of laws and policies to control forest and land fires as a form of climate change mitigation in protecting peasants' rights to food and a better environment. In particular, it discusses community-based and participatory approaches to peatland ecosystem restoration implementation in Indonesia and how they relate to the provisions of UNDROP. The research underpinning this article used a participatory legal research method involving the authors in policy making. The authors collected data and analysed laws and policies concerning peatland restoration and peasants' protection. The participatory observation was carried out on agricultural innovation practices and the legal empowerment of the peasants. This article concludes that although UNDROP is not used as a reference in forming peatland restoration policies, some activities have demonstrated the fulfilment of several UNDROP provisions

Keywords: *Climate change, peatland, peasants, right to food, UNDROP*

[1] The initial version of this article had been presented in the 18th Asian Law Institute Conference, 15-17 September 2021.

I. INTRODUCTION

Climate change is already having a significant and negative impact on agriculture due to rising temperatures and declining water reserves. In the future, the impacts of climate change are expected to intensify because of the longer and more unpredictable duration of extreme weather events, and reduced groundwater storage on Earth. A recent study on global trends in water table depletion and agricultural productivity reveals that, during the period from 1992 to 2020, approximately half of the world's 1,058 natural lakes lost or depleted their groundwater reserves. As a result, global agricultural productivity declined by about 20% in line with reduced water resources and increased temperatures.[2] Similarly, water scarcity and rising temperatures also hold significant challenges for agricultural producing countries like Indonesia, which heavily relies on land and water resources. Without effective mitigation and adaptation strategies to address climate change, research estimates that rice production in Indonesia will decline by an average of 10% in every Celsius degree increase of temperature.[3]

Climate change has emerged as a critical element that must be taken into consideration when establishing a food system. Within this system, peasants represent an essential sub-system. They play a dual role as key participants and influencing factors in food security. Interestingly, they also face significant vulnerabilities due to the impact of climate change. Like other vulnerable groups, peasants often face threats to their traditional livelihoods, as they are more exposed to severe climate change impacts such as rising sea levels, extreme weather events, and food insecurity.[4]

There is a growing acknowledgment of the importance of ensuring dignity, equality, and well-being for peasant communities worldwide. Protecting peasants is a key factor in achieving climate justice. This principle recognizes that those who are most affected by climate crisis are often the most vulnerable and have contributed least to climate change. They are the ones who are facing the most incredible hardships. Data from Vi Agroforestry and We Effect, for example, show that the total emissions produced by the

---

2 Tom Kompas, Tuong Nhu Che & R Quentin Grafton, "Global impacts of heat and water stress on food production and severe food insecurity" (2024) 14:1 Scientific Reports, online: <https://doi.org/10.1038/s41598-024-65274-z>.

3 Bambang Tri Kurnianto, "The Future of Agriculture in Indonesia: Facing Climate Change and Globalization" (2024) 2:04 West Science Agro 171–177.

4 Phemelo Tamasiga et al, "Amplifying climate resilience: The impact of social protection, social cohesion, and social capital on public support for climate change action" (2024) 10:1 Sustainable Environment, online: <https://doi.org/10.1080/27658511.2024.2361568>.

wealthiest one percent of the global population, exceed the total emissions of the poorest 50 percent.[5]

The rights of peasants also have gained increasing recognition at the international level. Efforts by transnational agrarian social movements, such as Vía Campesina, have been instrumental in advocating for the rights of peasants within the United Nations framework.[6] The United Nations Declaration on the Rights of Peasants and Other Peoples working in Rural Areas (UNDROP) represents a significant step towards institutionalizing and protecting the rights of rural populations, including their rights to land, seeds, and a safe environment.[7]

The intersection of peasants' human rights and climate resilience is a critical area that requires attention and action. This issue is important in Indonesia because the agricultural sector is a significant contributor to greenhouse gas emissions. Indonesia is vulnerable to forest and land fires; and peasants, who still use land-burning technology to prepare for planting, are prone to criminalization. The government of Indonesia has established a zero-tolerance policy against land burning, including in the peatland ecosystems which faced severe land and forest fires in 2015 and 2019. On the one hand, this policy provides a good deterrent effect. However, on the other hand, it leads to legal vulnerability for Indigenous and local communities, especially those who practice the land-burning tradition. Indigenous peoples in Papua, for instance, burn the peatlands for hunting purposes. Meanwhile, in Kalimantan and Sumatra, the Indigenous and local people burn the land for family food farming. People apply peatland burning because it is the most accessible technology to increase soil nutrients and reduce acidity. However, Indigenous Peoples have local wisdom to control land fires, for example, by making a barrier, burning on a small scale and controllable area, and, most importantly, informing and getting consent from the surrounding peasants.[8]

Unfortunately, the situation was complicated by the arrival of migrants either came spontaneously from other provinces or were sponsored by the government or by plantation and forestry companies. They imitate land burning without a proper understanding of indigenous fire control techniques. In addition, plantation and forestry companies operating on peatlands often make land burning uncontrollable. Many

---

5 *CLimate Justice*, by Vi Agroforestry & We Effect (Stockholm: Vi-skogen : We Effect).

6 Tiziana Pagnani, Elisabetta Gotor & Francesco Caracciolo, "Adaptive strategies enhance smallholders' livelihood resilience in Bihar, India" (2020) 13:2 Food Security 419–437.

7 Hanne Cottyn, Eric Vanhaute & Esther Beeckaert, "Peasant frontiers as a research strategy: peasant resilience and the reproduction of common land rights" (2022) 37:1 Continuity and Change 43–68.

8 Mitsuru Osaki et al, "Peatland in Indonesia" in Mitsuru Osaki & Nobuyuki Tsuji, eds, *Tropical Peatland Ecosystems* (Tokyo: Springer Japan, 2016) 49.

companies employ community members to set fires.[9] Land burning reduces land clearing costs, but it has led to the emergence of a phenomenon that Purnomo identifies as the "publication of disaster and privatization of benefits".[10] Using fire to manage privately owned land has created smog that affects entire ecosystems and everyone who lives in them.[11]

The Indonesian government's strict implementation of the land burning prohibition from 2016 to 2024 subjected peasants to law enforcement. This article focuses on the impact of Indonesian zero-burning law enforcement on peasants as the policy led many to abandon their land. The dilemma between fulfilling the right to food and mitigating climate change emerges in this sense. Our research studied how climate change mitigation laws, particularly the peatland restoration policies in Indonesia, can protect peasants' rights to food sovereignty and produce a better peatland environment. This study also investigated the extent to which Indonesian peatland policies, including law enforcement policies, relate to the UNDROP principles. This study used the participatory legal research method[12] in which the authors were involved in policymaking. Thus, data was gathered through participant observation in addition to the collection and analysis of laws and regulations.

This article is divided into six sections. Following this introductory section, the second section covers the basic concepts of peasants' rights and their recognition and protection in various international treaties or declarations. The third section elaborates on the link between the right to food and climate change within the human rights framework. The fourth explains Indonesia's national legal framework for protecting peasants. The fifth section discusses the impact of laws and policies to control forest and land fires on the peasants. Finally, the last section discusses various corrective efforts to ensure the harmony of peatland environmental damage control and the protection and fulfilment of the human rights of peasants as stated by UNDROP.

---

9 S L Jewitt et al, "Indonesia's contested domains. Deforestation, rehabilitation and conservation-with-development in Central Kalimantan's tropical peatlands" (2014) 16:4 International Forestry Review 405–420; S E Page & A Hooijer, "In the line of fire: the peatlands of Southeast Asia" (2016) 371:1696 Philosophical Transactions of the Royal Society B: Biological Sciences 20150176; Saritha Kittie Uda, Lars Hein & Elham Sumarga, "Towards sustainable management of Indonesian tropical peatlands" (2017) 25:6 Wetlands Ecology and Management 683–701.

10 H Purnomo et al, "Forest and land fires, toxic haze and local politics in Indonesia" (2019) 21:4 International Forestry Review.

11 *Managing peatlands in Indonesia: Challenges and opportunities for local and global communities*, by K Hergoualc'h et al (Bogor: Center for International Forestry Research (CIFOR), 2018) online: <https://doi.org/10.17528/cifor/006449>.

12 Emily M S Houh & Kristin Kalsem, "Theorizing Legal Participatory Action Research: Critical Race/Feminism and Participatory Action Research" (2015) 21:3 Qualitative Inquiry 262–276.

II. PEASANTS' HUMAN RIGHTS AND THE CHALLENGES OF IMPLEMENTATION

As stated in the introductory section, climate change poses an existential threat to agriculture. Rising temperatures, erratic rainfall patterns, and extreme weather events like droughts and floods directly impact agricultural yields, livestock, and fishing grounds, jeopardizing food security and pushing communities further into poverty.[13]

The impacts of climate change on peasants are exacerbated by existing inequalities and historical injustices. Land grabbing, driven by agribusiness expansion and extractive industries, often displaces peasant communities from their lands, further increasing their vulnerability to climate shocks. Moreover, limited access to resources, technology, and decision-making processes hinders their ability to adapt to changing environmental conditions.[14]

Peasants, like other human beings, are entitled to the rights enshrined in the Universal Declaration of Human Rights and other human rights treaties that have been ratified by many states. These instruments protect a series of claims that should be enough to ensure the peasants a dignified existence. Peasants, often referred to as smallholder farmers, fisherfolk, pastoralists, and Indigenous Peoples, represent a significant portion of the world's population. Their deep-rooted connection to the land and traditional ecological knowledge has made them stewards of biodiversity and sustainable agricultural practices.

The international community has taken steps towards recognizing and protecting their rights. The United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP), adopted in 2018, marks a significant milestone.

---

13 Marc Edelman, *What is a peasant? What are peasantries? A briefing paper on issues of definition* (2013); La Via Campesina, "Peasants at the frontline of the climate struggle share testimonies" (10 January 2024), online: <https://viacampesina.org/en/2024/01/peasants-at-the-frontline-of-the-climate-struggle-share-testimonies/>; Muchlas Dharmawan Tualle et al, "Living through crises due to successive commodity booms and busts: Investigating the changing peasants' farming style in rural Indonesia" (2023) 7:1 Forest and Society 95–115.

14 Jemima Duru, Joseph Aro & Rachael Ebunoluwa Oladipo, "The effects of climate change on the livelihood of rural women: a case study of Ilorin South, Nigeria" (2022) 46:1 Bulletin of the National Research Centre 165; Mbongeni Maziya et al, "The Perceived Impact of Climate Change on the Livelihoods of Smallholder Farmers in Kwazulu-Natal Province, South Africa" (2024) 16:7 Sustainability; Arabinda Roy, Sanjeev Kumar & Mostafijur Rahaman, "Exploring climate change impacts on rural livelihoods and adaptation strategies: Reflections from marginalized communities in India" (2024) 49 Environmental Development 100937; S B Thakur & A Bajagain, "Impacts of Climate Change on Livelihood and its Adaptation Needs" (2019) 20 Journal of Agriculture and Environment 173–185.

The Declaration affirms the right to land and natural resources, the right to seeds and traditional agricultural knowledge, and the right to participate in decision-making processes that affect their lives. The UNDROP stands as a landmark achievement of the recognition of peasants' human rights.[15]

While not explicitly peasant-centric, treaties like the International Covenant on Economic, Social and Cultural Rights are powerful tools for advancing peasant rights. The right to an adequate standard of living, encompassing food, clothing, and housing, directly relates to peasants' dependence on land and resources. Similarly, the right to food is intrinsically linked to their agricultural practices and access to markets. The Covenant also recognizes the right to water (Articles 11 and 12), a resource often contested and increasingly scarce due to climate change and industrial agriculture. Furthermore, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) holds particular significance for female peasants who face intersecting forms of discrimination. Their rights to land ownership, inheritance, and access to credit are often restricted by patriarchal norms and discriminatory laws. CEDAW's provisions on rural women's empowerment and access to resources are crucial for addressing these inequalities.

Despite the existence of these legal frameworks, the realization of peasant rights faces significant obstacles. The non-binding nature of the UN Declaration, while aspirational, lacks the enforcement mechanisms of a treaty. States often prioritize economic growth over the rights of rural communities, leading to land grabbing, displacement, and environmental degradation. The lack of awareness about these treaties, both among peasants and government officials, further hinders their implementation.

Another criticism is that UNDROP cannot escape statistical framing and, despite its radical underpinnings, relies on states to grant rights to the peasants. UNDROP, as a radical articulation of peasant claims, cannot be achieved without reorganizing power

[15] Marc Edelman, "Linking the Rights of Peasants to the Right to Food in the United Nations" (2012) 10:2 Law, Culture and the Humanities 196–211; Zainab Lokhandwala, "Peasants' Rights as New Human Rights: Promises and Concerns for Agrobiodiversity Conservation" (2022) 12:1 Asian Journal of International Law 105–120; Denise González Nunez, "Peasants' Right to Land: Addressing the Existing Implementation and Normative Gaps in International Human Rights Law*" (2014) 14:4 Human Rights Law Review 589–609; Arne Vandenbogaerde, "Localizing the Human Rights Council: A case study of the Declaration on the Rights of Peasants" (2015) 16:2 Journal of Human Rights 220–241.

asymmetries in the countryside and reimagining the architecture of agriculture itself in a significant way.[16]

Considering the power relation factor as stated earlier, access to climate justice is important to ensure the protection of peasants' rights. Unfortunately, access to justice remains a distant dream for many peasants. Legal systems are often inaccessible, expensive, and biased against rural communities.[17] Peasants and other vulnerable groups often face obstacles accessing the law due to several factors, including distance to reach legal service institutions, language barriers, and a lack of legal assistance to help them understand the state's legal system. Due to these factors, the state legal system is particularly costly for peasants and low-income groups. In addition, the prejudice developed by state legal actors against peasants as a group that is not "law-aware" or even are "law-breakers" adds to the widening gap in accessing legal protection.[18]

Addressing these implementation gaps requires a multi-pronged approach. States must demonstrate political will by ratifying and domestically implementing relevant treaties. Awareness-raising campaigns are crucial for informing peasants of their rights and empowering them to claim them. Strengthening legal aid services and promoting access to justice for rural communities is paramount. In addition to these, states must take concrete steps to integrate peasant rights into climate change policies and programs. These rights are important for protecting peasants from land grabbing and from displacement, which is crucial for their resilience to climate change. States also must support peasant-led initiatives that promote sustainable agriculture, biodiversity conservation, and climate change adaptation. Ensuring access to information, technology, and financial resources have been recurrent problems that have not been resolved properly in many countries. This access will empower peasants with the tools and knowledge to adapt to changing climate conditions.

Thus, addressing the climate crisis requires a paradigm shift that places human rights, particularly the rights of the most vulnerable groups like peasants, at the forefront. Upholding the rights of peasants is not only a moral imperative but also a strategic imperative for building a just and sustainable future through the empowerment of peasants and efforts to support their climate resilience.

In Indonesia, the role of peasant discourse about climate resilience is particularly interesting as traditional agrarian studies or movements tend to focus on land conflicts.

---

16 Lokhandwala, *supra* note 15.

17 Nunez, *supra* note 15.

18 Andrii Lapkin, "The problems of access to justice in rural areas (on the example of Ukraine)" (2019) 68 SHS Web of Conferences, online: <https://doi.org/10.1051/shsconf/20196801018>.

Meanwhile, as White et al.[19] point out, rural Indonesia is experiencing a shift where land remains a key issue in the rural political economy, but it is not the only concern. While some peasants face land dispossession and conflict, there is another group of rural Indonesians who do not live under the threat of losing their land or engaging in agrarian conflict. This latter group has a different definition of threats. They face challenges to their livelihoods due to climate change and policies aimed at controlling it, which often overlook the need to enhance peasants' capacity to adapt.[20]

III. RIGHTS TO FOOD AND CLIMATE JUSTICE

As mentioned in the previous section, UNDROP recognizes rights for peasants, whether they fall under civil and political rights or economic, social, and cultural rights. Among the regulated rights are the rights to organize, life, freedom, and security. There are also the rights to express opinions and expression, associate, participate and obtain social security. Recognition is also given to food sovereignty, environmental, water, and sanitation rights including culture and traditional knowledge. This section discusses several provisions in UNDROP related to food, climate change, and the environment, as closely related to the problems faced by rural peatland communities in Indonesia.

The Indonesian Peasant Union, one of the peasants' organizations that consistently fights for peasants' human rights at the national and international levels, stated that the movement to promote the recognition of peasants' rights was driven by the 2007-2008 global food crisis. The crisis proved that the global agricultural system run by large corporations, with monoculture and environmentally harmful cultivation, cannot protect peasants. In other words, the industrialized food and agriculture system has violated the fundamental rights of peasants.[21]

The Global Network against Food Crises, in its report on the status of the food crisis in 2020, states that the 2020 food crisis affected 55 countries/territories. The main causes are conflicts, COVID-19-related economic shocks, and extreme weather. This crisis has impacted 155 million people. Indonesia is not one of the countries with a food crisis; however, this country is also facing a food shortage problem due to limited food

---

19 Ben White, Colum Graham & Laksmi Savitri, "Agrarian movements and rural populism in Indonesia" (2023) 23:1 Journal of Agrarian Change 68–84.

20 *Ibid.*

21 Serikat Petani Indonesia (SPI), *Sejarah Kelahiran Deklarasi Perserikatan Bangsa-Bangsa tentang Hak Asasi Petani dan Orang-orang yang bekerja di pedesaan: Perjuangan Serikat Petani Indonesia dalam Mendorong Perumusan Hak Asasi Petani dari Tingkat Lokal sampai Global*, online: <https://spi.or.id/wp-content/uploads/2019/10/Sejarah-Lengkap-UNDROP.pdf>.

distribution during the Covid-19 pandemic and due to extreme weather. The 2002 La-Niña, for example, caused high rainfall that disrupted the success of food harvesting.[22]

Peasants are generally considered food producers who are encouraged to fulfil the national food supply, but their right to food protection is often neglected. Article 15 of UNDROP states that peasants and other people working in rural areas also have the right to adequate food and to be free from hunger. This right includes the right to produce food and obtain proper nutrition. Peasants also have the right to determine their own food and agricultural systems as part of food sovereignty.

States must ensure that peasants have physical and economic access to adequate food produced and consumed sustainably, equitably, and in a manner that respects their culture. States are also obliged to maintain access to food for future generations and ensure the lives of peasants, both individually and in groups, with physical and mental dignity. States should also take appropriate action to eradicate malnutrition for children and pregnant and lactating women.

UNDROP requires countries that have signed this Declaration to recognize food sovereignty and guarantee the right of peasants to participate in food and agricultural policy decisions. In addition, states must also formulate policies to promote and protect the right to adequate food, food security, food sovereignty, and sustainable and equitable food systems that promote and protect peasants' rights. UNDROP also recognizes that peasants bear a heavy burden due to environmental degradation and climate change as various studies have shown that agriculture is very vulnerable to climate change. Extreme weather in the rainy or dry seasons poses a threat of peat fires and floods, ultimately lowering agricultural productivity.[23]

Article 18 of UNDROP recognizes the rights of peasants to conservation and protection of the environment, and their rights to the productive capacity of the lands and resources they use and manage. The states must ensure that all peasants, without

---

22 *Global report on food crises. In Food Security Information Network (Issue September)*, by Food and Agricultural Organization (FAO) (2019) online: <Https://Www.Wfp.Org/Publications/2020-Global-Report-Food-Crises>.

23 J Gordon Arbuckle Jr, Lois Wright Morton & Jon Hobbs, "Understanding Farmer Perspectives on Climate Change Adaptation and Mitigation: The Roles of Trust in Sources of Climate Information, Climate Change Beliefs, and Perceived Risk" (2015) 47:2 Environment and Behavior 205–234; Ktut Murniati & Abdul Mutolib, "The impact of climate change on the household food security of upland rice farmers in Sidomulyo, Lampung Province, Indonesia" (2020) 21:8 Biodiversitas Journal of Biological Diversity; Mohammad Rondhi et al, "Assessing the Role of the Perceived Impact of Climate Change on National Adaptation Policy: The Case of Rice Farming in Indonesia" (2019) 8:5 Land 81; Philip K Thornton et al, "Climate variability and vulnerability to climate change: a review" (2014) 20:11 Global Change Biology 3313–3328.

discrimination, enjoy a safe, clean and healthy environment. For peatland peasants and their families, such an environment requires the absence of smoke from peatland fires.

The peasants then have the right to contribute to the design and implementation of climate change adaptation and mitigation policies, including using their traditional practices and knowledge. The states must secure that no hazardous materials, substances, or waste are stored or disposed of on peasants' land. UNDROP emphasizes that the states must protect the peasants from abuse by non-State actors, including by enforcing environmental laws that contribute, directly or indirectly, to the protection of peasants' rights.

As part of protecting peasants from the impacts of climate change, Article 25 of UNDROP states that peasants and people working in rural areas have the right to proper training according to the agroecological, socio-cultural and economic environment in which they are located. Training programs should include but are not limited to improvements in productivity, marketing, and ability to cope with pests, pathogens, system shocks, chemical effects, climate change, and weather-related events. The states should promote equitable and participatory peasants-scientific partnerships to achieve this goal. The partnerships include peasants field schools, participatory plant breeding, and animal and plant health clinics. The states should also provide training, market information, and advisory services to support these.

The UNDROP provisions establish the recognition and protection of peasants' rights against the negative consequences of climate change. The UNDROP framework also covers the rights of peasants to build capacities for climate resilience. Given these comprehensive guidelines, it is reasonable to consider UNDROP as a model for national regulatory frameworks.

IV. NATIONAL LAWS FOR SAFUGUARDING PEASANTS FROM THE IMPACT OF CLIMATE CHANGE

The national legal framework of Indonesia regarding the protection of peasants is stated in several laws, each with the potential to protect and empower peasants significantly. Some of these include the Basic Agrarian Law (Law 5/1960), which regulates the security of land tenure for peasants, the law on the provision of production-sharing agreements between agricultural landowners and cultivators (Law 2/1960), the law on the determination of the maximum size of agricultural land (Law No. 56 PRP of 1960), the law on agricultural cultivation (Law 12/1992), the law on the protection of permanent and sustainable agricultural land (Law 41/2009), and the special law on the protection

and empowerment of peasants (Law 19/2013). This article only focuses on Law 19/2013 as it provides specific provisions on peasants' protection strategies, including for climate change.

Law 19/2013 recognizes that peasants in Indonesia must deal with climate change and vulnerability to hydro-meteorological disasters such as droughts and floods. Article 7 paragraph (2) of this Law states that the protection strategy consists of providing infrastructure and facilities for agricultural production, guaranteeing business certainty, guaranteeing price stability, eliminating high-cost economic practices, compensating losses in the event of crop failure, agricultural insurance, providing early warning systems, and handling the impacts of climate change.

To implement protection against climate change, the central government and local governments are proactively required to build an early warning system and conduct climate forecasts to anticipate crop failure. Such anticipation, for example, is carried out by providing information on forecasts of organism attacks, pests, or disease outbreaks that can disrupt crops. Based on these forecasts, the government must develop preventive and mitigating measures (Art. 34 and Art. 35 Law 19/2013). In addition, Law 19/2013 also mentions agricultural insurance. One of the risks that can be covered through insurance is natural disasters (Art. 37).

The protection of peasants from the impacts of climate change, as stipulated in Law 19/2013, is sufficient in terms of risk prevention and transfer. Nevertheless, implementing agricultural insurance is likely to be a challenging process. For instance, it is currently unclear whether such insurance can be applied in cases where agricultural land is burned during forest and land fires. While some severe forest and land fires are considered natural disasters, others are categorized as man-made disasters. Thus, if land fires are not classified as natural disasters, it raises questions about how agricultural insurance can compensate peasants for their losses. Peasants, particularly those outside of Java, clear their land by burning it. This practice may lead to the exclusion of coverage for risks associated with land burning. Consequently, those who engage in land burning, especially in degraded peat ecosystems, will be unprotected against losses.

In addition to improving the protection of peasants from the impacts of climate change within the framework of disaster management, the authors suggest to enhance peasants' resilience to climate change. Hultgren[24] has shown that peasants in tropical regions are generally more adaptable to climate change than those in subtropical areas.

[24] Andrew Hultgren et al, "Impacts of climate change on global agriculture accounting for adaptation" (2025) 642:8068 Nature 644–652.

This increased adaptability may stem from a more resilient culture of agroecological practices that are accustomed to dealing with climate-related challenges.[25]

The authors also have yet to identify any regulations in Indonesia that specifically address the protection of peasants in the context of climate resilience. As outlined in Law 19/2013, protection is primarily defined in terms of providing facilities and technologies for disaster prevention and mitigation. Improving the capacity of peasants to adapt to climate change is often overlooked. Peasants' adaptability is a key factor in this regard, given the Indonesian government's zero-tolerance policy of forest and land burning. The following section will discuss the implications of this no-burning policy in greater detail, particularly for the villagers residing in the peatlands.

V. PEATLAND FIRES LAWS

Peatlands constitute 3% of the earth's land and cover 400 million hectares. Most are in North America, Russia, and Europe.[26] Around 25 million hectares of peatland are in Southeast Asia.[27] Indonesia has 24.7 million hectares of peat ecosystems located in a landscape called the Peat Hydrological Unit. This figure places Indonesia as one of the largest tropical peat ecosystem countries. Indonesia's peat ecosystem is widely spread over the islands of Sumatra, Kalimantan, and Papua. Peatlands located in Sumatra and Kalimantan are close to neighbouring countries such as Malaysia and Singapore.

Peatlands can store high amounts of carbon. Around 46 Gt of carbon, or 8-14% of the world's carbon stock, is stored in Indonesia's peatlands. However, irresponsible peatland management in the past was carried out by drying and burning. Indonesian peatland conversion has changed the ecosystem from a carbon reservoir to a source of greenhouse gas (GHG) emissions.[28] As part of the wetland ecosystem, peatland contains high amounts of water. Drainage of peatlands causes land subsidence, which is defined as a decrease in the surface of peatlands due to changes in land use and improper water management. As a result, peatlands will experience irreversible drying, resulting in a

---

25 *Ibid.*

26 Donal Clarke & Jack Rieley, "Strategy for Responsible Peatland Management 2019" (2019), online: *International Peatland Society* <https://peatlands.org/document/strategy-for-responsible-peatland-management-2019/>.

27 ASEAN, "ASEAN Haze and Peatland Programmes" (2014), online: <Https://Hazeportal.Asean.Org/Programmes/>.

28 Almasdi Syahza et al, "Peatland Policy and Management Strategy to Support Sustainable Development in Indonesia" (2020) 1655:1 Journal of Physics: Conference Series, online: <https://doi.org/10.1088/1742-6596/1655/1/012151>.

decrease in the ability of the peatlands to hold water.[29] Which makes them prone to fire during the dry season and floods in the rainy season. In the last three decades, the peatland ecosystem in Indonesia has suffered a lot of damage because of the massive clearing of peatlands, including peat domes that should be protected because of their ability to store water. Many built-canals are found in peatland, leading to peat draining, which is prone to fires and subsidence.

The most extensive forest and land fires in Indonesia occurred from 1997 to 1998. About 8 million hectares of forest and land were burned.[30] In 2015, another severe fire scorched around 2.6 million hectares of land, of which 800 thousand hectares were peatlands. A World Bank report stated that the economic loss due to forest and land fires in 2015 reached USD 16.1 million, equivalent to 1.9% of Indonesia's GDP. Greenhouse gas emissions from the fires were also enormous. Global Fire Emission Database data shows that fires in Indonesia at that time contributed about 1,750 million metric tons of carbon dioxide equivalent (mtCO2e) to global emissions in 2015.[31]

The government of Indonesia's efforts to prevent and combat forest and land fires has significantly reduced peat fires since 2016. The Indonesian Ministry of Environment and Forestry reported that forest and land fires in 2016 only covered 430 thousand hectares. Successive reduction then occurred in 2017 where the government reported that fire hit 165 thousand hectares of land and forest. The following year forest and land fires impacted on 529 thousand hectares in. There was a significant increase in forest and land fires in 2019, where 1.6 million hectares of forest and land were burned. However, this was caused mainly by natural factors. The year 2019 was a hot year that sparked fires in various parts of the world, including America and Australia, which each had more fires than Indonesia. In 2020, Indonesia again recorded success in suppressing forest and land fires with a total burned area of 296,000 hectares.

One of the factors behind the successful control of forest and land fires is the establishment of laws and regulations and strict law enforcement. The first peat ecosystem protection law was enacted in 1990 by a Presidential Decree on protected areas management (Presidential Decree 32/1990). According to the Decree, peatlands are part of a protected ecosystem. Nevertheless, this policy was not widely implemented.

---

29 Hergoualc'h et al, *supra* note 11; Mokhamad Yusup Nur Khakim et al, "Peatland subsidence and vegetation cover degradation as impacts of the 2015 El niño event revealed by Sentinel-1A SAR data" (2020) 84 International Journal of Applied Earth Observation and Geoinformation 101953.

30 David Glover & Timothy Jessup, eds, *Indonesia's Fires and Haze: The Cost of Catastrophe / ISEAS Publishing* (ISEAS / IDRC, 2016).

31 *The Cost of Fire: An Economic Analysis of Indonseia's 2016 Fire Crisis*, by World Bank (The Word Bank, 2016).

During the period from 1990 to 2014, there were no laws and policies explicitly regulating peat ecosystems. In 2007, for example, in the Spatial Planning Law No. 26 of 2007 and Government Regulation No. 26/2008 on National Spatial Planning, peatlands were also included as protected areas. This Government Regulation states that protected peatlands must have a layer of 3 meters or more and be located upstream of a river or swamp.

The Environmental Protection and Management Law Number 32 Year 2009 requires the central and local governments to have Environmental Protection and Management Plans (*Rencana Perlindungan dan Pengelolaan Lingkungan Hidup-RPPLH*), including plans related to the protection of peat ecosystems. This Environmental Law also states that the maintenance of the peat ecosystem is part of the conservation of natural resources. In 2012, the Ministry of Environment released the National Strategy for Sustainable Peatland Management. Then, in the plantation sector, the Indonesian Minister of Agriculture issued a regulation related to the use of peatlands for oil palm plantations (Ministry of Agriculture No. 14 of 2009 concerning Procedures for Utilizing Peatland Ecosystems for Oil Palm Cultivation). Ecosystem protection is also generally regulated in the Law on Soil and Water Conservation (Act 37/2014) and the Government Regulation on Swamps (Government Regulation 73/2013).

The specific regulation of peat ecosystems began in 2014 by issuing Government Regulation (GR) Number 71 of 2014 concerning the Protection and Management of Peat Ecosystems. However, in the two years since its establishment, this regulation was not implemented. The 2015 forest and land fires prompted the Government of Indonesia to reaffirm laws and policies to protect peat ecosystems. In 2016, GR 71/2014 was amended by Government Regulation 57/2016. Subsequently, the Minister of Environment and Forestry made several ministerial regulations to implement this new Government Regulation.

The Indonesian government established a non-structural agency called the Peatland Restoration Agency (*Badan Restorasi Gambut*, BRG) to restore peatland damage, primarily due to fires. This agency was legalized through Presidential Regulation No. 1/2016, then extended and expanded its duties to protect mangrove ecosystems through Presidential Regulation No. 120/2020. BRG, then renamed BRGM (*Badan Restorasi Gambut dan Mangrove*), served the country from 2016 to 2024. It coordinated and facilitated peat restoration in seven provinces, namely Riau, Jambi, South Sumatra, West Kalimantan, Central Kalimantan, South Kalimantan, and Papua. Around 90% of Indonesia's peatlands are located in these seven provinces. Most of them were damaged, with an area of approximately 2.67 million hectares.

Our observation from 2015 to 2020 showed that the prevention and control of forest and land fires have been a top priority, with strict law enforcement playing a crucial role. The President's policy directions, outlined in several coordination meetings on readiness to prevent forest and land fires, emphasized the need for uncompromising law enforcement.[32] However, in practice, law enforcement was primarily directed towards the community. A study at a police station in Riau Province, Sumatra, revealed that from 2014 to 2016, 90% of criminal cases of forest and land fires involved individual perpetrators. A similar trend was observed in 2019. Ardiyanto and Hidayat's research found that 72 of the 74 cases of forest and land fires handled by the Riau Regional Police were carried out by individuals.[33] In West Kalimantan Province, another area with extensively degraded peatlands, the regional police have named 66 peasants suspected in forest and land fires. Six of them were acquitted by the panel of judges at the Sintang District Court in March 2019. However, most perpetrators were found guilty.[34] This data confirms the statement by the Indonesian Legal Aid Institute that peasants and Indigenous Peoples are the groups most often caught in the forest and land fire law enforcement.[35] These challenges underscore the necessity for more effective law enforcement strategies, prioritizing human rights principles.

VI. HOW UNDROP RELATES WITH INDONESIAN CORRECTIVE POLICIES OF PEATLAND FIRES MANAGEMENT

As outlined in the previous sections, this article delves into the means by which the human rights of peatland peasants can be safeguarded under stringent law enforcement policies. Specifically, it scrutinizes the alignment of these protections with the principles and provisions of the UNDROP, underscoring the pivotal and reassuring role of the UNDROP in this context.

---

32 Antara, "Jokowi: Tegakkan Hukum Pembakaran Hutan Tanpa Kompromi" (2021), online: <Https://www.antaranews.com/Berita/2012289/Presiden-Jokowi-Minta-Penegakan-Hukum-Pembakaran-Hutan-Tanpa-Kompromi>.

33 Syaifullah Yophi Ardiyanto & Tengku Arif Hidayat, "Pola Penegakan Hukum Terhadap Pelaku Pembakaran Hutan dan Lahan" (2021) 1:3 PAMPAS: Journal of Criminal Law 79–91.

34 Arief Nugroho, "Olah lahan gambut tanpa bakar, tekan laju kebakaran hutan dan lahan" (28 October 2020), online: *Ekuatorial* <https://www.ekuatorial.com/2020/10/olah-lahan-gambut-tanpa-bakar-tekan-laju-kebakaran-hutan-lahan/>.

35 Deti Mega Purnamasari, "Banyak Kriminalisasi Masyarakat Adat dengan Tuduhan Pembakaran Hutan", *KOMPAS.com* (9 December 2019), online: <https://nasional.kompas.com/read/2019/12/09/16081631/banyak-kriminalisasi-masyarakat-adat-dengan-tuduhan-pembakaran-hutan>.

The UNDROP is highly relevant when considering the challenges faced by peasants in the context of peatland fires. Peasants are disproportionately affected by environmental disasters such as peatland fires. The UNDROP, with its focus on protecting the rights of peasants and rural communities, can serve as a crucial framework for addressing the impacts of peatland fires on these vulnerable populations. Peatland fires do not only pose immediate risks to health and livelihoods but also have long-term consequences on the environment and local economies. Peasants living in peatland areas are particularly vulnerable to the impacts of these fires, as their agricultural activities and homes are often directly affected by the destruction caused by the fires.[36] The UNDROP emphasises the rights of peasants to a safe and healthy environment, adequate living conditions, and protection from the adverse effects of environmental degradation. When peasants are facing peatland fires, these rights become even more critical, as the fires not only threaten their immediate safety but also have lasting effects on their land, water sources, and overall well-being. Therefore, by recognising and upholding the rights enshrined in the UNDROP, governments and policymakers can ensure that peasants affected by peatland fires receive the support and protection they need. The UNDROP not only ensures their rights but also provides a guiding framework for ensuring that peasants are actively involved in decision-making processes related to fire prevention and management, thereby empowering them and instilling hope for the future.

While the authors of the present study do not explicitly state that corrective measures in peatland fire management adhere to the UNDROP, we do find significant parallels between the principles of peatland restoration policies and the UNDROP. In this context, the alignment is particularly demonstrated in the participatory approach of involving the peasants in peat protection and restoration, which resonates with the UNDROP. This alignment implies that peatland restoration policies, even when not directly aimed to implement the UNDROP, are in fact in accordance with the UNDROP. Thus, it can effectively restore peatlands and protect the rights of the peasants who rely on these lands for their livelihoods, instilling confidence in the effectiveness of these policies. The following sections describe three major policies of community-based peatland restoration from 2016 to 2024.

---

[36] Laely Nurhidayah et al, "Community-Based Fire Management and Peatland Restoration in Indonesia" in Annisa Triyanti et al, eds, *Environmental Governance in Indonesia* (Cham: Springer International Publishing, 2023) 135.

1. Participatory Approach of Peatland Restoration

Indonesian peatland restoration policy as implemented by BRG/BRGM involved three approaches. The first approach was the rewetting of degraded peatlands. This involved constructing rewetting infrastructure, such as blocking or filling up built canals or installing drilled wells on burned or drained areas. Until 2024, thousands of peatland rewetting infrastructure units were constructed by BRG/BRGM in collaboration with provincial governments, conservation area management agencies, and local communities. Additionally, BRG/BRGM partnered with non-governmental organizations to conduct restoration activities, and concession holders had built peat rewetting infrastructure in their respective areas. The second approach was replanting (revegetation), which focuses on planting suitable peatland plants in burnt areas. The third approach involved economic empowerment to revitalize people's livelihoods. This activity aimed to provide alternative livelihoods that do not harm the peat ecosystem and offer incentives to community groups protecting their peatland.

The restoration program focussed on implementing the three approaches at the grassroots level, targeting villages in and around peat ecosystems. The program, known as the Peat Care Village Program or Desa Peduli Gambut (DPG then known as *Desa Mandiri Peduli Gambut*, DMPG), was initially designed by BRG in 2017 to emphasize community participation in peatland restoration. A study by Caroline Ward et al. stated that BRG placed community participation as a key indicator of the success of peat restoration (Ward et al., 2020). Through the DPG efforts were made to mobilize rural communities and strengthen village institutions to support peat restoration. The program also educated the community on preventing agricultural practices involving land burning. BRG/BRGM implemented the DPG programs to strengthen village institutions and assist with local regulations on peatland protection. From 2017 to 2020, 715 villages which situated in approximately 4.6 million hectares of peatland, including on 1.4 million hectares targeted for peat restoration, had been subject to DPG programs.

The DPG program served as a framework for activities aimed at preserving and managing peat ecosystems and promoting social and economic empowerment in the villages.[37] It is essential to focus on villages, considering that over 1000 villages in the area targeted for peat restoration were underdeveloped or less developed. As per the Village Development Index (IDM) issued by the Ministry of Villages, Development of

[37] *Gambut Basah adalah Anugerah: 5 Tahun Kinerja BRG*, by Badan Restorasi Gambut (BRG) (BRG, 2020).

Disadvantaged Communities, and Transmigration in 2016, around 80% of peat villages were under-developed and less-developed villages.

The DPG program encompassed various activities, including the deployment of village facilitators, socio-economic and village ethnographic studies, participatory mapping, assistance in village planning, inter-village cooperation, and rural area establishment. Additionally, the program focussed on local knowledge innovation, the use of appropriate technology in agricultural activities, conflict resolution facilitation, community land tenure legality management, and community participation in monitoring peatland restoration.[38]

Five key factors were taken into consideration when implementing the DPG program. Firstly, the program was data-driven, focusing on socio-economic studies, ethnography, and participatory mapping. Secondly, it emphasized inclusivity and aimed to involve various community groups such as peasants, women, youth, and low-income individuals. Thirdly, it respected local initiatives and valued local wisdom regarding peatland ecosystem management as a valuable resource. However, this knowledge was considered dynamic and adaptable to changes in the peatland ecosystem. Fourthly, the program encouraged collaboration with all stakeholders as BRG could not solely conduct community participation efforts due to its limited scope of authority. Lastly, the DPG program aimed to integrate other development policies like poverty alleviation, women's empowerment, and creative economic development to empower citizens.

In the DPG program, one key focus was using free and prior informed consent (FPIC) for rewetting, revegetation, and revitalizing livelihood projects. A set of guidelines for implementing FPIC as a social safeguard for peat restoration was published in 2017. This policy aligned with Article 10, paragraph 1 of UNDROP, recognizing the right of peasants to actively and freely participate in the development and execution of policies, programs, and projects that may impact their lives, land, and livelihoods. Additionally, the official policy issued by BRG on FPIC demonstrated the agency's effort to encourage peasants' involvement in decision-making at the site level regarding peat restoration projects (see Art.10 para 2 of UNDROP).

2. Field School of Zero-burning Agriculture

BRG/BRGM, through the Peat Peasants Field School, developed a technology for managing peatlands without burning. This initiative first appeared in 2016 in Pulang

[38] *Ibid.*

Pisau Regency, Central Kalimantan, through dialogue between the Agency and peat peasants there. The peasants complained that strict law enforcement had intimidated them, leading to the unwillingness to continue working on their land. The meeting agreed that educational efforts were needed to provide solutions to continue farming and not be afraid of punishment for burning land. It was from this meeting that the idea of developing the zero-burning peatland agriculture training began. However, the community found the 2016 training provided by several academics to be unsatisfactory. The technology introduced by the agricultural experts from universities was inappropriate.

In 2018, the Peat Peasants Field School was formed, with a more structured curriculum and solid teaching staffs. The teaching team consisted of innovator peasants successful in finding formulas and methods of agriculture without burning, agroecological activists, and researchers from the Research and Development institution of the Ministry of Environment and Forestry. The Field School has trained more than a thousand peasants, including 15 cadres of skilled peasants who become mentors for others in developing zero-burning agriculture. Likewise, the demonstration plots were developed independently by the peasants. The Field School had built a new farming culture that was not only zero burning but also zero waste.

The Peasants Field School is an example of UNDROP implementation in peatland restoration. Article 25 Paragraph 1 and Paragraph 3 of UNDROP obliges states to facilitate field schools and agroecological practices. Paragraph 1 of Article 25 of UNDROP for instance states:

> *"Peasants and other people working in rural areas have the right to adequate training suited to the specific agroecological, sociocultural and economic environments in which they find themselves. Issues covered by training programmes should include, but not be limited to, improving productivity, marketing, and the ability to cope with pests, pathogens, system shocks, the effects of chemicals, climate change and weather-related events."*

Paragraph 3 mentions that the states have obligation to "encourage equitable and participatory farmer-scientist partnerships, such as farmer field schools, participatory plant breeding, and plant and animal health clinics to respond more appropriately to the immediate and emerging challenges that peasants and other people working in rural areas face."

BRG/BRGM had facilitated "equitable and participatory farmer-scientist partnerships" as required by UNDROP in its Field School activities. Zero-burning farming was a form of agroecological practice. In addition, 100 home garden plots were established in Sumatra and Kalimantan to support food sovereignty. Acknowledging the significant role of peasant women and other rural women in the economic survival of their families, UNDROP has emphasized their importance. With the onset of the Covid-19 pandemic, food and healthy consumption have become crucial. As a result, BRG encouraged peasant women to develop home gardens.

3. Peasants' Paralegals

Article 16 of UNDROP states that peasants have the right to life and personal security. In this regard, Paragraph 2 of Article 16 states that peasants must not be subjected to arbitrary arrest or detention, torture, or cruel, inhuman or degrading treatment or punishment. These rights are in line with UNDROP provisions in Article 12 relating to access to justice. Paragraph 3 of Article 12 states that peasants and people working in rural areas have the right to obtain legal assistance. States should consider additional measures, including legal aid, to support peasants and people working in rural areas who do not have access to administrative and judicial services. In addition to these provisions, Article 18 Paragraph 5 mentions:

> *"States shall protect peasants and other people working in rural areas against abuses by non-State actors, including by enforcing environmental laws that contribute, directly or indirectly, to the protection of the rights of peasants or other people working in rural areas."*

Providing legal assistance to peat peasants is essential when law enforcement policies to prohibit land burning are implemented. Cases of peasants who conflict with the law, as described in section V, require solutions. Field Schools, as discussed in section VI.2, function as prevention. However, when peasants are involved in legal cases, other methods are necessary to protect them as many are legally illiterate.

BRG facilitated the formation of community paralegals in peat villages. Community members were provided with basic paralegal training to serve as non-litigation legal aid providers for other residents. In addition, paralegals also supported the village government in making village regulations for peat protection and implementing legal literacy. The peasant paralegals are a form of community paralegals. Studies have shown that community paralegals play a crucial role in safeguarding human rights within communities by enhancing access to justice and legal empowerment. By working closely

with community members, they bridge the gap between the legal system and marginalized populations, ensuring that human rights are respected and protected. Research has proved that community paralegals can have a significant impact on various aspects of human rights protection like the right to access better livelihood and a healthy environment. Paralegals can support the realization of the right to health for vulnerable communities by advocating for the enforcement of human rights.[39] Community paralegals in peatland villages, supported by BRG/BRGM, will be essential in this sense. Even though BRG/BRGM has ended their tasks, the paralegals still exist. They can continue providing legal assistance for peasants in conflict with the law. This assistance provides important access to justice for the peatland peasants.

VII. CONCLUSION

Law enforcement has been one of the Indonesian government's methods to prevent and restore the environmental degradation due to forest and land fires, especially since the devastating fires that hit the country in 2015. Indonesia lost millions of hectares of forest and land due to the 2015 fires, the largest portion of which was in the peatland ecosystem. These peat ecosystems are essential in controlling climate change because of their ability to store carbon. The government's commitment to restoring these ecosystems is evident in the establishment of new policies and institutions and the implementation of strict law enforcement that to some extent has impacted on peasants. Some studies have identified what they call the 'criminalization' of peasants due to the traditional practice of cultivating agricultural land on peatlands through burning. This article investigates this phenomenon from another aspect, looking at efforts to balance the goal of environmental protection with the protection of peasants' rights to sustain their livelihoods. This balance is important in implementing UNDROP principles and provisions, one of which emphasizes the protection of rights to land, water, and natural resources. This study found that the government of Indonesia did not explicitly refer

[39] Shari L Dworkin et al, "What community-level strategies are needed to secure women's property rights in Western Kenya? Laying the groundwork for a future structural HIV prevention intervention" (2013) 26:6 AIDS Care 754–757; Anuradha Joshi, Marta Schaaf & Dina Zayed, "The use of legal empowerment to improve access to quality health services: a scoping review" (2022) 21:1 International Journal for Equity in Health 136; Marta Schaaf et al, "'We all have the same right to have health services': a case study of Namati's legal empowerment program in Mozambique" (2020) 20:1 BMC Public Health 1084; Albert Wirya et al, "Expanding the role of paralegals: supporting realization of the right to health for vulnerable communities" (2020) 20:1 BMC International Health and Human Rights 8.

to UNDROP in its policy formulation and implementation for peatland restoration. However, some of the activities carried out, such as community-based peatland project implementation, FPIC implementation, the establishment of peasants' field schools, and peasants' paralegals, demonstrated the fulfilment of several UNDROP provisions. In this case, it can be concluded that the UNDROP plays a vital role in safeguarding the rights of peasants when they are facing challenges such as peatland fires. By upholding the principles outlined in the UNDROP and taking lessons from the experience of peatland restoration practices, the authors believe that the Indonesian government can ensure that peasants are protected from the adverse effects of environmental disasters and are empowered to participate in decision-making processes that affect their lives and livelihoods.

BIBLIOGRAPHY

Antara, "Jokowi: Tegakkan Hukum Pembakaran Hutan Tanpa Kompromi" (2021), online: <Https://www.antaranews.com/Berita/2012289/Presiden-Jokowi-Minta-Penegakan-Hukum-Pembakaran-Hutan-Tanpa-Kompromi>.

Arbuckle Jr, J Gordon, Lois Wright Morton & Jon Hobbs, "Understanding Farmer Perspectives on Climate Change Adaptation and Mitigation: The Roles of Trust in Sources of Climate Information, Climate Change Beliefs, and Perceived Risk" (2015) 47:2 Environment and Behavior 205–234.

Ardiyanto, Syaifullah Yophi & Tengku Arif Hidayat, "Pola Penegakan Hukum Terhadap Pelaku Pembakaran Hutan dan Lahan" (2021) 1:3 PAMPAS: Journal of Criminal Law 79–91.

ASEAN, "ASEAN Haze and Peatland Programmes" (2014), online: <Https://Hazeportal.Asean.Org/Programmes/>.

Badan Restorasi Gambut (BRG), Gambut Basah adalah Anugerah: 5 Tahun Kinerja BRG, by Badan Restorasi Gambut (BRG) (BRG, 2020).

Clarke, Donal & Jack Rieley, "Strategy for Responsible Peatland Management 2019" (2019), online: International Peatland Society <https://peatlands.org/document/strategy-for-responsible-peatland-management-2019/>.

Cottyn, Hanne, Eric Vanhaute & Esther Beeckaert, "Peasant frontiers as a research strategy: peasant resilience and the reproduction of common land rights" (2022) 37:1 Continuity and Change 43–68.

Duru, Jemima, Joseph Aro & Rachael Ebunoluwa Oladipo, "The effects of climate change on the livelihood of rural women: a case study of Ilorin South, Nigeria" (2022) 46:1 Bulletin of the National Research Centre 165.

Dworkin, Shari L et al, "What community-level strategies are needed to secure women's property rights in Western Kenya? Laying the groundwork for a future structural HIV prevention intervention" (2013) 26:6 AIDS Care 754–757.

Edelman, Marc, "Linking the Rights of Peasants to the Right to Food in the United Nations" (2012) 10:2 Law, Culture and the Humanities 196–211.

Edelman, Marc, What is a peasant? What are peasantries? A briefing paper on issues of definition (2013).

Food and Agricultural Organization (FAO), Global report on food crises. In Food Security Information Network (Issue September), by Food and Agricultural Organization (FAO) (2019).

Glover, David & Timothy Jessup, eds, Indonesia's Fires and Haze: The Cost of Catastrophe | ISEAS Publishing (ISEAS / IDRC, 2016).

Hergoualc'h, K et al, Managing peatlands in Indonesia: Challenges and opportunities for local and global communities, by K Hergoualc'h et al (Bogor: Center for International Forestry Research (CIFOR), 2018).

Houh, Emily M S & Kristin Kalsem, "Theorizing Legal Participatory Action Research: Critical Race/Feminism and Participatory Action Research" (2015) 21:3 Qualitative Inquiry 262–276.

Hultgren, Andrew et al, "Impacts of climate change on global agriculture accounting for adaptation" (2025) 642:8068 Nature 644–652.

Jewitt, S L et al, "Indonesia's contested domains. Deforestation, rehabilitation and conservation-with-development in Central Kalimantan's tropical peatlands" (2014) 16:4 International Forestry Review 405–420.

Joshi, Anuradha, Marta Schaaf & Dina Zayed, "The use of legal empowerment to improve access to quality health services: a scoping review" (2022) 21:1 International Journal for Equity in Health 136.

Khakim, Mokhamad Yusup Nur et al, "Peatland subsidence and vegetation cover degradation as impacts of the 2015 El niño event revealed by Sentinel-1A SAR data" (2020) 84 International Journal of Applied Earth Observation and Geoinformation 101953.

Kompas, Tom, Tuong Nhu Che & R Quentin Grafton, "Global impacts of heat and water stress on food production and severe food insecurity" (2024) 14:1 Scientific Reports, online: <https://doi.org/10.1038/s41598-024-65274-z>.

Kurnianto, Bambang Tri, "The Future of Agriculture in Indonesia: Facing Climate Change and Globalization" (2024) 2:04 West Science Agro 171–177.

La Via Campesina, "Peasants at the frontline of the climate struggle share testimonies" (10 January 2024), online: <https://viacampesina.org/en/2024/01/peasants-at-the-frontline-of-the-climate-struggle-share-testimonies/>.

Lapkin, Andrii, "The problems of access to justice in rural areas (on the example of Ukraine)" (2019) 68 SHS Web of Conferences, online: <https://doi.org/10.1051/shsconf/20196801018>.

Lokhandwala, Zainab, "Peasants' Rights as New Human Rights: Promises and Concerns for Agrobiodiversity Conservation" (2022) 12:1 Asian Journal of International Law 105–120.

Maziya, Mbongeni et al, "The Perceived Impact of Climate Change on the Livelihoods of Smallholder Farmers in Kwazulu-Natal Province, South Africa" (2024) 16:7 Sustainability.

Murniati, Ktut & Abdul Mutolib, "The impact of climate change on the household food security of upland rice farmers in Sidomulyo, Lampung Province, Indonesia" (2020) 21:8 Biodiversitas Journal of Biological Diversity.

Nugroho, Arief, "Olah lahan gambut tanpa bakar, tekan laju kebakaran hutan dan lahan" (28 October 2020), online: Ekuatorial <https://www.ekuatorial.com/2020/10/olah-lahan-gambut-tanpa-bakar-tekan-laju-kebakaran-hutan-lahan/>.

Nunez, Denise González, "Peasants' Right to Land: Addressing the Existing Implementation and Normative Gaps in International Human Rights Law*" (2014) 14:4 Human Rights Law Review 589–609.

Nurhidayah, Laely et al, "Community-Based Fire Management and Peatland Restoration in Indonesia" in Annisa Triyanti et al, eds, Environmental Governance in Indonesia (Cham: Springer International Publishing, 2023) 135.

Osaki, Mitsuru et al, "Peatland in Indonesia" in Mitsuru Osaki & Nobuyuki Tsuji, eds, Tropical Peatland Ecosystems (Tokyo: Springer Japan, 2016) 49.

Page, S E & A Hooijer, "In the line of fire: the peatlands of Southeast Asia" (2016) 371:1696 Philosophical Transactions of the Royal Society B: Biological Sciences 20150176.

Pagnani, Tiziana, Elisabetta Gotor & Francesco Caracciolo, "Adaptive strategies enhance smallholders' livelihood resilience in Bihar, India" (2020) 13:2 Food Security 419–437.

Purnamasari, Deti Mega, "Banyak Kriminalisasi Masyarakat Adat dengan Tuduhan Pembakaran Hutan", KOMPAS.com (9 December 2019), online: <https://nasional.kompas.com/read/2019/12/09/16081631/banyak-kriminalisasi-masyarakat-adat-dengan-tuduhan-pembakaran-hutan>.

Purnomo, H et al, "Forest and land fires, toxic haze and local politics in Indonesia" (2019) 21:4 International Forestry Review.

Rondhi, Mohammad et al, "Assessing the Role of the Perceived Impact of Climate Change on National Adaptation Policy: The Case of Rice Farming in Indonesia" (2019) 8:5 Land 81.

Roy, Arabinda, Sanjeev Kumar & Mostafijur Rahaman, "Exploring climate change impacts on rural livelihoods and adaptation strategies: Reflections from marginalized communities in India" (2024) 49 Environmental Development 100937.

Schaaf, Marta et al, "'We all have the same right to have health services': a case study of Namati's legal empowerment program in Mozambique" (2020) 20:1 BMC Public Health 1084.

Serikat Petani Indonesia (SPI), Sejarah Kelahiran Deklarasi Perserikatan Bangsa-Bangsa tentang Hak Asasi Petani dan Orang-orang yang bekerja di pedesaan: Perjuangan Serikat Petani Indonesia dalam Mendorong Perumusan Hak Asasi Petani dari Tingkat Lokal sampai Global, online: <https://spi.or.id/wp-content/uploads/2019/10/Sejarah-Lengkap-UNDROP.pdf>.

Syahza, Almasdi et al, "Peatland Policy and Management Strategy to Support Sustainable Development in Indonesia" (2020) 1655:1 Journal of Physics: Conference Series, online: <https://doi.org/10.1088/1742-6596/1655/1/012151>.

Tamasiga, Phemelo et al, "Amplifying climate resilience: The impact of social protection, social cohesion, and social capital on public support for climate change action" (2024) 10:1 Sustainable Environment, online: <https://doi.org/10.1080/27658511.2024.2361568>.

Thakur, S B & A Bajagain, "Impacts of Climate Change on Livelihood and its Adaptation Needs" (2019) 20 Journal of Agriculture and Environment 173–185.

Thornton, Philip K et al, "Climate variability and vulnerability to climate change: a review" (2014) 20:11 Global Change Biology 3313–3328.

Tualle, Muchlas Dharmawan et al, "Living through crises due to successive commodity booms and busts: Investigating the changing peasants' farming style in rural Indonesia" (2023) 7:1 Forest and Society 95–115.

Uda, Saritha Kittie, Lars Hein & Elham Sumarga, "Towards sustainable management of Indonesian tropical peatlands" (2017) 25:6 Wetlands Ecology and Management 683–701.

Vandenbogaerde, Arne, "Localizing the Human Rights Council: A case study of the Declaration on the Rights of Peasants" (2015) 16:2 Journal of Human Rights 220–241.

Vi Agroforestry & We Effect, Climate Justice, (Stockholm: Vi-skogen : We Effect).

White, Ben, Colum Graham & Laksmi Savitri, "Agrarian movements and rural populism in Indonesia" (2023) 23:1 Journal of Agrarian Change 68–84.

Wirya, Albert et al, "Expanding the role of paralegals: supporting realization of the right to health for vulnerable communities" (2020) 20:1 BMC International Health and Human Rights 8.

World Bank, The Cost of Fire: An Economic Analysis of Indonseia's 2016 Fire Crisis, by World Bank (The Word Bank, 2016).

Myrna Asnawati Safitri is an associate professor of Environmental Law at the Faculty of Law at Pancasila University in Indonesia. She served as the Deputy Head of the Indonesian Peatland and Mangrove Restoration Agency from 2016 to 2022. Myrna has extensive experience as both a researcher and a practitioner in Indonesian policy reform related to environmental and natural resource management.

Dermawati Sihite is a lecturer of the Faculty of Law at Lambung Mangkurat University, Indonesia. She has significant experience in research and policy implementation in the field of environmental law.

Muhammad Yusuf is an independent researcher and former head of a working group at the Indonesian Peatland and Mangrove Restoration Agency. He has considerable experience in research and social activism, focusing on issues related to peasants' rights and the environment.