

How Cabo Verde indigenous beans could boost food security

By [Anyse Sofia Fernandes Pereira Essoh](#)

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With just over half a million inhabitants, Cabo Verde is heavily dependent on food imports. It spent \$65 million [importing](#) food products in 2018.



[Farmers, Rui Vaz village, Santiago island, Cape Verde.](#)

This dependence on food imports puts the country in a vulnerable situation when it comes to food security. According to Food and Agricultural Organisation, Cabo Verde has not yet eradicated hunger, with about [5.3% of its population](#) suffering from food insecurity.

There are other challenges too. Cabo Verde is located in the Sahelian arid and semiarid region which means there is sporadic rainfall. Agriculture in the archipelago is [highly dependent on rainfall](#). Poor soil and limited water resources make the situation even more critical. Limited agro-industrial production with outdated and non-competitive manufacturing industry are factors too.

The Covid-19 pandemic has [accentuated](#) this vulnerability, primarily by the big impact it had on the issues of employment and household income. The archipelago depends heavily on [tourism](#)

Agriculture on the islands is anchored in staple foods, such as corn and beans. Also, to a minor extent, pumpkin, cassava, sugar cane, tomatoes and sweet potatoes. The diet of the population mainly relies on cereals - maize, rice, and wheat - vegetables, starchy roots, and fish.

Our [research](#) looked at how legumes could help prevent and combat food insecurity. We concluded that legumes grown on the island are an excellent, yet relatively inexpensive, source of essential nutrients and minerals. Dry beans are low cost, low fat, low cholesterol and low maintenance - balanced with high macro and micronutrients content, high fibre, high versatility and very long shelf life.

The study also highlighted pulses' agronomic value, as they occupy most of the agricultural area of Cabo Verde and are highly traded in national markets.

An important outcome of the study is a checklist of legumes used as food. We also collected new data on their native distribution (archipelago and worldwide), common names, and other uses. Added to this is an assessment on which legume species are consumed and traded in Santiago Island, the largest and most populated Cabo Verdean island.

The information will contribute to improving the knowledge of plant genetic resources in Cabo Verde. It will also help to design new strategies and investments to conserve the agronomic value and plant genetic resources of such crops.

Our research findings

We focused on the main legume species in Cabo Verde: *Cajanus cajan* Huth, *Lablab purpureus* Sweet, *Phaseolus vulgaris*, *Phaseolus lunatus* and *Vigna unguiculata* Walp.

Our results showed that 15 Leguminosae species are recognised as food plants in Cabo Verde. Eleven are non-native and four are native species. About 47% are used in traditional medical practice and 53% as forage.

Among the cultivated species, only three are native to these islands, meaning that those species occur naturally and are part of the ecological basis of the country. They also represent less in terms of agriculture-related expenditure and are much easier to cultivate as they are extremely well adapted to local environmental conditions, and are often more nutritious than some introduced crops.

Seeds are the most consumed plant parts in Cabo Verde and are an excellent, yet relatively inexpensive, [source](#) of essential nutrients and minerals. They also have enormous potential to combat malnutrition and food insecurity on these islands. This data is in accordance with findings on the importance of pulses in ensuring food security in other island states such as [Maluku Islands](#), [Pacific Islands](#) and [Solomon Islands](#).

This makes pulses very important especially in many households where people do not have easy access to a wide variety of nutrient sources.

Lablab purpureus, one of the relatively most neglected species, showed greater nutritional potential associated with greater climate resilience. This concerns adaptation to drought, a significant fact in terms of sustainability.

Another important finding was the possibility of including bean leaves in Caboverdean diet as a valuable source of antioxidant compounds, phenols and other beneficial elements. Despite being commonly used in other parts of Africa as a food source, in Cabo Verde they are only used in animal feeding. Including these plant parts in Caboverdean diet could be a valuable addition especially in a country where food shortage and malnutrition still prevails.

Beans have great economic and social importance and contribute to food security. They do this both as food and as a source of family income, especially in rural households. This is because of their drought-resistant ability, high nutritional value, and remarkable shelf-stability.

What next

Our research presents legumes in a new light, underlining the fact that they receive little attention from public decision-makers, who have done little to promote their use. They have also failed to include these species in conservation programmes. Consumers also are increasingly replacing beans with less nutritious and functional foods.

Public decision-makers could include some of these underutilised but nutritious seeds in the National Agricultural Development Program, provide support for farmers through seeds distribution initiatives. They can also create a National Germplasm Bank and foster opportunities for national universities and research centres to have more resources to finance research to characterise, evaluate, enhance and preserve these crops.

Some action could also be taken to promote and heighten the general populations consumption of pulses. This could include native bean species in the [Scholar Canteens Program](#), and public awareness campaigns on the nutritional and functional value of beans seeds and leaves.

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ABOUT THE AUTHOR

Anyse Sofia Fernandes Pereira Essoh is a PhD Student Tropical Knowledge and Management at Nova SBE (specializes in genetics and agrobiotechnology), Nova School of Business and Economics.

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