CHILDREN'S AMAZON

NAVIGATION GUIDE

TERRABRASIL

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PHOTOGRAPHY

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C6 Bank and Mastercard are pleased to present to you, the teacher, this navigation guide to *Children's Amazon*. Your work is fundamental for students to gain understanding of Brazil and its regional populations and cultures. Education has the potential to transform future generations, so that our youth become informed and active adults in defence of the forest. We would like to take this opportunity to thank you for your dedication to teaching and your efforts in presenting the Amazon to our children. May your work bear much fruit and help build a country that is increasingly diverse and sustainable.

Child from Baré ethnic group, Uaupés River, São Gabriel da Cachoeira, Amazonas

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THE AMAZON

- National borders
- State borders (BEYOND THE LEGAL AMAZON)
- State borders (WITHIN THE LEGAL AMAZON)
- State capitals
- Main rivers
- Legal Amazon
- South America

N

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VENE ZUELA
COLUMBIA
EQUADOR
PERU
BOLÍVIA
GUYANA
SURINAME
FRENCH GUIANA
ATLANTIC OCEAN
PACIFIC OCEAN
ANDES MOUNTAIN RANGE

Boa Vista
RORAIMA
BRANCO RIVER
NEGRO RIVER
SOLIMÕES RIVER
Manaus
AMAZONAS
MADEIRA RIVER
TAPAJÓS RIVER
AMAZON RIVER
AMAPÁ
Macapá
PARÁ
XINGU RIVER
Belém
São Luís
MARANHÃO
ACRE
Rio Branco
Porto Velho
RONDÔNIA
MATO GROSSO
Cuiabá
TOCANTINS
Palmas
PIAUÍ
BAHIA
GOIÁS
DF Federal District
MINAS GERAIS
MATO GROSSO DO SUL

BRAZIL

NAVIGATION GUIDE

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Left : Takumã man, Xingu Indigenous Park, Kamayurá Indigenous village (MT)

Introduction

"The forest is alive. It will only die if white people insist on destroying it. If they succeed, the rivers will disappear underground, the ground will crack, the trees will wither, and the rocks will crack in the heat. The parched earth will be empty and silent. The xapiri spirits, who come down from the mountains to play in the forest on their mirrors, will flee far away."
(Davi Kopenawa, em *A queda do céu*)

Brazil has the opportunity to assume global leadership in the fight against climate change. It is a huge task, but the cycle of destruction that threatens climate stability can be reversed, notably with education and societal attitudes. Home to the largest native tropical rainforest on Earth and 25% of the planet's biodiversity, with 311 species of mammals, 1,300 species of birds, 1,400 species of fish, and 550 species of reptiles, Brazil is a fundamental part of the global system when it comes to sustainability.

To understand its immense wealth and potential, stop deforestation and restore the forests, invest in science and create a new model of social development for the nearly 30 million people living in the Amazon are the duty and moral imperative of the State and of all Brazilians - and vital for the future of humankind.

Immediate action is needed to stop the cycle of forest destruction that has accelerated over the past 50 years: until 1975, the deforested area corresponded to 0.5% of the Amazon; in 2023 we have now lost 20% and another 20% has been degraded. These alarming facts are driving uncontrolled global warming, disrupting the rain cycles that guarantee Brazilian agro-industrial production and threatening the water ecosystem that produces 20% of the Earth's fresh water.

When we assume our leading role, Brazil will become the benchmark of a new global consciousness and a centre of investment in sustainable practices. For this to happen,

Japurá River, Tefé (AM)

the illegal fires that are decimating the jungle at an unprecedented rate in this country (45% of national greenhouse gas emissions) need to be controlled. At the end of 2022, the System of Greenhouse Gas Emissions Estimates (SEEG) marked the highest emissions rate in Brazil in 19 years: 2.42 billion gross tons of CO_2 in 2021 - an increase of 12.2% over 2020.

Reversing this race to the precipice also requires an innovative approach to education, one that teaches from an early age how the largest ecosystem in the country can be sustained and why it matters to the ecological balance of the entire world. Brazilians need to know the Amazon in order to love it and defend its conservation – you cannot protect something that is ignored.

Against this backdrop, *Children's Amazon* presents the daily life and dreams of children who live in the Amazon region – in cities, towns or villages. In the first book, in each of its 14 chapters, we highlighted children as the main characters; in the second book (the one you are reading, called the *Navigation Guide*), based on the experiences and the home region of each young representative, we describe their realities and elaborate on the historical, social, economic and ecological context for discussion by the teacher in the classroom.

Children are the main hope for reversing degradation processes and the misuse of natural resources in the Amazon. The education of a new generation of Brazilians can improve the interaction between human society and the environment. This is the only way that the region's unique socio-biodiversity will be safeguarded in the future.

Artistic and pedagogical in nature and designed primarily for ages 8 to 12, *Children's Amazon* brings together verbal (text) and visual (photography and illustration) narratives to portray children and their relationships with their surroundings and with nature, revealing not only the wonders of fauna and flora and regional legends, but also the day-to-day threats: water pollution, fires, pressure from mining activity and centuries-old rituals on the verge of extinction.

It is important to emphasize that this project is aligned with Brazil's "Common Core" Curriculum (BNCC), with the goal of offering strategies and content development for elementary schools. We look at the intersection of intradisciplinary, interdisciplinary, and transdisciplinary implementation approaches to pedagogical work: academic and curricula projects and lesson plans.

The material helps children to develop the skills set out

Carajá child with *pirarucu* fish, Araguaia River (TO)

Jaguar in the Mata-Cachorro channel, Serra do Amolar (MS)

in the BNCC – in particular, to identify landscape features and describe interactions with nature by diverse types of society (especially traditional populations and Indigenous peoples associated with knowledge of the water and land). The young reader will acquire skills to interpret environmental contexts and understand the concept of sustainability, awakening a conservationist conscience.

Until the age of eight, children are oriented towards their immediate environment (family, school and community). From this age on, children begin increasingly to develop other interests and thus expand investigation of their social universe. This is when they begin to perceive the other as distinct from themselves – so issues related to otherness can be addressed more readily at this stage. The child has already overcome initial literacy challenges and is ready to tackle interpretative readings of short texts with an age-appropriate approach.

With help from the teacher, reading the *Children's Amazon* texts provides children with an understanding of the characteristic features of natural and social domains and the relationships between them, and stimulates their curiosity to seek answers based on knowledge of other Brazilians of the same age group.

Photography was chosen as the central element of the project because it forges immediate communication. As a universal language, the photographic image is understood by the entire human family and has the power to generate openness towards change and draw attention to socio-environmental issues.

This navigation guide is designed to inspire teacher action so that students will access a wealth of knowledge and gain awareness of the climate emergency. Taking a broader view of the concept of sustainability, and with a conviction that environmental education defines societal models of the future, *Children's Amazon* expands engagement through a multidisciplinary approach that is strengthened by uniting art/sensibility and science/reason.

Mirror of the nation

"In a world destined to face the coming climate emergency, preserving the world's largest tropical forest is the first and foremost duty of civilization."
(João Moreira Salles, in *Arrabalde*)

The Amazon should be a source of pride - not of dispute. Synonymous with "life" in various connotations, the forest is self-sufficient and indeed guarantees the survival of the planet as it exists today.

Knowing and valuing the Amazon is the starting point for any solution to the environmental crisis that threatens the Earth. After decades of massive destruction without regard for the future, we have the opportunity to combine traditional knowledge with science and technology to transform this development model that no longer makes sense - it has been proven that without respect for nature our future is inhospitable. We *are* nature.

We need to understand the factors that have brought this important ecosystem to its present deplorable state. We invite teachers to revisit this history so that they can use it with their students. The future of our society depends on the awareness that we awaken now.

The main goal of *Children's Amazon* is to serve as a first step into the subject. Brazilians need to be enchanted from childhood by this vast forest, admire the ancient knowledge of Indigenous peoples and learn why the Amazon is important to the entire Earth.

Vai Quem Quer river, rio Negro, Novo Airão (AM).

Early Amazonian History

Brazil is the only country in the world named after a tree, and no place could better reflect it than the Amazon. In our territory lies a large part of the largest tropical forest on the planet, also present in Bolivia, Colombia, Ecuador, Guyana, French Guiana, Peru, Suriname and Venezuela. A green immensity that can be seen from space.

The Amazon covers more than 7 million square kilometres (45% of the area of Brazil, which itself counts for almost half of all South America), of which 5.5 million are covered by forest vegetation, more than 3.5 million of which are in Brazil. The Amazon alone represents more than half of all remaining tropical rainforests in the world. The Congo rainforest, in second place, occupies only a third of the area.

Inhabited by Indigenous peoples for more than eleven thousand years, according to archeological evidence found at Caverna da Pedra Pintada (Monte Alegre, PA), it was only in the 16th century that the first European explorers ventured into its rivers.

Between 1540 and 1542 Spanish explorer Francisco Orellana traveled the entire length of the Amazon River (*Paraná-assú* as it was known in Tupi, the Amazon's then *lingua franca*). His chronicler, Gaspar de Carvajal, reported that he had seen women warriors, creating a reference to the Amazons of Greek mythology. Since that time, the river has been called the River of Amazons, and then simply the Amazon River, and the region, by extension, the Amazon.

Orellana was part of an expedition ordered by Gonzalo Pizarro, a cruel and brutal Spanish conqueror who decimated the Inca empire in Cusco (Peru), and was later declared governor of Quito, where he went in search of the mythological city of El Dorado, rumoured to be made of gold. After more than half of his troop of 220 Spanish and more than 4,000 Indigenous men died on the journey, Gonzalo decided to return to Quito and ordered Orellana to go on ahead, thus giving him the glory (and the extreme ordeal) of having discovered the course of the largest river on the planet.

In 1560, another expedition in search of El Dorado was commissioned by the Spanish conqueror Pedro de Ursúa. However, the disappointment of not having found the precious metal incited a violent revolt among his soldiers, and another Spaniard, Lope de Aguirre, was held responsible for the insurgency.

Aguirre was thereafter transformed by the narratives of

Left: the confluence of the Tapajós and Amazon rivers in Santarém (PA). Above: yellow *ipê* trees at Serra do Divisor (AC).

It was in the Amazon that Mário de Andrade learned about important cultural traits that he himself would come to understand as "Brazilianness", especially after contact with *quilombo* and river communities, and other Indigenous populations.

Mário de Andrade standing in front of a kapok tree trunk, between Santo Antônio and Porto Velho (RO), on July 11, 1927.

the time into a tyrant and a madman, pejorative terms that accompany historical accounts to the present day.

In 1615 by order of the Crown, the Portuguese embarked on an expedition to the mouth of the Amazon River, with the goal of consolidating colonial occupation of the region. Upon reaching Guajará Bay on January 12, 1616, the commander of the three vessels, Francisco Caldeira Castelo Branco, with his second lieutenant, Pedro Teixeira, established what would become the Forte do Presépio, the site where the city of Belém (PA) would be established.

In the manner of colonial explorers, Pedro Teixeira came on a hostile mission, capturing slaves and colonizing the Xingu and Tapajós rivers. In 1637, he sailed up the Amazon River in 45 canoes, accompanied by 70 soldiers and more than a thousand Indigenous rowers, in search of an access route to the Pacific Ocean. He founded the village of Franciscana, between the Napo and Aguarico rivers, to demarcate the boundaries between Portuguese and Spanish lands (the landmark Treaty of Tordesillas) and ended his journey in Quito, Ecuador.

The Amazon also attracted the interest of naturalists during the 18th and 19th centuries. French naturalist and adventurer Charles-Marie de La Condamine was the first to explore the entire course of the Amazon River, documenting its fauna, flora and geography between 1735 and 1744. He authored a scientific paper that reported on its interconnection with the Orinoco River, and his writings on the biology of the region served as inspiration for other scientists who later visited the Amazon

In Belém (PA), he spent time studying latex extracted from the rubber tree (*Hevea brasiliensis*) and its uses . He also conducted the first studies on the cinchona shrub (*Cinchona sp*), from which quinine is extracted, and on curare, a poison extracted from several plants – mainly from the genera *Chondrodendron* and *Strychnos* – used by Indigenous peoples on arrowheads for hunting.

Born in Bahia, Alexandre Rodrigues Ferreira was the first Brazilian naturalist to explore the Amazon interior. Between 1783 and 1792, he explored the islands of Marajó, Cametá, Baião, Pederneiras and Alcobaça on the Amazon and Negro rivers up to the frontier of Spanish lands; and the Branco, Madeira, and Guaporé rivers, reaching the town of Cuiabá in the Pantanal region of Mato Grosso, and up the Paraguay River, documenting the fauna, flora, and cultivation techniques of Indigenous populations along the way.

Other naturalists active in the Amazon between 1848 and 1858 include Richard Spruce, a botanist who first described the species *Banisteria caapi* (the Ayahuasca vine, used in religious rituals by the Tukano and other ethnic groups); Henry Walter Bates, author of *The Naturalist on the River Amazon* (1863), in which he describes more than fourteen thousand species (mostly insects), and which was considered by Darwin as one of the two books that most influenced him; and Alfred Russel Wallace, who mapped the Rio Negro over four years, describing species of fauna and flora, and whose collected specimens – intended for sale in England – were lost in a fire on the return voyage. Despite this misfortune, portions of Wallace's diaries were saved, and he wrote six scientific essays that, together with studies by Bates, contributed to evolutionary biology theory that was later definitively formulated by Charles Darwin.

In recent times

The industrial revolution of the late 19th and early 20th centuries produced milestones such as the onset of the automobile age, with Henry Ford transforming manufacturing processes by creating the production line.

Tires, one of the most important items in the production of automobiles, were made of rubber extracted from the rubber tree, which dominated the economy in the Amazon between 1879 and 1912. Manaus, Porto Velho and Belém became the most advanced cities in Brazil, due to the vast revenues produced by the so-called Rubber Boom. These state capitals built water, sewage and electrical systems, and erected palaces, museums and cinemas – creating a golden era in the North of Brazil.

Henry Ford launched an agro-industrial megaproject to produce latex on a large scale in the Amazon, and in 1927, through a concession from the State of Pará, established a production complex on the banks of the Tapajós River that included a city in the middle of the forest, later called Fordlândia, and about 1 million hectares of rubber monoculture. The city included hospitals, housing, dining halls, and for the elite engineers and officials, even ball courts, swimming pools, clubhouses, cinemas, soccer fields and golf courses. Workers were recruited from all corners of Brazil, and there was a sense of euphoria around the huge job opportunities generated by the project.

However, even though he was ignorant of cultivation practices in tropical rainforests, Ford disregarded the advice of Brazilian forestry engineers and, with soil quality

a limiting factor for tree growth, the monoculture was attacked by several types of insects. The project ended in failure, with a loss of nine million dollars at the time. In addition to this failure, Henry Wickham smuggled 70,000 rubber tree seeds back to England, which allowed Britain to plant rubber plantations in Asia, giving the British Empire a monopoly on global latex production. Moreover, synthetic rubber production was developed by the end of World War II. Fordlândia was transferred to the government of Pará and today is in ruins.

Also present in the region in 1927 was Mário de Andrade, one of the most important writers of Brazilian Modernism, whose journey down the Amazon River, resulted in his important travelogue *O turista aprendiz* [The Apprentice Tourist], and two of his most important subsequent works: *Clã do Jabuti* (1927) and *Macunaíma* (1928). It was in the Amazon that Mário de Andrade came to know important cultural traits that he would come to understand as "Brazilianness", especially after contact with quilombo (African-Brazilian), riverside and Indigenous communities.

Amazonian landscapes

The Amazon is home to one of the greatest biodiverse regions in the world, with 25 different landscapes and four forest types. As an indication of all that has been discovered and also what still lies ahead, suffice it to say that, among the 14 genera of primates, the Schneider's marmoset species (*Mico schneideri*) was only identified in 2021!

Animals compose the sound of the forest, with their songs, croaks, hisses, screams, howls, and other vocalizations, from birds like the uirapuru (*Cyphorhinus arada*) and

Zoé men and boys, Cuminapanema River (PA).

the cricrió (*Lipaugus vociferans*), monkeys like the guariba (*Alouatta sp.*), various amphibians (from the *Brachycepha-loideae* or *terrarana* families), and insects, like crickets and cicadas. Among numerous florae, of note are the 40,000 higher plant species (3,000 trees alone), ranging from 40 to 300 distinct species per hectare.

The main landscape and ecological systems can be classified as Terra Firme forest (always dry), Várzea forest (floods during the rainy season) and Igapó forest (perennially flooded). Besides these more characteristic formations, there are extensive areas of *cerrado* (savannah), fields and coastal vegetation, a combination that constitutes an important source of raw materials – food, medicine, forest, energy and mineral resources.

One hundred and eighty Indigenous groups form a population of more than 440,000 individuals (310,000 people living in villages and about 77 groups that are still isolated), speaking more than 150 different languages, of which the largest groups are from the Guarani, Xerente, Amawáka, Anambé, Kambeba, and Aruá ethnic groups. More than 25,000 Indigenous people live on Yanomami land alone, located in the states of Roraima and Amazonas. There are also more than a thousand *quilombo* communities in the Amazon, in addition to a wide variety of traditional groups including rubber tappers, fishers, river communities, and Brazil nut and Babassu palm nut gatherers.

This diversity of cultures brings a wealth of traditional events, such as the *Kuarup* in Xingu Indigenous Territory, dances and popular celebrations such as the *boi de mascara* from São Caetano de Odivelas, the *boi-bumba* from Parintins, the *marambiré* from Óbidos, the *marujada* from Acre, the *marabaixo* from Macapá, the *siriri* or *cururu* from Mato Grosso, the *sússia* dance from the holy festival in Monte do Carmo, the *carimbó* from Pará and others.

In terms of geography (terrains and ecosystems), we find at least three main formations in the Amazon. To the south, the Brazilian Central Plateau, with average altitudes between 300 and 1,650 metres above sea level; to the north, the Guianas Plateau, with peaks exceeding 2,000 metres in altitude, such as Mount Roraima (2,734 m.), Pico 31 de Março (2,972 m.) and Pico na Neblina (2,993 m.), the highest in the country; and in the centre, the floodplains or wetlands (*varzéas*), with altitudes below 1,500 metres. This plateau is distinguished by two types of terrains: the wetlands, which extend along the rivers and are always flooded, and the terra firme, or dryland forests, which cover most of the plain and constitute the realm of the great forest.

Over the course of more than eleven thousand years of occupation, human beings have maintained a close relationship with the Amazon region, and it is estimated that the population reached 8 to 10 million people in prehistoric times.

Amazonian soil is slightly acidic and quite sandy, and surprisingly poor in nutrients. This apparent drawback can be explained by the fact that most of the organic matter is retained in the biomass. Some surveys show that only slightly more than 10% of the Amazon has soil that is sufficiently fertile for agricultural activities, which in itself is a reason to advise against its establishment in the region. Besides this, sandy soils, when deforested, tend to become desert landscapes.

The climate is ruled by water cycles, producing hot temperatures almost all year round (an average of 250C), varying little throughout the seasons. With average annual pluviosity (rainfall) of approximately 2,300 millimetres, it is the most humid region of the country. There are places in the West, Northwest and North coast of the Amazon, moreover, where annual precipitation is more than 3,000 millimetres. The two rainiest cities in the world are located there: Lloró (Colombia), with an average annual precipitation of 13,300 millimetres, and Calçoene (AP, Brazil),

with an average annual precipitation of 4,165 millimetres. Popular wisdom maintains that there are only two seasons in the region: one where it rains every day and the other where it rains all day.

Water and forest; forest and water

All that rain makes the Amazon the world champion of rivers and other waterways. Besides the "common" rivers, the most impressive in the region are the so-called "flying rivers", which distribute rainfall over almost all of Brazil and are responsible for the climate equilibrium of the entire planet. These are formed by massive amounts of water vapour resulting from evaporation of the rivers and the forest, which is later carried by the winds generated by the Earth's rotation.

This immense quantity of water, in the form of clouds, ends up falling over the Center-West and South regions of the country, and in neighbouring countries. Yes, the rain that falls over most of Brazil is formed in the Amazon! Studies have shown that the amount of water vapour produced by the Amazon forest may have the same order of magnitude as the flow of the Amazon River itself (200,000 m^3/second) into the Atlantic Ocean.

A single tree, with a crown diametre of about ten metres, can release more than 300 litres of water per day into the atmosphere; other trees, with a diametre of 20 metres, release more than a thousand litres per day. Considering that each Brazilian uses on average 150 litres of water per day, 100 million trees would be enough to supply this demand. We have, however, more than 390 billion trees in the Amazon - our humid tropical rainforest.

Besides Indigenous lands, with an area of about 110 million hectares (27% of the forested area), there are the so-called Conservation Units or protected areas, in various categories, namely National Parks, Extractive Reserves, Sustainable Development Reserves, and National Forests. According to the NGO Imazon, by December 2010 there were 307 Conservation Units in Brazil's Legal Amazon, totaling 1,174,258 square kilometres, which represents 23.5% of this territory. Of this total, 196 were for sustainable use and 111 for full protection, managed by both the federal government (132) and state governments (175). Protected areas were and continue to be created to maintain the ecological balance of the planet, which is economically dependent on the environmental benefits provided by the Amazon.

Left: Tapajós River, Santarém (PA). Above: The Amazon Theatre, Manaus (AM).

The first occupants

Over the course of more than eleven thousand years of occupation, human beings have maintained a close partnership with the Amazon region, and it is estimated that the population reached 8 to 10 million people in prehistoric times. Archeological and paleontological studies indicate that the first peoples who arrived there probably came from Asia. As a form of survival adaptation, these pioneers began to practice a crude form of agriculture, which was then perfected over 8,000 years, with the formation of diverse and increasingly complex Indigenous societies. In addition to agriculture, they developed skills to manage forest resources in order to meet their basic needs.

These ancestral peoples left traces of their daily life: Brazilian archeology was born in the Amazon in the 19th century with pioneering researchers Ladislau de Souza Mello Netto, Azevedo da Silva Ramos and João Barbosa Rodrigues.

At first, the search for food was carried out mainly through hunting and gathering by nomadic groups, followed by the cultivation of root vegetables and other increasingly sedentary practices and complex skills involved in the production of ceramic vessels. Then, as social arrangements became more complex and were skills developed to live in flooded areas, they established small village settlements, created social hierarchies with chiefs and caciques or village leaders, and refined religious and spiritual traditions, including the ritual burial of the dead. Those formed the origin of the mythology and spirituality among Amazonian ethnic groups that are present to this day.

The people of Marajó, called Marajoaras, probably reached their peak between 1000 and 400 B.C. It is estimated that the local population may have reached more

There are 32 hydroelectrical dams in operation in the Amazon and another 31 in some stage of planning, not counting the 57 sites in the region that have been designated for this purpose. Among those already built are Balbina (AM), Tucuruí (PA), Santo Antônio (RO), Jirau (RO) and Belo Monte (PA).

Above: Hydroelectrical dam in Belo Monte, Altamira (PA).
Right: Baniwa man, Içana River, Cabeça do Cachorro (AM).

than 100,000 inhabitants, who managed to survive even during the first years of European colonization. The complexity of their traditions can be seen to varying degrees in the ceramics and paintings depicting fauna and flora, from the unadorned (everyday use) to the more sophisticated and ornate (funerary urns or for other religious purposes).

Their diet was based on the consumption of herbaceous plants and grasses, as well as açaí and *tucum*, which they also used for basketry and boats. They likely did not cultivate manioc on a large scale, but ate seeds, fruits, and fish. They fished using *timbó*, a mixture of toxic plants that are thrown into the water to kill small fish, which are then collected when they surface. Habitation in the Marajó region declined around 1300, probably due to the difficulty of maintaining their defense structures and dwellings.

The peoples who lived in the region of Santarem more than a thousand years ago also developed skillful ceramic techniques, with characteristics distinct from Marajó ceramics. The pieces show a wealth of anthropomorphic forms, mainly female, and rainforest animals. However, archeological sites in the region have been destroyed by human activities, so research and preservation of this ancient human settlement has been difficult.

The ceramics of the first inhabitants of the Amapá region depict people sitting on benches. And at a megalithic archeological site in Calçoene (which receives the highest rainfall levels in Brazil), huge granite stone plates arranged in a circular shape likely indicate a site for astronomical observation. Funeral urns were also found there, which suggests that it may have been a complex ceremonial site.

The arrival of European colonizers had a profound impact on Indigenous peoples, whether through conflicts over territorial occupation or due to the introduction of diseases that decimated much of the local population. Those who survived underwent a process of racial miscegenation with Europeans and enslaved Africans who arrived. By the 19th century, a large part of the population was of mixed racial background.

Madeira-Mamoré Railroad and the rubber boom

During the first four centuries of colonization, neither the Portuguese Crown nor, later, the Brazilian Empire found mineral wealth as expected, nor thus could they develop significant economic activity in the Amazon. This reality only changed in the 19th century with the rubber boom, when local inhabitants abandoned hunting, gathering and

subsistence agriculture practices and, along with a huge influx of migrants arriving mainly from the Brazilian Northeast, became latex extractors.

Upon Charles-Marie de La Condamine's reporting on the properties of natural rubber latex, the product began to be produced industrially, with the opening of the first plant in Paris in 1803, but the material was difficult to treat because it was extremely soft and sticky. Not until 1839 did the North American inventor Charles Goodyear manage to transform the properties of rubber, making it more resistant by adding sulfur and subjecting it to heat and pressure. This process, called vulcanization, was patented in 1841 and enabled the rapid growth of the rubber industry.

Between 1879 and 1912 the extraction of latex became hugely profitable and the product quickly proved to be the driver of a prosperous economic period. For the migrant northeastern workers, however, it was a period of difficult adaptation, and many died due to the poor food and housing conditions they were subjected to, and to tropical diseases, especially malaria, to which they had no resistance.

Wealth was so great that the so-called "rubber barons" even proposed building a railroad to transport the region's production. Initially conceived in Bolivia, which had no access to the sea to transport the latex it produced, the railroad was at that time the solution to overcome a stretch of the Madeira River with many waterfalls, which prevented it from being transported by river. The North American engineer George Earl Church was tasked with designing the project.

Faced with increased demand for the product, mainly by the Ford-led automobile industry, Brazilian workers began to invade Bolivian territory in search of more rubber trees to exploit, which generated conflict with the neighboring country. Soldier and politician Jose Plácido de Castro participated in some of the battles in the region.

With the Proclamation of the Republic in Brazil, and sponsored by the rubber barons, the diplomat José Paranhos, Baron of Rio Branco, and ambassador Assis Brasil were charged with drawing an agreement with Bolivia so that the territory of Acre would be incorporated into Brazil. In 1903, with the signing of the Treaty of Petrópolis, Brazil bought the area for two million pounds sterling, with the intention of exploiting the forests of Acre in exchange for land in Mato Grosso and the commitment to build a railroad that would connect the Madeira River region of Bolivia to Mamoré, where fluvial transport was already possible. The men were honoured by having the Acre cities of Rio Branco, Plácido de Castro and Assis Brasil named after them.

The Madeira-Mamoré Railroad was constructed between 1907 and 1912, when it was completed with the town of Guajará-Mirim. Its construction became one of the most tragic episodes in Brazil's history: more than 6,000 workers died due to tropical diseases, lack of medicine, hunger and ill health. When it was finally completed, the price of latex extracted from the Amazon was no longer competitive on the international market. The railroad, which also suffered natural damage caused by climatic and environmental conditions, was partially decommissioned in 1930 - and closed for good in 1972.

Only a small stretch of seven kilometres out of the original 366 was in operation for tourism purposes between 1981 and 2000. Named a World Heritage Site, the workshop facilities and railroad tracks await restoration, in accordance with an agreement for the construction of the Santo Antônio and Jirau hydroelectrical dams.

The end of the rubber boom left a trail of devastation and decline in the region. There was a small resumption of the boom between 1942 and 1945, as World War II increased demand for rubber to be used in vehicles to fight Nazism in Europe. At the initiative of then president Getúlio Vargas, there was compulsory recruitment of 100,000 men from the Northeast (called "rubber soldiers"), mainly from Ceará, to work in the rubber plantations, under near slavery conditions.

The war's end brought a new economic decline, and more than 30,000 men were abandoned, and later died from attacks by forest animals (jaguars, snakes and scorpions), from illness, or were assassinated for rebelling against the exploitative conditions to which they were subjected.

Other attempts to leverage the economy

Later, during Brazil's military governments, there were attempts to resume development in the Amazon. In 1966,a series of federal laws - "Operation Amazon" – offered tax exemptions to companies setting up in the region, with income tax deductions ranging from 50% to 100%.

During this period, the Superintendency for the Development of the Amazon (SUDAM) was created, and a large number of infrastructure projects began - the construction of the Trans-Amazonian Highway became the most emblematic; the Free Port of Manaus, for importing and exporting, was another major project.

These incentives attracted the interest of national and international companies. As these companies established themselves, they pursued activities that had profound impact on the forest, such as burning and clearing land for cattle grazing, mining activities, and industrial facilities. The demand for energy for the expansion of these enterprises led to the government developing plans for the construction of hydroelectric and thermoelectric plants that are still underway – entailing the damming of great Amazonian rivers to form gigantic artificial lakes.

There are 32 hydroelectrical dams in operation in the Amazon and another 31 in some stage of planning, not counting the 57 sites in the region that have been designated for this purpose. Among those already built are Balbina (AM), Tucuruí (PA), Santo Antônio (RO), Jirau (RO) and Belo Monte (PA).

These dams flooded indigenous areas, caused water pollution, the destruction of vast areas of trees (either by cutting and burning or by submersion), loss of fishery resources, displacement of large populations (Tucuruí alone involved more than 23,000 people, and 20,000 in Belo Monte), unchecked growth of the urban population, a worsening of basic sanitation and public health, as well as violence, inequality, loss of biodiversity and increased greenhouse gas emissions, not to mention the spread of pests and parasitic insects, among many other serious social problems.

Settlement projects, promoted by the National Institute for Colonization and Agrarian Reform (INCRA), established agro-villages of about one hundred hectares of land along the Trans-Amazonian Highway, each with about 50

Collecting piassava palm, Aracá River (AM).

The deaths of environmental and community leaders, mainly due to land use conflicts, have been frequent, with some cases having international repercussions.

Acima, rio Içana, Pari-Cachoeira (AM). À direita, indígena zo'é, rio Cuminapanema (PA).

houses, around which farmers and their families received a plot of another one hundred hectares each for cultivation, with the sole condition that they use 50% of the land for crops, with the other 50% used to preserve the forest. However, due to the poor soil, these agricultural projects produced few crops, and the vegetation was depleted in a few years.

Carbon stock and medicinal plants

Despite so many mistakes in terms of its exploitation, the Amazon is a region with outstanding features that can be explored in a rational way that respects its natural cycles. The largest freshwater reservoir in the world, the Amazon River alone empties 20 billion tons of water per day into the Atlantic Ocean, which positions Brazil as one of the largest suppliers of drinking water in the world in an eventual global water shortage.

Scientific studies have shown that the Amazon region is crucial in controlling the planet's climate. Forest fires have significant international impact, as they already represent 3% of global carbon emissions.

On the other hand, the Amazon is still a great repository of carbon on the planet: it holds more than 9 billion tons, the largest volume in a tropical rainforest in the world (four times larger than the Congo, in second place). If responsibly managed, the arable lands of the Amazon can supply an abundance of food, with legitimate potential for an agricultural area of 725,000 square kilometres.

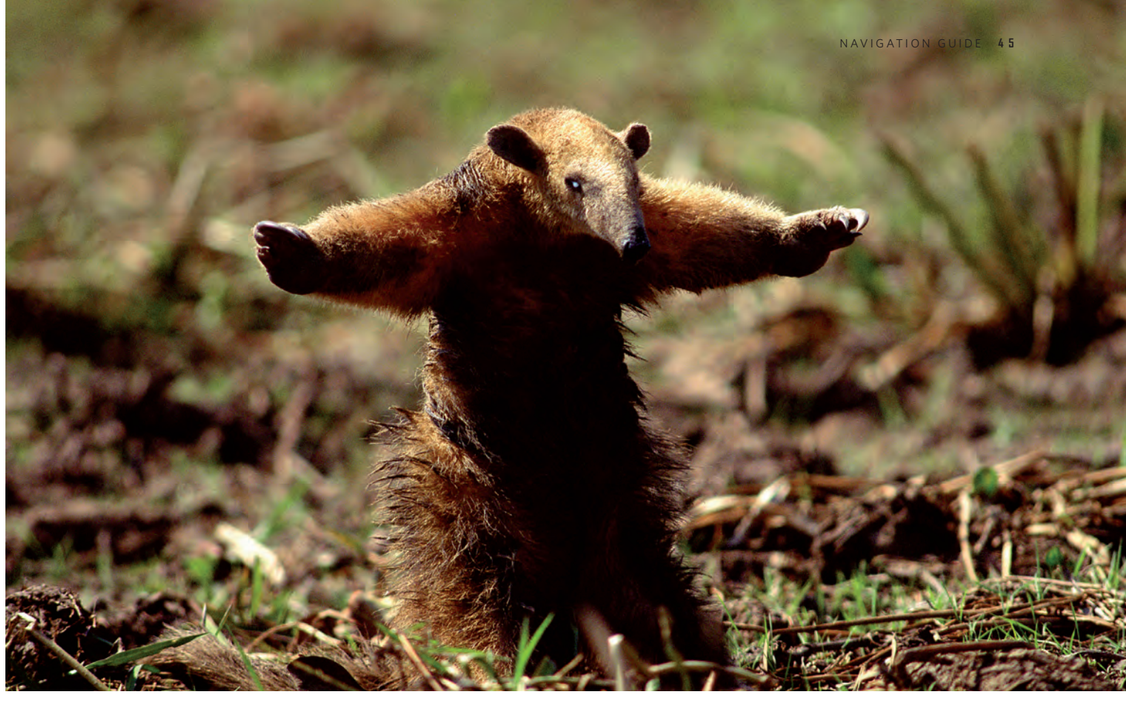
More than 10,000 plant species are recognized as carriers of active ingredients for medicinal use, cosmetics and in the biological control of pests – the National Institute for Amazon Research (INPA) alone has identified about 300 species with this potential. Such wealth may represent the future of the bioeconomy, a sector that promotes sustainable development and well-being to human populations through the effective use of biodiversity.

The Amazon represents the centre of world climate geopolitics, where pioneering innovation initiatives are being undertaken. For Brazil, it represents its greatest opportunity to seek and implement a new model of development and civilization - we can become leaders in sustainability.

Ongoing destruction

Despite all this potential, 20% of the Amazon has already been lost. The history of forest fires is old, but their frequency has reached tragic levels, peaking between 1995 and 2004, with annual deforestation rates exceeding 20,000 square kilometres per year. From 2005 to 2014, the deforestation rate slowed, but has increased again (and has not stopped since), reaching peaks of 10,000 square kilometres in 2021 and 2022.

These numbers reveal a disaster resulting from years of national public policies that favoured deregulation of forest industries at the expense of sustainable use. Between 2019 and 2022 the federal government, determined to expand agricultural and cattle raising activities (of extremely low productivity) and mining in the Amazon, dismantled organizations that fight deforestation, encouraged illegal activities such as squatting and land grabbing and mining on Indigenous lands and attacked efforts by public and non-governmental organizations to monitor and control exploitation of the territory.



Below: forest burning, Trans-Amazonian Highway, Novo Progresso (PA). Right: giant anteater *tamanduá-mirim*, Trans-Amazonian Highway (AM).

The dismantling of Brazilian environmental policy has become a major obstacle to trade agreements and has put Brazil in the position of an international pariah in climate issues. Civil servants from agencies such as the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) and the Chico Mendes Institute for Biodiversity (ICMBio), responsible for environmental inspection and the management of Conservation Units, respectively, reported threats, political persecution, aggression and demoralization, in addition to the withholding of budgets and the dismantling of their infrastructure and capacity for action.

To describe the vastness of Amazon's mineral reserves requires numbers that are astonishing in themselves. There are 18 billion tons of iron and 10 million tons of copper in Carajás, 4 billion tons of aluminum in Trombetas, Paragominas and Almeirim, 80 billion tons of manganese in Carajás and Serra do Navio, 250 tons of gold in Tapajós, 400,000 tons of tin and 90,000 tons of nickel in several regions. Additionally, there are, in smaller quantities, diamonds and uranium in Roraima and rock salt in Amazonas. This represents tons upon tons of targets for the fury of large-scale extraction.

Mining, if practiced with modern technologies that minimize environmental impact and allow lands to recover after extraction has been exhausted, can play a key role in the economy of the Amazon and Brazil. But this is not what has been happening.

The advance on Indigenous lands of gold extraction using mercury (which has contaminated the waters of rivers such as the Tapajós and caused degradation and silting of waterways) must be strongly condemned. In Yanomami territory alone, there were more than 250 communities (around 16,000 people) affected by illegal mining in 2021. That year saw a 46% increase in invasions by miners as compared to the previous year. Public health studies conducted in 2022 revealed among the Yanomami population there was contamination by mercury in 56% of the women and children in the Maturacá region (AM). In 2022 alone, mining was responsible for the deforestation of 232 hectares of forest in Yanomami Indigenous lands in Roraima. The chaos generated by illegal mining led to a health emergency for the Indigenous people in Roraima in January 2023 - images of malnourished, skeletal children were seen around the world. "The Yanomami have never starved to death. Now, mining is killing my people, and also the Munduruku and Kayapo peoples," declared Yanomami leader Davi Kopenawa.

Regulatory bodies

It is important to remember that Brazil has taken on international commitments, mainly under the Paris climate agreement and the 2030 Agenda (Sustainable Development Goals), which have been compromised by the continuing degradation in the Amazon.

We set a voluntary climate goal in 2016 that our Nationally Determined Contribution (NDC) would be a 37% reduction of greenhouse gas emissions by 2025 and 43% by 2030, as compared to 2005, based on reference data from the National Inventory, produced by the Ministry of Science, Technology and Innovation (MCTI).

This inventory originally indicated that in 2004 we emitted 2.1 billion tons of carbon dioxide equivalent ($GtCo_2e$). However, in 2020, the Brazilian government backtracked on their announcement of new targets, by reassessing the 2005 data and reconfiguring a "starting point" of 2.8 $GtCo_2e$. In practice, therefore, Brazil artificially reduced its commitment and effectively committed to greenhouse emissions of around 400 million tons more than the 2016 target.

And all this is, of course, on account of the fact that emissions in the Amazon have increased. By 2021, the Amazon will emit more than half of Brazil's entire volume of greenhouse effect (GHG), while the region represents only 9% of its gross domestic product (GDP). This is a way of doing economics that generates little wealth and a lot of pollution, while maintaining elevated levels of poverty, inequality, and unemployment. Thus, the region has experienced a sharp deterioration in both the economic environment and some of the most critical social indicators in the country, which run counter to international environmental concerns.

The deforestation rate, the most important being the Program for Calculating Deforestation in the Amazon (Prodes) and the Real-Time Deforestation Detection Sys-

tem (Deter), conducted by the National Institute for Space Research (Inpe).

In addition to these systems, the Amazon has been monitored by the Climate Observatory's Greenhouse Gas Emission Estimate System, through an initiative called MapBiomas, which is the result of a collaboration among a group of civil society organizations, universities and national and international research institutions.

Much of this deforestation occurs along roads opened up in the forest that, once inaugurated, serve as access both to workers settled by the government and to squatters who, settling further into the forest, create the demand for new roads. Thus, the deforestation, seen from above, resembles the shape of a fishbone. The seemingly endless cycle can accelerate forest degradation until the tipping point, after which there is no possibility of regeneration - the slow, gradual death of the forest.

Violent conflict

In addition to attacks on nature, the region has also witnessed a frightening increase in social violence, due to worsening poverty and the weakening of structural policies in health and sanitation (with increasing cases of endemic disease and diseases transmitted by insects and other parasites), education, and infrastructure.

This situation has intensified illicit economic activities, resulting in social unrest - and the Amazon region ranks first in murders in the country, at 68% of the total, with 22% occurring in Pará alone (2021). Among the 30 cities with the highest average murder death rates in Brazil, 13 are in the Amazon region, of which the following are the most violent: Jacareacanga, Floresta do Araguaia, Cumaru do Norte, Senador José Porfírio, Anapu, Novo Progresso, Bannach (all in Pará); Santa Luzia D'Oeste and São Felipe D'Oeste (Rondônia); Aripuanã and Glória D'Oeste (Mato Grosso) and Japurá (Amazonas).

The deaths of environmental and community leaders, mainly due to land use conflicts, have been frequent, with some cases having international repercussions.

But the reality is much crueler: in just the two-year period between 2020 and 2022, according to data from the report "Murders in the Pan-Amazon" organized by the Pastoral Land Commission, Brazil had 62 murders (seven were women), second only to Colombia, with 120 (10 of which were women).

Chico Mendes, leader of the rubber tappers' union in the Xapuri region (AC) had become, by the end of the 1980s, one of the most recognized figures in the struggle for the rights of forest workers and for Amazon conservation. He was gunned down in his own home by local ranchers as he was coming out of his shower. His example inspired the creation of the Extractive Reserves, a model of Conservation Units that had not existed in Brazil and that has since been adopted by other countries. His story is one of the first that showed the importance of the alliance between social and environmental movements, starting a new era of resistance that would come to be known as Brazilian socio-environmentalism. Chico Mendes is considered a national hero by those who defend the forest and the environment.

Left: a Brazil-nut tree survives a fire in Rondônia. Right: Chico Mendes (1944-1988), in Xapuri (AC), two months before his assassination.

Dorothy Stang was a member of the Pastoral Land Commission, linked to the Catholic Church, and fought for the rights of rural workers involved in land conflicts. She was one of the coordinators of the Sustainable Development Project, linked to INCRA, in settling landless workers in areas disputed by farmers and loggers. At the age of 73, she was murdered in an ambush 50 kilometres from the city of Anapu (PA), where she lived.

Bruno Pereira, indigenista, e **Dom Phillips**, jornalista, também foram vítimas de conflitos em terras amazônicas, pois realizavam ações de denúncia e de proteção aos povos indígenas na região do Vale do Javari (AM) contra as constantes ameaças e invasões de suas terras por garimpeiros, narcotraficantes e madeireiros.

The Indigenous land issue

The situation of Indigenous peoples has been aggravated by a debate over the withdrawal of previously acquired rights. Since 1988, the Brazilian Constitution has recognized original land rights of Indigenous peoples for the lands they have traditionally occupied, and it is this premise that has guided the State in recognition of Indigenous lands throughout the country. However, in an attempt to roll back these achievements, groups eager for the natural resources of these territories have been attempting to create a different legal interpretation, claiming that this right is only guaranteed to Indigenous people who already occupied their traditional lands in 1988.

Article 231 of the Brazilian Constitution is clear in defining that Indigenous rights are "original", that is, they predate the formation of the Brazilian State, so that this interpretation should be unequivocal. In a breach of these rights, and as the Brazilian justice system has not defined if a "time frame" should be imposed, Indigenous communities have suffered a series of aggressions and violence: lands have been invaded by illicit activities and public policies for their protection have been abandoned. By political decision of the federal government, between 2019 and 2022 no Indigenous land was approved in Brazil. In 2023, the process resumed with the creation of the Ministry of Indigenous Peoples to address this issue.

New models

By introducing an integrated agenda in the Amazon that considers the well-being of the people who live there, initiatives that already exist can become even more successful. It is essential to engage public policies in education, health, science and technology, connectivity, territorial planning, security, and the fight against intolerance. In this context, participation by young people who live in the region, in cities, in the forests and on the rivers, is fundamentally important, as they are the contingent that has engaged in the struggles and taken ownership of fighting serious socio-environmental problems, by putting pressure on public authorities, forming networks and coalitions, and occupying public spaces. Youth are showing us new paths and telling us what they want for their future.

The Amazon can be the solution to the climate crisis only if the jungle and reforestation areas receive international financial resources provided for in the so-called "carbon market". Deforested regions would gain new life by being transformed into areas of large biomass production with biodiversity. This would require improved soil use, defining the use goals of each region, and financial values estimates that motivate owners to preserve the forest.

Diverse "Amazons"

National initiatives, such as the Climate Observatory, the Brazil Climate, Forest and Agriculture Coalition, Amazon 2030 and Amazon Concertation have already produced a detailed diagnosis of what needs to be done in the region, considering its spatial, temporal and thematic differences. The solutions must take into consideration at least four distinct realities in the Amazon, which require individual strategies to face problems and leverage opportunities:

1) Urban Amazon: accounts for about 70% of the population and needs to see improvements in basic sanitation and public health, mobility, job opportunities and education. Education in the Amazon is a recourse to combat illegal and predatory activities in the region; traditional knowledge, as well as advanced science and technology, should be included in school curricula, along with greater access to broadband connectivity (an indispensable aspect of educational development in the region, since only 50% of its 140,000 schools have internet, and even that is of inadequate quality);

2) Deforested Amazon: municipalities that have already lost more than 65% of their forested territory, mainly in the so-called "arc of deforestation", a strip starting in the

Right: Zo'é child, Cuminapanema River (PA).

Anavilhanas National Park, Novo Airão (AM).

west of Maranhão, through the south of Pará and extending to the west, cutting through Mato Grosso, Rondônia and Acre by means of highways such as BR-364. The most important challenge in this region is to improve agricultural productivity and land use regulation, and to advance the recovery of degraded areas with reforestation measures. There is sufficient space in the Amazon for the development of agriculture and cattle raising without the need for new deforestation. Of the 84 million hectares (an area equivalent to the size of Germany) already deforested, 37 million hectares could be made available for reforestation and restoration with agroforestry systems;

3) **Amazon under pressure**: covers a swath from the central region of Pará (São Félix do Xingu, Altamira, Novo Progresso), the extreme northwest of Mato Grosso and southern Amazonas, part of Acre, where forest remains but is being deforested at a rapid pace. Without rational use of the territory, the area has seen degraded pastureland and an increase in organized crime. Control measures (investigation and punishment of unlawful acts) need to be intensified, along with territorial planning and implementation of alternatives to consolidate an economy that keeps the forest intact;

4) **Preserved Amazon forest**: located mainly in the state of Amazonas, part of northern Pará and some isolated regions, this area needs to see strengthening and consolidation of its economy based on biodiversity, which involves not the expansion of roads, but rather improved interconnectivity. By creating new markets for the bio-economy, young people will be able to choose to settle on the land not only for its wood and non-timber products, but also for the ecosystem byproducts the forest can offer.

Pioneering experiments in sustainability

The Amazon is also an important centre of cultural production and identity. There is an urgent need to recognize the plurality and diversity of the Amazon, and to respect the various visions and voices around development. In most traditional communities in the region, land ownership is collective and labour practices are cooperative and shared. The creative green economy practiced by Amazonian peoples teaches us the many ways in which human happiness can be compatible with respect for other beings on the planet.

There is no shortage of successful experiences in basic education in the Amazon, with positive results that can be replicated. We must ask why such practices have not gained scale to date and how they can become wide-ranging policies.

Perhaps the answer is that these practices have always been carried out with extreme difficulty and isolated community effort, or, at most, with limited capacity of local governments. When the federal government implements actions designed in the south and southeast regions of the country, their models often do not work for the local reality.

Local strategies need to flourish, and these initiatives need to expand in scope so that their potential is recognized and linked to broader approaches that can then consolidate into state policies beyond political cycles and party interests.

Imagining a potential future for humanity implies a reexamining of our current model of civilization, which has generated increasing social inequality and income disparity. Innovative ways of living in the Amazon can inspire new forms of social arrangements in which equity and the sustainable use of biodiversity are the backbone of the economy.

In most traditional communities in the region, land ownership is collective and labour practices are cooperative and shared. The creative green economy practiced by Amazonian peoples teaches us the many ways in which human happiness can be compatible with respect for other beings on the planet.

The solidarity economy is a way of organizing production and consumption so that everyone participates - in both the management and the end result of collective work. In this way, outcomes are optimized and social ties are strengthened. These collective governance systems need to gain scale for the model to be replicable in other settings. The Amazon teaches - we can learn.

In most traditional communities in the region, land ownership is collective and labour practices are cooperative and shared. The creative green economy practiced by Amazonian peoples teaches us the many ways in which human happiness can be compatible with respect for other beings on the planet.

From extractivism to sustainability

Innovative governance systems in the Amazon imply governing in a manner that is shared (plural, diverse and socialized), interactive (produced continuously by multiple key players), collaborative (with everyone participating in self-sustainability), multilevel (across various governmental bodies, from local to global) and negotiated (dependent on conflict resolution to move forward). These types of systems can also be put in place in other communities.

For this to become a reality, more investment and financing are needed for conservation. In 2008, the federal government, in partnership with state governors in the Amazon region, created the Sustainable Amazon Plan (PAS), which had among its main objectives to a) promote land-use planning; b) foster economic activities based on the sustainable use of natural resources; c) subsidize planning, execution and maintenance of infrastructure projects in the energy, transport and communications sectors and installation of urban facilities; d) strengthen social inclusion and citizenship by means of participatory processes; and e) support the construction of a new financing model for the Amazon. However, because of the inconsistent approach of federal administrations since its launch, PAS weakened and by 2022 was effectively terminated.

One of PAS' development initiatives was the Amazon Fund, which Brazil proposed at the 13th UN Conference on Climate Change (COP13) in 2007 and BNDES authorized in 2008. Deactivated in 2018 by direct action of the Ministry of the Environment, this fund raised almost R$ 3.5 billion, mainly through donations from Norwegian (93.8%) and German (5.7%) governments. The amount was invested in various projects, on the single condition by the donors that the fund contribute to the reduction of greenhouse gas emissions.

After the Ministry of the Environment questioned the use of Amazon Fund resources, donor countries stopped sending payments and the impasse remained until the end of 2022, resuming only in January 2023 when Norway released around R$ 3 billion.

Another important funding initiative for sustainable projects in the Amazon has emerged within civil society organizations. The Integrated Legacy of the Amazon Region (Lira) project was created to enable efficient management of approximately 80 million hectares of protected territorial areas between the lower and upper Negro River, the northern part of Pará, the Xingu River, the Madeira-Purus system and the states of Rondônia and Acre (equivalent to 34% of protected areas in the Amazon).

Initially funded by the Amazon Fund, the project was supported by a group of organizations that together invested more than R$ 60 million, benefitting 43 Indigenous lands in 23 states and 20 federal Conservation Units. By the end of 2022, in its first phase of implementation, Lira managed to involve 82 institutions, directly impacting more than 35,000 Indigenous and other communities in 54 municipalities who make their living from Amazon resources.

It is evident that a fundamental strategy to scale up a green economy in the Amazon is by linking private and public resources in combination with the proper use of scientific and traditional knowledge. This structure assumes that the accumulated experience and knowledge in each domain is valued and necessary for innovative approaches based on a conceptual tripod: technical-scientific knowledge, awareness, and acknowledgement of cultural value.

The Amazon's biological diversity, together with its social diversity, can teach the world how society and nature should interact to achieve sustainability and well-being.

By exposing our children to the Amazon, we not only open possible paths to a more balanced future for the Earth, but we also inspire other ways of survival that have life as their main value.

Right: Harpy eagle in the Amazon rainforest.
Following page: Child from a riverside community, Amazon River (AM).

Brazil, Indigenous land

Raoni Kamayurá, 8 years old. Xingu Indigenous Park, Mato Grosso

The games and dreams that make up daily life for Raoni and other children who live in the Xingu (book 1, chapter 1), reveal key historical and social features common to Brazilian Indigenous peoples, even while great diversity exists among them.

For 95% of the history of this territory - from the arrival of the first human groups to what is now Brazil - the only inhabitants have been Indigenous nations. Archeological evidence tells us that there have been more than 10,500 years of occupation, of which only about 500 years account for the arrival of the Europeans.

However, in recent years, where extermination has been all too prevalent, Indigenous nations have been drastically reduced: from 3 million, according to the National Foundation of Indigenous Peoples (FUNAI), to a little over 300,000 at the end of the 1960s. Results of the last census of the Brazilian Institute of Geography and Statistics (IBGE) indicate that the population has been growing, slowly: there are now more than 800,000 Indigenous people in Brazil (0.5% of the total population).

The survival of ethnic groups was only possible when others joined in their struggle. Of note is the pioneering spirit of Marshall Cândido Mariano da Silva Rondon (1865-1958), an army engineer and sertanista (hinterland explorer) who was commissioned by the Brazilian army in 1890 to establish a telegraph line connecting Mato Grosso to Rio de Janeiro. Ten years later, the line was extended to Paraguay and Bolivia and reached the Amazon in 1907.

Among other missions, Marshal Rondon also played a key role in making initial contact with various Indigenous peoples. At first he had a colonialist vision: he believed they needed to assimilate to the rest of the country. Over time, he changed his view and began to defend the notion that Indigenous peoples should have their rights restored. In 1939, Rondon became head of the National Council for the Protection of Indians.

In 1938, President Getúlio Vargas created a plan for the occupation of the Brazilian Midwest, the so-called "March Westward". In 1943, he organized an expedition, named Roncador-Xingu, for the development and integration of Brazil's interior. Forty woodsmen were selected, along with agronomists, nurses, doctors and other professionals.

Os irmãos Villas-Bôas – Orlando (1914-2002), Cláudio (1916-1998) e Leonardo (1918-1961) –, nascidos no interior de São Paulo, mas que moravam na capital, ao saberem da organização da expedição, interessaram-se imediatamente em participar. Para tanto, alistaram-se na caravana disfarçados de trabalhadores analfabetos. Ao longo da viagem, porém, seus dotes e liderança emergiram: os irmãos acabaram assumindo o comando da jornada no seu trecho mais difícil, quando atingiram o rio das Mortes, no Alto Xingu e, depois, a Serra do Cachimbo, no rio Tapajós. Desde então, tornaram-se a referência nacional da luta pela demarcação de terras, algo impensável para a época.

The work of these three brothers (with the support of Marshal Rondon, and Darcy Ribeiro, Noel Nutels, Heloísa Alberto Torres, José Maria da Gama Malcher and Café Filho) resulted in the creation in 1961 of the Xingu National Park (later renamed Xingu Indigenous Park), the first Indigenous territory approved by the federal government in Brazil. Fourteen Indigenous ethnic groups who had been displaced from their original lands were relocated to a new protected territory of more than 2,600 hectares, where they could continue their ancestral cultural practices.

From that time on, demarcation of Indigenous lands gained momentum, especially with the approval of the 1988 Constitution, which granted Indigenous rights and land title. Today, these areas occupy more than 14% of national territory. There are more than 300 Indigenous nations in the country, speaking 274 different languages - the greatest ethnic diversity in Latin America. Between 2019 and 2022, no new lands were demarcated. In 2023, however, the federal government created the Ministry of Indigenous Peoples to emphasize a new phase in the protection of their interests.

Introducing children to the Xingu Indigenous Park is an opportunity for teachers to work with ways of knowing that respect the culture of these people. It is suggested to approach sociocultural diversity as a starting point for a discussion about the students' own lifestyles in the places where they live.

Deforestation and illegal mining

What Brazil's Indigenous nations have in common is their constant need to fight for recognition of their rights. Deforestation for the expansion of agricultural production and invasion of lands for illegal mining create social conflict and violence. To defend their best interests, the *caciques* are responsible for the coordination and participative management of village life, inspired by the knowledge of the shamans. Millennial knowledge about the plants that serve as medicine "to cure the illnesses of the body - and the soul", about caution to be taken with venomous animals, about what can and cannot be eaten, and the nature of the relationship between people and nature is the role of the shaman.

Raoni's talk reveals how important the *cacique* and the shaman are to the cultural identity of children and youth in his village. Teachers can talk to students about the influence of their elders, including their parents and other adults in their family and community, in shaping their own worldviews.

Pages 54 and 55: *Kuarup* (ritual to honour the dead), Xingu Indigenous Park, Kalapalo Indigenous village (MT).
Above: Marshall Cândido Mariano da Silva Rondon (1865-1958).

Villas-Bôas brothers: Leonardo, Orlando and Claudio. Pages 60 and 61, Ipavu lagoon, Xingu Indigenous Park (MT).

The name Raoni refers to one of Brazil's greatest Indigenous leaders (born in 1930), who should be remembered along with other leaders such as Ailton Krenak, Almir Surui, Davi Kopenawa, Sônia Guajajara, Jacir Macuxi, Daniel Munduruku, Joênia Wapichana, Célia Xakriabá, Myrian Krexu, Cristiane Takuá, Daiara Tukano, Arissana Pataxó, and Sônia Ará Mirim, among others. On January 1, 2023, during the inauguration ceremony of President Luiz Inácio Lula da Silva, Chief Raoni was one of the representatives of the Brazilian people to ascend the ramp of the Planalto Palace, in an event that was an emblematic milestone in the struggle of Brazil's original peoples.

Knowledge is shared through oral tradition: culture and knowledge are passed on from generation to generation. Creation myths create a cultural foundation and sense of belonging to a people – a common way of understanding the world, in contrast to that of Westernized peoples. More than just ritualization, like the ones seen during the *Kuarup*, for example, the stories told and their celebrations in the villages are fundamental agents of identity reaffirmation. The *Kuarup* is a farewell ritual for the dead, celebrating their memory so that their souls can be released to the spiritual world. Each deceased person is represented by a decorated wooden trunk, which is then released into the river..

It is worthwhile here to help children understand how much we think and act according to our own worldview, and how many different views can exist and influence each other. Teachers can point out that culture is the essence of any people, but that it is not static: it incorporates elements from other cultures, in a permanent process of exchange that has characterized humanity since the beginning.

Contrary to what is sometimes imagined, Indigenous peoples have expanded their horizons in understanding and operating in contemporary society. This is evident in Raoni's accounts of soccer, superheroes and cell phones. Indigenous people have distinguished themselves as cultural producers and active communicators in various media, disseminating their traditions and collaborating with activists on the socio-environmental impacts on their lands.

Ways of being and living

Raoni's stories are revealing of Indigenous ways of being and daily life in his village. Describing how older brothers take care of the younger ones, he demonstrates their collective approach to care for one another. Childcare is also divided among the adults, who help them learn basic daily tasks such as making bows and arrows, hunting, fishing, growing cassava, gathering fruit, and preparing food.

When talking about his connection with the river (whether for play or hygiene), Raoni presents one of the aspects of Indigenous culture that most influenced the formation of the Brazilian people: the daily bath. Many ways of playing and their similarities with children from other corners of the country work as a starting point for students to discover other differences and similarities.

The daily diet in Indigenous villages is based on cultivating manioc, hunting and fishing, and gathering edible items from the forest. These items also serve as raw material for making utensils for everyday use and other crafts. Learning to cultivate, harvest, hunt, and make baskets and pots is essential for empowering children during the growth process.

Indigenous village dwellings, especially those made with ancestral techniques, such as huts, are precious examples of Indigenous knowledge: architecture adapted to the local biome. Sleeping in hammocks is another example of how different, but also similar, village life and city life can be. The most distinct aspects, such as heating by bonfire or using plant leaves for hygiene after taking care of one's basic physiological needs "in the bush," demonstrate human adaptability to different living conditions.

The ease with which they deal with the fact of being naked or clothed is a point that can be addressed in the classroom. Where do taboos come from? If Indigenous children and adults live sometimes without clothes, body painting gains particular aesthetic importance. An appreciation of this aesthetic aspect (both body painting and handicrafts) can help teachers of art education, inspiring new ways of perceiving the beauty of symbols and abstraction.

It is also worth mentioning the extent to which Indigenous youth have sought a place in broader Brazilian society, first, by enhancing the dissemination of their culture through various forms of artistic expression, then by their presence in university courses. Getting training in health, education, engineering, law, tourism, media, arts, and other areas has increasingly become a way for young people to remain in their communities. In this way, they are able to help theirpeople by providing services that are often precarious or to occupy prominent positions in politics and society, strengthening their communities and cultures.

The presence and reach of cultural traditions of Brazil's original peoples in our identity traits needs to be deepened. Only then will we understand each other as relatives in this Indigenous land called Brazil.

Contemporary cross-disciplinary BNCC themes that can be elaborated by reading the chapter by Raoni

- Cultural connections and popular knowledge
- Dialogue, diversity and appreciation of multiculturalism
- Human interactions (human rights, community participation, participatory management, cooperation and solidarity, knowledge sharing)

The energy of açaí

Pedro Henrique Teles Nascimento, 12 years old. Periquitaquara, Belém, Pará

Pedro Henrique's story (book 1, chapter 2) is about an Amazon that is little known by outsiders and shows us just how interconnected people are with their local realities. Pedro lives in the community of Periquitaquara, on the island of Combu (PA), growing up on the *várzea* (floodplain or wetlands) where he learned from an early age how to make a living through hunting and gathering Amazonian species.

The Amazon is a land of superlatives. Everything there is grand, magnificent, larger than life. But it is also a place of subtleties, of a myriad of realities, of serene, steady daily life, in nature and within communities.

Located at the mouth of the Guamá River, the island of Combu is part of the Amazon Estuary. It is the fourth largest island in Belém (PA), 1.5 kilometres from the city as the crow flies. Since 1997 it was transformed into an Environmental Protection Area (APA). About 1,500 people live there, in five communities: Beira Rio, Combu, Paciência, São Benedito, and Periquitaquara.

According to the National System of Conservation Units, an APA must protect regions with natural, cultural and aesthetic attributes essential to quality of life for human communities, while ensuring the protection of the area's biodiversity and the sustainable use of its natural resources.

Most of the island is composed of wetlands which are affected by the daily change in the tides. Due to rainfall cycles, it is inundated part of the year by overflowing rivers. Drought allows the soil to become drier in a shorter period. Among the species of plants and trees adapted to live in these conditions, the açaí stands out as a plant which grows very well there. Some of the areas, known as *igapós*, are always flooded.

Living in wetland areas requires adaptation in dwellings, which need to be built on stilts - a characteristic design in several riverside communities. The main subsistence activity of these communities on the island of Combu is extraction, which allows the production and commercialization of açaí, cocoa, and the pupunha palm. Because of the island's great natural beauty, leisure and tourism activities also generate income for local residents.

The açai palm (*Euterpe oleracea*), with its firm and flexible trunk, is the most important species for economic use in the region and, in a way, in the entire Amazon. Consumed by local people since pre-colonial times, its name is of Tupi origin, since *yasa'i* means "fruit that weeps+earth", perhaps a reference to the dark juice yielded by its fruit.

Unlike the ice cream consumed in other regions of the country, in the Amazon açaí is eaten at room temperature, mixed with manioc flour. As the açai palm has a highly valued palm heart, it has come to be exploited in a non-sustainable way: an enormous number of trees were cut down in periods when they did not produce fruit, and the species became threatened in the region.

In order to reverse this situation, residents organized and created the APA. Thus, they were able to control the production of açaí and reinforce the implementation of Agro-extractive Settlement Projects, which allowed them to fine-tune operations in traditional riverside communities.

Sustainable Use Conservation Units, along with public policies that support land title regularization, are important to combat socio-environmental conflicts that foment violence in the Amazon.

Riverside populations (many formed by non-Indigenous people) do not have the same constitutional rights as those on demarcated Indigenous lands, so they need different strategies in the fight to maintain their territories..

Pedro Henrique's account helps educators in the classroom to work with their students on one of the greatest economic opportunities of the Amazon: the managed and sustainable use of native species for human food and other purposes (supplying wood or raw material for cosmetics, pharmaceuticals, etc.).

Besides açaí, among hundreds of species with economic potential, the following stand out in the region: Brazil nut (*Bertholletia excelsa*), rubber tree (*Hevea brasiliensis*), tucuma (*Astrocaryum aculeatum*), cupuaçu (*Theobroma grandiflorum*), bacuri (*Scheelea phalerata*), camu-camu (*Myrciaria dubia*), andiroba (*Carapa guianensis*), açacu (*Hura crepitans*), kapok (*Ceiba pentranda*) and paxiúba (*Socratea exorrhiza*) - "the palm tree that walks", mentioned by Pedro Henrique.

According to 2022 estimates, of the many trees supplying high quality wood, about 40% are harvested from the Amazon without proper logging permits. Some are protected by law: the Brazil nut tree (*Bertholletia excelsa - Decree No. 5,975/2006*), the rubber tree (*Hevea brasiliensis - Decree No. 5,975/2006*) and the mahogany tree (*Swietenia macrophylla - Decree No. 6,472/2008*).

Approximately 142,000 hectares of forest were exploited in 2022 without any permits issued by the relevant bodies. According to the Map of Illegal Logging in the Amazon (Imazon, Idesam, Imaflora, and ICV), these trees were taken from registered rural properties (72%), Indigenous lands (11%), unproductive properties (9%), conservation units (4%), rural settlements (3%), and undesignated lands (1%).

It is possible to make commercial use of tree species (while minimizing environmental impacts) by respecting norms laid out by management standards, and thereby guaranteeing forest conservation and the availability of natural resources for future generations. The case of açaí extraction practices, passed on from generation to generation, serves as an excellent example of the integration of humans and natural resources.

As Pedro Henrigue teaches us, ancestral knowledge of how to collect clusters of fruit, process foods into forms that can be consumed in diverse ways, create income from selling food, manage production while respecting the tree's flowering and fruiting cycles, and using the tree's derivatives (trunks, leaves and fruitless bunches), shows just how much these people have to teach the rest of Brazil - and the world.

Contemporary cross-disciplinary themes of the BNCC that can be addressed by reading Pedro Henrique's chapter

- Dialogues with the territory
- Health and environment
- Food and nutrition security
- Human interactions (human rights, community participation, participatory management, cooperation and solidarity, knowledge sharing)

Pages 62 and 63: açaí expert
Following pages: Açai expertise developing in the forest

The Amazonian bull

Marcos Gustavo Sales Dias, 9 years old. São Caetano de Odivelas, Pará

Marcos Gustavo (book 1, chapter 8) lives in a town famous for its popular festivals. These are age-old cultural expressions with a vast diversity of forms and colours in the Amazon, as in the rest of the country. Most combine music, choreographed dances, traditional costumes and always represent a well-known storyline, like a kind of popular opera.

The poet, writer and researcher of Brazilian popular culture Mário de Andrade (1893-1945), in *Danças dramáticas do Brasil* (edited by Oneyda Alvarenga and published in 1959), states that "(...) the subject of each dance is both profane and religious, at the same time containing a practical element at once affected by religious transfiguration." In the book, he presents the dances of the *congos* and *congadas* (of African origin) and of the *maracatu* and *moçambiques* (a result of the mixture of African, Indigenous and European cultures).

The dances are accompanied by music and dramatization that follow a traditional cultural theme. Formally, they are a suite, that is, made up of a series of choreographic pieces, rhapsodies, associated with a theatrical dialogue, that Mário de Andrade interpreted as a dramatization around a fire.

The *bumba-meu-boi* dance, however, is the one that most draws the writer's attention. It is one of our country's most traditional cultural expressions, whose roots are not very well known, but which probably originated in the cattle cycle in the Northeast of Brazil, between the 17th and 18th centuries. Its enactment combines elements of music, dance and theatre, and was given Brazilian Cultural Heritage status by Iphan.

The basic plot is a kind of *auto-do-boi*, which tells the story of Mãe Catirina, an enslaved woman married to Pai Francisco, who lives on a farm in the *sertão* (hinterland). When she becomes pregnant, she feels an irresistible desire to eat the tongue of the most beautiful bull on the farm, which belongs to her master. To satisfy his wife's desire, Pai Francisco steals, kills and removes the tongue of the farm owner's favorite bull. However, a cowboy who works on the farm learns of the event and warns his boss, who swears revenge and pursues the couple. At the end of the story, the characters, accompanied by doctors and priests, manage to resuscitate the bull, which makes the farmer happy. He forgives the couple – and everything ends in a big party.

Variations on this storyline have spread throughout Brazil, to the point that Mário de Andrade considered the bull "the national animal par excellence", and the dance that enshrines it a strong and unanimous element that constitutes our nationality. There are researchers who even consider that the book *Macunaíma* (our symbolic national hero) was inspired, in its narrative rhapsodic form, by the saga of the bumba-meu-boi (our symbolic animal).

Performances of *bumba-meu-boi* (the name adopted in Maranhão) are so common in the country that they took on various regional names and nuances in the dances and costumes: *boi-bumbá* (AM, AP, PA, RO, RR); *boi de reis* and *boi de São João* (CE); *boi-calemba* (PB, PE, RN); *boizinho* (RJ, SP); *boi de jacá* (SP); *boi-pintadinho* (RJ) and *boi de mamão* (SC, PR).

In the Amazon, the grandest *boi-bumbá* festivities have been held in the city of Parintins (AM) since 1913. Elements of Indigenous culture have been incorporated and two great associations (boi *Caprichoso*, with its *marujada* festival; and boi *Garantido*, with its batucada sound) compete for the annual festival prize in beautiful spectacles in which up to 40,000 people participate. Emerging within migrant culture from the Northeast of Brazil during the Amazon rubber boom, the Parintins *boi-bumbá* combines the original festival storyline with elements from regional traditions: an exaltation to nature, the forest, and stories of *quilombo*, Indigenous, *caboclo* (mixed African-European-Indigenous) and riverside cultures.

In São Caetano de Odivelas, where Marcos Gustavo lives, a municipality known as the "land of the crab", there is a variation known as *boi de Mascara*, where actors dress up as different characters. As is the case throughout the state of Pará, this folk dance denounces the disparate social relations that existed between enslaved Black or Indigenous people (in the *senzalas*), and plantation owners (in the *casas-grandes*).

The *boi de Mascara* does not have the same traditional narrative structure as in other regions. It probably originated in the *Boi Faceiro* (1935) and *Boi Tinga* (1937), from Marajó Island. These two groups were sponsored by two different local clubs. Since then, a "rivalry" arose: the *Boi Faceiro* brought together performers who wished to respect the *auto-do-boi* tradition and its characters; the *Boi Tinga* attracted performers who wanted to reinvent the festival, making it more irreverent, free, and colourful.

There are two cultural aspects that teachers can address with their students in class: the maintenance of traditional ancestral traits that maintain a social group's identity, and the dynamics of permanent transformation that that same culture undergoes over time. This is a precious opportunity to discuss cross-disciplinary BNCC themes such as "Cultural Connections and Popular Knowledge" and "Dialogue; diversity and multiculturalism appreciation", since the *boi de Mascara* of São Caetano de Odivelas is an example of how the process of creating popular festivals reveals the dynamics inherent in how traditions are thought of and reproduced - that is, it shows how the process of forming culture can aggregate conflicting ideas, sometimes antagonistic, sometimes complementary, but always the product of different senses, sensibilities, and visions of social groups.

Mário de Andrade considers the bull "the national animal par excellence", and the dance that consecrates it a strong and unanimous element that constitutes our nationality.

The use of masks there had its origin in the fishermen who used them to avoid being recognized. Besides the bull, which in São Caetano de Odivelas is a quadruped (two "tripe" performers give it life), other characters are part of the game. The *pierrôs* wear masks with prominent noses, overalls and head ornaments. The *cabeçudos* or *preás* have enormous heads disproportionate to their bodies, and suspended legs and arms. The *buchudos*, on the other hand, have no fixed dress and can be various beings (dinosaurs, elephants, witches, etc., as long as they are amusing). There are also cowboys and other animals.

The revellers that accompany the boi go from house to house, all decorated and with food to greet them. The

Pages 66 and 67: playing Vaca Velha, in São Caetano de Odivelas (PA)

sound of marching songs and sambas pull the revelers and performers until, at the end of the journey, the bull flees and never returns.

All this celebration takes place in a city where mangroves are a fixture in the landscape and in the lives of its residents. Marcos Gustavo's account of how to catch crab (*Ucides cordatus*) reveals an aspect of this important ecosystem that, from so much accumulated organic material in these regions where river and sea meets, is fundamental to the marine fauna food chain.

The crab is the main extractive product of the region. Adults and children capture it through three techniques: lassoing, tapping and punching (also called "arm" or *muque*). Local expertise and practices of crab catching are vital to ensure conservation of the mangrove ecosystem so that sustainable harvesting guarantees income generation for the local population.

Finally, as another example of the great diversity of Amazonian popular culture, it is worth mentioning the *marambiré* dance, a cultural expression mainly from Alenquer (PA), having originally emerged in the *mocambo* (*quilombo*) of Pacoval. It is, therefore, a tradition that symbolizes the ethnic resistance of *quilombolo* peoples, bringing together dance, music and songs that refer to the ancient kingdoms of Central Africa.

Cross-disciplinary contemporary themes of the BNCC that can be worked on by reading the chapter by Marcos Gustavo

- Cultural connections and popular knowledge
- Dialogue; diversity; appreciation of multiculturalism.

Catching crabs in the mangrove in São Caetano de Odivelas (PA).
Following pages: Revelers accompany the bull from house to house.

The legacy of rubber

Franciele Silva Pereira, 10 years old. Xapuri, Acre.

Franciele (book 1, chapter 12) immigrated to the Amazon with her family from the Northeast of Brazil, in search of opportunities offered by one of the most robust economic periods the region has ever experienced.

The rubber boom was established in the Amazon because it is the only place in the world where the rubber tree (*Hevea brasiliensis*), native to the region, occurs in the wild in the forest. The extraction of latex, the raw material for the manufacture of rubber, saw significant growth with the advent of automobile manufacturing, as early as 1879 and until 1912, with a second important period between 1942 and 1945.

At its peak, at the beginning of the 20th century, more than 500,000 workers, mainly from the Brazilian Northeast, migrated to work on rubber plantations, and the term *seringueiro*, or rubber tapper, emerged.

In the second boom cycle, during World War II, between 55,000 and 70,000 new workers, also from the Northeast, formed the so-called "rubber army" – most, however, died, victims of tropical diseases or due to terrible living and working conditions. Only about six thousand survived.

Of these, some remained in the Amazon, like Franciele's family; others, with the end of the war and the decline in rubber sales, returned to their places of origin.

In the 1960s, an important transformation process began in the Amazon, thanks to decisive actions of the State and the attraction of private investments for the "modernization" of the region. The military regime, which took power in Brazil in 1964, then implemented "Operation Amazonia", whose objective was to integrate the region with the rest of the country through an accelerated settlement process.

Public agencies were created to promote industrialization, as well as financial incentives for those willing to "colonize" the territory with business enterprises, mainly in the agricultural sector.

In this period, rubber tappers emerged as a relevant social movement. They gained more importance and visibility until the mid-1980s. Organization of these workers became necessary because governmental projects interfered with their activities and transformed the region into a stage for conflict.

Vast areas were sold off at low prices. The new owners started to clear the forest to plant pastures, which exacerbated the removal of rubber trees (the main means of sustenance for the latex-extracting population). Often the rubber tappers were driven off the land and their houses destroyed or burned down.

From demanding their rights to land use, the rubber tappers' agenda expanded in the 1980s. With the support of global environmental activists that fought for the reduction of deforestation of the forest, the movement became transnational. During this period, the leadership of Chico Mendes gained great prominence.

Francisco Alves Mendes Filho was born in 1944, on the rubber plantation of Porto Rico, in Xapuri (AC), the son of migrants from the northeast of Brazil who came to Acre during the second rubber boom. He spent his childhood and adolescence harvesting latex with his father. He only had the opportunity to learn to read and write when he was 16 years old. While still young, he became an activist in the fight against exploitation of forest workers by rubber plan-

Francisco Alves Mendes Filho was born in 1944 on the rubber plantation of Porto Rico, in Xapuri (AC), son of migrants from the northeast who went to Acre during the second rubber boom. He spent his childhood and adolescence harvesting latex with his father.

Chico Mendes' house (1944-1988), in Xapuri (AC).

tation land owners.

As an adult, he actively participated in the movement that fought for the right to own the lands on which, since the end of the 19th century, rubber tappers had been harvesting latex and nuts. It was during this period that he began to organize the so-called "empates": an action in which people joined hands or arms to surround areas that would be deforested by tractors, and confiscated chainsaws. Bodies against machines form the iconic image of protection of the forest.

This was, however, a high-risk strategy, since the tractors could advance on the demonstrators, who also became targets of the gunshots aimed at the leaders. Thus, children, women, and the elderly could lose their lives during the protests, as in fact happened during several standoffs.

To institutionalize the movement, Chico Mendes, together with other colleagues, founded the Rural Workers Union of Brasileia. Soon after, he organized the Rural Workers Union of Xapuri. At this time, he entered politics and was elected councillor of Xapuri for the Brazilian Democratic Movement (MDB) in 1977. Three years later, he helped found the Workers' Party (PT) in Acre and participated in rallies with Luís Inácio Lula da Silva. During the 1980s, with the support of the Centro dos Trabalhadores da Amazônia (Amazonian Workers' Centre), he created the Seringueiros Project, to teach rubber plantation dwellers to read and write.

Under his leadership, hundreds of workers gathered at the University of Brasília (UnB) in 1985, for the National Rubber Tappers Meeting, where the National Rubber Tappers Council was formed, composed of one hundred leaders from all the natural rubber-producing states. As a result of this meeting, the Alliance of Forest Peoples emerged – rubber tappers, river-dwelling populations, nut gatherers, fishers and coconut shellers united around the protection of the forest with the creation of "extractive reserves", sites where such activities would be conducted with official permits and without the environmental impacts caused by deforestation.

Teachers can discuss with students how the formation of social movements to demand rights and the union between different causes, such as environmental conservation and civil rights, contribute to citizenship education, deepening important skills listed in the BNCC.

A visibilidade conquistada por essas iniciativas transforma o movimento dos povos da floresta em uma referência na preservação da Amazônia, principalmente no âmbito internacional, o que atrai o apoio de importantes organizações ambientalistas.

Chico Mendes: international award

Chico Mendes became a recognized leader in several countries. In 1987 he was invited to participate in the Inter-American Development Bank (IDB) Conference that took place in Miami, USA. There, he denounced the environmental and social damage that the paving of BR-364, a highway linking Porto Velho (RO) to Rio Branco (AC), would cause. His action resulted in the suspension of financing for the project until environmental impact studies were conducted.

In 1988, Chico Mendes became the first (and so far only) Brazilian to be awarded the Better World Society's Medal for the Environment. That same year he also received the Global 500, an award given by the UN.

With such recognition, he was considered an obstacle to the objectives of rural landowners and became the target of death threats - which ended up materialized on the night of December 22, 1988. After taking an outdoor shower at his residence, he was gunned down by Darcy Alves, son of the rancher Darly Alves.

Chico Mendes' death did not stop his ideas. One of them, presented during the National Assembly of Rubber Tappers, the Extractive Reserves (Resex), was established as the greatest legacy of the leader's struggle for forest conservation. The Conservation Unit model, until then unheard of in the world, was included in the National System of Conservation Units (SNUC) in 2000, allowing rubber tappers to remain in the forest while preserving its natural resources and promoting social benefits to their families.

In 2023, there were already 96 Extractive Reserves in Brazil, covering an area of about 15.7 million hectares of protected and sustainably used nature

The struggle for rights in the Amazon is still a reality that accounts for dozens of assassinations of leaders and environmentalists. This is a serious challenge to be solved in the region. The implementation of sustainable development through the bio-economy has shown itself to be an efficient way to solve centuries-old socio-environmental conflicts, with social inclusion, economic growth and conservation of the forest's biodiversity.

An enriching project for teachers to develop with students is to use cross-disciplinary methods to research examples of best practices in Amazonian bioeconomy and sustainable extraction.

In 2007, at the initiative of the Minister of the Environment, Marina Silva, Chico Mendes' partner in several actions in the Amazon, the Chico Mendes Institute for Biodiversity Conservation (ICMBio) was created, with a mission to care for Brazil's Protected Areas, including Sustainable Use Conservation Units, places where human activities can be integrated with protection of nature, as is the case in Extractive Reserves.

Contemporary cross-disciplinary BNCC themes to work on while reading the chapter by Franciele
Family and social life

- Vida familiar e social.
- Interações humanas (direitos humanos, participação comunitária, gestão participativa, cooperação e solidariedade, partilha do conhecimento).
- Diálogos com o território.
- Segurança alimentar e nutricional.
- Busca de autonomia na formação de crianças e jovens.
- Direitos humanos.
- Novas formas de participação.
- Equidade, justiça social e cultura da paz.

Franciele's routine: from plantation to forest.

A turning point

Keicy Graziele Costa Gomes, 12 years old. Oiapoque, Amapá

Keizy Graziele (book 1, chapter 11) lives in Oiapoque (AP), a region that borders two countries and, incredibly, two continents. The Amazon is so big that it reaches as far as France! It may seem strange, but that is exactly what happens on the border between the state of Amapá and French Guiana, a colony linked to the European Union.

There, separated by the Oiapoque River, lies a geographical and political point of contact between Brazil and France. A binational bridge joins the two shores: Portuguese is spoken on one side, French on the other, but on both sides are spoken several other Indigenous languages (mainly Tupi-Guarani, Arawak and Karib), and Spanish and Creole.

An important geographical landmark lies in the Amazonian state of Amapá: its capital, Macapá, crosses the Equator. And the line runs exactly along the halfway line in Milton de Souza Corrêa Stadium, the famous Zerão - the only soccer field in the world where each team scores in a different hemisphere.

For some time, Oiapoque was considered the northernmost municipality in the country - since 1998, however, this title is known to belong to Uiramutã (RR), where the source of the Ailã River is located, the true northern tip of Brazil. The source is on Mount Caburaí, at an altitude of 1,465 meters.

Talking about geographical landmarks with students can be an effective way for the teacher to address the political geography of South America - especially the Amazon - focusing on the countries that make up the so-called Pan-Amazon and the diplomatic and border relations issues between them.

The Pan-Amazon is a term attributed to the group of countries that have the Amazon forest in their territories: Bolivia, Brazil, Colombia, Ecuador, Republic of Guyana, French Guiana, Peru, Suriname, and Venezuela. Six of its nine triple borders are in the Amazon region: 1) Brazil - French Guyana - Suriname; 2) Brazil - Suriname - Republic of Guyana; 3) Brazil - Republic of Guyana - Venezuela; 4) Brazil - Venezuela - Colombia; 5) Brazil - Colombia - Peru; 6) Brazil - Peru - Bolivia. There are more than 11,500 kilometres of borders between these countries, which poses great challenges to governments in guaranteeing the security and rights of the people who live there.

In fact, the concept of the Pan-Amazon emerged in the context of grassroots struggles to bring awareness of the need not only to respect national borders, but to treat the Amazon as a single whole: a forest biome that is not limited to any individual country, with a diversity of ancestral peoples who live independently of its official boundaries. There are more than 400 Indigenous peoples in the nine countries – whose living territories have no reason to be separated by national borders.

It is important to point here out that Brazil holds about 62% of the Amazon forest. This underscores its need to lead the implementation of some type of integrated governance, but which is difficult to establish due the political and economic interests of each nation.

A first attempt to promote integration occurred with the creation of the Amazon Cooperation Treaty Organization (ACTO) in 1995, which brings together all Amazonian countries with the exception of French Guiana.

Its main mission is the establishment of environmental preservation objectives and implementation of rational use of natural resources previously established by the Amazon Cooperation Treaty (TCA), signed in 1978 by countries in the region.

Among the main challenges of this bloc of countries are: the sustainable use of natural resources; the management of migration of people across the common territory of the Amazon, respecting the traditions of various local ethnic groups; the proliferation of clandestine activities such as illegal mining and logging; and combating the trafficking of weapons, drugs, animals, and even people. The region has become one of the most violent in the world, spurred by the transit of smugglers, drug traffickers, and illegal exploiters of wealth. One solution is international governance, based on collaboration and fundamental principles of sustainable management of Amazon territory and

Previous page: Oiapoque River. Below: boats on the Oiapoque River; background, the Franco-Brazilian Binational Bridge, linking Amapá and French Guiana.

its many social and environmental demands.

The Amazon region presents challenges that go beyond the exclusive interests of each nation. Its conservation is fundamental for the health of the planet (global scale issues), for the development of the nation states that it subtends (regional scale issues), and for the social wellbeing of the millions of individuals who live there (local scale issues), all of which are pertinent to resolving conflicts related to land use.

The idea of "national interests" also applies to Indigenous peoples. The concept of "nation" implies the existence of a demarcated territory, which ultimately gives rise to the "borders" dealt with in this chapter. The recognition of land claims, therefore, is an existential prerequisite for Indigenous communities.

Under the Brazilian Constitution, Indigenous societies have the right to organize themselves as nations, independent from each other and differentiated from the Brazilian nation itself. However, these societies are still generally treated as "peoples", whose right to territory is still a matter of permanent conflict.

Discussing the concept of political division between nations and the challenges imposed by the "separation" of humans into demarcated territories, such as the restriction of free movement between territories, is an opportunity for teachers and students to deepen their reflections on how we should build our future.

Keicy's remark - "Our school has a really cool mix of people. We have Indigenous children, Cuban, Haitian, Venezuelan" – provides a very telling message about the value of diversity and respect for differences.

Is the Amazon the place where we can practise a new kind of international policy, in which collaboration on solving regional and global problems goes hand in hand with recognizing the diversity of peoples and respect for their basic rights in life? We want to believe that it is.

Contemporary cross-disciplinary BNCC themes to work on while reading the chapter by Keicy Graziele

- Busca de autonomia na formação de crianças e jovens.
- Diálogos com o território.
- Vida familiar e social.

City of Oiapoque (AP). Following pages: a route on the Encantada River (AP).

Bicycles and buffalos

Homero de Moura Gonçalves, 8 years old. Afuá, Marajó Island, Pará

Homero (book 1, chapter 4), lives in Afuá (PA), the region where the Amazon River flows into the Atlantic Ocean, at a rate of more than 200 million liters of fresh water per second. Just to give an idea of what this means, a 75-minute flow of the Amazon River would be enough to supply the city of São Paulo for an entire year!

It is a mix of delta and estuary, from the waters of the Amazon River and the Pará River, which meets the Tocantins River, and contains flows from a series of intertwining river branches, *igarapés* (creeks or streams) and small navigable channels. Here again, we have what is the largest fluvial-marine archipelago on the planet, with 2,500 islands and islets, besides the island of Marajó (the largest, with 42,000 square kilometres) and another 46 smaller ones of varying size.

In the past, the island was known as Marinatambal. Before the arrival of the Europeans, the population reached 40,000 inhabitants. The Marajoaras had their heyday between 1000 and 400 years B.C and were excellent potters. The current name of the island, dating from 1754, comes from *m-bará-yó*, which in Tupi means "taken from the sea" or "barrier of the sea".

Marajó has the largest buffalo breeding area in the country, with more than 700,000 head. The flooded fields are an ideal terrain for the species. Both meat and milk from these animals form part of the local diet. Besides cattle breeding, other activities include the extraction of wood, açaí and rubber latex.

Living in this region demands lifestyle adaptation. The annual rainfall and the tidal action of the Atlantic Ocean provoke fluctuations in water levels, to the point of determining the predominant mode of housing construction: the *palafita* or stilt-house. These houses are supported on long pillars made of logs, so that living quarters are as far away as possible from the highest water level.

Teachers can discuss with students the diverse types of human dwelling that exist, in Brazil in particular, pointing out the differences between housing made with straw (such as the ocas in the Xingu), with wood pillars driven into the ground (*palafitas*), with mud and wood (taipa), and other materials more familiar to urban children, such as bricks or concrete.

In the Amazon, besides the *palafitas*, there are floating houses built on trunks of açacu wood açacu or on plastic drums (more artificial), which also adapt to the rise and fall of the river waters. Many of these solutions are based on so-called bio-architecture, the art of construction that seeks the most appropriate materials in nature for each type of environment where people need to live.

The stilt houses of Afuá, so beautifully described by Homero, create a picturesque setting. Bicycles have become the only way to get around.

Teachers can take the opportunity here with students to address the issue of urban mobility, drawing attention to the most sustainable modes such as bicycles, and the most impactful on the planet, such as automobiles powered by greenhouse gas-emitting fossil fuels, and their influence on the climate crisis that humanity will face in the coming years. The Amazonian way of life can serve as inspiration for creative solutions we need to survive in the future.

At the mouth of the Amazon River, due to the incredible volume of water that flows into the Atlantic Ocean and the lunar effect on the tides, we see the phenomenon of *pororoca* - which Homero mentions in his account. It was an amazing natural event: when the ocean's waters reached a higher level than fresh water river levels, an immense wave, sometimes as high as six metres, would "rise" over the rivers, causing a "big bang" (*poro'roka* in the Tupi language).

Known throughout the country and the world, the *pororoca* was immensely popular among surfer tourists who liked to venture into this continuous wave. The phenomenon occurred at various points in the delta-estuary, including in Afuá, where the water sometimes flooded even the stilt houses during so-called "high tides", an excessive rise in the Amazon River levels due to the power of the full moon.

When the clash between river and sea gives the advantage to fresh water flow, the Amazon releases an immense amount of nutrients that make up its plume, characterized by large volumes of water with low salinity, and high concentrations of suspended dissolved material. A considerable amount of marine fauna nutrients isprovided in this way, as a gift from the forest to ocean beings.

Human intervention in the environment has affected

Previous page: traffic in Afuá, Marajó Island (PA). Below: detail of a vessel in the port of Afuá.

this balance, however, so that even as powerful a natural phenomenon as the pororoca happens increasingly rarely. At the mouth of the Araguari River (AP), where it was most impressive, excessive buffalo farming and dam construction have caused such severe silting that the phenomenon has practically disappeared. The *pororoca* has not appeared since 2015 and no longer attracts visitors from all over the world who used to come to be enchanted by the event. The "big bang" has been silenced.

This story also allows students to learn about a common activity found in the brackish waters at the mouth of the Amazon River: the harvest of seafood and river fish, and aquatic animals, especially shrimp.

Fishing for shrimp in the Amazon is easy and fun, and even young children know how to do it. All that is needed is to tie bait inside a *matapi*, a type of cage made from palm stalks, which is placed on branches or trees at the bottom of the river. After the big shrimps enter, they get trapped and cannot escape: their antennae work like sensors, so when they touch the stalk of the *matapi*, they withdraw and get stuck. The shrimp festival is one of Afuá's most traditional festivities.

Contemporary cross-disciplinary BNCC themes to work on while reading Homero's chapter

- Dialogue; diversity and appreciation of multiculturalism
- New forms of participation
- Seeking autonomy through the education of children and youth
- Territorial dialogue

Buffalos on Marajó Island (PA).

Endless rivers

Elivaldo Cavalcante Ribeiro, 11 years old. Novo Airão, Anavilhanas National Park, Amazonas

In his story, Elivaldo (book 1, chapter 3), from the Renascer community near Vai Quem Quer *igarapé* in Novo Airão (AM), shows his strong bond with boats, the only available form of transportation for many residents of the Amazon. The Amazon is a web of rivers of all sizes, with enormous distances between locales, often only reached by days of boat travel.

The main water basin of the region is the Amazon River, the largest in the world, with 7 million square kilometres (about 4 million in Brazil, and the rest divided among six countries: Peru, Colombia, Bolivia, Ecuador, Venezuela, and Guyana). It is formed by giant rivers like the Negro, Solimões, Purus, Tapajós, Madeira, Trombetas, Japurá, Jari, Javari, Tarauacá, Itacuaí, Iriri, and the main one, the Amazon, along with its more than a thousand tributaries.

The junction of the Negro and Solimões rivers, the Amazon is the longest river on the planet, at a length of 6,992 kilometres from its source in the Andes (Peru) to its mouth in the Atlantic Ocean. Before reaching Brazil and becoming the Solimões River, it is called by other names, such as Ene, Tambo and Ucayali. Only when it meets the Rio Negro is it called the Amazon River. The Nile River (Egypt) is the second longest, at 6,852 kilometres, followed by the Yang Tsé (China), at 6,380 kilometres. These are lines of water that can be seen from space.

Besides being the longest, the Amazon River is the mightiest: it has the largest volume of water on Earth, pouring more than 200 million litres of water per second into the sea and more than 30 tons of sediment. In some stretches, its depth can reach 100 metres; its width near the mouth reaches 50 kilometres. It alone accounts for 30% of all the fresh river water that flows into the Atlantic ocean.

Anavilhanas and Mariuá

Extending for 3,240 kilometres, the Madeira River is the largest tributary on the right bank of the Amazon, formed by the junction of the Mamoré and Guaporé rivers. Rio Negro, which is about 1,700 kilometres long, is the largest tributary on the left bank and the longest in the world with black-waters. With its headwaters located in Colombia, the Negro harbors the two largest fresh water island archipelagos on the planet: Mariuá (some 1,400 islands, 140 km long and 20 km wide) and Anavilhanas (almost 400 islands, 60 lakes and dozens of *paranás* - river channels - and igapós or floodwaters - in the Amazon.).

Barcelos is the closest municipality to Mariuá, an archipelago protected by Jaú National Park and Serra do Araçá State Park; Novo Airão, where Elivaldo lives, is closest to Anavilhanas National Park. Both archipelagos are environments in constant flux from rising and falling waters of the

Negro River due to fluctuating rainfall patterns. Novice seafarers are not equipped to venture into the region – its complex labyrinth of waterways demands an experienced navigator at the helm.

Here teachers can explore the concept of *igarapé*, comparing it to other terms for waterways in the Amazon and other regions of Brazil. Using maps is recommended to help children visualize and understand the extent of these river basins. Teachers can study the characteristic of these rivers and archipelagos in detail in order to present students with a comprehensive view of Amazon hydrography.

The immense distances travelled by boat between riverside communities and large Amazonian cities mean that residents must adapt to a unique rhythm of life. As Elivaldo explains, children rely on these routes to get to school, adding that he must row for 30 minutes through the *igarapés* to reach his school. Accessing health facilities is also a challenge and it can take many hours of boat travel even by

These waters are home to an immensely rich variety of species, notably the pink river dolphin (*Inia geoffrensis*), the largest freshwater dolphin in the world and a symbol of the region.

Previous page: riverbank in Anavilhanas National Park (AM).
Below: Amazon river dolphin

Elivaldo on the Vai Quem Quer creek, Novo Airão (AM). Following page: sunset on the Vai Quem Quer creek.

rabetas (faster motor boats) before docking at a hospital or clinic.

Navigating small boats carries the risk of encountering *banzeiros*, turbulent waves formed by the wind that can overturn boats and knock people in the water, and the *rebojo*, a kind of whirlpool current on the riverbed, which can even swallow up small boats.

Teachers can address mobility issues in the Amazon with their students by making analogies with their own local school and community situations. The ability to come and go is a basic civil right that entails State-provided infrastructure. An overview of Amazonian boats is also a good study topic for students, as there are numerous types, including canoes, *rabetas*, *catraias*, *voadeiras*, *lanchas*, *balsas*, catamarans, *obidenses*, and other recreational vessels.

These waters are home to an immensely rich variety of species, notably the pink river dolphin (*Inia geoffrensis*), the largest freshwater dolphin in the world and a symbol of the region. Around 2.5 metres long, it can weigh more than 150 kilos and feeds on fish, crabs, and even turtles. Unfortunately, its meat is used as bait for fishing *piracatinga* (*Calophysus macropterus*). Killing dolphins for bait, as well as habitat impact from mercury contamination, oil extraction, boat traffic and hydroelectric dam construction have placed the species at risk of extinction.

Conservation projects have been implemented for the harbor porpoise (*boto-cor-de-rosa*), but despite efforts by the International Union for Conservation of Nature and Natural Resources (IUCN), this species is at risk as well. While there is a lack of data on pink river dolphin populations, estimates show a 50% reduction in current dolphin counts that will reach 95% within 50 years if no action is taken.

In locations such as Novo Airão in Anavilhanas, tourism projects allow people to interact with pink river dolphins. These facilities, operated by ICMBio and NGOs, allow children and adults to learn about these friendly animals in a way that does not harm them.

To love and protect animals we need to know them, look into their eyes, have empathy for them and recognize their right to live. A good example of a responsibly managed environmental education activity operating in the region is Ibama's Quelônios Project, which monitors egg hatching of tracajá (*Podocnemis unifilis*), a species of Amazon turtle.

The Amazon is a water kingdom inhabited by countless magical beings. In popular culture, the legend of the boto tells of a young man, dressed in white and wearing a hat, who seduces women in order to impregnate them.

Iara, also known as the "mother of the waters", is the female equivalent of the boto: a being of great beauty, half-woman and half-fish, whose attractive voice lures men to her home beneath the water's surface. According to the folklorist Câmara Cascudo (1898-1986), the character of Iara is an adaptation of the European mermaid legend introduced by the Portuguese, which merged with Indigenous legends of the *Ipupiara*, a marine monster that attacks and eats people, and the *Mboiaçu* (Big Snake), a huge, terrifying black snake that chases and frightens fishermen and others who travel the waters. Both *Ipupiara* and *Mboiaçu* are linked to Indigenous mythologies of the "water mother", the origin of all things, and Iara can also be linked to the African deity *Iemanjá*, the candomblé *orixá* considered the "queen of the waters".

Reality and fantasy are two ways of knowing that can be readily explored alongside one another with children. With this fluid approach, knowledge of the Amazon is assimilated as a multiplicity of meanings and sensibilities that have been shaped through both science and traditional knowledge. After all, the Amazon cannot be explained by reason alone.

Contemporary cross-disciplinary BNCC themes to work on through reading the chapter by Elivaldo

- Seeking autonomy through the education of children and youth
- Territorial dialogues
- Food and food security
- Health and environment

Queen of the waters

Maria Vitória Correia Dias, 10 years old. Abaetetuba, Pará

The Amazon is teeming with emblematic plants, which is only natural since it is the largest rainforest on the planet. Some species stand out for their economic uses, others for their simple beauty. Learning about them means plunging into a world of symbology and aesthetic enchantment.

The Victoria Regia water lily (*Victoria amazonica*) is one of its best-known symbols – little wonder, then, that Maria Vitoria (book 1, chapter 9) likes being named after this lily, the world's largest aquatic plant.

The floating leaves of this lily can reach up to three metres in diametre. Initially white in colour, the flower takes on pinkish tones as it matures under the sun. The plant inspired beautiful legends among Indigenous peoples, Maria Victoria, tells us, like that of the warrior Naiá, who was in love with the moon. When she tried to kiss her reflection in the water, she ended up drowning and was transformed into the "star of the waters" by the Moon goddess (Jaci, in some adaptations).

Described in 1801 by the botanist Thaddeus Xaverius Peregrinus Haenke, it was taken to England by the botanist John Lindley. The plant enchanted the then Queen Victoria: hence, it was named in her honour.

The water lily also has other local names, such as "jaçanã", "cará-d'água" and "river corn". Thanks to its beauty, the species is one of the preferred species for water gardens by landscapers the world over.

An Amazonian plant with great economic importance, guaraná (*Paullinia cupana*) also has an associated legend, which explains the peculiar shape of its fruit: they are the shape of the eyes of a little Indigenous boy killed by Jurupari, a snake-like entity sometimes depicted as a lawful god, sometimes as an evil demon, who bites the boy and poisons him. Tupã orders the boy's eyes to be buried so that a plant can grow from them, and its fruit given to young and old to help make them strong and healthy.

Guaraná is the fruit of an Amazonian bush vine and is widely used to manufacture beverages, mainly soft drinks, but it can also be consumed in powder or stick form, as an extract or as syrup. Rich in caffeine, the plant is a stimulant that increases mental capacity and reduces muscle fatigue, among its many other medicinal properties.

Cocoa (*Theobroma cacao*) is another Amazonian plant with important commercial use, as it is the raw material for chocolate production. There are indications that it was already being consumed more than 5,000 years ago, especially in the Western Amazon and in Central America, by

Mayo-Chinchipe-Marañón, Olmec, Aztec and Mayan cultures. Roasted and ground seeds were mixed with water to make a drink that was consumed during rituals. The bitter drink was taken to Europe, and over time was consumed mixed with milk and sugar, giving rise to chocolate as we know it today.

The Brazil nut (*Bertholletia excelsa*) is one of the country's most important export products. More than 20,000 tons of Brazil nuts are consumed annually throughout the world. Half of the production comes from Bolivia, 40% from Brazil and another 10% from Peru. The chestnut tree is protected by law because of species decline due to deforestation. Its main habitat is restricted to some stretches of the Amazon (Acre in particular), but it is also found in all other states.

Guaraná, Brazil nut and cocoa are three plants that help teachers and students understand the great economic potential of Amazonian biodiversity, the global scale of consumption of its resources, and alternative economic development models in the region and the country.

A variety of tropical fruits grow in the forest, such as bacuri (*Platonia insignis*), cupuaçu (*Theobroma grandiflorum*), soursop (*Annona muricata*), biribá or araticum (Annona mucosa), camucamu (*Myrciaria dubia*), tucumã (*Astrocaryum aculeatum*), ajuru (Chrysobalanus icaco), araçá-boi (*Eugenia stipitata*), cubiu (*Solanum sessiliflorum*) and ingá (*Inga edulis*), among many others.

It is also worth mentioning the medicinal andiroba (*Carapa guianensis*), with its antiseptic, anti-inflammatory and healing properties, as well as being an excellent mosquito repellent, and the copaiba (*Copaifera langsdorffii*), with the same antiseptic, anti-inflammatory and healing properties, but also of interest to the cosmetics industry. Its oil can also be used as fuel for boats and even cars.

Among such diversity, the buriti or miriti (*Mauritia flexuosa*) deserves special mention. An extremely elegant species of palm, it is found in the *cerrado* biome from the southeast and central-west regions of Brazil, but mostly prominent in Amazonian transition areas between the *cerrado* and the forest. Its main characteristic is its seeds, which germinate in swampy land around river springs. For this reason, they tend to form groupings of specimens (*buritizais*) or even continuous lines of trees (*veredas*) in the landscape that follow the streams and springs.

This is the tree that inspired the title of the masterpiece *Grande Sertão: veredas* (1956) [The Devil to Pay in the Backlands] by the great writer João Guimarães Rosa (1908-1967), in which he describes the tree as follows: "Observe, sir: the buriti comes from the shores, its coconuts falling on the tree paths - the waters carrying it away along the banks, the coconut tree is replanted by the waters themselves; hence the buriti forests, on one side and the other, lining up, following along, as if by calculation."

The *miriti*, as it is known in Abaetetuba, Maria Vitória's homeland, and in other regions of the Amazon, is a tree with countless uses for the people who live there. Its fruit is edible and rich in vitamins; it can be eaten raw, in juices, or in the form of sweets, jellies, ice creams and liqueurs. A medicinal oil is extracted from its seed to fight intestinal worms, in addition to its other healing and energy-giving properties. The oil is also used in tanneries to soften and varnish leather. The cosmetics industry also uses the plant to manufacture shampoos, soaps, moisturizing creams and sunscreens. The trunk serves as a structural support for *oca* huts, and its leaves are used for sun and rain cover. It also produces an edible and tasty heart-of-palm. The straw from the leaves is used to make baskets, mats, hats, bags, hammocks, ropes and even towels. Due to its lightness, the leaf stalk is used to make furniture.

Handcrafted toys from Abaetetuba and other regions are an important cultural tradition that demonstrates the multiple uses of *miriti*. Maria Vitória's description of making toys from *miriti* straw is a good example of cultural traditions passed on from generation to generation and may inspire the teacher to offer similar activities for children using available materials.

Pages 104 and 105: Victoria Regia water lily. Above: handcrafted toys made in Abaetetuba (PA). Next page: *buritizal* palm trees in Oiapoque (AP).

Miriti toys have become a great tradition in the Cirio de Nazaré celebration, which Ana Luísa describes in chapter 7. These extremely colourful toys bring joy to the festivities, and records indicate that the tradition of their manufacture and use dates back to 1793, when the first Círio festival took place in Belém.

Basketmaking and crafting of other objects for daily use by Amazonian people is highly diversified, both in the straw species used as raw material, and in braiding and weaving formats and aesthetics. The most commonly used species besides *miriti* are arumã (*Ischnosiphon polyphyllus*), cipó-titica (*Heteropsis flexuosa*), ambé (*Philodendron imbe*) and tucumã (*Astrocaryum aculeatum*).

Other Amazonian trees serve as raw material for the manufacture of canoes, *rabetas*, *rabudas*, hulls and other pleasure boats, in which people travel using an umbrella or "sunbrella" to protect themselves from the sun, a typical scene in densely populated regions as well as in riverside communities.

The information in this section allows children to understand the various uses of Amazon species via the cultural aspects of food production, domestic crafts, house and boat construction, and typical "scenes" or "humanscapes" in the Amazon. This helps students to absorb details about the region and blend distinct Brazilian cultural identities into a complex understanding of the country.

Contemporary cross disciplinary BNCC themes to work on while reading Maria Vitoria's chapter

- Cultural connections and popular knowledge
- Territorial d ialogue
- Family and social life

Belo Monte: more rock than water

Maykawá Juruna, 9 years old. Altamira, Volta Grande do Xingu, Miratu

Maykawá Juruna (book 1, chapter 6) is an heir to a threatened land. He was only one year old when work on the Belo Monte hydroelectric power plant (HPP) began - times so dark that the Juruna people call it "the end of the world". His personal account reveals the importance of the Xingu River to the lives of his people.

Kararaô, which in the Kayapó language means "battle cry", was the name the Brazilian government gave to the project to build a hydroelectric power plant in the middle of the Xingu River, in the stretch of its biggest bend, the "Volta Grande".

Xingu means "good water" or "clean water" in the Kamayurá language. In the Altamira (PA) region, the river is a great spectacle of beauty, with dazzling rapids and almost mystical impact. The Volta Grande do Xingu, a bend that is about one hundred kilometres long, is one of the most impressive of all Brazilian river landscapes. And it was exactly there that they built the plant, in Cararaô.

An older project, started during the military regime of the 1970s, had originally included a plan for the construction of a complex of six hydroelectric plants on the Xingu River, with flooding of more than 20,000 square kilometres that would directly impact twelve Indigenous lands and require the displacement of hundreds of thousands of inhabitants from its banks. The prevailing development vision in those years saw the idea of progress as a "heroic" struggle of civilization against nature, which had a violent impact on the Amazon forest.

There, in Altamira, on 27 September 1972, the first 1,253-kilometre stretch of the Transamazonian Highway was inaugurated, a project which made it clear that Brazil had bought into road transport. Promotional materials from companies contracted to build the road proudly stated: "To unite Brazil, we have ripped up the green hell". In fact, the highway opened the doors to illegal land grabbing, logging and mining – none of which has stopped.

The Tucuruí hydroelectric power station on the Tocantins River (PA), with a generating capacity of 8,370 MW (the second largest in Brazil), and the Balbina hydroelectric power station on the Uatumã River, with a capacity of only 275 MW, also had great environmental impact, but the carelessness had no impact on the country's growth agenda.

Even under protest from the scientific community and national and international socio-environmental

Due to forest fires, in 2019 Altamira had the highest amount of greenhouse gas emissions in Brazil.

movements, the decision to build the Cararaô hydroelectrical complex proceeded through various federal administrations.

In 1989, a legendary scene took place at the Meeting of the Indigenous Peoples of the Xingu. During a public hearing on the construction of Cararaô, Tuíra, a Kayapó woman with an enormous *terçado* (a machete used in the fields), confronted José Antonio Muniz Lopes, then Director of Planning for Eletronorte, which headed the project, running the machete blade across his cheek. The episode and the event, attended by environmental activists, Amazonian community leaders, artists, scientists and foreign journalists, marked the beginning of a battle against the dam that would last for almost three decades.

The project was resumed only in 1994, with concessions in construction details in order to minimize criticism from opponents. The size of the reservoir, for instance, was reduced from 1,200 to 400 square kilometres, in order to avoid flooding the Paquiçamba Indigenous Area. Between 1999 and 2000, the licensing review process for the plant's construction began, but it was only in 2005 that the project took off in force.

Without a hearing from Indigenous communities, the Senate authorised a project to establish the plant - with the new name: UHE Belo Monte. Between 2009 and 2011, a long legal dispute was fought between supporters and opponents, and project approval and construction finally began in June 2011. On May 5, 2016, the then president, Dilma Rousseff, inaugurated the plant.

Altamira currently is plagued by serious social problems involving the sexual exploitation of women. Indigenous ethnic groups most affected have been the Arara and the Juruna, as well as the Kaiapó. There are also environmental impacts, such as reduction in the natural river flow, which impedes navigability and the entire aquatic and terrestrial ecosystem of the Xingu River, affecting biological cycles of the fauna and reducing fish populations. Riverside communities are threatened as a result.

The history of the Juruna people is especially important. They were forced to disperse over the years because of attacks, some migrating to Xingu National Park (PIX) and others remaining in Volta Grande territory to fight battles and disputes over resources with other nations such as the Kamayurá and the Suyá.

Their original name is Yudjá. Thanks to their unique skill as canoeists, they were considered "masters of the river". Together with the Arara people, the Juruna are among the Indigenous groups most affected by Belo Monte construction work. It is estimated that in 1842, when they were contacted, their population was about 2,000. In 2010, they were reduced to 348. It was a history marked by war, enslavement and forced displacement due to colonialist expansion and then, especially, the arrival of the Transamazonian Highway.

Fishing for tucunaré (*Cichla ocellaris*) ensures that people have food to eat, while fishing for the ornamental acari-zebra (*Hypancistrus zebra*), even though it is prohibited since the species is considered vulnerable, guarantees extra earnings for the family. In other words, they depend on traditional fishing for their food supply and "fancy" fishing to generate supplementary income. Captive breeding and management projects for species of economic benefit

Truck With illegal lumber, Altamira (PA). Preceding page: exposed stone riverbed from the Xingu River (PA). Following page: fires burning in Altamira (PA).

are being implemented.

According to accounts by elders, the Arara of the Volta Grande do Xingu are descendants of the Arara of the Bacajá River. The arrival of Belo Monte has even impacted their cultural beliefs about themselves and how they see their place in the world.

Due to forest fires, in 2019 Altamira had the highest amount of greenhouse gas emissions in Brazil. Together with Marabá (PA), it is one of the regions with the highest rate of violence due to socio-environmental conflict. Murders occur almost daily.

The Juruna and the Arara peoples have resisted the invasion of their territories for centuries. Together with environmental activists, they have made the struggle against the Belo Monte Hydroelectric Plant construction a symbol for the defence of environmentally sustainable development models, for Brazil and for the world. The construction of the hydroelectric dam has caused drastic changes in people's way of life in the forest and in the environmental conditions they depend on for survival. These issues need to be addressed by educators, so that future generations can find alternatives for less impactful energy production.

In April 2022, the installed capacity of domestic solar energy production in Brazil reached 14,000 MW, surpassing Belo Monte's 11,200 MW. In ten years (between 2012 and 2022), the country managed to embrace a renewable energy source that, by replacing hydroelectric power, could have avoided 30 years of environmental impact and conflict. The Volta Grande of the Xingu River was sacrificed in vain.

Contemporary cross-disciplinary BNCC themes to work on while reading the chapter by Maykawá Juruna

- Equity, social justice and a culture of peace
- Dialogue, diversity, and appreciation of multiculturalism
- New forms of participation
- Seeking autonomy through the education of children and youth
- Territorial dialogue
- Energy and clean technologies
- Human interactions (human rights, community participation, participatory management, cooperation and solidarity, sharing of knowledge)

Quilombo resistance

Rayene dos Santos,
8 years old.
Quilombo community
in Silêncio, Pará

Previous page: Pacoval Quilombo, Monte Alegre (PA).
Right: residentes of Silêncio Quilombo, Óbidos (PA).

Rayene (book 1, chapter 5) lives in a *quilombo* community deep in the Amazon. The story of her daily life offers an entry point into an important chapter in Brazilian history and culture and symbolizes the similarities in struggles against violence and enslavement.

As in the community of Silêncio in Óbidos (PA), there are in Brazil, according to data consolidated by IBGE, almost 6,000 *quilombo* communities. Just over 400 are recognized, of about 700 groupings located in officially defined territories.

The words *kilombo* (from Kimbundo) and ochilombo (from Umbundo) have roots in the Bantu languages of Angola and loosely translated mean "protected place for rest". The words also connote "warrior camp", which is appropriate given its history.

Slavery in Brazil began in 1530 and was legally abolished only in 1888. For more than 350 years, violent practices robbed the freedom of Indigenous Brazilian men and women, mainly from the African continent.

Initially, with no available labourers for agricultural activities, Portuguese settlers took advantage of conflicts between Brazilian Indigenous peoples to enslave the defeated tribes. This was known as "just war": the Portuguese Crown authorized the enslavement of anyone who came into conflict with settlers and "friendly" peoples.

During this period, many ethnic groups refused to be enslaved; they fled to the interior of Brazil and began establishing several of the nations that inhabit the country today. Jesuits, religious missionaries who have been active since thebeginning of colonization, defended Indigenous peoples and helped to abolish slavery. By 1550, possibility of enslaving African peoples officially became an option, especially for heavy labour in sugar cane plantations.

This period of slavery in Brazil is fraught with episodes of continuing violence. Enslaved people were transported by ship from various parts of Africa in such degrading conditions that many died on the way and were discarded at sea. It is estimated that in the more than 300 years that slavery reigned in Brazil, almost five million Africans landed by force in the country.

This entire contingent of people faced inhuman working and living conditions, with work schedules that often exceeded 20 hours a day under the harsh surveillance of their masters, and with any sign of distress or fatigue meted out with punishment and torture.

Cultural expressions of the Quilombos

The *ganzá* is an instrument whose name is derived from *kimbundo* (a language spoken in northwestern Angola) meaning "gourd" (*nganza*). Made of a cylindrical tube filled with seeds, it is played by shaking it. Although the name suggests it is of African origin, it is most likely a variation on the *maraca*, an Indigenous instrument played in ancient religious cults.

Due to a prohibition on the use of the maraca by Portuguese colonists in the mid-20th century, *caboclos* adapted the "pau-de-chuva", also an Indigenous instrument, to create a *ganzá* for the *Congada* festivities. It is, then, an Afro-Indigenous instrument, played by descendants of the mixed ethnicities that make up the Brazilian people.

The *congada* is a cultural and religious expression that combines elements of music, dance, theatre and songs of African origin and from the European Catholic Church, with praise for kings of the Congo mixed with reverence for Black Christian saints (mainly Nossa Senhora do Rosário, São Benedito and Santa Efigênia). In some festivities that pay homage to São Benedito, it is known as "marambiré", a syncretic dance using traditional songs in *lundum* rhythm, with lyrics about the suffering of slaves, serving as a tool of ethnic resistance.

Although today these festivities are part of Brazil's rich cultural diversity, they also reveal the pains of the past and function as a manifesto of demands for improved inclusion and equity policies. There is still an unpaid debt owing for integration and the fight against inequality in Brazilian society. Since the abolition of slavery in 1888, the country has failed to establish equal rights with dignity and quality of life for people of African descent.

A discussion with students about Rayene's story gives teachers a way to address the origins and consequences of racial violence, which shape social relations even today. Themes such as police violence against Black people from marginalised communities, prejudice against religions of African origin and exploitation of low-paid workers are issues in the current debate on human rights and social equity in our country. Even today, the descendants of this difficult period still face challenges in fully integrating into society and they continue to suffer discrimination and racism.

The concept of 'quilombo' (in some places called 'mocambo') only gained a well-defined legal framework after the approval of the 1988 Constitution, in which land rights were granted to these communities. The National Liaison of Rural Black Quilombo Communities (Conaq), founded in 1995, is currently the most active entity defending the rights and culture of people who struggle for possession of territories historically occupied by their ancestors.

Fundação Palmares is a federal agency created with the goal of promoting, fostering and preserving Black cultural expression in Brazil, coordinating the certification process for *quilombo* settlements, and drafting the Statute of Racial Equality.

It is estimated that there are over a thousand families living in *quilombo* territories in Óbidos, distributed in 18 communities spread over six territories. The community of Silêncio, where Rayene lives, is part of the Cabeceiras Territory, given title by Fundação Palmares in 2000, with an area of over 17,000 hectares, which also includes the communities of Apuí, Castanhaduba, Cuecé, Matá, São José, São José de Patauá, Vila Nova, Serra, Centrinho and Ponta Grande.

Manioc (cassava) cultivation and flour manufacturing in Silêncio and other communities throughout the country is an excellent example to use in class discussions about cultural hybridity in Brazil.

Originally a plant that was "domesticated" and consumed by Indigenous Brazilians, manioc was incorporated into the diet and way of life of *quilombo* communities, followed by Amazonian riverside communities and then throughout the country, to the point of being a marker of national identity.

The unique flour-making process, from cultivating the cassava to harvesting, washing, grating, pressing in *tipiti* baskets and roasting it in firewood-heated pots, is still found in almost all rural communities in Brazil. The process is a prime illustration of knowledge transfer across generations – which is also seen in the use of Indigenous medicinal plants and those brought to the country by European colonisers and enslaved Africans.

Contemporary cross-disciplinary BNCC themes to work through while reading Rayene's chapter

- Conexões culturais e saberes populares.
- Cultural connections and popular knowledge
- Equity, social justice and a culture of peace
- Dialogue, diversity and appreciation of multiculturalism
- New forms of participation
- Seeking autonomy through the education of children and youth
- Territorial dialogue
- Values for a new way of learning
- Health and environment
- Family and social life
- Food and food security

Right: playing Marambiré, in Porteira Quilombo, Trombetas River (PA).
Next page: flour mill in Silêncio Quilombo, Óbidos (PA).

Maria de Nazaré, Mother of the Amazon

Ana Luísa dos Santos Nunes, 9 years old. Vigia, Pará

Religiosity deserves special attention when examining the cultural make-up of contemporary Amazonian peoples. In the chapter by Ana Luísa (book 1, chapter 7), she recounts that she was born prematurely and, because of her mother's promise to Our Lady of Nazaré, every year she takes part in Círio de Nazaré celebrations by dressing up as an angel. Her story serves as a point of departure for educators in discussing God, gods and divinities.

Before the arrival of Europeans, there were countless religious expressions in Brazil - a diversity as great as the vast range of cultural multiplicities that existed. However, some common traits can be identified. Most forest peoples are polytheistic and believe in the existence of many entities - usually spirits or supernatural beings.

To cite just a few examples... The Tembé believe in the karoara, supernatural beings grouped into creator spirits, forest spirits, spirits of the dead and animal spirits. The Yanomami believe in the *xapiri*, forest spirits that live in the mountains. The Macuxi consider all their relatives to be descendants of two heroes: the brothers Makunaimî and Insikiran, sons of Wei (sun god). For the Baniwa, on the other hand, there is a complex set of more than twenty myths starring Nhiãperikuli, their supreme being.

The first religion to be introduced came as baggage of the Catholic Church. Jesuits from the Society of Jesus began to catechise Indigenous populations starting in 1622. Their initial step was to try to erase existing cultural and religious traits and then impose European Christian values.

After the Jesuits came the Franciscans (1617), the Carmelites (1627), and finally the mercenaries (1640). Catholic orders carried out evangelisation with a common strategy: they focused on isolated Indigenous villages to facilitate preaching while trying to prevent potential contact with Dutch and English religious bodies who were occupying the region and preaching Protestantism.

Jesuit mission work was mostly dominant during the 17th century. It not only fulfilled the role of evangelising Indigenous peoples, but also served to support the Portuguese Crown in facilitating mapmaking, based on the missionaries' drawings of the region.

The Jesuits were the most important religious group in the defence of Indigenous people against the colonists' attempts to enslave them. This period ended with the administration of Governor Francisco Xavier de Mendonça Furtado, brother of Sebastião José de Carvalho e Melo (Marquis of Pombal), who forced the withdrawal of Jesuit missions. Communities in the Amazonian interior then spent almost a century without the pastoral care of the Catholic Church. The lack of priests gave rise to different forms and experiences of faith. A phenomenon emerged, generally referred to as "popular Catholicism": lay people led the holy feasts, using sacraments (ribbons, candles, images, holy water), as well as theatrical and festive religious expressions.

During this period, traditional religious structures resumed that included some of their original features. The shaman, or religious leader, is able to make direct contact with "enchanted" beings and possesses knowledge to cure all ills of the body and soul. During the *pajelança*, their most common ritual, shamans make prognoses and recommend the course of action to help an individual and their community.

There are indications that *pajelanças* (rituals performed with the help of instruments, usually *maracas* and *chocalhos*, types of rattles) are expressions of the religious syncretism of ancestral ceremonies and European Catholic rituals.

This syncretism is conversely also responsible for the opposite belief, that Catholic saints have the capacity to cure or "scare away the evil eye" to free people from everyday evils. This can be observed, for example, in the largest religious gatherings in Brazil: the Círio de Nazaré (Our Lady of Nazareth) religious festival, in which more than 2.5 million people participated in 2022.

Our Lady of Nazareth is one of the most worshipped saints in the Amazon. She is the patron saint of several cities, especially of Belém and Vigia (where the Círio originated), both in Pará. The story of Ana Luísa is linked to this devotion of the people of Pará.

Information provided in this chapter allows the teacher to introduce the importance of faith and religion in the culture of Amazonian peoples and in Brazil more generally.

In the 19th century, with the arrival of the rubber boom, Amazonian reality was transformed - as was the work of the Catholic Church. To protect riverside populations against the interests of the great rubber barons, missionaries organized small agricultural communities, with bishop Dom Macedo Costa in the key role.

They proposed the creation of Catholic agricultural colonies of Indigenous peoples, *caboclos* and new immigrants arriving from the Northeast of Brazil, so they could make their livelihood in the Amazon through agriculture rather than hunting and gathering activities only, with priests in the main leadership role.

These farming communities were organised through associative work: people produced and distributed equally their food, clothing, and all the rich natural resources available to them.

As part of their implementation strategy, the Catholic

Previous pages: procession at a Círio de Nazaré celebration, Belém (PA). Right: coloured umbrellas at a Círio celebration in Vigia (PA).

The arrival of evangelicalism in the Amazon region is also a phenomenon that deserves special attention.

Above: Círio de Nazaré procession, Belém (PA).

Church installed small offices, called prelatures, in various territories of the Amazon. These local headquarters had relatively minor status in the church's hierarchical structure.

Missionary work associated with these prelatures was essential for what are now known as "riverside communities": from their organizational structure (linked to legally instituted associations) to their collaborative way of life.

The workings of the Catholic Church in the Amazon, therefore, mixes political and social issues with preaching of the Christian faith. To a great extent, this pattern accounts for organisational processes in the struggle for human and environmental rights.

In 2019, Pope Francis convened a synodal assembly under the theme "The Amazon: New Paths for the Church and for an Integral Ecology", which resulted in the apostolic exhortation called Dear Amazon" and an official final report setting out guidelines for Catholic missions in the region.

The arrival of evangelicalism in the Amazon region is also a phenomenon that deserves special attention. Growth in the number of churches in the period between 2010 and 2020 is in the order of 300%, and the number of evangelicals is expected to surpass that of Catholics by 2032.

Pentecostal and neo-Pentecostal evangelicals have increasingly taken their place among Amazonian communities. Their main churches are Assembly of God, Universal Church of the Kingdom of God, God is Love Pentecostal Church and Foursquare Church. They work mainly in the conversion of people with low economic power.

Concern is so great that the Federal Supreme Court granted a request for a case of direct action of unconstitutionality in 2021, filed by the Liaison of Indigenous Peoples in Brazil (Apib) against a measure allowing evangelical missionary activities in Brazilian Indigenous territories.

It is worth mentioning that the inverse also occurs: religious expression originating from traditional Amazonian populations have spread to other regions in Brazil. The most emblematic case is the consecration of ayahuasca, a drink found in more than 70 Indigenous ethnic groups in the Amazon forest, produced by mixing the vine of the mariri (*Banisteriopsis caapi*) with chacrona leaves (*Psychotria viridis*).

The use of this drink, also known in Brazil as daime, for religious and spiritual purposes has invaded large cities and has become a widespread practice among people of various faiths, in rituals that have been called urban shamanism or neoshamanism.

The ingestion of *ayahuasca* provokes alterations in perceptive states and various reactions, with most people experiencing an expansion of consciousness, including reports of visions of ancestors and past lives. It is also considered to be a ritual for cleansing the body, as it causes vomiting and diarrhoea.

Contemporary cross-disciplinary BNCC themes to work through while reading the chapter by Ana Luísa

- Cultural connections and popular knowledge
- Dialogue, diversity, appreciation of multiculturalism
- New forms of participation

A fisherman's sea

Davi Mescouto Melo, 12 years old. Ajuruteua, Pará

The story of David (book 1, chapter 10) emphasizes the multiple arrays of landscapes and realities in the Amazon. This territory, which covers 58.93% of the country, has cities and communities located as far as the ocean coast, as is the case with Ajuruteua, 37 kilometres from Bragança, in Pará.

A suggested teaching activity for this chapter is the concept of the Legal Amazon and its various constituent regions. This is an area of 772 municipalities in nine Brazilian states (Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins and Maranhão), covering more than 5 million square kilometres.

In 1953 President Getúlio Vargas created the Superintendence of Economic Valorization Plan for the Amazon (SPVEA) to carry out development projects. Its mission was to promote the local economy in order to integrate it into the rest of the country.

Under President Castelo Branco, the SPVEA was replaced by the Superintendent of Amazonian Development (Sudam), with a goal to elaborate, coordinate, execute and supervise all the federal programmes, projects and plans operating in the region. One of its first measures in 1967 was to create the Manaus Free Trade Zone, a tax-free area to promote free trade in commercial goods and establish an industrial hub on the outskirts of the Amazon capital.

As the criteria for the creation of the Brazilian Legal Amazon were political and geographical, not ecological, its territory is made up of three main biomes: the Amazon rainforest itself, parts of the Cerrado and the Pantanal. It also includes, as discussed in Homero's story (book 1, chapter 4), transition environments between fresh and salt water, such as at the mouth of the Amazon river, the area of the pororocas.

The Cerrado is the second largest biome in Brazil, covering two million square kilometres, or around 25% of national territory. However, in the Amazon we find only 150,000 square kilometres of this ecosystem (7% of its territory), in the states of Amapá, Pará, Roraima, Tocantins and Mato Grosso. The Pantanal ecosystem, accounting for around 12% of national territory, is found in the Legal Amazon only in the state of Mato Grosso.

In the states of Maranhão, Amapá and part of Pará there is also a long ocean coast, extending for over 1,500 kilometres between the Oiapoque River (AP) and São Marcos Bay (MA). In Pará, this coast is distinguished by its considerable number of islands, bays and peninsulas among the mouths of rivers of varying sizes, where mangrove and *restinga* (sandbank) ecosystems predominate.

Previous pages: setting up a curral fishing net on Algodoal Island, sea coast of Pará

Populations living on the coastal strip have fishing and seafood gathering as the mainstay of their local economies, as well as seasonal tourism, such as in Salinópolis (PA).

The opening of roads that currently provide access to Amazonian coastal fishing communities has influenced social relations and types of fishing methods as industrial fishing has gained steam.

Starting in the second half of the 20th century, large fishing vessels were introduced with an average capacity of up to 20 tons, and the use of mechanised trawls became common. This resulted in an end to selecting fish by size, with significant impact on marine environments and changes to existing relations between humans and the sea.

Artisanal fishing (traditional techniques, such as the *curral*, the *tarrafa* and the *espinhel*) are, however, still very present, and are a source of subsistence for much of the coastal population. The curral (known as "cerco" in the Southeast) is a type of trap set in a seabed with calm seas and low slopes. The fish enter into an enclosure and, when the tide changes, cannot escape. They are made using taquara mats, which are attached to wooden stakes.

The *espinhel* (longline) is a fishing device formed by a *linha madre* (main line), secondary lines (loops) and hooks with bait (sardines, mackerel and squid) to attract the fish. Buoys are placed on its ends to help locate the fish.

Tarrafa fishing is a method in which the fisher throws a type of circular net with lead weights at the ends into the water in order to catch and remove the fish that get trapped under it.

The Indigenous fishing village of Ajuruteua, where Davi lives, is in the region of the Caeté-Taperaçu Marine Extractive Reserve (REM). This Sustainable Use Conservation Unit was created in 2005, as it is a region with extensive mangroves (equivalent to 28.3% of Brazil's total mangrove ecosystem). Traditional fisheries (with simple harvesting techniques) and hunting and gathering done by families characterises the working life of people living there. Social and economic sustainability is based on the relationship between humans and the sea.

Learning about diversity of biomes, ecosystems, and human lifestyles of Amazonian coastal fishing communities helps students to better understand the incredible mosaic of landscapes, peoples and cultures that inhabit this immense region of our country.

In the northeast of Pará there is a cultural tradition practiced both by farmers and by fishermen: men finish the day by dancing *carimbó* to the rhythm of the drum. The *carimbó* is a typical round dance, in which boys invite girls to dance by clapping their hands. For their part, the girls, wearing brightly coloured circular skirts, try to cover the heads of their partners with their skirts.

The word for this dance is of Indigenous origin - from the Tupi *korimbó* (wood that produces sound), referring to the *curimbó*, the main instrument used in the dance, a type of drum made from a hollow trunk. Brought to Brazil by enslaved Africans, *carimbó* incorporates Indigenous and European influences – a recipe with classic "ingredients" of the Brazilian people.

In 1880, *carimbó* was criminalised in the capital of Pará, under Law No. 1028, the Code of Postures of Belém: "It is prohibited, under penalty of a fine of 30,000 réis: (...) To make noise, rattle and shout loudly (...). (...) To play drums, *carimbó* or any other instrument that disturbs the peace at night, etc."

However, in 2014, *carimbó* was declared Intangible Cultural Heritage of Brazil by the Advisory Council of Cultural Heritage, and the following year titration of the dance was granted by Iphan. The State of Pará celebrates Municipal Carimbó Day on August 26, a date chosen in honour of the birth of Mestre Verequete (1916-2009), the King of Carimbó.

Contemporary cross-disciplinary BNCC themes to work through by reading David's chapter

- Seeking autonomy through the education of children and youth
- Territorial dialogue
- Health and environment
- Family and social life
- Food and food security

Macuxi horizon

Renata Raposo, 9 years old. Raposa Serra do Sol Indigenous Lands

Renata (book 1, chapter 13) is a Macuxi girl who was born and lives in the Raposa Serra do Sol Indigenous Lands (TI), whose controversial struggle for existence has given it emblematic status in Brazil. Since demarcation of Macuxi territory in 2005, rice planters occupying the same land have reacted violently to attempts, including by the Brazilian Army, to evict them.

Conflicts between Indigenous people and rice producers have resulted in many deaths. These episodes were widely reported in the Brazilian and international press. In 2008, the Federal Supreme Court (STF) granted an injunction suspending the consolidation of Indigenous lands. Non-Indigenous people left the region in 2009, thus, the 1,747,464 hectares were allocated principally to the Macuxi and Wapichana ethnic communities, as well as to the Patamona, Taurepang and Ingarikó.

The Macuxi represent the largest Indigenous population in Roraima, with almost 20,000 individuals. The Wapichana, on the other hand, belong to the Aruak linguistic family, an ethnic group that became known nationally after Joênia Wapichana, a former federal deputy, became the first Indigenous person nominated to lead the National Foundation for Indigenous Peoples (FUNAI) in 2023. She was one of the main leaders in the land demarcation process of Raposa Serra do Sol Indigenous territory, as well as being the first Indigenous woman to practise law professionally in Brazil.

The Macuxi people have lived in the area for at least two thousand years. They are expert potters and have a complex and substantive mythology which links all things created on earth to their heroes Makunaimî, Enxikirang and Ani'ké - sons of the sun. Makunaimî is at once God the creator and a playful man who inhabits Mount Roraima, from which the Macuxi are direct descendants. It was this sacred entity that inspired the writer Mário de Andrade to write *Macunaíma*, his masterpiece published in 1928.

From this same cosmology, it is worth mentioning Kanaimé, a being that embodies evil forces and punishes people who do evil – Cruviana, goddess of the wind who enchants men with the nocturnal freshness of the forest – and Ko Ko Non (Clay Granny) who, as protector of clay, allows the Macuxi to produce their ceramics as long as they bring gifts as a reward, such as cigars, food in a clay pot and caxiri (fermented drink) in a gourd.

Clay pots are an important ancestral tradition of the Macuxi people. Typical foods are prepared in them, like the "darumida", made of black *tucupi*, extracted from cassava and cooked for more than eight hours until it becomes viscous, peppers and fish or game as a source of protein. Another important cultural form is the *parixara*, a dance accompanied by ritualistic songs performed with straw clothing and instruments such as rattles made of seeds.

Discussing the production of handicrafts, such as Macuxi clay pots or basketry or objects made from wood or seeds is an effective way for teachers to address the relationship between the utilitarian or even mythological functions of these pieces and the aesthetics associated with "Indigenous art", a recent cultural appropriation following contact with non-Indigenous people. Craft and art are closely related, but not equal, cultural expressions that deserve an in-depth discussion with students.

Originally the Macuxi exchanged their clay pots for objects made of *arumã* fibre such as *tipitis* and *jamanxim* produced by the Ingarikó, who came down from the mountains especially for this purpose. Each ethnic group is the keeper of a specific kind of knowledge, and this exchange of artefacts was common in the past.

Manufacturing objects from materials found in the Amazon is an ancestral practice fundamental to the survival of the peoples who live there. With the characteristic marks of each ethnic group (such as graphics, and weaving and framing techniques), clay, straw, wood, seeds, stocks and fibres are transformed into pots, bowls, stools, musical instruments, hunting implements, baskets for transporting, oars and countless other ornamental objects for everyday use.

These products are currently being valued as objects of ancestral art and have found significant market value for sale to non-Indigenous people, which makes them an important source of income for Amazonian communities.

A result of the so-called "creative economy", i.e., manufacturing processes that combine ancestral knowledge with complex production techniques, these objects manufactured by traditional populations have even become export items to several countries.

The body of knowledge that Amazonian peoples draw on to produce objects of such beauty is known as 'traditional technology': practical knowledge of processes, techniques, and tools that enable the production and use of objects. Indigenous artisanship is the result of techniques developed over prolonged periods of time, always associated with the utility of the object, and almost invariably allied to the culture and cosmology of each ethnic group.

It is difficult to speak of "Indigenous art", as the concept itself is incompatible with many Amazonian peoples. However, drawing on elements of their culture, Indigenous artists have reworked traditional objects and aesthetics to create artworks that are highly appreciated and valued in Brazil and around the world.

Jaider Esbell (1979-2021), for example, is a Macuxi artist who has distinguished himself in the fields of visual arts and literature. He is the author of *Terreiro de Makunaima - Mitos, Lendas e Estórias em Vivências*, but he is also recognised as a painter, designer and installation artist. He was highlighted in the 34th São Paulo Art Biennial in 2021. That same year, he was the curator of the exhibition *Moquém - Surarî: contemporary Indigenous art*, at the Museum of Modern Art of São Paulo (MAM), which brought together other important Indigenous artists from various ethnic groups, such as Ailton Krenak, Amazoner Arawak, Antonio Brasil Marubo, Arissana Pataxó, Armando Mariano Marubo, Bartô, Bernaldina José Pedro, Bu'ú Kennedy, Carlos Papá, Carmézia Emiliano, Charles Gabriel, Daiara Tukano, Dalzira Xakriabá, Davi Kopenawa, Denilson

The Macuxi have lived in the area for at least two thousand years. They are expert potters and have a complex and substantive mythology which links all things created on earth to their heroes Makunaimî, Enxikirang and Ani'ké - sons of the sun.

Previous pages: open land in Raposa Serra do Sol Indigenous Lands (RR).

night I wandered again, but never again my Goddess, never again did I find you.

The creative solidarity economy, collectively produced by Amazonian communities through cooperative self-management that promotes fair trade and respect for the environment, is an alternative way to generate income. The practice contributes to the conservation of natural and cultural resources and ensures work opportunities for young people who may choose to remain in the territory.

Amazonian artists, both Indigenous and non-Indigenous, contribute to disseminating the cultural production of forest peoples. They create potential markets for handicrafts, art and ancestral technologies, which gain visibility and scale as an alternative for the local green economy.

Contemporary cross-disciplinary BNCC themes to work through by reading Franciele's chapter

- Family and social life
- Human interactions (human rights, community participation, participatory management, cooperation and solidarity, knowledge sharing)
- Territorial dialogue
- Seeking autonomy through the education of children and youth
- New forms of participation
- Equity, social justice and a culture of peace

Baniwa, Diogo Lima, Elisclésio Makuxi, Fanor Xirixana, Gustavo Caboco, Isael Maxakali, Isaias Miliano, Joseca Yanomami, Luiz Matheu, Mahku, Mario Flores Taurepang, Nei Leite Xakriabá, Paulino Joaquim Marubo, Rita Sales Huni Kuin, Rivaldo Tapyrapé, Sueli Maxakali, Vernon Foster, Yaka Huni Kuin and Yermollay Caripoune.

Jaider Esbell is the author of this passage describing the Macuxi wind goddess:

Here comes the seductive Cruviana, the resonant, cold, enchantress of dawn. Why do you walk at dawn alone, so fragile? Didn't they warn you about Cruviana? She comes slowly, descending the mountains, around the hills, dragging her cloak through the stiff brush, she comes in search of the flat lands of the savannah where she can find a hammock waiting for her. Cruviana came, she arrived at the hut, she lay down with me and it was not a dream. In the morning I was alone, back to my days; at

Above: Macuxi ceramics; Right: Renata prepares clay in Raposa Serra do Sol Indigenous Lands (RR). Next pages: lagoon in Raposa Serra do Sol Indigenous Lands (RR).

Cities on the forest

Samuel Dias, 11 years old. Bairro de São Geraldo, Manaus, Amazonas

Samuel (book 1, chapter 14) lives in Manaus (AM), the largest city in the Amazon with a population of over 2.25 million people. Like Belém, in Pará (1.5 million), Porto Velho, in Rondônia (540,000), Ananindeua, in Pará (535,000), Macapá, in Amapá (523,000), Boa Vista, in Roraima (420,000), Rio Branco, in Acre (413,000), Santarém, in Pará (307,000), and Marabá, also in Pará (284,000 people), the capital of Amazonas is part of a number of major cities built on the forest.

Of the 28 million people who live in the Amazon, around 75% live in urban areas. Practically all the major cities are located on river banks. Most have populations of up to 50,000 people (86%), or between 50,000 and 100,000 people (8%).

People living in urban areas suffer from problems typical of cities that have grown without urban planning. Most Amazonian cities have lower quality of life indicators than in other regions of Brazil. The average household income, for example, is 46% lower than the national average.

Manaus and Belém, the two largest cities, have gone through various stages of development. During the rubber boom (1890-1920), they experienced what is known as the "Amazonian Belle Époque", becoming the most developed capitals in the country, with infrastructure that included electricity and sewage networks, piped water systems, cinemas, museums and impressive theatres such as the Amazon Theatre in Manaus and the Teatro da Paz (Peace Theatre) in Belém.

The economic crisis after this period, despite episodes of reprieve, imposed a disorderly type of urban development on the capitals, which resulted in social problems requiring complex solutions.

According to the IBGE, only 22.4% and 25.1% of housing in Belém and Manaus, respectively, is surrounded by trees, the lowest two percentage of urban afforestation among 15 other Brazilian cities with over a million inhabitants. As a comparison, Goiânia (89.5%), Campinas (88.4%) and Belo Horizonte (83%), the three most densely populated large cities in Brazil, have four times more green areas than the two largest capitals in the North. This data reveals the degree of neglect in Amazonian urban development.

After all, both cities were built in the heart of the largest rainforest on the planet.

Considering that the transformation of cities into spaces that ensure quality of life for their inhabitants is a global goal, envisaged by the Sustainable Development Goals (SDG 11 - "to make cities more inclusive and sustainable"), the challenge of redesigning urban infrastructure is urgent. The most worrying aspects are social housing, urban public transport (mobility), and basic and environmental sanitation.

More than half (53,4%) of the approximately 650,000 households in Manaus are in favelas, mostly built on stilts, or in encroachments and squatter settlements. In Belém, the situation is even worse, as about 56% are temporary or illegal dwellings. Such precariousness is the result of a territorial occupation that ignores the local environment and an urbanisation model that is out of touch with Amazonian reality. The forest was cut down and the land was filled in and flattened, as was done in cities in other regions of Brazil.

The growth of cities has taken place with people's "backs to the forests" and rivers that surround them, disregarding traditional knowledge of the local population and their ancestral relationship to the environment. Housing construction and the entire urban infrastructure was copied from larger, mainly coastal cities in Brazil, with little development planning.

For this reason, streets and roads, for example, now overlap with the waterway infrastructure that enabled navigation, thus diminishing production practices that used to take place along the riverbanks.

Manaus is a symbol of this lack of vision of the future, showing extreme poverty rates, unsanitary housing sprawl, precarious urban mobility infrastructure, and a broken public health system. Of the one hundred largest Brazilian cities, it appears among the 20 worst, in 89th position when it comes to sewage collection/treatment and drinking water supply, even though it is located on the banks of

Previous page: palafitas in Manau (AM). Below: Samuel plays ball in Manaus (AM).

the Rio Negro, one of the largest rivers in Brazil.

Teachers and students can use Samuel's story to discuss urban problems, referring to the situation in their local region where their own school is located and pointing out similarities and differences to the situation in Amazonian cities.

In contrast to riverside communities and Indigenous communities in the Amazon interior, where it is possible to find a modicum of food and emotional security in the forest, residents of urban slums suffer the direct impact of their vulnerable and degrading social condition, where absence of basic sanitation and difficulty of obtaining health care are all too prevalent.

The stilt houses built over the *igarapés* on the peripheries of Amazonian cities form disorderly agglomerations of precarious dwellings that suffer from a lack of minimum sanitation conditions. With the effect of climate change, they are increasingly becoming risk areas for the population, due to more frequent flooding at higher than average flood levels, which encroach on and even take down dwellings, damage furniture and personal belongings, and aggravate people's living conditions.

The search for solutions to urban problems in the Amazon needs to take into consideration its unique characteristics, such as the climate, the surrounding forest and rivers, and the flat, low topography.

Another problem that has worsened is the arrival of immigrants fleeing even more precarious conditions in their home countries, most recently from Haitians escaping regions environmentally impacted by earthquakes, wars and regional conflicts and Venezuelans leaving their country for economic reasons and humanitarian crisis. In a five-year period (2010 to 2015), more than 85,000 Haitians entered the country and in just three years (2017 to 2020), and more than 260,000 Venezuelans arrived, creating worrisome migratory flows in the large Amazonian cities.

Here is another opportunity for discussion among students, since causes for migration, together with adaptation problems, for newcomers and for host communities, are urgent current issues that in principle involve ideas around human rights, diversity, and health.

In addition to environmental issues of the forest, challenges for the future of the Amazon involve the social aspects of its increasingly urban population. They also encompass economic issues, with the potential to establish innovative solutions for production and consumption that demand better living conditions for people. This is the only way to build effective public policies.

The challenges are the size of Amazon. So, too, are the opportunities.

Contemporary cross-disciplinary BNCC themes to work through while reading Samuel's chapter

- Family and social life
- Human interactions (human rights, community participation, participatory management, cooperation and solidarity, knowledge sharing)
- Human rights

Detail of the Amazon Theatre (1896), in Manaus (AM).
Following page: the meeting of the Negro and Solimões rivers, near Manaus (AM).

GOING FURTHER...

Suggested **films and documentaries** to dive deep into diverse aspects of the Amazon

Aguirre, a cólera dos deuses (1972)
Direction: Werner Herzog

Iracema – uma Transa Amazônica (1974)
Direction: Jorge Bodanzky and Orlando Senna

Raoni (1978)
Direction: Jean Pierre Dutilleux and Luiz Carlos Saldanha

Jari (1979)
Direction: Jorge Bodanzky and Wolf Gauer

Terceiro milênio (1981)
Direction: Jorge Bodansky and Wolf Gauer

Fitzcarraldo (1982)
Direction: Werner Herzog

Fronteira das almas (1988)
Direction: Hermano Penna

O Brasil Grande e os Índios Gigantes (1995)
Direction: Aurélio Michiles

No Rio das Amazonas (1995)
Direction: Ricardo Dias

Anaconda (1997)
Direction: Luis Llosa

O cineasta da selva (1997)
Direction: Aurélio Michiles

Mário (1999)
Direction: Hermano Penna

Tainá – uma aventura na Amazônia (2001)
Direction: Sérgio Bloch and Tânia Lamarca

Era uma vez Iracema (2005)
Direction: Vincent Carelli

Navegaramazônia – uma viagem com Jorge Mautner (2006)
Jorge Bodanzky and Evaldo Mocarzel

Corumbiara (2009)
Direction: Vincent Carelli

No meio do rio, entre árvores (2010)
Direction: Jorge Bodanzky

As Hiper Mulheres (2011)
Direction: Takumã Kuikuro, Leonardo Sette and Fausto Carlos

Tainá 3 – A origem (2011)
Direction: Rosane Svartman

Vale dos Esquecidos (2011)
Direction: Maria Raduan

Amazônia (2012)
Direction: Thierry Ragobert

Amazônia eterna (2012)
Direction: Belisario Franca

Rio 2 (2014)
Direction: Carlos Saldanha

The salt of the Earth (2014)
Direction: Juliano Ribeiro Salgado and Wim Wenders

El abrazo de la serpiente (2015)
Direction: Ciro Guerra

O povo dourado somos todos nós (2015)
Direction: Daniela Perente, Cecilia Engels and Felipe Kurc

Órfãos do Eldorado (2015)
Direction: Guilherme Coelho

The lost city of Z (2016)
Direction: James Gray

Beyond Fordlândia (2017)
Direction: Marcos Colón

Oro (2017)
Direction: Agustín Díaz Yanes

Taego Ãwa (2017)
Direction: Henrique Borela and Marcela Borela

Wappa (2017)
Direction: Henry Grazinolister

Ex-pajé (2018)
Direction: Luiz Bolognesi

Sob a pata do boi (2018)
Direction: Marcio Isensee and Sá

Soldados do Araguaia (2018)
Direction: Belisario Franca

Amazônia, o despertar da Florestania (2019)
Direction: Miguel Przewodowski

Amazônia Groove (2019)
Direction: Bruno Murtinho

Novas espécies – A expedição do século (2019)
Direction: Maurício Dias

Soldados da borracha (2019)
Direction: Wolney Oliveira

Amazônia Sociedade Anônima (2020)
Direction: Estevão Ciavatta

Nheengatu (2020)
Direction: José Barahona

Ainbo: spirit of the Amazon (2021)
Direction: José Zelada and Richard Claus

A última floresta (2021)
Direction: Luiz Bolognesi

À margem do ouro (2022)
Direction: Sandro Kakabadze

Gyuri (2022)
Direction: Mariana Lacerda

O reflexo do lago (2022)
Direction: Fernando Segtowick

Pureza (2022)
Direction: Marcus Ligocki and Renato Barbieri

And a list of **books** that focus on the Amazon

A cidade perdida
David Grann, Ed. Companhia das Letras

A invenção da Amazônia
Neide Gondim, Ed. Valer

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Jaider Esbell. Um povo sagrado ninguém pode vencer, 2021

Acrylic on canvas, 77 x 121 cm

The Jaider Esbell Gallery of Contemporary Indigenous Art

Photo: Bruno Leão

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Children's Amazon gives voice to girls and boys who live in the largest rainforest on the planet. This project takes the form of a pair of books. In the first, the children tell their stories. In the second (this *Navigation Guide*), the experiences of each child are considered in their historical, social, economic, and ecological contexts. Designed with classroom educators in mind, these are lessons to shape a conscious generation.

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