



# Factors influencing consumption of nutrient rich forest foods in rural Cameroon



Robert Fungo<sup>a, b, \*</sup>, John H. Muyonga<sup>a</sup>, Margaret Kabahenda<sup>a</sup>, Clement A. Okia<sup>c</sup>,  
Laura Snook<sup>b</sup>

<sup>a</sup> School of Food Technology, Nutrition & Bio-Engineering, Makerere University, P. O. Box, 7062, Kampala, Uganda

<sup>b</sup> Bioversity International Forest Genetic Resources Programme, Via dei Tre Denari, 472/a, 00057 Maccarese, Rome, Italy

<sup>c</sup> World Agroforestry Centre (ICRAF), P.O. Box 26416, Kampala, Uganda

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## ABSTRACT

Studies show that a number of forest foods consumed in Cameroon are highly nutritious and rich in health boosting bioactive compounds. This study assessed the knowledge and perceptions towards the nutritional and health promoting properties of forest foods among forest dependent communities. The relationship between knowledge, perceptions and socio-demographic attributes on consumption of forest foods was also determined. A total of 279 females in charge of decision making with respect to food preparation were randomly selected from 12 villages in southern and eastern Cameroon and interviewed using researcher administered questionnaires. Multivariate logistic regression analysis was used to identify the factors affecting consumption of forest foods. *Baillonella toxisperma* (98%) and *Irvingia gabonensis* (81%) were the most known nutrient rich forest foods by the respondents. About 31% of the respondents were aware of the nutritional value and health benefits of forest foods. About 10%–61% of the respondents expressed positive attitudes to questions related with health benefits of specific forest foods. Consumption of forest foods was found to be higher among polygamous families and also positively related to length of stay in the forest area and age of respondent with consumption of forest foods. Education had an inverse relationship with use of forest foods. Knowledge and positive attitude towards the nutritional value of forest foods were also found to positively influence consumption of forest foods. Since knowledge was found to influence attitude and consumption, there is need to invest in awareness campaigns to strengthen the current knowledge levels among the study population. This should positively influence the attitudes and perceptions towards increased consumption of forest foods.

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## 1. Background

Cameroon and much of the other sub Saharan countries have unacceptably high prevalence of under nutrition (CDHS, 2011; IFPRI, 2014). Current malnutrition prevalence statistics indicate stunting level of 32.5% and underweight at 14.6%, among Cameroonian children aged below five years. Compared to the recommended limits of 2% for stunting and 3% for underweight (CDHS, 2011; IFPRI, 2014) for healthy populations, the stunting and underweight prevalences in Cameroon are respectively 15 and 5 times higher. This shows that under-nutrition is a public health problem in Cameroon. Recent reports indicate that the sub-Saharan

population, including that of Cameroon, is at an increased risk of undernutrition, as a result of the changes in the food systems and dietary patterns (FAO, WFP and IFAD, 2014; IFPRI, 2014; Sneyd, 2013). A shift from the diversified traditional to simplified and monotonous diets, has resulted in increased consumption of rice, maize, and wheat products and drastic decrease in the consumption of traditional foods that are abundantly available within the region (Frison, Smith, Johns, Cherfas, & Eyzaguirre, 2006; Keller, Mndiga, & Maass, 2006; Penafiel, Lachat, Espinel, Van Damme, & Kolsteren, 2011; Pingali, 2007). The change in lifestyle has partly been associated with the loss of indigenous African knowledge on the use and preparation of many traditional food dishes (Akpavi et al., 2008; Maundu, 1996). On the other hand, nutrient composition studies of forest foods indicate that some forest food species have quite high content of essential nutrients and bioactive compounds (Fungo et al., 2015; Penafiel et al., 2011). Forest foods contribute 36% of total vitamin A and 20% of iron in Gabonese diets

\* Corresponding author. School of Food Technology, Nutrition & Bio-Engineering, Makerere University, P.O.Box, 7062, Kampala, Uganda.

E-mail address: [rfungom@yahoo.com](mailto:rfungom@yahoo.com) (R. Fungo).

(Blake et al., 2009) and 31% of RAE (vitamin A) and 19% of iron in the Tanzanian diets (Powell, Maundu, Kuhnlein, & Johns, 2013). Forest foods have substantial potential to increase intake of essential nutrients among the forest foods consumers. In South Africa and Togo, negative perceptions and attitudes towards traditional foods have been documented (Akpavi et al., 2008; Dweba & Mearns, 2011). Traditional foods are referred to as “food for the poor” by the educated and a section of the urban residents across Africa, resulting in their neglect and abandonment (Akpavi et al., 2008; Dweba & Mearns, 2011). These observations have been corroborated by some recent case studies among the forest dependent communities of Kisangani in DR Congo (Termote et al., 2012), Guiziga tribe in Cameroon (Hamawa, 2013) and residents of Lama Forest reserve in Benin (Boedecker, Termote, Assogbadjo, VanDamme, & Lachat, 2014). These studies revealed that despite the communities having access to abundant nutrient and phytochemical rich forest foods, food insecurity and under-nutrition are rampant.

The value of forest foods and diets is being periodically re-evaluated worldwide with good examples of studies revealing the considerable recognition of the potential health and nutritional contribution of forest foods among local communities in Tanzania (Powell et al., 2013), Vietnam (Ogle, Hung, & Tuyet, 2001) and Peru (Roche, Creed-Kanashiro, Tuesta, & Kuhnlein, 2008). These studies revealed that traditional forest foods often represent well adapted interactions between human perceptions and beliefs assigned towards the health and nutrition importance of forest foods that ensure meeting of nutritional and health needs of communities. Self-beliefs, attitudes and perceptions influence achieving healthy dietary habits (Sparks, Shepherd, Wieringa, & Zimmermanns, 1995). Consumption of wild and forest foods by the populations adjoining forests, contributes to the realisation of a healthy diet (Gil, Gracia, & Sanchez, 2000). Different studies indicate that consuming forest foods belongs to the community cultural tradition and indigenous knowledge of the local populations (Boedecker et al., 2014; Penafiel et al., 2011; Pieroni, 2008) while some studies indicate that consuming forest foods represents the cultural identity of the community (Dansie et al., 2008; Pieroni, Nebel, Santoro, & Heinrich, 2005). However, there is paucity of information on the

knowledge and attitudes towards the perceived health and nutritional benefits of forest foods and the factors that affect consumption of the forest foods in Cameroon. Therefore the aim of this study was to investigate the perceived health and nutritional benefits of forest foods and household socio-demographic factors that affect consumption of forest foods in southern and eastern Cameroon.

## 2. Materials and methods

The study was conducted in the eastern and southern regions of Cameroon (Fig. 1). The population around the eastern site is about 25,783, mainly composed of the Kako, Pol and Baka pygmy ethnic groups, living in 41 villages (Medinof, 2004). The population in the southern site is estimated to be 79,353, consisting of the Bulu ethnic group, living in 29 villages (Enviro Consult, 2009).

### 2.1. Study design

A three-stage cluster sampling technique involving one stage of purposeful selection and two stages of randomization were used in the selection of the study villages and households. In the first stage, districts within each site were purposefully selected on the basis of their accessibility, ethnicity, willingness of the community to participate in the study and existence of the logging activities in the surrounding forests. In the second stage, villages were randomly selected within the chosen two districts. In the third stage, households were randomly selected. From the eastern site, the study was conducted in seven villages, namely Kouedjina, Kagnol 3, Ndembo, Petit Pol, Melambo, Nkolbikon and Bonando; while in the southern site the study was conducted in five villages, namely Ngon, Bissam, Ondondo, Methyikpwale and Meyos. Using Fishers (1998) formula below, a total of 276 households to be interviewed, in the two sites was calculated based on the estimated proportion (9.9%) of the rural population directly depending on forests for food (Chao, 2012).

$$n = \frac{t^2 \times p(1 - p)}{m^2}$$

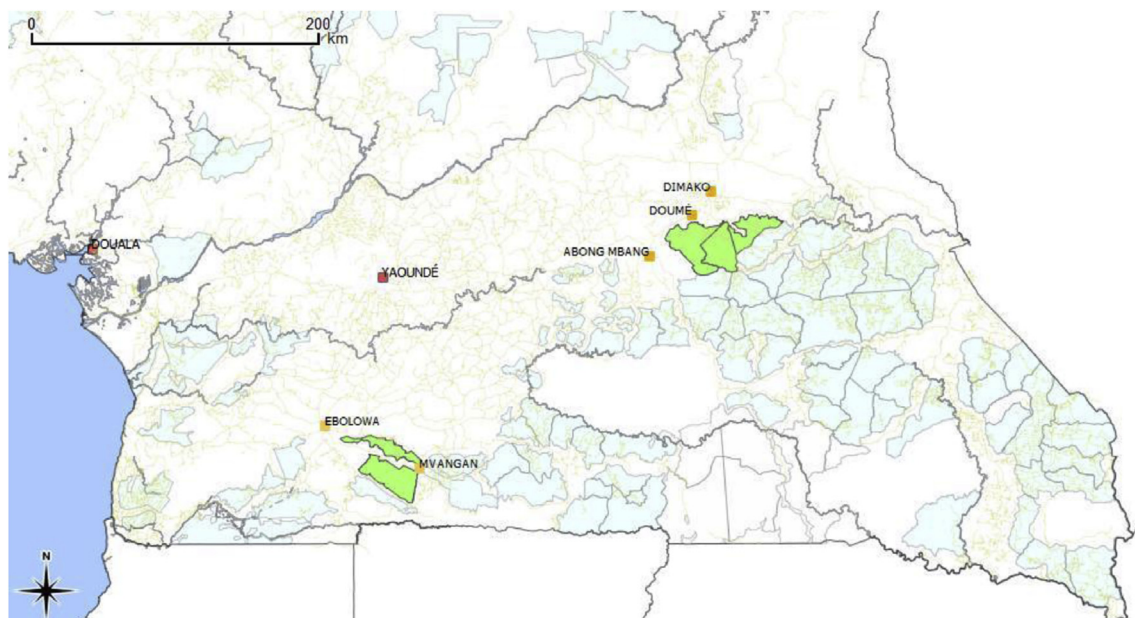


Fig. 1. Location of study sites.

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