



FEED THE FUTURE

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

From Feeding to Nourishing a Growing World

Elizabeth Mitcham

Director

Horticulture Innovation Lab



USAID
FROM THE AMERICAN PEOPLE

**HORTICULTURE
INNOVATION LAB**

UC DAVIS
UNIVERSITY OF CALIFORNIA

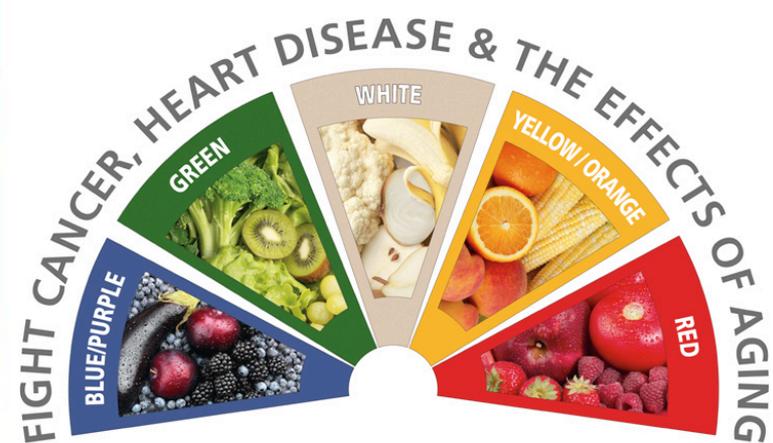


Missing data
 Off course, little/no progress
 Off course, some progress
 On course, at risk
 On course



GLOBAL TARGET

COLOR OF FRUIT AND VEGETABLE GROUPS	SOURCES OF ONE OR MORE OF THE FOLLOWING	FOUND IN ONE OR MORE OF THE FOLLOWING FOODS
GREEN		
	Lutein, Zeaxanthin, Indoles, Vitamin K &/Or Potassium	Turnip, Collard, Kale, Spinach, Lettuce, Broccoli, Green peas, Kiwi, Honeydew, Cabbage, Brussels Sprouts, Bok Choy, Arugala, Swiss Chard, Cauliflower, Leafy greens, Watercress, Endive
YELLOW/ORANGE		
	Beta-Carotene, Vitamin A, Bioflavonoids, Vitamin C, &/Or Potassium	Carrots, Sweet potatoes, Pumpkin, Butternut Squash, Cantaloupe, Mangoes, Apricots, Peaches, Oranges, Grapefruit, Lemons, Tangerines, Clementines, Peaches, Papaya, Nectarines, Pears, Pineapple, Yellow Raisins, Yellow Pepper, Bananas
RED		
	Vitamin C &/Or Anthocyanins	Cranberries, Pink grapefruit, Raspberries, Strawberries, Watermelon, Red Cabbage, Red Pepper, Radishes, Tomatoes, Cherries, Beets, Apples, Red Onion, Kidney Beans, Red Beans
BLUE/PURPLE		
	Anthocyanins, Vitamin C, &/Or Phenolics	Blueberries, Blackberries, Purple Grapes, Black Currants, Elderberries, Plums, Prunes, Raisins, Eggplant
WHITE		
	Allium & Allicin	Garlic, Onions, Leeks, Scallions, Chives



**Eat Your Colors Every Day
To Stay Healthy & Fit**

<http://www.pbhfoundation.org/>

<http://www.fruitsandveggiesmorematters.org/>



FEED THE FUTURE

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



USAID
FROM THE AMERICAN PEOPLE

**HORTICULTURE
INNOVATION LAB**

UC DAVIS
UNIVERSITY OF CALIFORNIA



FEED THE FUTURE

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



Nutrition
Security



USAID
FROM THE AMERICAN PEOPLE

HORTICULTURE
INNOVATION LAB

UC DAVIS
UNIVERSITY OF CALIFORNIA



OH
snap



LET THE
beet
DROP



I DON'T
carrot
ALL

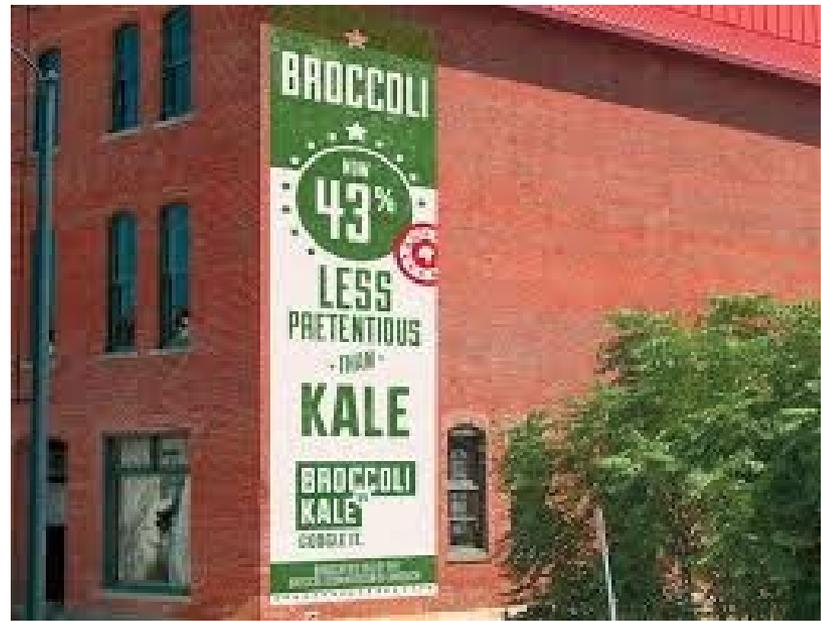


KICK
SOME
asparag-ass

lettuce
CELEBRATE



AWWW
shucks



HOW TO MAKE A:

KICKASSEROLE

INSTRUCTIONS ⇩

- 1 FIND A RECIPE FOR A CASSEROLE.
- 2 ADD THE MOST KICKASS VEGETABLE KNOWN TO MAN.
- 3 WATCH AS YOUR CASSEROLE BECOMES A KICKASSEROLE.
- 4 MARVEL AT ITS AWESOMENESS.

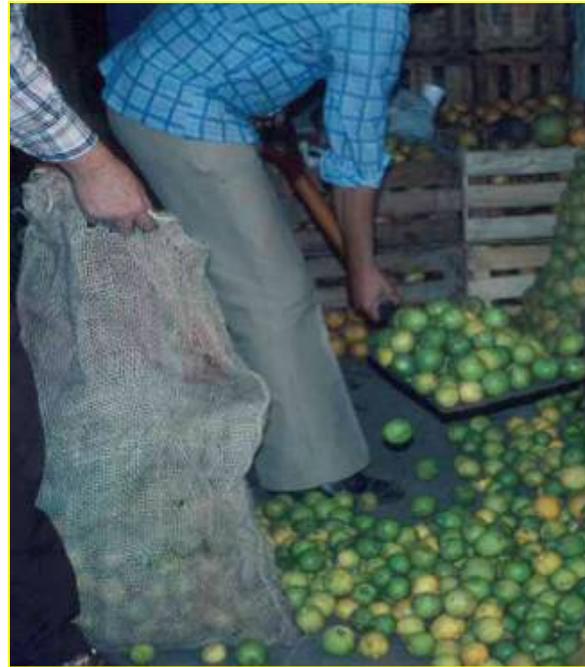


Market Connections

Postharvest Handling in Developing World



Examples of Shipping Containers Used in Developing Countries





Cardboard vs. Reusable Plastic Crates



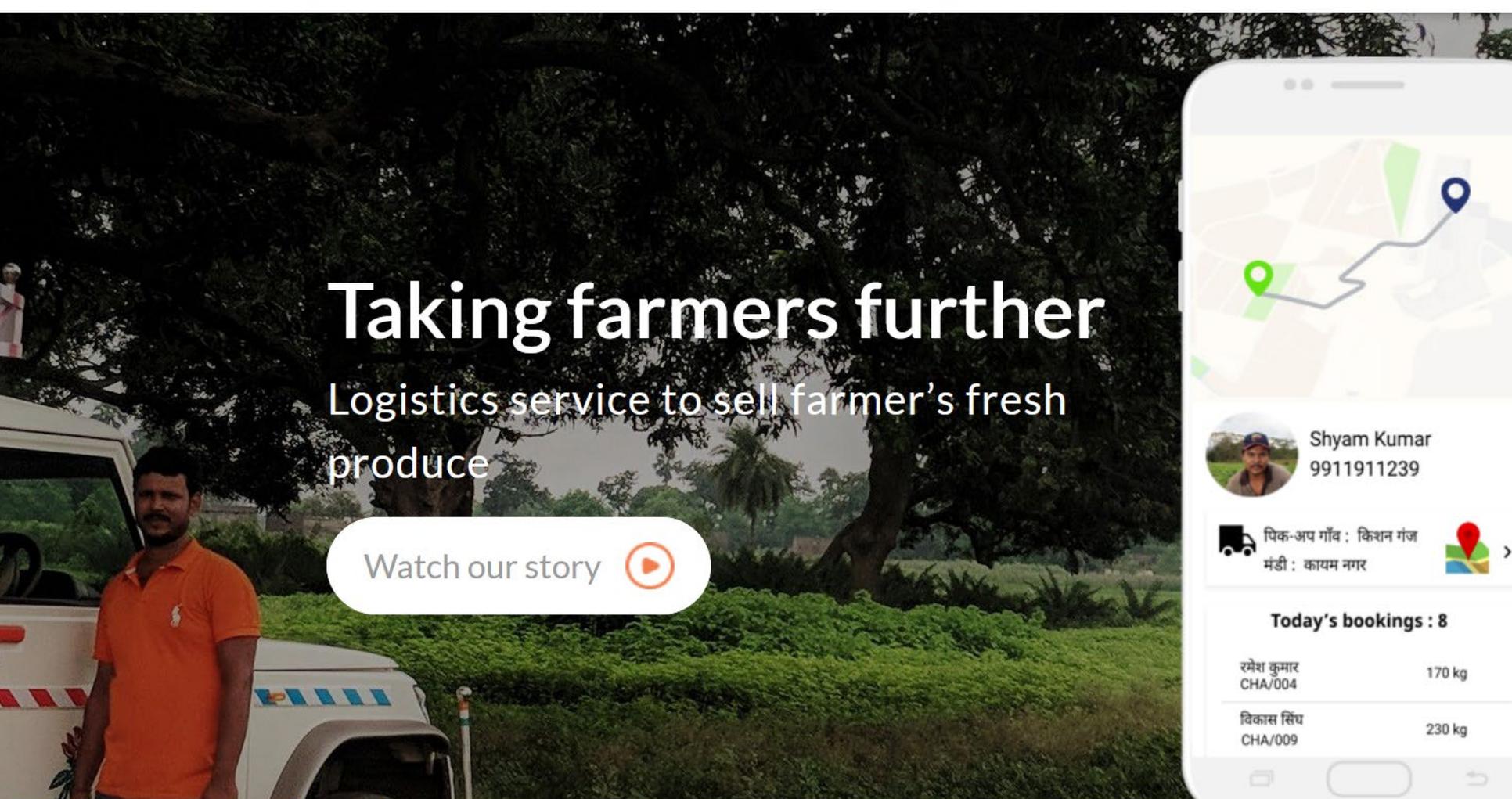
- Support product
- Washable
- Resistant to moisture





CoolBot Cold Rooms





Taking farmers further

Logistics service to sell farmer's fresh produce

Watch our story 

Shyam Kumar
9911911239

पिक-अप गाँव : किरान गंज
मंडी : कायम नगर

Today's bookings : 8

रमेश कुमार CHA/004	170 kg
विकास सिंघ CHA/009	230 kg



Maintaining the Dry Chain

- Thorough drying of any dried product after harvest
 - Seeds, fruits, vegetables, nuts, grains, legumes
 - Challenging in warm humid environments
- Once products are dried to 60 to 70% moisture content, must be kept dry
- Must also prevent increase in moisture content in humid climates
 - Mold and insect activity
 - Aflatoxin contamination (anti-nutrient)





Maintaining the Dry Chain

- Thorough drying of product after harvest
 - Seeds, 1
 - Challenge
- Once prod content, m
- Must also p humid clima
 - Mold and i
 - Aflatoxin co

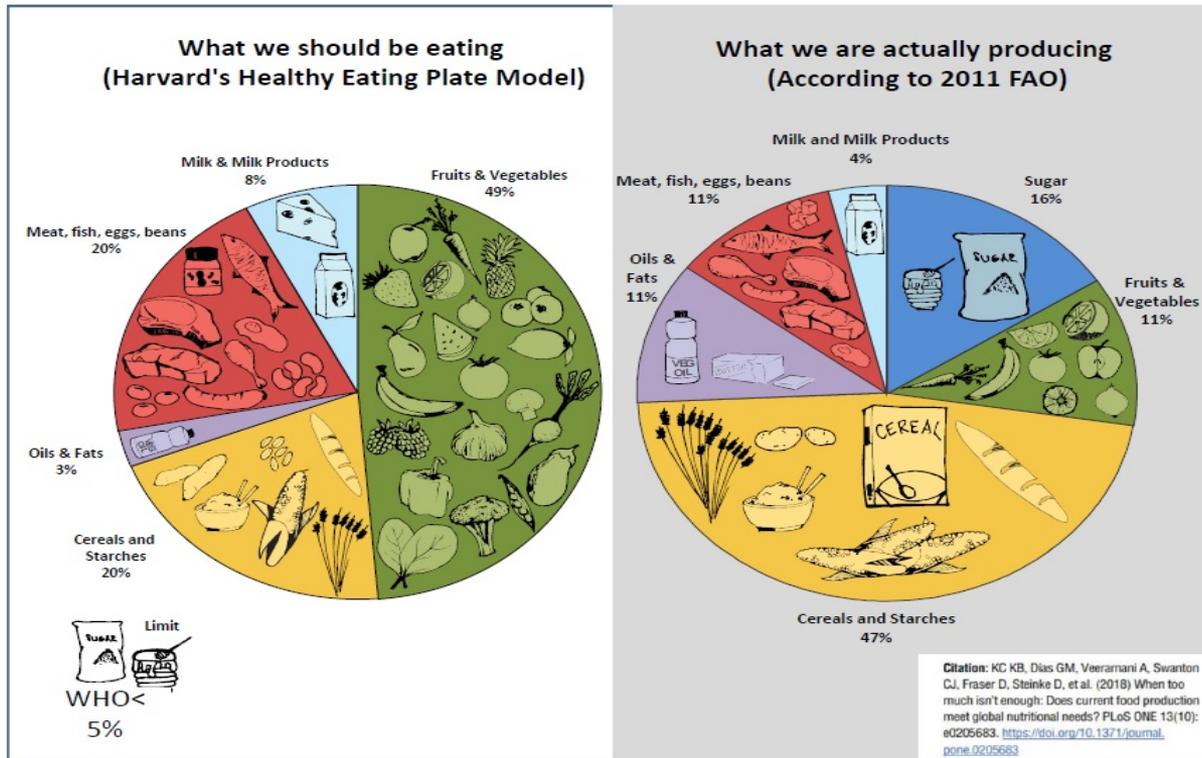


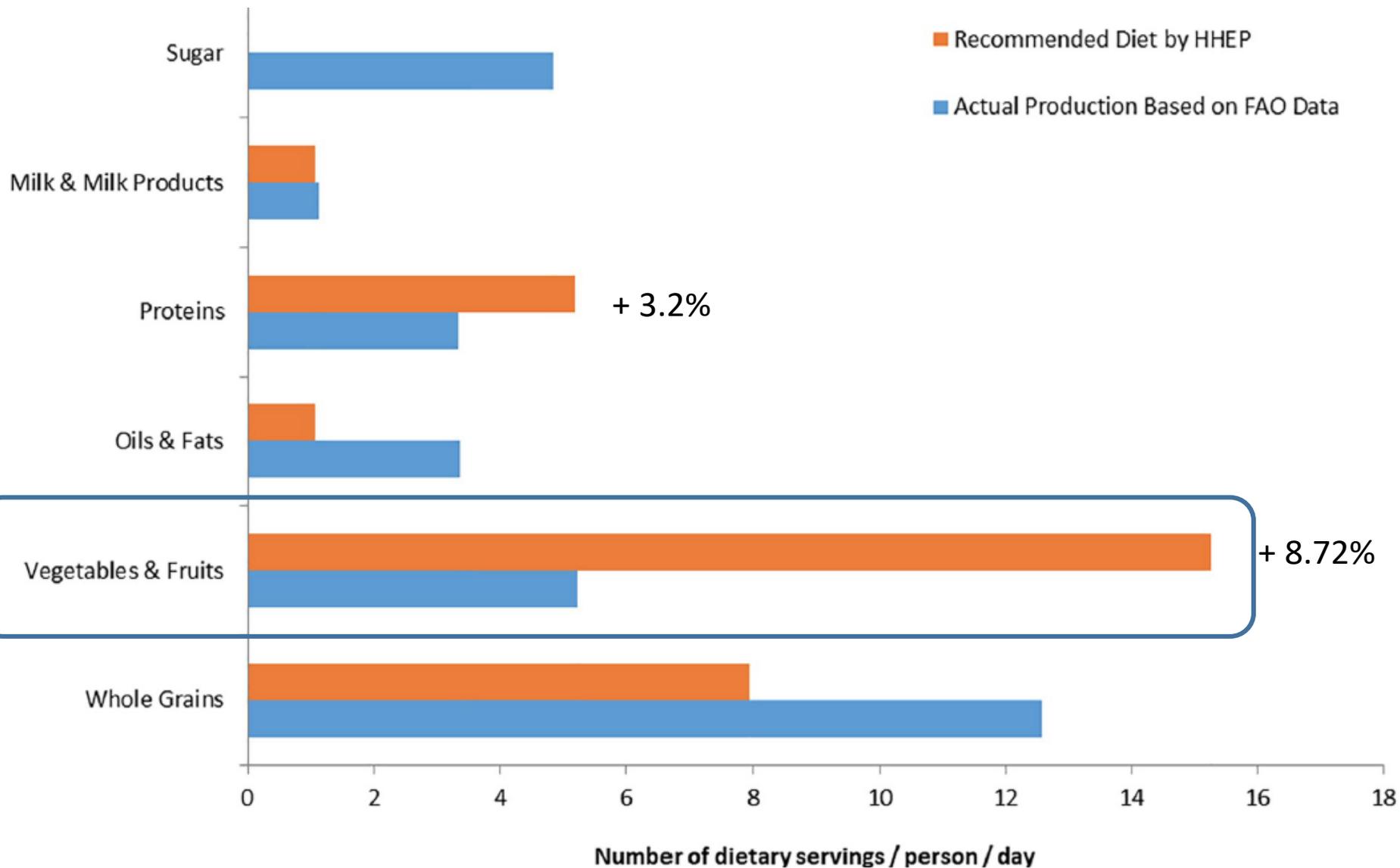


Processing to Preserve the Colorful Harvest



Politics matters: Aligning agricultural production priorities with healthy diets





Krishna Bahadur KCID et al., 2018



HORTICULTURE INNOVATION LAB

UC DAVIS UNIVERSITY OF CALIFORNIA



Variety Improvement and Evaluation



BT Brinjal in Bangladesh

Fruit Borer Control



In SE Asia eggplant can receive 30-50 pesticide applications per 70 day season. A biotech solution exists – ABSPII (Bt gene)



Protected Culture

- Row Covers
- Nethouses
- Greenhouses



Without Nets

With Nets





Conservation Agriculture



HORTICULTURE INNOVATION LAB

UC DAVIS UNIVERSITY OF CALIFORNIA



Grafting of Vegetable Seedlings







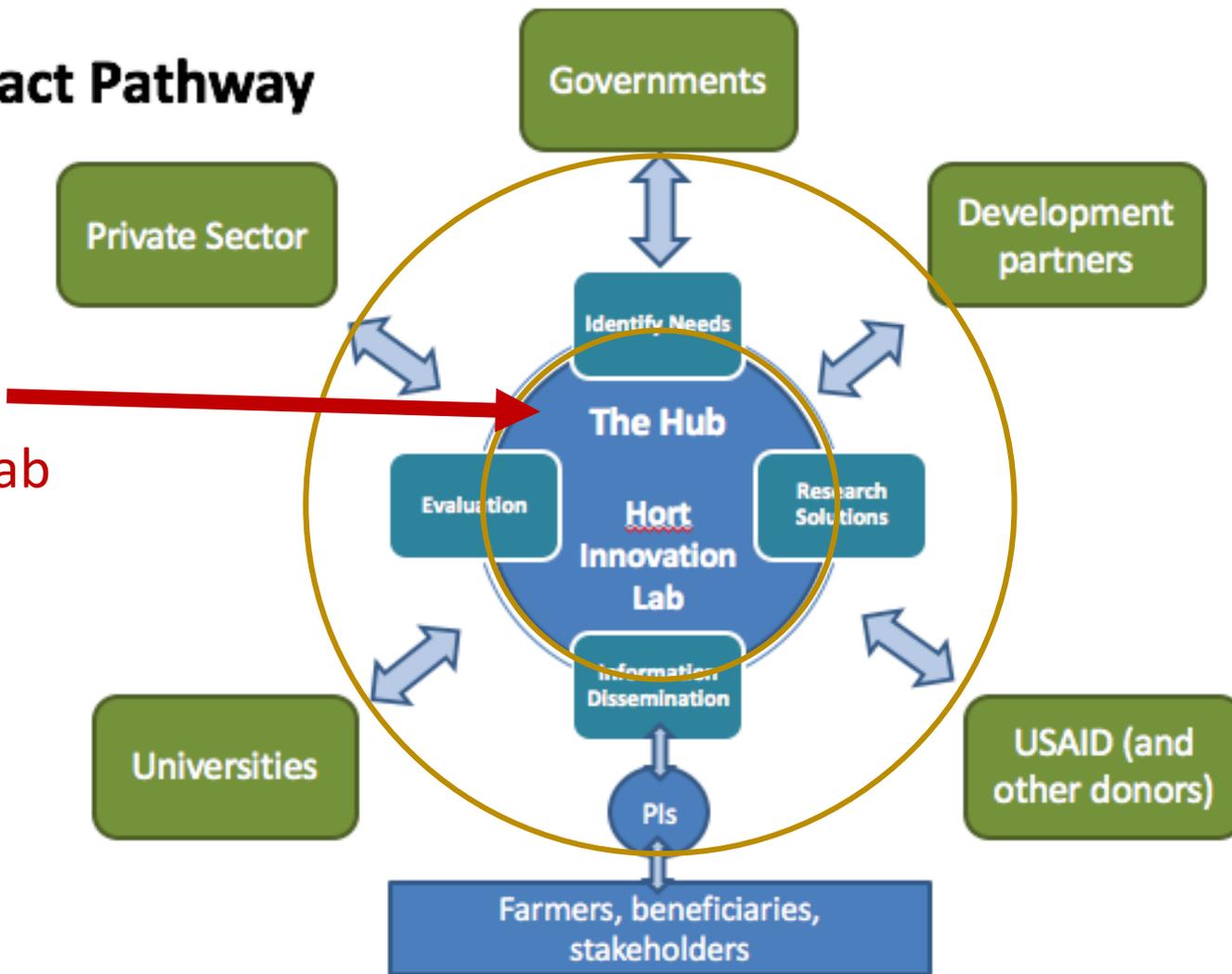
USAID
FROM THE AMERICAN PEOPLE

**HORTICULTURE
INNOVATION LAB**

UC DAVIS
UNIVERSITY OF CALIFORNIA

Impact Pathway

Horticulture
Innovation Lab
Network

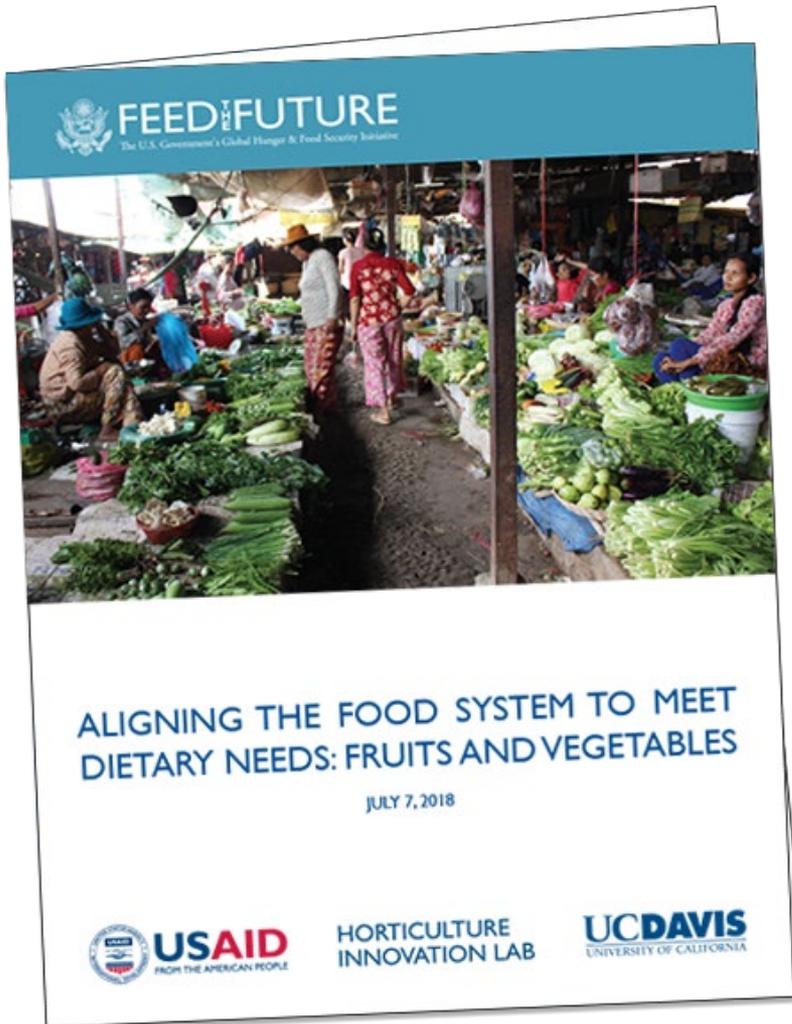


USAID
FROM THE AMERICAN PEOPLE

**HORTICULTURE
INNOVATION LAB**

UC DAVIS
UNIVERSITY OF CALIFORNIA

Aligning the Food System For Fruits and Vegetables



White paper summarizes
2017 conference at UC Davis,
co-hosted by



**Program in International
and Community Nutrition**

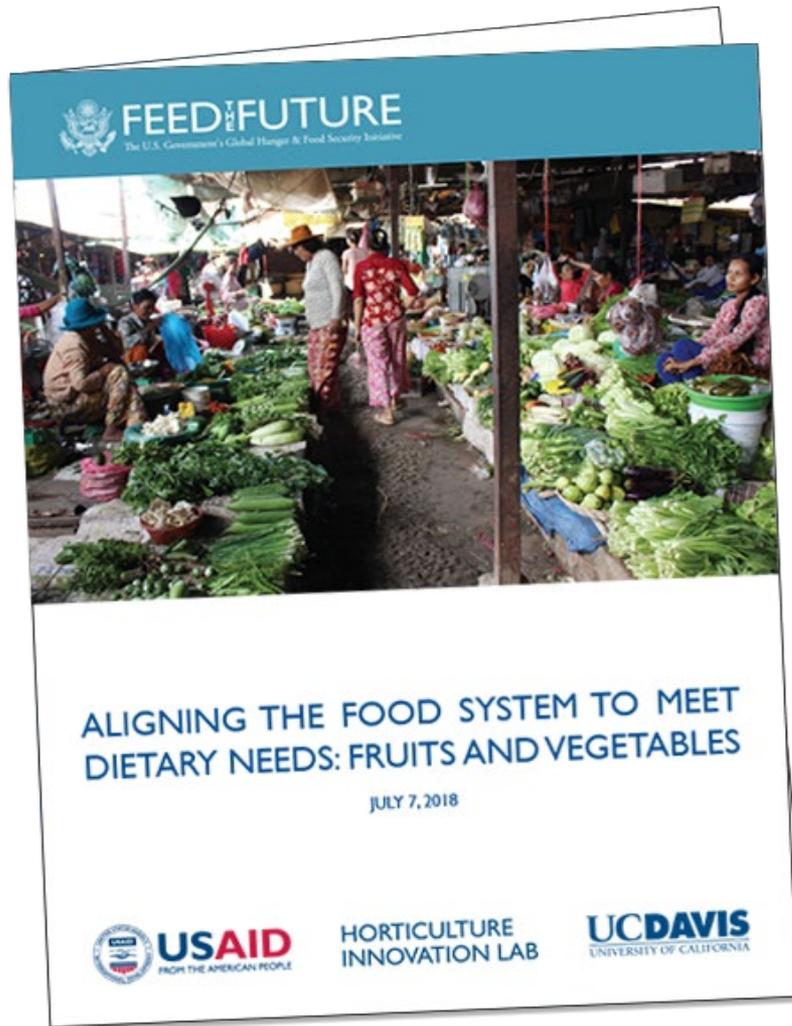


USAID
FROM THE AMERICAN PEOPLE

HORTICULTURE
INNOVATION LAB

UC DAVIS
UNIVERSITY OF CALIFORNIA

[horticulture.ucdavis.edu/event/
nutrition-2017](http://horticulture.ucdavis.edu/event/nutrition-2017)



Sections:

- Health case for investing in fruits and vegetables
- Economic case for investing in fruits and vegetables
- Strategies to increase consumption
- Questions and topics for further research
- References list

horticulture.ucdavis.edu/event/nutrition-2017



FEED THE FUTURE

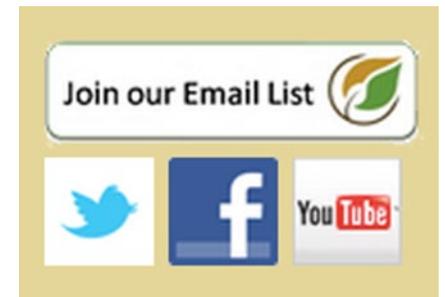
The U.S. Government's Global Hunger & Food Security Initiative

Thank You

For more information:

<http://horticulture.ucdavis.edu>

- ▶ Connect on Twitter: [@HortInnovLab](https://twitter.com/HortInnovLab)
- ▶ On [Facebook.com/HortInnovLab](https://www.facebook.com/HortInnovLab)
- ▶ Videos on [YouTube.com/HortCRSP](https://www.youtube.com/HortCRSP)
- ▶ Subscribe to our newsletter:
<http://blog.horticulture.ucdavis.edu>



USAID
FROM THE AMERICAN PEOPLE

HORTICULTURE
INNOVATION LAB

UC DAVIS
UNIVERSITY OF CALIFORNIA