

## Local Knowledge

### The Domestication of Tropical Fruit Trees

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#### Background

Fruit trees provide food, drive economies and often hold significant sociocultural value, factors that have historically driven the domestication of many species. The evolutionary journey shaped by gathering, eating and trading habits is largely overlooked. In Cameroon, a country undergoing a food transition, the Agropolis Foundation's 'Arbopolis' project used a participatory approach that brought together growers, consumers and researchers to demonstrate the importance of safou (the fruit of *Dacryodes edulis*) in diet and cultural practices. These findings will bolster the resilience of local food systems and support the sustainable management of this species' genetic resources.

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#### For more information

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ICARD-VERNIÈRE C. *et al.*, 2023 – Le safou, un fruit atypique dans l'alimentation traditionnelle au Cameroun. *Cah. Agric.*, 32 (21). <https://doi.org/10.1051/cagri/2023013>

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## Description of the Research and System

Plant domestication is the human practice of cultivating and altering wild species so they serve our needs, be it food, medicine or useful materials. This process hinges on selecting and breeding plants that exhibit desirable traits such as larger fruit, enhanced disease resistance, or higher productivity.

The cultivation, harvesting, consumption and trade practices that shaped the domestication of the safou tree formed the core of the Arbopolis project's participatory process, executed in three phases: 1) initial meetings where all project partners jointly defined the research objectives and questions; 2) fieldwork that gathered empirical data; 3) dissemination among our civil-society partners, followed by a transfer-and-mediation session aimed at young people.

A mixed-methods platform combining focus groups, presentation workshops and a public results-sharing campaign was deployed in both urban and rural sites. The data focused on local ecological knowledge, cultivation and perceptions of the species, including its 'ethnovarieties', as well as flavour preferences and consumption volumes. Simultaneously, leaf samples were taken to assess the genetic diversity of the species across the survey sites. A cross-analysis linking the genetic and ethnoecological aspects was then used to examine how social and cultural factors shape the species' genetic diversity.

## The Participatory Research Tools Mobilised

In participatory research, a 'focus group' is a qualitative technique that uses group discussion to gather the views, ideas and experiences



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Left: children playing under a fruit-bearing safou tree.  
Right: children painting a safou tree and its surroundings during an art activity.

of participants as to their involvement on a given topic while ensuring that all stakeholders' perspectives are taken into account. The project's focus groups enabled local stakeholders, including researchers, community members and growers, to identify key ecological, agronomic and economic challenges surrounding safou tree management and consumption in Cameroon. These challenges vary depending on whether the species is viewed through a commercial lens or not. The group discussions also served as a platform to explore the role of this traditional food amid rising urbanisation, shifting dietary patterns and malnutrition, issues closely tied to the steep price increases of food staples, particularly in urban areas.

Subsequently, the findings were debated and revisited during follow-up workshops with industry stakeholders and families engaged in safou cultivation. The workshops facilitate the exchange of knowledge, allow for feedback, confirm or challenge specific findings, and help plan out next steps.

Drawing on the insights gained during the project, we launched an environmental awareness campaign that included stop-motion animation workshops covering scriptwriting, set and character design, filming, sound recording and editing, as well as art sessions with children from several schools in our study area, all organised through the IRD 'Domestication, Conservation and Transformation of Safou' Youth Club.

Through the drawing exercise and follow-up discussions, the children expressed how they see their social and natural surroundings and the particular place that trees, especially the safou, occupy within them. Individual conversations

held after each piece of art helped us understand why specific elements were included, highlighting how certain tree species that are familiar to the children play a vital role in their daily lives.

## The Results and Effects Achieved Through the Research

By leveraging a participatory research framework across all phases of the research project, we gained insights into the safou tree's biological diversity, the factors shaping growers' and buyers' preferences, and its role in the local diet. These findings confirm the species' sociocultural significance in Cameroon. The species is widely recognised and highly valued across all ethnic groups in Cameroon, as evidenced by the extensive range of names for its various fruit types. From June to September, during its peak harvest season, safou is consumed extensively, prepared in a variety of ways and paired with starchy side dishes, making it a major contributor to both rural and urban household diets. In agroforests, safou contributes to the high level of diversity in native and introduced species, both naturally occurring and deliberately planted, that help sustain these systems' ecological resilience while bolstering the social and economic resilience of the households that rely on them. Consumer preferences were identified. In addition, urban homeowners grow safou in their private gardens using seeds from highly prized fruits, either sourced from their native villages or bought at Yaoundé's markets, thereby helping to conserve the species' genetic diversity.

## TAKEAWAYS

Participatory research demands substantial time, and its activity schedules often clash with funding deadlines and the fixed timelines required for research. Adopting a participatory approach typically requires specific calls for projects and a lengthy implementation period, often exceeding three years.

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Photo p. 12: “Phil'eau” workshop to raise awareness among young people in rural areas about environmental issues and water conservation, Saint-Louis, Senegal.

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Photo p. 38-39: “Phil'eau” workshop in an Ameth secondary school, Saint-Louis, Senegal.

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Photo p. 100-101: Coastal erosion at Djogué in the Casamance River estuary after the storm at the end of May 2014.

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