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Using the Internet to Save the Rainforest

How an Amazonian Tribe Is Mastering the Modern World

By Juliane von Mittelstaedt

The Surui people from the Brazilian rainforest are fighting to stop the destruction of their homeland. But instead of bows and arrows, they are using the Internet, GPS and Google Earth. Next they plan to start carbon emissions trading.

Chief Almir Narayamoga Surui spins the globe in front of him past Copenhagen, Bristol, and Washington. He loves playing on Google Earth, and hopping from one continent to another. It's become something of an addiction. I ask him what interests him about Bristol. "I don't know," he replies. "I'm just looking." The virtual Earth in front of him continues turning, and finally reaches Brazil, and here the 35-year-old chief, who was born on the floor of a hut in the rainforest, zooms in on a large green triangle surrounded by brown, the outlines sharp as if drawn with a ruler.

"This is our land: 2,428 square kilometers of rainforest," he says. Almost three times the size of New York city, the wedge of forest is home to the 1,300 members of the Surui tribe, one of several thousand indigenous groups living in Brazil. The land is called Terra Indígena Sete de Setembro, named after the day the world of the white man first encroached upon that of the Surui: September 7, 1969. This first contact -- which is still referred to as "contato" -- proved devastating, slashing the population from 5,000 to just 250 through the combined ravages of hunger, civilization, and above all chicken pox. Before modernity burst into their lives, the Surui had remained within the confines of their reservation, and had practically never left the forest.

Forty-one years later, Chief Almir sits in a light green house at the site of that first contact. Today it is a suburb of the town of Cacoal on Highway BR-364 in the northwestern Brazilian state of Rondônia. The chief is a short, stocky man with small, lively eyes set in a head that rests like a boulder between his shoulders. In front of him sits a black miniature notebook. Behind him, on the wall, hangs an arrow decorated with feathers.

Internet, Google Earth, GPS

It is from here that he wages his battle against the deforestation of his homeland. His weapons of choice are the Internet, Google Earth, and GPS. He talks about satellite images, about the million trees he intends to plant, and the 16.4 million tons of carbon dioxide he wants to sell on the global emissions market.

The Surui will be soon be one of the first indigenous peoples that will be paid by the world to preserve its forest. They are being advised by investment bankers, lawyers, and managers. But the decisions will be all their own, taken at a gathering of 1,300 native Indios. Almir Surui believes his people need modernity to help them maintain their traditional way of life, that this is the only way they can save their forest, their culture, and their tribe. But because it is an experiment, the outcome is uncertain -- for both the Surui and the rest of the world.

The Amazon Basin contains 40 percent of the world's tropical rainforests. It is the Amazon which will first show whether the battle against deforestation and climate change can be won. And also what will happen if it is lost.

Just last year, 130,000 square kilometers of forest was cut down or burnt, at least 10,000 square kilometers of this in Brazil. That may be the lowest figure in decades, but it's still too much. Twenty percent of the Amazon rainforest has already disappeared. The same amount has been damaged. On a purely proportional scale, the greatest amount of forest has been lost in the state of Rondônia.

At Loggerheads with the Loggers

The Sete de Setembro reservation survived as a green wedge hemmed in by farms, villages, and roads. It survived because the Surui drove away settlers and loggers alike, strung iron chains across the roads, and moved their villages to better prevent encroachment into their reservation. But 2,428 square kilometers is too vast an area for 1,300 Indians to be able to guard constantly. The Surui lost 7 percent of their forest, but have saved 93 percent. Their's is the last area of forest in this part of Rondônia, in which 4,000 people still live off the logging industry.

"But let us start at the beginning," the chief says. "Let's drive to Lapetanha."

We get into his pickup truck and he drives past gas stations, scrap yards, and hotels that let rooms by the hour. Eventually we see fields of soy beans, banana plantations, and black-and-white Friesian cows standing in fields full of charred tree stumps. "All this was once our land," he says modestly and quietly in soft Portuguese. He can't remember what it used to look like. After all, the forest was already gone when he left his village for the first time at the age of 14. Nor can he remember much about the fighting or his father, who helped drive the settlers out of the reservation -- he armed with a bow and arrow, they with guns. "I just remember the fear," Almir Surui says.

The fear is all that remains. People standing by the roadside stare as Almir's car drives past, and they look increasingly hostile the closer we get to the reservation. Many of them are loggers who used to live in the reservation. Three years ago the loggers and sawmill owners put a \$100,000 bounty on his head, and the chief was forced to flee to the US.

Two Worlds

It takes an hour to drive back in time from one world to another.

In one world Almir Surui has two wives, one in Cacoal, the other in Porto Velho, as well as five children, a house with a garden and a dachshund. In this world he is something akin to the foreign minister of the Amazonian Indians. He has traveled to 26 countries, been at the United Nations in New York, taken part in the Copenhagen climate summit, and had an audience with Prince Charles in London. Al Gore intends to pay him a visit in the near future. In December the Brazilian magazine *Época* named him as one of the hundred most important Brazilians, together with soccer star Kaká, model Gisele Bündchen, and writer Paulo Coelho. He is a member of two government commissions, and during the elections in the summer he will be standing for a parliamentary seat as a member of the Green Party.

His other world is Lapetanha, the place of his birth in the reservation, the village where he was elected chief at the age of 17 because his father had been a chief before him and perhaps also because they sensed that he was somewhat special. In this world, the people eat grubs and only got

electricity four years ago. Here he paints dots and lines on his face and body during religious festivals, the remains of which can be seen as faint blue coloring shimmering on his skin.

This is the world which was rocked by modernity 41 years ago when workers cleared a path through the forest as a prelude to the construction of a highway. This road brought with it settlers, cattle, cars, and telephones. Today, in many settlements you can find a chest freezer in which the villagers put the peccaries they hunted with bows and arrows.

Lost Harmony

This other world begins at the end of the fields where the forest suddenly grows dense again. Only a narrow track leads to the village comprising a few huts, a school, a church, three computers, and 102 inhabitants. Almir Surui parks his pickup outside the wooden house of his parents. Marimop, his 87-year-old father, is lying in a hammock wearing a green crepe shirt and orange shorts. His mother is squatting on the ground drilling holes in an armadillo shell.

Both have two blue lines across their face. Almir's father explains that it is the symbol of the Surui, and that all men and women used to have this tattoo. "But young people don't want that anymore." I ask him what has changed since his people were involuntarily connected to the outside world. "The spirits used to keep the forest and the weather in harmony," the old man explains. "But the spirits are no longer what they used to be in the time of great tranquility." In other words, before 1969.

The loss of tranquility was accompanied by a loss of tradition, primarily pride. Outsiders sneered that the Surui were stupid and indolent, and they became embarrassed to call themselves indigenous people. Since then they have been at pains to appear as Brazilian as possible. Whenever they travel to the city, they wear carefully ironed shirts and meticulously polished shoes. Those who can afford to tile their terrace. A handful even own a car. And the most important person in the village is no longer the shaman, but a man from Germany. Every Wednesday, the missionary comes to the village to preach -- though mostly about the Apocalypse and Genesis because little else has been translated.

Looking at the chief sitting between his parents, you can imagine what a huge leap he must have taken to venture out into the other, alien world. Almir was the first Surui to go to college. He studied biology in Goiânia, a city of 1.2 million inhabitants, where fellow students ignored him because he didn't talk, look or eat like they did. Almir only ate soft-boiled meat, preferably pork, and no vegetables or sauce. Although the Surui have adapted in many ways, their nutritional habits have not changed.

Technology and Tradition

The young Surui therefore sought refuge in the Internet and joined the battle against the World Bank and its Planaflo development project, which envisaged building new roads, dams and settlements on Indio land, but ignored the country's indigenous people. The Indios took on the World Bank -- and won. When the chief returned to his village, he brought with him a computer and an idea: that the Surui's only hope for survival lay in combining the two worlds of technology and tradition. It was the dawn of a new era.

Almir's father still hunts with a bow and arrow, while Almir now has an iPhone. "I revere modern technology," he says. It sounds like a profession of faith. Although he can get no reception, he holds his iPhone in his hand, and won't let go. He glances at the unresponsive screen, yearning to check his e-mail, surf the Internet and Google his own name, which he often does whenever he is bored. Yesterday he generated 49,600 hits. That gives him hope, he says, because you don't disappear so

quickly if you have 49,600 hits. He has five different e-mail addresses, and 324 friends on Facebook. One of them is fellow Amerindian Evo Morales, the Bolivian president.

Almir Surui, the Indio from the Amazon rainforest, is now famous.

It all began in 1997, the year of the Kyoto Protocol. Almir Surui was 22 when he hatched a 50-year plan that was as simple as it was ingenious: The Surui would themselves heal the wounds the loggers had inflicted on their reservation. And within 50 years their forest would be as pristine as it once was. Almir believes this is the tribe's only hope for survival because there had always been some Surui who would cooperate with the logging mafia, some to escape poverty, some out of sheer greed.

'An Email from the Heart of the Rainforest'

The chief's words convinced nearly all the Surui, who avidly began breeding and planting seedlings. Gradually the forest returned. Ignoring the rain and the heat, they planted more and more species: Açai palms, Ipé (trumpet trees), Brazil nut, mahogany. Women, children, and the elderly all lent a hand, clearing scrubland that looks like forest but is no more than brushwood, palm trees, and ferns. They are still planting to this day.

Standing among the Surui, his arms pockmarked with mosquito bites, is a man from Switzerland; Thomas Pizer, from the Aquaverde organization. Pizer recalls how he received an e-mail from Almir Surui six years earlier. The message read: "On your website it says you are involved in the reforestation of the Amazon. If that is true, please help us." Word documents and Excel tables were attached to the e-mail. "I was being sent Excel tables from the heart of the rainforest!" Pizer says with a laugh. He wired the Surui enough money for 500 seedlings. They planted 1,900. "No other indigenous people in all of Brazil has done this much for the revival of their forests," he says.

So far, the Surui have planted 120,000 trees. Another 40,000 are planned to be added this year. Yet despite all their efforts, they are still a long way from Almir's dream of a million new trees -- partly because of persistent attempts at illegal logging. Almir pulls out a piece of paper and sketches the Surui reservation. Next to it he draws a circle. "The authorities gave the loggers a license to cut down trees in this area," he explains, pointing to the circle. "But there are no trees left there anymore, so they come into our reservation and then claim the trees were cut down legally."

An Indio Visits Google Inc.

Only last week he caught some illegal loggers as they were about to make off with three truckloads of mahogany. The trucks belonged to the regional authorities in the neighboring state of Mato Grosso. "The mayor is involved. That's typical around here," Almir says. He's lost faith in the Brazilian government and in its plan to slash logging by 80 percent by the year 2020. Almir Surui, the chief from the rainforest, now only believes in the power of knowledge.

Three years ago he therefore contacted the company with the greatest store of knowledge: Google, Inc. Wearing a crown of feathers on his head, he entered the company's global headquarters at 1600 Amphitheater Parkway in Mountain View, California, demanding a meeting. They granted him 30 minutes -- and spent three hours talking with him. A few months later, Google came to Lapetanha armed with laptops, satellite telephones, cameras, and video beamers. And the Surui typed their first query about the world into the Google search engine: "Desmatamento Amazônia" (deforestation in the Amazon).

They shot a video for YouTube, built a website and learnt the meaning of words like "blog", "overlay", and "3D". They even invented a word for Google in their own language, Tupi-Monde: "ragogmakan." It translates literally as the messenger, because Google carries the message of the Surui and their plan out into the world.

Scanning Googles for Intruders

The chief hopes to fully digitize the reservation one day. They're already working on the first step: They want to integrate a self-produced map of their forest into Google Earth, where people will be able to consult photos, take a virtual flight over the reservation, and watch videos of the tribal elders talking about their traditions. Meanwhile in a palm-leaf hut down on the forest floor, Surui will sit at computers scanning high-resolution satellite images of their forest inch by inch to detect intruders, pictures that the Chinese-Brazilian CBERS III satellite will soon be supplying.

Until then, they must make do with satellite pictures on Google Earth. Despite their poor resolution, the pictures were good enough to identify dozens of places in which wood poachers and gold prospectors have penetrated and been driven out again. Many tons of wood have been confiscated. It has been a taste of things to come, of the future that will hopefully come in October when the Surui will engage in global emissions trading.

Almir Surui first heard the term REDD -- or "retchy", as he pronounces it -- three years ago. The acronym stands for Reducing Emissions from Deforestation and Forest Degradation. He discovered that forests trap carbon dioxide, and companies around the globe are willing to pay a lot of money to have the trees soak up carbon dioxide on their behalf. They don't pay for a forest that is merely in existence, but rather for preventing its destruction.

Forest Could Vanish by 2100

The Surui therefore commissioned a simulation of what would happen if they didn't protect their reservation: The "business as usual scenario", to use the REDD jargon. For the Surui, business as usual would mean that 30 percent of their forest would disappear in the space of 50 years. By the end of the century it could all be gone.

Swinging in his hammock gnawing on a peccary rib, Almir Surui throws out a huge figure: \$120 million (€99.6 million). That's the price of protecting his forests for 44 years and thus preventing 16,475,469 tons of carbon dioxide entering the atmosphere. The possible purchasers of such "credits" are companies willing to voluntarily trade in emissions, but also investment banks, brokers, and even governments. The US state of California would be one such candidate because it has pledged to reduce its CO2 output.

The Indio chief is well aware of the criticism of REDD. Critics say it is too complicated, that Mother Nature should not be steered by the logic of the money markets, that too much money is lost in transaction fees. Moreover it is far from certain that REDD will really help protect the environment.

Nevertheless if everything goes to plan, REDD could restore some of the indigenous peoples of Brazil's lost pride and make the world take them seriously. The Surui could become a model for how Amerindians could live off and in harmony with their forest.

Surui Business Plan

The Surui want to use a part of the money to build new homes for themselves and to plant even more trees. They would also like a hospital, a better school, computers for all, and pensions for the elderly and infirm; a mini welfare state for the Surui. The rest of the millions they hope to generate from emissions trading would be put into a fund with which they would buy companies and bring jobs to the region, something which would also benefit their enemies, the wood poachers.

The chief speaks of a business plan, about Surui coffee, yield, and growing capital assets. He talks just like a businessman -- which is exactly what he will be in the near future. He and other Surui are to act as the fund's supervisory board, a body he will chair. Fifteen Surui are currently studying business, biology, and tourism so that they can run the businesses.

The young people hope that emissions trading will bring the future into their village. The elderly hope it will bring tradition back to the village.

Almir senses it will be a delicate balancing act. He has turned the Surui into high-tech Indios, but at the same time he wants them to preserve their culture. He says he sometimes despairs, and worries that the two are mutually exclusive. "But what's the alternative?" He shrugs his shoulders. There is none.

Rainforest in the Desert?

That evening, the old world and the new can be witnessed side-by-side in the village. A thick curtain of rain is falling. In one of the huts, a laptop sits on a chair. It is showing a video filmed during the Mapimai festival, the celebration of the creation of the world. The festivities feature a contest between two clans. They paint themselves, don decorative feathers, and then see who can drink the most chicha, a beer brewed from maize. On screen, men stagger around, laugh, sway together, and vomit. The children of the village sit in front of the laptop laughing. Next up is a video of Almir giving his speech at the Copenhagen Summit.

The chief sits next to them, lost in thought. Memories of Copenhagen are long gone. He's already hatching his next plan. A company from Abu Dhabi in the United Arab Emirates has called him and asked whether it would be possible to grow a rainforest in the middle of the desert. Almir knows Abu Dhabi is a country made of sand. But along the Persian Gulf they've already built the world's tallest building, an island shaped like a palm tree, and a ski slope. So why not a rainforest?

Almir told the sheikhs he would need \$15 million -- and of course a hall surrounding the forest -- to complete the project. The Surui would manage the undertaking, and money earned from entrance fees would be used to buy back the land surrounding their reservation, land that used to belong to them.

Almir Surui smiles. Thirteen years into his 50-year plan, he's certainly not running out of ideas. In fact, he's only just hitting his stride.

Translated from the German by Jan Liebelt