

Amazonia today

A region between development, destruction
and climate protection

A study by Thomas Fatheuer

Published by the Heinrich Böll Foundation



AMAZONIA TODAY

HEINRICH BÖLL STIFTUNG

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About the Author

Thomas Fatheuer spent several years working on development projects in Amazonia: From 1995 to August 1999 as coordinator of the Amazon programme of the German Development Service in Belém, and from 2000 to April 2003 as a GTZ (now GIZ) specialist in the PDA sub-programme of PPG7. After this, he became head of the Heinrich Böll Foundation office in Rio de Janeiro.

photo credits

Photos by Juliano R. Salgado (© all rights reserved, p. 24, 30, 35, 57) come from research on Salgado's film «Amazonia - The Borderland between Good and Evil», and depict the film's protagonists, etc. The headstone marks the last resting place of Dorothy Mae Stang, an American nun and environmental activist; she was murdered in 2005 on the order of big landowners in Brazil.

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Ordering address: Heinrich-Böll-Stiftung European Union, rue de Luxembourg 47-51, 1050 Brussels
T + 32 (0)2 743 41 14 **F** + 32 (0)2 743 41 09 **E** info@eu.boell.org **W** www.eu.boell.org

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FOREWORD

The rain forest is going up in smoke – this is the impression given by images being sent around the world. These broadcast images are nothing new, but the digital revolution means that they reach their audience faster than ever before. At present, there are fires in the Arctic, burning forests in Canada, in Siberia, South-East Asia, and now in the Amazon. They are a cause for concern and elicit a feeling of helplessness, since many people are now aware of the importance of the world's tropical rain forest to climate change and protection of biological diversity.

Addressing the threat to the Amazon and the many causes of deforestation was, indeed is, the main thrust of this study. Amazonia not only holds the largest tropical rain forest and freshwater basin in the world, it is also a natural habitat and hotspot of biological diversity, and above all it is home to 33 million people, to 385 registered indigenous peoples. Its function as regards our climate is recognised and proven; if the forest is not protected, the goals set by the Paris Agreement will not be achieved.

Reports and current trends coming out of the Amazon are of grave concern. The rate of deforestation since the inauguration of Jair Bolsonaro as Brazilian President in January 2019 has risen dramatically. We should recall however, that even under previous Presidents, from Lula to Temer, there were no signs of a halt to the deforestation. That is why this publication will take a close look at the background (and the people involved) and the causes of deforestation, for the destruction of the rain forest and the degradation of land which is home to indigenous peoples and traditional communities, is a result of social and economic processes which are firmly entrenched within the country's power structures.

The publication makes it clear that President Bolsonaro is an advocate for vested interests buried deep in the upper echelons of Brazilian society. He has adopted the old idea that Amazonia is in need of development, even at the expense of the rain forest itself. Cattle ranching, agriculture, major dam projects, and mining can be seen as highly productive activities. Traditional development and preservation of nature and habitat remains an area of conflict, which cannot easily be solved by simple win-win rhetoric. The issues here revolve around power and profits. Bolsonaro is not a sudden convert to burning the rain forest, but has always been a consistent hard-right advocate for the interests of some very powerful economic players. He supports these interests by wrecking the relevant legislation and institutions which were set up to protect indigenous peoples and the forest, for example the environmental protection agency, IBAMA, or the National Indian Foundation, FUNAI, starving them of funds, and generally defaming and removing their capacity to act. He wages war on them all, criminalising all those critical of his politics and development model and those who

oppose him. The flames not only threaten the forest, but also the homes of indigenous people, basic human rights, and Brazil's (fragile) democracy.

However, all is not yet lost. Firstly, not all the Amazon rain forest is on fire, estimates state that around 11,500 km² of forest had been destroyed at the end of the study period of 2019 (end of August), compared with 7,500 km² in 2018. Even so, a single square kilometre is still one too many. In addition, we should be aware that these numbers form part of a massive propaganda effort to de-dramatize the scale of the problem, for example, the Bolsonaro government repeatedly refers to the first year of the Lula government (2003/04) in which the deforestation rate was significantly higher. In any case, it is clear that there has been a dramatic rise in deforestation since 2012. Secondly: The emancipatory nature of Brazilian civil society, where the public is increasingly taking a stand to put pressure on the government. Approval for Bolsonaro's policies is waning rapidly, and many indigenous territories and protected areas are being formed to create a protective, defensive wall against fire and agribusiness. All this should be supported, and solidarity in this case should mean an end to hypocrisy and finger pointing at Brazil. We are, after all, far from role models when it comes to deforestation and certainly not in regard to climate policies. Europeans, including Germans, import meat, soy, timber, and minerals, the exploitation of which is a major contributing factor to deforestation. And yes, we share responsibility for the destruction of the largest tropical rain forest on the planet. Politics and politicians have access to levers that can support protection, but they choose not to use them. The EU-Mercosur free trade agreement, which is pending ratification, is designed primarily to open up the South American market to German and European car exports. In return, the EU will import more soy and meat. This is not a plausible way of protecting the climate, rain forests, and human rights.

In this publication, Thomas Fatheuer creates the framework for a very different view of the Amazon Basin. He analyses projections, myths, and attributes linked to this diverse, complex, and vast area of natural beauty and habitat. He also sets out alternatives to deforestation and destruction, which have been developed by social movements and civil society in Brazil. The main concern of Thomas Fatheuer was always to understand Amazonia better, to sketch out a diverse picture of its natural beauty and people, and to analyse vested interests and attempt to counter their arguments. He has been visiting parts of Amazonia for decades, and has travelled widely once more for this publication, has family ties to the region, and is caught on the horns of a dilemma between despair and hope. He also continues to be active in the fight against the destruction of this unique and precious region, and I thank him for it with all my heart.

Berlin, August 2019

Barbara Unmüßig
President of the Heinrich-Böll-Stiftung

INTRODUCTION – AMAZONIA, A BRIEF PORTRAIT

Almost everyone is aware of the Amazon, and some attach their own preconceptions to it. These might include the Manaus Opera House, piranhas, native Indians with blow pipes, or the films of Werner Herzog... but most people retain the image of a vast forest.

«Amazonia was born of a myth» – said a publication from 1992.¹ In the murky mire of myth and image, of preconception and prejudice, it is easy to lose sight of the true nature of Amazonia, so it is comforting that today there is at least one definition of Amazonia which is widely recognised: According to this definition, the Amazon basin is an area of around 7.5 million km², 5.5 million km² of which is covered by tropical rain forest. These figures are almost impossible to grasp. Germany and France combined do not even cover 1 million km², and would fit into the Amazon basin eight times over. Seven independent nations and French Guyana form part of the region that is also known as the Pan-Amazon.

Amazonia is not easily defined; different criteria can be applied and indeed this has long been the case. To address this conundrum, the European Commission and the Amazonian Cooperation Treaty Organization (OTCA) gathered together a team of experts (exclusively men, curiously) to define the geographical boundaries of Amazonia.² The team's work still represents the basis for the generally recognised geographical definition of Amazonia.

A current analysis of the data (RAISG)³ however, arrived at a different figure to this committee, namely a size of 7.8 million km². As RAISG represents the latest compilation of reliable data in Amazonia, we will work on the basis of these figures. One thing is crystal clear however: When we speak of «Amazonia», we could be talking about quite different things.

1 La Amazonia nació de mitos, <http://www.otca-oficial.info/assets/documents/20160630/bfdd8871043740a9aff514c281ecd52.pdf>

2 https://www.researchgate.net/publication/286926324_Proposicao_para_definicao_dos_limites_geograficos_da_Amazonia

3 RAISG stands for Rede Amazônica de Informação Socioambiental Georreferenciada: «The Amazon Geo-Referenced Socio-Environmental Information Network is a consortium of civil society organizations from the Amazon countries, supported by international partners, concerned with the socio-environmental sustainability of Amazonia.» <https://www.amazoniasocioambiental.org/en/>

Amazonia as a natural environment

If we talk about Amazonia as a geographical area, then this normally means the Amazon basin or the Amazon lowlands, the largest contiguous landscape in the world. The lowlands are structured according to a vast river system. The Amazon itself is the world's longest river. For a long time, the Nile was considered to be the longest river, but recent measurements in 2008 put the Amazon back into first place. What was never in dispute though was that the Amazon holds more water than any other river in the world by some distance. With a flow of 206,000 m³ per second, it is far and away the world leader – the second largest river in this category, the Congo, comes in at 41,800 m³ and the Rhine at mere 2,900 m³.

Several of the Amazon's tributaries are themselves among the world's longest rivers, for example the Rio Tapajós and the Rio Xingu. The Amazon basin is therefore the world's largest freshwater basin, with some 25% of the world's freshwater flowing here.

The majority of Amazonia is actually covered by forest, 5.357 million km² in 2000, which amounted to 68.8% of the region. Between 2000 and 2010, Amazonia lost some 4.5% (240,000 km²) of its forest, with the rate dropping after 2010, a rate which has again accelerated under President Bolsonaro.

Amazonia is self-evidently then the largest area of tropical rain forest in the world, with half of all tropical rain forest found here, housing a significant part of the world's species. Estimates calculate that some 10% of our global diversity is located within Amazonia.⁴

Amazonia as a home

Around 33 million people live in the region defined as Amazonia, at least two-thirds of them in urban areas. Belem and Manaus are the two main metropolitan areas in the Amazon basin. Iquitos is the third largest city with a population of 400,000. It is worth noting that the Brazilian geographer, Berta Becker, labelled Amazonia as an «urbanised jungle». Cities such as those mentioned above are not a new phenomenon, but formed the bridge heads for colonisation of the region. In more recent times, a string of medium-sized cities, have sprung up around development clusters. Examples include Marabá in Brazil.

The cities of Amazonia are however, rarely in the global spotlight, with the focus obviously elsewhere in Amazonia: The region is home to 385 registered indigenous peoples, and some 27% of the region consists of indigenous areas. Indigenous territories (TI) and protected areas, which are often populated and managed by traditional communities, make up around 45% of the area of Amazonia. Indigenous peoples and traditional communities are therefore major territorial powers in the region. Protected areas and indigenous territories cover an overall area which is four times the

⁴ However, the figures for biodiversity must be treated with caution, if only because the total number of species is disputed and based solely on estimates. A good overview with references for further reading can be found here: <https://www.theguardian.com/news/2018/mar/12/what-is-biodiversity-and-why-does-it-matter-to-us>.



size of Germany and France combined.⁵ This heavy concentration of protected areas and indigenous territories is a feature of a most of the Amazon basin countries and is unique anywhere in the world. The high number of indigenous peoples is furthermore an indicator of great sociocultural diversity, meaning that there is no single indigenous Amazonia, but a wide variety of ethnicities and communities.

Amazonia as a myth

Myths are tales with a meaning. In the case of Amazonia, myths serve one main purpose; they give this huge region a shared identity. They define by uniting, and come time and again back to the insistence that «Amazonia is...»

A television series, shown in 2017, asked the question, «Green Hell or Paradise?», highlighting the contrasting mythical imagery of the region. For a long time, Amazonia did indeed tend to be seen as a green hell, an impenetrable primeval forest, full of insidious diseases and ferocious natives with poisonous blow pipes. Joseph Conrad's paradigmatic short novel, «Heart of Darkness», ends with the words, «The horror, the horror!» and succinctly reflects a colonial view of the Tropics. Of course, there have always been stories reflecting the opposing view, often supporting the idea of the «noble savage».

5 Figures from RAISG, referring to the Pan-Amazon.

The prototype of the modern myth is the depiction of Amazonia as the world's green lung, but in more recent history, the template for Amazonia as a myth has focused upon ideas of «development». Amazonia, the untapped rain forest, the land without people, has been seen as a region ready for development at least since the Vargas dictatorship of the 1940s, and most definitely before this. Brazilian poet Euclides da Cunha, described Amazonia 100 years ago as the last page still to be written in the book of Genesis. This «framing» of Amazonia as a region ripe for development is based on the assumption that the present must be swept away or at least overcome. As a first step, development means clearance or destruction of existing forest. Forests must be logged, and indigenous peoples represent a barrier.

In recent decades however, the notion of «preservation» has also arisen alongside that of «development». In this case, the present appears positive, worthy of preservation. The forests and rivers of Amazonia are a treasure trove of biodiversity, whose preservation is a goal worth fighting for. Deforestation is no longer seen as a noble act of civilisation, but as sacrilege. Indigenous peoples become legal subjects with their own past, present and future, and no longer an unfortunate relic of the Stone Age.

The turmoil in Amazonia today is happening because both these concepts exist, and both have had, and will continue to have, an influence on regional and global developments. Arguably, the notion of preservation has won the day, at least in Western Europe, but also in urban centres of South America. Yet the machinery of destruction ploughs on unchecked, and with increasing momentum. There is no lack of conciliatory concepts which aim to reconcile preservation and development. At the end of the day however, they do not transfer well to the reality of the conflict on the ground within Amazonia. We will have more to say about this later.

Amazonia today – a diverse natural environment and a home to people

Two trends have changed and reshaped our perception of Amazonia in recent decades. On the one hand, the image of a single ecosystem has given way to a more fractured view. The image of Amazonia as a single entity has proven to be unsustainable. The huge forest, which from an aerial perspective at least appears contiguous, has been found to be far less uniform as originally thought. The Brazilian statistics institute IBGE identified no fewer than 104 different landscapes and 204 sub-systems in 1995, and soil composition and vegetation is much more diverse than first thought. The socio-cultural diversity of the different groups in Amazonia has also now been established: The region is in no way populated exclusively by indigenous peoples, but comprises a mosaic of traditional users in local communities.⁶ The images portraying a vast, homogenous forest have given way to a pattern of genuine complexity.

⁶ The project run by Nova Cartografia Social da Amazonia and coordinated by Alfredo Wagner, has contributed significantly in recent years to highlighting the social diversity and the related usage strategies of indigenous peoples. For an overview: <https://www.mobilizadores.org.br/wp-content/uploads/2014/07/Cartilha-Cartografia-Social.pdf>

Today, it is clearer than ever that the Amazonian rain forest is not simply a largely untouched natural environment, but the product of centuries of interaction between man and nature. Large tracts of the rain forest have been influenced and shaped by the actions of indigenous peoples, changing the distribution and abundance of plants for example. William Baille called this a «Cultural Forest». The phrase «unspoilt nature» is therefore consigned to the realms of myth, even though there may be parts of Amazonia in which humans have had very little impact. However, the interaction of indigenous peoples with the rain forest also provides mankind with a wealth of hitherto untapped knowledge, and shows how we could live with and off the forest without destroying it. An economic model which can only be implemented once the forest has been destroyed appears primitive by comparison.

Amazonia – a central reference point for global environmental politics

Amazonia is of fundamental importance to preserving biodiversity and the fight against climate change. The destruction of the tropical rain forest, thought to be the most species-rich ecosystem on Earth, means a cataclysmic destruction of species. Although many scientists assume that the destruction of species is just as big a problem for the sustainability of life on this planet as climate change, the latter remains the subject of a global debate.

«The Amazon rain forest is one of the tipping points in the planet's ecosystem», says Delphine Zemp from the Potsdam Institute for Climate Impact Research. The vicious circle of drought due to deforestation, which in turn encourages further deforestation, would cause significant damage to the Amazon's influence on the climate. It is now widely recognised that the Amazon basin rain forest is crucial to rainfall in large parts of the continent. The «river in the sky» as the cloud formations are known in Amazonia, supply regions as far away as Argentina with water. Further forest loss from the Amazon would have a direct impact on South America's rainfall and indeed on the global climate.⁷

Carlos Nobre, one of the foremost Brazilian climate experts, believes that the danger of such a tipping point can only be avoided if no more than 20% of the rain forest is destroyed. At present, some 17% of the area is deforested, though other parts of the rain forest have been damaged by logging.⁸

We are therefore very close to the feared tipping point. However, Amazonia and the destruction of the rain forest have become crucial to global climate politics, as deforestation is responsible for some 11% of global CO₂ emissions. If deforestation in Amazonia continues at its present rate or even accelerates, the targets in the Paris Agreement will not be met. For this reason, the IPCC (Intergovernmental Panel on Climate Change, also known as the World Climate Council) are already discussing how

7 See: <http://www.biodiversity.de/produkte/aktikel/biologische-vielfalt-kann-den-amazonasregenwald-vor-dem-klimakollaps-retten-wenn>

8 See: <https://advances.sciencemag.org/content/4/2/eaat2340.full>

«negative emissions» can be achieved, for example through extensive reforestation, if deforestation does not slow.

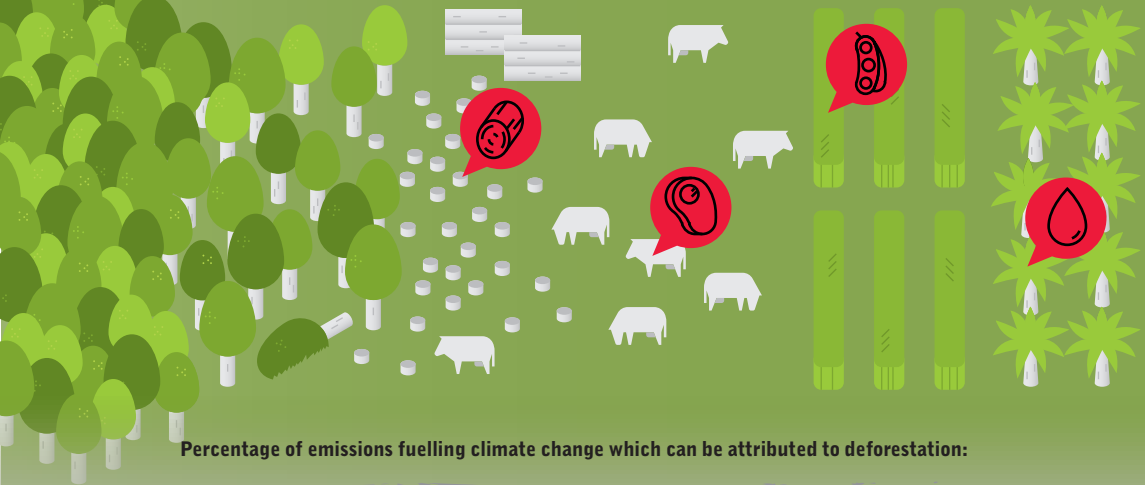
There is still time to reverse this trend. The destruction of the rain forest and the devastation of land which is home to indigenous peoples and traditional communities is a result of social and economic processes, which are deeply embedded in the country's power structures. This will be studied in more depth in the remainder of this work.

Amazonia in Brazil – a term is operationalised

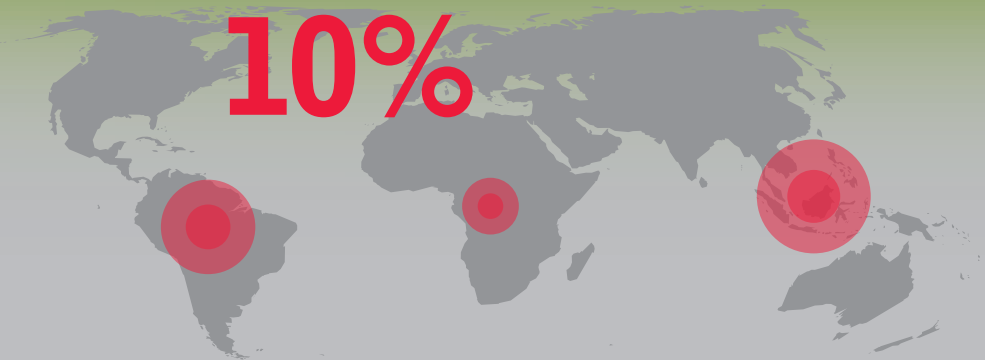
The term Amazonia (Amazônia) is used in a variety of contexts. In Brazil, Amazônia Legal is defined as an administrative division, covering more than 5 million km² and 61% of the country's area. Amazônia Legal is home to 21 million people, 12.4% of the Brazilian population. Around 72% of Amazonia's population live in towns or cities (2010 census). The largest cities in the region are Manaus with 2.1 million and Belém with 1.4 million inhabitants. Some 250,000 people are considered indigenous people; 21% of the area of Amazônia Legal consists of indigenous territories. Amazônia Legal is however in no way coterminous with the Amazon rain forest. Amazônia Legal comprises three biomes, the major ecoregions of Amazônia (rain forest), Cerrado (humid savanna) and the Pantanal (wetland area). Around 4 million km² of this is covered by the Amazônia biome, in other words, the rain forest area. When we talk about the Amazônia biome, we are only referring to the rain forest area of Amazônia Legal. This distinction is important but not always made. Deforestation figures therefore mostly refer to Amazônia Legal, meaning that deforestation does not exclusively relate to the rain forest. In particular, the expansion of soy farming has primarily affected the Cerrado areas. There are also different legal provisions in place according to the biome, for example, the key provision which states that only 20% of the area on private land can be cleared only applies to the Amazônia biome, while in the Cerrado area within Amazônia Legal, 65% of the area may be cleared.

What is driving deforestation?

The production of timber, beef, soy, and palm oil is the main driver behind logging in the rain forest, contributing to global warming and destroying the habitat of many animals and plants.



Percentage of emissions fuelling climate change which can be attributed to deforestation:



In countries which produce the lion's share of the four commodities mentioned above, tropical rain forest is being cleared at an annual rate equating to destruction of an area bigger than Germany, within just ten years.

360.000 km²

Our consumer habits are fuelling the destruction of these forests, but we can also help to end this cycle by ensuring that we do not consume at the expense of our forests.



1 Deforestation without end?

A look at the causes

According to media images, the rain forest is going up in smoke. The Amazonia region and Brazil in particular, are rarely out of the news: Deforestation appears unstoppable, despite a common consensus that large-scale deforestation is highly damaging, and must therefore be opposed. This consensus not only prevails in the industrialised nations of the Western Hemisphere, but is also pervasive among the environmentally aware urban population of Brazil. One thing is beyond doubt and well-established:

- Deforestation contributes to climate change. In Brazil, deforestation is the main source of CO₂ emissions.
- The climate goal agreed by the world community, namely to restrict global warming to 1.5°C, cannot be met unless the logging of tropical rain forest is drastically reduced.
- The rain forest is a biodiversity hotspot. The flames are burning the very foundation of evolution on our planet.
- Deforestation is destroying the homes of indigenous peoples and traditional communities. The rain forest is their home!

This is an all too familiar story and has led to countries with a large stock of tropical rain forest setting a goal of reducing deforestation. The main reference point here is the international climate process. Through the Paris Agreement, Brazil has also committed to sharply reducing the rate of deforestation, so why is it so difficult then to put a stop to deforestation?

The causes of deforestation – a current overview

The dynamics of deforestation have long been the subject of research, and the key trends are well-documented. Globally, there are four main factors responsible for deforestation: Cattle, soy, palm oil, and timber.

Transformation of forest into grazing and arable land is driving a large part of the deforestation. Global findings also apply to Amazonia, although here, cattle and soy are the main drivers. Palm oil in Brazil only plays a role in one region of Pará state, but is of growing importance in other Latin American countries. Logging is less responsible for wholesale deforestation than for the degradation of forests – a phenomenon that has attracted far less attention.

Deforestation rates in Amazonia and in the states of Acre and Mato Grosso

Year	Amazonia Legal (km ²)	Acre (km ²)	Mato Grosso (km ²)
2004	27.772	728	11.814
2005	19.014	592	7.145
2006	14.286	398	4.333
2007	11.651	184	2.678
2008	12.911	254	3.258
2009	7.464	167	1.049
2010	7.000	259	871
2011	6.481	280	1.120
2012	4.571	305	757
2013	5.891	221	1.139
2014	5.012	309	1.075
2015	6.207	264	1.601
2016	7.893	372	1.489
2017	6.947	257	1.561
2018	7.536	444	1.490

All deforestation figures are based on official Brazilian data from INPE/PRODES:
<http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes>

Satellite images show clearly what is happening to the deforested areas: Cattle are grazed on more than 60% of the deforested areas. The expansion of cattle ranching is by some distance the key driver of deforestation – a conclusion that was reached many years ago, and which has been reinforced by countless studies.⁹

⁹ Current overviews of the situation with further reading can be found here: P. Pacheco, M.G. Piketty, R. Poccarr-Chapuis et al. (2017): Beyond zero deforestation in the Brazilian Amazon: Progress and remaining challenges to sustainable cattle intensification. CIFOR Info Brief 167. And here: J. Godar, T.A. Gardner, E.J. Tizado, P. Pacheco (2014): Actor-specific contributions to the deforestation slowdown in the Brazilian Amazon, PNAS.



What is happening to the deforested land?

Satellite images show: 60% grazing, 23% secondary vegetation (largely former grazing), 6% agricultural activity. The remaining (approximately) 10% is dedicated to a range of uses, urban settlements, and undefined areas; mining currently plays an almost negligible role with 0.1%.

These figures were sourced from TerraClass, which is compiled by the government institutes, INPE and Embrapa.

They refer to Amazônia Legal and the period 1988-2012 http://www.inpe.br/noticias/noticia.php?Cod_Noticia=3780

The expansion of cattle ranching in Amazonia associated with deforestation has accelerated over decades, and is an instructive pointer to the «development» of Amazonia. Between 1985 and 2005, the number of cattle in Amazonia («Amazonia Legal») has expanded from 15 to 74 million.¹⁰ Virtually 100% of the growth in beef cattle in Brazil has occurred in Amazonia. The region now holds more than one-third of all Brazil's beef cattle. Back in 1975, this figure was less than 7%, rising to more than 10% in 1985. Within a relatively short window of twenty years (1985-2005), the expansion of cattle grazing in Amazonia has seen a huge jump, and is the dominant growth factor in many parts of the region. This explosion in the number of cattle between 1985 and 2005 was particularly evident in three states: Mato Grosso (from 6.5 to 267 million), Pará (from 3.4 to 18.0 million) and Rondonia (from 0.7 to 11.3 million). The massive expansion has often been labelled as «cattleisation». However, even though the expansion of cattle ranching is a key «driver» of deforestation, this is certainly not the case in every region of Amazonia. In fact with 1.2 million animals, cattle ranching plays a relatively minor role in the largest state in the region, Amazonas, despite the presence of a number of regional hotspots in the south of the state.

From 2005, the number of beef cattle in Amazonia fell slightly (from 74 to 70 million in 2007). Since then, numbers have consolidated at a relatively high level (2016 at around 80 million head of cattle), in Amazonia and in Brazil as a whole, where the number of cattle has hovered around the 210 million mark.¹¹

¹⁰ A good overview of the trends up to 2007 can be found here: Judson Ferreira Valentim e Carlos Mauricio Soares de Andrade: TENDÊNCIAS E PERSPECTIVAS DA PECUÁRIA BOVINA NA AMAZÔNIA BRASILEIRA in: Amazônia: Ci. & Desenv., Belém, v. 4, n. 8, jan./jun. 2009 <http://agropecuaria.org/wp-content/uploads/2016/04/GanaderiaAmazonia.pdf>

¹¹ The last available statistical survey set the figure for 2017 at 214.9 million head of cattle. In Mato Grosso the figure was 29.7 million. More at: <http://agenciabrasil.ebc.com.br/economia/noticia/2018-09/rebanho-de-bovinos-e-producao-de-leite-caem-diz-pesquisa>

Who is clearing the forest, small farmers or the big corporates?

Responsibility for deforestation is the subject of heated debate, with the issue returning to prominence in recent years as claims that large-scale deforestation was at an end have proven to be premature. There is little doubt however that both major landowners and small farmers carry some responsibility, yet research data setting out the contribution of smallholdings to deforestation differs greatly. A comprehensive study came to the following conclusions:

- Much of the deforestation (47%) between 2004-2011 was concentrated on land tenures of larger than 500 ha, with 12% attributed to small farms
- A few thousand big landowners (more than 2,500 ha) were responsible for 28% of deforestation alone, but the percentage of small farms involved in deforestation rose from 8% in 2004 to 13% in 2011.¹²

Source: https://www.researchgate.net/publication/236840818_From_Large_to_Small_Reorienting_Rural_Development_Policies_in_Response_to_Climate_Change_Food_Security_and_Poverty

The role of soy cultivation

Soy also plays a pivotal role in deforestation dynamics, but a quite different one to cattle ranching. Much of the expansion of soy cultivation has taken place on land already cleared for grazing, so soy cultivation is often not the primary cause of deforestation, yet the sheer scale of the expansion of soy in Amazonia remains staggering. In 2012, 8.16 million hectares were planted with soy, a rise of 159% compared with 2000.¹³ This expansion of soy cultivation is concentrated mainly in Mato Grosso state. The area under cultivation here grew from 1.2 million hectares in 1991 to 6.2 million hectares in 2010 and 9.5 million hectares in 2018. The main concentration of soy can be found in the Cerrado biome, where the expansion of soy farms between 2001 and 2006 was in fact a major contributor to increased rates of deforestation. During this period, soy plantations in Amazonia grew by 1 million hectares, with 30% of this expansion taking place on forested land and not on grazing land.¹⁴

- 12 The figures were sourced from a briefing by the Stockholm Environment Institute, which offers a good overview of the recent debates: https://www.researchgate.net/publication/269220844_A_new_era_in_the_fight_against_deforestation_in_the_Brazilian_Amazon_Opportunities_to_improve_policy_effectiveness
- 13 These figures refer to Amazonia Legal. Most of the expansion of soy cultivation took place in the Cerrado biome; see <http://www.iea.sp.gov.br/out/LerTexto.php?codTexto=13575>.
- 14 H.K. Gibbs et al.: «Brazil's Soy Moratorium.» *Science* 347.6220 (2015): P. 377-378. The figures here relate to the Amazonas biome, which essentially covers the forest areas of Amazonia; see http://www.gibbs-lab.com/wp-content/uploads/2016/03/aaa0181.Gibbs_.wSM_Port_formatted_03162016-3.pdf

Soy in figures (2018)

Soy worldwide

Production: 336.7 million metric tons

Area: 124.6 million hectares

Source: USDA (24/05/2018)

Soy in the USA

Production: 119.5 million metric tons

Area: 36.2 million hectares

Productivity: 3,299 kg/ha Source: USDA (24/05/2018)

Soy in Brazil

Production: 116.9 million metric tons

Area: 35.1 million hectares

Productivity: 3,333 kg/ha Source: CONAB (May 2018)

Mato Grosso – capital of soy cultivation in Brazil

Production: 31.8 million metric tons

Area: 9.5 million hectares

Productivity: 3,350 kg/ha Source: CONAB (May 2018)

Source: <https://www.embrapa.br/soja/cultivos/soja1/dados-economicos>

Logging and forest degradation

The damage suffered due to selective logging is inadequately reflected in deforestation statistics, for satellite images only record the area cleared, but degradation of the forest by (mostly illegal) logging is shown in insufficient detail. This is also why it is difficult to ascertain damage to the forest with any great accuracy, as «forest degradation» is a poorly defined concept. An idea of the scale of this forest damage is provided by a study conducted by Imazon in Pará state between August 2015 and July 2016.¹⁵ This study identified a degraded area of 12,800 km², four times the deforested area within the same period in the same state (3,025 km²), though the lion's share of forest damage can be attributed to fires and only 427 km² to logging, and this is exactly where the problem lies when discussing degradation, i.e. is extremely difficult to determine the causal chains with any precision. To what extent are the fires a consequence of forest degradation? There is no doubt that degraded forests are more prone to fire, but it is almost impossible to quantify this accurately. This also applies to the question of to

¹⁵ See: <https://imazon.org.br/en/>.



what extent climate change is responsible for droughts which create the perfect conditions for forest fires.

Drivers versus causes

«Cattle are the most serious environmental problem facing Amazonia and the world,»¹⁶ says Paul Adario of Greenpeace. These kinds of statements are often heard and can be useful for campaigns, but they boil down the problem of deforestation down to a very narrow argument, for although the expansion of cattle ranching and agriculture is manifestly an actor in the destruction of the rain forest, it should not be confused with being a cause of deforestation.

Within the international debate, there is a distinction to be drawn between «drivers of deforestation» and the «underlying causes of deforestation». Why do we now find pasture and soy fields where the forest once was? Is meat consumption in «developed» countries responsible? Or is international free trade fuelling the soy boom? Or is a development policy that relies on agricultural exports to blame? Clearly, it is much harder to identify the causes than the drivers and actors of deforestation.

¹⁶ See: <https://news.mongabay.com/2018/05/new-film-shines-light-on-cattle-industry-link-to-amazon-deforestation/>

Drivers and causes of deforestation – a fundamental distinction

Direct drivers include human activity or direct action, which directly impact the forest canopy, and lead to a loss of carbon (e.g. through the expansion of agriculture, infrastructure measures, and timber production). The consequences include complex interactions between social, economic, political, cultural and technological processes which are often far removed from their source (e.g. rising world market prices, national policies which provide incentives for expanding agriculture, and public resettlement programmes). The perpetrators of deforestation and destruction of forests are individuals, households, or companies which are linked to the direct drivers as well as the underlying causes (e.g. farmers, mining companies, governments, and consumers).

One potential response in looking for causes is as banal as it is consequential, namely that transforming the forest is economically beneficial. This statement is not quite as trivial as it appears at first glance. Ecological critics have long depicted agriculture in Amazonia as impossible or at the very least unviable. This point of view has clearly underestimated or ignored the potential for agriculture in Amazonia. Government assistance has turned soy cultivation in Mato Grosso into a highly mechanised and high-tech agricultural enterprise, which produces similar yields per hectare to those of the US. This has created a new, powerful elite within agribusiness. The former governor of Mato Grosso and the country's largest soy producer, Blairo Maggi, became a key supporter of the Lula government, Minister of Agriculture under President Temer, and one of the most prominent and internationally connected representatives of Brazilian agribusiness.

Brazilian meat producers have also modernised with breathtaking speed in recent decades. Slaughterhouse business JBS Friboi became the world's largest meat processor, has been one of the key funders of election campaigns in Brazil, and since 2017 has been at the centre of the corruption scandals which shook the country to its core. However, the agriculture sector only modernised up to a point.

Cattle ranching is a logical part of the expansion of agricultural frontiers, though it does not need to be all that productive to make deforestation worthwhile, for the fact remains that the creation of cattle grazing on previously forested areas means that the land tenure increases in value. The profitability of cattle ranching therefore does not solely depend on economic activity, it can also be guaranteed by increasing the value of land.

Alongside profitability, the availability of land for expansion of agriculture is the second crucial factor. Amazonia remains one of the largest agricultural zones in the world: New arable and grazing land is being created by destroying the original vegetation (rain forest and Cerrado). Much of the land acquisition is in fact illegal, either because it is not based on legal land titles, or because landowners do not strictly comply with environmental regulations: In the Amazonas biome, landowners may only



log 20% of the forest, while in the Cerrado biome this figure is 65%. The lack of enforcement of legal standards and environmental regulations with regard to land use is also a significant factor in the onward march of deforestation. In a nutshell: Lack of controls («command and control»), a scarcely functioning legal system, and (false) economic incentives all represent key causes of deforestation, and are therefore starting points in the effort to develop political strategies to reduce deforestation.

A glance at the satellite images reveals few clues as to the extent to which the «land use change» dynamic is part of a comprehensive development dynamic. Roads, mines, or even dams take up little space, but still form the basis for infrastructure expansion, allowing the forest to be «conquered» by agriculture.

Deforestation can therefore only be seen as the outcome of a complex social, economic and political process. Transformation of forest into pasture and arable land is merely the most visible part of the process. We will return later to the links between expansion of infrastructure, investment, and development models.

Who does Amazonia belong to?

Unfortunately, there is no easy answer to this question, and therein lies the main problem facing Amazonia. In almost half of Amazonia, ownership rights are clearly defined, as this half consists solely of protected areas or indigenous territories.

Territories	Amazonia, area ¹⁷	
Protected areas in Amazonia	1.110.652 km ²	22,7%
Indigenous territories	1.086.950 km ²	21,7%
Total	2.197.485 km ²	43,9%

On the other hand, some 70 million hectares of land forms a huge area which has no defined ownership structure. This is known as the «terras não designadas», which at around 700,000 km² is an almost incomprehensibly large area, twice the size of Germany (357,000 km²). In reality, the extent of the «caos fundiaria», or land tenure chaos, in Amazonia is even greater, as many land titles outside of this unacquired land are poorly defined.

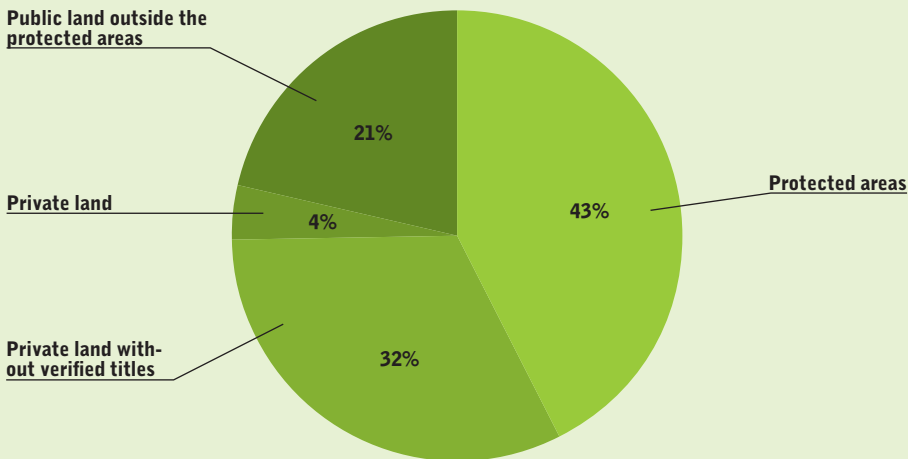
¹⁷ These figures can sometimes be higher; fluctuations in the figures are a result of overlapping areas, though the fluctuations are relatively minor, as all statistics show that TI plus protected areas make up some 45% of the area of Amazonia. The figures quoted here come from: <https://imazon.org.br/en/>

Land ownership in Amazona – plenty of scope for land grabs

The Brazilian state of Amazonas is the largest area worldwide in which land can be appropriated. The issue of deforestation is therefore inseparably linked to the dynamics of land appropriation. This was the case historically and indeed remains the case today. In Brazil, land appropriation is known by the term «grilagem», which is normally interpreted as illegal land appropriation.

«Grilagem» is a key term and concept for understanding the dynamics of deforestation in Brazil. This is not always properly understood, especially within the international debate which tends to focus on cattle ranching. The boundaries between illegal appropriation and legal or quasi-legal processes have become increasingly blurred, and are characterised by subsequent legitimisation of originally illegal appropriations. The idea that the occupation of land generates ownership rights is firmly rooted in Amazonian history, and is also legitimised by the story of the «posseiros», the landowner. This refers to people who use the land themselves, not to speculators.

The following graphic shows the sheer complexity of ownership rights on Amazonia. We can see that only a small minority of the private land in Amazonia carries a land title certified by the authorities. This does not mean that the remaining areas in private hands are all illegal, but their status is often unclear. The graphic also shows that just over one-third of the land in Amazonia is in private ownership.



Source: <https://imazon.org.br/PDFimazon/Portugues/livros/quem-e-dono-da-amazonia-uma-analise-do.pdf>

Deforestation is the most frequent way in which land is appropriated and in which ownership claims are asserted. Land grabs are therefore a cause of deforestation. «He who clears the forest control the land» says the title of a book by Mauricio Torres about the «grilagem» in Amazonia, one of the key contributions of recent years to the Amazonia debate. The title is a quote by a «grileiro». Torres describes the relationships like this: «Deforestation is not caused by soy or cattle ranching... The people who are clearing the forest rarely own a cow, have never reared a calf, or planted soy... Deforestation is a direct consequence of land prices.»¹⁸

Deforestation is therefore less an expression of a direct economic strategy of converting forest into grazing, than the result of a complex situation comprising the following elements:

- The availability of huge tracts of land
- Lacks of legal clarity
- Illegal practices: Bribery, violence, threats, cover-up of illegal practices (acquisition of dubious ownership titles)
- Inadequate registry system
- Land grab specialists («grileiros») with specific knowledge and a useful network of contact
- Political links to the agriculture lobby, which wields considerable political power and has legalised illegal deforestation through legislation (e.g. amnesties).

It is this mix that makes deforestation so difficult to control, and which causes some political approaches (e.g. to improve the land registry) to run into the sand despite good intentions.

Expectations are a key aspect of this dynamic. These expectations are based on past experience, in particular with regard to amnesties. The expectation that the political landscape will facilitate or at least look on passively while deforestation rates increase has been heightened considerably by the election of Bolsonaro.

18 The quote comes from an article by Eliane Brum: https://brasil.elpais.com/brasil/2017/10/02/opinion/1506961759_879609.html

2 The fight against deforestation: Successes, failures, and prospects

Deforestation slowdown: A success story?

In any discussion about deforestation in Amazonia, one important point is rarely highlighted, and that is the dramatic fall in deforestation in the years following 2004. This shows that politicians are not powerless and that deforestation can be fought effectively. In 2003 and 2004, the deforestation rates in Brazil rose drastically. This rise thrust Amazonia back into the national and international spotlight, and created a political problem for the incoming President Lula da Silva and his dynamic Environment Minister Marina Silva, who herself was once a campaigner for social justice in Amazonia. The government responded with a plan to combat deforestation (Plano de Ação para Prevenção e Controle do Desmatamento na Amazônia Legal, [PPCDAm]), which proposed stronger controls and regulation of land ownership, and promoted sustainable land use.

The sharp fall in deforestation in Brazil between 2005 and 2009 was also considered internationally to be a model of how to successfully fight deforestation. This success can be attributed to a single factor. At the heart of the plan was the idea that it was not only the job of the Ministry of the Environment to fight deforestation, but that it was a priority of the government as a whole, with coordination by the «casa civil» (State Department), which reports directly to the President and oversees government action (in a similar way to the German Chancellery). Studies have been able to identify three main factors which were successful in slowing the rate of deforestation:

- Increased control over illegal activities linked to stiffer penalties, and the attempt to impose these more consistently;
- expansion of protected areas;
- Focusing action on municipalities with the highest deforestation rates.

Brazil reduces deforestation – a success story

In 2009, deforestation covered an area of just 7,500 km², fluctuating in subsequent years between 5,000-8,000 km². Between 2004 and 2011, the decline in deforestation in Amazonia was 77.5%. How were these impressive numbers achieved? Every study and investigation shows it was down to a combination of different measures. Crucial elements included the identification of new protected areas, stronger action against illegal logging, imposition of stiffer penalties, and the mobilisation of civil society. The Brazilian environment agency, IBAMA, also recorded a rise of 790% in the amount of penalties imposed between 2003 and 2007 (from 153 million to 1.4 billion reais, around 500 million euros based on the exchange rate at the time). The experience of Brazil also shows that controls targeting the central actors of deforestation, i.e. the «drivers of deforestation», can produce quick results. In Pará state, environment agencies and the judiciary launched a campaign against the illegal activities of 20 big landowners and 11 slaughterhouses, which had received beef from these fazendas (ranches). The campaign led to penalties of 2 billion reais (around 700 million euros) for illegal logging. As a result of the campaign, food conglomerates and supermarket chains severed their business ties with the prosecuted farms. Protected areas were extended between 2002 and 2010 by 695,393 km²; most of these are located within Amazonia and respect the way of life of traditional communities. The focus on municipalities with particularly high deforestation rates was also a marked success.

Many researchers assume that the rise in soy and meat prices is also a key factor behind deforestation. The «stock» of cleared land may also play a role, though one that is hard to quantify. Even though it is difficult to give a specific weighting to individual factors which lead to a rapid decline in deforestation, the general pattern here is quite clear, in that the successes in Brazil at the time represent a benchmark in the global fight against deforestation.

The Soy Moratorium and control of slaughterhouses

A key specific element in the fight against deforestation in Amazonia is the Soy Moratorium, masterminded by Greenpeace and which commits the soy industry not to buy soy from areas deforested after 2006. The aim of the moratorium was to stop the expansion of soy cultivation following deforestation, and the project achieved impressive results. Prior to the Soy Moratorium, some 30% of soy expansion was on deforested land; with the launch of the moratorium, this figure fell to 1%. The surprising thing was that soy cultivation continued to expand, albeit from the rain forest onto grazing land. Although it remains unclear to what extent this contributed in turn to the growth of grazing land in Amazonia, a link is entirely plausible. By contrast, it is



plain to see that expansion of soy cultivation in the Cerrado biome did not stop following the moratorium, nor did it stop in areas with original vegetation. In short: It is clear that the Soy Moratorium successfully stopped the transformation of rain forest into arable land for soy, but not the expansion of cultivation in the Amazon region; it simply shifted into other ecosystems.¹⁹

Building on the (albeit limited) success of the Soy Moratorium, Greenpeace and other actors negotiated the Cattle Agreement: TAC do Carne. This committed the major meat processors in Brazil to source meat from legal sources only, i.e. from farms which comply with environmental and social legislation, and not from areas which have been illegally deforested. The success of the Cattle Agreement proved to be more limited than that of the Soy Moratorium. Part of the cattle supply chain consists of large numbers of cattle ranchers who are able to evade oversight.

They sell their cattle to legal ranches, where they are quickly fattened and sold «legally» to slaughterhouses. In a similar vein to «money laundering», this practice is known as «cattle laundering». There are no accurate figures on the number of illegal cattle which find their way onto the legal market via this route, but estimates show that around 30% of cattle are reared illegally. Operation «Carne Fria» («Cold Meat»), conducted by the environment agencies, shone a light on these illegal practices back in 2017, the result being the closure of 15 slaughterhouses because they were buying

¹⁹ A good overview assessing the moratorium: H.K. Gibbs et al., «Brazil's Soy Moratorium», Science 347.6220 (2015), p.377-378, <https://science.sciencemag.org/content/347/6220/377.summary>

illegal cattle. Clearly, there has been little success in controlling the entire cattle supply chain.²⁰

Too soon for the all-clear: Deforestation continues to rise

The falling trend in deforestation had ended by 2012; the rate has risen since then to above the levels of 2009, though never reaching the extreme levels of 2003 to 2005. Since 2009, the deforested areas have fluctuated in size between 5,000 and 7,000 km² per year, with a slow increase since 2012. In 2018, the figure reached 7,900 km², meaning that Brazil distanced itself from its own self-imposed climate goals, which are based essentially on reducing CO₂ emissions by slowing deforestation. To achieve these, deforestation would have had to fall each year to 3,900 km² by 2020.²¹ The current trend is not heading in the right direction; the political signs of recent years, and of the current year in particular, are not encouraging.

Once again, there are a number of factors that could explain the trend's reversal. One key factor is clearly the passing of the Forest Code in 2012, which was the subject of much wrangling between environmental groups and agribusiness, with the environmental lobby successfully arguing for retention of the 80% clause for Amazonia. As already mentioned, this stipulated that landowners in the Amazonia biome can only log 20% of their land, 65% in the Cerrado biome. The agriculture lobby's success came in adding flexibility to many of the clauses, and especially in an amnesty for all deforestation up to 2008. All this saw drastic reductions in the «passivo ambiental», and illegal logging and land grabs were retrospectively legalised. The amnesty also created a new loophole for the legalisation of illegal deforestation by registering it as «up to 2008».

20 More information at: <https://amazonia.org.br/2017/07/o-drible-do-gado-a-parte-invisivel-da-cadeia-da-pecuaria/>

21 This refers to the goals of the national climate policy. According to climate goals to which Brazil has committed internationally, the reduction would have to be achieved by 2025

Passivo Ambiental – illegal deforestation

Logging on private land which goes beyond that which is legally allowed is known by the Brazilian environment agencies as «Passivo Ambiental». By law, this illegal logging must be compensated for and restored. Thanks to the new Forest Code, this «Passivo Ambiental» fell by 58%: from around 50 million to 21 million hectares. Experience shows that all targets aimed at reducing «illegal deforestation» are extremely dubious, for the definition of «illegal» cannot be changed overnight.

https://www.socioambiental.org/sites/blog.socioambiental.org/files/nsa/arquivos/artigo-codigo-florestal_britaldo_soares_sae_2013pdf.pdf

In the Forest Code, the amnesty was linked to a commitment to create a GPS-based environment registry for land ownership in Amazonia, based on satellite images. In other words, landowners must set out the environmental situation on their land, and show to what extent it meets the regulations (essentially the 80% rule). This should be achieved through the «Cadastro Ambiental Rural» (CAR) instrument. CAR is promoted by the government as a key breakthrough in the fight against deforestation, and is also supported by German development cooperation (EZ). This process was originally meant to have concluded by the end of 2017, but the deadline was recently extended to the end of 2019. Environmental licensing is not linked to proof of ownership. Instead of promoting strict compliance with environmental regulations, CAR seems at first glance to just add to the already complex and confused situation of land rights in Amazonia. Private CAR licences for public land and in protected areas have been issued illegally but treated as virtual land titles.

CAR – an ineffectual placebo?

A major study cast doubt on the effectiveness of CAR as a means of combating deforestation. The authors of the study, Raoni Rajão and Andréa Azevedo, come to the following conclusions: «CAR is becoming an excellent example of a good intention that is paving the way to hell». A study now shows that CAR has failed in both its aims: Its launch did not reduce illegal deforestation, and just 6% of owners have taken measures to restore deforested land. (...) «The owners noticed, that not to register with the CAR carried a high price, because of access to loans,» said Azevedo. «The stick is small, as is the carrot,» said Rajão in summary. The problem is that there is nothing to be gained from regulation. Once registered, the owner has access to loans, does what he likes with his land, and does so with impunity.»

The two authors were not surprised. In 2012, together with Marcelos Stabile they published an eight-year analysis of SLAPR (a predecessor of CAR). They discovered that after the third year of implementation, deforestation in the registered tenures was greater than in those that were not registered. This occurred because landowners used SLAPR to obtain an environmental licence for their farms. Once they had the paperwork, they simply disregarded the registry's provision without fear of prosecution. «The rural elite looked at the system and turned it on its head.»

<https://www.revistaplaneta.com.br/monitoramento-subvertido/>

Along with the amnesty provided for by the Forest Code, there were other political indications in recent years which were inconsistent with the aim of reducing deforestation. This trend appeared to accelerate under the governments which took office following the ousting of President Dilma Rousseff as the result of a highly controversial impeachment process. A number of legal initiatives were launched to reduce the size of protected areas, and to drastically cut the budget of Brazilian environment agency IBAMA. In addition, the budget for controlling deforestation in Amazonia shrank from 121 million to 65 million reals between 2013 and 2016. The number of inspectors fell by 30% over the same period.²² These initiatives removed the two central pillars which could have reduced deforestation: The establishment and consolidation of protected areas and effective control of illegal deforestation. The policies of recent years, stretching back to the Dilma Rousseff government, are now being tightened and radicalised by the Bolsonaro government.

Other factors are fuelling this negative trend. In 2014, the massive Belo Monte dam project was launched in the middle of the Amazon, so raising the prospect that other dams would be built in the region. A new mining boom in Amazonia is also very much on the horizon; it is highly likely that environmental regulations will be made more «flexible» to accommodate this.

²² More information: <http://www.observatoriodoclima.eco.br/deter-do-b-abre-polemica-entre-mma-e-inpe/>

Climate policy discovers the forest: The rise of REDD+

Since the 2007 UN Climate Change Conference held in Bali, the reduction of deforestation has come very much to the fore in international climate negotiations, and is also an increasingly influential force in Brazilian politics. The following instances and assumptions contributed to the growth of REDD+ as an instrument of development cooperation and global climate protection:

- The reduction of deforestation had already been raised as a goal in other programmes, but REDD+ consistently focused on the issue, and linked it to the reduction of CO₂ emissions. This linkage to global climate policies held out the prospect of fresh momentum and new finance for the forest.
- The reduction of deforestation and emission can be measured. Right from the start, REDD+ was conceived as a «results-based» mechanism. The link with generally accepted measurable results – after all, who is against a fall in emissions? – made REDD+ extremely attractive and promised a solution to the many problems of development cooperation, especially in view of previous experience with PPG7. Instead of a complex approach without a measurable reduction in deforestation, REDD+ pledged to concentrate on one central figure.
- A results-based approach would tie payments to the adoption of commitments by the recipient country, which was now responsible for achieving very specific goals. REDD+ can therefore strengthen «ownership» of actions by forest nations.
- Payment of funds tied to proof of deforestation adds legitimacy to development cooperation.
- From the start, REDD+ was designed as a funding mechanism, creating a huge finance resource through monetisation of CO₂ which is stored by the forest and not released. The forest's storage function was seen as an ecosystem service which could be monetised. As (prevented) CO₂ actually has a cost, the monetary value of the CO₂ stored by the forest can be calculated. REDD+ was based on the expectation that non-public money would be mobilised on a large scale for forest protection.

The latter aspect of REDD+ both raised expectations and attracted considerable criticism and resistance, for monetisation of the stored CO₂ for a market is not a straightforward matter. The only practical way of doing this which does not rely on public funds is a compensatory programme, or «offsetting» as it is commonly known. An actor purchases a certificate, which is generated by reductions in deforestation, in order to offset emissions that are unavoidable or that the actor does not wish to prevent. From a climate policy perspective, this is a zero-sum game, but could provide huge resources for forest protection, at least this was the hope in the early days of REDD+. Economic activity and the idea of a «green economy» were meant to come together to create a new basis for environmental protection through monetisation of environmental services.

Since then, a certain degree of disillusionment has set in. The initial expectation that REDD+ would be «quick, easy and cheap» has proven to be a mirage, a fact largely recognised today even by advocates of REDD+ and REDD+ project operators. The huge hoped-for sums for forest protection from the private sector have failed to materialise; all that has emerged is a small voluntary market (e.g. for offsetting of flights). Nevertheless, there are a good number of REDD+ mechanisms and projects in use and in progress right across the globe, indeed in Brazil the key approaches and main financial resources for international collaboration in the Amazon, have also been developed within the context of REDD+.

National REDD+ and the Amazon Fund for Forest Conservation and Climate

The emergence of REDD+ in Brazil was and remains the subject of heated debate within civil society, with the main arguments put forward by two opposing camps. A pro-REDD+ lobby has coalesced around the Fórum Amazônia Sustentável, with the Instituto de Pesquisa Ambiental da Amazônia (IPAM) also playing a key role. From the outset, this organisation based in Pará state took an active role in international climate talks aimed at developing the concept. Since 2009, arguments critical of REDD+ have been voiced by the Grupo Carta de Belém with strong backing from the NGO «FASE». Grupo Carta de Belém has been supported by the Heinrich Böll Foundation in Brazil from its inception.

It goes without saying that no one is against the reduction of (emissions due to)



deforestation. At the heart of the debate, both then and now, is the question of whether REDD+ is viable as a market mechanism which is and can be financed by «offsets». IPAM and others have been active both nationally and internationally from the start, and have been open advocates for finance through offsetting. This view was justified by the hope not only of far greater funding, but of more flexible implementation. The positions of the pro-offset camp were represented by some elements of the environmental agencies and the governors of the Amazonian states, who were motivated by the prospect of huge sums of money.

A CO₂ gold mine?

According to official figures, Brazil saved around 30 billion metric tons of CO₂ between 2006 and 2012 by reducing deforestation in Amazonia. If this is converted to a cash amount based on the low price for CO₂ (US\$5 per metric ton), then these are certainly vast sums. A forum of Amazonian governors has argued consistently in recent years that Brazil, and the federal states in particular, have a claim of some kind to these enormous payments. The claims were set out in 2015 in an open letter, the Carta de Cuiabá. As part of these claims, the government of Mato Grosso calculated that it was entitled to US\$10 billion which they could negotiate on the international market. Against this backdrop, it is hardly surprising that Amazonian governors are lobbying for Brazil to remain bound by the Paris Climate Agreement.

<http://g1.globo.com/mato-grosso/noticia/2015/05/governadores-de-mt-e-8-estados-da-amazonia-assinam-carta-de-cuiaba.html>

Calculations regarding the claims by federal states are set out here in full: <https://idesam.org/publicacao/contribuicoes-para-estrategia-nacional-redd-2-edicao.pdf>

Goldmine CO₂

According to official data, Brazil saved about 30 billion tons of CO₂ by reducing deforestation in Amazonia between 2006 and 2012. Even if these are converted into money with a low price for CO₂ (five US\$ per ton), huge sums come out. In recent years, Amazonian governors, who are united in a forum, have systematically argued that Brazil, and the states in particular, are entitled to such huge payments. The claims are summarized in an open letter from Carta de Cuiabá in 2015. For example, the government of Mato Grosso calculates that it is entitled to US\$ 10 billion, which they can negotiate on the international market. Against this background it is also understandable that the governors of Amazonia are calling for Brazil to remain in the Paris climate agreement.

On an international level however, responsibility for handling the annual UN climate talks lies with the Ministry of Foreign Affairs (Itamaraty); the Ministry has always rejected funding from REDD+ through offsetting, and is supported in this by the Carta de Belém. The result of the lengthy negotiations is that the door would be left open to funding from REDD+ and that no offset mechanism would be established within the framework of the United Nations Framework Convention on Climate Change (UNFCCC). According to this, Brazil would meet the criteria for receiving results-based finance set out in the international climate convention that were negotiated as part of the «Warsaw Framework» of 2013.

A national REDD+ strategy (ENREDD+) was approved in Brazil in 2015, and a national REDD+ commission (CONAREDD+) established with input from civil society. Representatives of civil society were drawn from the Association of Indigenous Peoples of Brazil (APIB) and the National Council of Rubber Tappers (CNS)²³, with Observatório do Clima and the Grupo Carta de Belém as their substitutes.

The token representation granted to civil society with just two out of thirteen seats was criticised from the start. The other 11 seats are filled by representatives from a number of government institutions.²⁴ At the start of 2018, the Observatório do Clima suspended its cooperation with CONAREDD+ (Comissão Nacional para REDD+), arguing that they had little opportunity to make their voice heard. The other members remained to try and maintain the flow of information and to prevent changes with regard to offsets.

As the national REDD+ process ruled out establishing REDD+ as a market mechanism based around offsets, acceptance of REDD+ grew as part of «políticas públicas», i.e. public politics. Three main strands have emerged in Brazil in recent years with regard to the implementation of REDD+: Private REDD+ projects to generate tradeable CO₂ certificates, and offer these on the voluntary market²⁵; projects as part of the «REDD+ Early Movers» (REM) in the federal states of Acre and Mato Grosso, financed and supported by the German EZ (FZ and TZ); and the Amazon Fund.

Amazon Fund for Forest Conservation and Climate

The Brazilian Fundo Amazônia is apparently the largest REDD+ programme worldwide, becoming a key funder of numerous and extremely diverse initiatives of Brazilian civil society. The fund has received donations of US\$ 1.142 billion from the Norwegian government, but also US\$ 68 million from KfW in Germany, and US\$ 7.7 million from Brazilian oil corporation Petrobras.²⁶ The fund is managed by the national development bank, BNDES; funding for Amazonia is therefore out of the hands of the Ministry of the Environment. The GIZ provides technical assistance. Total funding came to an

²³ The acronym CNS was retained for Conselho Nacional dos Seringueiros, now renamed Conselho Nacional de Populações Extrativistas (National Council of Rubber Extractors).

²⁴ The exact composition is set out here: <http://redd.mma.gov.br/en/the-national-redd-committee>

²⁵ Overview of the voluntary CO₂ market: <https://www.forest-trends.org/publications/voluntary-carbon-markets/>

²⁶ Figures (rounded) from Fundo Amazonia: <http://www.fundoamazonia.gov.br/pt/home/>

impressive US\$1.218 billion, finally fulfilling the hopes of billions in funding for the Brazilian Amazon stretching back to the 1990s.

However, finance is now linked to achieving results, i.e. the measurable and verifiable reduction of deforestation. This reduction must be achieved on a national and not a project level, meaning that individual projects do not have to show a reduction in deforestation, or develop their own carbon accounting. In addition, the Brazilian federal government has declared that none of the national carbon reductions from a slowdown of deforestation will be used as internationally traded emissions credits. All this has led to a widespread acceptance of the main aspects of the Amazon Fund, and an acknowledgement that it should not be the focus of criticism surrounding REDD+.

Criticism of the Amazon Fund by civil society stems from two main issues: inadequate involvement, the high barriers to project funding, and the complex demands on project management. Both largely exclude local groups and social movements from project funding. This complaint is explicitly voiced by representatives of indigenous peoples, who say very clearly that the Amazon Fund cannot fill the hole left behind by PDPI.

Response of indigenous groups to the Amazon Fund

«Since its inception, Brazilian civil society, indigenous representatives, and representatives of non-governmental organizations, have been demanding that the Amazon Fund provide support for projects of local organizations, such as indigenous, quilombolas, extractive-farmer, and marginal-farmer associations. Autonomous project management is critical to strengthening the organizations and traditional communities, and key in ensuring long-term perspective for the results of the Amazon Fund. However, access to the resources of the Amazon Fund for these organizations, and for all civil society organizations for that matter, is proving remarkably difficult. The policies and requirements to be met for the approval and contracting of projects, although in compliance with the standard procedure adopted by the management institution, do not correspond to the reality, structure, or scope of these organizations' activities. This fact is reflected in the panorama of the Amazon Fund's project portfolio, in which, of the 104 existing projects, only 11 benefit indigenous lands, and only one single local organization project has been commissioned directly by the Amazon Fund, namely the project of the Ashaninka Association of the Amônia River – API-WTXA, signed off in April 2015.»

<http://www.kaninde.org.br/carta-das-organizacoes-indigenas-e-indigenistas-sobre-a-criacao-de-novo-mecanismo-de-financiamento-de-projetos-dos-povos-indigenas/>

One attempt to get round this dilemma is the financing of a sub-fund, the Fundo Dema, a small project fund managed by FASE (Federação de Órgãos para Assistência Social e Educacional). The fund is universally mentioned in interviews as a positive example. Representatives of indigenous peoples are now trying to establish (in collaboration with the Coordenadoria Ecumênica de Serviço (CESE)) a similar sub-fund specifically intended for indigenous peoples.

The involvement of Fundo Dema and FASE means that the camp opposing REDD+ will also have a voice in the Amazon Fund. This may also help stimulate a critical debate on the concept, strategy, and implementation of the Amazon Fund that is so desperately needed in Brazilian civil society. The contrast with PPG7 is striking.

As a REDD+ programme, the Amazon Fund is tied to a measurable reduction in deforestation, and as such is the perfect example of how REDD+ functions. The reduction in deforestation is measured according to a «reference level», known as «forest reference emission level» (FREL) in REDD+ jargon. In the case of the Amazon Fund, payments during the period from 2001 to 2015 are linked to the average deforestation level of 1996-2010. This means that the years of extremely high deforestation levels, 2004 to 2006 are also used in the calculation, and the average logging rate for the period is very high at 16,540 km². As a reminder, the deforested area in 2011 was 6,841 km². In other words, in this case REDD+ is acting as a kind of reward for past efforts made before the introduction of REDD+ funding. This is not necessarily in line with the original concept of REDD+, but is justified as motivation for actors in the early phase of REDD+. In the case of Brazil however, this has led to the absurd situation of all payments for REDD+ projects having been made after a period of drastic slowdown in deforestation. Thanks to the high reference level, significant payments have been justified even though deforestation is on the rise. In the case of the Amazon Fund, Brazil would have been able to double its deforestation rate since 2011 and still receive funding regardless. This has another fatal effect, for the reductions achieved are cumulative. Based on this logic, Brazil is entitled to US\$ 21.5 billion. As the reference level varies according to the programme, higher figures may also be reached. If we take the reference level for the UNFCCC (16,640 km²), we get a figure of US\$ 36.4 billion!²⁷ The Amazon fund would only guarantee a fraction (around 6% of the lower figure) of the payments to which Brazil would be entitled based on the «carbon accounting». The consequences of these calculations are alarming. Expectations of massive payments have been raised in the REDD+ process, and these expectations have been taken extremely seriously in Brazil and, in particular, in the federal states within Amazonia. It is unrealistic to assume that such payments could be made on anything even approaching this scale.

Unmet expectations are a problem and can serve as a justification for deforestation: «Look, the international community doesn't want to compensate us properly for reducing deforestation (after all, Brazil did not simply invent these figures). If that's the case, we may as well carry on clearing the forest.»

27 Cf.: <https://forestsnews.cifor.org/57836/the-36-billion-dollar-question?fnl=en>

There is another consequence of this mechanism which is a cause for concern. The problem outlined above, i.e. payment even though deforestation is on the rise, will actually become less relevant in future, for the Amazon Fund at least. For all payments from 2016 onwards, the reference level is based on the average rate of deforestation between 2006 and 2015. This figure is just 8,150 km². This is still higher than the average logging rate in 2009 (7,464 km²), the year in which the clear trend towards reducing deforestation came to an end. Now however, there is a risk that the Amazon Fund cannot generate any new claims, as deforestation in 2018 was 7,900 km², i.e. dangerously close to the reference level, and viable payments could then no longer be made to projects for indigenous territories and protected areas. The rights of indigenous peoples would then also have to be supported if deforestation was not reduced due to national factors.

Instead of «easy, quick and cheap», REDD+ has proven to be complex on an almost absurd scale, not least because the results are not in any way clear. All these complications are completely unnecessary – unless we are still speculating about a future market mechanism.

REDD+ – a results-based mechanism without results?

One of the basic ideas of REDD+ is the link between payments and proven performance, in this case reduction of deforestation. The evidence surrounding this could not be clearer. REDD+ was implemented from 2008. As already mentioned, between 2004 and 2009 there was a significant and dramatic fall in deforestation. This cannot have been down to the REDD+ approach though. From 2009, the trend towards significant and continuous declines in deforestation ended, and even began to climb from 2012. This trend was even more evident in the new figures for 2018, indicating that a reduction in deforestation is not in sight. This development should be cause enough to revive discussion – including old and sometimes moribund debates – of REDD+. The old ground regarding the basic premise of REDD+ should not be covered, but rather the issue of what benefit REDD+ actually provides and what it doesn't do.

The term «results-based payments» suggests that there is a direct link between payments and results, but in reality, this relationship is more complex. REM explicitly promises payments for past efforts, as a kind of reward. To this extent, the project approach justifies the flow of payments over years for reduced deforestation, even though deforestation is no longer in decline or indeed has risen, as happened in Acre state. Reduction of deforestation is based on a reference period, in relation to which actual deforestation must be lower. If the reference periods include the years of major reductions (before 2009), then payments can also be made for reductions in deforestation even when deforestation is rising. This is, at the very least, rather surprising, and is rarely mentioned in popular depictions. Even if this can be justified for a certain period, at some point it has to come to a stop if the REDD+ logic is not to collapse under its own absurd contradictions.

The figures for deforestation rates in 2018 paint a clear picture: They are only slightly higher for Amazonia, but much higher for the REM states of Acre and Mato

Grosso than in 2009. For the relatively small state of Acre, which is still seen as a beacon of sustainable development, the result is particularly devastating.

REDD+ in Brazil – a brief summary

What comes next? By no means everything that was supported by the REM or Amazon Fund was and is useless or pointless. But the fact remains that the current REDD+ approaches are not in a position to promote, let alone guarantee, the reduction of deforestation. The result of many years of promoting REDD+ in Acre is extremely instructive. An evaluation by KfW contains the following very striking sentence: «The state of Acre continues to be a pioneer of forest preservation politics in both Brazil and internationally. By way of qualification, it should be mentioned however that a substantial link between reduced deforestation and the project could neither be proven nor denied.»²⁸

In view of the complex causes of deforestation, REM/REDD+ is an unsuitable method of reducing deforestation in Brazil. Many worthy projects and approaches are promoted within the context of REDD+, but they have little to no influence on the dynamics of the development model in Amazonia. By linking its benefits to verifiable reduction of deforestation, REDD+ has overextended itself. The consequences of this are a real cause for concern. If payments are tied to proven reductions, they must sooner or later be stopped or justified by ever more nonsensical contortions which put the plausibility of the project at risk. This means that even worthy funding such as the support of indigenous peoples and traditional communities, consolidation of protected areas, backing of civil society initiatives, or even funding of the Brazilian environment agencies to guarantee effective control of illegal deforestation are not only at risk, but would soon have to be axed completely. In Acre, deforestation in 2018 was significantly above the reference level of 330 km² – a figure that is curiously still well above the figure of 2009 (167 km²).

International cooperation must stop labouring under the illusion that it can reduce deforestation in such a complex country, and reflect on how it can make a real difference.

Like Brazil's national climate policy, REDD+ depends on the historical capital earned from reducing deforestation, as happened in the years leading up to 2009. In the meantime, there are no clear political signs that further reductions in deforestation are likely. Emissions will also continue to rise in Brazil, but all the while the country is receiving payments for reducing deforestation. At best then, REDD+ acts as a reward scheme for reductions which happened without and before REDD+, but are no longer clearly linked to policies which encourage reductions, or even make them likely. The future of the programme looks bleak.

²⁸ The quote comes from p. 14 of the evaluation: https://www.kfw-entwicklungsbank.de/PDF/Evaluierung/Ergebnisse-und-Publikationen/IKI-Evaluierungen/IKI_Brasilien_Acre_D.pdf

The main problem now is that combatting deforestation is not only, but also, linked in Brazil to a mechanism which has produced no results to date. The suspicion exists that this is more to do with a design flaw in REDD+, in other words the assumption that deforestation can be seen as a problem treatable in isolation that can be fought using specific approaches to reduce deforestation. These approaches cannot continue to be viable if deforestation is linked to complex causes, i.e. is tied to the specific development model of a country or region. This is now very evident in Brazil.

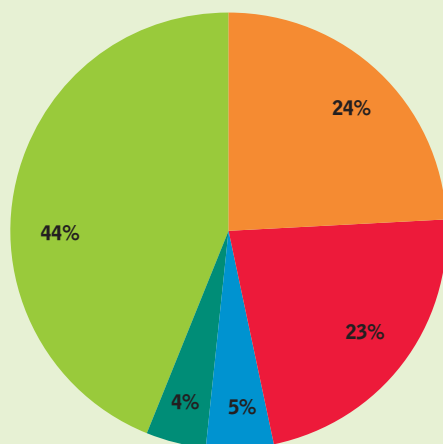
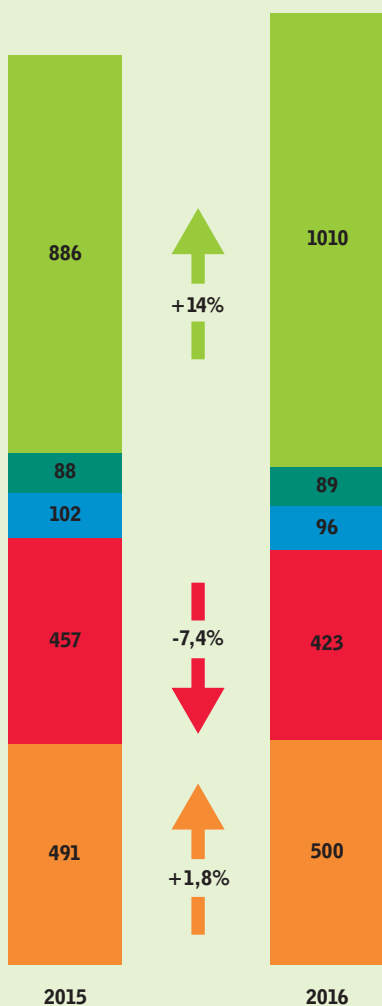
A problem for climate policy

The current deforestation trend is not only a problem for an international funding mechanism, but for national climate policy. The dependence of Brazilian climate policy on reducing deforestation is now becoming a problem, as a glance at the figures of recent years will show. In 2015 and 2016, Brazilian emissions rose by 12.3%, while in the same period, the economy was in deep crisis and GDP fell by 7.4%. «Brazil is therefore the single major power in the world that is increasing its emissions without adding any value to the economy,» reported the Observatório do Clima.²⁹

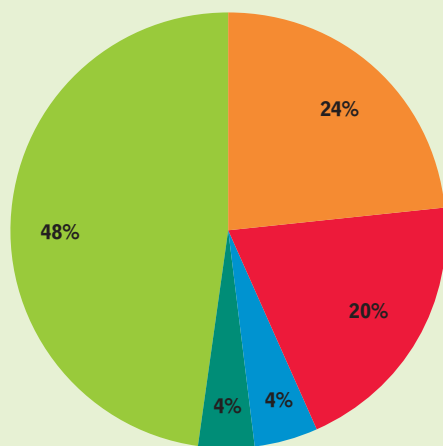
This is solely and exclusively down to a rise in emissions due to deforestation and cattle ranching, as energy-related emissions fell (by 7.4%), as did those of crisis-hit industry (5.9%).

²⁹ <http://www.observatoriodoclima.eco.br/emissoes-brasil-sobem-9-em-2016/>

Brazil's rising emissions
CO₂ in million metric tons



2015



2016

■ Cattle ■ Industrial ■ Waste
■ Energy ■ Deforestation and other changes of use

Source: SEEG - Sistema de Estimativas de Emissões e Remoções de Gases de Efeito Estufa, <http://seeg.eco.br/>

3 The development model battleground – old problems and new trends

The development of Amazonia and the dynamics of deforestation are not only explained by agriculture and cattle ranching, and in the logic of land grabs, but also by investment in mammoth energy generation projects as well as in infrastructure and mining.

The best-known example of a mega project is the Belo Monte dam, the third largest in the world, constructed in the middle of the Amazon. It was under the Lula and Rousseff governments that work on massive dam projects in Amazonia began with the construction of dams in Rondonia (Santo Antonio and Jirau) in addition to Belo Monte. Mobilisation of national sources of funding was crucial to the realisation of the new dam projects.

According to the plans of the then government, which were then adopted by its successors, this was just the start: The plan was to construct 43 dams in Amazonia! Specific plans for dam projects have so far concentrated on the Rio Tapajós, a tributary of the Amazon. The resistance of the indigenous Munduruku people and of traditional communities and other population groups in the region also attracted international attention and achieved some success in that the biggest dam project Sao Luiz de Tapajós was shelved, in other words halted until further notice.

The argument surrounding the mega dams in Amazonia shows that governments are unable to implement all their plans. This is not only down to difficulties in obtaining licences and the resistance of the population, but also in the lack of investment and finance. Since 2015, a deep political and economic crisis has prevented the financing of major projects and infrastructure investment. All the major construction companies were embroiled in a corruption scandal. Investment in Amazonia is of a «stop and go» nature in that fantasy plans are not easily distinguished from real developments. However, the construction of large dams also relate to the capacity of the Brazilian government and the private sector to pump huge, if overdue, investment into Amazonia.

The expansion of agricultural production, enhancement of infrastructure, major projects and mining are not separate development strategies, but often overlap. Even if all elements are not always present at the same time everywhere, taken together they form the key vectors of the «development model» which has been established in Amazonia in recent years. The rest of this study will not go into great detail with regard to the large dam network, as this has been covered exhaustively in recent



years, including in German by other publications. The focus here will fall upon the mining sector and infrastructure projects in the context of Amazonia's monetisation strategies.³⁰

The mining time bomb

Amazonia was primarily seen as a mining province back in the 1970s and 1980s, when the establishment of the Grande Carajas project, which involved opening the world's largest iron ore mine, raised huge expectations and provoked an international debate. In 1987, Elmar Altwater published *Constraints in the Global Market* (Sachzwang Weltmarkt), which addresses the export-based development of Amazonia, and cites Carajas as an example of the «enclave economy».³¹

Since then, mining in Amazonia has become a reality, but is mainly concentrated in Pará state. Some 87% of mining activity in Amazonia takes place in this state, where mining products have become the key export sector by some distance.³² Iron

³⁰ The free trade zone in Manaus (Zona Franca de Manaus) was a specific milestone in Amazonia's development history. The zone transformed Manaus into a semi-industrial enclave, which is sustained by tax incentives. Although these incentives were extended in 2014 for another 50 years, the Zona Franca remains an isolated phenomenon which is dependent on subsidies.

³¹ Elmar Altwater: *Sachzwang Weltmarkt – Verschuldungskrise, blockierte Industrialisierung, ökologische Gefährdung – der Fall Brasilien*, Hamburg 1987.

³² See: http://seer.cgee.org.br/index.php/parcerias_estrategicas/article/viewFile/734/674

ore retains its dominance, though aluminium is gaining in importance. Bauxite, the basis for aluminium production, is found in abundance in Amazonia and is mined in a number of locations. Aluminium production is an extremely energy-intensive process, and is therefore very closely linked to dam construction and electricity generation. One aluminium plant alone (Alubras) consumes 20% of the energy generated by the Tucuruí dam.³³ Both aluminium and energy are therefore exported as a result of the process. The main bauxite deposits can be found on the Trombetas River, a region with a high concentration of quilombos. Mining is the source of much conflict here.³⁴

Mining in Pará state

A glance at the export balance of the most populous federal state in the Amazonia region reveals some surprising facts: Iron ore makes up 45% of exports in Pará state, with copper at 13% and aluminium at 11%, followed by potassium and bauxite. In total, some 80% of exports are made up of mining products. Soy comprises just 3%, with similar figures for beef and cattle exports. Overall, Pará exported US\$10 billion of products, and imported just US\$1 billion.

The dominance of mining in Pará is also reflected in the gross domestic product (GDP) structure. While the agriculture sector enjoyed a 12.4% share, mining/industry came to 28.5%.

GDP figures refer to 2015 and can be found here: <http://www.fapespa.pa.gov.br/produto/notas/127>. Industry's share not only covers mining.

Export figures refer to 2016 and can be found here: <http://www.mdic.gov.br/index.php/comercio-exterior/estatisticas-de-comercio-exterior/balanca-comercial-brasileira-unidades-da-federacao?layout=edit&id=2206>

Even if mining represents the cause of many socio-ecological conflicts, the future of mining in Amazonia is far more of a threat than the present situation. This was also made clear to global observers when the Temer government issued a decree approving mining concessions in the resource-rich RENCA reserve in August 2017, and with it lifted the ban on mining in the 4.6 million hectare protected Amazon area – an area larger than Baden-Württemberg (35. km²) – which had been in place since the 1980s,³⁵ though national and international protests led to the decree being reversed. The

³³ See: <https://valeqvale.wordpress.com/2012/09/27/o-maior-contrato-de-energia-do-brasil/>

³⁴ The Joint Conference on Church and Development (GKKE) has spent a number of years investigating problems linked to the aluminium industry in Brazil. A brief overview with further reading in Christian Russau: *Abstauben in Brasilien* (Cleaning up in Brazil), Hamburg 2016.

³⁵ RENCA was set up as a mining reserve in 1984 under the military dictatorship, with the regime openly preventing international groups from accessing the area. Over the years that followed, a large part of RENCA was turned over to nature reserves and indigenous territories.

RENCA case shows that mining is once again high of the list of priorities; it also shows however that the expansion of mining in Amazonia is a sensitive issue.³⁶

Work on reforming the general framework for mining projects is in fact ongoing. Another stated goal is to increase the share of mining in GDP from 4% to 6%.

The Bolsonaro government did, and still does, expect this process of «flexibilisation» to gather pace. Despite this, the serious mining accident in Brumadinho has had a significant impact on the debate, and has offered encouragement to politicians and NGOs who argue for stricter criteria in granting licences and independent oversight. To recap the details of this accident, more than 200 people perished following a dam collapse in Brumadinho in January 2019.

Politically, the field remains complex and unclear, though illegal mining seems to continue unabated.

36 The direct impact of mining on deforestation has always been considered negligible, but it was also clear that this does not reflect the influence of mining on deforestation dynamics. A study published in October 2017 by Vermont University attempted to assess the influence of mining on deforestation, and came to the conclusion that almost 10% of deforestation in the Brazilian Amazon is ultimately down to mining. An overview of the study can be seen here: <https://news.mongabay.com/2017/11/mining-activity-causing-nearly-10-percent-of-amazon-deforestation/>

The new Amazonian gold rush

Illegal wildcat mining, known as «garimpo», which normally involves gold mining, has increased exponentially. The RAISG network published an updated overview of illegal mining in Amazonia in December 2018, and identified 2312 locations and 245 areas of illegal activity in the Pan-Amazon. The greatest concentration was found in Venezuela. Most of this is gold, diamond and coltan mining, with 453 «garimpos» in 132 areas in Brazil alone. The greatest concentration can be found in the Tapajós region, predominantly in protected areas. 18 cases were identified in indigenous territories, including in Yanomami territory. «Illegal mining in indigenous territories and protected areas has grown exponentially in recent years,» says Beto Ricardo, Executive Secretary of RAISG, in presenting the study.

President Jair Bolsonaro was a prominent lobbyist for «garimpos» in his time as a federal deputy. The expectation was that he would move to regulate these illegal mines, though this had not been forthcoming as of May. The dismantling of the Ministry of the Environment and criticism of penalties had the desired effect. The clear determination of the government to ignore illegal activity only serves to fuel the already evident expansion of «garimpo».

More on this study can be found at:

<https://www.publico.pt/2018/12/10/mundo/noticia/ha-2-mil-locais-amazonia-mineiros-ilegais-1854210>

However, the case of RENCA also highlights the difficulties involved in extending mining concessions in Amazonia. Around 69% of the envisaged «mining reserve» in this area is located within indigenous territories and protected areas, for which mining concessions need to be granted – a situation typical to the Amazon. Under the current legislation, mining licences cannot be issued in indigenous territories and protected areas, or at the very least it is difficult to do so. This applies to almost 50% of the Amazon. Current law prohibits mining in indigenous territories and most protected area categories without the explicit approval of the national parliament (National Congress). In protected areas which allow direct use, mining may be permitted in principle, but must also be approved by the relevant authorities.³⁷ The expansion of mining into protected areas and indigenous territories are the subject of heated debate in Brazilian society.³⁸

³⁷ A detailed overview of the legal situation can be found in an outstanding study published by the WWF: https://wwfbr.awsassets.panda.org/downloads/mineracao_na_amazonia_legal_web.pdf

³⁸ There is a good overview in this article by Julianna Malerba: <https://wrm.org.uy/articles-from-the-wrm-bulletin/section1/brazil-mining-and-biodiversity-from-environmental-degraders-to-environmental-services-providers-when-the-line-between-destroying-and-conserving-is-merely-rhetorical/>

If mining - considering a total of 4181 mining projects - in the indigenous territories was allowed, this would affect the following territories and peoples:



216

indigenous territories



128

indigenous peoples

Source: <https://terrasindigenas.org.br/pt-br/node/41>

Infrastructure serving the soy economy

Just as Pará is the major mining state in Amazonia, Mato Grosso is the state that has seen a vast expansion of high-tech agribusiness, earning its sobriquet as Brazil's soy bean state. According to various studies, the share of agribusiness in its economic activity (GDP) is around 50%³⁹, which is much higher than the Brazilian average. As in Pará, Mato Grosso has a large export surplus, and the state's economy is heavily skewed towards exports. The main export product is soy. Overall, the soy industry makes up more than 60% of exports, followed by maize with a share of at least 19%. In contrast, mining products play no role in the list of exports.

This brief glance at the two most economically important states in Amazonia shows clear differences in their economic structures, but the soy boom in Mato Grosso is increasingly a key link in the development of the two states.

³⁹ See: <http://www.mt.gov.br/economia>

Soy boom with no end in sight

Soy production in Brazil is expanding rapidly, with no end in sight and new records set in 2017/18. Mato Grosso is the undisputed number one soy state with yields of 30 million metric tons, more than 25% of the entire national soy crop (117 million metric tons). Soy production in Brazil has doubled in the last ten years, with exports of more than 80 million metric tons in 2018. Soy is therefore Brazil's most important export, contributing US\$32 billion, according to figures from the Associação de Comércio Exterior do Brasil (AEB), followed by crude oil (US\$24 billion), and iron ore (US\$19.9 billion). Around of the Mato Grosso crop is exported, 15.2 million metric tons in 2016. Pará in contrast exported just 818,000 metric tons. Some 79% (around 11.6 million metric tons) was exported to one country, China. The EU was the recipient of around 15% of Brazilian exports; most went to Spain (6.5%) and the Netherlands (4.7%).

All figures according to: Soybean transportation guide, Brazil 2017: <https://www.ams.usda.gov/sites/default/files/media/BrazilGuide2017.pdf>

The images of endless soy monoculture farms in Mato Grosso have become familiar, but the growth of soy cultivation is not confined to the expansion of soy fields. Soy is not a staple food for people in the region, but is grown for export, and so the logistics of transporting the crop is hugely challenging. Soy is also a key factor regarding infrastructure investment.

This key «front» of infrastructure expansion in Amazonia is discussed under the title «Northern Exit» («Saida pelo Norte»). The main concern is to speed up transport of the crop from soy regions in Mato Grosso to the ports. Most soy from Mato Grosso is still transported by truck to the ports of Santos and Paranaguá more than 2,000 kilometres away. There is a consensus within the mainstream of Brazil's agriculture politics that the logistical bottlenecks hindering further expansion of soy cultivation need to be resolved. The business sector is well organised and has stepped up its lobbying activities. It has developed the «Norte Competetivo» («Northern Competitiveness») concept, and has pooled its resources to form a «Movimento Pro-Logístico» («Movement for Logistics»). The common consensus is that logistics and infrastructure should be expanded primarily for transporting soy. The soy boom in Mato Grosso is therefore a key economic driver for a region far beyond Mato Grosso, as the nearest ports navigable to shipping lie in Pará, on the Tapajós River.

At the heart of these logistics projects lies the «Tapajós corridor», which will connect agricultural regions with the Tapajós. Various proposals are being discussed and developed to clear this logistical bottleneck. Running through the heart of the soy region, the first major project, extension of the BR 163 highway linking Cuiabá with Santarém, is already largely complete. Although only a small section of road remains untarred, the new road has already been damaged, meaning that transport is difficult

during the rainy season. Agribusiness giant Cargill has spent years constructing a port facility in Santarém which has now proven to be too small. The final section of the BR 163 to Tapujós will run through the centre of the city.

Competitors are looking at alternative routes. Bunge and the Ammagi Group, which belongs to soy king and former Brazilian Minister of Agriculture, Blairo Maggi, are looking at shorter land routes. They are building port facilities in Mirituba, a region comprising the city of Itaituba. The soy harvest is loaded onto transport ships there and taken to the port of Santarém where large ships can be docked. Other heavyweights of international agribusiness are also represented in the region: A consortium comprising Louis Dreyfus, Bunge, and Brazilian construction firm Odebrecht, is building port facilities in neighbouring municipality Ruropolis.

It is quite clear however that transport via the BR163 and ports are not enough to keep pace with the anticipated expansion, so discussions are ongoing regarding two other projects.

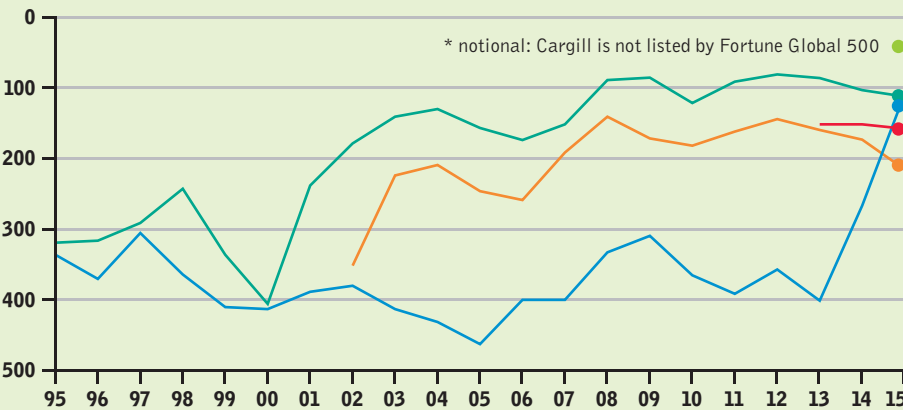


Amazonia – the giants of the global market are present

«Four corporate groups dominate the import and export of agricultural commodities: Archer Daniels Midland, Bunge, Cargill and the Louis Dreyfus Company. Together, they are known as the «ABCD Group» or simply «ABCD». Archer Daniels Midland (abbreviated to ADM), Bunge and Cargill are US companies, while Louis Dreyfus has its main office in the Dutch capital of Amsterdam. All four were founded between 1818 and 1902, and apart from ADM, they remain to this day under the influence of their founding families. They trade, transport, and also process, many commodities. The Groups own ocean-going vessels, ports, railways, refineries, silos, oil mills, and factories, and enjoy a 70% share of the world market. Cargill is the number one, followed by ADM, Dreyfus and Bunge.»

This classic combination was broken up in recent years by the Chinese Cofco Group, which has enjoyed a meteoric rise to the top of the world market rankings, overtaking two companies from the old «ABCD» group on the way thanks to its Brazilian business.

Ranking of agricultural commodity business groups on the Fortune 500 list of the world's largest companies



Revenue from trade, own production, and financial services for 2015 in billions of US dollars:

#37*	CARGILL	US\$ 120.4 billion
#112	ARCHER DANIELS MIDLAND (ADM)	US\$ 67.7 billion
#121	COFCO	US\$64.5 billion
#157	LOUIS DREYFUS	US\$ 55.7 billion
#214	BUNGE	US\$ 43.5 billion

Source: <http://beta.fortune.com/global500>

In 2018, Cofco occupied third place in the soy exporter rankings in Brazil, trailing behind just Bunge and Cargill (cf. <https://br.reuters.com/article/business-News/idBRKCN1P91YV-OBRBS>) The growth of Cofco in the Brazilian soy sector is extremely impressive and reflects the global trend. However, Cofco has established itself as just one of the main actors, and has not succeeded in forcing the traditional traders out.

Ferrogrão: Railway line for soy exports

The «Ferrogrão» project, a railway line from Sinop, capital of the soy cultivation region in Mato Grosso, is well into its planning phase. Estimated costs for the 933 km railway through the Amazon come to around 12.7 million reais (around four billion euros). A conglomerate comprising some impressive names from international agribusiness has been formed to begin construction: Amaggi, Louis Dreyfus, Cargill, Bunge and ADM have come together to support the project. Since December 2017, several public hearings have been held as part of the approval process. Finance has been made available by the Brazilian Development Bank. According to the agreement, 80% of the estimated costs were financed at very favourable terms.⁴⁰

All this indicates that construction of the Ferrogrão is also a priority for the Bolsonaro government. The Minister of Infrastructure, Tarcisio Freitas, has stated that construction of the railway line lays the foundation for increasing soy cultivation by 71%(!) in the region, and promised a «revolution in agribusiness» thanks to this railway line.

One alternative or extension to the line would be to make the Tapajós and its tributary Teles Pires navigable to shipping between Mato Grosso and Itaituba: the Tapajós – Teles Pires water highway.

This project already foundered back in 2012 following an objection by the Public Ministry. It is closely linked to the construction of hydroelectric dams on the Tapajós. After the unexpected failure of the largest dam, São Luiz de Tapajós, the future of dams and water highways is uncertain, so the most realistic path to take appears to be the railway line.

Exports as the basis of «development»

A glance at the most important federal state in Amazonia in economic terms shows a clear pattern: Development revolves almost exclusively around the export of commodities. As already established, these dominate not only production conditions, but also development of infrastructure. The basis of Amazonia's development model is the export of soy and minerals; this focus on exports is far greater than in the rest of Brazil, and contributes significantly to the extraordinary export surpluses. However,

⁴⁰ <https://www.istoedinheiro.com.br/governo-altera-emprestimo-do-bndes-para-ferrograo/>

it is based on relatively few products, and does not produce flourishing landscapes, but only localised projects and destruction of nature and habitats. The export-based sector also wields considerable political influence, and is able to force through its demands, even if the path is sometimes strewn with problems and delays; by doing so, it also controls the flow of investment. This is how an Amazonia of major projects, dams and soy cultivation, continues to expand. This expansion is very closely linked to the growth in deforestation, with the region around the BR 163 road construction project becoming a particular hotspot. However, the drivers of this dynamic are often absent from deforestation statistics. The amount of land used by mining is small, and even soy consumes much less land than cattle ranching. However, the road which is being built to transport soy, also facilitates land grabs, land speculation, and expansion of cattle ranching, and is therefore a factor in deforestation. Protected areas are coming under increasing pressure, as has been seen in the example of the Jamanxim National Forest.

The commodity and export-based development model of Amazonia appears to be a successful model through the lens of mainstream Brazilian politics. The profits from development of large-scale agriculture, of cattle ranching and mining are – as we have already seen – driving factors in encouraging the appropriation and deforestation of large tracts of land. The people of the region, indigenous peoples, traditional communities and small producers, but also residents of smaller towns, are not the target, and hardly the beneficiaries, of this development, but are often seen as «barriers to development». This could also be considered a success: Indigenous peoples, traditional communities, as well as smallholders and other social groups are no longer just victims of development – they are organising resistance and have become part of the fight against the current Amazonian development model.

Dispute over the Jamanxim National Forest

But this was by no means the end of the dispute. The plan now was to implement the reduction through due legal process. This set in motion complex wrangling over various proposals, but always coming back to the fact that existing protected areas in the Tapajós region should be significantly reduced.

The arguments surrounding protected areas in the region are illustrative and symptomatic. Economic activity in the protected area is cited as justification for the reduction – almost all Brazil's protected areas are home to settlers, including both small farmers but also more extensive land grabs.

If the occupation took place before the protected area was set up, the settlers have claim to compensation. Occupation after the area has been established is illegal in all instances. The separation of partly occupied sections from protected areas would now open up the possibility of retrospectively legalising illegal land grabs.

Mining is also an issue, as there are illegal gold prospectors in all protected areas in the region. The extraction of gold and gemstones is the province of numerous actors operating on an artisan's level, known in Brazil as «mineracao artesanal». There are applications for 150 mining licences in the area earmarked for separation from the Jamanxim FLONA alone, but this is not just about the Jamanxim National Forest. Proposals in various stages of the parliamentary process call for the reduction of protected areas in the region by more than 1 million hectares. As 2018 came to a close, the position was confused, and it remains uncertain as to what extent the reductions will be implemented. There is little doubt however that Amazonia's protected areas are under enormous political pressure.

A comprehensive overview of the situation regarding protected areas on the Tapajós is provided by a Nota Técnica, published by various civil society organisations:

<https://www.socioambiental.org/pt-br/blog/blog-do-monitoramento-blog-do-ppds/nota-tecnica-de-organizacoes-da-sociedade-civil-em-repudio-ao-pl-81072017>

4 Another way is possible!

Deforestation continues to be the tragic reality shaping the international perception of the region. At this point, it should be noted however that deforestation is just the most visible of a complex combination of factors, the fever so to speak, but not the disease. This combination of disparate factors is known commonly in Latin America as a «development model». Deforestation and development models are inseparable issues, but this is where we diverge from the prevailing consensus. Though (at least verbal) rejection of (illegal) deforestation has now become common currency, opinion splits when it comes to discussing the development model. Criticism levelled by social movements as well as critical NGOs and academics at this model of «poor development» does everything but build consensus. In fact, after the turning point of 1992, when the model of «sustainable development» was proclaimed in Rio, with Brazil agreeing to an international pilot programme to protect its rain forests, normative standards such as «retention of the rain forest and protection of its inhabitants» have been established alongside ideas of development policy based on «monetisation» and exploitation. Roads, ports, and mega dams have been built alongside the creation of protected areas. This juxtaposition can be seen as the result of resistance against the dominant development model. Looking back over the last thirty years, we cannot say that different development paths have co-existed peacefully in Amazonia, yet the Bolsonaro government has effectively declared war even on this precarious co-existence. Development and exploitation are once again the dominant ideas, and the Ministry of the Environment and its agencies are not to stand in their way. Bolsonaro pays lip service to current development debates regarding Amazonia, but intends to remove the counterweight represented by parts of civil society and the Ministry of the Environment, or at the very least, leave it much diminished. After just a few short months in office, the impact of the new government started to be felt, with environmental controls on Amazonia brought to a virtual halt, and very few penalties imposed. This gives out a very clear message, i.e. do not expect to be prosecuted for illegal deforestation and other illegal activities.

Within this context, the obvious question of alternatives is highly problematic, for it also involves a way of looking at the problem which leads to questionable framing. If alternatives are being sought, then current development becomes the norm, justified by the normative power of the factual. Does saying «no» to destruction and degradation really have to be justified by «alternatives»? If we accept that alternatives are needed, we also accept «development» as normality. This is why the construction of a major dam in Amazonia is barely questioned («Brazil needs more energy for its growing population and economy...») In fact, the sentence «What are your alternatives?»



often has the impact of a hammer blow to protesting grassroots and indigenous movements.

The seemingly reasonable request for alternatives is now firmly embedded as part of a naturalised view of development. Amazonia has been perceived in recent decades as a development region par excellence. As far back as the immediate post-war period, Amazonia has been firmly in the sights of a Brazilian central government which is now developing plans and institutions to «monetise» Amazonia. The term is misleading however, as what is there is actually of no value to developers. Value only comes through opening up the region (roads), exploitation (mining), development (intensive agriculture), and integration into markets, and it is the degradation of the existing forest that is the flipside of this development fixation, because all existing barriers must be overcome.

This entrenched and virtually ubiquitous way of thinking and acting in Amazonia has undergone something of a seismic shift in recent years. This naturally has something to do with a new appreciation of the rain forest. The preservation or protection of the rain forest arose alongside the «development» paradigm. There has of course been no shortage of attempts to link the two paradigms. Slogans such as «protection through use» are fine on paper, but difficult to put into practice, and are abused to legitimise destruction. In the midst of this tangled web, social movements and their affiliates have made «territory» the key term, so reshaping the question of alternatives. An «alternative development model» cannot be drafted sitting at a desk, but must

address the real battles and developments. Three main pillars can be defined then for Amazonia.

Defending territories

With the end of the military dictatorship, (incomplete) democratisation, and the process of a new constitution, a change took place in the way that indigenous peoples and traditional communities were viewed. Henri Acselrad called it a «territorial turn». Before this change, indigenous territories were known as «reservas indígenas», a term related to Indian reservations in the USA. Reserves are by nature residual, a last refuge; territories however are a social and legal construct, the aim of which is autonomy. «The demand for a territory ... stirs notions of power, identity, self-governance, and control over natural resources. It is aimed at a new territorialisation of national identity, and based on territorial law, attempts to redefine the relationship between disparate groups and the state and nation.»⁴¹

The 1980s and 1990s were periods of new territorialisation. A further step was the recognition of quilombola (descendants of Afro-Brazilian slaves) territories in the Brazilian constitution. The passing of a «National Policy for the Sustainable Development of Traditional Peoples and Communities» in 2007 was an important milestone within the context of official policy. The decree which constitutes this policy defines the concept of the territory as follows: «Traditional Territories: A necessary space for the cultural, social and economic reproduction of the traditional peoples and communities.»⁴²

This territorial change forms the meat of the arguments and alternatives in today's Amazonia. Starting point for all strategies is recognition of the territorial rights of traditional peoples, or put simply, the central question is: Who does the land belong to? This is not about individual land titles, but the right to territory and use of it for the common good, «bens comuns». The concept of territory is not however confined to indigenous peoples and traditional communities; peasant farmers' or family farm organisations also increasingly use the term «territory» as a reference point for their strategies, as the dividing lines between peasant farmers («campesinato») and traditional communities in Amazonia are often blurred. The central link between the battles of peasant farmers and traditional peoples, is the idea and practice of resistance against the occupation of Amazonia by the means of capitalist production, including its requirements and consequences. One thing is certain, namely a united resistance against the spread of agribusiness, major projects, and mining. On the one side stands the «territory of the people» with «territory of capital» on the other. Although this may seem rather broad-brush and simplistic, it neatly describes the two main poles of development perspectives in Amazonia, which are diametrically opposed with respect to their forms of territorial appropriation.

⁴¹ Citation from: Jean Pierre Leroy: Mercado ou Bens comuns? O papel dos povos indígenas, comunidades tradicionais e setores do campesinato diante da crise ambiental, Rio de Janeiro 2016 [own translation].

⁴² Decree 6040 of 7 February 2007.

Amazonia's experiences over recent decades have shown that where agribusiness expands, peasant farming disappears or is at best marginalised, and that traditional communities can only survive in specific territories. Territories are therefore not just fixed areas, but social constructs, which are inseparably linked to the defence of rights and the idea of resistance against a development model which is a threat to their existence.

Territories in Amazonia are allocated to the categories of «indigenous territories» and «protected areas»; the various details are governed by the law. Protected areas in turn are split into two sub-categories: Areas which are fully protected and only allow a limited human presence, and protected areas in which sustainable use («Unidades de Conservação de uso sustentável, ou de uso direto») is permitted and designated. One key sub-category of these protected areas is formed by the Reservas Extrativistas (RESEX), the extractive reserves. Emerging from the rubber tappers' movement led by Chico Mendes, the concept has been extended in the meantime to various forms of sustainable use.

RESEX is defined as an area which is inhabited by traditional communities characterised by extraction activity and subsistence farming. These should be a source of livelihood to these communities and ensure that natural resources are used sustainably. Private ownership of land with the right to sell is not permitted in the RESEX.⁴³

The establishment of protected areas with direct use and of RESEX in particular, represents a key turning point in the history of protected areas in Amazonia. Protected areas are now no longer seen as a threat by the local population, but as a protection of an alternative lifestyle and against threats from big landowners and illegal logging. The establishment of RESEX and similar protected areas is now a constant demand of local communities, social movements, and NGOs, a trend which is both an expression and consequence of the abovementioned territorial turn.

All these territories, i.e. the protected areas and indigenous territories, cover an area of more than two million km², an expanse larger than the area of the four largest countries of the EU (France, Spain, Sweden, Germany) put together.

The battle for territories is also a battle for rights, and involves much more than the right to land. It is about the right to autonomy, self-determination, and an autonomous lifestyle, and not about once again developing and imposing outside «alternatives» such as REDD+.

Territories and rights are therefore a pivotal starting point in the battle against the dominant development model in Amazonia and for autonomous lifestyles. Indigenous organisations (COIAB), quilombola associations, and countless local initiatives work on this basis, and are supported by organisations such as the pastoral commissions (CPT) of the Catholic Church, and NGOs like FASE and Terra de Direitos.

43 Cf.: <https://uc.socioambiental.org/uso-sustent%C3%A1vel/reserva-extrativista>

Strengthening agroecology

Agribusiness has established itself as an agricultural model, especially in Mato Grosso. This model is based on vast monocultures, the use of genetically modified seed (soy and maize), and massive use of agricultural poisons. The model also produces high yields per hectare, and enormous export surpluses. It is largely very high-tech, and also state of the art when it comes to processing (e.g. in slaughterhouses). The age of the old, barely productive landowners is in the past here at least. To many, the model is seen as a success, and the agriculture lobby is now a major political player in Brazil. Agribusiness however creates few jobs per hectare of utilised land, and contributes little towards improving domestic food security, for under this veneer of big business, Amazonia is also a land of peasant farmers, characterised by the great diversity of production methods and population groups involved in these activities. A diversified extraction industry (rubber, nuts, oils) has now linked up with high-tech, sophisticated markets for natural cosmetics. Manioc, which was a staple food of the indigenous people before the Conquest, remains the main staple in many regions of Amazonia. In Pará, the most populous state in Amazonia, the fruit of the açaí palm is a vital foodstuff and a significant economic factor which provides 300,000 jobs alone in this region.⁴⁴ Women are often prominent in these sectors.

Many projects promote diversification in agriculture adapted to local circumstances. This forms the basis for agroecology, which in the meantime has been embraced by Amazonia's social movements (such as the landless movement and the agriculture workers' unions, normally associations of peasant farmers).

The Articulação Nacional de Agroecologia (ANA), the National Agroecology Coalition, has become a key actor in Brazilian civil society.

Agroecology in Amazonia is able to connect with traditional communities and create the possibility of retaining agrobiodiversity and food sovereignty. With the aim of strengthening autonomy and rights, agroecology is also the recipient of significant support from international NGOs.

Strengthening legal structures

Illegality remains a core issue in Amazonia, with official figures unable to clearly distinguish between legal and illegal deforestation. A study by the Instituto Centro da Vida (ICV) on deforestation in Mato Grosso in 2018 established that around 85% of the deforestation in 2018 was illegal, i.e. carried out without authorisation.⁴⁵ This figure may be a good base from which to determine the extent of illegal deforestation throughout Amazonia. Illegal deforestation is however only one aspect of the problem. In 2017, Amazonia saw a recurrence of major massacres in Pau d'Arco and Coloniza

⁴⁴ More details at: <http://www.adepara.pa.gov.br/artigos/a%C3%A7a%C3%AD-riqueza-do-par%C3%A1-com-mercado-garantido-dentro-e-fora-do-brasil>. There are in fact no reliable statistics, and estimates vary widely.

⁴⁵ <https://www.icv.org.br/publicacao/analise-do-desmatamento-na-amazonia-mato-grossense-prodes-2018/>

with 9 and 10 dead. Land conflicts are on the rise, a trend which is accentuated by a general expectation of impunity. It is not only human rights defenders that are under threat, but even the employees of environment agencies, who have been repeatedly attacked.

In this situation, it is imperative that NGOs who work to protect the rights of the affected individuals and groups, are supported and defended. In addition to this, it remains important to strengthen legal structures. Like NGOs and attorney networks, in some of the states within Amazonia, the Public Ministry (MP) has played a fundamental part in defending the rights of indigenous peoples and traditional communities. One key function of the MP is to review the constitutionality of the government's actions. The MP is often involved in major projects, has repeatedly taken action against the construction of Belo Monte, and has also filed objections against the planned Ferrograo railway.

The work of the MP has been crucial in recent years in establishing at least some legal defence lines in Amazonia, and to bolster resistance by giving a voice in the legal system to those affected by such major projects. Deforestation cannot be fought effectively if legal structures are not guaranteed and if the rule of law is no longer a basis for government action. Programmes such the environmental registry or REDD+ discussed above will run aground if this disregard for the law continues.

It is hard to assess the prospects of defending the territories under the Bolsonaro government, though the President does not have the power to abolish protected areas or indigenous territories, so in this way they provide a platform for organising resistance. The government does however have the option of identifying no new protected areas or indigenous territories; other than this, it can reduce financial support for the relevant statutory bodies and therefore open the door to illegal invasions. Indigenous organisations stress time and again that they have withstood 500 years of conquest, and will also survive the Bolsonaro government. It is the responsibility of international civil society to help them do so.

Germany's responsibility

The Brazilian section of the Amazon is part of Brazil, and the consensus demands that global environmental politics respect national sovereignty. Hypothetical scenarios regarding the «internationalisation of Amazonia» are simply pipe dreams or knee-jerk reactions to nationalist demagoguery. International collaboration can therefore only support national actors, and work together towards common, agreed goals. Reduction of deforestation would be one of these common goals. In a democratic society, it is normal for governments not to represent a monolithic block. Official German development work in the Amazon largely rests with the Ministry of the Environment, which has played a key role in the arguments surrounding the future of the Amazon – or at least did so until the election of the Bolsonaro government. A central role in this was played by the Amazon Fund, which is one of the most important tools in global environment politics with funds of more than US\$1 billion.

German collaboration with Brazil is multi-faceted, and involves a close relationship with Brazilian civil society. The Catholic bishop's organisation Misereor and Bread for the World support various initiatives in Brazil and the Amazon. But smaller organisations such as Action for World Solidarity (ASW) also work with grassroots groups, indigenous organisations and human rights groups. Political Foundations – the Heinrich Böll Foundation for example – support partner organisations in the Amazon. Under the Bolsonaro government though, this cooperation is in doubt and at risk.

However, the links between Germany and Amazon involve another, even more important aspect: To what extent do German companies and the habits of German consumers bear some responsibility for the destruction of Amazonia? This international responsibility is frequently the subject of discussion by German NGOs.

The debate surrounding the international dimension of rain forest destruction has a long history, as back in the 1980s, the World Bank was repeatedly singled out for criticism. International funds supported major projects and questionable development programmes at the time, but this is no longer the case. Symptomatic of this is the Belo Monte dam project.

Whereas plans for its construction in the 1980s under another name were funded by international finance, since the turn of this century the new generation of dams have been financed nationally by the Workers' Party governments in Brazil. Even so, German and European corporates continue to have various business interests in the Amazon, for example, Voith Hydro, a joint venture of Voith and Siemens, has invested 443 million euros in the construction of Belo Monte. Other interests are less visible, for example, MunichRe (new name for Münchner Rück one of the biggest reinsurers in the world) and Allianz have played a key role in insuring Belo Monte. The accident in Brumadinho, Minas Gerais state, also revealed to an astonished public the extent to which TÜV Süd was culpable – the company was responsible for safety checks.⁴⁶

When it comes to deforestation in Amazonia, one issue looms over all others: Is «our» meat and soy consumption responsible in part for destruction of the rain forest?

2018 was a record year for Brazilian beef exports: 1.6 million metric tons were exported – just 118,000 metric tons to the EU, well below 10%. The main importer is China, but even Egypt imported more meat than the EU. A look at the figures in US\$ alters the picture somewhat: The EU bought slightly more than 10% of the value of Brazilian exports, and is therefore the second-biggest importer after China.⁴⁷

With regard to soy production, China also remains by some distance the main customer, though some 15% of soy production (soy and soy bean meal) in Mato Grosso goes to Europe (see text box p. 50). Between 40-50% of the soy imported to the EU comes from Brazil, though recently this has been in slight decline, because the EU has been importing more soy from the USA. Soy imports from Brazil therefore remain

⁴⁶ Christian Russau offers an excellent overview of German interests in Brazil: *Abstauben in Brasilien* (Cleaning up in Brazil). Deutsche Konzerne im Zwielicht (German Corporates in the Shadows), Hamburg 2016. A publication of the Rosa Luxemburg Foundation in collaboration with medico international.

⁴⁷ See: <https://www.beefcentral.com/trade/competitor-watch-brazilian-beef-exports-close-out-2018-with-record-shipments/>

a fundamental element of the European meat industry. In contrast, the European market is of secondary importance to Brazil, so European consumption continues to contribute to the expansion of soy cultivation in Brazil, but is not by itself a «game changer».

Conclusion: European consumers do contribute to the expansion of cattle ranching and soy cultivation in Brazil, but are not the main factor. The problems of Brazil cannot therefore be solved solely or primarily through consumer-based approaches.

Poisons from Germany

Virtually all soy grown in Brazil comes from genetically modified crops, mainly genetically modified seeds resistant to glyphosate (also known under the brand name «Roundup Ready»). The market leader was Monsanto subsidiary, Monsoy, with a market share of 30% of the market for soy seeds in Brazil; the company has now been incorporated into the Bayer Group (Agro Bayer Brazil). The predominance of genetically modified soy in Brazil is linked to an agricultural model based on monoculture, in which glyphosate can be used extensively. This model has, at least from the short-term perspective of Brazilian agribusiness, proven economically successful, is now well established and has spread, in particular in Mato Grosso.

Along with soy, maize cultivation is also a key factor in the use of genetically modified crops in Brazil. 16.7 million hectares are planted with maize, 88% of this with genetically modified maize.⁴⁸

The spread of genetically modified crops is linked to an excessive use of pesticides. Brazil alone consumes 20% of the world production of agricultural poisons, known as «agrotóxicos» in Brazil. Between 2000 and 2004, use rose from 170 million to 500 million metric tons, an increase of 194%. In Brazil's main soy states, between 9 and 19 kg of glyphosate is sprayed per hectare.⁴⁹

Both Bayer and BASF sell many of the «agrotóxicos» banned by the EU to Brazilian customers. This was documented by the «Critical Shareholders» Group in 2019, and raised at the annual general meetings.⁵⁰

Another aspect of international responsibility for destruction of the rain forest has been addressed by the Amazon Watch organisation: It concerns the investment of BlackRock in the region. BlackRock is the world's largest investment bank, not only investing in Brazilian agribusiness, but also in oil exploration in the Amazon.⁵¹

48 Source: <https://www.grupocultivar.com.br/noticias/area-plantada-no-brasil-com-milho-trans-genico-permanece-estavel>

49 Source: <https://reporterbrasil.org.br/2017/11/agrotoxicos-alimentos-brasil-estudo/>

50 Christian Russau's speech to the Bayer shareholders' annual general meeting addressing the use of agricultural poisons in Brazil is recorded here: <http://www.kritischeaktionae.de/bayer/rede-von-christian-russau-21/>

51 See: <https://amazonwatch.org/work/blackrocks-big-problem>

In another study, Amazon Watch looked at the role of six agribusiness firms («ruralistas»), and exposed their international networks.⁵²

«We indigenous people have long known that large multinational banks and companies are supporting ruralistas in their attempts to destroy indigenous and traditional communities, as well as our forests and rivers,» explains Alessandra Korap Munduruku, Coordinator of the Munduruku people's Pariri Association. «They see trees and water as money, but this is our home, and we have a different way of life. Just like the rest of mankind, we depend on Amazonia, and therefore have a duty to protect it.»⁵³

We all have a duty to do so.

52 See: <https://www.kooperation-brasilien.org/de/themen/landkonflikte-umwelt/brasiliens-agrobusiness-und-ihre-internationalen-connections>

53 Ibid.

Amazonia today

A region between development, destruction and climate protection

The Amazon rainforest is threatened: fires, clearings, land grabbing, mining - they all affect this unique ecosystem. It is not only the largest tropical forest in the world, but also the largest freshwater basin, a hotspot of biological diversity, and home to 33 million people and hundreds of indigenous peoples. The destruction of the rainforest has global impacts, but it first strikes these nearly-defenseless communities.

In his publication «Amazonia today,» the Amazon expert Thomas Fatheuer analyses the different actors and driving forces behind deforestation. It becomes clear that President Jair Bolsonaro stands for interests that are deeply rooted in the Brazilian power structure and favour development at the expense of the rainforest. At the same time, Fatheuer draws a nuanced picture of the Amazon region. He describes the projections and myths linked with this natural habitat and shows the alternatives to deforestation and destruction that social movements and civil society have developed in Brazil.

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