

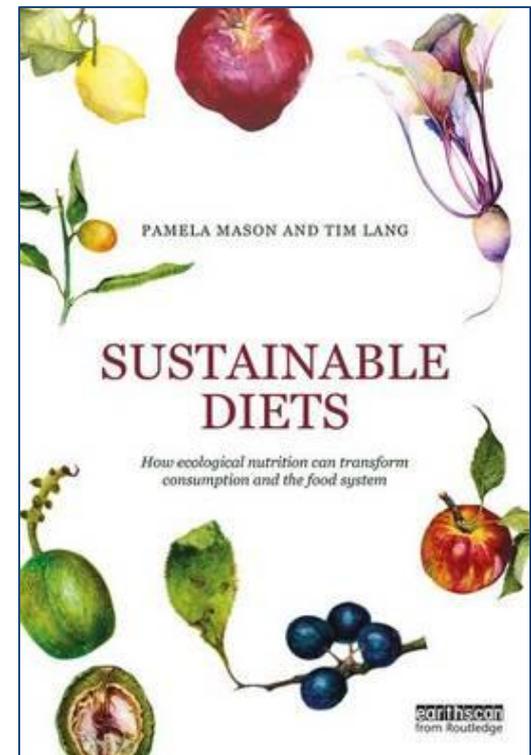
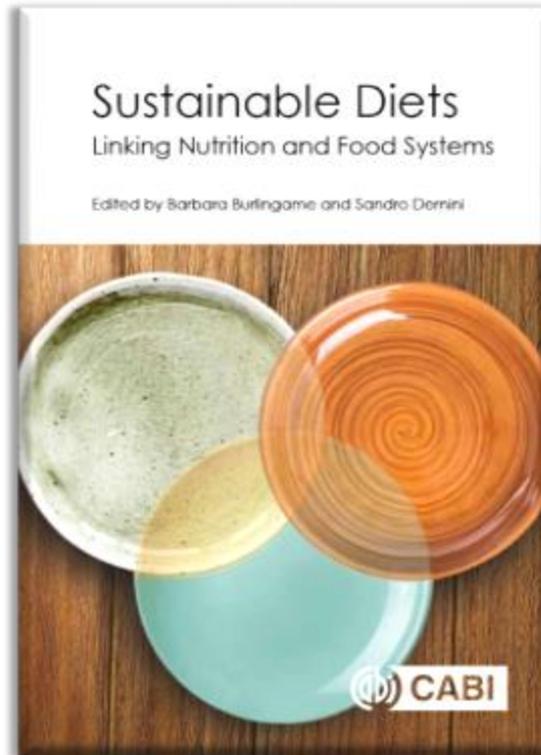
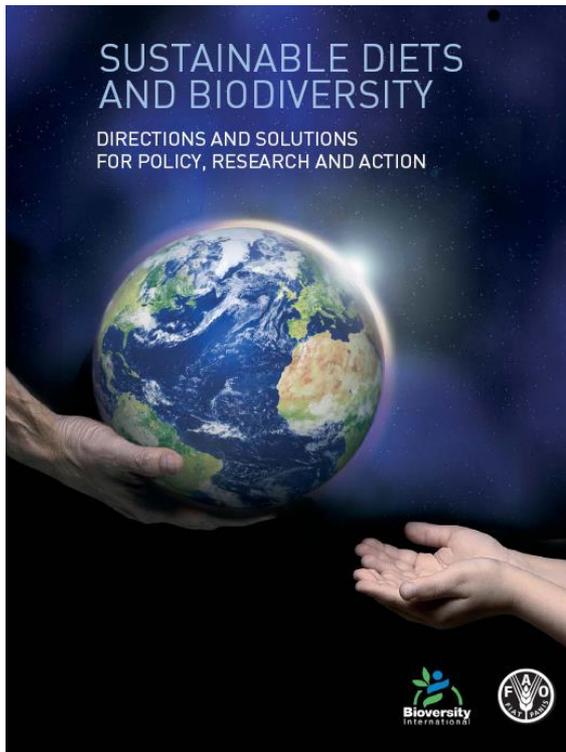
Importance of biodiversity and local conditions for sustainable diets

Barbara Burlingame, PhD

18 November 2020

FAO-oriGIn Series

Contributing to SDGs through quality linked to geographical origin

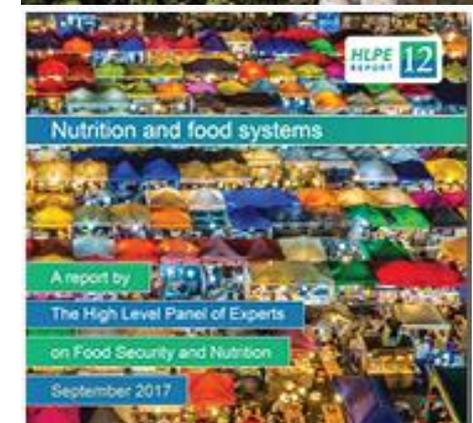
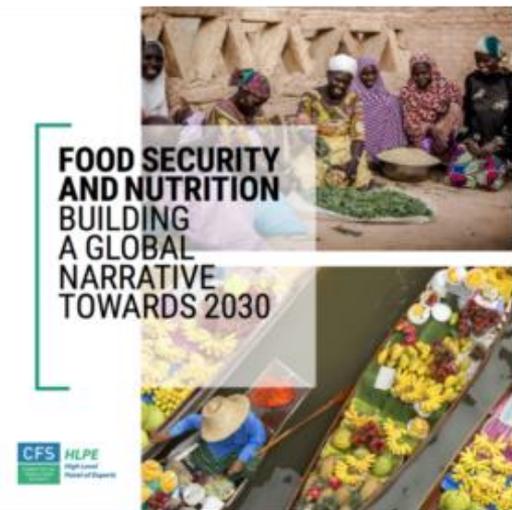


Sustainable Diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources.

HPLE Global Narrative

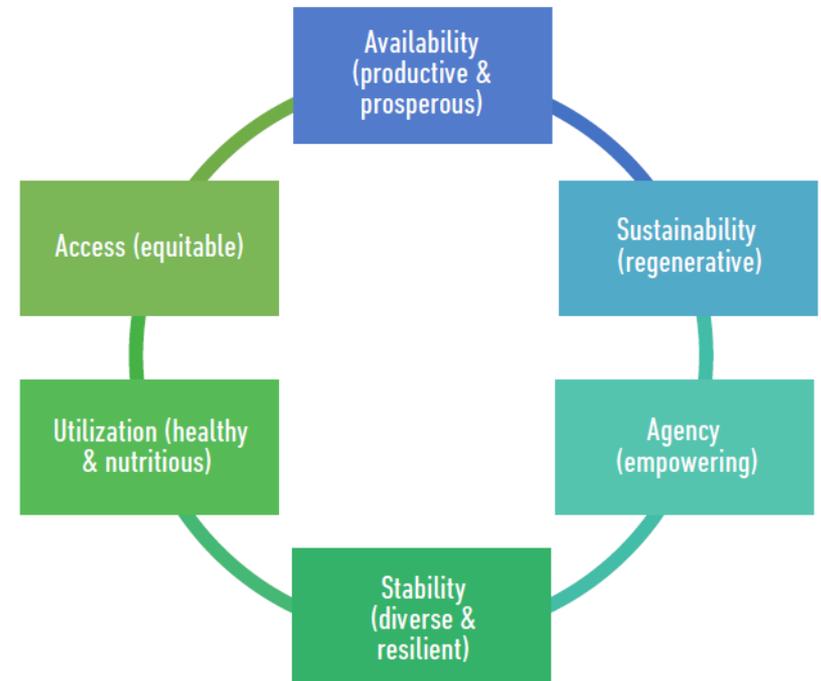
- Facilitate the supply of a culturally acceptable, diverse basket of foods of both plant and animal origin to ensure sustainable diets.
- Facilitate biodiversity conservation through sustainable use by promoting the production and consumption of nutritionally-rich neglected and underutilized food species (NUS) and local varieties.
- The agriculture sector should engage the health and environment sectors in establishing policies and programmes that are nutrition-driven and environmentally sustainable.
- The health sector should engage the agriculture and environment sectors in addressing overweight/obesity and malnutrition in all its forms, and illnesses associated with food- system-related chemical and microbial exposures.

<http://www.fao.org/cfs/cfs-hlpe/>



Global Narrative towards 2030

- Recognizing *agency* and *sustainability* as key aspects of food security
- Uphold the central role of the right to food and other human rights in food security and nutrition
 - Reframe the right to food as freedom from hunger and all forms of malnutrition —underweight, overweight, obesity, micronutrient deficiencies and non-communicable diseases—reaffirming the importance of “safe and nutritious food” along with freedom from hunger.
 - The CFS should formally strengthen the Voluntary Guidelines on the Right to Food, by moving from “progressive realization” to “unconditional realization.”

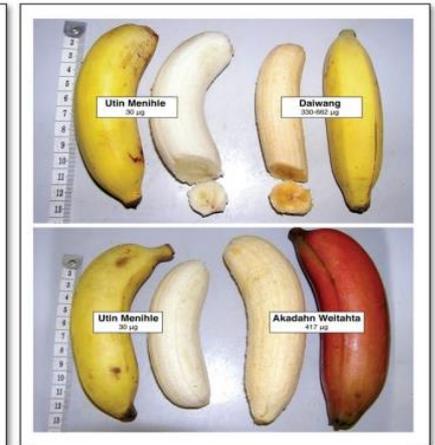
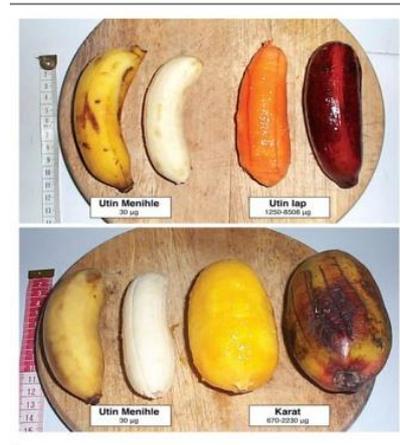


SUSTAINABLE FOOD SYSTEMS THAT SUPPORT THE SIX INTERCONNECTED DIMENSIONS OF FOOD SECURITY

Biodiversity for Food and Nutrition

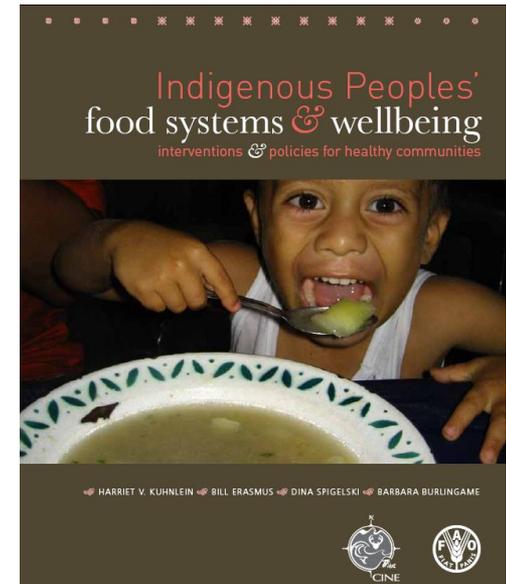


<5 µg carotenes



>8500 µg carotenes, mostly β-carotene

Burlingame



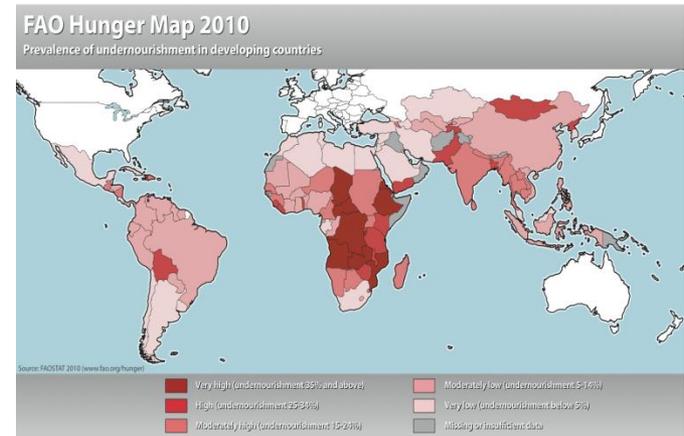
Cultivar Differences in Nutrient Content

Nutrient	Range	Average	Variety with highest nutrient content	Variety with lowest nutrient content
Protein (n=1339)	5.55 – 14.58 g/100g	8.55	Indica CR1707 (Costa Rica)	Indica Rd 19 (Thailand)
Iron (n=95)	0.70 – 6.35 mg/100g	2.28	Long grained ^a red (China)	Undermilled Red ^a (Philippines)
Zinc (n=57)	0.79 – 5.89 mg/100g	3.34	Ganjay Roozy (IRRI)	Long grain ^a Fragrant (China)
Calcium (n=57)	1.0 – 65.0 mg/100g	26	ADT-21, red (India)	Brown Japonica ^a (Korea)
Thiamin (n=79)	0.117 – 1.74 mg/100g	0.475	Juchitan A-74 (Mexico)	Glutinous rice ^a special grade (China)
Riboflavin (n=80)	0.011 - .448 mg/100g	0.091	Tapol Dark Purple (Philippines)	Mun-pu red (Thailand)
Niacin (n=30)	1.97 – 9.22 mg/100g	5.32	Long grained ^a purple (China)	Glutinous round ^a grained (China)
Amylose (n=1182)	1.0-76.0 g /100g	22.36	Ingra 410 (Brazil)	Bpi-Ri-3 (Philippines)

^a These data come from Food Composition Tables, and do not strictly represent rice varieties

Nutrients, ecosystems and traditions

- Mongolia
 - landlocked
 - food insecure
- n-3 fatty acids
- Mares' milk, local breed, genetic trait
- Biodiversity of grasslands





MINISTRY OF INDUSTRY
AND AGRICULTURE



WELCOME TO THE 2ND SCIENTIFIC ASIA AND THE PACIFIC SYMPOSIUM ON "SUSTAINABLE DIETS: HUMAN NUTRITION AND LIVESTOCK"

21th - 25th August, 2013
Ulaanbaatar, Mongolia

Dilemmas and trade-offs

- Rich sources of nutrients
- Increase risk NCD
- Deforestation
- Natural repositories of plant biodiversity, with livestock a synergistic part of this sustainability.
- Global carbon balances
- Fibrous pasture species
- ALL FOOD SYSTEMS ARE SUSTAINABLE
- Thus, we look to the context, i.e., the food system or the ecosystem, for guidance.
- The essence of sustainable diets: an ecosystem approach.



G.I and Terroir



Food Biodiversity

	Resource	Nutrient
Wheat, cultivated and wild	<i>Triticum</i> four species 106 varieties	Protein, amino acids, B-vitamins, vitamin E, fatty acids
Apricots	<i>Prunus armeniaca</i> , more than 140 varieties	β -carotene, lutein, lycopene, anthocyanins, vitamin C
Grapes	<i>Vitis vinifera</i> Thousands of varieties	Vitamin C, organic acids, anthocyanins, resveratrol, many phytochemicals