



From left to right,
cupuaçu flower, guaraná,
copaíba, tucuma,
and passion fruit flower

SUSTAINABILITY, FEMALE SUBJECT

Entrepreneurs from the Amazon use innovation and traditional knowledge to create new cosmetics and foods

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A group of entrepreneurial women from the Amazon have developed a collection of innovative products, including cosmetics and foods, that demonstrate potential for driving sustainable development in the region. Biologist Andrea Waichman, a researcher from the Federal University of Amazonas (UFAM) and partner at the cosmetics startup Darvore, has developed an oil reducing balm made from copaíba (*Copaifera langsdorffii*) and tucuma (*Astrocaryum aculeatum*), working with inputs from extractivists from the Uatamã Sustainable Development Reserve in the state of Amazonas. She explains, "We have created nanometric capsules made with Amazonian bioactives, instead of synthetic materials. This way, we are able to have 100% natural products". Darvore has headquarters in Manaus (Amazonas) and a branch in Ribeirão Preto (São Paulo).

This businesswoman, who was born in Argentina and based in Amazonas for over 25 years, was one of those interviewed in the e-book *Potência amazônica* (Amazon

power), which was released in October and brought together some local leaders from the region's innovation ecosystem. In addition to the copaíba balm nanoencapsulated in tucuma butter, Darvora, at which economist João Tezza is also a partner, has developed a facial moisturizer made from copaíba but encapsulated in cupuaçu (*Theobroma grandiflorum*) butter. Both of these products were released in June 2022. The nanoencapsulation process was subject to a patent application filed in 2019 with the National Institute of Industrial Property (INPI). The product was developed in partnership with the São Paulo State Institute for Technological Research (IPT) and is manufactured by Yosen, a startup with a focus on nanotechnology that is located in Supera, the business park for innovative companies of Ribeirão Preto, in the state of São Paulo.

The ancestral knowledge and culture of indigenous peoples have also inspired fledgling companies in the Amazon. Biologist and farmer Raquel Tupinambá, who is pursuing a PhD in social anthropology at the University of Brasília (UnB), is trying to set up a processing house within the Tupinambá territory in the Tapajós-Arapiuns Extractive Reserve (RESEX) in Pará, where she was born, grew up, and lives. Alongside her sister, agroecologist Mariane Chaves, the researcher has developed products inspired by Tupinambá gastronomy and culture. The most famous product is an orange-red cassava wine called Mani-Oara, with an alcohol content of 8%. The fermentation uses fungi from another cassava-based drink consumed by the indigenous people from the region, called tarubá.

The idea of creating products that valued the work of women from the indigenous territory matured between 2014 and 2016, while the biologist was studying for her master's degree in botany at the National Institute of Amazonian Research (INPA) and her sister was taking a master's in ecology at the Federal University of Viçosa (UFV) in Minas Gerais. She kept herself informed of public notices, organizations, and acceleration programs that could help her start her own business. She and her sister decided to give new life to the Association of Agroextractivist and Indigenous Residents of Tapajós (AMPRAVAT), which organizes and distributes the production of approximately 30 families.

They were considered in a public bid by the nongovernmental organization Saúde e Alegria (meaning health and happiness), with funding through the L'Oréal Fund for Women, for the construction of the processing house in the Indigenous territory. They successfully obtained funding in 2019, but the pandemic delayed the start of the work until 2022. The objective is to achieve artisanal certification from the Pará Agricultural Defense Agency (ADEPARÁ), which would permit the sale of its products in supermarkets and malls within the state. In addition to the wine, they produce a black tucupi sauce, jams, and other products that are only sold in stores and markets in Santarém and Alter do Chão.

The initiatives of Waichman and Tupinambá are recent examples of the potential of the bioeconomy, a set of productive activities capable of generating income and wealth for the populations that live around the world's largest tropical rainforest, ensuring its preservation. Although there are no consolidated data on how much the sector generates in the region, analysis from the Amazon 2030 project published in April 2021 by Brazilian public administrator Salo Coslovsky, an associate professor at New York University, estimated that entrepreneurs located in the Amazon exported 955 products between 2017 and 2019. Of this total, 64 products are classified as "compatible with the forest" (nontimber forestry extractivism, agroforestry systems, fishing and tropical fish farming, and tropical horticulture and fruticulture) and generate an annual income of US\$298 million.

Pharmacist Samara Rodrigues, the CEO of Pharmakos D'Amazonia, which produces cosmetics and food supplements and is located in Manaus, says that she is often sought after by companies interested in buying some type of raw material from the forest. She notes, "It is frustrating, because we are a technology-based company". One of the products in line for release by the company is a cream that contains the leaves of the wild passion fruit (*Passiflora nitida*), a plant that is native to the region. This product was developed in partnership with researchers from UFAM and the University of São Paulo (USP), the Federal

University of Sergipe (UFS), and the Federal University of Rio Grande do Norte (UFRN). The antioxidant properties of the extract were described in an article published in September in the *Brazilian Journal of Pharmaceutical Sciences*. Rodrigues explains, "We have already done all the efficacy tests and the publication is the last demand of ANVISA [Brazilian Health Regulatory Agency] so that we can register the product and sell it". Ten years ago, she assumed leadership of the company created by her father, pharmacist Schubert Pinto, a retired teacher from UFAM. Today, Pharmakos D'Amazonia has approximately 80 cosmetic and food products in its catalog.

Sheila Melo, an intellectual property specialist from EMBRAPA Eastern Amazonia, a unit of the Brazilian Agricultural Research Corporation (EMBRAPA), in Belém, stresses the importance of having Amazonian women stand out on this path. She observes that "Many innovative products and services arise from this local vision, and we have a huge market to be explored. As a woman from Pará, I know that experience is a differential for innovating, by observing our reality and our potential". In her assessment, there is still much to be done along the path of innovation and female entrepreneurship. Indeed, she notes that "In daily life, we still see difficulties and barriers linked to gender equality. There is also a lack of diversity, such as Indigenous, Black, and LGBTQIA+ people in this innovative ecosystem".

Medical engineer Júlia Bussab Fonseca, who is doing a PhD at the University of Sussex in the UK and studies the intersections of gender and race in climate finance mechanisms in the Amazon, has seen some advances. As the financial director of Climática, a company that provides consultancy on climate change for other organizations, she has worked for clients who seek to create programs aimed at female entrepreneurs. She notes, "For around two years, we have seen institutions, such as banks, looking for us to include companies and projects with female leadership in their financial services". In one of these consultancies, she is collecting data and indicators, information that is still scarce, about the participation of women in the innovation and entrepreneurship ecosystem in the Amazon region. ■