

JUST BECAUSE SOMETHING DOESN'T DO WHAT YOU PLANNED IT TO DO DOESN'T MEAN IT'S **USELESS.**

THOMAS EDISON

The Amazon is in flames, but Brazil's past can show the path forward

With the seemingly pervasive shift in political winds, the shining model of Brazil's success is losing its sheen



RUTH DEFRIES AND DOUG MORTON



A satellite image shows smoke rising from Amazon forest fires in Rondonia state, Brazil

sat down to catch our breath on a halfburnt log. Plumes of smoke on the ho-We couldn't have known that we were Mato Grosso.

of fires this year — the result of both could be weeks or months. drier conditions and intentional burnthe importance of these data — and could show the path forward.

In 2003, we were on a mission with

ust over 16 years ago, on a swel- of carbon that would otherwise trap tering day along the southeastern heat in the atmosphere and how trees fringe of the Amazon forest, we recycle water into clouds that sustain forests and water crops far away.

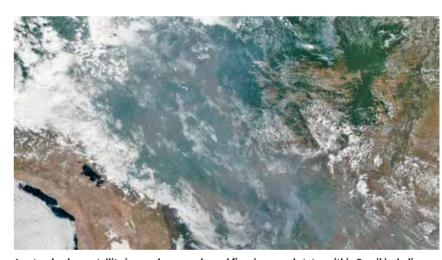
Before we headed into the field, we rizon wafted to the sky, and the sound had huddled with our Brazilian colof chainsaws whirred in the distance. leagues around computers to analyze data from a recently launched satellite sitting in a time and place that was that sent images of the forest every rapidly approaching peak deforest- day. The new data were full of promation this century in the Amazon. It ise, suggesting it might be possible to was July 2003 in the Brazilian state of shrink the time between a chainsaw crew cutting a forest tract and INPE's That moment comes to mind this ability to map where that deforestation week, with reports that Brazil's Ama- occurred. With older satellites, the gap zon has experienced a record number between the event and the information on. As we sat on the log, we looked at

ing to clear the forest. As smoke from only way to find out was to see for distraught at what it meant. Pasture for deforestation fires blankets the Am- ourselves. So we marked on a map the cattle and fields for soy to ship to Euazon once more, those in power have places to check. After crossing rivers rope and Asia were replacing responded by attacking government on shaky wooden bridges, changing trees. Satellite images provided the big work made a difference. Data alone minerals, satisfying the clamor for cash scientists and attempting to bury factst- numerous flat tires and pushing vehi- picture. The Amazon forest was disap- cannot keep the forest standing, but crops and building massive infrastruchat the satellite record makes clear. But cles out of the sand, we arrived at one pearing before our eyes. lessons from Brazil's own past highlight of the spots marked on the map. Sure enough, a thick chain dragged between technical skill and dedication to their by their roots. At a second spot, piles Brazilian government has had the best our colleagues from the Brazilian space of dead trees still smoldered. A third system in the world to track its forests. agency, INPE, as part of a collaboration spot also had telltale signs of recent INPE's estimates are the gold standard between U.S. and Brazilian scientists. deforestation. And a fourth, fifth and to officially document changes in the The goal was to understand how the sixth. Each clearing was as big as an forest. The key has been transparency: Amazon forest stores massive amounts Iowa cornfield. The algorithm was spot Satellite images, methods and results

Thousands of fires are burning in Brazil, many of them in the world's biggest rainforest, which is sending clouds of smoke across the region and pumping alarming quantities of carbon into the world's atmosphere

each other in dismay. We were thrilled Could we trust the algorithms? The with the accuracy of the algorithm, but

Our Brazilian colleagues put their cannot go into action.



A natural-colour satellite image shows smoke and fires in several states within Brazil including Amazonas, Mato Grosso, and Rondonia

two tractors had ripped out the trees mandate into action. For decades, the tion rates plunged with government great cost. policies that combined carrots and sticks for ranchers and farmers. The the edge of the deforestation frontier, tired rationale that standing forests get Brazil demonstrated to the world that in the way of progress toppled. With effective policies can curb the damage. better-managed pastures and fields, But our planet's most vital assets can ranchers and farmers produced even never be completely safe from politon new clearings. Brazil became the earlier gains. Successes take years of blessed with vast remaining tracts of many talented people, such as our INPE lush tropical forest. Tracking deforest- colleagues. As the chainsaws buzz once routine as an annual checkup.

With the seemingly pervasive shift for the world to see. in political winds, the shining model like these facts. Because the reality NASA's Goddard Space Flight Centre)

are all shared with the world. And their gets in the way of unearthing valuable without data, even the best policies ture, he is using the all-too-familiar tactic of claiming truth is a lie and cutting In the following years, deforesta- off the fact-checkers. Yet this comes at

In the years since we sat on the log at more beef and soy despite restrictions ical upheavals that reverse course on shining example for other countries hard work and technical expertise from ation from satellites became nearly as again, we stand in solidarity with the truth — the satellite record of forest loss

(Ruth DeFries is the Denning uniof Brazil's success is losing its sheen. versity professor of sustainable de-Deforestation is inching upward, an velopment at Columbia University, observable fact known from INPE's own a MacArthur fellow and the author system and other sources. Brazilian of "The Big Ratchet: How Human-President Jair Bolsonaro – who has ity Thrives in the Face of Natural made opposition to environmental pol- Crisis." Doug Morton is chief of the icies a pillar of his platform - doesn't Biospheric Sciences Laboratory at



Smoke billows during a fire in an area of the Amazon rainforest near Humaita, Amazonas state, Brazil