

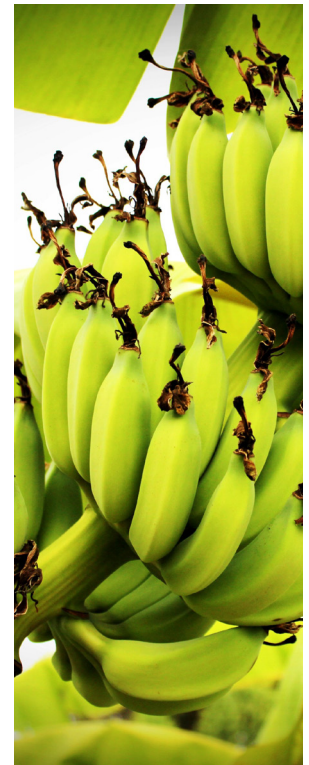


Nutritious Food Portfolios: filling food harvest and nutrient ‘gaps’ in local food systems

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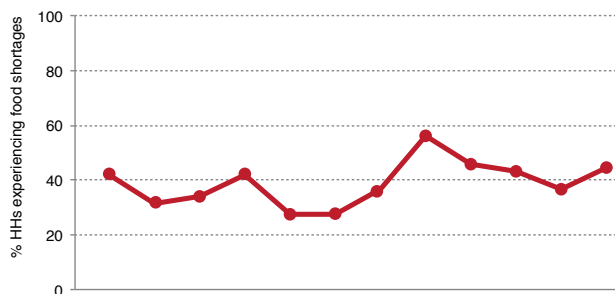


A diversity of nutrient-dense pulse, vegetable and fruit species, which are traditional components of mixed farming systems and can contribute largely to family nutrition and food security. To enhance available diversity of foods, while addressing seasonal food availability, *nutritious food portfolios* have been developed by the World Agroforestry Centre (based on the original [Fruit Tree Portfolio](#) concept). These are site-specific combinations of indigenous and exotic food tree species with complementary vegetables, pulses and staple crops that potentially can provide year-round harvest of nutritious foods and, at the same time, fill food harvest and nutrient gaps in local food systems when integrated into food systems.

To identify site-specific *portfolio* recommendations, evidence is generated on current agricultural production diversity and food consumption, preferences and dietary gaps in local communities. Participatory priority setting exercises are used with community representatives to identify suitable and preferred food crops and their site-specific months of harvest. The foods are then evaluated

for their nutritional composition, following international standards on food composition for key micronutrients and their contribution to the diet. Food composition data play a key role in linking agriculture to nutrition but unfortunately information on the nutrient composition of many species, particularly indigenous and underutilised species, are absent due to a lack of research. To address this data and knowledge gap, ICRAF have collated food composition data and developed a Food Composition database of Priority Food Trees and Crops. The food composition data compiled for food tree species and underutilised crops provides a necessary repository for prioritising domestication programs to mainstream available nutritious foods.

The integration of *nutritious food portfolios* using ecologically suitable species, seasonal availability and their nutrient content information is a sustainable food based approach to address micronutrient deficiencies by promoting nutrient dense foods in local diets while supporting greater food security through year-round harvest.



Periods of Food Insecurity

Food Insecure Months - Quantitative Baseline Data

Food Insecure Months - Qualitative FDG Data



Food Name	Food description	Scientific Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Iron	Vitamin A*	Folate	Vitamin C
Fruits																		
Mango	pulp, ripe, raw	<i>Mangifera indica</i> ** [†]													~	+++	~	++
Bird cherry	raw	<i>Berchemia discolor</i> ** [‡]													++			+++
Tamarind	pulp, ripe, raw	<i>Tamarindus indica</i> ** [‡] , * [†]													++			
Pawpaw/Papaya	pulp, raw	<i>Carica papaya</i> * [‡]													~	++	~	+++
Banana	pulp, raw	<i>Musa spp.</i>															~	~
Desert date	fresh, raw	<i>Balanites aegyptiaca</i>													~			+++
Desert date	dried, raw	<i>Balanites aegyptiaca</i>													+++		~	
Common wild medlar	raw	<i>Vangueria madagascariensis</i>																
Passion fruit	purple, raw	<i>Passiflora edulis</i>													~	++		++
Grewia/Mallow raisin	raw	<i>Grewia villosa</i>													~		~	~
Ntuuka	raw	<i>Tennantia sennii</i>																
Mobola plum	raw	<i>Parinari curatellifolia</i>													++			+++
Guava	pulp, raw	<i>Psidium guajava</i>													~	~		+++
Moringa	seeds, raw	<i>Moringa oleifera</i>																
Moringa	leaves, boiled	<i>Moringa oleifera</i>													++	+++	~	+++
Vegetables																		
Cowpea	leaves, boiled	<i>Vigna unguiculata</i>													++	+++	++	++
Amaranth	leaves, boiled	<i>Amaranthus spp.</i>													+++	+++	~	++
Pumpkin	leaves, boiled	<i>Cucurbita maxima</i>													++	++	~	
Staples																		
Maize	sweet, yellow, boiled	<i>Zea mays</i> ** [†]													~	~		
Millet/Pearl millet	whole grain, boiled	<i>Pennisetum glaucum</i> * [‡]													++			
Sorghum	whole grain, boiled	<i>Sorghum bicolor</i>													~			
Plantain	green, boiled	<i>Musa paradisiaca</i>															~	~
Pulses																		
Bean	mature, whole, water-soaked, boiled	<i>Phaseolus vulgaris</i> ** [‡]													~		++	
Green gram/ Mung bean	mature, whole, water-soaked, boiled	<i>Vigna radiata</i> ** [‡] , * [†]													~		++	
Cowpea	mature, whole, water-soaked, boiled	<i>Vigna unguiculata</i> * [‡]													~		++	
Groundnut/peanut	raw	<i>Arachis hypogaea</i>													+++		+++	

Notes:

82% of HHs had experienced food scarcity in the last twelve months

* Vitamin A (calculations based on Vitamin A retinol equivalent = retinol + 1/6 beta-carotene + 1/12 alpha-carotene + 1/12 beta-cryptoxanthin). Data are expressed per 100 g fresh weight of edible portion.

** = most consumed * = most sold 1, 2, 3 = as prioritised by farmers

+++ = high source ++ = source ~ = present, but low = no source = no data currently available



Food trees for diversified diets, improved nutrition, and better livelihoods for smallholders in East Africa under the Programme Putting Research into Use for Nutrition, Sustainable Agriculture and Resilience (PRUN SAR)

<http://www.worldagroforestry.org/project/food-trees-diversified-diets-improved-nutrition-and-better-livelihoods-smallholders-east>

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