

Caterpillars in diets

Congo (DRC)

Focus on food habits in the DRC Bassin : insects as source of protein in local diets

OVERVIEW

In the Democratic Republic of Congo (DRC), the consumption of insects - including caterpillars – is part of eating habits. In Kinshasa, for example, more than 70% of the population consumes caterpillars throughout the year. The main supply provinces of the capital are Equateur (64%) and Bandundu (24%). Four main species of caterpillars are consumed: *Cirina Forda*, *Imbrasia epimethea*, *Imbrasia ertli*, *Imbrasia oyemensis*.



Cirina Forda

Imbrasia epimethea

Imbrasia ertli

Imbrasia oyemensis

In the district of Kwango, caterpillars are considered a delicacy. For local tribes (Kiyaka, Kikongo, and Tchokwe), the *mingolo* ("caterpillar") is one of the major source of protein of their diets. From an economic point of view, the trade of caterpillars to large urban centers such as Kinshasa and Kikwit provides a source of income for the inhabitants of the region, particularly the most vulnerable.

In this area of DRC, the most common edible caterpillars is the *Cirina Forda*. It invades the savannah woodlands between the months of September and December.

HARVEST

Caterpillars are traditionally collected from the ground or harvested from the *Essia* trees (*Petersianthus macrocarpus*). However, in order to facilitate the collection, local tribes prepare the ground by making bushfires in woodland. Once the host trees remain leafless, caterpillars spontaneously migrate from the top of trees to the ground. At the end of the sixth day of their migration, it is easy to pick them up at man's height on the trees' trunk.

FAMILIES AND COMMUNITIES

During the harvest season, all household members - men, women as well as children – gather in woodland areas around the villages to collect caterpillars. Given the economic value of this product, other activities are suspended for the time of the caterpillar harvesting season. The fields for the agricultural season ahead (Cassava, maize, cowpea, etc.) are prepared beforehand in order to free as many community members as possible for harvesting of caterpillars. In a second phase, it is usually women who are responsible for the processing and marketing of caterpillars. They sell the caterpillars on the market, at about 1USD for 150 grams.



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RESOURCES AND PUBLICATIONS

Are available at
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PROCESSING AND COMMERCIALIZATION

Depending on caterpillars and regions, processing methods differ. For species with long, thick hair, such as *Cirina Forda*, the larva is put directly on hot coals of charcoal. The heat burns away the caterpillars' hair and waste. After a few minutes on the fire, the caterpillars become smooth and start drying. In a second phase, the caterpillars are laid to sun-dry for two to three days on wooden grids or corrugated sheets. Thus prepared, the caterpillars can be stored for several months, provided they are preserved from humidity.

Caterpillar trade in Bandundu is composed of two flows. On the one hand, caterpillar producers and traders ensure the supply of various outlets (nearby cities, capital, etc..) by road and, to a lesser extent, by waterways. On the other hand, wholesalers and retailers who receive the products pay money to the traders/producers, thereby creating a cash flow. In this isolated area of DRC, access to cash is very limited, and the caterpillar trade is therefore very important in the local economy. The trade of these insects, even though seasonal, provides additional income to local populations and in particular to women. With the money earned, households can buy key commodities like salt, sugar, vegetable oil and soap, and pay school fees for children. Thus, the positive impact is not only nutritional for family members, but also improves incomes and livelihoods.

The caterpillar value chain could be described as a long circuit. In most cases, households sell their caterpillar harvest to local retailers, who will in turn sell the products to wholesalers who finally convey the supply to large cities. Between the collector and the consumer in town, the price has been multiplied by 2.5.

NUTRITION PROJECTS

In its project aiming at eradicating the Konzo disease in the district of Kwango, Bandundu province, the NGO Action Against Hunger (ACF) has organized comprehensive nutrition education classes, and cooking demonstrations. These trainings presented, among other things, caterpillars-based recipes (see box below). FAO is currently conducting a similar project in the area.



NUTRITIONAL VALUE

Like many edible insects, caterpillars are very rich in protein. The *Cirina Forda* fresh material, for example, contains 14% of protein, much like beef. The caterpillar can be a solution to protein-energy malnutrition, and a crucial ingredient in complementary feeding of young children. The intake of animal protein is essential for their physical and cognitive growth, in order to prevent the irreversible effects of stunting (or rickets). Depending on the species, caterpillars are also rich in micronutrients (minerals and / or vitamins). They provide magnesium and iron, which are essential to the nutrition of children and pregnant women.

RECIPE: Caterpillars in peanut sauce

Clean the caterpillars and leafy vegetables twice with clean water. Heat a little water in a vessel. Add leafy vegetables very thinly cut, cook for the necessary time according to the chosen leafy vegetable (10min from boiling point). Add caterpillars and peanut paste until the sauce becomes thick. Salt and / or spice. Simmer for 10 minutes.

RECOMMENDATIONS

Use caterpillars in the treatment and prevention of child malnutrition. Caterpillars are rich in protein and essential micronutrients, and are traditionally harvested and consumed by families. Promoting the integration of caterpillars in the recipes of complementary foods for young children, as well as in children and pregnant women foods in general, would be relatively simple and could have a significant impact on the prevention of child malnutrition, particularly of stunting.

Strengthen the capacity of small pickers and improve marketing. A large part of collected insects are sold in urban centers directly after the harvesting season, when offer is high and sales prices are very low. The rest of the year, the population can buy caterpillars from households who were able to constitute stock and can sell at much higher prices. Supporting groups / cooperatives of collectors could allow them to better transform and store their caterpillars to sell throughout the year. This would ensure better returns to small gatherers and a better supply of local markets throughout the year.

Sensitize and train pickers to responsible and sustainable management of the environment. Promoting wider use of caterpillars to improve nutrition and family incomes could lead to uncontrolled exploitation, and therefore to the decrease and even disappearance of the caterpillars. It is essential to train small collectors, local institutions and local extension workers (including Ministries of Agriculture and Forestry), so they can make better use of this resource in a sustainable manner, while preserving it for future generation.