

THINKING SUSTAINABILITY RESEARCH



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From the forest to your plate: the benefits of sustainable wild fruit consumption and scientific contributions to its popularisation

Translation in English

In many parts of the world, especially in urban areas, people are consuming an increasingly smaller variety of food plants. It is also worrying, for instance, that just three plants – maize, wheat and rice¹ – account for 51% of global plant-based food consumption, and there are clear drawbacks related to this predominance of so few food elements in human diets. Firstly, low dietary diversity is often associated with unsustainable agricultural practices, based, for example, on monoculture (cultivation of a single crop on vast tracts of land) and the shrinking of areas of natural vegetation, such as native forests. Furthermore, when agricultural systems focus on just a few plants, extreme weather events such as a prolonged drought can lead to much greater production losses than in cases where agriculture is based on a greater diversity of plants. It must also be noted that low-diversity diets are often deficient in nutrients, which may result in health consequences.

Scientists from various fields of expertise have been thinking of solutions to diversify the diet of human societies. This has led to growing interest in neglected and underused foods, including a number of wild fruits. In Brazil, vulnerable populations of farmers and extractivists have also benefited from the increase in wild fruit consumption, whose main source of income is derived from trading these products.

My research has therefore been carried out with a view to popularising wild fruits, and with this in mind, my team and I have been using interdisciplinary approaches, integrating domains such as ethnobiology, ecology, consumer science and environmental psychology. We have recently been working in extractivist communities in the municipality of Piaçabuçu, in the south of the state of Alagoas (North-east Brazil). We have tried to take a comprehensive approach towards the consumption and trade of these plants, studying everything from the start (farmers and extractivists) to the end (consumers and potential consumers) of the production chain.

Our research with farmers and extractivists identified the plants that, according to them, have the greatest potential for popularisation², taking into account elements such as taste, availability, nutritional value and speed of deterioration. Some of these high-potential fruits are the cambuí, known in scientific circles as *Myrciaria floribunda* (H.West ex Willd.) O.Berg; araçá (*Psidium guineense* Sw.); and aroeira (*Schinus Terebinthifolia* Raddi.).

Given that the edible part of these plants is their fruit, they have a high potential for sustainable harvesting in terms of reconciling consumption with maintaining these plant species in their natural ecosystems. To this end, we have carried out ecological and ethnobiological studies on the plants with the greatest potential, in order to understand whether fruit extraction can be maintained or expanded sustainably. Our ecological studies on cambuí³, for example, have shown that any potential increase in fruit extraction could jeopardise the species in the region. This means that the best way for farmers and extractivists to increase their income from the cambuí trade would be through processing and adding value, as opposed to increasing extraction.

By assessing the plants with potential, as well as the sustainability of extractivism, we have prepared the base of the production chain for the potential popularisation of these products. However, we cannot consider the increasing interest in wild fruits without focusing on the consumer and potential consumer, and it should also be noted that wild fruits are in low demand. Our research team interviewed consumers and potential consumers of neglected and underused foods in the state capital of Alagoas, Maceió⁴, where we found that the main barriers to the consumption of these foods are the difficulty in finding them at fairs and markets, as well as the lack of information available about them, especially in nutritional and culinary terms.

This means that publicity strategies are essential to widen people's interest; however, we know that this interest can vary according to the profile of the consumer. After conducting interviews at fairs in Alagoas⁴, our team also found, for example, that older people and those who frequent organic product fairs are the most likely to consume these products. In terms of advertising strategies, it was found, in a recent study not yet published by our team, that adverts focusing on the social benefits of wild fruit consumption (such as generating income for vulnerable communities) are more effective than those centred on the nutritional or environmental benefits of their consumption.

In addition, our studies have revealed that pairing wild fruits with other better-known fruits can be an effective way of encouraging people to consume them³. We have also seen, for example, that by mixing cambuí and araçá juices with fruits such as acerola and guava, which are widely consumed in Brazil, there is less resistance and greater acceptance of these products. Likewise, although this is a less effective strategy for some audiences, giving the wild fruit a name that alludes to a popular fruit (for example, *acerola-jasmim* instead of *cambuí*) can also reduce consumer resistance to accepting an unfamiliar product³. However, such a strategy must be considered with caution, since it is extremely important to maintain the popular names of plants, especially with regard to preserving and promoting the crops from which these products are derived for trade and consumption. Complementing the names of these wild fruits by adding those of other fruits alongside them (for example, "*cambuí: a acerola-jasmim*") would be a more suitable solution than replacing their names entirely.

With these studies, we hope to provide relevant information to bring together income generation in the countryside, nature conservation and food diversification. These efforts are aligned with the idea that we need to change the logic behind our food systems in order to contemplate diverse, sustainable and socially beneficial agriculture.

1 FAO (2019) Voluntary Guidelines for the Conservation and Sustainable Use of Farmers' Varieties/Landracers. Food and Agriculture Organization of the United Nations, Rome.

2 Gomes, D.L.; Ferreira, R.P.S.; Santos, E.M.C.; Silva, R.R.V.; Medeiros, P.M. (2020). Local criteria for the selection of wild food plants for consumption and sale in Alagoas, Brazil. *Ethnobiol. Conserv.* 9.

3 Santos, E.M.C.; Conservação biocultural de *Myrciaria floribunda* (H. West ex Willd.) O. Berg: contribuições ecológicas, socioeconômicas e comportamentais. Tese (doutorado), Universidade Federal de Alagoas.

4 Santos, G.M.C.; Barbosa, D.M.; Santos, E.M.C.; Gomes, D.L.; Silva, R.R.V.; Medeiros, P.M. (2020). Experiências de popularização de plantas alimentícias não convencionais no estado de Alagoas, Brasil. *Ethnoscintia*