Trinational Report:
Fires and deforestation in territories with a documented presence of indigenous peoples in isolation
Bolivia – Brasil – Paraguay
(2020, reference year 2019)

International Working Group for the Protection of Indigenous Peoples
in Isolation and Initial Contact (PIACI IWG)

2020

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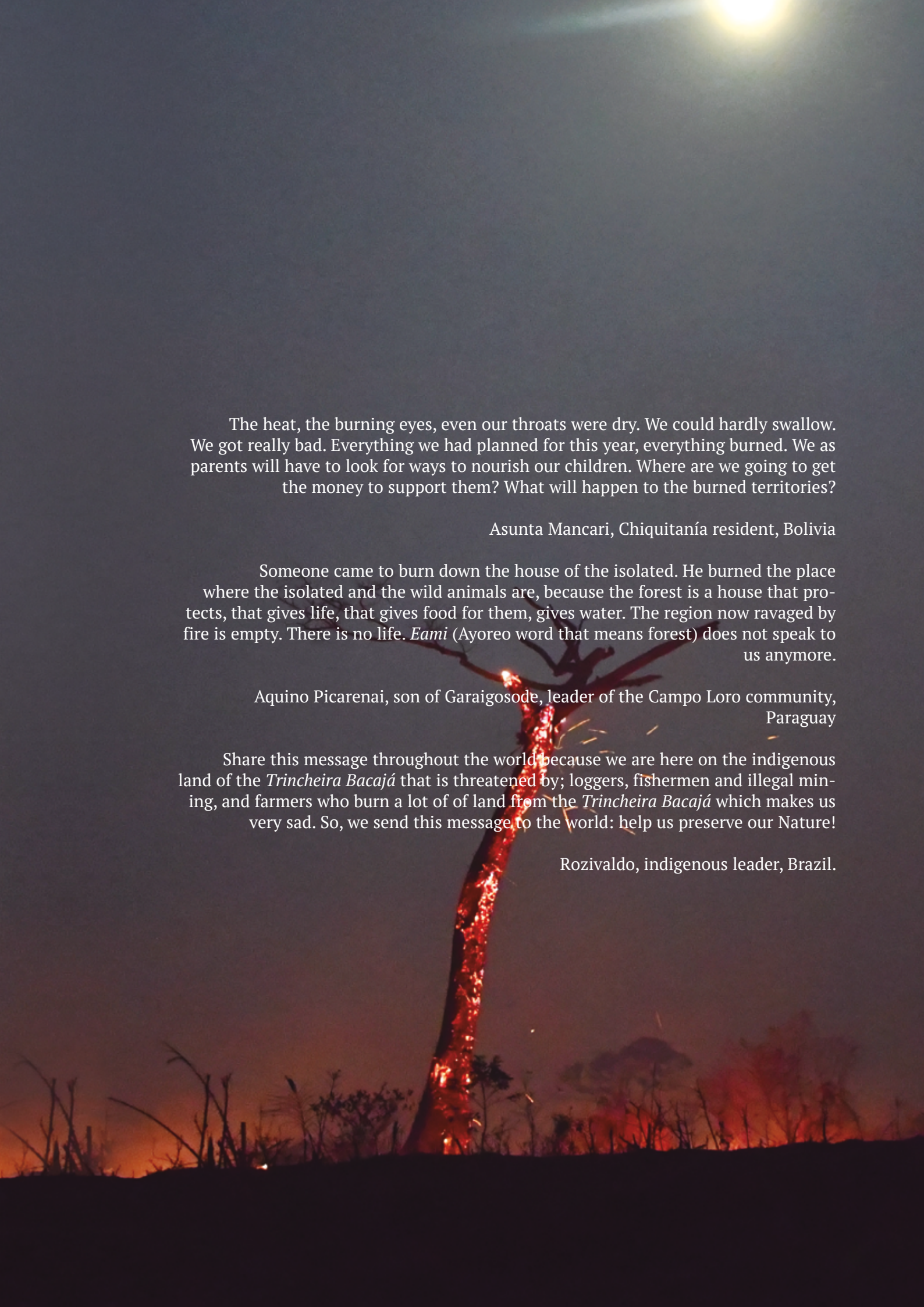

The heat, the burning eyes, even our throats were dry. We could hardly swallow. We got really bad. Everything we had planned for this year, everything burned. We as parents will have to look for ways to nourish our children. Where are we going to get the money to support them? What will happen to the burned territories?

Asunta Mancari, Chiquitanía resident, Bolivia

Someone came to burn down the house of the isolated. He burned the place where the isolated and the wild animals are, because the forest is a house that protects, that gives life, that gives food for them, gives water. The region now ravaged by fire is empty. There is no life. *Eami* (Ayoreo word that means forest) does not speak to us anymore.

Aquino Picarenai, son of Garaigosode, leader of the Campo Loro community, Paraguay

Share this message throughout the world because we are here on the indigenous land of the *Trincheira Bacajá* that is threatened by; loggers, fishermen and illegal mining, and farmers who burn a lot of of land from the *Trincheira Bacajá* which makes us very sad. So, we send this message to the world: help us preserve our Nature!

Rozivaldo, indigenous leader, Brazil.

Presentation

The International Working Group for the Protection of Indigenous Peoples Living in Voluntary Isolation and Initial Contact (GTI PIACI), is pleased to present the **Tri-National Report: Fires and Deforestation in Territories with Registers of Indigenous Peoples Living in Voluntary Isolation, concerning Bolivia, Brazil and Paraguay**. The report represents a huge collective effort to collect information in these three countries. We have compiled the valuable experience of many organizations that work in the protection of groups that remain in isolation, and we have included the committed efforts of various allies that have worked on this issue for decades.

The purpose of this report is to determine the impacts of the fires documented during 2019 on the Indigenous Peoples Living in Voluntary Isolation (PIA) and their territories, based on a methodology that incorporates three local situation reports, in which the voices of the peoples who share territory with PIA have a central role. Through maps, geo-referenced information and direct testimonies, this report reconstructs the serious events that occurred during 2019 in vast regions of the Amazon and the Great American Chaco. For each case, the same methodology was used to collect information and analyze the situation of the local or national territories.

The reports analyzed 99 Indigenous territories (TI) with PIA records in Bolivia, Brazil and Paraguay, confirming an increase in heat sources in 2019 compared to 2018 of the order of 258.25% in Bolivia; 259.28% in Brazil and 185.12% in Paraguay. The heat sources detected in the 32 conservation units (protected areas) with the presence of PIA in 2019, compared to 2018, increased by 744.38% in Bolivia, 347.87% in Brazil and ,4.415% in Paraguay. From the contributions of local Reports, a general analysis was performed. Regional and local information allows us to elucidate a broader picture of the problem and to project the immediate risks and threats to isolated indigenous peoples.

The relationship of these peoples with their territories is of total dependence. They obtain all their food sustenance from these areas, as well as the raw goods necessary for the reproduction of their material culture. The relationship with the territory goes beyond the "physical"; inside of it they found their spiritual relationship with their ancestors and with the elements that allow them to live. From this millennial relationship that indigenous peoples keep with the ecosystem, an incomparable "traditional ecological knowledge" is formed. The territorial loss caused by deforestation and fires causes displacement in search of safer places, but brings with it other dangers: involuntary approach to neighboring populations and possible contagion of diseases. The situation is further complicated by the presence of Covid-19, a pandemic whose exponential growth seriously jeopardizes the life of these peoples, the living heritage of America and Humanity.

Finally, the Trinational Report seeks to highlight the urgent need to establish a worldwide mobilization in favor of the protection of the peoples of the Amazon and the Great Chaco. Based on the foregoing, specific recommendations are established for the States, multilateral organizations and civil society, which are responsible for establishing adequate protection strategies against the possible return of wildfires and forest clearing, which represent a constant and serious threat to the territories and lives of indigenous peoples in a situation of isolation and initial contact.

Land is Life, 2020

1. Conceptual framework

1.1. Indigenous peoples in a situation of isolation – PIA

This paper has adopted the concept of indigenous peoples in isolation (*PIA for its Spanish acronym*) as set out in the "Guidelines for the Protection of Indigenous Peoples in Isolation and in Initial Contact in the Eastern Region of Paraguay" (UN/OHCHR – February 2012)[1], which states that:

> *Peoples in isolation are indigenous peoples or segments of indigenous peoples who do not maintain regular contact with the majority population, and who also tend to shun all contact with peoples outside their group.*

1.2. Territory

The concept of territory has gained significant importance in recent years, particularly since the 1960s when the first more scientifically systematic approaches to the subject began to appear. Due to its significant breadth, a diverse range of approaches have been applied to the subject including biology, focusing particularly on animal territory; sociology, with its focus on the construction of territory through social relations; anthropological approaches emphasizing the symbolic dimensions of territory through the study of traditional communities; political science, emphasizing state territory; economics, treating territory as a base of production; and psychology, which tends to focus on the individual/collective search for identity (HAESBAERT, 2009)[2].

The concept of territory/territoriality is intimately related to the political, economic, cultural, natural, symbolic and historical dimensions of each country/community. In referring to indigenous territory, the diversity of understandings and cultural elements at play in the experiences of indigenous territorial occupation and management are inherently implied.

We have adopted the same concept of territory as set out in the "Territorial Corridor for Pano, Arawak and other Indigenous Peoples in Isolation and Initial Contact - Diagnosis and Anthropological Foundations" paper that was published in 2015 by the "Platform of indigenous organizations for the protection of peoples in isolation and initial contact in Peru"[3]:

> *Territory for indigenous peoples consists of a set of material and subjective elements through which they establish a historical, geographical, ecological, economic, cultural, social, symbolic and political connection.*

1.3. Vulnerabilities

This document seeks to address the diverse socio-cultural, territorial, epidemiological, political and demographic dimensions of vulnerability.

It is important to emphasize that vulnerability is a position, relative to determining factors. Indigenous peoples in isolation (PIA) are best understood as in a position of extreme vulnerability due to the context imposed upon them by Western society. The "institutional" dimension, related to development policies implemented in the region often associated with

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1 Available at: http://acnudh.org/wp-content/uploads/2012/03/Final-version-Guidelines-on-isolated-indigenous-peoples-february-2012.pdf. Accessed on: 27 March 2019.

2 HAESBAERT, Rogério. **O mito da desterritorialização: do "fim dos territórios" à multiterritorialidade** (The Myth of Deterritorialization: From the "End of Territories" to Multi-Territoriality). 2nd Ed. Rio de Janeiro: Bertrand Brasil, 2009. Available at: http://www.seer-adventista.com.br/ojs/index.php/formadores/article/viewFile/455/419 Accessed on: 8 March 2019.

3 HUERTAS, Beatriz. Corredor Territorial Indígenas en Aislamiento y Contacto Inicial Pano, Arawak y otros - Diagnóstico y fundamentos antropológicos ("Territorial Corridor for Pano, Arawak and other Indigenous Peoples in Isolation and Initial Contact - Diagnosis and Anthropological Foundations") published in 2015 by the "Plataforma de organizaciones indígenas para la protección de los pueblos en aislamiento y contacto inicial do Perú" ("Platform of indigenous organizations for the protection of peoples in isolation and initial contact in Peru").

autonomous and/or illegal initiatives, stands out as one of the determining factors placing the PIA in a particularly vulnerable position.

As such, vulnerability is formed in a dynamic of reciprocal interdependencies that express multiple - biological, existential and social - factors. Vulnerability inhibits one's relative capacity to assert oneself in the world, limiting social agency, which in turn leads to greater fragility[4].

> *The degree of individual or group susceptibility to problems and hazards that threaten their living conditions may be expressed in socio-cultural, territorial, epidemiological, political and demographic terms*[5].

We have adopted the following concepts for the preparation of the local country reports on fires and deforestation:

1.4. Live fire

Represents a pixel or area where a thermal anomaly was detected (fire flames, erupting volcano, factory chimney) by passing satellite. In Brazil, this data is widely used as a way of detecting fire outbreaks and is disclosed and processed by the National Institute of Space Research – INPE.

1.5. Burned Area

In contrast to the live fire data, which is specific to a particular point in time, this type of data shows the total surface area affected by fire. It is usually derived from satellite images but can also be evaluated through field activities.

1.6. Pixel

The minimum spatial resolution unit of a satellite image.

1.7. Satellite Image

The resulting photograph of a portion of the Earth's surface, taken by a satellite.

2. Introduction

Regardless of their motivations, the decision of certain indigenous groups, or parts thereof, to opt for isolation is an expression of their self-determination. As recognized by the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the Declaration from the Organization of American States (OAS) and International Labour Organization (ILO) Convention 169, the right of the PIA to remain in isolation is a prerequisite for their self-determination.

Taking into account the specificities of Indigenous Peoples in Isolation (PIA), the United Nations High Commissioner for Human Rights (UNHCHR) and the Inter-American Commission on Human Rights (IACHR/OAS) established specific instruments[6] to underscore their self-determination and emphasised the responsibility of each state to establish differentiated policies that recognize the fundamen-

4 OVIDEO, Rafael Antônio Malagón e CZERESNIA, Dina. **O conceito de Vulnerabilidade e seu Caracter Biósocial** (The Concept of Vulnerability and its Bio-Social Character). Botucatu: Interface, 2014.

5 VAZ, Antenor. **Diagnóstico Institucional** – Grupos Indígenas Isolados e de Recente Contato no Brasil (Institutional Assessment – Isolated and Recently Contacted Indigenous Groups in Brazil). Strategic Framework Program for Indigenous Peoples in Isolation and Initial Contact. OTCA, 2013.

6 **UN - Guidelines for the protection of indigenous peoples in isolation and in initial contact in the Amazon region, Gran Chaco and the eastern region of Paraguay**. Outcome of consultations carried out by OHCHR in the region: Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru and Venezuela. Available at: https://acnudh.org/load/2019/07/015-Directrices-de-Protección-para-los-Pueblos-Ind%C3%ADgenas-en-Aislamiento-y-en-Contacto-Inicial-de-la-Región-Amazónica-el-Gran-Chaco-y-la-Región-Oriental-de-Paraguay.pdf Accessed on: 4 May 2020. OAS - Indigenous peoples in voluntary isolation and initial contact in the Americas: Recommendations for the full respect of their human rights [Prepared by the Rapporteurship on the Rights of Indigenous Peoples at the Inter-American Commission on Human Rights]. Available at: http://www.oas.org/es/cidh/indigenas/docs/pdf/informe-pueblos-indigenas-aislamiento-voluntario.pdf Accessed on: 4 May 2020.

tal rights of indigenous peoples in isolation and initial contact (*PIACI, for its Spanish acronym*).

It is important to note that the daily life of indigenous peoples in isolation is marked by numerous threats that place them, for the most part, in a situation of permanent flight and depredation. Territory, nature, space, time, matter and spirituality are intrinsically connected for these peoples. Reciprocity and 'kinship' coexist simultaneously in the ecosystems (territoriality) and relationships are sustained with all neighbouring "living beings" as a prevailing factor in the quality of life, self-determination, self-sufficiency and sustainability of the social system and physical and psychosocial health of these peoples.

The PIA live in their traditional territories, known to them and their ancestors. Though they undoubtedly perceive and experience their effects, they resist borders created by states. They alter their territorial relationship/dominion, create new survival strategies; insist, resist and persist. Despite continual efforts to affirm their non-existence, they become "visible".

For the PIA, borders that have been invisibly interposed through processes of (neo) colonization and land appropriation are secondary to their original territorial jurisdiction. Today they feel the bitter effects of a geopolitical and socioeconomic matrix driving them to ever greater precariousness, itself propelled by those actors implementing a perverse global development model which transforms the PIA into highly vulnerable peoples.

The special attention given to the situation of indigenous peoples in isolation is necessary due to the special vulnerability to which they are subject. Other elements of this vulnerability include the absence of immunological memory in the face of external infections, the partitioning of their traditional territories, their frequent transnational situation, and the weakness of state institutions responsible for their protection.

In addition to the aforementioned effects of colonization, the PIA in Bolivia, Brazil and Paraguay were subjected to an unprecedented wave of fires and deforestation in their territories in 2019 requiring broad differentiated solutions that cannot be addressed solely under the approach of local international regulations established for indigenous peoples with a history of contact[7 and 8].

The Paraguay Local Fire Report (Py LFR 2020) prepared by the Amotocodie Initiative (AI) presents important stories from indigenous Ayoreo people about the effects of the fires on Indigenous Peoples in Isolation (PIA).

> As he toured the burned area, Aquino Picanerai, leader of the Campo Loro community and son of a great Garaigosode leader, said: *"This means that someone came to burn the house of those in isolation. They burned the place where the isolated peoples and the wild animals are, because the forest is a house that protects, that gives life, that provides food for them, that gives water"*.
>
> The region devastated by the fire is empty today. There is no life. "Eami[9] doesn't talk to us anymore," said the old men and women as they witnessed their territory ravaged by fire. These words denote a disagreement with Eami, an awareness of a new reality in which they've been expelled from Eami and feel separated from that reality.
>
> According to estimates by Ayoreo sages, the region will begin to regenerate in 2 years or so if the whites leave it alone. In 60 or 70 years it might look a little bit like the region did until just a few months ago. So the isolated ones won't be coming here for a long time. "Now they have to look for areas where they can

7 For more information see: Vaz, Antenor, Indigenous Peoples in Isolation: Territories and Development in the Amazon and Gran Chaco ['Regional Report'], 2019. Available at: http://landislife.org/wp-content/uploads/2019/10/Land-is-life-25-septiembre-2019.pdf Accessed: 9 May 2020.

8 We use the term "indigenous peoples with a history of contact" to differentiate between indigenous peoples who have regular or sporadic contact with the non-indigenous population and indigenous peoples in isolation (PIA).

9 *Eami* is an Ayoreo word that refers to the forests, and world, which they inhabit.

hunt and gather, some of those areas are not far from Garai, but the surroundings also have few resources because there is a lot of smoke and fear from the fire," said Mateo Sobode.

Carlos Diri Etacore, leader of the Ijnapui community, received information from workers in the Line 1 area who saw some "naked Indians" crossing the road to the South. "I think that they are going south of Line 1, towards the area of Florida or Toro Pampa, from the reports that we have from people who saw the isolated peoples passing the route that goes to Bahía Negra". This sighting corresponds to August 24, 2019.

Ayoreo experts maintain that, despite the near total destruction of the Garai region, it is difficult at this time for the isolated peoples to move away from there for long. In the words of Pebi Juumini, president of the Garaigosode Association of Paraguay: "It is not easy to go to another territory because there are other dangers, there are other indigenous peoples, other groups, there are whites, and all that is dangerous. One possibility is that they have gone to the east of Chovoreca, more in the direction of Bahía Negra. That's also possible because in the stories of my people, in the past, people didn't go in the opposite direction when there were fires, they wouldn't run from the fire, they would rather go sideways".

The main hazardous situations that Ayoreo peoples in isolation face in this scenario is the possibility of unwanted contact or the spread of diseases to which they have no immunity. For this reason, a series of recommendations were disseminated through social networks during those days so that the inhabitants of the Chovoreca area could remain calm and act correctly in situations where isolated groups approach, always maintaining the principle of no contact in the event of a sighting or approach.

> It is impossible to know the decisions made by the isolated peoples during their life in the bush. It is known from historical references that they could divide into two or more groups for reasons of survival, greater agility in displacement, or in times of crisis.

The Trinational Fire Report (*TFR*) is an initiative by the International Working Group for the Protection of Indigenous Peoples in Isolation and Initial Contact (*IWG PIACI*) which arose from the need to quantify and qualify the impacts of particularly high incidences of fire in 2019 on indigenous peoples in isolation in Bolivia, Brazil and Paraguay, compared to historical records from previous years.

Using the three Local Fire Reports (*LFRs*) prepared by indigenous and allied organizations in Bolivia, Brazil and Paraguay[10], information was systematized using a previously agreed upon methodology. The necessary and supplementary reading of each of these reports provides detailed data on deforestation and fire outbreaks that affected (and will continue to affect) territories with a registered presence of indigenous peoples in isolation.

2.1. Origin of the Fires

The fires that occurred in Bolivia, Brazil and Paraguay originated in the state's predatory relationship with land. According to specialists in Brazil, such fires in the Amazon are primarily a political issue:

> There was nothing natural about those fires. Even if there had been a (natural) outbreak, it would not have been of the same magnitude that eventually occurred. This shows that parts of the population, especially those wealthier sectors, were in some way incentivised to set fire to the forest, and we are now seeing the consequences of this[11].

10 **Bolivia**: Central de Comunidades Indígenas Tacana II - Rio Madre de Dios (CITRMD), prepared by Adamo A. Diego Cusi and Agustin Moy Yubánure; **Brazil**: Coordination of Indigenous Organizations of the Brazilian Amazon (COIAB), prepared by Ananda Santa Rosa; **Paraguay**: Iniciativa Amotocodie (IA), prepared by Miguel Angel Alarcón, Luis María de la Cruz, Jieun Kang and Miguel Lovera.

11 Available at: https://www.brasildefato.com.br/2019/08/28/queimadas-na-amazonia-nao-sao-naturais-e-tem-impacto-global-afirma-pesquisador/ Accessed: 3 May 2020.

The Local Fire Reports (LFRs) of Bolivia (BoLFR), Brazil (BrLFR) and Paraguay (PyLFR) present a wealth of material concerning the origins of the fires, as well as the specificities of indigenous peoples' relationships with, and use of, fire.

The Bolivia Local Report (BoLR) presents a set of information related to government actions that incentivise the expansion of the agricultural frontier without an adequate accompanying conservation policy:

> *The use of fire is unavoidable in the Americas. It is therefore necessary to differentiate between traditional "chaqueo" fires for agricultural purposes or the clearing of "chaco" through "controlled burning"12, which generally occurs on a small scale (less than three hectares) for self-sufficiency purposes, and large-scale agroindustrial or livestock-related clearing using mechanized fires that involve the burning of large areas of land (up to 50 or 100 hectares) and is linked to the extension of the agricultural frontier for market interests and/or the export of raw materials. In cases where there is no oversight and in adverse conditions, this type of burning can lead to FOREST FIRES that indiscriminately destroy everything in their path. In 2019 the forest fires in Bolivia were catalogued as level six; a phenomenon unequalled elsewhere in the continent that can engulf more than 4000 ha. of forest per hour (Castellnou, M. 2018).*

Laws that incentivise the expansion of the agroindustrial frontier.

In effect there are no clear conservation policies, no initiatives to replace extractive activities or address their negative socio-environmental effects (Gudynas, 2015), and no initiatives to increase agricultural productivity per hectare, which is key to reducing rates of deforestation. Until Nov. 10, 2019, the former Movement Towards Socialism (MAS) government supported settlement colonisation with infrastructure and public investment13, incentivising the expansion of the agricultural frontier in indigenous territories and protected areas of the Amazon, Gran Chaco and Cerrado b. or Chiquitanía, where, according to Rojas (2019 in press), Costa and Olona (Mongabay 2019), and others, as much as 90% of available land has been allocated by INRA (Bolivia's National Institute of Agrarian Reform).

The government also introduced a series of legal modifications such as Law 741 from 2015, which authorised the clearing of up to 20 hectares for private and community properties, and Supreme Decree 26075, which states: "Clearing is authorised for agricultural activities on private and community lands that are part of the integrated sustainable management of forests and land in the departments of Santa Cruz and Beni (...) In both departments, controlled burning is permitted in accordance with current regulations in assigned areas as classified by the Land Use Plan (PLUS)". Prior to July 10, 2019, clearing and burning was only permitted

12 Traditional Chaqueo: A practice of lowland indigenous peoples and a schedule that accompanies cultivation is the grazing of pastures and cutting of logs between March and July, and the settling of forest material on the ground in October, burning after the first rain, and sowing with the rains of November and December, using CONTROLLED BURNING: A practice of voluntary burning in a certain area, which must be isolated in such a way that the fire produced cannot spread beyond the land intended to be burned. This involves building firebreak alleys around the boundaries of the area, clearing vegetation and all combustible material along corridors of a prudent width. The owners of the property alert the neighbours to the burning. Be careful! Do not burn when there are strong winds and high temperatures. Have enough help: Ensure an adequate number of trained people and tools necessary to control the burning and watch that the fire does not spread until it is totally extinguished, including any embers that could potentially reignite. Schedule and time the burns appropriately: With those responsible to be cleared and authorized by the Municipal Forestry Unit (UFM), in turn delegated by the Forestry Superintendence. Do not damage the soil: Bear in mind the frequency, duration and intensity of the fire to avoid damaging the soil, as well as the length of burning time (the thicker the material being burned, the greater the damage to the soil).

13 Infrastructure and investments in public companies can have consequences on forests and biodiversity: e.g. the San Buenaventura Sugar Mill, the paper mill in the Chapare, the various hydroelectric plants located in tributaries of the Amazon, parks and indigenous territories, and hydrocarbon exploration and exploitation. Intensifying and expanding extractive activities (oil, energy, agriculture and mining) (Campanini, 2014; Gómez, 2018; McKay, 2018).

on private land and only in the department of Santa Cruz. The approval of DS 3973 and the amendment of Article 5 of DS 26075 authorized controlled fires on private and community lands in Santa Cruz and Beni.

Finally, without consultation with the indigenous sector, the Government of Beni (related to the former government) promulgated the Land Use Plan for the department of Beni on November 27, 2019, exposing 10 million hectares of land (to deforestation) through its classification as "agricultural land". This instrument altered land use; authorizing everything from new roads to extractive systems. Indigenous territories received "no prior consultation" and may only participate in the PLUS at the request of their authorities. Protected Areas without Management Plans can be re-categorized and re-defined when necessary. In existing wetlands, seasonal cultivation is permitted in summer using adaptive species and measures are in place for the use of agrochemicals against wildlife. And they have switched from using the term "Sustainable Development" (or the conservation of resources for future generations) to the term "Sustainable" (or greater productivity of the environment). These land rights are assigned by the Departmental Agrarian Commission or competent departmental authority (PLUS BENI 2019), without consideration of indigenous and peasant communities' real and ongoing economic dependence (70%) on the remaining forest (collecting timber and non-timber resources, among others[14] *(BoLR-2020).*

In Brazil, on the initiative of the Federal Public Prosecutor's Office and the Federal Police, a criminal plan was established in 2019 "to set fire to parts of the jungle"; later known as the "Day of Fire" (August 10, 2019). According to BBC Brazil: "The first reports about this (Day of Fire) were published on August 5 by the *Folha do Progresso* newspaper in the Paraná city of Nuevo Progreso, 1194 km from state capital Belén. The report mentioned a discussion with an unnamed leader of the city's rural producers in which he promised to instigate forest fires on the 10th. "The producers want the 10th of August to come to the attention of the authorities (...) The increase of production takes place without government support in the region. "We need to show the president (Jair Bolsonaro) that we want to work and the only way to do that is by cutting down trees. The way to shape and clean our pastures is through fire", the text read[15].

In a Globo report[16], the illicit initiative was described as follows:

> The criminal plan that became known as the "Day of Fire" after news that forest fires were organized in the municipalities of Altamira and Novo Progresso, southwest Pará, on August 10 and 11 of this year, was coordinated through at least three groups in messaging applications. The information provided to Globo Rural magazine was confirmed to G1 on Wednesday (23) by Sérgio Pimenta, Federal Police delegate in Santarém: '(...) last year (2019), the drought alone was not enough to explain the increase in fires; the average volume of rain was normal for the period'. The key element was the growth of deforestation: According to data from Deter, the first eight months of 2019 showed a 92% increase compared to the same period in 2018. 'The Amazon is a rainforest that does not burn naturally. The fire there is somebody's responsibility, and it's called a human being,' says researcher Ane Alencar, science director at IPAM (Amazon Environmental Research Institute)".

The Paraguay Local Report (PyLR, 2020) reveals:

> *Forest fires in the Paraguayan Chaco normally occur between the months of August and Oc-*

14 Data from Vincent Vos, in a plenary session on the New Land Use Plan in Beni 2019, where he mentions the high attachment of the Beni people to timber, chestnut, rubber and non-timber forest products.

15 Available at: https://www.bbc.com/portuguese/brasil-49453037 Access date: 9 May 2020. See also: https://www1.folha.uol.com.br/ambiente/2019/10/fazendeiros-e-empresarios-organizaram-dia-do-fogo-apontam-investigacoes.shtml Accessed: 9 May 2020.

16 Available at: https://g1.globo.com/pa/santarem-regiao/noticia/2019/10/23/dia-do-fogo-foi-combinado-em-grupos-de-mensagens-revela-policia-federal.ghtml Accessed: 9 May 2020.

tober, with the highest incidence from mid-August to mid-September.

The origin of these fires is entirely anthropogenic; fire is customarily used in the management of pastures through the "controlled burning" of fields carried out in order to facilitate pastural foliage growth while maintaining its nutritional and palatable qualities. Although this traditional practice has always entailed considerable biodiversity impacts on the environment in general, historically it was limited to environments governed by natural formations, both topographical and in terms of the vegetation predominant in the landscape, which ensured that the availability of combustible material and the degree of humidity, wind and space were within the containment capacity of the productive rural environment's ecosystem. It should be noted that this technique was originally applied to natural grasslands and savannas.

The "savannization" of scrubland and forest environments is taking place in the context of livestock production in the Chaco region, with the adoption of practices that deviate from the quantitative and qualitative parameters that ensure environmental "balance" in traditional systems. When the practice of burning is transferred to other types of grassland or savannah environments that are not adapted to fire, the human capacity to control burning and the natural capacity to limit fires is lost. In the traditional system consisting mainly of native grass species, the available combustible biomass is normally of rapid combustion and low temperature storage potential, which causes ephemeral or fleeting ignition, ensuring the likelihood of spread to other types of higher density vegetation remains low (IQLPy-2020).

The fires became particularly intense and extensive in 2019 after an uncommonly rainy period between January and May in the region, which had rarely occurred since the region underwent widespread deforestation and conversion to pastureland. This situation led to a significant increase in biomass, principally amongst the introduced pastures, with their volume increasing by as much as 50%. Months of drought, heat and abnormally strong winds followed the heavy rains, resulting in the controlled burns to which the pastures were normally subjected getting completely out of control. The recklessness of those carrying out such burns increased the spread of the fires across Paraguay, although it was in the Chaco that the fires assumed a particularly vast magnitude, covering almost 360,000 hectares (PyLFR-2020).

Below is a brief overview of information on indigenous peoples in isolation in South America, followed by the methodology used in the analysis of the fires in Bolivia, Brazil and Paraguay, and, finally, the trinational analysis of their impacts on indigenous peoples in isolation (PIA).

3. The pia in South America

Information about the PIA was obtained and systematised using documentary and field research; traveller and missionary accounts; interviews with the surrounding (indigenous and non-indigenous) population living nearby or sharing territories inhabited by the PIA (including the accounts of those involved in illicit activities); overflights; official reports from public institutions; anthropological accounts and scientific publications; bibliographic information, field trips organised specifically for such purposes, and the extensive use of new technologies linked to remote sensing (high-resolution satellite images), among other methods.

There is no common denomination in the eight South American countries with a recorded PIA presence to designate the existence of a particular people (ethnicity or group) in a situation of isolation. Different countries use "reference", "records", "information", etc.

This report uses "records" or "registers" and their associated derivations. As Amorim[17] (2016) explained to the official Brazilian indigenous body, Fundação Nacional do Indio – FUNAI – records concerning the existence of a particular PIA in a certain region:

17 Amorim, Fabrício Ferreira. *Isolated indigenous peoples in Brazil and the indigenist policy designed to ensure their rights: Advances, avenues and threats* (Povos indígenas isolados no Brasil e a política indigenista desenvolvida para efetivação de seus direitos: avanços, caminhos e ameaças). In Revista Brasileira de Lingüística Antropológica. 2016

(...) are intended to become a georeferenced, duly qualified and systematized data base on the use and occupation dynamics and socio-cultural characteristics of these peoples, without the need for contact interventions. At the administrative level, the data collected in the field is organised and annexed to previously existing records in the Funai database (...). A "record" is the basic unit in the process of systematizing data for the institutional recognition of the existence of isolated indigenous peoples. In general terms, a "record" is linked to a region or to a geographical reference in which there is a possible or proven presence of isolated indigenous peoples or groups, and given an identifying number (...).

Records are classified according to the degree of data available concerning their presence: i) ***Information Record****; when data from third parties is available, but classified in a still preliminary manner and/or with a limited body of data; ii)* ***Reference Record*** *under study; when a strong body of qualified and organized data is available which requires the carrying out of field expeditions to deepen information, investigate possible traces and verify their presence; and iii)* ***Confirmed Reference Record****; when the Reference Record under study has been verified and the presence of isolated individuals has been verified in the field through the location of irrefutable evidence, and expeditions and/or overflights have been carried out by Funai's specially trained teams (...)*

With regard to estimating the number of indigenous peoples in isolation in the Amazon and Gran Chaco regions of South America[18], the Regional Report systematized the data available for 2005 and 2019. The First International Meeting on "Indigenous Peoples in Isolation in the Amazon and Gran Chaco"[19] was held in Belém (State of Pará, Brazil) in 2005. On that occasion, the analysis outlined the following picture:

18 It is important to stress that there is no single methodology at the regional level for systematizing PIA registration. Note that in some countries registration is done according to ethnicity, in others "location/region". The same ethnicity may therefore be recorded more than once, as data could exist in simultaneously in different regions.

19 Organized in Belem, Pará (Brazil) from 8 to 11 November 2005 by FUNAI's General Coordinator of Isolated Indians (Coordinadora General de los Indios Aislados) and the Centre for Indigenous Work (CTI), headquartered in Brasilia. At this meeting, consultant Vincent Brackelaire presented the document: "Regional diagnosis of the situation of the last isolated indigenous peoples in Latin America (Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Venezuela)". The same author presented an updated version in 2006, incorporating the results of the 2005 meeting: "Situation of the last isolated indigenous peoples in Latin America (Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Venezuela) - Regional diagnosis to facilitate protection strategies. Available at: http://jasyrenyhe.com/fobomade/wp-content/uploads/sites/10/2016/11/Situacion_pueblos_ind%C3%ADgenas_aislados2006.pdf. Date of access: 8 May 2020

Table 1. PIA in the Amazon and Gran Chaco (as of 2005)

Country / PIA Records - 2005						
Bolivia	**Brasil**	**Colombia**	**Ecuador**	**Paraguay**	**Perú**	**Venezuela**
Confirmed:05	Confirmed:20	Confirmed:01	Confirmed:02	Confirmed:02	Confirmed:20	Confirmed:01
To be confirmed: 03	To be confirmed: 28	To be confirmed: 00	To be confirmed: 01	To be confirmed: 00	To be confirmed: 00	To be confirmed: 00
2005 - TOTAL - 84 **PIA Confirmed: 51** **PIA to be confirmed: 33**						

According to data collected for the (2019) Regional Report[20], the registered presence of indigenous peoples in isolation in 2019 was as follows:

Table 2. PIA in the Amazon and Gran Chaco (as of 2019)

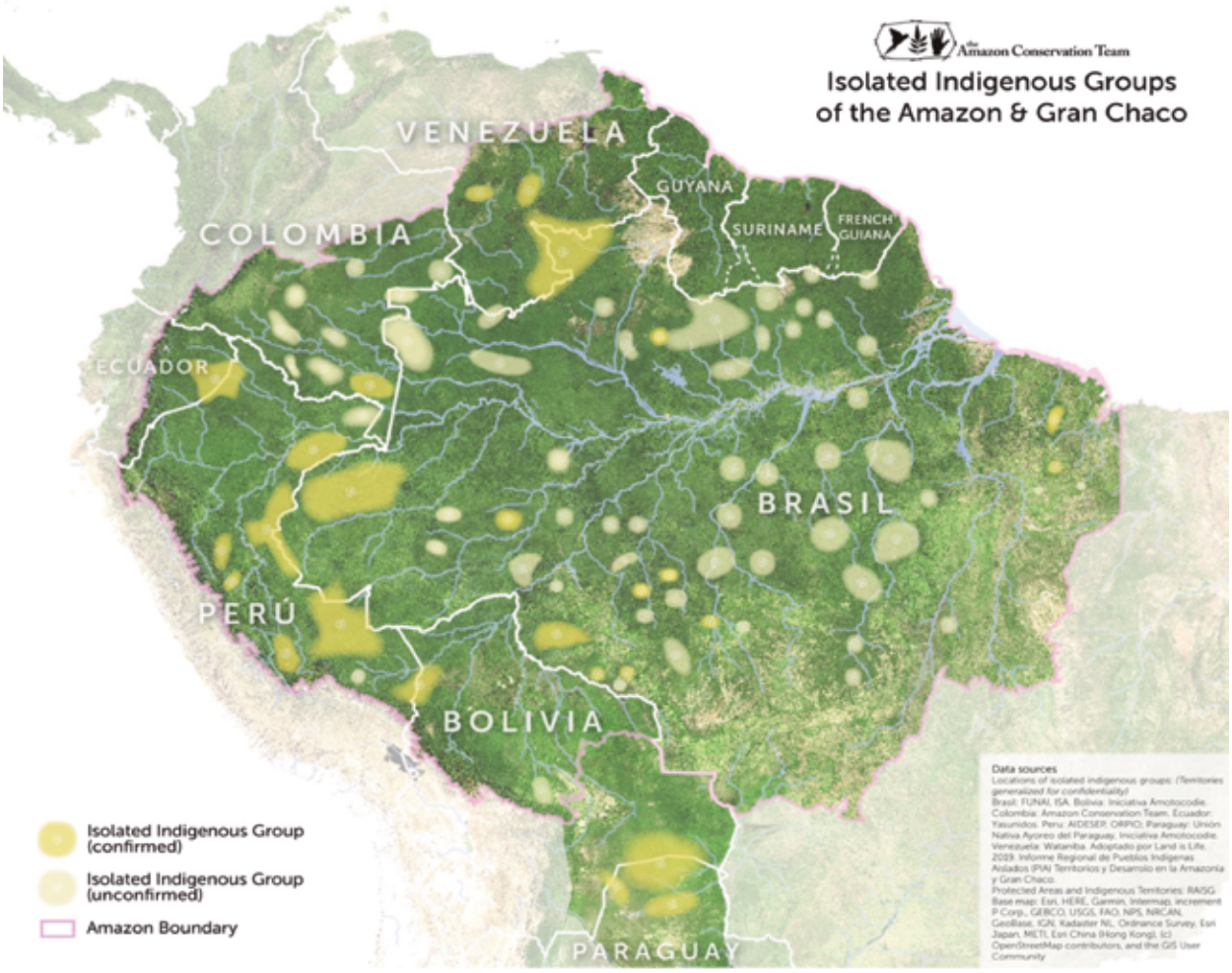
Country / PIA Records - 2005						
Bolivia	**Brasil**	**Colombia**	**Ecuador**	**Paraguay**	**Perú**	**Venezuela**
Confirmed:02	Confirmed:28	Confirmed:02	Confirmed:03	Confirmed:02	Confirmed:26	Confirmed:03
To be confirmed: 07	To be confirmed: 86	To be confirmed: 16	To be confirmed: 04	To be confirmed: 05	To be confirmed: 00	To be confirmed: 01
2005 - TOTAL - 185 **PIA Confirmed: 66** **PIA to be confirmed: 119**						

The period between 2005 and 2019 demonstrates progress in the confirmation of indigenous peoples in isolation (increasing from 51 confirmed records in 2005, to 66 in 2019) as well as in the number of still to be confirmed PIA records (from 33 records in 2005, to 119 in 2019).

The total number of recorded PIA in South America increased from 84 to 185 across the Amazon, Cerrado and Gran Chaco biomes. Despite progress in the monitoring and quantifying of records, the public policy framework for PIA protection remains precarious due to the numerous legal and illegal activities in their territories and surrounding areas.

20 Vaz, Antenor. 2019. Indigenous peoples in Isolation: Territories and Development in the Amazon and Gran Chaco ['Regional Report']. Available at: http://landislife.org/wp-content/uploads/2019/10/Land-is-life-25-septiembre-2019.pdf Accessed: 8 May, 2020.

Map 1. Registered PIA in South America (2020). Prepared by: ACT Colombia



4. Traditional ecological knowledge and types of fire in Bolivia, Brazil and Paraguay

4.1 Traditional Ecological Knowledge

The use of ancient fire techniques for traditional land management has been a constant among the indigenous peoples of South America for millennia. The 2019 fires that occurred in Bolivia, Brazil and Paraguay, however, bear no relation to this traditional practice.

For indigenous peoples (with a history of contact), fire may be understood differently from current Western thinking. According to Pedro Paulo Xerente, manager of the Xerente brigades in PrevFogo's Federal Brigade Program[21], fire

> *"(...) is also life. It is through fire that crops are grown, that fruit is yielded, which later becomes food and then organic matter, which feeds the soil. It is fire that makes life happen (...) At the beginning of the dry season, the elders say where (one should) set fire. This can help the trees bear fruit, for example.*

"The use of natural resources by the Piripkura Indians[22] in the Northwest of Mato

21 National Centre for the Prevention and Combat of Forest Fires. More information available at: https://www.ibama.gov.br/incendios-florestais/prevfogo Date accessed: May 4, 2020

22 Indigenous peoples in isolation in the northwest of Mato Grosso State, Brazil.

Grosso [Brazil]: An analysis of Traditional Ecological Knowledge in the Context of Brazil's Expansionist Policy in the Southern Amazon"[23] written by Tarcísio da Silva Santos Júnior, Jair Catabriga Candor and Ana Suely Arruda Câmara Cabral, and published in the Brazilian Journal of Anthropological Linguistics (V.8, n.2, 2016), is used as a reference to demonstrate the complex and indissoluble relationship that indigenous peoples in isolation have with their territory in this Trinational Fire Report.

The relationship between the PIA and their territories is marked by total dependence. Their nutritional sustenance depends entirely on these areas, which also provides the raw materials needed to (re)produce their material culture. Their relationship with territory goes beyond the "physical"; it is here too that they conduct their spiritual connections with their ancestors, with the fauna, the flora and all the minerals existing within it. A unique "traditional ecological knowledge"[24], or TEK, emerges from this ancient relationship between indigenous peoples and the ecosystem.

According to Santos Júnior et al. (2016), this traditional ecological knowledge encompasses knowledge of geographical space and the location of natural resources, as well as the biotic and abiotic interactions between fauna and flora species and the physical environment (climate, hydrography, relief and soils).

> *Understanding the operations of a functioning ecosystem to obtain the necessary resources for survival - for example, knowing if a fruit is palatable, where it is located and when it will be available for consumption - demands, among other things, observation, experimentation, learning and the transmission of knowledge (Berkes, Folke and Gadgil 1995). This sequence of action requires repetition, which only occurs when a group of people settle in a certain place, as in the case of the Kawahíwa with respect to their traditional territory (Menendez 1992).*

To clarify, the traditional ecological knowledge of indigenous peoples in isolation,

> *(...) is developed within the ecosystem and is based on the temporal and spatial co-evolution of sustainable use practices of biodiversity, without which the maintenance of the environmental health of the ecosystem and, consequently, the survival of the PIA, is unlikely (Berkes, Folkes and Gadgil 1995; Hooper et al. 2005).*

Fires and deforestation have:

> *(...) profound negative impacts on the organization of these peoples by reducing and fragmenting native plant species in PIA territories. This radically interfere in the PIAs intrinsic relationship with their territory and in the environmental health of the ecosystem, which is essential for the physical and cultural reproduction of these peoples. The survival of indigenous peoples in isolation depends on a territory free of the anthropogenic influences from non-Indians (Santos Júnior et al., 2016*)

The physical and cultural reproduction of indigenous peoples in isolation depends upon traditional ecological knowledge (TEK), which is itself intrinsically related to the environmental health of the ecosystem; a situation not easily reconciled with the expansionist economic policy in vogue across South America. A sobrevivência dos PIA depende de um território livre de influências antrópicas de não índios.

The results of this work demonstrate that regional economic growth based on the extensive use of natural resources feeds into a cycle of environmental degradation which in turn leads to a reduction in biodiversity and a loss of ecological resilience:

> *The continuity of the cycle shifts the state of equilibrium from ecosystem A to another ecosystem B, when the former can no longer absorb more negative environmental impacts (ecological resilience). The result of this process is that the ecosystem's new state of equilibrium may not be viable for the physical reproduction of*

23 Available at: https://periodicos.unb.br/index.php/ling/article/view/16301 Accessed: 8 May 2020.

24 Tarcísio et al. quoting Berkes, Folke and Gadgil (1995) in defining Traditional Ecological Knowledge as: "*A cumulative set of knowledge and beliefs linked to the relationships among living beings (including humans) and between them and their environment, maintained across different generations through cultural transmission*".

the Piripkura, insofar as our premise is that the Piripkura's TEK depends, in short, on the adaptive management of the biodiversity distributed across the spatial heterogeneity that constitutes the Piripkura Indigenous Territory-PRK. Finally, in the current political and socioeconomic context, an understanding of the Piripkura's use and occupation of the PRK Indigenous Territory is crucial in order to contribute to the safeguarding of their rights, as established in articles 230 and 231 of the Federal Constitution of Brazil, 1988, particularly since their traditional territory is not yet fully protected by the Brazilian State and, at present, continues to face the threats from economic expansion (Santos Junior et al., 2016).

The knowledge and practice of indigenous peoples is shaped through their relationship with and management of the biodiversity present in the spatial heterogeneity of their territories. Interference from external agents forces indigenous peoples to adopt new practices, but there is a limit to such adaptive capacity because, when exposed to intense and repeated negative interventions, resources (fauna, flora and the physical environment) are essentially finite.

The use of burning by indigenous populations has always been associated with and adapted to local ecological conditions. Traditional fires are used for cleaning spaces, be it to facilitate movement, attract game animals, eliminate poisonous animals, as well as for cultivation purposes. These activities are carried out in moderation utilising ancient wisdom[25]. The different types and uses of fire are described and classified in the Local Reports of Bolivia, Brazil and Paraguay.

4.2. Types of Fire in Bolivia, Brazil and Paraguay

The Bolivian Local Report distinguishes between three types of fire: forest fires, the mechanised burning of land for agroindustry and/or livestock grazing, and "traditional *chaqueo*" burning:

- Burning by traditional chaqueo: To carry out a chaco, an area of less than three hectares is selected by indigenous peoples of the lowlands for controlled burning[26] for agricultural purposes, and a schedule is established to guide cultivation. The process begins by grazing the pastures and cutting down logs between March and July so that the combustible material can settle in the soil until October. Burning begins following the first rain, in order that sowing may commence with the November and December rains. An indigenous self-sufficiency practice.

- Mechanised burning to clear land for agroindustry or livestock: Frequently carried out under the 'chaqueo' label to justify the current mechanised clearing and burning of extensive 50 or 100 hectare areas of land for agroindustry and other intensive farming. Subject to the logic and interests of the market and linked to the expansion of the agricultural frontier with a view to the export of raw materials.

25 The *coivara* method is a common use of fire in traditional agricultural systems, used in scrubland, savannah and forested areas. The *coivara* method is used to render a certain area agricultural, cleaning it and fixing chemical elements in the soil that are important for the cultivation of certain desired crops (corn, cassava etc.). There are, of course, other cosmological and socio-cultural factors related to the traditional adoption of fire which may or may not be related to their apparent functions, and which should therefore be understood in the context of the diversity of the peoples who practice it (BrLR 2019).

26 Controlled burning: Practice of voluntary burning on a given surface, which must be isolated in such a way that the fire produced cannot spread outside the area to be burned. It involves building firebreak alleys at the boundaries of the area, clearing vegetation and all combustible material with corridors of prudent width. Always alert! As the owner of the property, you must warn your neighbours about the burning. Be careful! Do not burn when there are strong winds and high temperatures. Count on sufficient help: the number of trained people and tools necessary to control the burning, watching that the fire does not spread, until the total extinction of the fire and in addition to eliminate the bulbs that can be lit again. Schedule the burns with those responsible for the land to be cleared and authorized by the Municipal Forestry Unit (UFM) when the Forestry Superintendence refers the function to these units. Do not damage the soil: take into account the frequency, duration and intensity of the burn to avoid damage to the soil, as well as the length of time (the thicker the material being burned the greater the damage to the soil).

- Fires and wildfires: Fires that become wildfires, which then result in "forest fires", defined as: "... an uncontrolled manmade or natural fire that occurs in natural or managed forests, causing ecological, climatic, economic and social damage", i.e. those that occur in forested areas due to the abundant content of potentially flammable combustible material; trees, resins, branches, leaves, dry scrub, bushes, grasses, stubble, dry grass, etc. which, when they burn, carbonize, produce embers, sparks, burn and indiscriminately destroy all that lies in their path.

The Brazilian Local Report presents different initiatives that indigenous peoples and organizations implement to combat fires and safeguard indigenous territory. It is worth noting that fire-fighting initiatives are carried out in coordination with state bodies while territorial protection activities are autonomous and receive little to no support from the state:

The protection of lives and territories and the care of Mother Earth are guiding principles for indigenous peoples. For some years now, communities and indigenous organizations have been forming groups of fire brigades and forest protection units to protect their territories. These initiatives occur across the country, but primarily in the Brazilian Amazon.

Indigenous peoples have taken on the role of fighting forest fires and preserving various biomes. The emerging need to fight fires in the interior of indigenous territories is carried out mainly by ***indigenous brigades****, many of which are contracted by Prevfogo - a Brazilian state agency linked to the Institute of the Environment (IBAMA) - and in certain regions also by groups of forest guards. These initiatives to contain the advance of illegal activities and protect territories stem from indigenous peoples themselves.*

The work of these brigades and guards significantly reduced the devastation caused by the fires in 2019, when the largest fires ever recorded in indigenous territories broke out. The ongoing and tireless efforts to fight the fires, which were identified from satellite images or from information from the communities themselves, and then transmitted to indigenous peoples, were fundamental in their eventual extinction. Despite the importance of their role, most of the brigades and guards acted to the limit of their human, psychological, material, operational and financial resources; the limitations of which in some cases restricted their ability to contain the fires in their territories. The vulnerability of regions with a presence of indigenous peoples in isolation requires urgent and special attention in this regard.

Another extremely challenging situation in this context was the increase in the number of illegal fires and other illicit activities on indigenous lands. The increase in such activity can be attributed to the country's present political landscape in which the Jair Bolsonaro's government is inciting attacks against the rights and territories of indigenous peoples.

The importance of properly organising and equipping both the brigades and the indigenous rangers to fight the fires in Indigenous Territories is increasingly evident in this context. The indigenous movement itself must also be better organized and strengthened in order to support these groups in a preventative strategy involving the planning, training and provision of resources to these brigades and guards.

Prompted by the 2019 outbreak of fires in Indigenous Territories, COIAB launched a campaign to attract support to help fight the fires in Indigenous Territories of the Amazon. Resources were organized and deployed for the brigades working with the Xerente, Krahô, Apinajé and Karajá peoples in the state of Tocantins; the Uru-Eu-Wau-Wau people in the state of Rondônia; and the forest guardians of the Arariboia Indigenous Land in Maranhão.

These sorts of initiatives and collective action for the protection of indigenous territories are increasingly necessary today. Ongoing interaction and the exchange of experiences between indigenous brigades and forest guardians, and between local leaders and indigenous organizations, is incredibly important if processes are to be built that can better protect indigenous peoples and territories and safeguard the existence of future generations (BrLFR).

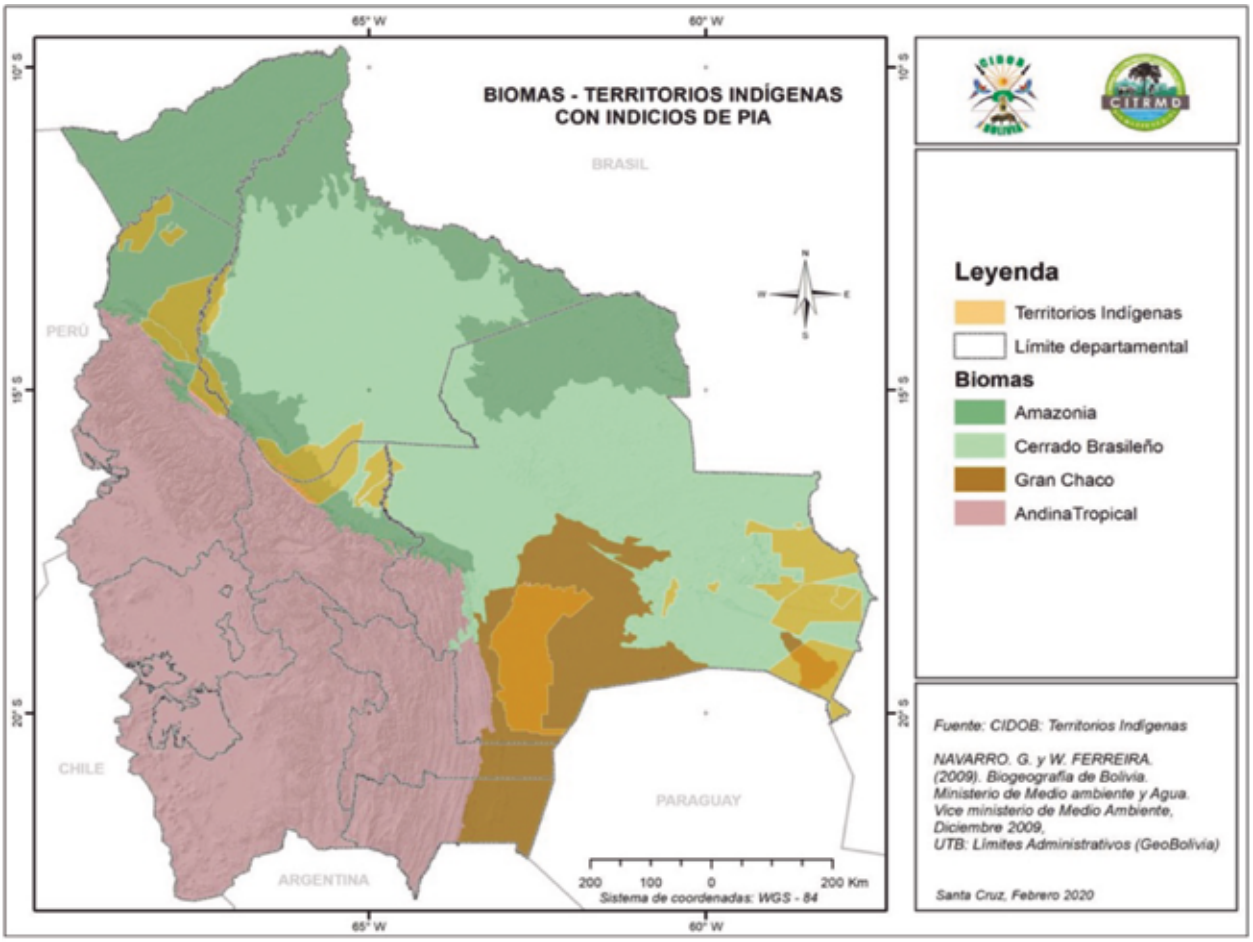
The following section describes how the three Local Reports defined and addressed the fires in the different ecosystems in their respective countries with a presence of indigenous peoples in isolation.

Bolivia

Based on the vegetation map of Bolivia by Ibisch and Merida (2003) and Eco Regions

and Ecosystems for Bolivia (Navarro and Ferreira 2007 and 2009), we chose Amazonia, the Cerrado Brazileño (Chiquitanía) and the Gran Chaco as the regions forming the basis of this study:

Map 2. Biomes and Location of Indigenous Territories in Bolivia



Satellite monitoring is carried out in Bolivia's protected areas, indigenous territories and PIA inhabited regions for the kind of fire registered in 2019 (classified as level six).

Amazon Biome (Bolivia):

"Amazonian" Biogeographic Regions: For the identification and analysis of live fire outbreaks, the boundaries of three out of the four large regions in Bolivia were used as biogeographical units: The aquatic ecosystems and wetlands of the Ben, Pantanal and Chiquitania, located in the Amazon Region; the Brazilian-Paranaense Region; and the Chaco Region, which were then further divided into their respective provinces and sectors (Navarro & Ferreira, 2009).

In the lowlands of northern Bolivia (northern Beni, northern La Paz and all of Pando), with extensions into the north of Santa Cruz. Additionally, in the lower and sub-Andean regions of the Eastern Cordillera of the Andes, from La Paz to the northwest of Santa Cruz[27].

27 *Southwestern Amazon Province (Acre and Madre de Dios): 1a) Acre and Madre de Dios sector (jungle and lowland forest), 1b) Heath and Lower Madidi sector (jungle and lowland forest), 1c) Pre-Andean sector of nor-*

Figure 1. Spatial distribution of detected outbreaks in the Amazon biome in 2019.

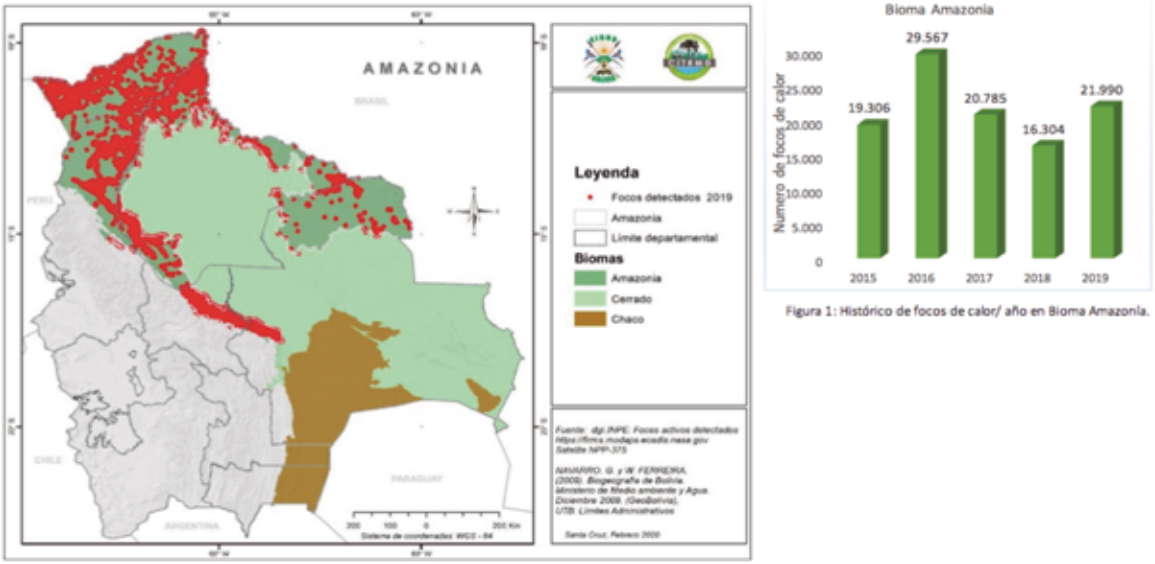
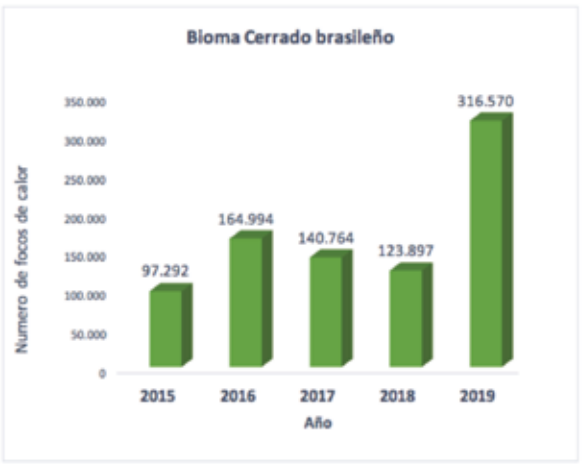


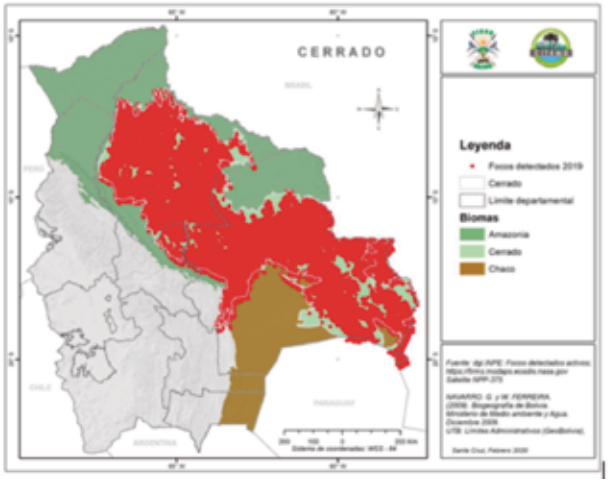
Figura 1: Histórico de focos de calor/ año en Bioma Amazonía.

Brazilian Cerrado (Bolivia)

Brazilian-Paranaense Region: The most extensive region in Bolivia and in South America as a whole, occupying most of the Department of Santa Cruz (Chiquitania) and Beni, with disjunct areas in the sub-Andean valleys of La Paz (Tuichi-Machariapo, Caranavi and Boopi), Cochabamba and Santa Cruz. It incorporates three distinct biogeographical provinces in Bolivia[28].

Figure 2. Location of detected outbreaks in the Brazilian Cerrado biome (Chiquitania) in 2019 and the total number of live fires recorded in the same biome between 2015 and 2019.





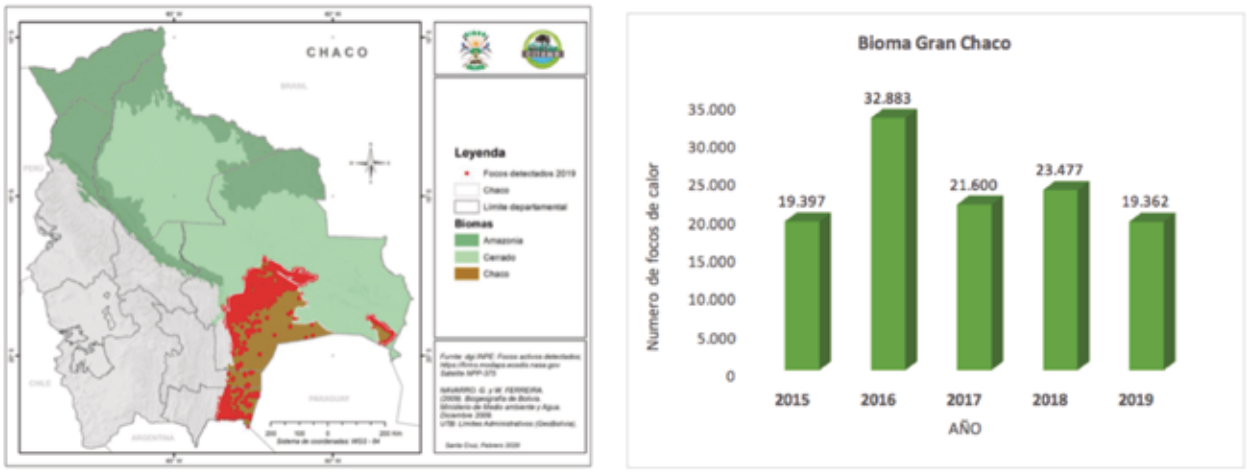
thern Bolivia and southern Peru (forest, shrub, and what is known as Várzea Amazónica) P.A. "Centro-Surea/ Central-South?" (Madeira and Tapajós): 2a) Alto Adeira sector, 2b) Guaporé sector.

28 *Province of "Cerradense Occidental"*: 3a) Chiquitano Transitional Sector to the Amazon. 3b) Chiquitano Central Sector. 3c) Chiquitano Transitional Sector to the Chaco 3d) Chiquitano sector of Santa Cruz. *P. "Beniana"*: 4a) Western Beniano Sector 24 4b) Eastern Beniano Sector 4c) Northern Beniano Sector. P. "Pantanal": 5a) Northwestern Pantanal sector (Curiche Grande Basin) 5b) Southern Pantanal sector (Corumbá-Miranda)

Gran Chaco

Chaqueña Region: Extends to the south and southeast in the Department of Santa Cruz and in the east in the departments of Chuquisaca and Tarija. It occupies the old alluvial fans of the Grande, Parapetí and Pilcomayo rivers and has a dry and semi-arid xeric bioclimate. Only one such biogeographic province is found in the country, encompassing two distinct biogeographic sectors[29].

Figure 3. Location of all detected fires in the Chaco biome in 2019 and the number of live fires recorded in the same biome between 2015 and 2019.



Brazil

Amazon Biome (Brazil)

Over the last five years, between 2015 and 2019, fires in the Amazon region have been recorded on an annual basis (see Figure 1). 2018 is an exception due to the amount of rainfall throughout the entire period (including the dry season). 2019 registers the third highest value across the range (with only 2016 and 2018 registering fewer fires, as shown in Figure 1). The number of detected outbreaks appears very close to the average, but, with seventeen thousand fewer occurrences than average, it is nonetheless a marked difference (see Figure 2). With respect to the incidence locations, the highest number of detected outbreaks occur in the state of Roraima and in deforested regions[30].

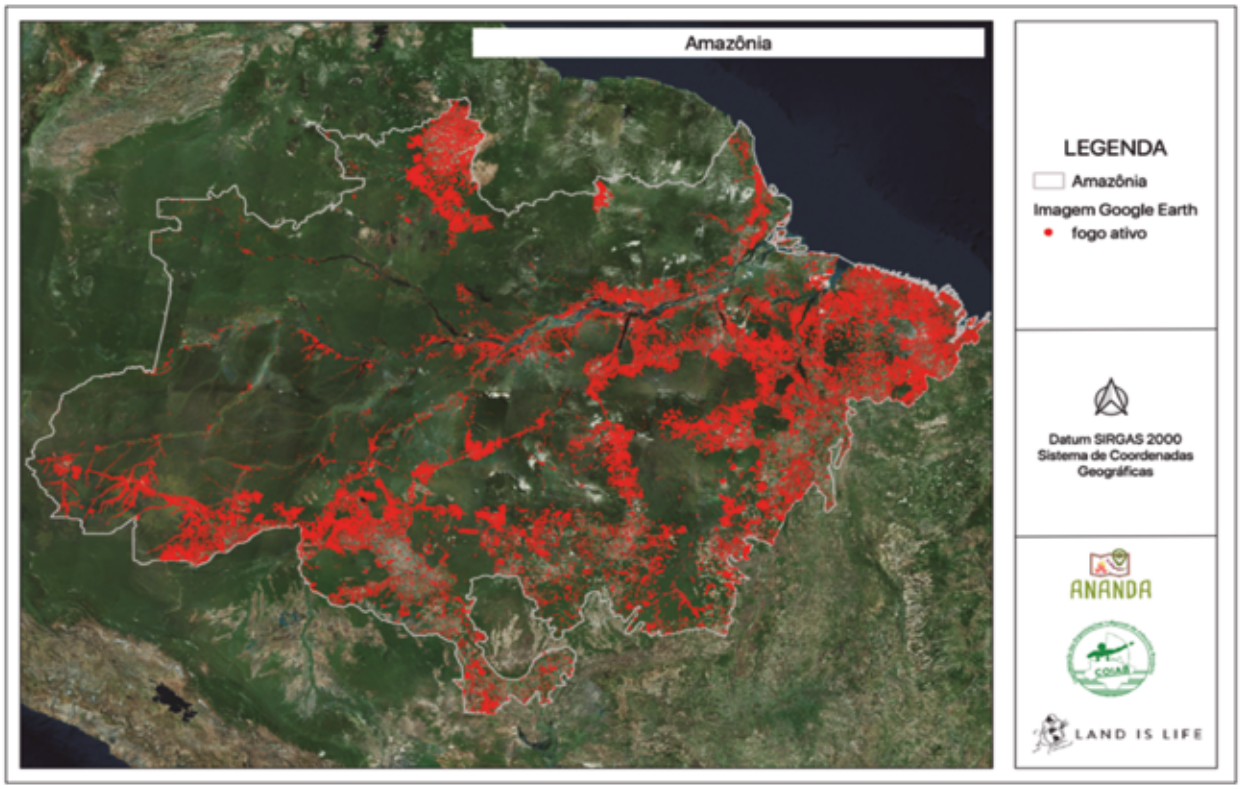
29 *Northern Chaco" Province*: 6a) Northwest Chaco Sector 6b) Northeast Chaco Sector

30 The region exhibits high rates of deforestation, ranging from south-eastern Pará and heading west through to Mato Grosso, Rondônia and Acre.

Figure 4. Number of live fires detected in the Amazon biome between 2015 and 2019.

Figure 5. Difference in the total number of live fires detected in the Amazon biome between 2015 and 2019 in relation to the annual average.

Map 3. Spatial distribution of all detected live fires in the Brazilian Amazon biome in 2019.



Cerrado Biome (Brazil)

The Cerrado contains ecosystems[31] prone to fire transmission (BARRADAS, 2017)[32], particularly when this phenomenon occurs infrequently and towards the end of the dry season. There are certain fire-sensitive plants in the biome which can be severely damaged with little chance of recovery.

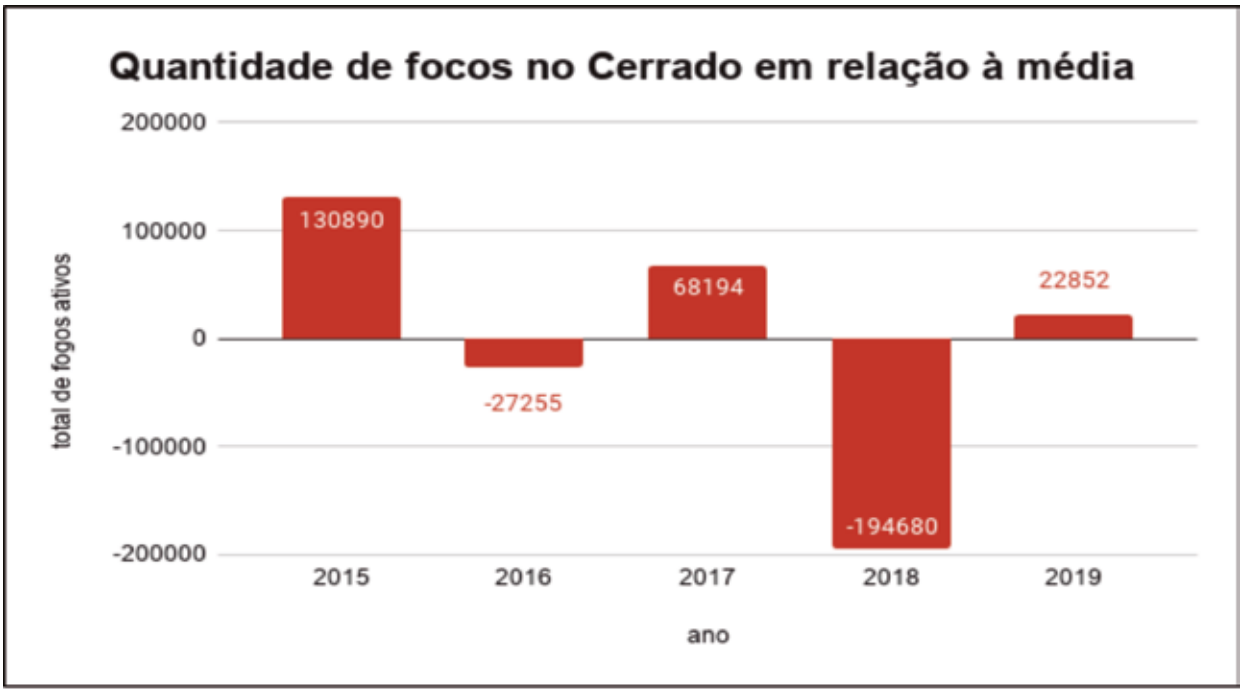
As in the Amazon biome, 2019 witnessed the third highest number of recorded fires (Figure 3), though in this instance with a greater than average number of detected outbreaks (Figure 4). The majority of the fires occurred in the north and centre of the biome and are strongly correlated with economic activity.

31 Savannah and pastureland.

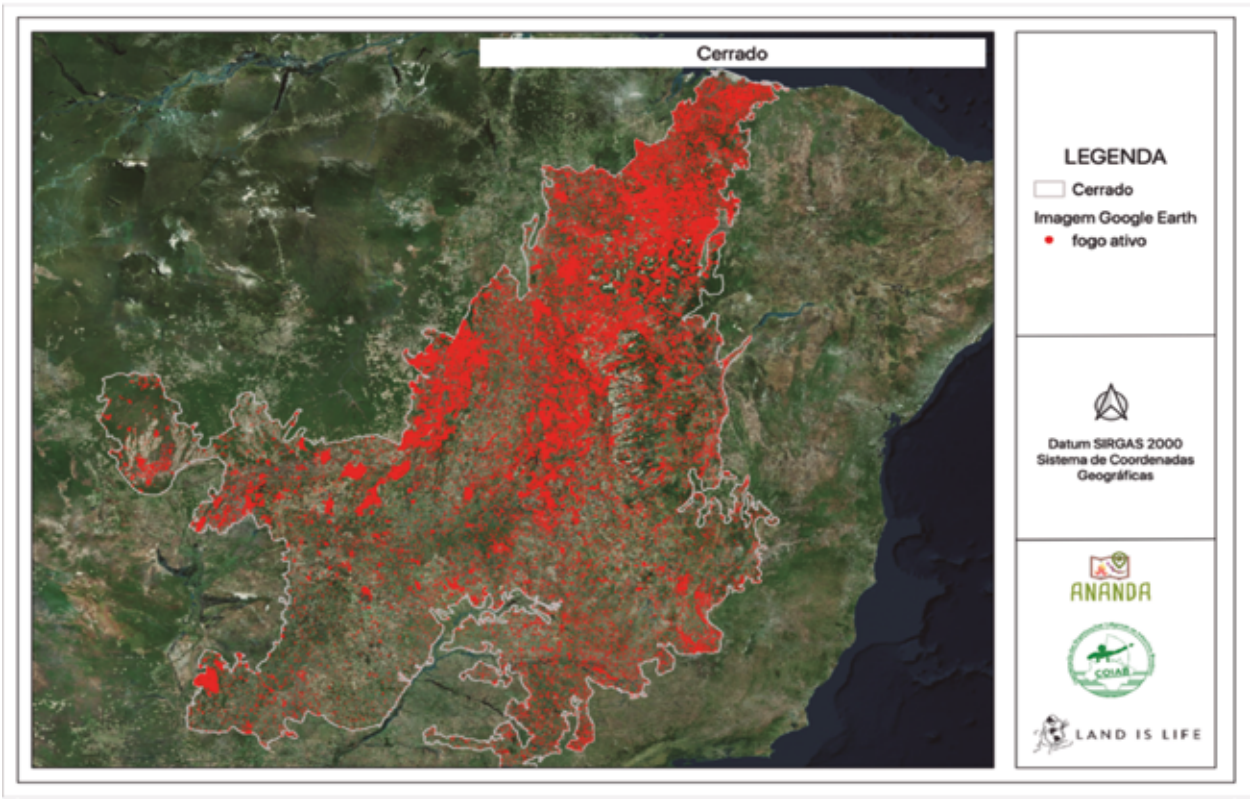
32 BARRADAS, Ana Carolina Sena. BARRADAS, Ana Carolina Sena. **Fire Management at Serra Geral do Tocantins Ecological Station, Brazil**. Rio de Janeiro National Botanical School/Garden: Rio de Janeiro, 2017.

Figure 6. Number of live fires detected in the Cerrado biome between 2015 and 2019.

Figure 7. Difference in the total number of live fires detected in the Cerrado Biome between 2015 and 2019 compared to the annual average.



Map 4. Spatial distribution of live fires detected in the Cerrado Biome in 2019.



Paraguay

The main vegetation types affected by the fires are the xerophytic and mesoxerophytic scrub of the northern Chaco[33] - including transitional areas between the two - and the upper mesoxerophytic highlands.

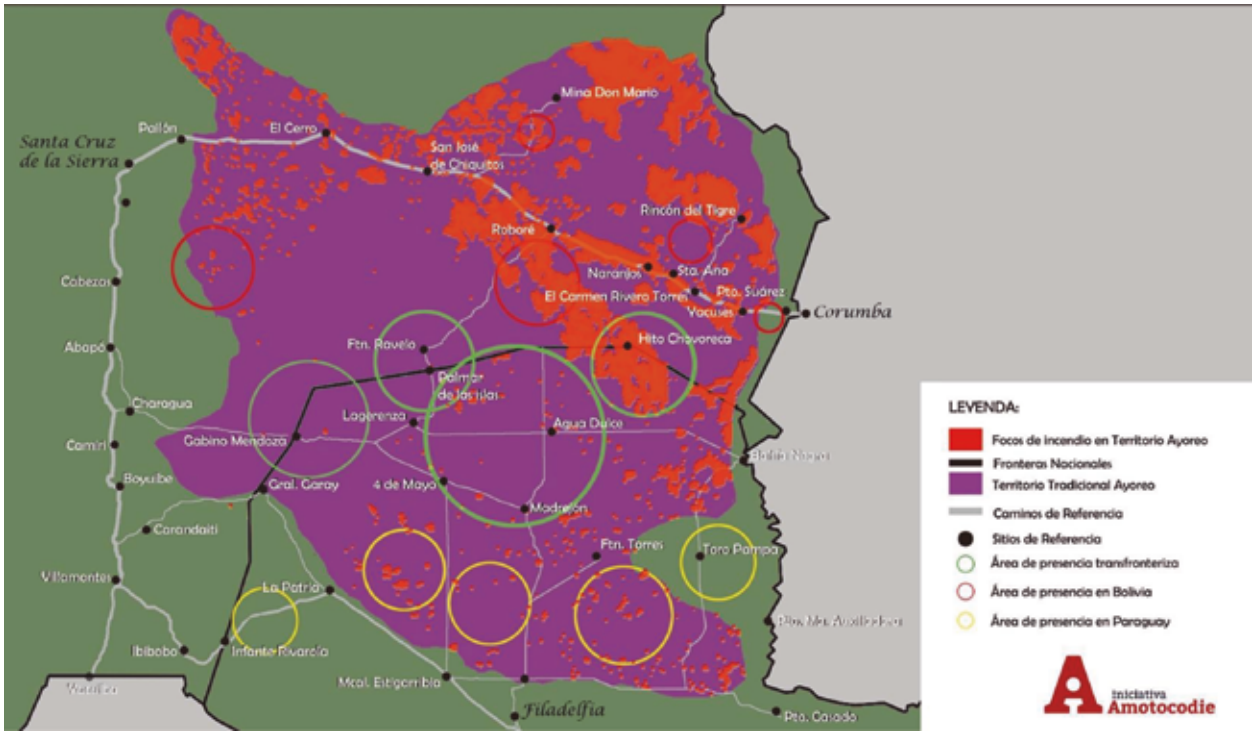
Photo 3 - Burned area on the Paraguay-Bolivia border taken after the first rains in November 2019. Photo: AI drone.

33 Hueck, 1978 - Hueck, H. The Forests of South America: Ecology, Composition and Economic Importance. GTZ. Eschborn, 1978.

The impacts are devastating; the destruction of the region's native vegetation has very serious consequences, especially if one looks at the resilience of the affected plant cover. These recover slowly and the land is occupied by species specialized in surviving in highly saline, dry land with poor fertility. It is estimated that of the 3,000 to 4,000 native species found in the various ecosystems of the northern Chaco, only 100 to 200 native species thrive in the burned plains. This represents a drastic decrease in the carrying capacity of local habitats, as well as in their overall environmental health. The damage to regional biodiversity is serious, and in many cases irreversible. This damage ranges from the extinction or disruption of the dynamics of different fauna species, to the breakdown of flora assemblages and, above all, to the degradation of local habitat systems.

The Chovoreca area in the border region between Paraguay and Bolivia suffered the lowest levels of deforestation. Despite the vegetation in this region being highly combustible, and the period coinciding with a prolonged drought, no significant fires occurred in this region between 2015 and 2018, even though records from Bolivia's SENAMI indicate the area was very dry and the risk of widespread combustion in the event of fire was high.

Map 5. Fire Outbreaks in 2019 and Areas with a Documented Ayoreo Presence in Paraguay and Bolivia.



5. Methodology

5.1. Procedures for the Local Reports

A common methodology was initially agreed upon and forwarded to the Amotocodie Initiative (Paraguay), CITRMD (Bolivia) and COIAB (Brazil), which left open the possibility of any necessary adaptations to the reality of the data in each country while, at the same time, stressing the importance of maintaining a certain standard of information, especially that concerning the quantification of fires.

For this reason, the use of live fire data (also known as *outbreaks* or *hotspots*) from only one satellite from the INPE Fire Program, the

NPP-375[34], was agreed upon which has the best spatial resolution (375m) of all available satellites, conducts four daily passes, and therefore produces more detailed mapping, which reduces omission errors[35].

The main analysis methodology was the monthly comparison of fires in each indigenous territory and conservation unit with a recorded presence of indigenous peoples in isolation. For the Cerrado, Amazon and Chaco biomes, the comparison was annual, taking into account the last five years (2014 to 2019). In addition to this analysis was the requirement to identify the areas affected by the 2019 fires.

The reports would be presented according to the outline detailed in Table 3:

Table 3. Outline of the procedures followed for the preparation of the local reports.

Information in the Report	Description
History of fires in the country	Brief summary
Annual number of fires per biome between 2015 and 2019	In the Amazon
	In the Chaco
	In the Cerrado
Fires in Indigenous Territories/Reserves with a PIA presence	Fire history (5-year period - 2015 to 2019)
	Causes of fire
	Monthly outbreaks in 2019
	Vegetation affected
	Source of fire (traditional, illegal economic management within the land, economic management by indigenous people)
	Direct and indirect impacts on PIA
Fires in Conservation Areas with a PIA presence	Fire history (5-year period - 2015 to 2019)
	Causes of fire
	Monthly outbreaks in 2019
	Vegetation affected
	Source of fire (traditional, illegal economic management within the land, economic management by indigenous people)
	Direct and indirect impacts on PIA

Highlighting periods of drought and rain in each country was also suggested, bearing in mind that non-traditional fires can be more dangerous in the dry period.

34 Available at: http://queimadas.dgi.inpe.br/queimadas/bdqueimadas#exportar Accessed: 9 May 2020

35 The assumption is that omission errors occur when the data is not mapped or recorded, which can lead to a weak understanding of fire patterns.

5.2. Procedures for the Bolivia Report

Bolivia based its analysis on the monthly and annual NPP-375 fire outbreak figures, in accordance with the methodological recommendations of the report coordinators, and presented maps and graphs detailing the location of these outbreaks. For the delineation of PIA areas, CITRMD screened the areas from the Indigenous and Native Territories Database (TIOC) and the national and sub-national Protected Areas Database, and then cross-checked this data with confirmed records to determine the sixteen indigenous territories and two protected areas to be analysed.

Figure 8. Example of diagnostic area assessment for the Bolivia Fire Report.

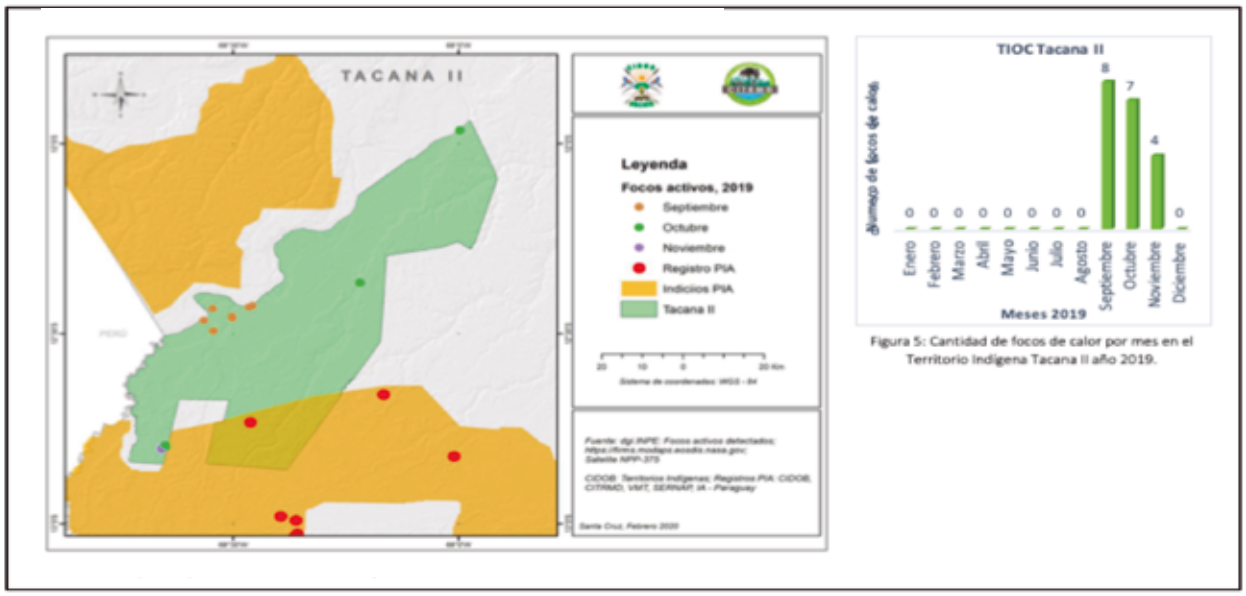


Figura 5: Cantidad de focos de calor por mes en el Territorio Indígena Tacana II año 2019.

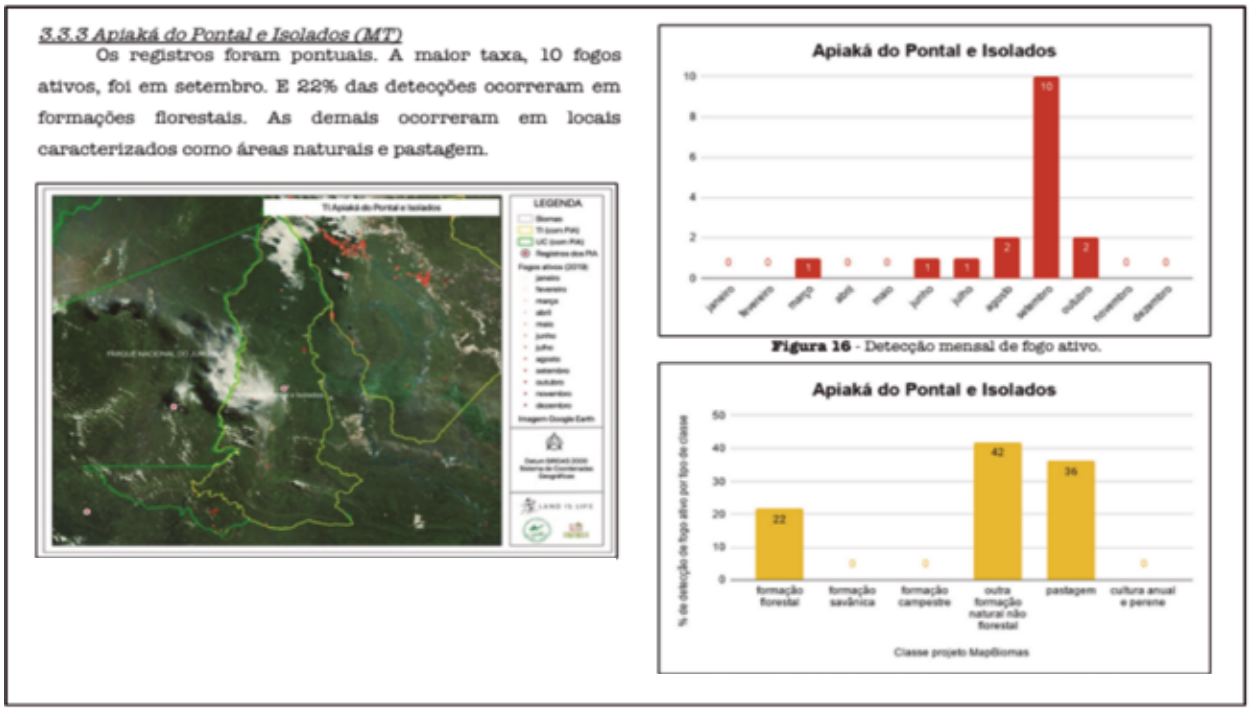
5.3. Procedures for the Brazil Report

Fire validation in the Brazil Report followed the same methodology as in the other reports: monthly fire analysis across 2019 were used in the case of indigenous territories and conservation units, and annual analysis in the Amazon and Cerrado biomes, based on NPP-375 fire outbreak data made available by the INPE's Fire Program. The *Shapefiles* database from the Ministry of Environment (MMA), the Chico Mendes Institute of Biodiversity Conservation (ICMBio) and the National Indian Foundation (FUNAI) databases were used to cross-reference Indigenous Territories and Conservation Areas.

Of all the data that was cross-checked with FUNAI's records on the presence of indigenous peoples in isolation (whether *under study*, or *data and reference confirmed*), only the 80 designated Indigenous Territories and 14 Conservation Units were taken into account.

When delineating research areas, in addition to the monthly fire analyses, data from collection 4, 2018 map, from the *MapBiomas Project* (https://mapbiomas.org/) was also taken into account to assess areas affected by fire. The data for each area was presented in map and graph format.

Figure 9. Example of diagnostic area assessment for the Brazil Fire Report.



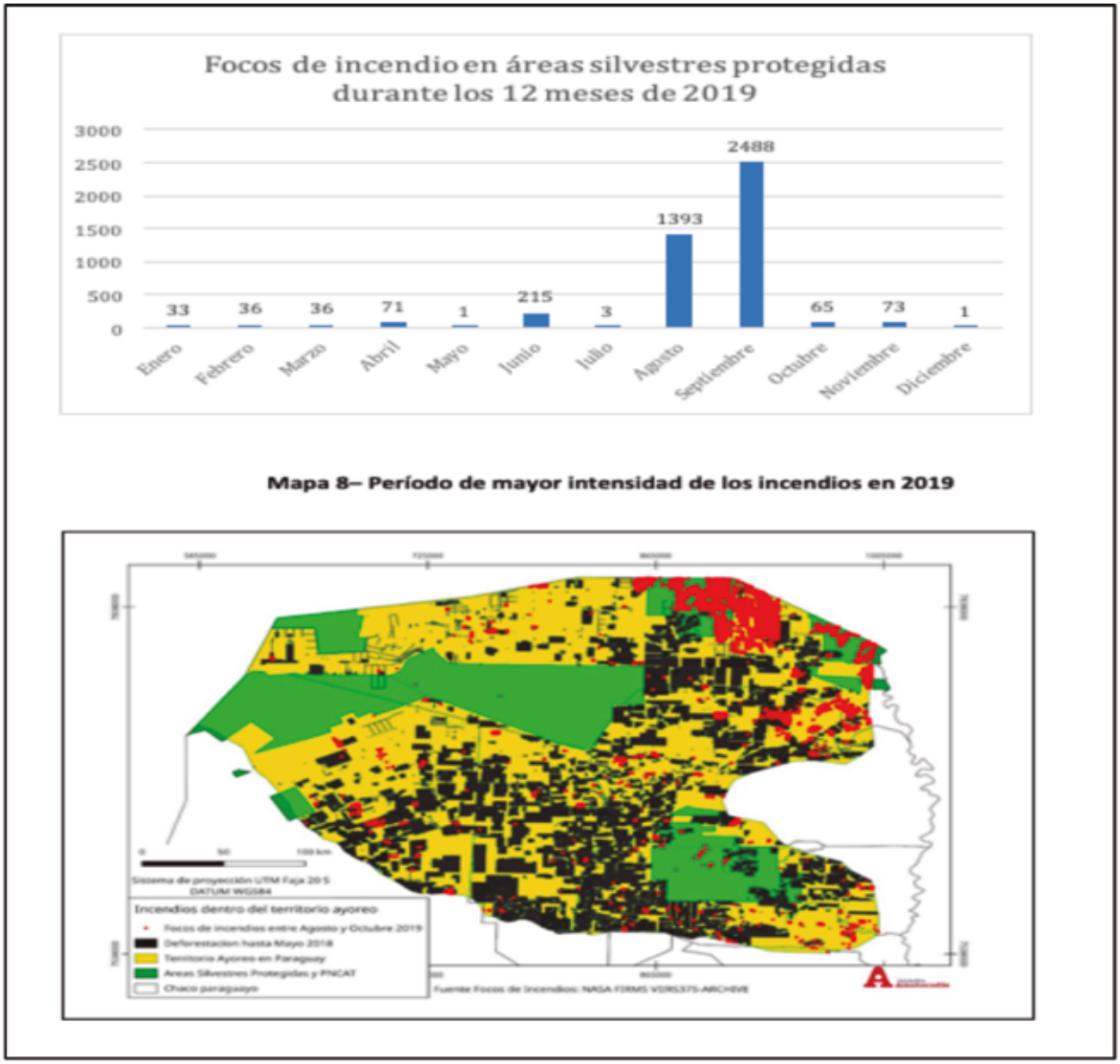
5.4. Procedures for the Paraguay Report

The Paraguay Report followed a different, more condensed model, while retaining the presentation and analysis of data with field validation alongside the indigenous elders of the Chovoreca region.

Live fire data was used from the *Fire Information for Resource Management System* (FIRMS) from the *National Aeronautics and Space Agency* (NASA), and the *VIIRS* satellite (the same as the NPP-375 system). In some cases, *Landsat* and *Sentinel* images assisted in detection. To assess fires in areas with a registered PIA presence, the *shapefiles* database was used to examine protected wilderness areas, indigenous territories and deforested areas between 2015 to 2019.

The information was arranged into annual fire and deforestation maps within Ayoreo territory in Paraguay, with all Indigenous Territories and Conservation Areas included in the same graphic. An analysis of the highest fire intensity periods together with a graph displaying monthly detected outbreaks throughout 2019 was also included (Figure 10).

Figure 10. Example of diagnostic area assessment for the Paraguay Fire Report.



6. Fires in indigenous territories and conservation units with a pia presence

Continuing to evaluate impacts, we will now present the indigenous territories/ reserves and conservation units affected by fire in each country.

Bolivia

Delineating study areas: For the analysis of detected fire outbreaks both those areas already titled as Indigenous and Native Territories - TIOC - and those still under consideration, have been taken into account. Many such territories are legally recognized by the state with collective property titles for peoples with a history of contact. Reference records have also been identified in studies on the presence of indigenous peoples in isolation (PIA) which require field surveys led by the DIGEPIO to delineate/demarcate territories. There have been at least 44 recorded references in studies between 2000 to 2019 by government agencies, indigenous territorial organizations and national level publications concerning the as many as 10 distinct PIA groups in Bolivia. These have been obtained through testimonies, photographic field records, and geographic reference locations.

Table 4. Local Occurrence Records.
The records used in this study are listed in orange.

Site	Reference records under investigation				Total
	Cingolani 2011	V-Ministry of Lands 2008	CITRMD Indigenous 2017	I. Amotocodie 2019	
In protected areas (Indigenous Territory/Conservation Unit)	5	7	0	7	19
Outside legally demarcated areas	2	3	6	14	25
Total	7	10	6	21	44[36]

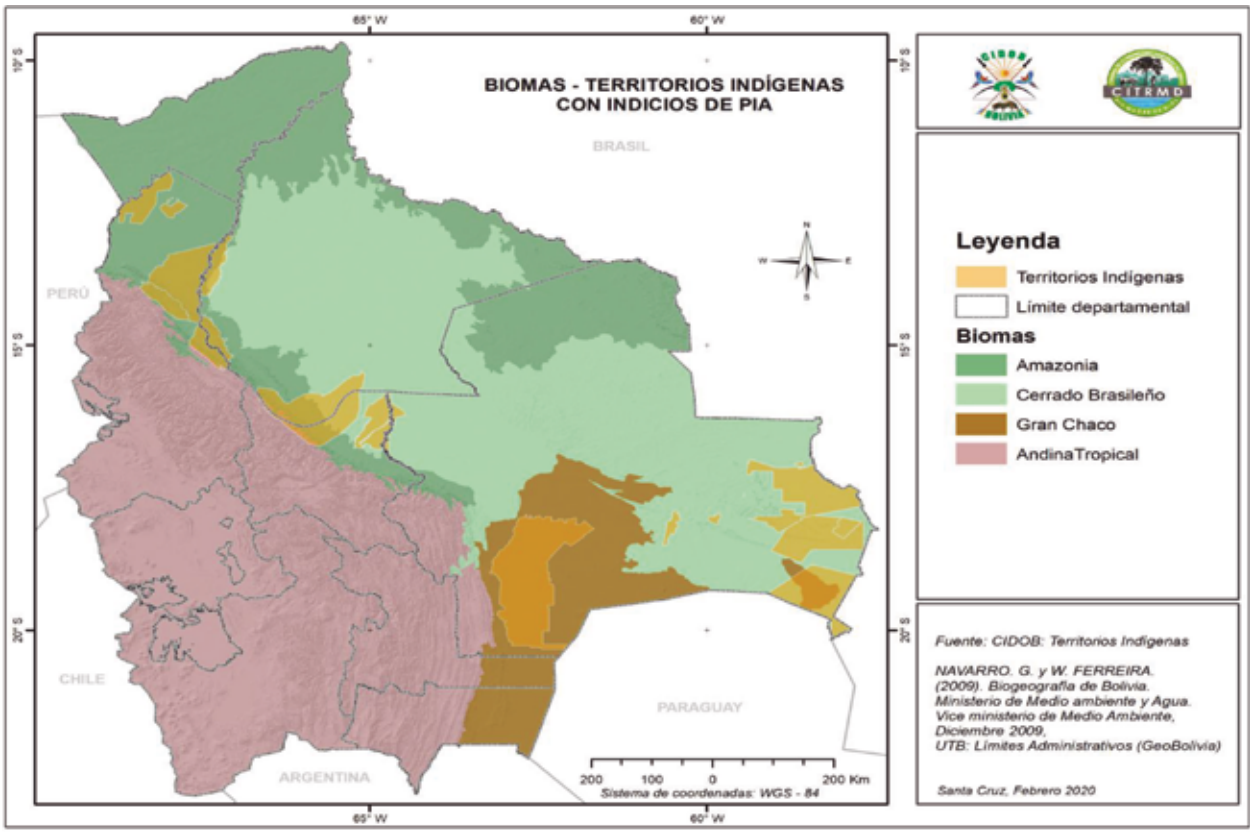
Table 5. Indigenous Territories with an identified PIA presence and fire outbreaks in 2019

Item	Unit	Territorio Indígena con historia de contacto (TIOC)	Con registros de referencia en estudios	Total
1	(TIOC)	San José de Uchupiamona	Total	1
2	TIOC	Tobite II	1	1
3	TIOC	Tacana III	1	1
4	TIOC	Yuqui	1	1
5	TIOC	El Pallar	1	1
6	TIOC	Tacana II	1	7
7	TIOC	Lajas Pylon	1	1
8	TIOC	Araona	1	1
9	TIOC	Tiger's Corner	1	1
10	TIOC	Lecos de Apolo	1	1
11	TIOC	Saint Therese	1	1
12	TIOC	Yuracare	1	1
13	TIOC	Tancana I	1	1
14	TIOC	TIPNIS	1	1
15	TIOC	Pantanal	1	1
16	TIOC	Isoso	1	1
17	TIOC	Otuquis	1	1
Total			17	23

36 This research adopted 7 records under consideration during the Cingolani study and the 2008 working roundtable map in Cobija, 10 records under study by the Vice-Ministry of Lands, 6 records outside Protected Areas by CITRMD, and another 21 indications or possible sightings by the Amotocodie Initiative for its proposed sites. A total of 44 potential records form the basis for this study.

The areas that correspond with live fire outbreaks are listed in the tables below; first, those that occurred in Indigenous Territories, and subsequently, those in Protected Areas with an identified PIA presence.

Map 6. Biomes - Indigenous Territories with an identified PIA presence.



The Protected Areas included have an identified PIA presence, or overlap or are adjacent to an indigenous territory with a documented PIA presence.

Table 6. National and Sub-National* Protected Areas with PIA Reference Records and Fire Outbreaks in 2019.

Unit	National Protected Area	PIA within or nearby the Protected Area	Reference Records to be confirmed by DIGEPIO	Fire Outbreaks in 2019
PNANMI	Saint Matthias	Ayoreo	1	32.659
Reserva	Ñembi Guasu*	Ayoreo	1	9.752
PN	Isiboro Secure	T´siman	1	3.707
PNANMI	Otuquis	Ayoreo	1	3.147
PN	Carrasco	Mbya Yuki	1	753
PNANMI	Madidi	Toromona; Araona; Nahua; undetermined	5	545
ZRA	Toromona*	Toromona	7	5
PNANMI	Amboró	Mbya Yuki	1	493

UF	Área Protegida Nacional	PIA superpuesto por el Área Protegida o área de influencia	Registros en estudios a reconfirmar la DIGEPIO	Focos de calor 2019
RVS	Bruno Racua*	Pacahuara	1	231
RB	Lajas Pylon	T'siman-Moseten	1	131
RN	Manuripi Heath	That Eja	1	53
PNANMI	Kaa Iya of the Great Chaco	Ayoreo	6	31
RB	Beni Biological Station	T´siman	1	sd
ANMI	Apolobamba	Nahua	1	sd

Brazil

The areas were determined in accordance with the annex to Technical Instruction (TI) n° 25/2017/COPLII/CGIIRC/DPT - FUNAI. This document identifies 114 records of the presence of Indigenous Peoples in Isolation, either confirmed, under investigation or suspected. Of these, 81 are in protected areas (indigenous territories - IT and/or conservation units – CU) and were taken into account for this report; while 33 records are outside of legally delimited areas and not evaluated.

Table 7. Local Occurrence Records
The records used in this study are listed in orange.

Site	Confirmed record	Record under investigation	Suspected record	Total
In protected areas (IT and/or CU)	27	17	37	81
Outside legally demarcated area	1	9	23	33
Total	28	26	60	114

The areas that correspond with live fire outbreaks are listed in the tables below. First, those that occurred in Indigenous Territories with an identified PIA presence and, subsequently, in conservation units.

Table 8. Indigenous Territories with a PIA Presence that were Assessed in Relation to the 2019 Fires.

UF	Terra Indígena	Referencia confirmada	Registro en estudio	Registro em información	Total
AC	Kampa e Isolados do Rio Envira	1			1
AC	Kaxinawa do Rio Humaitá	1			1
AC	Kaxinawa/Ashaninka do Rio Breu		1		1
AC	Mamoadate	1			1
AC	Riozinho do Alto Envira	2			2
AM	Alto Rio Negro			3	3

UF	Terra Indígena	Referencia confirmada	Registro en estudio	Registro em información	Total
AM	Deni			1	1
AM	Himerimã	1			1
AM	Jacareúba/Katawixi		1		1
AM	Pirahã			1	1
AM	Tenharim do Igarapé Preto		1	1	2
AM	Trombetas/Mapuera – Waimiri Atroari (considerei Trombetas)			1	1
AM	Vale do Javari	9	3	3	15
AM	Waimiri Atroari		1		1
AM	Yanomami		1	1	2
MA	Alto Turiaçu			1	1
MA	Arariboia	1			1
MA	Awa		1		1
MA	Cana Brava			1	1
MA	Caru	1			1
MA	Krikati			1	1
MT	Apiaká e Isolados		1		1
MT	Apiaká/Kayabi			1	1
MT	Arara do Rio Branco			1	1
MT	Aripuanã			1	1
MT	Enawenê-Nawê			1	1
MT	Kawahiva do Rio Pardo	1			1
MT	Parque Aripuanã		1		1
MT	Parque do Xingu			2	2
MT	Piripkura (RU)	1			1
MT	Zoró			1	1
PA	Arawete do Igarapé Ipixuna		1		1
PA	Ituna_Itatá		1		1
PA	Kaxuyana-Tunayana and Isola-dos			1	1
PA	Kayapo			1	1
PA	Menkragnoti		1		1
PA	Munduruku			1	1
PA	Paru de Leste River			1	1
PA	Sawre Maybu			1	1
PA	TI Kararaô			2	2
PA	Tumucumaque			1	1

UF	Terra Indígena	Referencia confirmada	Registro en estudio	Registro em información	Total
PA/MT	Menkragnoti		1		1
PA/RR/AM	Mapuera Trumpets	1			1
RO	Massaco	1			1
RO	Tanaru (UK)	3		3	6
RO	Uru-Eu-Wau-Wau	1		5	6
RR	Yanomami	1			1
RR-AM	TI Pirititi		1		1
TO	Inawebohona	26	17	37	80
Total		26	17	37	80

The Conservation Units included have an identified PIA presence, or overlap or are adjacent to an indigenous territory with a documented PIA presence.

Table 9. Conservation Units Included for Fire Assessment.

Federation Unit	Conservation Unit	Acronym	Indigenous territory that overlaps or borders a CU
AC	Terra do Meio Ecological Station	ESEC da Terra do Meio	-
AC	Itaituba II National Forest	FLONE of Itaituba II	Sawré Muybu (Pimental)
AC	of Santa Rosa do Purus National Forest	FLONA of Santa Rosa de Purus	Riozinho do Alto Envira
AC	Amazon National Forest	FLONA do Amazonas	Yanomami
AM	Chandless State Park	PES Chandless	-
AM	Amazon National Park	PARNA da Amazônia	-
AM/MT	Serra do Divisor National Park	PARNA da Serra do Divisor	-
AM/PA	Pacaás Novos National Park	PARNA of Pacaás Novos	Uru-Eu-Wau-Wau
AM/RO	Araguaia National Park	PARNA do Araguaia	Inawebohona
AM/RR	Juruena National Park	PARNA do Juruena	Apiaká do Pontal and Isolados
MA	Pico da Neblina National Park	PARNA do Pico da Neblina	Yanomami
MA	Mapinguari National Park	PARNA Mapinguari	Jacareúba/Katauixi (Restricted use)
PA	Guaporé Biological Reserve	REBIO do Guaporé	Massaco
RO	Gurupi Biological Reserve	REBIO do Gurupi	Awa/Caru
RO	Upper Juruá Extractivist Reserve	Upper Juruá RESEX	Kaxinawá Ashaninka do Rio Breu
TO	Ituxi Extrativist Reserve	Ituxi RESEX	Jacareúba/Katauixi (Restricted use)

Paraguay

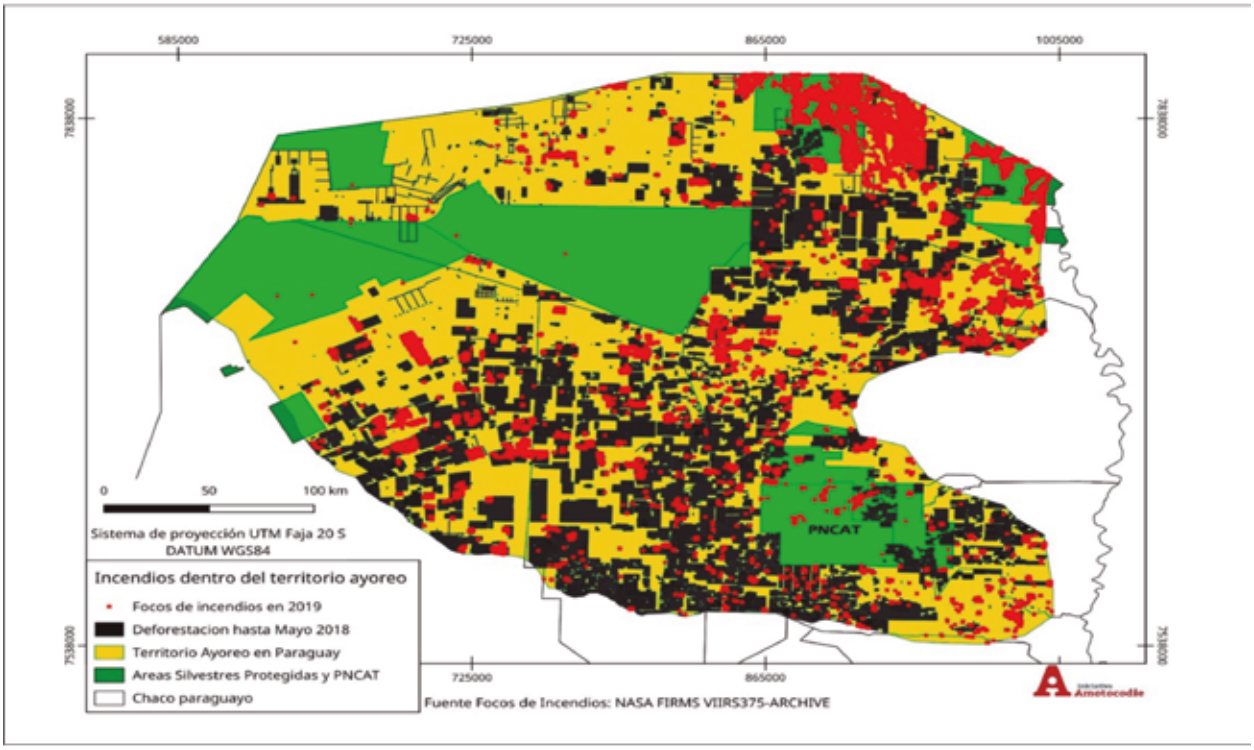
Fires in indigenous territories/reserves with a PIA presence.

Historical fire record between 2015 and 2019.

Table 10. Areas affected by forest fires in the last 5 years. Monitoring carried out by Iniciativa Amotocodie.

	Focos de incendios				
	2015	2016	2017	2018	2019
Asociados a deforestación y pasturas	22.036				20.195
Áreas Silvestres protegidas	957				4.415
Patrimonio Natural y Cultural Ayoreo Toto-biegosode	735				305
Propiedades indígenas	98				377
Total anual	23.826	21.326	19.275	13.666	25.292

Map 7: Fire Outbreaks in 2019



7. Considerations

During the November 2019 Lima meeting, the International Working Group for the Protection of Indigenous Peoples in Situations of Isolation and Initial Contact - PIACI IWG - proposed the preparation of a TRINATIONAL REPORT on FIRES AND DEFORESTATION IN THE TERRITORIES OF INDIGENOUS PEOPLES IN ISOLATION IN BOLIVIA, BRAZIL AND PARAGUAY (2019) in order to quantify the effects of forest fires on Indigenous Peoples in Isolation in Bolivia, Brazil and Paraguay;

countries that all exhibited high numbers of fire outbreaks in 2019 compared to previous years.

The three "Local Fire Reports" prepared by indigenous and allied organizations in Bolivia, Brazil and Paraguay, involved the systematisation of information based on a predetermined methodology. The individual reading of these reports provides detailed data on deforestation and fire outbreaks that occurred in territories with a registered presence of indigenous peoples in isolation.

To avoid repetition, we will prioritize the regional analysis of the impacts of fires on indigenous peoples in isolation and their territories.

The table and chart below detail the fire outbreaks in 2018 and 2019 in indigenous territories and conservation units with a documented presence of indigenous peoples in isolation in Bolivia, Brazil and Paraguay:

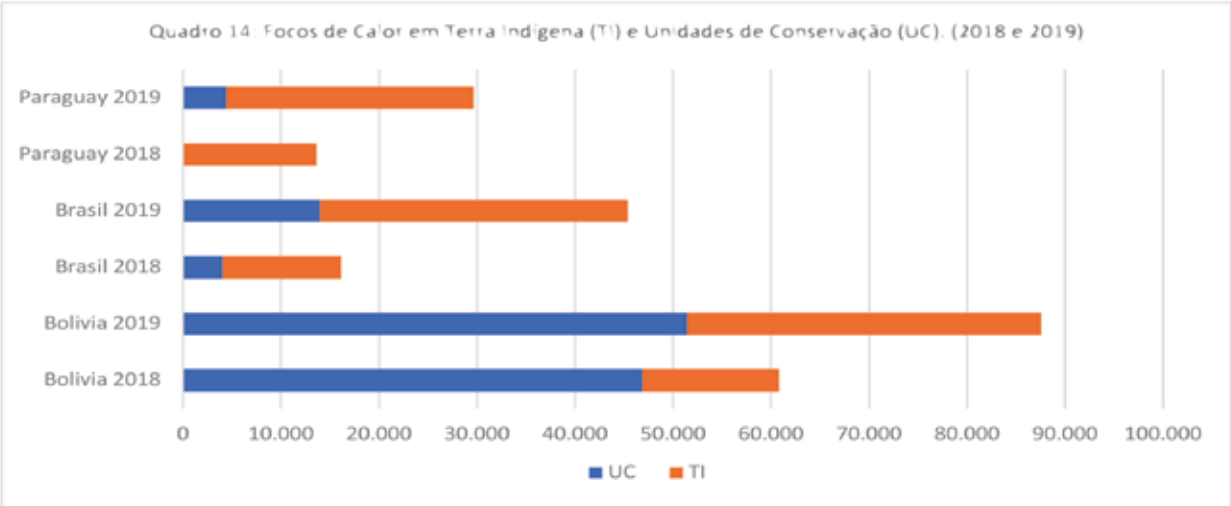
Table 11: Fire Outbreaks in Indigenous Territories (IT) and Conservation Units (CU) in 2018 and 2019.

Country	Fire Outbreaks 2018 (in IT)	Fire Outbreaks	Focos de calor 2018 (em UC)	Focos de calor 2019 (em UC)
Bolivia	13,953 (in 18 IT)	36,034 (in 18 IT) (increase of 258.25%)	6,891 (in 11 CU)	51.502 (em 11 UC) (aumento de 744,38%)
Brazil	12,125 (80 IT)	31,438 (80 IT) (increase of 259.28%)	4,021(16 CU)	13.988 (16 UC) (aumento de 347,87%)
Paraguay	13.666*	25.292* (increase of 185.12%)	10**	4.415** (aumento de 44.150%)

*Total number of outbreaks in ITs and CUs in the respective years

** Includes all national Conservation Units in the Ayoreo area. Five protected areas were analysed within this Ayoreo territory: Cerro Covoreca NP, Rio Negro NP, Defensores del Chaco NP, Medanos del Chaco NP and Cabrera Timane Natural Reserve.

Figura 8. Foco de calor en tierras indígenas (TI) y unidades de conservación (UC) (2018-2019).



A total of ninety-nine Indigenous Territories (ITs) with documented PIA records in Bolivia, Brazil and Paraguay were analysed. In 2019, there was an increase of 258.25%

in Bolivia, 259.28% in Brazil and 185.12% in Paraguay compared with 2018. The number of outbreaks detected in the 32 conservation units (protected areas) with a documented presence of indigenous peoples in isolation increased by 744.38% in Bolivia, 347.87% in Brazil and 4.415% in Paraguay between 2018 and 2019.

The data presented above speaks for itself and, when coupled with other legal and illegal activities already affecting PIA territories, presents a bleak outlook for indigenous peoples in isolation in all three countries. The situation looks yet more serious, when, in addition to the danger posed by Sars-CoV-2, a considerable increase in deforestation rates has been recorded in the Brazilian Amazon in 2020 compared to the same period in 2019, a trend repeated in both Bolivia and Paraguay.

> Overall, deforestation in Brazil was 51% higher in the first quarter of 2020 than in the same period last year. Ane Alencar, director of science at IPAM (Institute for Environmental Research in the Amazon), explains that "[W]hen the dry season arrives in the Amazon, those felled trees will become fuel for fires. That was the main ingredient behind the 2019 fire season, a story that could repeat itself in 2020 if nothing is done to prevent it"[37].
>
> "Our data is already demonstrating an extended dry season and its consequences. We are seeing an increase in mortality of typical Amazonian trees and the survival of smaller, more resistant trees in the Cerrado [Brazilian savanna]," laments climatologist Carlos Nobre, who leads the Scientific Panel for the Amazon (SPA)[38].

As previously addressed in this report, indigenous peoples in isolation are subject to extreme vulnerability. In the face of an alarming increase in fire outbreaks and deforestation in indigenous territories and conservation units with a documented PIA presence, the plight of these peoples in the context of the 2019 fires is highly disturbing. We do not know how many people survived.

The Brazilian State's PIA protection system is practically paralyzed due to changes in human resources and protection policy. The situation is even worse in Bolivia and Paraguay where there are no protective systems or policies in place.

Faced with this pressing situation, indigenous and allied organizations are the only protection players that have come to the defence of the PIA in the three countries in question. Using the available legal frameworks, these organizations have been developing initiatives with indigenous peoples who border or share territories with indigenous peoples in isolation (PIA). In some cases the only remaining option for organized civil society is to issue denouncements and warnings to the international community as a way of monitoring rights violations and fostering proactive stances for the protection of indigenous peoples in isolation in these countries.

In view of the (past and future) threats to PIA territories, further exacerbated by fires and logging, it is not far-fetched to conclude that many of the 185 documented PIA in South America have already reached their threshold in terms of the body of knowledge and practices that can ensure their survival. "To the extent that the process of economic expansion in the region has historically generated intense environmental degradation and loss of biodiversity, it is urgent to reflect deeply on this issue"[39].

37 Available at: https://amazonia.org.br/2020/04/desmate-por-grilagem-explode-e-pode-alimentar-temporada-de-fogo-na-amazonia/?utm_source=aknatm_medium=emailtm_campaign=Noticias-da-Amazonia-22-de-abril-de-2020 Access date: 10 May 2020

38 Available at: https://www.dw.com/pt-br/amazônia-ganha-destaque-inédito-na-ciência-internacional/a-52327828 Accessed: 10 May 2020

39 SANTOS JÚNIOR, Tarcísio da Silva; CANDOR, Jair Catabriga; CABRAL, Ana Suely Arruda Câmara. Uso de recursos naturais pelos Índios Piripkura no Noroeste de Mato Grosso [Brasil]: uma análise do Conhecimento Ecológico Tradicional no contexto da política expansionista do Brasil na Amazônia Meridional (Use of natural resources by

In an April 2020 article**40** published in *Deutsche Welle* (DW) Brazil, journalist Nádia Pontes presents research carried out over decades and supported by scientists from different parts of the world in which she points to a link between deforestation and epidemics.

In a text published years before the current pandemic, Aneta Afelt (mentioned in the *Deutsche Welle* article) from the University of Warsaw in Poland demonstrated a connection between deforestation, the proliferation of bats in degraded areas, and coronaviruses. Afelt's research describes how high rates of deforestation over the past forty years in Asia were an indication that the next infectious disease would likely emerge from there.

According to researchers cited in the above-mentioned article, the relationship between deforestation and epidemics has been studied for decades. Consider the following example:

> *Scientists have been sounding the alarm for at least two decades: As populations advance further into the forest, the risk of microorganisms - until then in balance - migrating into daily human life and claiming victims increases. News about the spread of the new coronavirus, first detected in China last December and then circulated around the world, didn't take Ana Lúcia Tourinho by surprise. With a doctorate in ecology [Universidade Federal de Mato Grosso - BR], she studies how environmental imbalance makes both the forest and society sick. (...)*
>
> *Long before the new coronavirus infected the first humans and spread beyond China to other parts of the world sheltered in the bodies of travellers, Sars-CoV-2 inhabited other hosts in the wild - most likely bats.*
>
> *Isolated and in equilibrium in their dense forest habitat, viruses like this would not pose a significant threat to humans. The problem arises when these natural reserves begin to be cut down, destroyed and inhabited.*
>
> *In the Amazon, where deforestation in 2019 broke the decade's record with 9,762 km² destroyed and a 51.4% increase in deforestation alerts was recorded between January and March 2020 compared to the previous period, the situation is similar.*
>
> *(...) The world's largest rainforest region is deemed a likely hub for future epidemics according to an analysis conducted by Simon Anthony's team at Columbia University in the United States. In Brazil alone, the survey counted at least 3,204 types of coronavirus that circulate in bats.* *3204 coronaviruses circulating in bats, or 3204 bats that carry types of coronavirus?*
>
> *The risk that comes from the Amazon*
>
> *Tourinho doesn't even like to think about the potential impacts on public health if the destruction of the Amazon Rainforest continues to escalate. "If the Amazon were to become a great savannah, you can't even imagine what could come out of it in terms of disease. It's unpredictable," says the researcher. "Besides being important to us because of the climate and the fauna, it's also fundamental to our health".*
>
> *Studies conducted in the country have already traced a direct relationship between deforestation in the Amazon and disease increase. In 2015, for example, a team from the Institute of Applied Economic Research (IPEA) found that for every 1% of forest cut down each year, cases of malaria increased by 23%.*
>
> *The survey was carried out with data from 773 cities in the Amazon Deforestation Monitoring Project between 2004 and 2012. In addition to malaria, the incidence rate of leishmaniasis was also found to be directly related to deforestation.*
>
> *"Intact forest acts as a shield to prevent external communities from coming into contact with animals that are hosts to microorganisms that cause disease. When we destroy the forest and make roads into it, we create a time bomb", concludes Tourinho, who also mentions the danger*

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the Piripkura Indians in Northwest Mato Grosso [Brazil]: An analysis of Traditional Ecological Knowledge in the context of Brazil's expansionist policy in the Southern Amazon. Accessed: 3 May 2020.

40 Available at: https://www.dw.com/pt-br/o-elo-entre-desmatamento-e-epidemias-investigado-pela-ciência/a-53135352 In that link you can find other materials related to the topic. Access date: 9 May 2020.

posed by large enterprises such as hydroelectric dams in the Amazon.

Entering and leaving the forest to extract wood, raise cattle, open mines is also identified as a health risk. "People who enter these areas could come into contact with these viruses and transmit them to urban centres," says Tourinho.

The researcher also points out that, in this context, indigenous people are often more resistant due to their centuries of living in untouched forest.

"When these viruses reach cities, they spread very quickly precisely because of the ease of movement and the likelihood of international travel in these centres. Cities reproduce the same kind of confinement that we practice with animals which are triggers for the proliferation of contagious diseases," adds the biologist.

One such route may explain the origin of the Sars-Cov-2 pandemic. Covid-19, a respiratory disease caused by the coronavirus, has infected more than 2 million people and killed more than 128,000 worldwide, according to data provided by Johns Hopkins University on Wednesday (04/15/2020).

Indigenous warnings about the risks of predatory behaviour by "whites" in nature, inaudible and invisible to the "commodity peoples", will have drastic repercussions on humanity. Indigenous leader Davi Kopenawa prophesises in his book "The Fall of the Sky[41]", which is based on his extensive shamanic knowledge derived from the vision brought about by (*yākoana)* hallucinogens, that: (...) *when the Amazon succumbs to unbridled devastation and the last shaman dies, the sky will fall on everyone and it will be the end of the world*. From shamanic visions and ethnographic reflections on non-indigenous people, Kopenawa visibly and vociferously foreshadows a catastrophic harbinger for all of us if the devastating action of non-indigenous people over what we call "the environment" continues.

Indigenous warnings about the risks of predatory behaviour by "whites" in nature, inaudible and invisible to "commodity peoples", will have drastic reverberations across humanity. Indigenous leader Davi Kopenawa prophesies in his book "The Falling Sky", based on extensive shamanic knowledge derived from the vision brought about by hallucinogens (yākoana) that: (...) when the Amazon succumbs to unbridled devastation and the last shaman dies, the sky will fall on everyone and it will be the end of the world. From shamanic visions and ethnographic reflections about non-indigenous people, Kopenawa visibly and vociferously foreshadows a catastrophic harbinger for all of us if the devastating action of the supremacy of non-indigenous people over what we call "the environment" continues.

In an interview with *O Globo*[42] discussing Kopenawa's understanding of both his own and non-indigenous people, Bruce Albert spoke of the differences between the structure of Western writing and the multiplicity of words from Shamanic spirits, underscoring Kopenawa's warning of "commodity people" leading to environmental disaster:

> *Kopenawa elaborates different images of whites in his discourse, including their spirits. The napënapëri are the shamanic ancestors of the whites, and allies of the forest peoples. There are also the spirits of white people who unleashed the xawara epidemic. How - if at all - do these different images help create a more complete portrait of white people? Could the whites be allies and enemies at the same time, a people divided internally from the supernatural point of view?*
>
> *The napënaperi were shamanic spirits of white peoples' ancestors in ancient times, when the whites were outsiders not unlike the Yanomami and "still had culture," as Davi says. The xawarari are cannibalistic spirits of the epidemics that follow today's whites and their possessions. They are two different things. There is a*

41 Kopenawa, Davi; Albert Bruce. The Falling Sky - Words of a Yanomami Shaman. 1st edition. Saint Paul. Companhia das Letras. 2015.

42 Available at: https://oglobo.globo.com/cultura/livros/em-queda-do-ceu-davi-kopenawa-bruce-albert-apresentam-pensamento-yanomami-17264840 Access on: 10 May 2020

duality in the Yanomami vision of white people, however. On the one hand there are the whites as a different people, but open to alliance; the "true outsiders" (napëpë yai) of ancient times; and on the other are the present-day whites as associative and insatiable predators whom Davi calls the "commodity people".

The Trinational Fire Report, reflecting data from the (very recent) past, aims to communicate/denounce the urgent need to establish a global movement for the protection of indigenous peoples in isolation in the Amazon and Gran Chaco. Despite the global crisis caused by Sars-CoV-2, governments, multilateral organizations, and civil society in general, must urgently establish protection strategies in response to the fires and deforestation that threaten to once again devastate the territories of indigenous peoples in situations of isolation and initial contact.

In light of this devastating situation for the PIA in South America, we propose the following measures to mitigate the destructive effects:

1. In view of the fact that fires in the forest, natural areas and fields in general have a global impact due to the huge contribution to the atmosphere of greenhouse gases produced by these fires and to the massive loss of biodiversity and functionality environmental impact of affected biomes, it is imperative to promote the negotiation of a binding agreement that guarantees a minimum funding equivalent to 1% of the revenues of transnational companies in the territories of the signatory countries. These funds will be administered by an entity of broad composition, ensuring the equal participation of the representatives appointed by the indigenous peoples. In this way, the set of underlying causes of fires can be addressed, which will promote tolerance or acceptance of natural systems to the impact of uncontrolled fire impacts.
2. Support and increase the efforts of indigenous people with a history of contact in the formation and strengthening of "indigenous brigades" for firefighting and prevention, as already occurs in Brazil through the National System for Prevention and Fighting of Forest Fires - PREVFOGO, linked to the Brazilian Institute of Environment and Renewable Natural Resources - IBAMA. This system is tasked with coordinating the necessary organization, implementation and operation of activities related to the education, research, prevention, control and combat of forest- and wild- fires**43**. Similar systems must be implemented in Paraguay and Bolivia, where indigenous peoples of those countries have formulated strategies to combat fire, considering their cultural guidelines and knowledge.
3. Support and increase the number of initiatives led by indigenous people with a history of contact related to territorial self-protection, such as the *Guardiões da Floresta* (Forest Guardians) who voluntarily create collectives to protect their territories**44**.
4. Request that multilateral organizations call on the Bolivian, Brazilian and Paraguayan governments to urgently establish, in 2020, fire-prevention and fire-fighting programs in territories with a presence of indigenous peoples in isolation, in cooperation with indigenous and allied organizations. These organizations must assign the necessary funds for the implementation of the measures within the framework of emergency regimes. Representatives of indigenous peoples must be part of the structures and of fund application processes.

43 National Centre for the Prevention and Combat of Forest Fires (Centro Nacional de Prevenção e Combate aos Incêndios Florestais). More information on this subject is available at: https://www.ibama.gov.br/incendios-florestais/prevfogo and https://ambientes.ambientebrasil.com.br/florestal/programas_e_projetos/prevfogo_-_sistema_nacional_de_prevencao_e_combate_aos_incendios_florestais.html

44 http://www.ihu.unisinos.br/78-noticias/594150-quem-sao-os-guardioes-da-floresta-o-grupo-de-indios-protetores-da-amazonia-no-maranhao Accessed: 12 May 2020

5. Recommend that, in accordance with proposal 4 above, the Legislative Houses of Bolivia, Brazil and Paraguay, in dialogue with indigenous organizations and civil society in general, enact legislation for a *National Integrated Fire Management Policy* that would result in a *Plan to Prevent and Combat Deforestation in the Amazon, Gran Chaco and Cerrado*. Integrated fire management entails the use of controlled burning combined with fire prevention, fire control and firefighting. It would also establish administrative, civil and criminal liability for those responsible for unauthorized fires and/or uncontrolled outbreaks that generate environmental, economic and/or social damage;
6. Recommend that multilateral organizations call on the Bolivian, Brazilian and Paraguayan governments to create an urgent task force, through their respective institutions, to draw up and implement a protection plan for territories with a documented presence of indigenous peoples in isolation in order to control trespassing and intrusion in said territories. Furthermore, these Governments should be urged to conduct a process of devolution of sufficient lands in indigenous territories and to have sufficient financial means to undertake their ecological restoration so that they fulfil their function of effective habitat for PIAs.
7. Recommend that multilateral organizations, in view of the numerous PIA records in cross-border regions in South America, and with cases such as Bolivia and Paraguay where fires spread from one country to another, urgently call on states to draw up fire prevention plans for the forthcoming year 2020.

Last but not least, in the face of the Sars-CoV-2 pandemic, international, regional and local scientific communities must take steps to further recognize the different forms of scientific understanding and expertise of native peoples regarding the premises of the link between deforestation and epidemics.

In the above-mentioned interview, Bruce Albert remarks on the comparisons between Kopenawa's statement and contemporary western scientific studies:

> *As countless scientific research continues to demonstrate, we are at the beginning of an environmental disaster of unimaginable magnitude. We are at the beginning of the end of the model of widespread predation of peoples and the planet invented a few centuries ago by the "commodity people". Davi's words are not, therefore, mere exotic prophecy, but a diagnosis and a warning. It is a diagnosis insofar as it is a very perceptive shamanic ethnography of our commodity fetishism. A warning insofar as it describes a process of planetary poisoning and warming that is already well underway and, as scientists are prone to do, points to the inevitable and tragic outcome of this process unless an improbable and radical change of course takes place.*

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9. Annexes

- CUSI, Adamo A. Diego; Yubánure, Agustin Moy. – **Informe Queimadas Local Bolívia (IQL Bo)**: Incendios forestales en territorios y áreas protegidas con registros de pueblos indígenas en aislamiento y contacto inicial-diagnostico Bolivia 2015 – 2019. Consejo de Comunidades Indígenas Tacana II Río Madre de Dios – CITRMD, 2020.
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The International Working Group for the Protection of Indigenous Peoples Living in Voluntary Isolation and Initial Contact (GTI PIACI), is pleased to present the **Tri-National Report: Fires and Deforestation in Territories with Registers of Indigenous Peoples Living in Voluntary Isolation, concerning Bolivia, Brazil and Paraguay.** The purpose of this report is to determine the impacts of the fires documented during 2019 on the Indigenous Peoples Living in Voluntary Isolation (PIA) and their territories, based on a methodology that incorporates three local situation reports, in which the voices of the peoples who share territory with PIA have a central role. Through maps, geo-referenced information and direct testimonies, this report reconstructs the serious events that occurred during 2019 in vast regions of the Amazon and the Great South American Chaco.

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