



# International Sugar Organization

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**EXECUTIVE DIRECTOR**

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(English only)**

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## **Sugar: A Killer Crop?**

The Executive Director would like to urgently draw attention of our friends and contacts to the article below which launches a very aggressive attack against Sugar with groundless affirmations and sweeping generalizations. The impact is all the worse as it has been published in the magazine of the UK Natural History Museum (NHM), which surprisingly does not appear to have verified the statements of the author much less subject the piece to a peer-review.

The Secretariat is preparing a firm, facts-based response to dispel the lies about sugar's use of water, impact on deforestation and carbon footprint with solid internationally-recognized evidence, adding a succinct mention about sugar's vital role in a balanced diet & human nutrition. The letter will be addressed to the Director of the NHM to complement the clarifications furnished by the Embassy of Brazil and other sister entities of the sugar sector.

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### **Sugar: a killer crop?**

By Katie Pavid, First published 15 March 2021

We know too much sugar is bad for our bodies, but it could be making nature sick, too. The delicious, sweet powder currently poses two major threats to our health and happiness. First, eating too much sugar contributes to the development of some of the world's biggest killers, including heart disease and diabetes.

Second, sugar cane farming is big business, and it has devastated parts of the natural world. It takes up more than 60 million acres of land worldwide - more than 150 times the area of Greater London. It's often grown in areas where lush tropical forest once stood.

The world's biggest sugar cane exporter is Brazil, where most of the country's precious Atlantic Forest has been demolished to clear space for plantations. The same story is replicated across the world. Sugar production in Florida is compromising the health of the Everglades, a unique tropical wetland environment. In Australia, runoff from coastal sugar cane production is poisoning the water around the Great Barrier Reef, the world's largest area of tropical coral.

How did we get here, and what can we do about it?



Sugar cane grows well in areas that are traditionally covered in tropical rainforest. Brazil, India, China and Thailand are the world's biggest sugar exporters. Image: Yatra/[Shutterstock.com](https://www.shutterstock.com).

### **Sugar cane: a survival strategy**

Our bodies crave sweet, high-calorie foods. Prehistoric humans would have come across sugar infrequently, in seasonal fruits or wild honey, and would have probably gorged on the occasional calorie boost.

But since we started intensively farming and manufacturing sugar from beets and cane, it has become pervasive in diets the world over. Unlike our hunter-gatherer ancestors, most of us now have control over how often we can eat sugar. The trouble is we haven't yet evolved any change in our craving for it, so we consume far too much of it.

Dr Ana Claudia Araujo is a plant researcher at the Museum. After a career in Brazil studying tropical plants, she now researches biodiversity loss and studies plant species threatened with extinction.

She says, 'Sugar cane itself shouldn't be demonised. It's just a plant trying to survive and reproduce, but humans took advantage of what it could offer. Now we have become addicted and want more and more of it. It has become an issue for the planet and for our own health, but it's an issue of our own making.'

### **A bitter history**

No one really knows where sugar cane came from, but it probably originated in New Guinea. It is not native to South America, although it now covers huge swathes of land there. Dr Neil Brummitt, a Museum researcher who studies plant diversity, says, 'Sugar was the eighteenth-century version of palm oil today. We know that modern palm oil farms can be incredibly destructive because rainforest is cleared to make room for them.'

'Sugar was just like that, too. Around 200 years ago, sugar cane was being produced in the way that palm oil is now. It grows well in areas that would otherwise be rainforest, so large parts of the tropics were cleared to produce it.'

'We haven't learned from our mistakes because we're repeating them all over again.'

Sugar was probably taken to the Americas in the fifteenth century, where it quickly became a source of great wealth for the Europeans who owned and sold it, but immense suffering for the enslaved people who grew it. The crop powered the transatlantic slave trade, as European colonists set up huge plantations in the Caribbean and South America. Indigenous people in Mexico, Guyana, Cuba, Barbados and Jamaica were killed in the pursuit of the 'white gold'. Later, after devastating the Indigenous population, European traders enslaved African people

to grow and harvest the crop. The sugar was shipped back to Europe, where slaveowners made a fortune from its sale.



Sugar cane has been a driver of deforestation across the world, particularly in Brazil. Image: mailsompignata/[Shutterstock.com](https://www.shutterstock.com).

### **Sugar's impact on nature**

Sugar's dark past has given way to a difficult present.

You might have heard that cattle farming is a big cause of deforestation in Brazil, but sugar has an equally big impact.

The Atlantic Forest, or Mata Atlântica in Portuguese, is found on the Atlantic coast of Brazil. It should be full of life, supporting thousands of species of plants and animals, many of which are found nowhere else. It's different from the Amazon rainforest but equally important. Around 500 years ago it would have covered an area of more than 1.5 million square kilometres. Now, more than 90% of it is gone, cleared mostly for timber, pasture and sugar.

Sugar cane farms have been the biggest driver of deforestation in Brazil and they are particularly damaging to rainforest areas because they use up a lot of water in the soil.



A map of the Atlantic Forest biome in Brazil, Argentina and Uruguay. The yellow lines surround the forest, as delineated by the World Wildlife Fund. Image: [NASA via Wikimedia Commons](#).

Ana Claudia says, 'Even if we stopped planting sugar cane right now, the forest wouldn't come back immediately because the process of growing sugar involves three steps that are very bad for other plants.

'First, sugar takes too much water from the soil. Secondly, farmers burn off old leaves when they cut the canes, which damages the land and harms tiny organisms and nutrients in the soil.

'Thirdly, sugar cane plantations need to be cleared each year, which causes floods because the soil is so damaged. The soil should be a huge sponge, but without tree roots it can't do what it's supposed to. In turn, the soil travels to lowlands and rivers that will flood during the rainy season - you get flooding at the wrong time and in the wrong place.

'All sorts of problems are caused on top of the loss of biodiversity. Human lives, comfort and wellbeing are all at risk because of forest destruction.'

Neil adds, 'Rainforests are like a huge recycling system. A lot of nutrients in the soil come from leaf litter on the forest floor. Moisture supports the fungi that decompose the leaves into the soil, and moisture and nutrients are taken back up by the plants.

'Much of the diversity of species in the rainforest is in epiphytes that grow on the trees, such as orchids, bromeliads, mosses and ferns. To keep all the diversity of these aerial plants, you need the trees to support them. They won't grow on sugar cane stalks.'

Other areas of land beyond the forest can also dry up because of sugar cane, as the forest would otherwise manage the flow of water.

Ana Claudia says, 'People didn't notice the effect 300 years ago. Now we can. Even clearing sugar cane plantations right now won't solve these issues immediately, because the supporting system is not there.'



A colorful toucan on a branch in the Atlantic Forest. The forest was once home to a huge diversity of life, but has shrunk in size by more than 90%. Image: Rodrigo S Coelho /[Shutterstock.com](https://www.shutterstock.com).

### **The future**

Sugar cane production could be expanded even further in the coming decades as it is promoted as a biofuel, a 'green' alternative to oil and gas. In Brazil, for example, it used to be commonplace that new cars ran on biofuel produced from sugar.

The trouble is the world needs less sugar, not more.

Ana Claudia says, 'Sugar cane is not our enemy. But we do need to think about how many species have we sacrificed in order to have sugar cane plantations. Some species that have been wiped out we won't ever even know about, and we don't know how important they were in their ecosystems.'

### **So what's the solution?**

An alternative to unhealthy diets and devastated rainforests is possible.

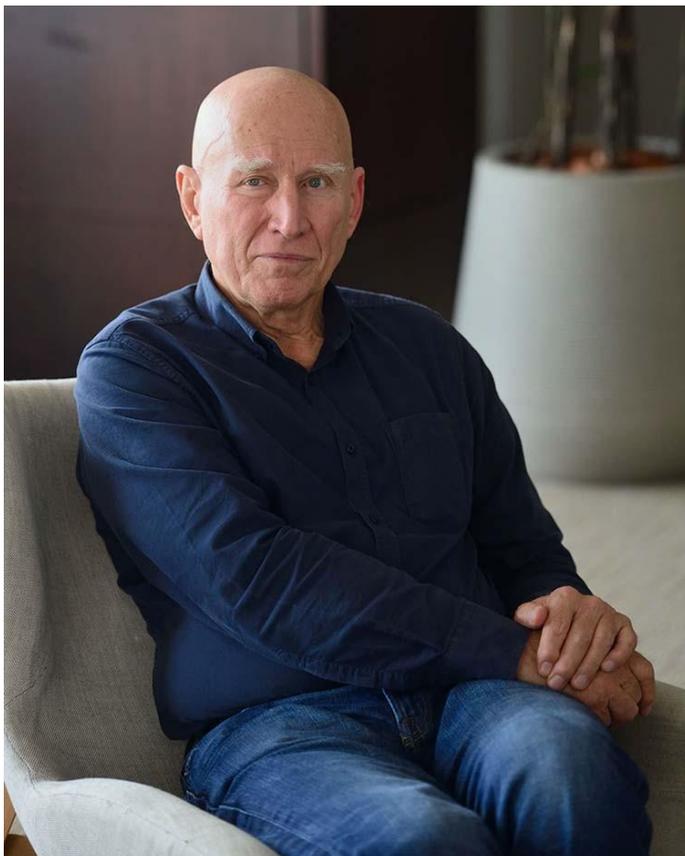
Ana Claudia says, 'You have to ask yourself, "What price am I willing to pay for sugar?" Think of nature as a commodity you benefit from. Are you willing to pay more for items that have sugar in them? We all like eating sweet food, but we don't actually need as much as we crave.'

On the other hand, if the world stopped eating sugar tomorrow, hundreds of thousands of people who rely on sugar for their incomes would lose their trade. One solution might be to reduce the amount of sugar we consume but pay more for the products that contain it. It would mean that workers still make enough money to live on, but plantations could shrink in size.

Also consider that many products contain unnecessary, hidden sugar, like soup and bread.

Ana Claudia says, 'We can't just destroy the sugar industry, but industries dependant on sugar need to think outside the box and find alternatives. So much forest is lost, but at least let's preserve what we have left and create corridors between existing patches.'

'Nature is extremely resilient, so there is hope. But we can't wave a magic wand and fix everything. We need to have patience and let nature nurture itself. We can't rush reforestation, so the earlier we start the better.'



Sebastião Salgado, founder of the Terra Institute. Image: Fernando Frazão/Agência Brasil via [\*\*Wikimedia Commons\*\*](#).

### **The Terra Institute**

Individuals can make a difference. One example is the Instituto Terra (Terra Institute) in Brazil, a conservation organisation that was set up by Sebastião Salgado, a world-renowned photographer, and his wife Léila Deluiz Wanick Salgado, an author, film producer and environmentalist.

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The couple bought a dry and devastated old cattle ranch in a region known as Rio Doce water basin in southeast Brazil, and set about reforesting it over the course of a decade with spectacular results. By 2019, more than 2.5 million seedlings from 297 native species from Atlantic Forest had been planted across thousands of acres. Natural springs flow on the farm again and native animals have returned to the area, including jaguar and endangered parrots.

In a Google Arts and Culture exhibit, the Terra Institute calls itself a 'great forest recovery lab'. It says, 'Having the green back, it did not take long to for the animals to make their way back as well. Nowadays the RPPN Bulcão Farm is a safe haven even for endangered species [of] Brazilian fauna.'

Hear more of The Terra Institute story's on [\*\*Google Arts and Culture\*\*](#).



Stevia, a natural sweetener and sugar substitute. Image: casa.da.photo/[\*\*Shutterstock.com\*\*](#).

### **Yacón and stevia**

There are also other crops able to fulfil our endless hunt for sweet food, including stevia, a perennial herb with sweet-tasting leaves that is commonly used in parts of South America. It requires less land and less water than sugarcane.

Likewise, yacón is a South American tuber traditionally grown in the Andes and naturally sweet-tasting. It produces a molecule called inulin, which tastes sweet but is not broken down by the body, meaning it holds no calorific value and passes directly through our system. Because it doesn't trigger an insulin response, it doesn't pose a diabetes risk as sugar cane does. It can be bought as a syrup and used as a liquid sweetener, and even grown outside in Britain.

Most sugar grown (rather than sold) in Britain is from sugar beet rather than cane, so there are already alternatives. European birch and beech trees are also sources of healthy sweetness.



Yacon plants have sweet, tuberous roots that look a little like sweet potatoes. They can be made into a sweet syrup. Image: Amawasri Pakdara/[Shutterstock.com](https://www.shutterstock.com).

Ana Claudia says, 'Hope isn't lost. There are still national parks across the world that protect nature. People are also more conscious than ever of issues related to their health and the health of the planet. If we keep talking and thinking about it, we'll find a better solution.'

'Go back hundreds of years ago: if we wanted to travel, we had to walk or ride an animal. Then eventually we invented trains. Later, we realised trains powered by coal were bad for our health, so we changed the engine to run on diesel and nowadays on electric cables. There is always a process of change, but we always adapt to new ways that prove to be, overall, better for us.'

'We need to find relevant ways to deal with the sugar industry now. We need to give ourselves time to adapt to new ways of doing things so that we can live healthier, longer and more comfortable lives. Meanwhile nature will have the time to breathe and reinvent itself.'

'This is just another phase in human evolution and development. We have tried sugar, came to realise it's bad for us, found better solutions, and now we can make a decision. How much are we willing to pay for a better life?'

<https://www.nhm.ac.uk/discover/sugar-a-killer-crop.html>