



The food environment, its effect on dietary consumption, and potential for measurement

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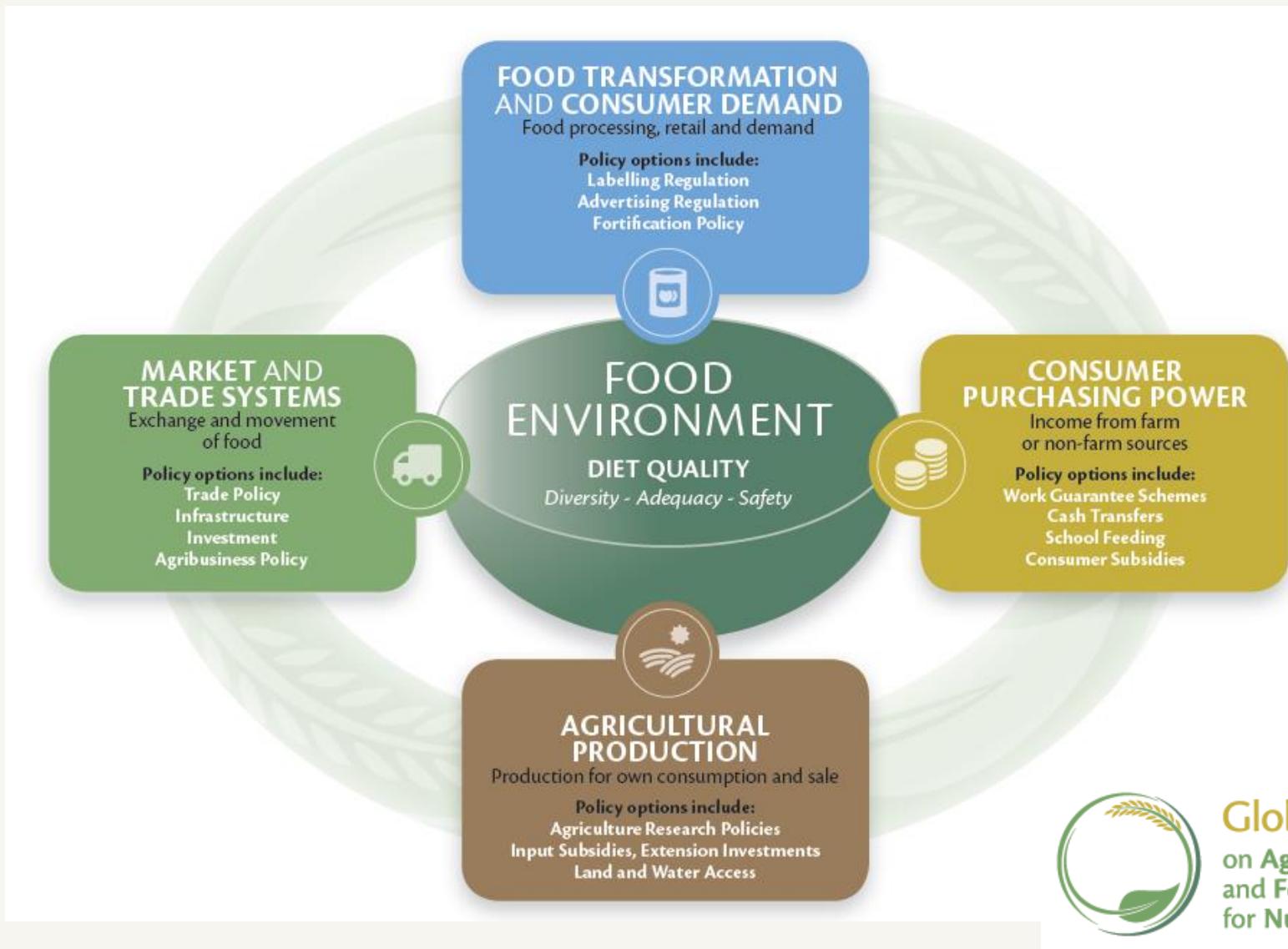


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Income*Food Environment interaction

- leaf Income always interacts with the food environment in how it affects diets
- leaf It is critical to understand the food environment if we want to understand how agriculture is affecting nutrition.



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Food environment

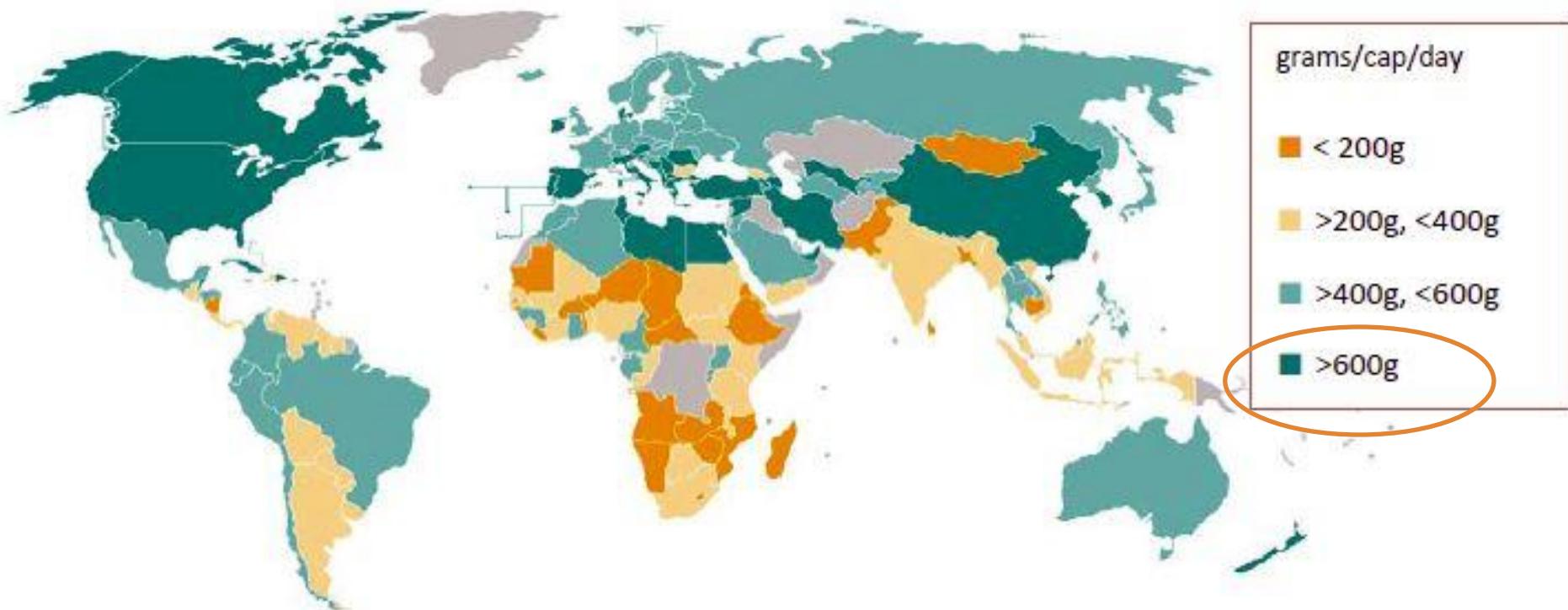
leaf We define it as:

- leaf Availability, Affordability, Convenience, and Desirability of various foods
- leaf We consider policy and sociocultural aspects to affect the food environment, but limit scope of our definition to the above characteristics of actual foods.
- leaf We are focusing here on the food *market* environment, but recognize there are other important parts of the food environment (farm and wild)

Food Env→ diets: Availability

- Based on current food availability, it is theoretically possible for all people to consume enough calories, but it is not possible for all to consume nutritious diets.

Figure 2.7 Fruit and vegetable supply per capita, 2009

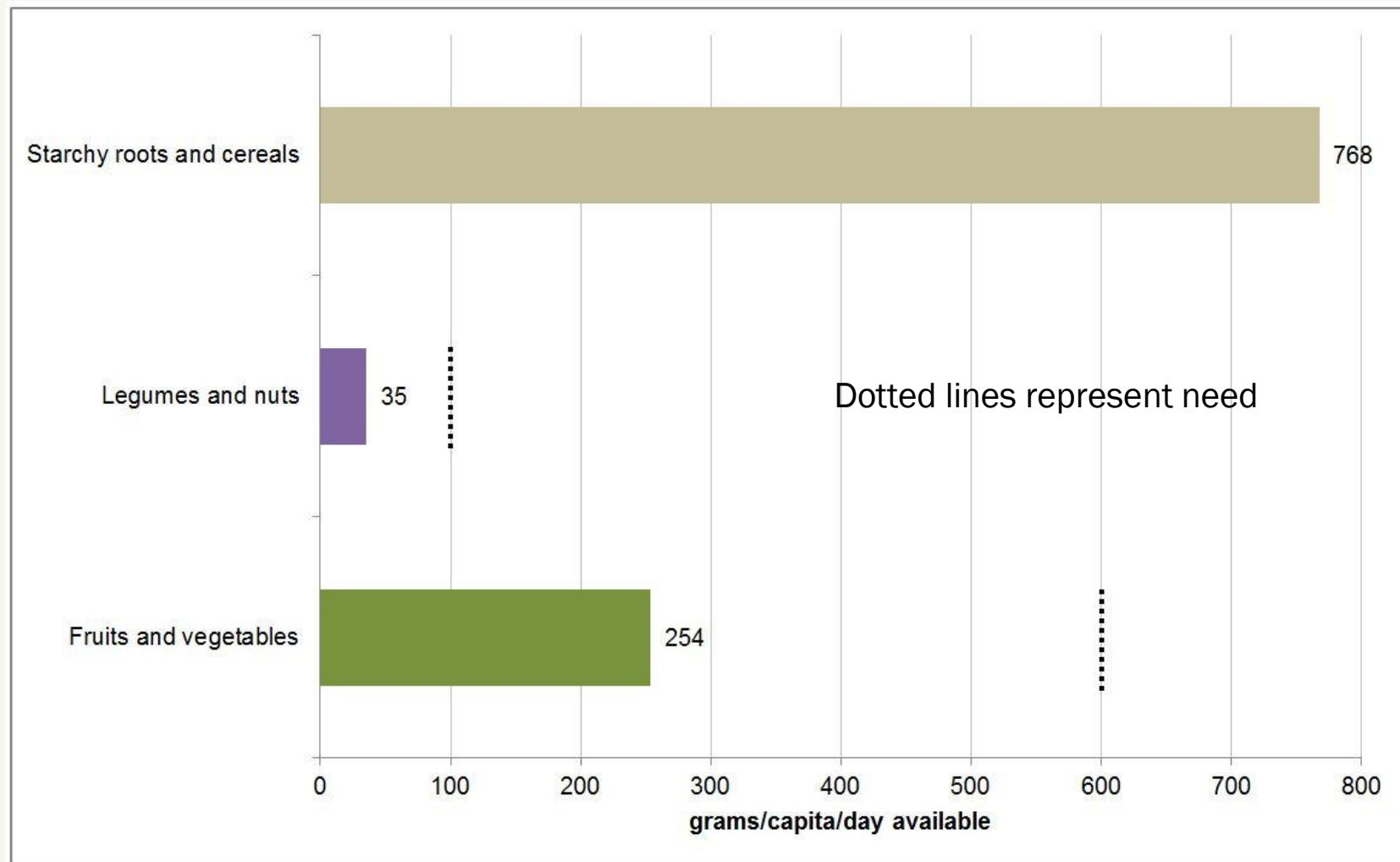


Source: FAOSTAT. Map from Wikimedia commons.

Note: FAO database contains small island states not visible at this resolution.

Source: Keats and Wiggins 2014; 2009 data from FAOSTAT

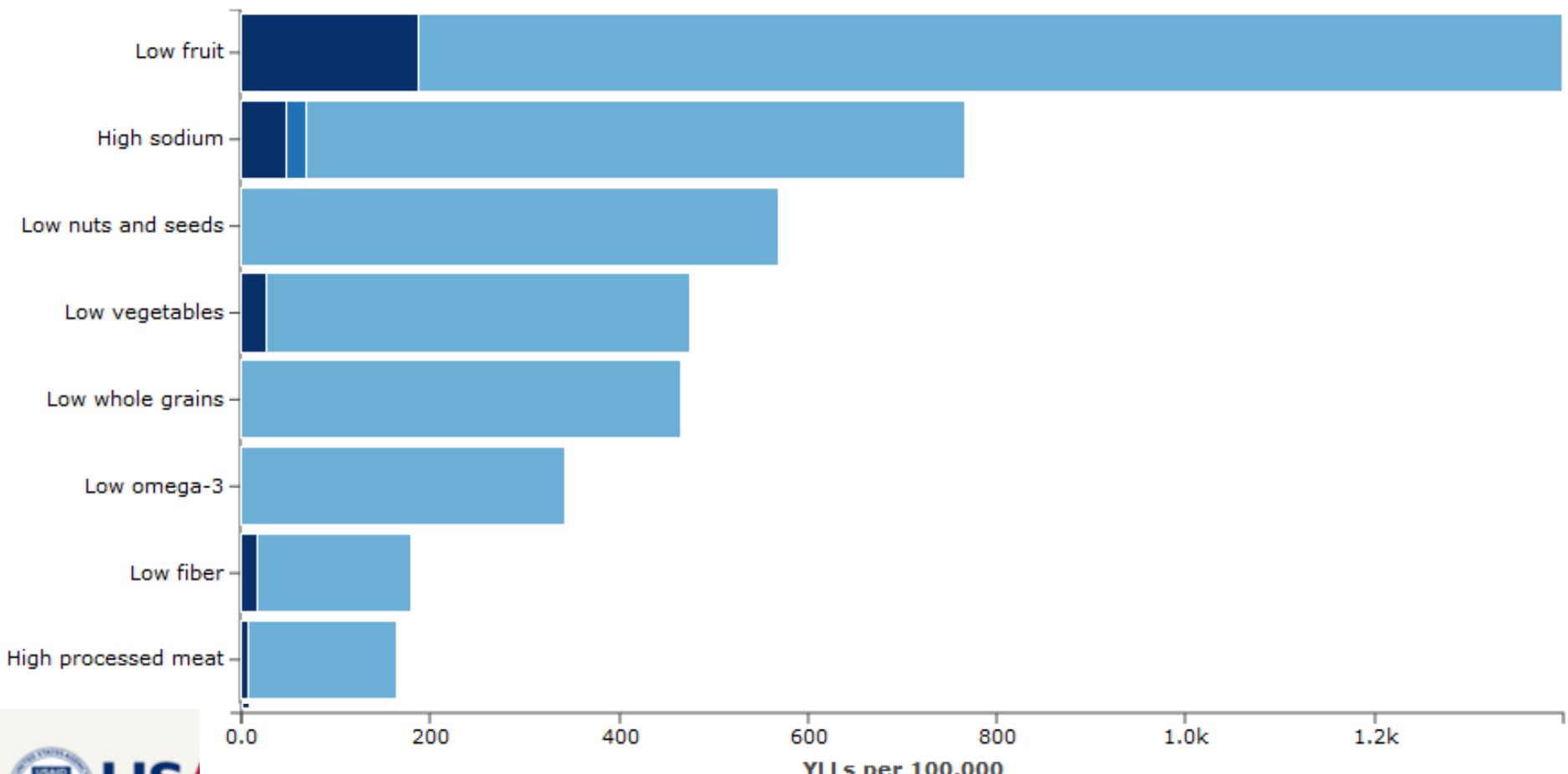
Food availability in sub-Saharan Africa



Herforth, A. In: Sahn, D. (Ed.) *The Fight Against Hunger and Malnutrition*. Oxford University Press (2015).
2009 data from FAOSTAT

Top contributors to “Dietary risks”

All developing countries, 2010



The U.S. Government's Global Hunger & Food Security Initiative

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Source: Institute for Health Metrics and Evaluation

Affordability: Cost of healthy diets

- 🕒 A systematic review of cost-of-diet studies globally: healthy diets \$10.50/week more expensive than less-healthy diets (similar across countries) (Rao et al. 2013)
 - 🕒 UK: the healthiest diet was double the price of the least healthy diet (Morris et al. 2014)
 - 🕒 US: refined grains, added sugars, and fats are much more affordable than the diet recommended by dietary guidelines (Drewnowski and Darmon 2005)
- 🕒 Healthy diets were unaffordable for large portions of the population in all sites studied (Ethiopia, Myanmar, Tanzania, and Bangladesh), costing between \$0.72-\$1.27/day more. (Chastre et al. 2007)
- 🕒 South Africa: a healthier diet costs 69% more than an unhealthy diet (Temple and Steyn 2011)

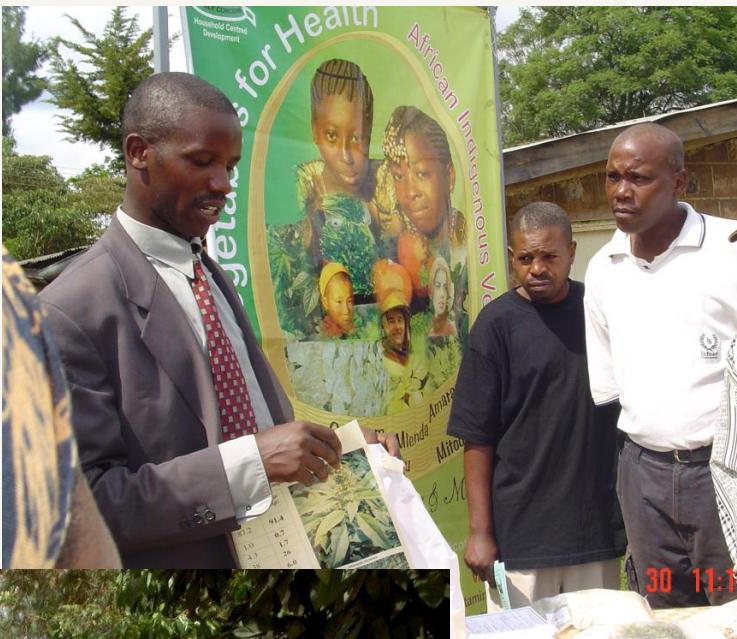
Food Env→diets: Affordability

- 🕒 Cornelsen et al. (2014) “What happens to patterns of food consumption when food prices change? Evidence from a systematic review and meta-analysis of food price elasticities globally.”
 - 🕒 Own-price elasticities have a much bigger impact on consumption of specific food groups than cross-price elasticities.
- 🕒 To encourage consumption of nutritious foods, lower their own prices.

Food Env→diets: Convenience

- 🕒 This is a new addition to the “food environment” definitions that have been used before
- 🕒 When time is a scarce resource, convenience may be even more important than the dollar cost of food.
 - 🕒 US literature: taste, cost, and convenience are major factors affecting food choices (Drewnowski 2003, Glanz et al. 1998)
 - 🕒 International literature: very little emphasis per se
- 🕒 Women’s time
 - 🕒 Highly constrained
 - 🕒 Reducing women’s time burdens often discussed as a principle of improving nutrition through agriculture
- 🕒 Distance to markets can be prohibitive
- 🕒 Perishable foods and lack of refrigeration

Food Env→diets: Desirability



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Photo: Anna Herforth
Arusha, Tanzania



Traditional Foods
For health & health



Traditional Foods Project is Implemented by:
CIP, Urban Harvest, AVRDC & Farm Concern International

Discover the hidden treasures ... eat traditionally ... stay quite modern!!

Traditional Foods

The Nutritious Way to Health!



Veges ni poa kwa life yako!

Nutritional Properties

Terrific Terere:

- rich in Calcium, Vitamin A and Iron

Super Spider plant:

- for lots of calcium and phosphorus

Mnavu Tamu:

- for super Calcium and Vitamin A

"aging can catch up quick....unless you eat properly... lots of veges in your meal does keep age at bay ...for a fairly long while!! old tibetan monk principle

Unataka kukaa young?
uta do?... eat traditional
vegetables stocked here!!

Jijenge na Vyakula Asili

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6751229, Cell: 0720-549343

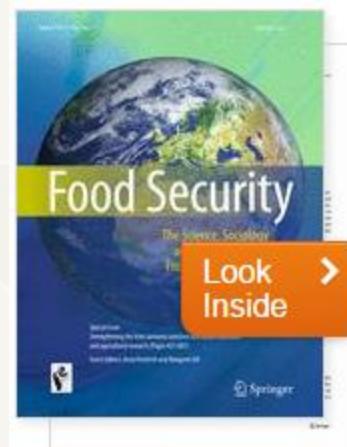
What is needed

- 🕒 The primary need is a feasible measure of availability and affordability of the components of a diverse, nutritious diet.
 - 🕒 Applicable internationally including in rural areas
 - 🕒 This is overdue for monitoring food security.
- 🕒 Convenience and desirability also important, but are further afield from current tools

Key takeaways

- Income has no direct effect on food consumption; it is always modified by the food environment.
- The food environment can be defined as availability, affordability, convenience, and desirability of various foods.
- Food environment measures need to be developed for international use, and could benefit agriculture-nutrition program design and evaluation.

Find the paper at:



Special Section of the June 2015 issue of *Food Security*:
Strengthening the links between nutrition and health outcomes and agricultural research



“Indicators of Availability and Affordability of Nutritious Diets in Africa” (IANDA)

Tufts, Columbia, University of Ghana, Sokoine University, Johns Hopkins

Main Goal: Use existing national price data to develop and validate indicators that measure the availability and affordability of nutritious, diverse foods and food groups in markets throughout the year

-Participatory process of data identification and consultation in two countries (Tanzania, Ghana)

-Partner with SUN & EU national information platforms

Outcome: generate recommendations for indicator construction and for modifying food price monitoring systems that will enable tracking of access to diverse nutritious diets in markets