**Submission to the Adverse Impact of Climate Change on the Right to Food**

**FIAN Indonesia**

**Climate Change in Central Kalimantan: Land and Forest Fire and its impact to people’s right to food**

1. Indonesia is an equatorial region whose climate is governed by monsoon Australasia. Without climate change, floods and drought have been the most frequent meteorological disasters that happen in this country[[1]](#footnote-1) and will be intensified during El Nino and La Nina events[[2]](#footnote-2). As temperature rises and climate change occurs globally, some regions in Indonesia including Central Kalimantan (Kalimantan Tengah), experience more massive land and forest fires and more frequent floods. Nevertheless, the main reason for these disasters are not because of natural causes, but man-made causes, especially by prolonged deforestation and mining, making climate change an exacerbating factor. It is like a vicious cycle as well: deforestation releases huge amounts of carbon to the atmosphere, and the rise of global climate induces land and forest fires. Due to climate change, floods, forest fire, and drought occur more frequently and more destructive, not only affecting the loss of livelihood but also impacting the policy making decision to prohibit traditional agricultural systems.
2. Several reports have shown the climate change and its impact in Indonesia. WWF in “Climate Change in Indonesia: Implications for Humans and Nature” compiled reports that show surface air temperature in Asia has increased by approximately 1-3°C over the last century and precipitation has increased in the northern regions of Indonesia, including Kalimantan.[[3]](#footnote-3)
3. The temperature rise will potentially increase the possibility of land and forest fires, and this disaster will affect people’s right to food and nutrition. Diverse sources document forest and land fire in 1997-1998[[4]](#footnote-4), 2015 (area impacted were approximately 584.000 ha)[[5]](#footnote-5) and 2019[[6]](#footnote-6), with severe effects in the agricultural and forestry sectors in 2015. Data shows that the agriculture and forestry sector suffered an estimated Rp 120 trillion (US$8.8 billion) in losses and damage in 2015, with damage to food crops estimated at IDR 23.7 trillion which caused a decrease in farmers' income.[[7]](#footnote-7) Furthermore, the impact will be prolonged as production of affected commodities like perennial crops and timber need approximately two to five years to harvest.[[8]](#footnote-8)
4. About 26% from this financial loss are because of biodiversity loss (including flora and fauna in the forest). Considering that several communities in Central Kalimantan also gain their foods from the diversity of ecosystems that exist in the forests, the biodiversity loss will also affect their right to food and nutrition fulfilment.
5. The climate change also affected rice productivity (not in Central Kalimantan but South Kalimantan, but we see the geographical similarity between two regions)[[9]](#footnote-9) and temperature rise resulted in loss of forests and soil fertility, affecting loss of foods[[10]](#footnote-10).
6. Assessment and research done by researchers in an article entitled *Impacts of the 2015 fire season on peat-swamp forest biodiversity in Indonesian Borneo* highlights a number of negative impacts of the 2015 peat and forest fires on biodiversity in Kalimantan. This is caused by forest loss, including reduced size of large forest patches and complete loss of some smaller forest patches, health impacts of prolonged haze inhalation, potentially compromised availability of and/or ability to find food by forest animals, as well as increasing river acidity and reduced local fish catches.[[11]](#footnote-11)

**Climate Change and Traditional Agricultural Systems in Central Kalimantan**

1. Most indigenous peoples and/or local communities in Indonesia, in this context Central Kalimantan, still use traditional agricultural systems which have been passed down from generation to generation by their ancestors. One of the traditional farming systems used is rotational cultivation or swidden agriculture that use slash-and-burn methods (hereafter, we will choose the term ‘rotational cultivation’)[[12]](#footnote-12). The rotational cultivation is the most suitable farming method in Central Kalimantan’s hard and dry type of soil.
2. The locals in Kapuas dan Gunung Mas District, Central Kalimantan, told FIAN Indonesia they actually prefer practising traditional agricultural systems rather than chemical-intensive farming, especially in the process of the land clearing and fertilising the soil. Instead of using chemical substances such as herbicide to clear the weeds and perennials or chemical fertiliser to fertilise the soil and plants, they use slash-and-burn methods which can clear the land as well as produce ash to make the soil fertile and plants thrive. Some local communities also used a mix of organic materials for making natural pesticides. At the heart of this traditional agricultural system is the use of local seeds which are shared, propagated, saved, and inherited in the family and communities. These local seeds are the varieties of upland rice and horticultural crops in the form of vegetables such as long beans, bitter gourd, sour eggplant, chillies, and white pumpkins. These crops are the prominent food and nutritional sources for the farmers’ households. The organic and diverse character of this agricultural system also signifies the independence of farmers' households in producing their own food henceforth the ability to be more resilient in a time of crisis.
3. Nevertheless, many local communities no longer practise this agricultural system. The locals used to have a season calendar as a reference to plant the upland rice as the planting and harvesting process is closely related to the stability of climate. An informant said the climate could still be predicted a few years ago so that the people in the village had more or less the same planting and harvesting season calendar, but since 2015, the weather could not be predicted anymore; the rain and dry seasons were coming all of sudden so that they disrupt the schedule of upland rice planting and harvesting. It happened in other villages as well. Local community whom we visited in another village in a different district (Manuhing Raya Subdistrict, Gunung Mas District) also told us the same story: the unpredictable weather disrupted their cultivation plans, resulted in pest disturbances and decreased quality of the harvests. Many women in the research field also reported that the fruit trees in their villages no longer produce as much and as delicious fruits as they used to.
4. This, and the fact that the district government also released a regulation[[13]](#footnote-13) that prohibited rotational cultivation at the same year (2015), are the reason why local communities gradually abandoned rotational cultivation and chose other ways to fulfil their food needs. After the forest and land fires in 1997/8, the Government of Indonesia issued a policy prohibiting burning land and forests. This prohibition applies to indigenous and/or local communities who use traditional plantation and agricultural systems such as in Central Kalimantan. The issuance of various laws and regulations prohibiting the use of traditional farming methods by indigenous and/or local communities was followed by repressive actions by the police officers who arrested farmers who cultivated fields using this traditional agricultural system. The arrests made by the police of people who wanted to farm using traditional farming systems made more and more people not dare to do farming again.[[14]](#footnote-14) The regulation treats the rotational cultivation practised by the community as the sole culprit of land and forest fire in Central Kalimantan instead of regulating and disciplining big corporations in mining and palm oil plantation sectors, while some forest fires, in fact, were caused by corporations[[15]](#footnote-15).
5. The local people also no longer do rotational cultivation because of the fear of being attacked by animals, such as monkeys and birds, who eat up their crops since there are fewer fields than before. The community realises that wild animals such as monkeys and birds have always eaten their crops, but have never harmed farmers because there are still a large number of cultivators. However, since fewer and fewer farmers are cultivating and the forest is decreasing due to the opening of large-scale plantations and mining, the attacks by wild animals are increasingly narrowing and harming the cultivators.

**Consequences to People’s Right to Food and Nutrition**

1. The inability to carry out rotational cultivation has led to several consequences in terms of people’s right to food and nutrition:
2. For people in the villages of Kalumpang and Mantangai Hulu in Kapuas District, who averagely stopped doing rotational cultivation around the year of 2015- 2018, the rice and vegetables that are usually planted on the local’s own field must be bought with cash at the market. According to the farmers, the hard and dry type of soil in their lands that is not being burned will not be able to grow accordingly. The burning prohibition promoted by the government not only eliminated the livelihoods of slash-and-burn cultivators, but also caused the disappearance of local upland rice seeds that cannot survive more than one year if not planted.
3. In the village of Sepang Kota, after the prohibition of burning the land was enforced, although the community still tried to carry out the traditional farming system by burning land secretly with a smaller land area (from 5-10 hectares, to 1-2 hectares), the many stories of farmers in other villages being arrested due to land burning eventually made them afraid and decided not to plant at all. Same as people in Kalumpang and Mantangai Hulu, most of the households’ food needs are met by buying from the market, even though they have never bought rice before as rice from the fields can be used for one year. They perceive that rotational cultivation with slash-and-burn methods which require specific practice to make ‘partition’ to prevent the fire creeping to other areas is not the same as uncontrolled and reckless burning which can cause massive forest fires.
4. In conclusion, climate change here can be seen as (1) a narrative to limit community’s sovereignty and independence to produce their foods (manifested as policy and regulations), shifting them to fulfill their needs from the market and the price volatility; and (2) a contributing factor that exacerbates the man-made disasters (hydrometeorological disaster such as flood and land and forest fire) which resulted in harvest failures and loss of livelihoods, furthermore being a contributing factor that eliminates traditions related to traditional agricultural system (considering rotational cultivation as a form of social institution in the community).

**Food Estate: Challenges in the promotion, protection, and fulfilment of the full realization of the right to food in the context of the adverse effects of climate change**

1. During the pandemic in late 2020, Indonesian Government released a policy to develop food estates in many provinces in Indonesia, including in Central Kalimantan. To realise this project, the government released several policies and one of the policies is on issuing permits for opening food estate land in forest areas, including in the protection forests[[16]](#footnote-16).
2. Greenpeace in its report states that food estates are not a solution to the food crisis, but rather it exacerbates the climate crisis through massive exploitation of forests and peatlands. One example is in Gunung Mas, the food estate project has destroyed 700 hectares of forest and threatens indigenous territories and biodiversity. It is reported that this land clearing has also caused flooding to occur more frequently in several surrounding villages. In fact, since it was opened, floods have occurred three times, especially in areas crossed by the Tambun and Tambakung Rivers. When heavy rains occur, remnants of land clearing and planting such as wood debris, sand and fertilisers can be carried into nearby rivers, causing flooding and river pollution which is detrimental to people who still use river water for their household needs as well as reduction in the number of fish as a food source. It is feared that if this project continues, an estimated 3 million hectares of forest in Indonesia will be lost.[[17]](#footnote-17)
3. It is ironic to see that while Indonesia has a high ambition to reduce greenhouse gas emissions by 29% by 2030 to then achieve zero emissions by 2060[[18]](#footnote-18), but instead of respecting and protecting traditional agricultural systems, they imposed monoculture and chemical-intensive agriculture which created deforestation and huge carbon release.
1. See Bayong Tjasyono, “Meteorology in Indonesian Equatorial Region”, accessed from <http://file.upi.edu/Direktori/SPS/PRODI.PENDIDIKAN_IPA/BAYONG_TJASYONO/Meteorologi_in_Indonesia.pdf> [↑](#footnote-ref-1)
2. See Muh Ibnu Aqil, *The Jakarta Post,* “Gov’t action called as climate change affects disaster risks”, accessed from<https://www.thejakartapost.com/indonesia/2022/11/23/govt-action-called-as-climate-change-affects-disaster-risks.html> [↑](#footnote-ref-2)
3. See Michael Case, Fitrian Ardiansyah, Emily Spector, “Climate Change in Indonesia: Implications for Humans and Nature”, 2007, accessed from <http://awsassets.panda.org/downloads/inodesian_climate_change_impacts_report_14nov07.pdf> [↑](#footnote-ref-3)
4. See Pantau Gambut, “Sejarah”, n.d., <https://pantaugambut.id/pelajari/sejarah> [↑](#footnote-ref-4)
5. See *BBC News Indonesia,* “Pegiat kecam putusan MA bebaskan Jokowi dari ‘perbuatan melawan hukum’ atas karhutla di Kalteng, ‘Kalau pemerintah saja tidak patuh, bagaimana pihak lain?’”, 2022, accessed from <https://www.bbc.com/indonesia/articles/cv29mnm91w0o> [↑](#footnote-ref-5)
6. See Callistasia Wijaya, *BBC News Indonesia,* “Kebakaran hutan Kalimantan Tengah: ‘Warga batuk-batuk, sesak napas, hingga harus turun tangan padamkan api’”, 2019, accessed from <https://www.bbc.com/indonesia/indonesia-49445325> [↑](#footnote-ref-6)
7. World Bank, 2018, “Laporan Pengetahuan Lanskap Berkelanjutan”, accessed from <https://openknowledge.worldbank.org/bitstream/handle/10986/23840/Forest%20Fire%20Notes%20-%20Bahasa%20final%20april%2018.pdf?sequence=6&isAllowed=y> [↑](#footnote-ref-7)
8. See Hans Nicholas Jong, *Mongabay,* 2019, “Indonesia fires cost nation $5 billion this year: World Bank”, from <https://news.mongabay.com/2019/12/indonesia-fires-cost-nation-5-billion-this-year-world-bank/> [↑](#footnote-ref-8)
9. See Maya Amalia Achyadi et al., “Impacts of Climate Change on Agriculture for Local Paddy Water Requirement Irrigation Barito Kuala, South Kalimantan, Indonesia”, *Journal of Wetlands Environmental Management* accessed from <https://ijwem.ulm.ac.id/index.php/ijwem/article/view/210> [↑](#footnote-ref-9)
10. See Sari Marlina, Bambang Supriyono Lautm Aswin Usup, and Revi Suryanati, “The impact of climate change on community, culture, and gender in Central Kalimantan”, 2020, Accessed from <https://www.researchgate.net/publication/347168579_The_impact_of_climate_change_on_community_culture_and_gender_in_Central_Kalimantan> [↑](#footnote-ref-10)
11. See Mark E. Harrison, Bernat Ripoll Capilla, Sara A. Thornton, Megan E Cattau, and Susan E. Page, 2016. Source: https://peatlands.org/assets/uploads/2019/06/ipc16p713-717a040harrison.ripoll.etal\_.pdf [↑](#footnote-ref-11)
12. Rotational cultivation is better at representing the farming system practiced by people who move at one time and at a certain time they will return to their previous land compared to swidden agriculture which implies shifting land use and ignoring the land that has been used afterwards. [↑](#footnote-ref-12)
13. This regulation was Peraturan Gubernur Kalimantan Tengah No. 49 Tahun 2015 tentang Pencabutan Atas Peraturan Gubernur Kalimantan Tengah No. 52 Tahun 2008 tentang Pedoman Pembukaan Lahan dan Pekarangan bagi Masyarakat di Kalimantan Tengah dan Peraturan Gubernur Kalimantan Tengah No. 15 Tahun 2010 tentang Perubahan Atas Peraturan Gubernur Kalimantan Tengah No. 52 Tahun 2008 tentang Pedoman Pembukaan Lahan dan Pekarangan Bagi Masyarakat di Kalimantan Tengah or translated Governor of Central Kalimantan Regulation No. 49 of 2015 concerning Revocation of Central Kalimantan Governor Regulation No. 52 of 2008 concerning Guidelines for Land and Yard Clearing for Communities in Central Kalimantan and Central Kalimantan Governor Regulation No. 15 of 2010 concerning Amendments to Central Kalimantan Governor Regulation No. 52 of 2008 concerning Guidelines for Land and Yard Clearing for Communities in Central Kalimantan. [↑](#footnote-ref-13)
14. Ada lima undang-undang nasional yang mengatur pelarangan pembakaran lahan yang berdampak pelarangan penggunaan sistem pertanian tradisional. [↑](#footnote-ref-14)
15. An informant in Mentangai subdistrict said that in 2018, there was an extensive forest and land fire disaster in this subdistrict. One of the cultivators from Mantangai Hulu was accused and arrested of being the perpetrator of the fire near the land owned by PT KLM (Kalimantan Lestari Mandiri, a palm oil company operated in Mantangai). After investigation, it turned out that the fire was caused by land clearing activities carried out by PT KLM itself. Based on a report issued by WALHI Central Kalimantan (2019)#, due to the environmental impact caused by the activity of burning the land, PT KLM was charged with corporate crime in Law No. 32 of 2009. [↑](#footnote-ref-15)
16. Ministry of Environmental and Forest regulation No, 7 of 2021 on Forestry Planning, Changes in Allotment of Forest Areas and Changes in Functions of Forest Areas, and Use of Forest Areas [↑](#footnote-ref-16)
17. Greenpeace, 2022, “Indonesia’s Food Estate Program: Feeding The Climate Crisis” . Source : [a388b294-food-estate-report\_english\_new-2.pdf (greenpeace.org)](https://www.greenpeace.org/static/planet4-indonesia-stateless/2022/11/a388b294-food-estate-report_english_new-2.pdf) [↑](#footnote-ref-17)
18. https://fiskal.kemenkeu.go.id/baca/2022/06/10/4350-indonesia-pastikan-komitmen-terhadap-perubahan-iklim#:~:text=Jakarta%20(10%2F06)%3A%20Pemerintah,zero%20emissions%20pada%20tahun%202060. [↑](#footnote-ref-18)