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URGENT ALERT

Ref.: Information on the critical situation of the Pantanal and local populations

Dear Special Rapporteurs Mr. Fry, Mr. Boyd and Mr. Tzay,

Please accept our warm regards on behalf of the Interamerican Association for Environmental Defense (AIDA) and Ecoa – Ecologia e Ação. AIDA is a non-governmental organization working to protect the right to a healthy and ecologically balanced environment in Latin America. ECOA is a non-governmental organization that promotes socio-environmental actions for the conservation of natural environments and their local populations in the Brazilian Pantanal. **The purpose of this communication is to inform you of the critical situation of the Pantanal Wetland located in Brazil, Bolivia, and Paraguay.**

We urge the Office of the Special Rapporteur on human rights and climate change, Special Rapporteur on human rights and the environment, Special Rapporteur on the rights of indigenous people to support the protection of the Pantanal, which is **at risk of total collapse**, by making an urgent call and recommendations to Brazil, Bolivia, and Paraguay to prevent devastating wildfires in the coming years. We respectfully request the Office conduct a visit to the Pantanal so that these recommendations may be made with greater urgency and force.

I. ABOUT THE PANTANAL

The Pantanal is the world's largest transboundary freshwater wetland, covering an area of 179,300 km²¹ across Brazil (80 percent), Bolivia (10-15 percent), and Paraguay (5-10 percent).² It contains six Ramsar sites: the Bolivian Pantanal, the Pantanal Matogrossense National Park, the SESC Pantanal National Heritage Private Reserve, the Fazenda Rio Negro National Heritage Private Reserve, Rio Negro National Park, and the Taiamã Ecological Station. Parts of the Pantanal are also protected by UNESCO as a Biosphere Reserve.³ Despite these protective designations, much of the Pantanal is privately owned and therefore unprotected.⁴

The importance of the Pantanal, as a distinct biome, is hard to overstate. Through its natural cycle—famously known as its “flood pulse”—which regulates water retention and drainage each year, the Pantanal plays a crucial role in regulating the local climate,⁵ purifying water, storing carbon, controlling soil fertility, and preventing erosion.⁶ These functions maintain the area's rich biodiversity, and provide water, food, and livelihoods for the Pantanal's human populations. The Pantanal supports thousands of species: at least 3,500 plant, 600 bird, 150 mammal, 175 reptile, 40 amphibian, and 300 freshwater fish species.⁷ Many of these species are threatened or in danger of extinction, including the well-known jaguar, tapir, and giant anteater, as well as the tuyuyu, marsh deer, giant otter, and macaw.⁸ The Pantanal is also home to the highest concentration of species such as jaguars and caimans in South America,⁹ and has the highest density of mammal species on Earth.¹⁰

Approximately 1.5 million people live in this region between Bolivia, Brazil, and Paraguay.¹¹ There are more than 270 communities that rely, directly or indirectly, on the Pantanal's wetlands

¹ Jose A Marengo, et al., *Extreme Drought in the Brazilian Pantanal in 2019-2020: Characterization, Causes, and Impacts*, 3 FRONTIERS IN WATER 2 (2021).

² Frederick Swarts, “The Pantanal in the 21st Century: For the Planet's Largest Wetland, an Uncertain Future” in THE PANTANAL OF BRAZIL, BOLIVIA AND PARAGUAY (2000), <http://www.pantanal.org/pantdesc.htm#:~:text=An%20estimated%2080%20percent%20of,is%20located%20in%20northeastern%20Paraguay>.

³ Walfrido Moraes Tomas, et al., *Distance surveys reveal 17 million vertebrates directly killed by the 2020's wildfires in the Pantanal, Brazil*, 11 SCIENTIFIC REPORTER 23547 (2021), <https://www.nature.com/articles/s41598-021-02844-5>.

⁴ Around 95 percent of the Pantanal is privately owned. See Michelaina Johnson, “5 Interesting Facts About the Pantanal, the World's Largest Tropical Wetland,” WORLD WILDLIFE FUND, Accessed 5 July 2022, <https://www.worldwildlife.org/stories/5-interesting-facts-about-the-pantanal-the-world-s-largest-tropical-wetland>.

⁵ Valentina Bedoya Serrati, *Exploring Ecosystem Services Provided by the Pantanal Wetland, South America*, WAGENINGEN UNIVERSITY AND RESEARCH 13, https://observatoriopantanal.org/wp-content/uploads/crm_perks_uploads/5cb0f734750a11456042675850236/2019/08/2018_exploring_ecosystem_services_provided_by_the_pantana_l_wetland_south_america.pdf

⁶ *Id.* at 14.

⁷ The Pantanal: Saving the World's Largest Tropical Wetland, WORLD WILDLIFE FUND, Accessed 5 July 2022, <https://www.worldwildlife.org/projects/the-pantanal-saving-the-world-s-largest-tropical-wetland#:~:text=Situated%20in%20the%20heart%20of,Bolivia%2C%20Brazil%2C%20and%20Paraguay>.

⁸ This is particularly troublesome because many of these species are under threat: the jaguar is categorized as near threatened and the lowland tapir and the giant anteater are categorized as vulnerable. See Jill Langlois, *Volunteers Coming to Rescue Jaguars, Other Animals Injured During Brazil's Wildfires*, NATIONAL GEOGRAPHIC, 2 October 2020, <https://www.nationalgeographic.com/animals/article/volunteers-rescuing-jaguars-injured-during-brazil-wildfires>.

⁹ The Pantanal: Saving the World's Largest Tropical Wetland, *supra* note 7.

¹⁰ Jill Langlois, *A Waterway Project in Brazil Imperils a Vast Tropical Wetland*, YALE ENVIRONMENT 360, 26 May 2022, <https://e360.yale.edu/features/a-waterway-project-in-brazil-imperils-a-vast-tropical-wetland>.

¹¹ The Pantanal wetlands: the most beautiful place you've never heard of – and why it needs protecting, GREENPEACE UK, Accessed 22 September 2022, <https://www.greenpeace.org.uk/news/pantanal-wetlands-brazil-wildlife-fires-industrial-meat/>

for their livelihoods, including multiple indigenous groups, cattle ranchers, and ribeirinhos.¹² Additionally, the importance of the ecosystem extends far beyond its ‘borders:’ the Pantanal wetland is fundamental to the welfare of more than 8 million people who live there.¹³

The Pantanal plays an important role in supporting the livelihoods of the local people such as fishing, hunting, gathering of raw materials, and eco-tourism. The Pantanal is essential for those who practice subsistence fishing—a centuries-old practice—which typically is the main source of protein in their diets.¹⁴ It is hard to overstate the importance of healthy fisheries to local communities. An estimate suggests that around 70 percent of the Pantanal locals—including both indigenous people and ribeirinhos—depend on fishing as their main livelihood.¹⁵

The Pantanal **is at risk of complete collapse**. In the last few years, the Pantanal has been devastated by fires, droughts, agricultural expansion by agribusiness and large-scale ranching, and the construction of dams and hydroelectric plants. These factors, in conjunction with weak policies and a lack of transnational collaboration, have destroyed millions of hectares of the Pantanal biome with direct consequences on the health of the entire ecosystem.

a. Fires and Droughts

In recent years, the intensification of human activity linked to extractive practices—led primarily by agribusiness and ranching—has created the conditions for unprecedented droughts and fires in the Pantanal region. Although fires are a part of the natural cycle of the Pantanal and small scale local ranchers historically used fires in a controlled and sustainable manner, the recent fires have far exceeded these past patterns. In 2019, fires destroyed thousands of hectares in the Pantanal, contributing to unusually dry conditions, resulting in average annual rainfall in 2020 that was 26 percent lower than the average of the last three decades,¹⁶ fueling the unprecedented fires in 2020.¹⁷ The fires of 2020 alone consumed over 4.5 million hectares, 30 percent of the Pantanal region.¹⁸ In Bolivia, the fires of 2020 affected 5.6 million acres (2.3 million ha) of the Pantanal, 23% of which were within protected areas.¹⁹ This scale of devastation locked in the conditions for further

¹²People of the Pantanal, WORLD WILDLIFE FUND, Accessed 22 September, 2022, <https://www.worldwildlife.org/magazine/issues/spring-2020/articles/people-of-the-pantanal>. Ribeirinhos are traditional communities along rivers who engage in fishing and small-scale farming, typically living in pile dwellings along the river and using motor boats as their primary form of transportation.

¹³ Results of the trinational project Sustainable Landscapes of the Pantanal, WORLD WILDLIFE FUND, Accessed 22 January, 2023. <https://www.wwf.org.bo/?uNewsID=380790>

¹⁴ See Serrati, *supra* note 6 at 10 (citing Mateus et al. 2011).

¹⁵ Rafael Chiaravalloti, *The Displacement of Insufficiently ‘Traditional’ Communities: Local Fisheries in the Pantanal* (2019), 17 CONSERVATION AND SOCIETY 173-183, 177.

¹⁶ Guilherme A.V. Mataveli, et al., *2020 Pantanal’s Widespread Fire: Short- and Long-Term Implications for Biodiversity and Conservation* (2021) 30 BIODIVERSITY AND CONSERVATION 3300, <https://link.springer.com/article/10.1007/s10531-021-02243-2>.

¹⁷ Anna Ionova, *‘Devastating’ Fires Engulf Brazilian Pantanal Wetlands – Again*, MONGABAY, 23 December 2020, <https://news.mongabay.com/2020/12/devastating-fires-engulf-brazilian-pantanal-wetlands-again/>.

¹⁸ *Wildlife Death Toll from 2020 Pantanal Fires Tops 17 Million, Study Finds*, MONGABAY, 17 December 2021, <https://news.mongabay.com/2021/12/wildlife-death-toll-from-2020-pantanal-fires-tops-17-million-study-finds/>.

¹⁹ <https://www.worldwildlife.org/descubre-wwf/historias/incendios-en-el-pantanal-establecen-nuevo-record>

drought and fires in 2021: in Bolivia, some 12,000 hectares burned.²⁰ In Brazil, the 2021 fires consumed about 1,393,500,²¹ more than the annual average from 2000 to 2019.²²

Without serious intervention, this vicious cycle will likely continue in the coming years. **From January to June of 2022 fire claimed more than 123,000 hectares of the Pantanal, representing a 26% increase compared to the same period in 2021,**²³ all while precipitation continues to decrease in the region. Furthermore, climate projections show that by 2040 local annual temperatures will increase by up to 3.5°C and annual precipitation will decrease by 10–20 percent. The prospect for 2100 is equally worrisome, with a projected 7°C increase in temperature and a 30 percent decrease in precipitation.²⁴

Even with intervention, the existing damage to the Pantanal will likely have cascading and long-lasting effects. Due to the intensity and duration of the droughts, the Pantanal has not had any opportunity to recuperate from the devastation of recent years. A study by NASA found a 30 percent decrease in vegetation productivity, a 9 percent decrease in evotranspiration (ET),²⁵ and a 5 percent increase in runoff across the burned regions.²⁶ These trends, in turn, can trigger or accelerate deforestation because “scorched soils with less vegetation can mean less rainfall being soaked up by plants, more water and sediment running off the land into the streams, and less moisture exchange with the air above.”²⁷

As previously mentioned, fires have long been used at a small scale in the Pantanal to clear land and stimulate new vegetation growth.²⁸ However, Reporter Brasil, a local news outlet, found that 2020 fires originated from farms that supply large-scale agribusinesses such as JBS, Marfrig, and Minerva,²⁹ not small-scale producers. Given the growing demand for agricultural exports for animal feed, biodiesel, and other products, it is unlikely that these companies will abate their practices without outside pressure. Brazil, for instance, is the largest exporter of both soybeans and beef in the world.

²⁰ *Observatorio Pantanal. Los incendios forestales regresan en el Pantanal boliviano.* Noticia de 4 de junio de 2021. En: <https://observatoriopantanal.org/es/2021/06/04/los-incendios-forestales-regresan-en-el-pantanal-boliviano/>.

²¹ Según el monitoreo de la Alerta de Área Quemada con Monitoreo Satelital Estimado (ALARMES), sistema creado por el Laboratorio de Aplicaciones Satelitales Ambientales (LASA), de la Universidad Federal de Río de Janeiro (UFRJ). ALARMES. En: <https://alarmes.lasa.ufrj.br/dashboard/9091#>>

²² Fundación Amigos de la Naturaleza (2020) Incendios transfronterizos y dinámica del fuego en el Pantanal. Santa Cruz, Bolivia. En: http://incendios.fan-bo.org/Satirfo/reportes/2020/Reporte_Incendios_Pantanal_07_Ago_2020.pdf

²³ Jornal Nacional. (2022, July 16). Pantanal começa a temporada mais seca do Ano em Estado de Alerta. Pantanal começa a temporada mais seca do ano em estado de alerta. Retrieved August 1, 2022, from <https://g1.globo.com/jornal-nacional/noticia/2022/07/16/pantanal-comeca-a-temporada-mais-seca-do-ano-em-estado-de-alerta.ghtml>

²⁴ Marengo, J. A., Oliveira, G. S., & Alves, L. M. (2015). Climate change scenarios in the Pantanal. *Dynamics of the pantanal wetland in South America*, 227-238.

²⁵ Evotranspiration, or ET, is the amount of evaporation from the surface of the land plus the amount of transpiration from plants.

²⁶ See Sujay Kumar, et al., Changes in Land Use Enhance the Sensitivity of Tropical Ecosystems to Fire-Climate Extremes (2022), 12 Scientific Reports 1-1.

²⁷ *A Human Fingerprint on the Pantanal Inferno*, NASA EARTH OBSERVATORY, Accessed 5 July 2022, <https://earthobservatory.nasa.gov/images/149398/a-human-fingerprint-on-the-pantanal-inferno>.

²⁸ Renata Libonati, et al., *Rescue Brazil's Burning Pantanal Wetlands* (2020), 588 NATURE 218, 219. Marengo, J. A., Cunha, A. P., Cuartas, L. A., Deusdará Leal, K. R., Broedel, E., Seluchi, M. E., ... & Bender, F. (2021); Jose A. Marengo, et al., *Extreme Drought in the Brazilian Pantanal in 2019–2020: Characterization, Causes, and Impacts* (2021), 3 FRONTIERS IN WATER 13; CJR Alho & J. Sabino, *A Conservation Agenda for the Pantanal's Biodiversity* (2011), 71 BRAZILIAN JOURNAL OF BIOLOGY, 327-335.

²⁹ Daniel Camargos & André Campos, *Pantanal Fires Started on Farms Belonging to Suppliers of Agribusiness Giants*, REPÓRTER BRASIL, 8 October 2020, <https://reporterbrasil.org.br/2020/10/pantanal-fires-started-on-farms-belonging-to-suppliers-of-agribusiness-giants/>.

Deforestation is another agricultural method to clear land that has serious consequences for the survival of the biome. In a recent study by the World Resources Institute, Brazil and Bolivia were first and third, respectively, in the world for primary forest loss in 2021.³⁰ Another study suggested that, **based on the rate of deforestation in the Pantanal between 1976 and 2008, the natural vegetation of the biome could be completely eliminated by 2050.**³¹

The expansion of agribusiness and large-scale ranching through deforestation, habitat destruction of native flora and fauna,³² pollution of soil and water sources, and uncontrolled and unregulated use of fires are the primary causes of the deterioration of the Pantanal.

II. IMPACTS

The destruction of the Pantanal has had serious and wide-ranging environmental consequences, including biodiversity loss, exacerbating the effects of climate change through the release of stored carbon and reducing water and soil quality through pollution and agrochemical discharge.

a. Biodiversity Loss

Biodiversity loss in the Pantanal is directly attributable to the loss of species habitat due to fires, deforestation, and the construction of dams and hydroelectric plants. According to one estimate, as many as 17 million animals perished in the 2020 fires alone.³³ The actual number is likely higher as the estimate did not include animals who died of starvation in the aftermath due to lack of food and water. In particular, the fires affected reptiles, amphibians, and small mammals the most as the fires not only burned above-ground but also raged underground due to wetland vegetation dried by the ongoing droughts.³⁴ Given the role these small animals play in the food chain as both predators and prey, scientists are fearful that their unprecedented loss will “result in an unimaginable unbalance to the ecosystem.”³⁵ Deforestation also affects the biodiversity of the Pantanal by destroying the homes and food sources of numerous species. Although the construction of dams mainly affects aquatic life, dams can harm riparian vegetation and human communities that live and survive in direct relationship with rivers.

b. Acceleration of the Climate Crisis

Unsurprisingly, the destruction of the Pantanal also has dire consequences for the climate crisis. The fires in the Brazilian region of the Pantanal released an estimated 115 million tons of carbon

³⁰ Mikaela Weisse & Elizabeth Goldman, *Forest Pulse: The Latest on the World's Forests*, WORLD RESOURCES INSTITUTE, <https://research.wri.org/gfr/latest-analysis-deforestation-trends>.

³¹ Cleber J. R. Alho, et al., *Threats to the Biodiversity of the Brazilian Pantanal Due to Land Use and Occupation* (2019), 22 AMBIENTE & SOCIDADE 7, <https://www.scielo.br/j/asoc/a/BqQNwh94qn5g9kh56FZchYj/>.

³² Cf. Guerra et al. (2020).

³³ Tomas, et al., *supra* note 3.

³⁴ Catrin Einhorn, et al., *The World's Largest Tropical Wetland Has Become an Inferno*, NEW YORK TIMES, 13 October 2020, <https://www.nytimes.com/interactive/2020/10/13/climate/pantanal-brazil-fires.html>.

³⁵ Victoria Gill, *Brazil Wildfires Killed an Estimated 17 Million Animals*, BBC NEWS, 16 December 2021, <https://www.bbc.com/news/science-environment-59670396>.

dioxide into the atmosphere just in 2020.³⁶ This exceeds 20 percent of the CO2 emissions generated by Colombia in the same year.³⁷

The result is a cataclysmic feedback loop in which the acceleration of the climate crisis leads to an accelerated deterioration of the biome and vice versa. This feedback loop will also have repercussions for surrounding biomes and their ability to sequester carbon: “the health of the lowland Pantanal is directly linked to the health of the Cerrado highlands surrounding it, whose rivers feed the wetland flood pulse, and the Amazon’s rainforest ability to generate rainfall in the region.”³⁸ In other words, the health of the Pantanal has global implications.

The Pantanal has felt the impacts of climate change for years—if the corresponding measures to reduce emissions and adapt to climate change are not implemented, the damage will be even greater. A 2021 World Meteorological Organization (WMO) report analyzed the most important impacts of climate change that Latin America is already experiencing, including rising temperatures, noting that 2020 was a record year for intense drought in the southern Amazon and the Pantanal—the worst in 60 years, and that fires in 2020 were worse than the previous year on record.³⁹

The preservation of the ecosystem of the Pantanal is fundamental to mitigate the effects of climate change and comply with the climate commitments of the States of Brazil, Bolivia and Paraguay. These states ratified the United Nations Framework Convention on Climate Change (UNFCCC), in which they agreed to

achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.⁴⁰

The destruction of the Pantanal demonstrates that States are not taking seriously their commitments to implement measures to mitigate climate change, to promote and support the development and application of technologies that reduce or prevent anthropogenic emissions of greenhouse gases, to promote sustainable management of wastes, deposits of greenhouse gases, or to cooperate to adapt to the impacts of climate change.⁴¹ The states’ inaction to protect the Pantanal also highlights

³⁶ Mikhaela A.J.S. Pletsch, et al., *The 2020 Brazilian Pantanal Fires* (2021), In ANUARIO DE ACADEMIA BRASILEIRA DE CIENCIAS, Vol. 93.

³⁷ Hannah Ritchie & Max Roser, CO2 and Greenhouse Gas Emissions, Our World in Data, Accessed 7 July 2022, <https://ourworldindata.org/co2-emissions#co2-emissions-by-region>.

³⁸ *Paradise Lost? Protecting the Pantanal, a Precious Ecosystem in Crisis*, ENVIRONMENTAL JUSTICE FOUNDATION 10, <https://ejfoundation.org/resources/downloads/EJF-Pantanal-Briefing-2020-Final.pdf>.

³⁹ World Meteorological Organization (WMO), *State of the Climate in Latin America and the Caribbean 2020, 2021* https://library.wmo.int/doc_num.php?explnum_id=10876 FOR TRAD: World Meteorological Organization, "State of the Climate in Latin America and the Caribbean 2020, 2021".

⁴⁰ United Nations Framework Convention on Climate Change (UNFCCC), article 2.

⁴¹ United Nations Framework Convention on Climate Change (UNFCCC), article 12 and 4.

their failure to comply with the binding commitment to reduce emissions of the six most important greenhouse gases, including carbon dioxide (CO₂), as established in the Kyoto Protocol.⁴²

The Brazilian, Bolivian, and Paraguayan states must take action to preserve the Pantanal to comply with the goals stipulated in the Paris Agreement—a related legal instrument of the UNFCCC that these states ratified—which recognizes the need to reduce emissions to jointly ensure climate protection, guaranteeing to limit the number of greenhouse gases in the atmosphere as well as to limit warming “well below 2°C above pre-industrial levels, and to pursue efforts to limit this temperature increase to 1.5°C.”⁴³

c. Water and Soil Pollution

Ash from the fires in the Pantanal is a harmful pollutant of waterways as it accelerates a large scale fish kill phenomenon known as *dequada* (or *decoada*) in which river water dissolved oxygen levels drop and CO₂ levels increase, making it difficult for fish and other aquatic animals to survive and fostering conditions for harmful bacteria growth. Scientists are concerned that increased fires will bring higher amounts of ash into the rivers, worsening existing *dequadas*.⁴⁴

The reproduction dynamics of fish in the Pantanal are directly related to the health of the wetlands. Many fish species in the region are migratory and go up to river headwaters to reproduce. In a process known as *piracema*, the fish spawn at the headwaters and the larvae need to enter a protected wetland area so that they can grow. As most of the wetlands burned in the recent wildfires, the environment is no longer favorable for the growth of larvae and young fish, resulting in a decrease in the number of shoals of fish for the next cycles. Three species of migratory fish are already at risk—pacu (*Piaractus mesopotamicus*), jaú (*Zungaro zungaro*) and pintado (*Pseudoplatystoma corruscans*) and may suffer a further population reduction if the recent fire conditions continue.⁴⁵

III. HUMAN RIGHTS VIOLATIONS

The destruction of the Pantanal has impacted nearly every aspect of human life for those living in the region, resulting in a violation of several human rights.

a. Right to Healthy Environment

The Brazilian, Bolivian, and Paraguayan States’ failure to protect the Pantanal violates the right to a healthy environment, has been recognized by an extensive body of law, including a recent

⁴² Kyoto Protocol, 1998, <https://unfccc.int/resource/docs/convkp/kpspan.pdf>.

⁴³ Paris Agreement, 2015, Article 2. https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

⁴⁴ *Paradise Lost?*, *supra* note 49 at 8.

⁴⁵ Flávio Dias, *Queimadas no Pantanal podem afetar água dos rios e quantidade de peixes, alerta especialista*, G1 MATO GROSSO DO SUL, 30 October 2020, <https://g1.globo.com/ms/mato-grosso-do-sul/noticia/2020/10/30/queimadas-no-pantanal-podem-afetar-agua-dos-rios-e-quantidade-de-peixes-alerta-especialista.ghtml>.

resolution from the United Nations General Assembly,⁴⁶ UN Human Rights Council (Resolution 48/13),⁴⁷ and the Inter-American Court's Advisory Opinion (OC-23/17).⁴⁸

In its Resolution, the UN Human Rights Council encourages States to: build capacities for environmental protection activities in order to fulfil their human rights obligations and commitments; to adopt policies for the enjoyment of the right to a clean, healthy, and sustainable environment as appropriate, with particular emphasis on protecting biodiversity and ecosystems; and to continue to consider human rights obligations and commitments related to the enjoyment of a clean environment, Sustainable development goals, taking into account their integrated and multisectoral nature.

The destruction of the Pantanal shows the interconnectedness and interdependence between protecting human rights and guaranteeing a healthy environment. As such, that there are a number of environmental obligations which are *sine qua non* (essential) to Brazil's, Bolivia's, and Paraguay's fulfilment of their obligations to respect and guarantee other human rights.

To comply with these state obligations in the face of possible damage to the environment and to respect and guarantee the rights to life and integrity, States must comply with the five obligations of guarantee and promotion of rights to the environment according to the jurisprudence of the Inter-American Court:⁴⁹ a) guarantee every person, without any discrimination, a healthy environment in which to live; b) ensuring access to basic public services for all; c) promoting environmental protection; d) promoting environmental preservation; and e) promoting environmental improvement. In addition, during their actions, they must respect the obligations of prevention, precaution, cooperation and procedure in the field of environmental protection.

Under this framework, States must not only abstain from unlawfully polluting the atmosphere, water and land whenever these activities release substances that are harmful to the health and integrity of people,⁵⁰ but also have a positive obligation to guarantee everyone, without any discrimination, a healthy environment in which to live,⁵¹ which includes the duty to prevent⁵² third parties from harming protected legal assets.⁵³

⁴⁶ Resolution 76/300: The Human Right to a Clean, Healthy and Sustainable Environment, GENERAL ASSEMBLY, A/RES/76/300, on 28 July 2022.

⁴⁷ Resolution 48/13: The Human Right to a Clean, Healthy and Sustainable Environment, HUMAN RIGHTS COUNCIL, A/HRC/RES/48/13, 18 October 2021.

⁴⁸ *Advisory Opinion OC-23/17 of November 15, 2017 Requested by the Republic of Colombia: The Environment and Human Rights*, INTER-AMERICAN COURT OF HUMAN RIGHTS (IACrHR), 15 November 2017, <https://www.refworld.org/cases,IACRTHR,5e67c7744.html>.

⁴⁹ Inter-American Court of Human Rights. *Advisory Opinion OC-23/17*. November 15, 2017. Available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 60.

⁵⁰ UN. General Comment No. 14: The right to the highest attainable standard of health (article 12 of the International Covenant on Economic, Social and Cultural Rights). UN Doc. E/C.12/2000/4, August 11, 2000, para. 34. Inter-American Court of Human Rights, *Advisory Opinion OC-23/17*, November 15, 2017. Available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, p. 30.

⁵¹ GTPSS, "Indicadores de Progreso: Segundo Agrupamiento de Derechos", November 5, 2013, OEA/Ser.L/XXV.2.1, GT/PSS/doc.9/13, para. 26. Cited in: Inter-American Court of Human Rights, *Advisory Opinion OC-23/17*, November 15, 2017. Available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 60.

⁵² *Case of Velásquez Rodríguez v. Honduras*. Merits, para. 175; *Case of González et al.* Cited in: Inter-American Court of Human Rights, *Advisory Opinion OC-23/17*, November 15, 2017, available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 118.

⁵³ *Case of the Mapiripán Massacre v. Colombia*, supra, para. 111, and *Case of Gonzales Lluy et al. v. Ecuador*, supra, para. 170. Cited in: Inter-American Court of Human Rights, *Advisory Opinion OC-23/17*, November 15, 2017, available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 115.

Brazil has failed in its duty to ensure, through the use of all the means at its disposal, that activities carried out in the territory of the Pantanal do not cause significant damage to the environment. The extractive development model applied by large landowners and food companies in the region has caused severe environmental degradation.

The States that make up the Pantanal have not adopted adequate due diligence measures to avoid damage to the Pantanal and continue to fail to act in a manner adequate and proportional to the of risk of total ecological collapse. This inaction is in violation of the standards of international environmental and human rights protection.⁵⁴

Moreover, there is an even higher risk that the destruction of the Pantanal will harm the rights vulnerable groups, in the Pantanal who depend on the wetlands of the region for their subsistence and are thus especially impacted by fires, droughts and deforestation such as of indigenous peoples, peasants, and ribeirinhos.⁵⁵

Thus, by authorizing or directly performing activities that cause significant risks to the environment and human health in the Pantanal, Brazil, Paraguay, and Bolivia are incurring liability for their conduct and the conduct of third parties, private agents, due to the lack of sufficient regulation, supervision or oversight of these activities.⁵⁶

It is not enough for States to have legislative measures that regulate economic activities and the management of natural resources in order to curb environmental damage. In addition to the obligation to regulate, States have the obligation to oversee and intervene in these activities. The Brazilian, Bolivian, and Paraguayan States must establish appropriate mechanisms to supervise and inspect activities in the Pantanal, including third party activities, in order to guarantee the human rights that may be affected by the actions of public or private entities⁵⁷.

Brazil, for example, despite having a legislative and administrative framework to combat illegal environmentally harmful practices, such as deforestation, has not effectively inspected and curbed these activities. Brazil is not complying with its own regulations established for environmental protection, nor has it forcefully exercised administrative and judicial control over public and private actors by monitoring their activities. The worrisome data that point to the increase in fire and deforestation rates in the Pantanal, even in the face of serious damage to biodiversity, the climate, and to people and communities, serves as evidence of the Brazilian State's non-compliance. Additionally, Brazil failed to fulfill its duty to mitigate⁵⁸ the fires of 2020. President

⁵⁴ ITLOS, Responsibilities and Obligations of States with Respect to Activities in the Area. Advisory Opinion of 1 February 2011, para. 117, and International Law Commission, Commentary to the Draft Articles on Prevention of Transboundary Harm from Hazardous Activities G.A. Res. 56/82, UN Doc. NRES/56/82, art. 3, para. 11. Cited in: Inter-American Court of Human Rights, Advisory Opinion OC-23/17, November 15, 2017, available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 142.

⁵⁵ Inter-American Court of Human Rights, Advisory Opinion OC-23/17, November 15, 2017, available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 67.

⁵⁶ Inter-American Court of Human Rights, Advisory Opinion OC-23/17, November 15, 2017, available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 146-170.

⁵⁷ Inter-American Court of Human Rights, Case of Ximenes Lopes v. Brazil, para. 89 and 90. Case of Ximenes Lopes v. Brazil, para. 89 and 90; Case of the Kichwa Indigenous People of Sarayaku v. Ecuador, supra, para. 167; Case of I.V. v. Bolivia, supra, para. 154 and 208.

⁵⁸ Inter-American Court of Human Rights, Advisory Opinion OC-23/17, November 15, 2017, available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, para. 174.

Bolsonaro's 120-day moratorium on fire clearing in the Pantanal and the Amazon in July 2020 and the supposed deployment of federal and military agents to enforce the ban was never effectively implemented, leading many to believe these actions were merely a public relations stunt.⁵⁹ Indeed, those on the ground—ranchers, tour guides, veterinarians, journalists, and local fire departments—reported that there has been little to no federal presence in the Brazilian Pantanal.⁶⁰ Furthermore, the administration's funding to clear dead vegetation, which could have mitigated the spread of fires, was woefully insufficient.⁶¹

Such omissions and practices are contrary to the provisions of the Inter-American Court of Human Rights, which provides that States must take the following measures during and after environmental damage: (i) cleanup and restoration of the affected area; (ii) contain the geographic scope of the damage and prevent, if possible, impacts to other States; (iii) gather all necessary information on the incident and the existing danger of damage; (iv) inform potentially impacted persons during and after emergencies.⁶²

The lack of protection and the inadequate management of the Pantanal region and its resources also constitutes a violation of these obligations in the long term as it directly interferes with the Pantanal's capacity to regulate ecological processes. Wetlands environments are key to mitigating climate change given their capacity to act as carbon sinks by sequestering and storing carbon dioxide (CO₂) from the atmosphere.⁶³ The Pantanal region is no exception. A 2014 study estimated that the Pantanal stores 23.62 tons of CO₂ per hectare during the non-flooded seasons and 103.53 during flooded seasons.⁶⁴ Furthermore, this region also contributes to a healthy local environment by regulating water flow, preventing floods and droughts,⁶⁵ and purifying water through natural filtration.⁶⁶

The right to a healthy environment described above is interconnected with the rights to life, integrity, and health.⁶⁷ An increased risk of fires and droughts puts lives at risk, not only directly, but also through the resulting lack of access to adequate food and water, the destruction of homes and land, and increased susceptibility to health problems.

⁵⁹ *Paradise Lost?*, *supra* note 49 at 9.

⁶⁰ *Id.*

⁶¹ Ciara Nugent, *Brazil is Burning – and President Bolsonaro's 'Terminator' Environment Minister is Rolling Back More Protections*, TIME, 1 October 2020, <https://time.com/5895167/brazil-fires-ricardo-salles-environment/>.

⁶² IACHR Court: Inter-American Court of Human Rights, Advisory Opinion OC-23/17, November 15, 2017, available at: https://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf, p. 71.

⁶³ Mitsch, W. J., Bernal, B., Nahlik, A. M., Mander, Ü., Zhang, L., Anderson, C. J., ... & Brix, H. (2013). Wetlands, carbon, and climate change. *Landscape Ecology*, 28(4), 583-597.

⁶⁴ Vega, L. F., Nunes da Cunha, C., Rothaupt, K. O., Moreira, M. Z., & Wantzen, K. M. (2014). Does flood pulsing act as a switch to store or release sediment-bound carbon in seasonal floodplain lakes? Case study from the Colombian Orinoco-Llanos and the Brazilian Pantanal. *Wetlands*, 34(1), 177-187.

⁶⁵ Wantzen, K. M., da Cunha, C. N., Junk, W. J., Girard, P., Rossetto, O. C., Penha, J. M., ... & Callil, C. (2008). Towards a sustainable management concept for ecosystem services of the Pantanal wetland. *Ecohydrology & Hydrobiology*, 8(2-4), 115-138.

⁶⁶ Zeilhofer, P., Calheiros, D. F., de Oliveira, M. D., de Carvalho Dores, E. F. G., Lima, G. A. R., & Fantin-Cruz, I. (2016). Temporal patterns of water quality in the Pantanal floodplain and its contributing Cerrado upland rivers: implications for the interpretation of freshwater integrity. *Wetlands ecology and management*, 24(6), 697-716.

⁶⁷ The Inter-American Court linked the right to a healthy environment to "the rights to life, personal integrity, private life, health, water, food, housing, participation in cultural life, property, and the right to not be forcibly displaced." Advisory Opinion (OC-23/17), para. 66.

b. Right to Health

These fires and related droughts also have had dire health consequences for those living in the Pantanal, particularly on respiratory health due to dust and smoke inhalation. During the dry season in the Pantanal, cases of respiratory illness increase by approximately 50 percent compared to the wet season.⁶⁸ This number will likely increase as dry seasons become dryer and fires become more severe. Furthermore, smoke pollution is a great cause for concern given the risk of smoke-related respiratory disease interacting with a COVID-19 infection.⁶⁹ The Brazilian state of Mato Grosso, home of the majority of the Pantanal, saw a 62 percent increase in respiratory illness hospitalizations and a 46 percent increase in COVID-19 hospitalizations between during the 2020 fires between July and October.⁷⁰ In Cáceres and Poconé, the worst-hit localities in Mato Grosso, the air had been saturated with smoke for the entire month of September of that year.⁷¹ Residents in these rural areas already faced major obstacles to accessing adequate healthcare before the fires⁷²—the fires left them even more vulnerable. Babies and children face even greater health risk as they are more susceptible to the toxic effects of the smoke from fires because their defense mechanisms to fight smoke and particulate matter, and their lungs, are less developed.⁷³

States have the obligation to restrict activities that impede equal access to the requirements for a dignified life, such as water, adequate food and clean air.⁷⁴ Brazil, Paraguay, and Bolivia have not yet adopted effective plans to make the public and private sectors comply with national and international environmental norms that contribute to the improvement of air quality,⁷⁵ nor have they applied the reinforced rights to protect the right to health of especially vulnerable groups such as children⁷⁶.

international authorities have long recognized that a healthy environment is a prerequisite for the enjoyment of many human rights, including, but not limited to the rights to life, the highest attainable standard of physical and mental health, physical integrity, food, water, sanitation,

⁶⁸ Gleidson Cesar, *Queimadas Urbanas Afetam a Saúde da População*, ECOA, 28 August 2019,

https://ecoa.org.br/queimadas-urbanas-afetam-a-saude-da-populacao/?gclid=Cj0KCQiA2ZCOBhDiARIsAMRfv9I7F53v6S91PLj2uaN8oG2Rv13RgKIR7er_E_34oGljLTB1dryr2P0aAoaZEALw_wcB_

⁶⁹ Mataveli, et al., *supra* note 16 at 3300.

⁷⁰ Juliana Arini, *Social and Environmental Crises Come Together in Mato Grosso in a Year of Record Burning in the Pantanal*, INFOAMAZONIA, 23 August 2021, <https://infoamazonia.org/en/2021/08/23/social-and-environmental-crises-come-together-in-mato-grosso-in-a-year-of-record-burning-in-the-pantanal/>.

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Crianças vivem as memórias e o medo dos incêndios no Pantanal*, LUNETAS, <https://lunetas.com.br/incendios-no-pantanal-criancas-ribeirinhas/>, Access 22 September 2022.

⁷⁴ UN. General Comment No. 14: The right to the highest attainable standard of health (article 12 of the International Covenant on Economic, Social and Cultural Rights). UN Doc. E/C.12/2000/4, 11 August 2000, para. 34.

⁷⁵ Boyd, D., Report: The question of human rights obligations related to the enjoyment of a safe, clean, healthy and sustainable environment. A/HRC/40/55 2019, p. 12,13,14.

⁷⁶ IACHR Court. Case of Xákmok Kásek Indigenous Community v. Paraguay. Merits, Reparations and Costs. Judgment of August 24, 2010. Series C No. 214, para. 257 ("[T]he State must pay special attention to the needs and rights of children, in consideration of their particular condition of vulnerability."); see also Case of the Barrios Family v. Venezuela. Merits, Reparations and Costs. Judgment of November 24, 2011. Series C No. 237, para. 55 (citing Juridical Condition and Human Rights of the Child. Advisory Opinion OC-17/02 of August 28, 2002. Series A No. 17, para. 91, and Case of Servellón García v. Honduras, *supra* note 1, para. 114) ("In this sense, it must pay special attention to the needs and rights of children, in consideration of their particular condition of vulnerability.").

housing, and an adequate standard of living.⁷⁷ States' obligations to respect, protect and fulfill human rights applies in the environmental context as much as any other.⁷⁸ Clean air is a fundamental component of the right to a clean, healthy, and sustainable environment.⁷⁹ The foreseeable adverse effects of poor air quality on the enjoyment of human rights give rise to States' extensive duties of to take immediate action to protect against those harmful effects. As the United Nations High Commissioner for Human Rights stated at the First Global Conference on Air Pollution and Health, held in 2018, "there can be no doubt that all human beings are entitled to breathe clean air."⁸⁰ To this end, States must adopt the following seven essential measures to give effect to this principle:

monitor air quality and its effects on human health; assess sources of air pollution; make relevant information publicly available, including public health warnings; establish air quality legislation, regulations, standards and policies; develop local, national and, where necessary, regional air quality action plans; implement an air quality action plan and enforce standards; and assess progress and, if necessary, strengthen the plan to ensure compliance.⁸¹

UN human rights experts articulated the importance of taking concrete and effective steps to address air pollution in the following manner: "[a] threat like this can no longer be ignored. States have a duty to prevent and control exposure to toxic air pollution and to protect against its adverse effects on human rights."⁸²

This duty includes States' obligation to ensure the protection, within their jurisdiction, of persons against violations of their right to health by third parties. This obligation implies, in turn, adequate regulation, supervision and oversight of economic and social activities in the Pantanal due to the danger of significant damage to the environment and health.⁸³

Thus, it is imperative that Brazil, Bolivia, and Paraguay comply with their international right to health obligations and guarantee the protection of the environment as a special condition to ensure the highest possible level of health for the Pantanal population, especially members of the most vulnerable groups.

⁷⁷ Inter-American Court of Human Rights, Advisory Opinion OC-23/17. See also Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy, and Sustainable Environment, December 2013 (A/HRC/25/53).

⁷⁸ *Ibid.*

⁷⁹ A/HRC/40/55. Report of the Special Rapporteur. Issue of human rights obligations relating to the enjoyment of a safe, clean, healthy, and sustainable environment, 8 January 2019.

⁸⁰ A/HRC/40/55, para. 44.

⁸¹ UN. David R. Boyd. Report: The issue of human rights obligations related to the enjoyment of a safe, clean, healthy and sustainable environment. A/HRC/40/55 2019, p. 12

⁸² UN Office of the High Commissioner of Human Rights (2017) *Toxic air pollution: UN rights experts urge tighter rules to combat "invisible threat"*.

⁸³ Committee on Economic, Social and Cultural Rights, General Comment No. 14: The right to the highest attainable standard of health (article 12 of the International Covenant on Economic, Social and Cultural Rights). UN Doc. E/C.12/2000/4, August 11, 2000, para. 55.

c. Food security and sovereignty

The decrease of biodiversity in the Pantanal as a result of fires, droughts, and agricultural expansion also negatively affects food security and sovereignty in a variety of ways.⁸⁴ The Pantanal is home to more than 260 fish species which are key to livelihoods and commerce. For instance, local communities depend on the fishing of numerous species, such as *Schizodon borelli* and *Leporellus vittatus*, for subsistence. Other species, such as *Piaractus mesopotamicus* and *Salminus brasiliensis*, have high socioeconomic value as they are the primary species sold in markets.⁸⁵ The capture of bait for sale to tourists who go to the Pantanal for sport fishing is another important economic activity directly affected by the fires and drought. On the banks of the Paraguai and São Lourenço rivers, residents report that the tuvira (*Gymnotidae* family), a species widely used as bait, has practically disappeared.⁸⁶ The fires also greatly affected native fruit species, such as the Bocaiuva (*Acrocomia aculeata* (Jacq.) Lodd. ex Mart.), the Acuri (*Attalea phalerata* Mart X Spreng) and the Laranjinha-de-Pacu (*Pouteria glomerata* (Miq.) Radlk.), sustainably harvested for consumption by traditional communities and as a source of income through the commercialization of sociobiodiverse products from community businesses. Thus, the threats to biodiversity in the Pantanal will have serious repercussions on the right to adequate food.

Food insecurity presents itself as irregular and non-permanent access to healthy food. During the drought and fires, much genetic material, seeds, seedlings, and small animals were lost, which may lead to a possible shortage of food,⁸⁷ but above all, impossibility to accessing food due to high prices, unemployment, poverty, the mode of distribution, and the use of agricultural resources for purposes other than human consumption.⁸⁸

There is no bait, there is no fishing, the fish is very bad because the bays and channels are dry [...] The difficulty is immense. We live off the donations we receive. We tried to plant something, but it's hard for it to thrive”, reported a woman living on the region.⁸⁹

Although cattle ranching has been presented as an alternative to traditional activities to ensure food security for the region’s population, the truth is that ranching creates more environmental problems than benefits. Cattle ranching deeply affects the ecosystem, causing habitat loss, soil erosion, and diminishing biodiversity, among other impacts.⁹⁰

⁸⁴ See generally, *The State of the World's Biodiversity for Food and Agriculture* (2019), FAO COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE, <https://www.fao.org/3/CA3129EN/CA3129EN.pdf>; see also Hannah Wittman, et al., *A Socio-Ecological Perspective on Harmonizing Food Security and Biodiversity Conservation* (2017), 17 REG ENVIRON CHANGE 1291-1301, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6979715/>.

⁸⁵ Alho, C. J., & dos Reis, R. E. (2017). Exposure of fishery resources to environmental and socioeconomic threats within the Pantanal wetland of South America. *International Journal of Aquaculture and Fishery Sciences*.

⁸⁶ Alcides Faria, *Pesca no Pantanal – a seca, os incêndios e a luta pela sobrevivência*, ECOA, 21 July 2021, <https://ecoa.org.br/pesca-no-pantanal-a-seca-os-incendios-e-a-luta-pela-sobrevivencia/>

⁸⁷ <https://ipdrs.org/index.php/noticias/que-pasa/6744-el-hambre-avanza-y-llega-a-33-millones-en-brasil>

⁸⁸ <https://rebelion.org/el-sistema-agroalimentario-capitalista-no-alimenta/>

⁸⁹ *Id.* at 68

⁹⁰ Watanabe, M. D., & Ortega, E. (2014). Dynamic emergy accounting of water and carbon ecosystem services: A model to simulate the impacts of land-use change. *Ecological Modelling*, 271, 113-131.

Likewise, agribusiness will not solve food insecurity, since a large portion of agribusiness outputs are not food staples but, rather are products intended for high-income or export markets.⁹¹ Further, the effects of the global climate crisis and deforestation have shortened the rainy season in key growing regions of the Pantanal, negatively impacting biodiversity, livelihoods of local communities, and elimination of possible alternative income sources due to habitat loss, making it difficult for small and medium farmers to manage production.

d. Right to Culture

The destruction of indigenous lands in the Pantanal impedes the ability of indigenous people to participate in their own cultural practices which help maintain their identity, thus violating the right to culture under article 27 of the UDHR⁹² and article 15.1(a) of the ICESCR.⁹³ Connection to the land often plays a central, if not existential role in many indigenous and non-indigenous communities in the Pantanal.⁹⁴ Fires, changes in land for agricultural expansion, and the loss of biodiversity sever this connection, thus harming indigenous identity and knowledge.⁹⁵ For the Yshir people, for instance, destroying the Pantanal directly threatens their belief system and cosmology, in which the forest, the rivers, and the wildlife have a central role.⁹⁶ Environmental degradation also impacts their ability to hold traditional ceremonies.⁹⁷ Such harm can decrease knowledge of the Pantanal ecosystem, as indigenous groups hold considerable traditional knowledge about edible and medicinal plants of the region, while formal academic knowledge of the biodiversity of the Pantanal is limited.⁹⁸

Many ribeirinha communities on the banks of the Cuiabá River saw their way of life affected by the fires. These communities maintain a strong bond with nature, especially with the river. The river contributes to their lives not only in terms of landscape and economic activities, but the river is also an essential means of transportation local populations, carrying flows of people, knowledge, and experiences. Thus, periods of environmental crisis, such the intense fire seasons, significantly interfere in the culture of these populations. In particular, ribeirinha women in the region share a sense of belonging with and gratitude to the river. During an interview with a local news team, some ribeirinha women reported that they did not intend to leave the small fishing village where they live, even in the face of a wildfire emergency:

⁹¹ Arroyo, G. (1981). LA CRISIS ALIMENTARIA EN LA FASE ACTUAL DEL CAPITALISMO. *Investigación Económica*, 40(156), 77–92. <http://www.jstor.org/stable/42778656>

⁹² Article 27 of the UDHR states that “everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits”

⁹³ Article 15.1(a) of the ICESCR states that each Contracting Party must “recognize the right of everyone to take part in cultural life”

⁹⁴ *Paradise Lost?*, *supra* note 49 at 7.

⁹⁵ *Id.*

⁹⁶ *Paraguayan Pantanal*, *supra* note 91.

⁹⁷ *Id.*

⁹⁸ Christopher Schulz, et al., *Physical, Ecological and Human Dimensions of Environmental Change in Brazil's Pantanal Wetland: Synthesis and Research Agenda* (2019), 687 *SCIENCE OF THE TOTAL ENVIRONMENT* 1015.

Oh, I'm not leaving here. Only after dying. My home is here and I love this place. It's the story of my life, of my family. It's where I was born and where I want to stay. It is a relationship of a lot of passion and gratitude.”⁹⁹

Children in the region also must deal with environmental-disaster trauma and yearn for the life they had before the fires. A 7-year-old boy who lived in the Paraguay Mirim region and had to move with his family to a village 3 hours away due to the destruction caused by the fire stated:

I really miss being able to bathe in the river, play with my friends. I miss my room and my old house. I want this to get better soon so I can return with my family to our real home.”¹⁰⁰

e. Traditional livelihoods

The emergency in the Pantanal also violates the right to work under Article 23 of the UDHR¹⁰¹ and Articles 6(1) and 7 of the ICESR.¹⁰² The Pantanal sustains the livelihoods of more than 270 communities or 1.5 million people.¹⁰³ Many of these communities rely on fishing for their livelihoods, but the threats to fish species are forcing many to look elsewhere for income.¹⁰⁴ Many also harvest raw materials from the Pantanal for use in handicrafts and artisanal works, the sales of which provide communities with another source of income.¹⁰⁵ Perhaps most apparently, if the current wildfire trends continue, wildfires will disrupt the ability of many to work, either by destroying the land that provides their income or by preventing travel.

In many riverine communities, the collection of live bait to supply fishing tourism in the Pantanal is an important source of income, especially for women who account for 80% of the total of *isqueiras*, the local term for bait fishers. These workers have historically lived in a situation of vulnerability: in order to fish for bait, women wade into river water to their chests, almost always without protective material, subjecting themselves to cold water and animal attack. Without proper clothing or equipment, many of these women are at risk of developing infections as a result of spending a lot of time in the water wearing wet clothes. Additionally, bait collection is usually performed at night and many *isqueiras* have no access to childcare during their working hours.¹⁰⁶

The fire and the drought in the Pantanal have exacerbated the *isqueiras*' vulnerability: given the low level of the rivers' waters, the availability of live bait was greatly reduced, making long working hours necessary to be able to capture just a few specimens.¹⁰⁷ An additional danger for these workers is the

⁹⁹ Safira Campos, *Cinzas deixadas pelos incêndios no Pantanal ameaçam ribeirinhos*, REDE COM CIÊNCIA, 15 November 2020, <https://redeciencia.shorthandstories.com/incendios-ribeirinhos-pantanal/index.html>

¹⁰⁰ *Id.* at 60

¹⁰¹ Article 23 states, in part, that “everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment.”

¹⁰² Article 6 states, in part, that “the States Parties to the present Covenant recognize the right to work, which includes the right of everyone to the opportunity to gain his living by work which he freely chooses or accepts, and will take appropriate steps to safeguard this right,” and article 7 requires State Parties to “recognize the right of everyone to the enjoyment of just and favourable conditions of work.”

¹⁰³ *Saving the Pantanal: Keeping the Water Flowing in the World's Largest Tropical Wetland*, *supra* note 68.

¹⁰⁴ *Id.*

¹⁰⁵ *Paraguayan Pantanal*, UNESCO, Accessed 6 July 2022, <https://whc.unesco.org/en/tentativelists/6281/>.

¹⁰⁶ *Mulheres fazem a diferença no Pantanal*, GAZETA DO PANTANAL, 6 March 2009, <https://www.gazetadopantanal.com/2022/04/mulheres-fazem-a-diferenca-no-pantanal/>.

¹⁰⁷ *Id.* at 68.

possibility of attacks by jaguars: because the fires reduced the availability of food in jaguars' normal habitats, these animals have approached the areas inhabited by riverine communities, seeking to feed on domestic animals. Faced with this danger, women have to stop their work of collecting bait earlier than usual as the risk of jaguar attacks increases greatly at night.¹⁰⁸

f. Indigenous lands

The fires have touched every indigenous territory in the region,¹⁰⁹ destroying almost half of all indigenous land.¹¹⁰ For example, The Kadiweu peoples living in the Kadiweu Indigenous Territory in Mato Grosso, have experienced 176 fire outbreaks since May 2020.¹¹¹ The Guató tribe, of the Baía dos Guató, lost nearly 90 percent of their land after fires spread from surrounding ranches.¹¹² Beyond that, all of Terena's Territory, Cachoeirinha Indigenous Land, burned in 2020. As one Cachoeirinha member explained:

The fires destroyed crops, burned houses. The fire destroyed a very large part of our territory, destroying many trees, animals, birds, harming our fauna and flora and our food security, because it destroyed our crops. We are very concerned about our forests because it is from them that we derive our sustenance, our traditional medicines. With the fire, all this is compromised. We no longer find many herbs that we use to treat diseases and also the acuri palm, which we use to cover traditional houses and some utensils, and to make chicha, a traditional drink. Everything is ending.¹¹³

Finally, it should be stated that the destruction of the Pantanal implicates violations of human rights articulated in various articles of the Indigenous and Tribal Peoples Convention (ILO 169). These include, *inter alia*: article 14, protecting a people's right to access lands in which "they have traditionally had access for their subsistence and traditional activities;" Article 15, protecting the peoples' right "to participate in the use, management and conservation of [natural resources pertaining to their lands];" and article 23, protecting "handicrafts, rural and community-based industries, and subsistence economy and traditional activities of the peoples concerned, such as hunting, fishing, trapping, and gathering." The last few decades have already seen a decline in traditional and cultural practices in the Pantanal, and this trend will likely continue without added protections.

¹⁰⁸ Karina Campos, Com seca e incêndios no Pantanal de MS, onças estariam devorando animais domésticos, UOL, 26 July 2022, <https://midiamax.uol.com.br/cotidiano/2022/com-seca-e-incendios-no-pantanal-de-ms-animais-domesticos-estariam-sendo-devorados-por-oncas/>

¹⁰⁹ *Id.* at 7

¹¹⁰ Einhorn, et al., *supra* note 35.

¹¹¹ *Paradise Lost?*, *supra* note 49 at 7.

¹¹² *Id.*

¹¹³ Bianca Muniz, et al., *Incêndios já tomam quase metade das terras indígenas no Pantanal*, PÚBLICA, 17 September 2020, <https://apublica.org/2020/09/incendios-ja-tomam-quase-metade-das-terras-indigenas-no-pantanal/>

IV. REQUEST

Hoping that the information provided will be useful for the fulfillment of the mandate of the Special Rapporteur and to promote the protection of human rights in the region, we request that the Special Rapporteur makes a visit to the Pantanal to issue an urgent call to Brazil, Bolivia, and Paraguay to prevent future fires in the Pantanal, ensure the restoration of ecosystems and protect the rights of local communities and populations, including recommendations in line with international human rights standards.

We appreciate your attention and action on this troubling matter. If you need additional information on the issue, please contact cvelarde@aida-americas.org, mribeiro@aida-americas.org.

Respectfully,



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