

Brazil space institute director sacked in Amazon deforestation row

Far-right leader Jair Bolsonaro calls satellite data showing rise in deforestation 'lies'

Dom Phillips in Rio de Janeiro

Fri 2 Aug 2019 19:11 BST

Last modified on Fri 2 Aug 2019 21:50 BST



An aerial view of a deforested section of the Amazon in Porto Velho, Brazil. Photograph: Nacho Doce/Reuters

The director of Brazil's National Space Research Institute (INPE) has been sacked in the midst of a controversy over its satellite data showing a rise in **Amazon deforestation**, which the far-right president, Jair Bolsonaro, has called "lies".

Ricardo Galvão, who had defended the institute and criticised Bolsonaro's attack, **was dismissed on Friday** after a meeting with the science and technology minister, Marcos Pontes.

"The way I expressed myself in relation to the president has caused an unsustainable embarrassment," Galvão said on Friday morning, according to the Folha de S Paulo newspaper site.

"Sacking the director of INPE is just an act of vengeance against someone who showed the truth," said Greenpeace Brasil's public policy coordinator, Márcio Astrini, in a statement.

Available on a government **website**, data from the Deter satellite showed an alarming **rise** in deforestation in recent months: it **soared** 88% in June compared with a year earlier.

Bolsonaro and his ministers have called its release irresponsible and an attempt to stain Brazil's image abroad. Last month he **called** INPE numbers "lies" and implied that Galvão was in "the service" of a foreign non-profit group. The next day Galvão said the president behaved "like he is in a bar" and defended the institute's data.

The most accurate data on deforestation in the Brazilian Amazon is collected by the Prodes satellite system and released annually. The Deter satellite system has a lower resolution and is primarily used for deforestation alerts, said Tasso Azevedo, a former head of Brazil's forest service. But over the last 12 years, whenever annual Deter data showed deforestation increasing, Prodes confirmed the trend and calculated an even higher rate.

Azevedo is the coordinator of MapBiomass, an initiative from NGOs, universities and technology companies that monitors changes in land use. He said that from January to July, accumulated Deter numbers showed a 62% increase in deforestation compared with the same period last year, and that three other international satellite monitoring systems had also shown rising deforestation. "All have different methodology, so the data is different, but all of them point to a rise in deforestation," he said.

On Thursday, Bolsonaro and the environment minister, Ricardo Salles, criticised the release of data as irresponsible and sensationalist. "The numbers were thrashed out, it seems to me, with the aim of striking at the name of **Brazil** and the government," Bolsonaro said.

In a **presentation**, Salles said his team had found hundreds of areas of deforestation included in the July figures from previous months or years. He did not explain the methodology used. INPE **defended** its numbers in a statement and said it had not been given prior access to Salles's study.

The government fears that the alarming data could prejudice an important trade deal between the South American trade bloc, Mercosur, and the EU. Environmentalists said the damage had already been done.

"Brazil's image is already hopelessly compromised by this crusade against the facts," said Carlos Rittl, executive secretary of the Climate Observatory.

Deforestation of Brazilian Amazon surges to record high

Environmentalists fear 2019 will be one of worst years for deforestation in recent memory

Jonathan Watts

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Tue 4 Jun 2019 17:14 BST

Last modified on Wed 5 Jun 2019 01:05 BST



Inspectors walk through an area affected by illegal mining in Pará state in Brazil's Amazon basin. The rainforest lost 739sq km during the 31 days of May Photograph: Vinicius Mendonca/AP

Deforestation of the Brazilian Amazon surged last month to the highest May level since the current monitoring method began, prompting concerns that president **Jair Bolsonaro** is giving a free pass to illegal logging, farming and mining.

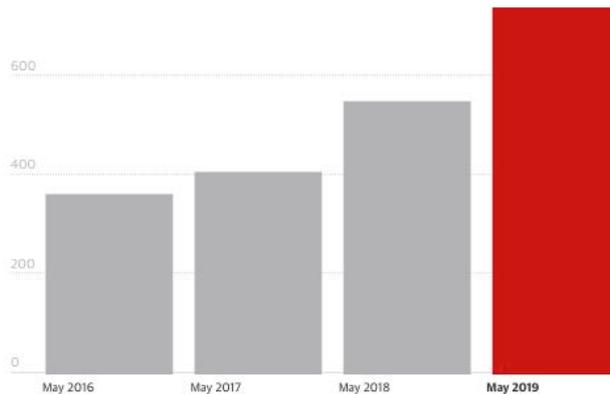
The world's greatest rainforest – which is a vital provider of oxygen and carbon sequestration – lost 739sq km during the 31 days, equivalent to two football pitches every minute, **according to data** from the government's satellite monitoring agency.

Although a single month is too short to confirm long-term trends, May is considered an important guide because it marks the start of the dry season, which is when most burning and other forms of forest clearance are carried out.

Unless the government sends a clear signal it will not tolerate a further acceleration, environmentalists fear there will be an increase in the coming months that could make 2019 one of the worst years for deforestation in recent memory.

“The government can't deny these numbers from their own agency. The question now is what they'll do about it,” said Carlos Souza, of the independent monitoring group **Imazon**. “By the end of July, we'll have a clear idea of the impact of recent moves to dismantle environmental policies.”

The Brazilian Amazon rainforest lost 739 sq km last month - a record for May since current satellite monitoring began



Guardian graphic | Source: INES

Since the far-right Bolsonaro came to power in January, he has weakened the environment ministry, loosened controls on economic exploitation of the Amazon, halted demarcation of indigenous land and encouraged mining and farming interests to expand in the region.

Since the president criticised the government's main monitoring agency as a “fines industry”, it has issued a fewer penalties than at any time in 11 years and the number of inspection operations is down 70% from last year.

His environment minister, Ricardo Salles, who was **convicted for environmental fraud** and had never visited the Amazon region before this year, has further undermined morale by failing to appoint regional chiefs and by firing veteran inspectors. Earlier this week, **Folha reported** he was moving to privatise the satellite monitoring of the forest.

He has also vexed donors Norway and Germany by **proposing to weaken the voice of civil society** in deciding how the \$1.3bn Amazon Fund is spent.

In congress, the dominant agricultural lobby is pushing for further relaxations, including the breakup of protected areas.

Bolsonaro's oldest son, Flavio, who is a senator, recently proposed a reform of the forest code that would remove the obligation of farmers in the Amazon to maintain forest cover on 50-80% of their property. This measure would **reportedly open up** an area larger than Iran for extractive industries. A growing wave of speculative land claims are being registered inside reserves, which is putting more pressure on the boundaries.

“The spike in deforestation is depressing, but hardly surprising: you have a government in Brazil who is dismantling nearly every environmental policy put in place since 1992 and who is harassing federal environmental agents, thus empowering environmental criminals,” said Carlos Rittl, the executive secretary of the **Climate Observatory**, an NGO formed by a coalition of environmental groups. “However, we must wait and see how it will behave in June.”

Other factors might have contributed to the increase. The first few months of this year were cloudy and rainy, which made satellite monitoring more difficult, so some areas might have been missed by earlier sweeps. The bad weather could also have prompted loggers and farmers to delay land clearance until May. The economy, which is often a driver of deforestation during period of high beef and soy prices, has also been in the doldrums, though Bolsonaro has indicated that agribusiness can help to lift **Brazil** towards positive growth.

In this regard, he is echoing and amplifying the message of his predecessors as president, Dilma Rousseff and Michel Temer, both of whom presided over periods of accelerated forest clearance as they became reliant on the rural lobby and commodity exports to China and Europe.

Another factor is an expansion of infrastructure projects, including roads and hydroelectric plants. The Brazilian state that suffered the greatest deforestation last month was Pará, which is home to the BR163 road through the Amazon and the Belo Monte dam.

Brazil deforestation row: Space research head Galvão out

2 hours ago



Scientists say the Amazon has suffered losses at an accelerated rate since Mr Bolsonaro took office

The head of Brazil's National Space Research Institute says he will be sacked after a public row with President Jair Bolsonaro over the scale of deforestation in the Amazon.

Ricardo Galvão had accused the far-right president of "cowardice" for questioning the institute's data.

It showed an 88% increase in deforestation in June compared with the same month a year ago.

Mr Bolsonaro said the institute was smearing Brazil's reputation.

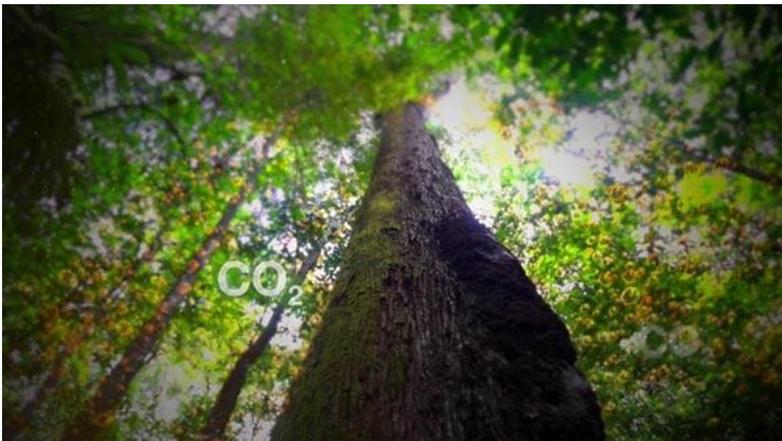
Brazil's ministry of science and technology has confirmed Mr Galvão's departure, although it is not clear whether he had quit or been fired.



President Bolsonaro has contested the institute's data as lies

Mr Bolsonaro, who took office in January, has accused Mr Galvão's organisation of trying to undermine the government. However, the National Space Research Institute (Inpe) says its data is 95% accurate.

Scientists say the Amazon has suffered losses at an accelerated rate under Mr Bolsonaro's government, with policies that favour development over conservation. As the largest rainforest in the world, the Amazon is a vital carbon store that slows down the pace of global warming.



How is the rainforest helping limit global warming?

Official figures suggest that the biggest reason to fell trees there is to create new pastures for cattle.

Over the past decade, previous governments had managed to reduce deforestation with concerted action by federal agencies and a system of fines.

But Mr Bolsonaro and his ministers have criticised the penalties and overseen a dramatic fall in confiscations of timber and convictions for environmental crimes.

Several scientific institutions, including the Brazilian Academy of Sciences, have defended Inpe and the accuracy of its data.

Scientist who called out Bolsonaro on Amazon deforestation is fired

By Sheena McKenzie, Daniel Silva Fernandez and Elizabeth Wells

Updated 1151 GMT (1951 HKT) August 3, 2019



Source: BEME

The fight for Brazil's Amazon 18:10

(CNN) Brazil has fired the head of a government agency that found a steep rise in deforestation in the Amazon, following a public spat with far-right [President Jair Bolsonaro](#).

Ricardo Galvão, the director of Brazil's National Space and Research Institute (INPE), said he was terminated on Friday after defending satellite data that showed [deforestation was 88% higher](#) in June compared to a year ago.

Galvão said in a [video statement on Facebook](#) that the agency let him go after a meeting with Brazil's Minister of Science, Technology, Innovation and Communications, Marcos Pontes.

He added that the scientific institute would continue to operate and it would now be up to Pontes to decide on his successor. An advisor to Pontes confirmed Galvão's comments to state news agency Agencia Brasil.

Bolsonaro claims the data is wrong

The scientist butted heads with Bolsonaro after the damning satellite data was released earlier in June, turning the international spotlight on the President's controversial plans to open up the world's largest rainforest to industry.

Bolsonaro called the INPE's findings "lies" and said they were harmful for trade negotiations, according to Agencia Brasil.

But Galvão stood firm, reaffirming the validity of his scientific institute, which has been monitoring the country's forests since the 1970s. He said the president had made "inappropriate accusations [of] people of the highest level of Brazilian science," in an interview with newspaper O Estado de S. Paulo.

CNN contacted the Brazilian government for comment but has not received a response.

Brazil's opposition leader in the lower house of Congress, Alessandro Molon, [said in a tweet](#) that Galvão "was attacked by the president and the environment minister for monitoring deforestation in the Amazon," adding that Bolsonaro wanted to "hide under his lies."

Controversial environmental policies

Bolsonaro, a former army captain, took office in January on the heels of a campaign pledging to [restore the country's economy by exploring the Amazon's economic potential](#).

Brazil is home to two-thirds of the Amazon, and during the first few months of Bolsonaro's presidency, the rate of rainforest destruction remained stable, according to the INPE. But it began to soar in May and June, the agency [said](#).

Some 769.1 square kilometers were lost in June, six months after Bolsonaro took power -- a stark increase from the 488.4 square kilometers lost in the same month the previous year, according to the INPE. It equates to an area larger than one and a half soccer fields, being destroyed [every minute of every day](#).

After tribe leader's death, Bolsonaro repeats call to mine the Amazon

By Maria Ramirez Uribe and Chelsea J. Carter, CNN

Updated 1822 GMT (0222 HKT) July 31, 2019



Brazilian Waiapi walk on the road of the Waiapi indigenous reserve, at Pinoty village in Amapa state in Brazil.

Brazil's president plans to exploit the Amazon 05:18

(CNN) The international community is speaking out against the killing of an indigenous tribal leader [in Brazil's Amazon](#), even as the country's president says there no evidence of foul play.

Emyra Wajãpi found dead on July 23 in Amapa, a region in northern Brazil, according to the tribe and the country's National Indigenous Foundation (FUNAI). The tribe says he was stabbed to death by "non-indigenous" people, after "15 armed invaders" had entered the area.

In [a statement by the Association of Wajãpi Villages](#), the Apina Village Council reported examining the site of the murder and finding signs the death was caused by "non-indigenous people."

But Brazil President Jair Bolsonaro told reporters on Monday he was not convinced Wajãpi had been murdered.

"Up to now there is no strong evidence that this indigenous (chief) was murdered. There are several possibilities," he said. "The federal police are there, are being sent there to get to the bottom of the case and find out the truth about this."

In a news conference on Monday, Brazil's attorney general Rodolfo Soares said, "We still don't know exactly what the cause of death was and whether it was miners, hunters, non-indigenous people, or even if the dispute took place between indigenous groups."

He cautioned that nothing had been ruled out, and that the investigation is ongoing.

The conflicting accounts came as the United Nations High Commissioner for Human Rights, Michelle Bachelet, decried the killing and characterized it as part of a larger issue of "encroachment on indigenous land."

"The murder of Emrya Wajãpi, leader of the indigenous Wajãpi people, is tragic and reprehensible in its own right," she said on Monday in a written statement."

"It is also a disturbing symptom of the growing problem of [encroachment on indigenous land](#) -- especially forests -- by miners, loggers and farmers in Brazil," she added.

Bachelet called on Brazil's government to halt the incursion of mining in indigenous territories, which she said could "herald a new wave of violence aimed at scaring people off their ancestral lands."

Since Bolsonaro took office in January, he has been pushing to deliver on campaign promises [to restore the country's economy by exploring the Amazon's economic potential](#).

He has proposed to open more areas of the Amazon to mining, and cut \$23 million from the country's environmental enforcement agency. He has also stripped FUNAI's ability to identify and grant titles to indigenous territories.

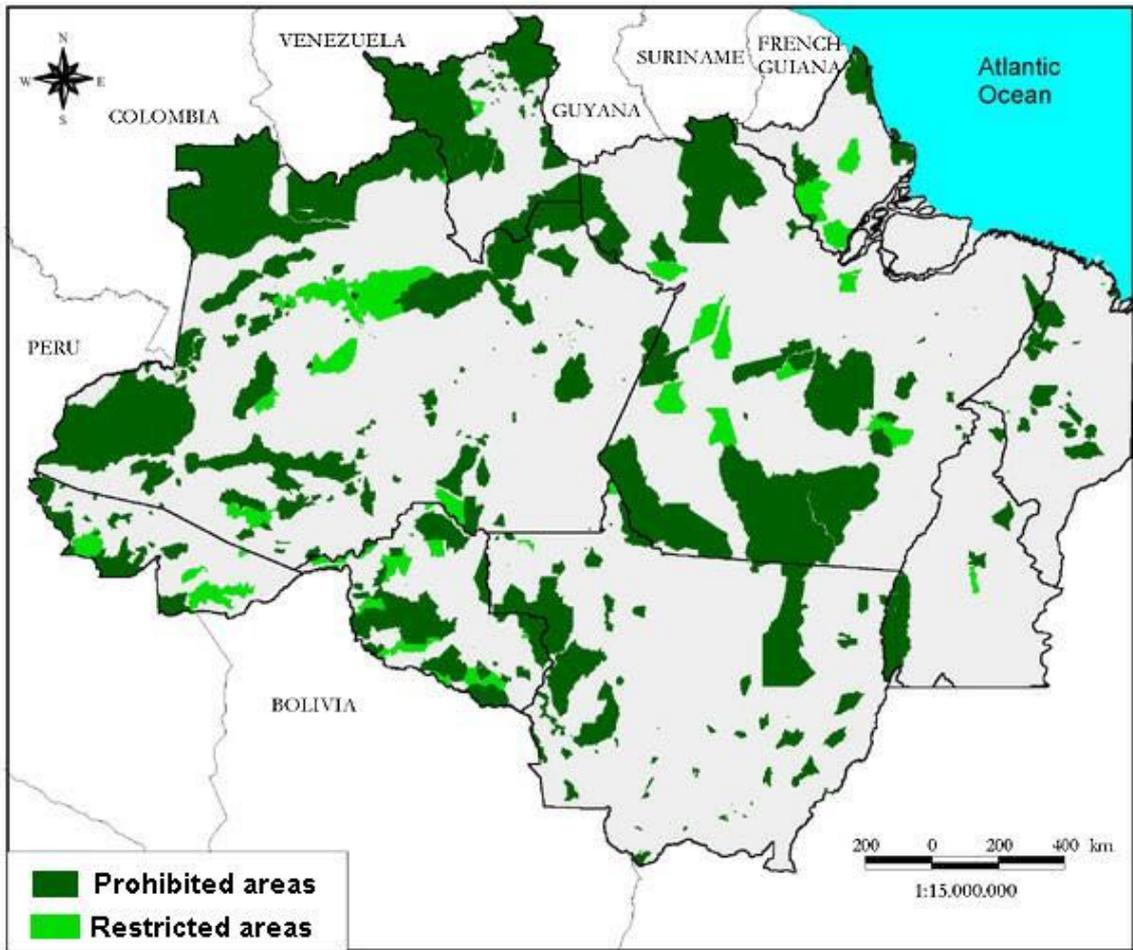
"My intention is to regulate mining, to legalize mining, even for the indigenous who have the right to exploit mines on their property. The land is indigenous and that is their land," Bolsonaro told reporters on Monday.

"Of course, NGOs and other countries don't want this. They want the indigenous to remain trapped like in a zoo, like they're a pre-historic human," he said.



Carlos Rittl, executive secretary of the environment NGO network Observatorio do Clima (Climate Observatory), told CNN that loggers, farmers and miners are already taking advantage of reduced oversight to seize control of a growing area of land within the Amazon forest.

According to Amazon Watch, a non-profit advocacy organization working to protect the rainforest and indigenous peoples' rights, at least 14 cases of illegal advances into indigenous territories by land grabbers, loggers and wildcat miners were documented across Brazil in the first three months of the year.



‘Tropical Trump’ sparks unprecedented crisis for Brazilian science

Tensions are rising as Jair Bolsonaro’s administration questions the work of government scientists and institutes debilitating cuts to research funding.

Jeff Tollefson

When neuroscientist Sidarta Ribeiro presented a preview of a report on the dire state of research in Brazil at a meeting of a major scientific society on 23 July, several government soldiers entered the room and began filming. Some in the audience took the soldiers’ actions as a show of intimidation.

“Maybe these guys were just soldiers who want to learn about science,” says Ribeiro, a researcher at the Federal University of Rio Grande do Norte in Natal. He coordinated the analysis on behalf of the Brazilian Society for the Advancement of Science (SBPC), which hosted the meeting and commissioned the report. But it didn’t look like they were there out of curiosity, Ribeiro says.

The incident is the latest example of the rising tensions between the country’s scientists and President Jair Bolsonaro’s administration. Since [Bolsonaro took office in January](#), Brazil’s researchers have faced funding cuts and repeated attempts by the administration to roll back protections for the environment and Indigenous populations. Government officials blocked the release of a ministry report on drug use in Brazil. And they have questioned other work by government scientists, including most recently, deforestation reports by a national agency. The head of that agency has since been dismissed.

“We are concerned about democracy itself,” says Sérgio Rezende, a physicist at the Federal University of Pernambuco in Recife, and a member of the commission that wrote the SBPC analysis.

A draft of the SBPC report details a decline in science funding that began with a major recession in 2014. It draws a direct line between the unprecedented crisis in science and the future of Brazil, arguing that the country’s social, economic and environmental prospects are under threat. Without policies that are “grounded in rationality, science and the public interest”, places such as the Amazon rainforest could soon pass the point of no return, according to the draft report.

Crisis of confidence

The commission found that total spending by Brazil’s three main science-funding agencies fell by nearly 47%, to 7 billion reais (US\$1.8 billion), last year, compared with 2014. The situation has deteriorated further since Bolsonaro took office: in March, his administration announced a [freeze on 42% of the budget for the ministry of science and communications](#), leaving it with just 2.9 billion reais for the rest of the year. The latest estimates suggest that the ministry could run out of scholarship money for undergraduate- and graduate-students and post-doctoral researchers as early as September if the government doesn’t provide more cash.

The funding crisis is just one of the sore points between researchers and Bolsonaro. Concerns over his administration’s policies regarding the environment and Indigenous tribes in the Amazon spiked last month, when Bolsonaro questioned his own government’s data on deforestation in the rainforest.

In early July, Brazil’s National Institute for Space Research (INPE) — which uses satellite observations of the Amazon to track the [destruction of the rainforest](#) — released data showing that deforestation rates from April through June had increased by 25% compared with the same period last year. The analysis also looked at an 11-month period from

August 2018 through June, and found that nearly 4,600 square kilometres of rainforest had disappeared, a 15% increase compared with the same time period a year ago.

On 19 July, Bolsonaro accused INPE of lying about the numbers, then later suggested that his administration should have the right to approve the agency's data before they are released to the public. INPE director Ricardo Galvão accused the president of cowardice for publicly attacking his institute.

No regrets

The data in question come from a monitoring system designed to provide rapid alerts to law-enforcement officers if it detects a new clearing in the Amazon as small as one hectare. The data aren't Brazil's official deforestation statistics — which come from a more detailed analysis of satellite observations — but often follow larger deforestation trends.

Scientists have defended INPE, saying that it has the most comprehensive deforestation monitoring system in the tropics. The agency's estimates provide a reliable gauge of deforestation trends and are based on publicly available data, says Ane Alencar, the science director at the Amazon Environmental Research Institute, an advocacy group based in Brasilia.

Galvão met with the minister of science, former astronaut Marcos Pontes, on 2 August to discuss the issue. But Galvão was told during the meeting that he was dismissed. He says that he had a constructive discussion with Pontes, and stressed that there was no indication that INPE's work on deforestation would be censored moving forward. But Galvão says that it was clear that he would have to leave because of the way he challenged the president.

"I don't have any regrets," says Galvão, a physicist formerly at the University of São Paulo who will now return to his academic post. "That was not a proper thing for a president to say."

Opening up the Amazon

The reported rise in deforestation comes as no surprise to many scientists and environmentalists. Bolsonaro's presidential campaign relied in part on promises to open up the Amazon to agriculture and mining interests.

Since taking office, he has scaled back enforcement of environmental laws and promoted development in Indigenous reserves. Now, his administration is pushing forward with proposals to shrink the size of protected areas in regions including the Amazon.

Bolsonaro has repeatedly derided environmental laws as being a barrier to progress and has criticized enforcement officials, says Maurício Voivodic, who heads the Brazilian branch of the environmental advocacy group WWF, which is in Brasilia. "That's why we are seeing illegal miners invading Indigenous lands," he says. "That's why we are seeing more deforestation."

Researchers in Brazil expected to see policy changes when Bolsonaro took office, but not so quickly or to such extremes, says Mercedes Bustamante, an ecologist at the University of Brasilia.

doi: 10.1038/d41586-019-02353-6



Brazilian President Jair Bolsonaro (left), here with Minister of the Environment Ricardo Salles (right), attacked the validity of satellite data showing deforestation in Brazil has increased since he took office. AP PHOTO/ERALDO PERES

Brazilian institute head fired after clashing with nation's president over deforestation data

By [Herton Escobar](#) Aug. 4, 2019 , 8:45 AM

The director of the Brazilian agency that monitors deforestation was fired Friday, following a **public face-off** with President Jair Bolsonaro. Physicist Ricardo Galvão announced his own ousting as director of National Institute for Space Research (INPE) to reporters in Brasília, saying his altercation with the president had made the situation “unsustainable.” No replacement has been announced.

Known for his stout personality, Galvão challenged Bolsonaro on 20 July, rebutting remarks about deforestation the president had made the day before. Questioned by journalists about the rise of deforestation in the Amazon—as indicated by satellite data from INPE’s Real-time Deforestation Detection System (DETER)—Bolsonaro called the institute’s data “a lie,” and said Galvão appeared to be “at the service of some nongovernmental organization.” Galvão replied by calling Bolsonaro a “coward,” defending INPE science, and daring Bolsonaro to repeat the accusation to his face.

Bolsonaro didn’t meet with Galvão and continued to question INPE data in the following 2 weeks, even as deforestation continued. According to the latest DETER numbers, approximately 4500 square kilometers of forest were cleared in the first 7 months of this year, since the beginning of Bolsonaro’s administration—60% more than in the same period in 2018.

Scientists and environmentalists were alarmed but not surprised—many had predicted deforestation would increase because of Bolsonaro’s aggressive pro-development, anticonservation political agenda.

Most of the increase that DETER noted came in June and July when the drier climate makes it easier to destroy the forest and cloud cover lessens, exposing deforestation that may have been hidden.

“The numbers, as I understand, were mauled for the purpose, it seems, to strike at the name of the government and Brazil,” Bolsonaro said during a press conference on 1 August. Sitting next to Bolsonaro, Minister of the Environment Ricardo Salles announced that a private monitoring service would be hired “in the shortest possible time frame” to complement INPE’s work with daily high-resolution photos. His office asserted several “inconsistencies and errors” had been found in the DETER data, including several areas that were counted as deforested in June, but actually began to be cleared in 2018, and others that were allegedly counted twice by the system.

INPE then released a statement to “reaffirm its confidence in the quality of the data produced by DETER,” noting that it has consistently used a well-known method for 15 years, and that “any comparison of DETER results with other methodologies or distinct images must be thorough and requires a more complete evaluation.” The satellite’s data have “contributed to the reduction of deforestation in the Amazon region when used in conjunction with law enforcement actions,” INPE said. (DETER is designed to rapidly identify areas where illegal deforestation is happening and warn law enforcement in time to stop it.) Official deforestation rates fell by 80% between 2004, when DETER became operational, and 2014. Since then,

they have been trending up slightly.

Founded in 1961 and based in São José dos Campos, Brazil, INPE is one of the country's most distinguished research institutions, recognized as an international leader in tropical forest remote sensing applications. Several scientific organizations have responded to Bolsonaro's criticisms by defending the institute. "The criticisms made have no scientific basis and disregard the immense contributions that the National Institute for Space Research give to Brazil and the world," the São Paulo Academy of Sciences wrote. The Coalition for Science and Society, a group of 65 Brazilian scientists concerned about political developments, said in a statement the government's attitude amounted to the "rapid scrapping" of Brazil's hard-built scientific credibility.

"The scientific community and international partners won't trust in a new 'official' number cooked up by the government," said Raoni Rajão, an environment management professor at the Federal University of Minas Gerais in Belo Horizonte, Brazil.

Science minister Marcos Pontes didn't speak to the press after firing Galvão, but he posted a message on Twitter thanking Galvão for his "dedication and effort."

***Update, 5 August, 9 p.m.:** *This story has been revised to add comments from Ricardo Salles describing alleged errors in the DETER data, as well as INPE's response to those claims.*

***Update, 6 August, 10:05 a.m.:** *Brazilian Minister of Science, Technology, Innovation, and Communications Marcos Pontes posted a video on Facebook on 5 August to announce that he has appointed Darcton Policarpo Damião as interim director of INPE. Policarpo Damião, a graduate of the Air Force Academy, has a bachelor's degree in aeronautical sciences, a masters in remote sensing from INPE, and a Ph.D. in sustainable development from the University of Brasília. Pontes said he will serve until a selection committee is assembled and a new director is picked. "We will improve [INPE's] satellites systems, the data analysis, and how this data is presented," he added.*