

Tropical Fruit Diversity for Healthy Diets and Sustainable Food Systems



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Outline

1. What is a healthy diet and how does fruit factor into healthy diets?
2. What are the nutrition and health challenges in India
3. How could fruit help?
4. Diet and Health Entry Points for CFI



What is a Healthy Diet?



NEW FAO/WHO 2024 Guideline

Adequate

Providing enough essential nutrients to prevent deficiencies and promote health, without excess.

Balanced

In energy intake, and energy sources (i.e., fats, carbohydrates and proteins) to promote healthy weight, growth and disease prevention.

Moderate

In consumption of foods, nutrients or other compounds associated with detrimental health effects.

Diverse

Including a wide variety of nutritious foods within and across food groups to favour nutrient adequacy and consumption of other health promoting substances.

What are healthy diets?

Joint statement by the
Food and Agriculture Organization
of the United Nations and the
World Health Organization



Source: [FAO&WHO, 2024](#)

International recommendations for a healthy diet

A healthy diet contains:

1. At least 400g of fruits and vegetables a day.
2. Legumes (beans).
3. Nuts.
4. Whole grains.
5. At least 25g of dietary fiber per day.
6. Less than 10% of total energy intake from free sugars.
7. Less than 30% of total energy intake from fats.
8. Less than 10% of total energy intake from saturated fats.
9. Less than 5g of salt per day.
10. No processed meat.
11. Less than 500g red meat per week.

Recommendations source: WHO Healthy Diet Fact Sheet 2018, and World Cancer Research Fund 2018 based on WHO IARC 2018



DIETARY GUIDELINES FOR INDIANS



ICMR-National Institute of Nutrition
Hyderabad-500 007, Telangana



Citation:
ICMR-NIN Expert Committee,
Dietary Guidelines for Indians-2024.

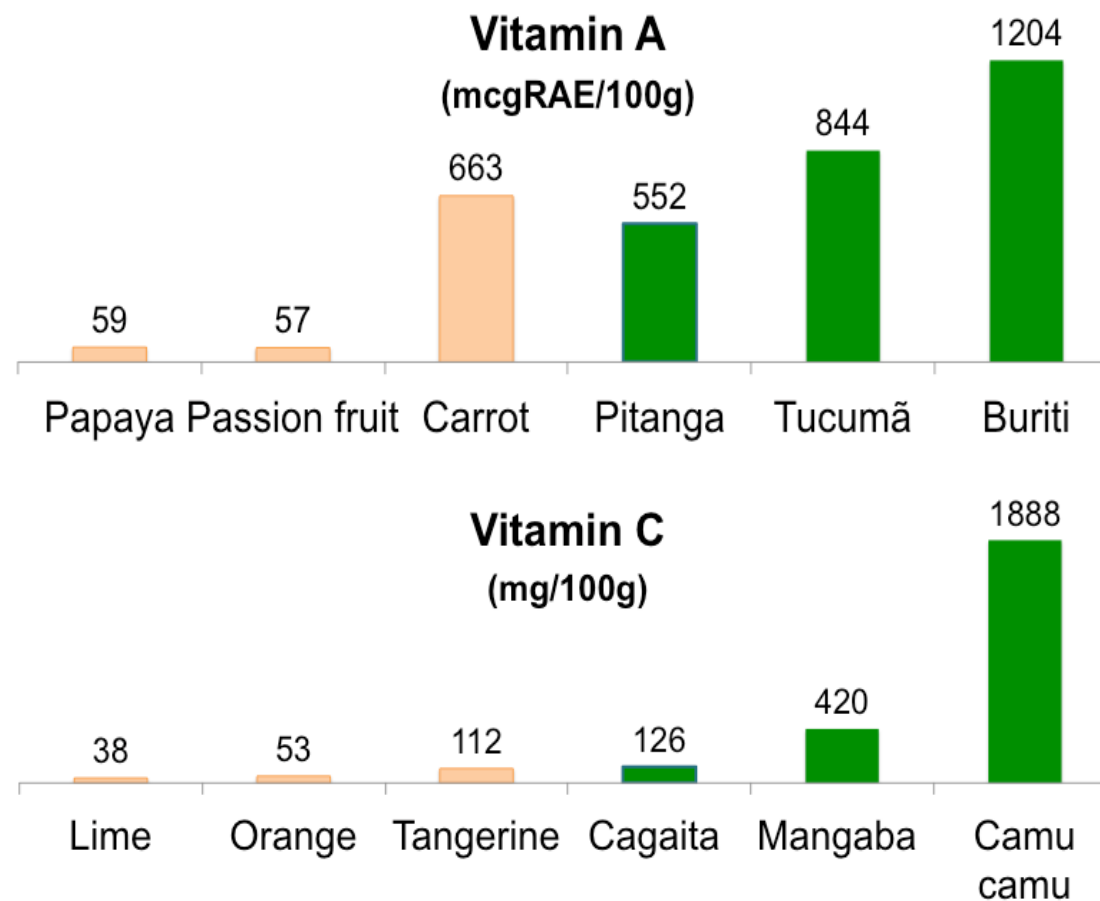


What do we know about the role of Fruit in a healthy diet?

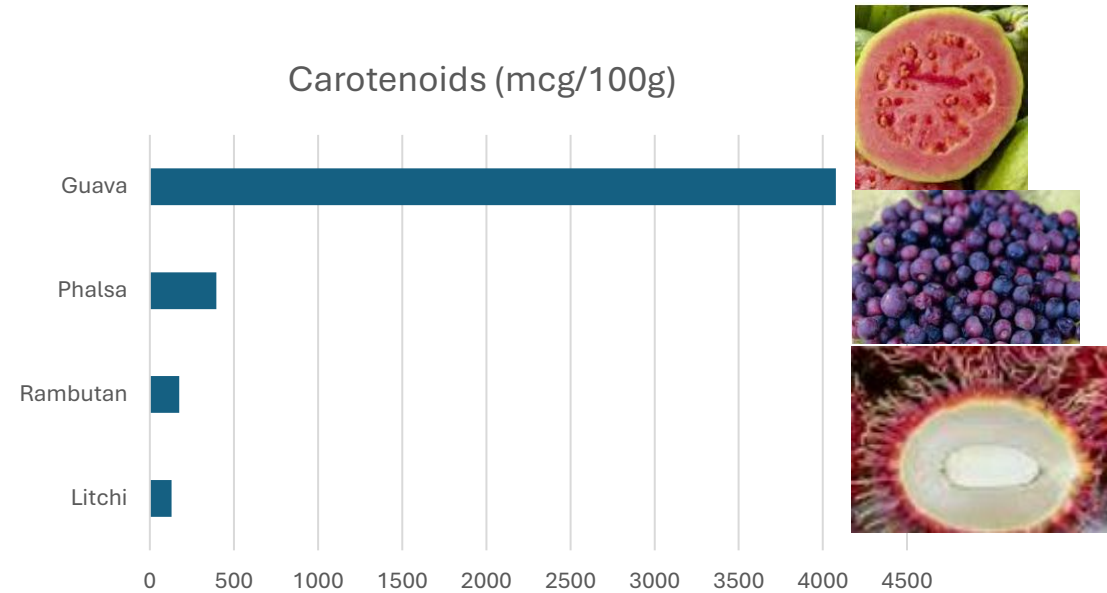
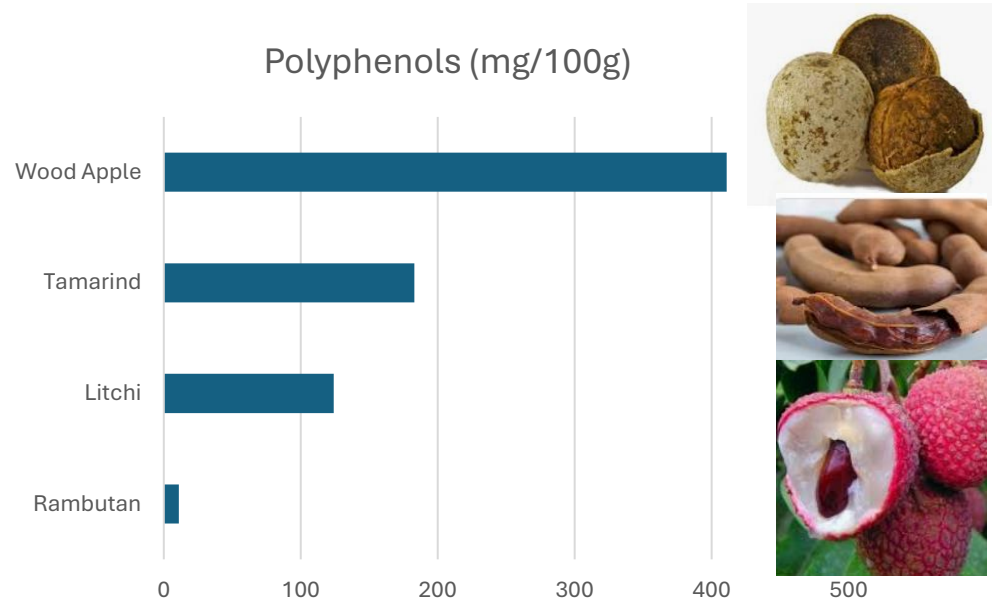
- WHO recommended intake of 200g/person/day
- FBDG recommend consuming fruit DAILY
- Rich source of Vitamins (Vitamin C, A) and Minerals (Iron, Zinc, Calcium)
- Rich source of dietary fiber
- Very rich in health protective bioactive compounds



Case of Brazil: of the 73 target species (many native) 49 characterized for nutritional content



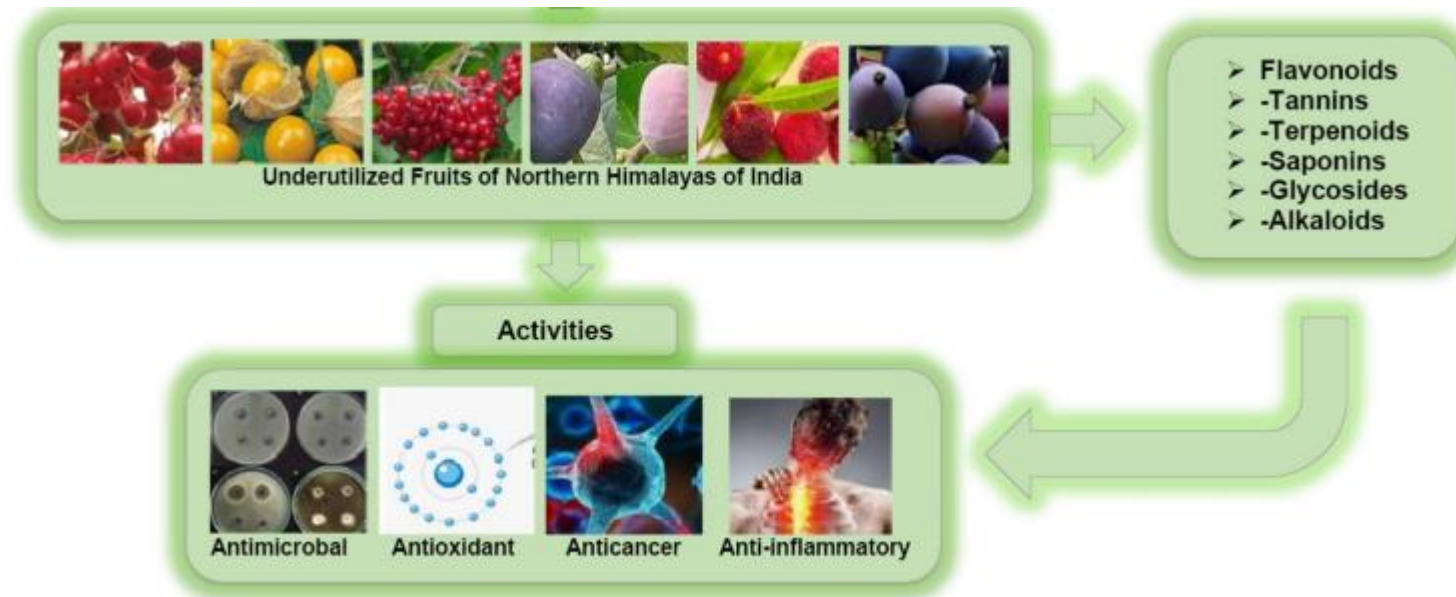
Total Polyphenol and Carotenoid values by species





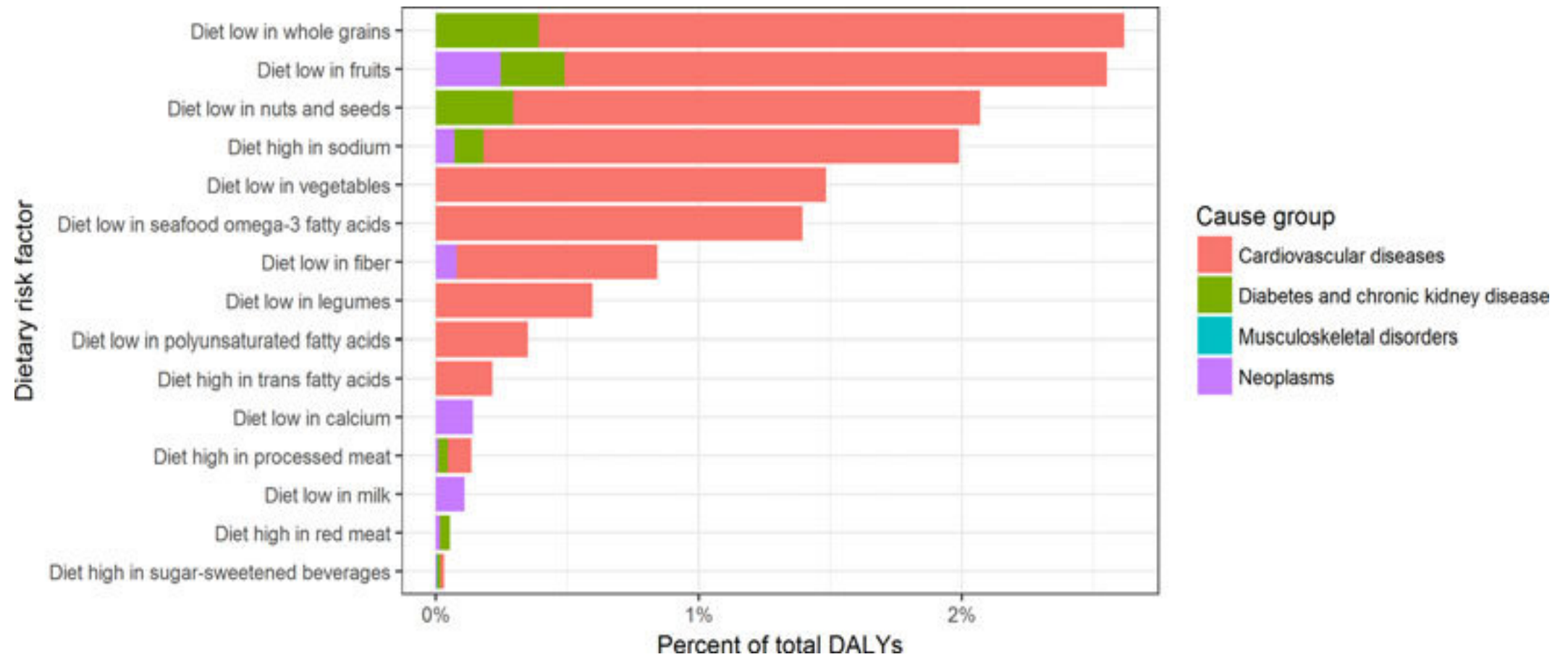
Bioactive constituents and health promoting compounds of underutilized fruits of the northern Himalayas of India: a review

Archana Bachheti¹, Deepthi¹, Rakesh Kumar Bachheti^{2,3}, Anjita Singh⁴, Meseret Zebeaman^{2,3}, Yilma Hunde^{2,3} and Azamal Husen^{5*}



Nutrition and Diet Challenges Globally and in India





Global burden of disease study, 2017

HTN and Diabetes in India up; CED and Obesity (stable/down)

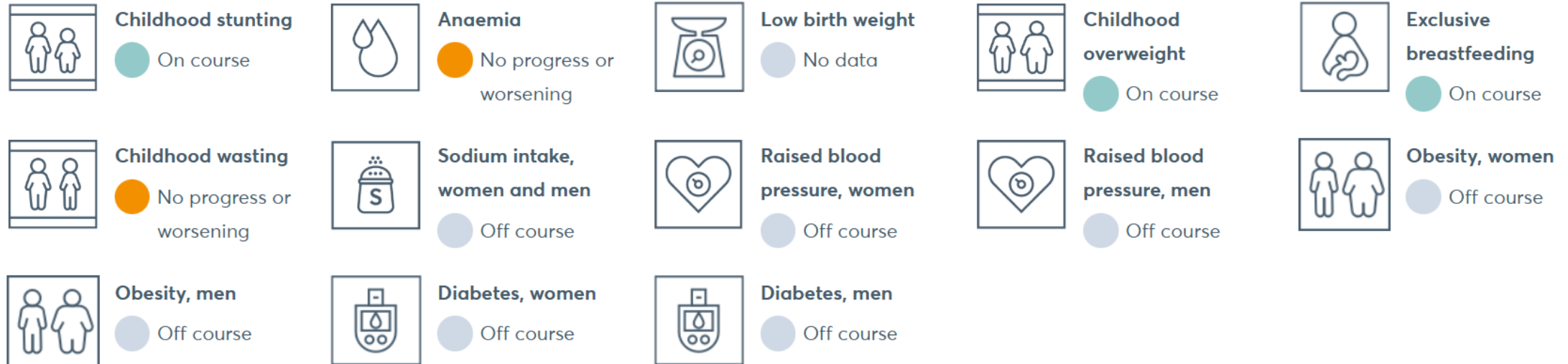
Table II. Undernutrition, overweight/obesity (WHO-Asian Cut-Offs), hypertension and diabetes among 18–69 year adults in India as per NFHS 5, 2021

Nutritional status/NCDs	Men		Women	
	2016	2021	2016	2021
CED	23.8	16.2	23.0	18.7
Overweight/obesity	21.9	22.9	28.7	24.0
Hypertension	20.2	24.0	15.3	21.3
Diabetes (Type 2)	10.5	15.6	9.7	13.5
Abdominal obesity (as per NNMB)	55.5	47.7	63.5	56.7

CED: Chronic energy deficiency or undernutrition among adults

INDIA AND GLOBAL NUTRITION TARGETS

Progress towards the global nutrition targets



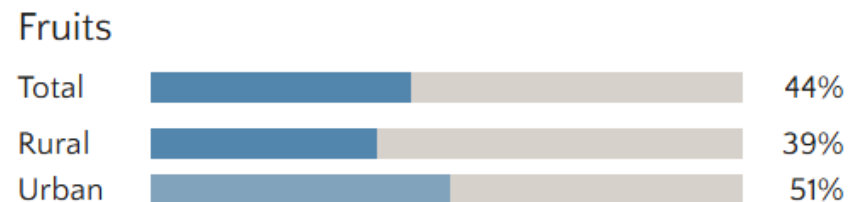
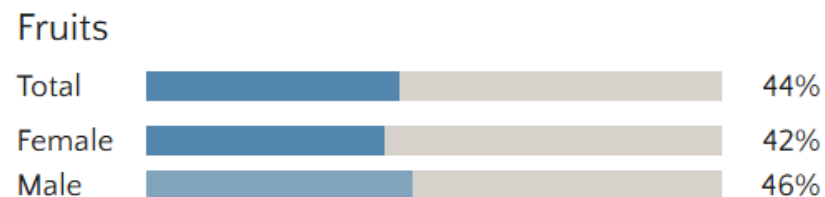
What is wrong with our diets?



Challenges

- Healthy foods are unaffordable, inaccessible, unavailable, undesirable, and unsafe
- Consumers lack agency
- Large environmental footprint
- Climate change and vulnerability, degradation of natural resources, urbanization, conflicts, economic shocks

In India, a higher percent of Men (46%) and Urban (51%) residents consume fruit compared to women (42%) and Rural (39%) residents



Vitamin A-rich fruits



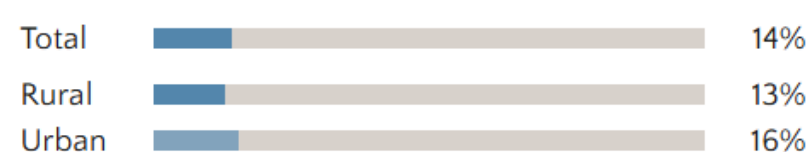
Vitamin A-rich fruits



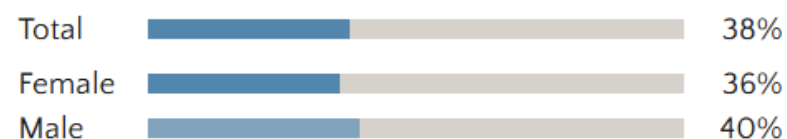
Citrus



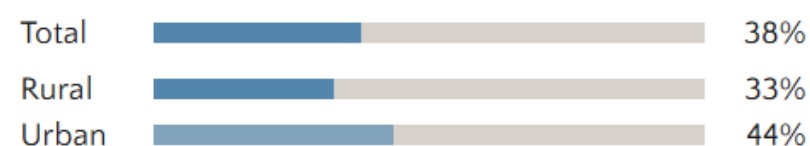
Citrus



Other fruits



Other fruits

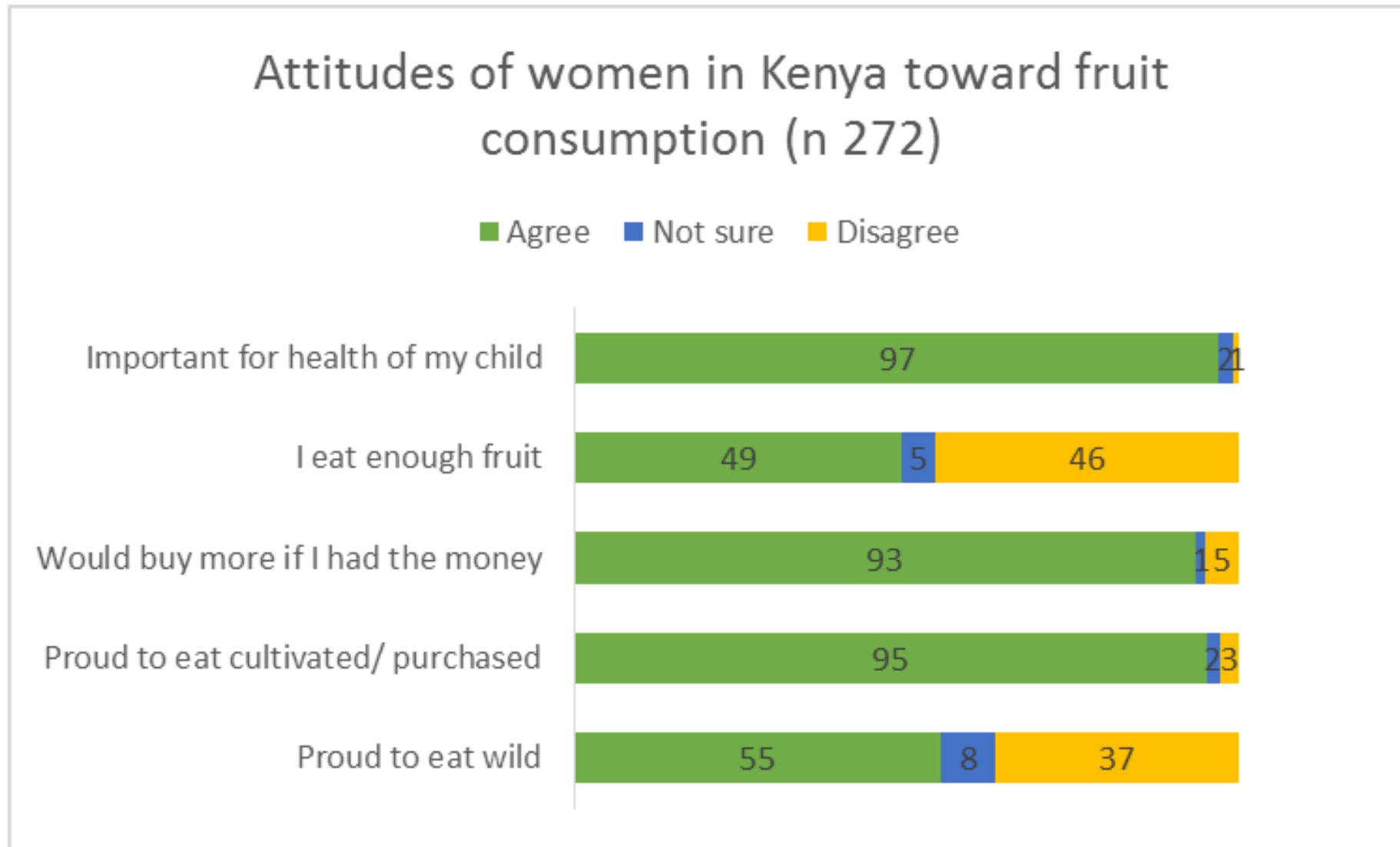


Data collected by the Global Diet Quality Project – September-November, 2021

Entry Points for CFI



Understand Barriers and Opportunities



Source: Keding, Kehlenbeck, Kennedy and McMullin, 2017

CELEBRATE THE DIVERSITY!

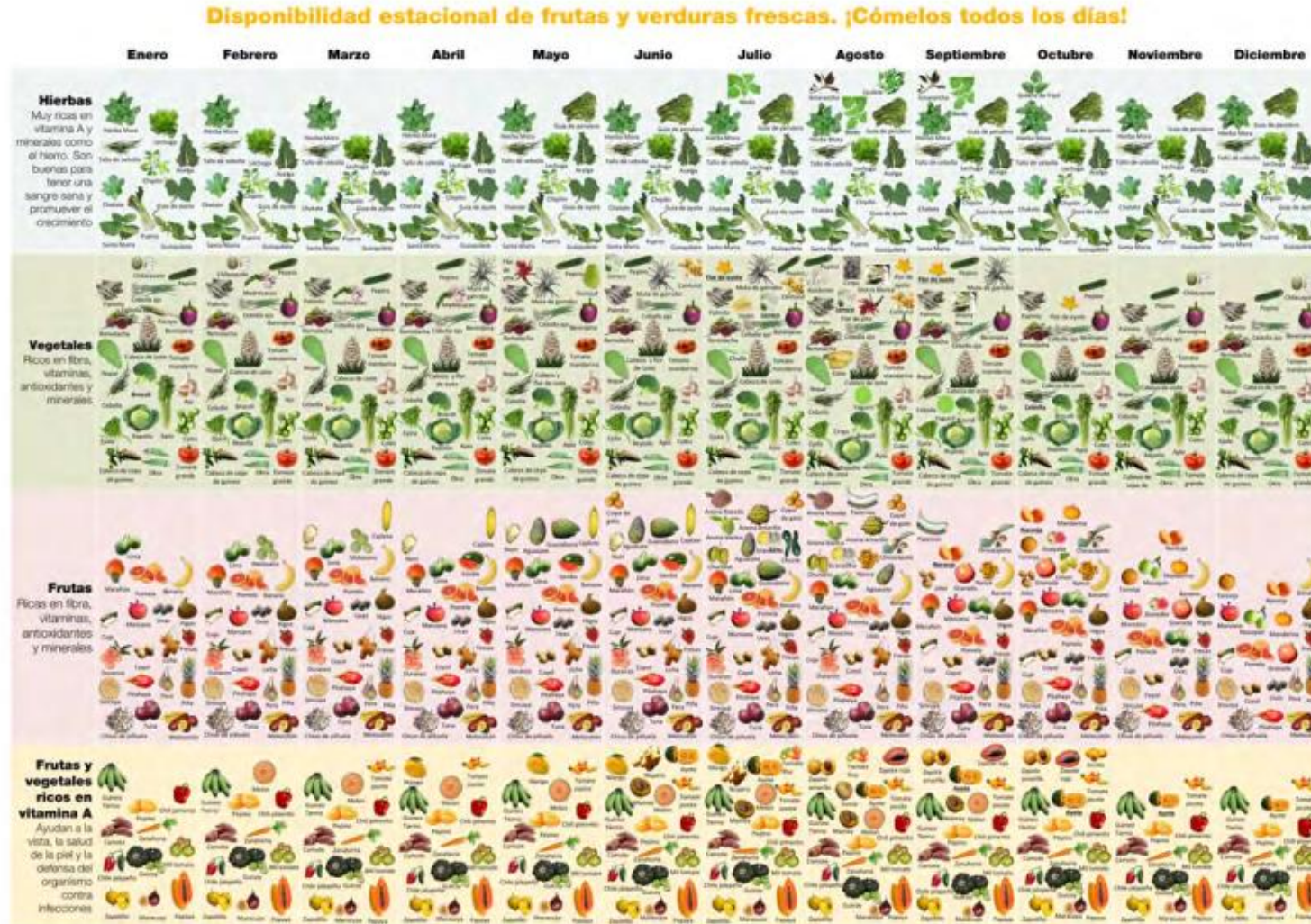
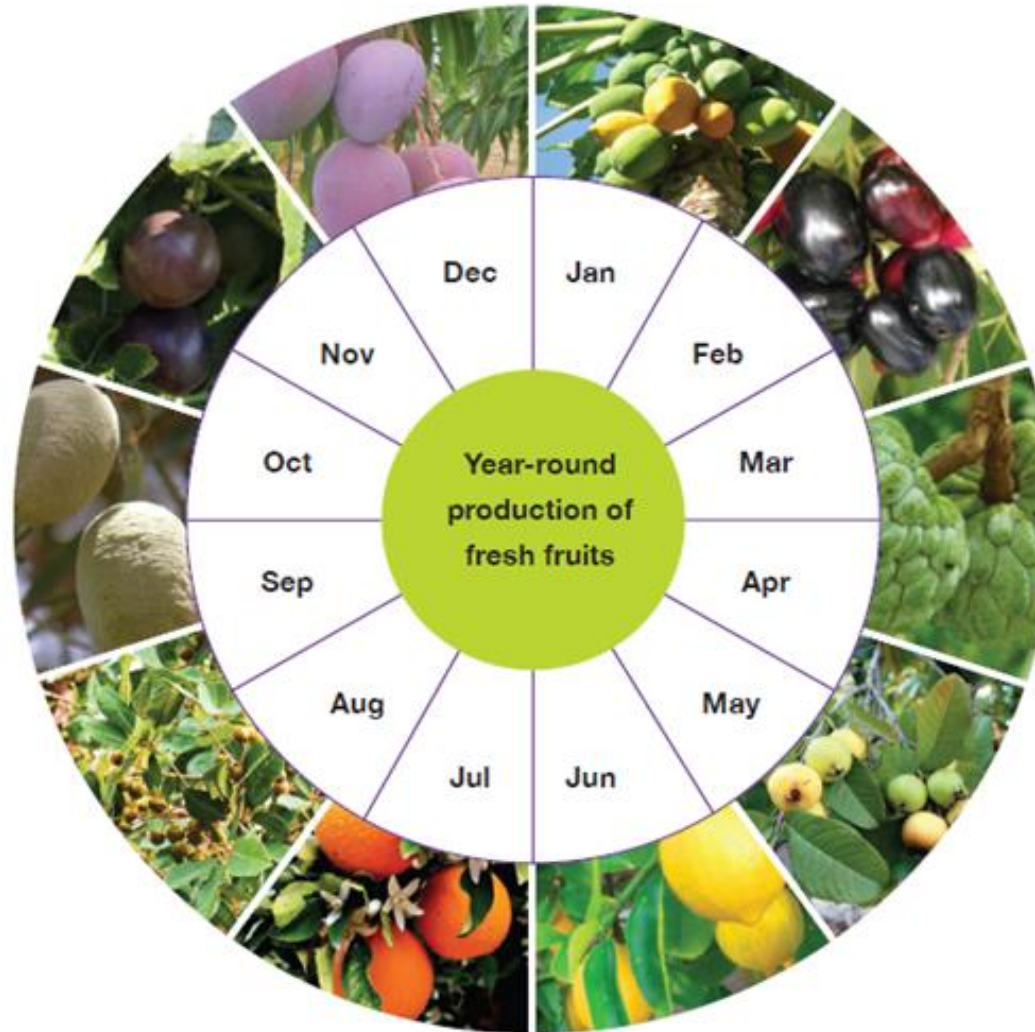


Figure 7 – The largely pictorial seasonal food availability calendar for Guatemala. Source: Bioversity International and UVG 2018

CELEBRATE THE SEASON!



Year-round fruit harvest of vitamin A and C rich fruits Machakos County, Kenya,
Source: Kehlenbeck K, McMullin S (2015) *Fruit Tree Portfolios for Improved Diets and Nutrition in Machakos County, Kenya* (Nairobi).

Nutrition Fact Sheets and other educational materials



Cultivate ABD Champions



