



The Western Washington Foodshed Study

Sponsored by American Farmland Trust and University of Washington

Funded by PCC Farmland Trust and Whole Foods Markets



What is a Foodshed?

Foodshed

n. The region in which food is produced and consumed and the pathways on which that food travels from farm to table.





Why Local?

- Consumer preference
- Support local economy
- Global natural resource competition
- Decreased carbon emissions
- Aesthetic and cultural value

Why Now?

Farmland loss in Western Washington

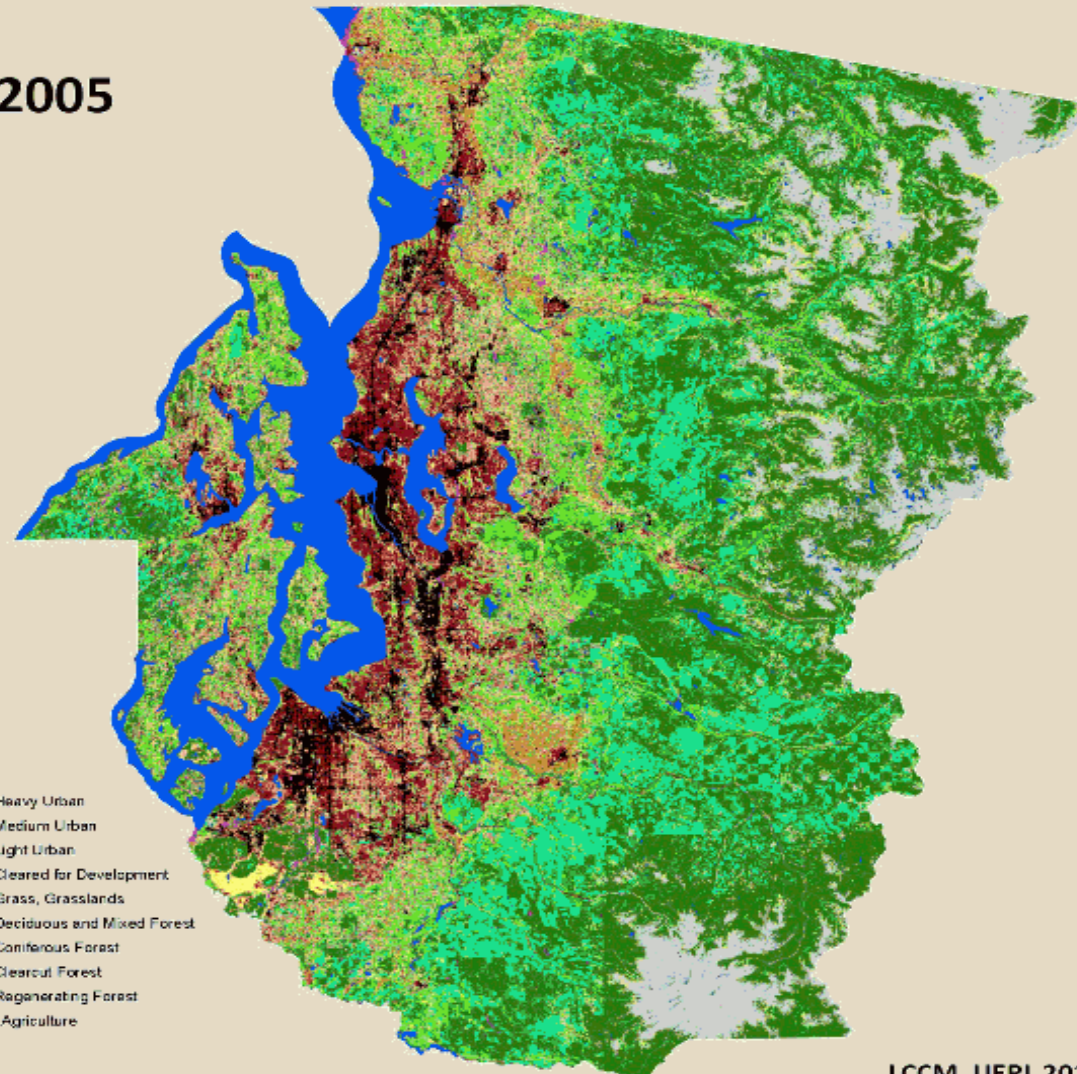
1950

2.3 million
acres

2007

1 million
acres

2005



Source: UW Urban
Ecology Research
Laboratory

Purpose of the Study

**How much food do we produce
and consume?**



**How do we re-localize our
foodshed?**

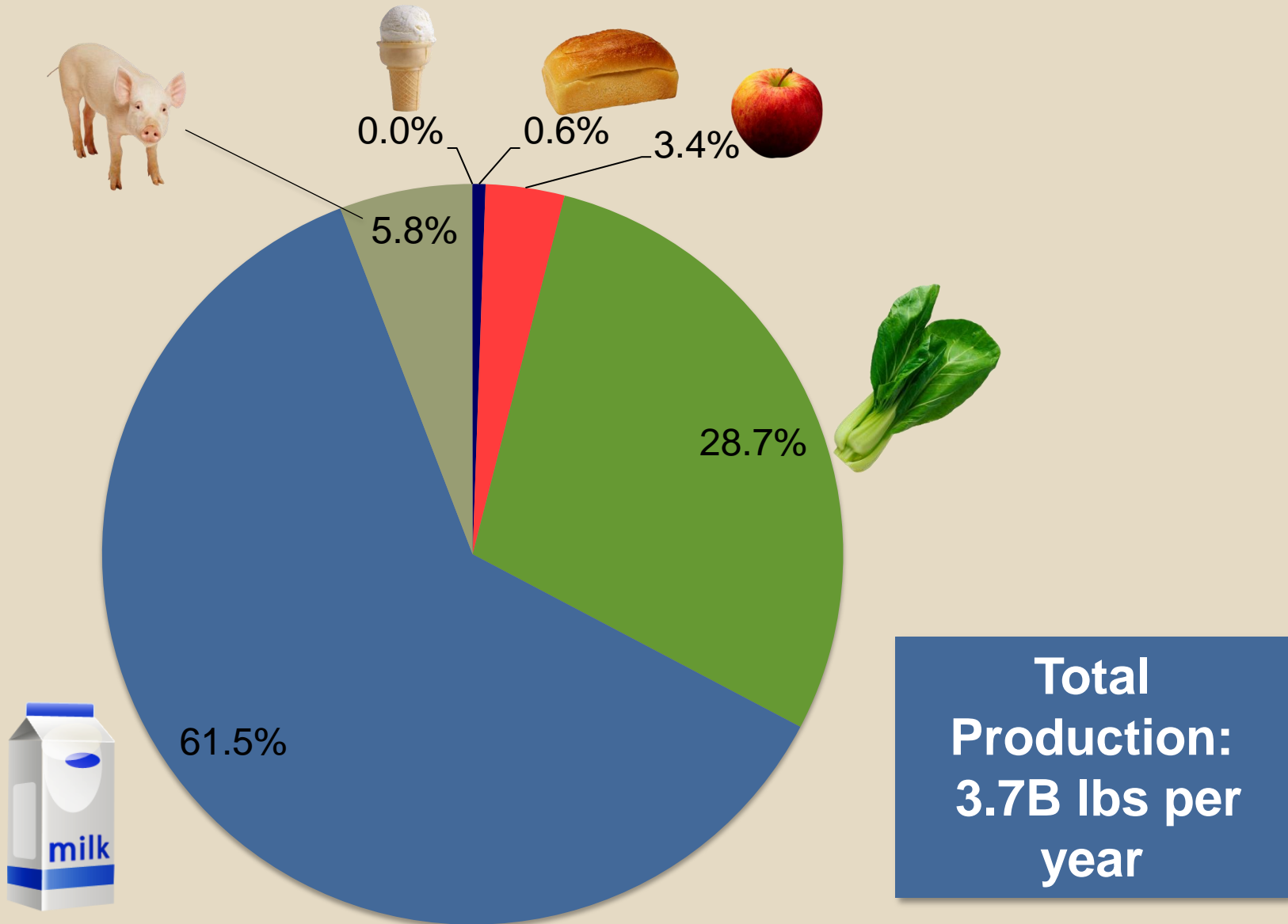


How Much Food?

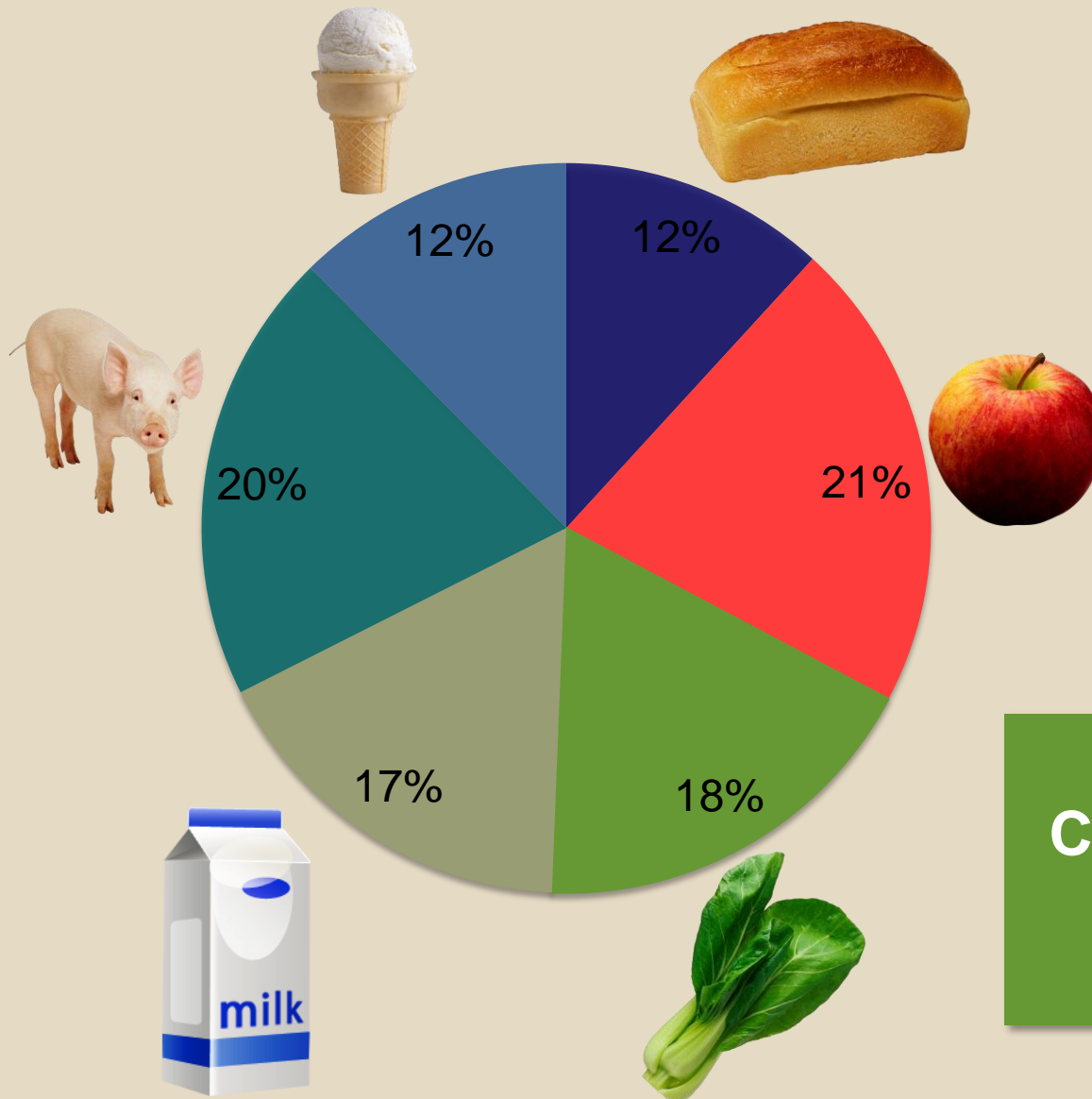

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Western Washington Production



Western Washington Consumption



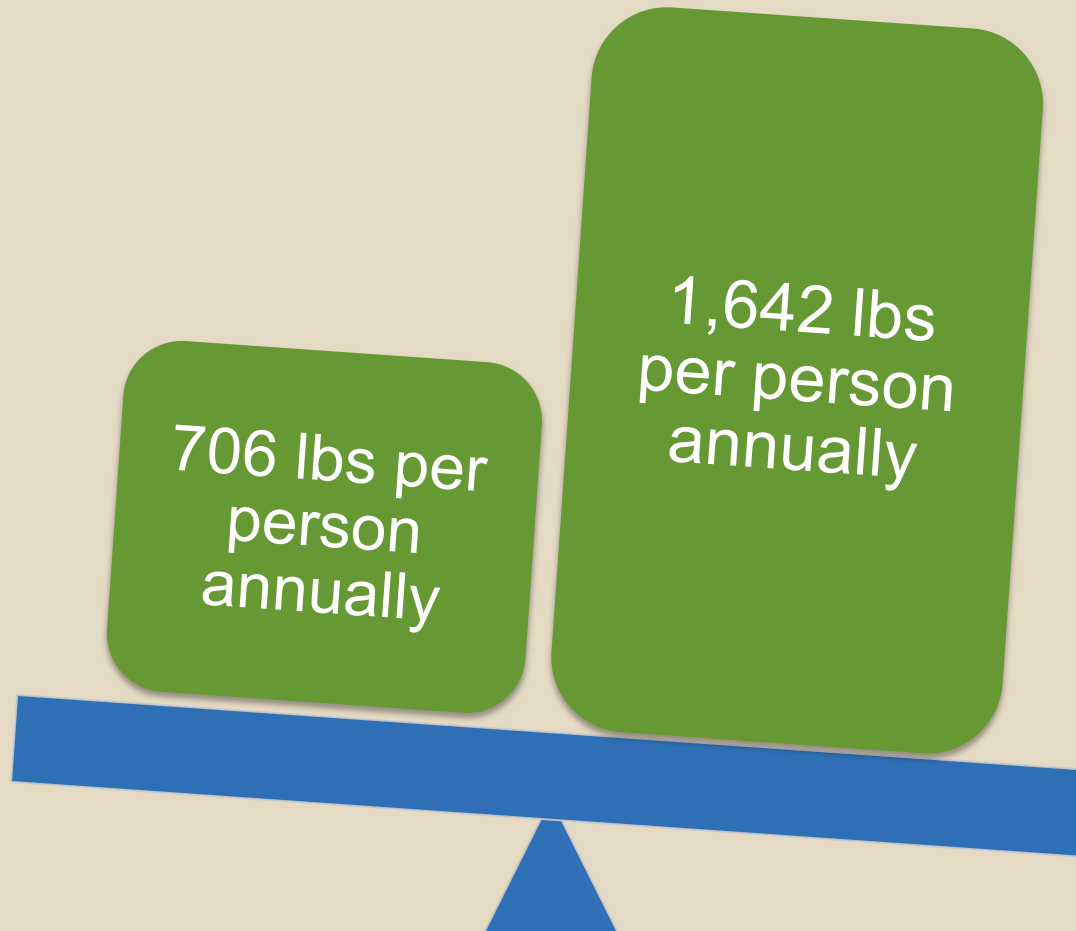
**Total
Consumption:
8.6B lbs per
year**

Our Current State

Production

Consumption

43%



Our Focus: Potential



What we know:

- Food supply chains are immensely complicated
- Most of the 706 lbs. per person produced in the region is exported

What this means:

The production: consumption ratio shows the *POTENTIAL* for our region to supply the food demanded by our residents

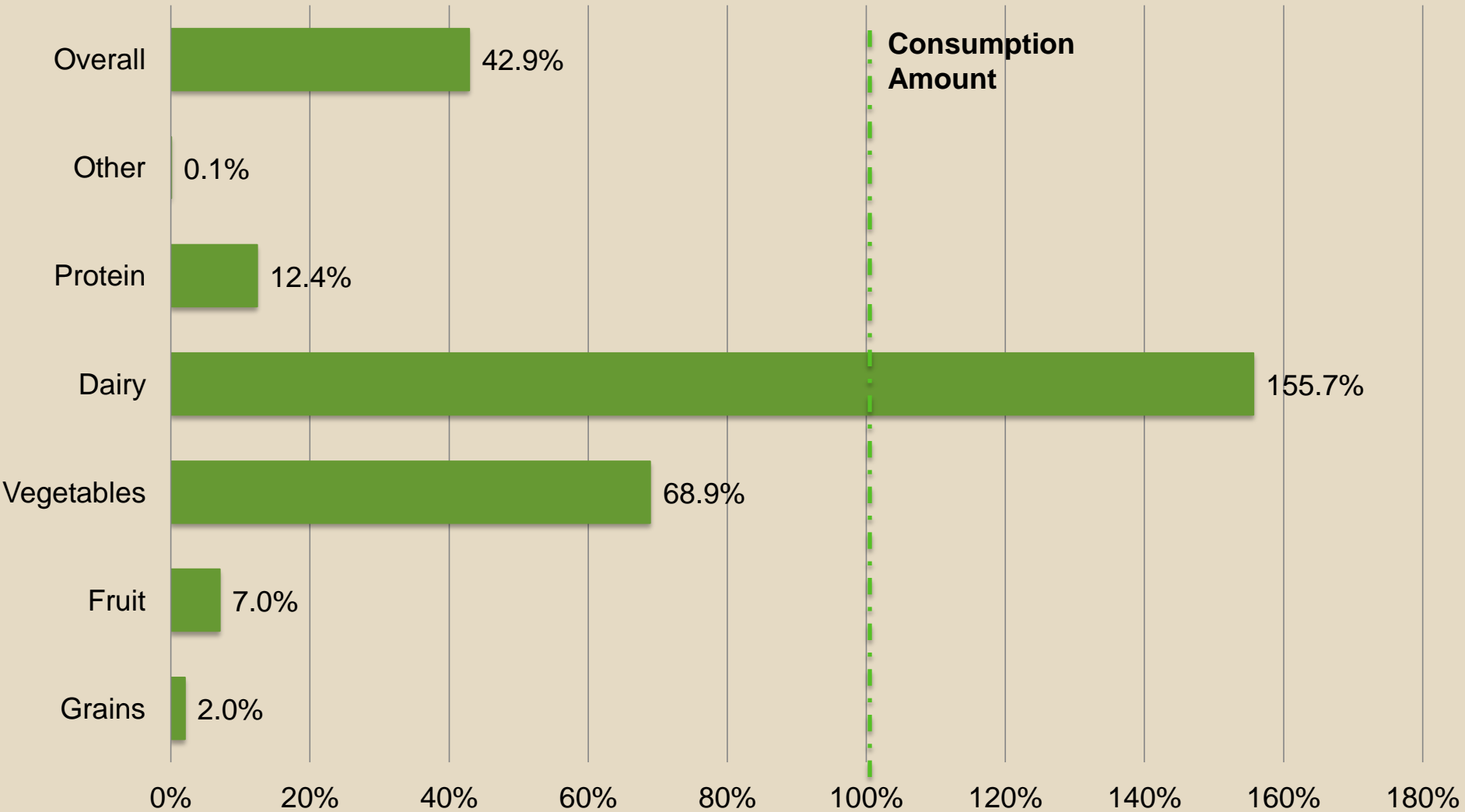
Our project focuses primarily on ways to increase the region's *POTENTIAL* to produce the amount of food our residents demand



What is the Potential?



Is there potential to fulfill consumption with the current production of the region?





What Do We Grow?

Grown in Surplus

barley
herbs
canola
trout
mollusks
milk
rhubarb
pumpkins
potatoes
green peas
beets
raspberries
blackberries

In Balance

cranberries
blueberries
cucumbers
sweet corn
snap beans

Grown in Deficit

corn
oats
rye
wheat
apples
apricots
cantaloupe
cherries
grapes
honeydew
kiwifruit
peaches

pears
tomatoes
strawberries
plums and prunes
watermelon
asparagus
carrots
garlic
leafy greens
mushrooms
onions
squash

cattle
chestnuts
chickens
dry edible beans
eggs
goats
hazelnuts
pork
sheep
turkeys
walnuts
honey

Not Grown in W. WA

Feasible

broccoli
brussel sprouts
cauliflower
celery
escarole and endive
eggplant
lima beans

peppers
radishes
sweet potatoes
dried peas and lentils
beet sugar
corn sweeteners

Not

Feasible

rice
avocados
bananas
dates
figs
grapefruit
lemon

lime
mango
olives
oranges
papaya
pineapple
tangerines

artichokes
okra
coconut
peanuts
cane sugar



How Do We Re-Localize?



Options For Re-Localization

Halt Farmland Loss

Bring More Land
Into Production

Increase Crop
Production

Localize the
Supply Chain

Reduce Food
Waste

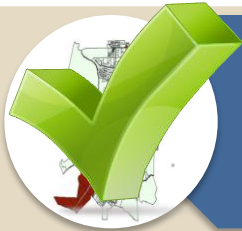
Shift the Local Diet

Balance of production/consumption ratio

Environmental
Impact

Financial
Feasibility

Sociopolitical
Feasibility



Promote Strong Agricultural Zoning Codes

- 600,000 acres of farmland in agricultural zoning out of the current 1 million acres
- To meet current consumption, would require 1.5 million acres
- **Considerations:**
 - Requires political coordination
 - Potentially lowers land values

Impact on Mass Balance			
Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	43%	43%	43%



Enhance Tax Incentives

- Open Space Taxation Act allows for farmers to have their lands valued according to current use rather than at its speculative value
- **Considerations:**
 - Increases economic viability of farming
 - Structure already in place for counties.



Impact on Mass Balance			
Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	43%	43%	43%

Bring More Land Into Production



Bring Historic Farmland Into Production

- 1950-2012: 1.3 million acres lost
- **Considerations:**
 - Time and resources needed to identify suitable lands
 - Need government incentives to make this strategy financially feasible for landowners
 - Competing land use interests

Impact on Mass Balance			
Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	-	-	-

Bring More Land Into Production



Expand Production on Mixed Agricultural Land

- RTI identified an additional 1.3 million acres not identified by WSDA.
 - 460,000 of intensive agriculture
 - 620,000 of mixed agriculture
 - 270,000 of other agriculture
- Potential for these additional lands to be farmed more intensely
- **Considerations:**
 - Current land use
 - Infrastructural expansion

Impact on Mass Balance			
Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	-	-	-

Bring More Land Into Production



Bring Low-density Agricultural Land Into Production

- ~500,000 acres currently
- 166,000 acres of low-density residential, >5 acres, with prime soils or soils of statewide importance.
- **Considerations:**
 - Current land use
 - Competing land use interests
 - Potentially lowers land values



Impact on Mass Balance

Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	44%	45%	46%

Increase Crop Production



Bring More Suburban and Urban Land Into Food Production

- 115,000 acres of public property for government services and 26,000 acres of land for utilities
- Garden space in backyards accounts for 1,240 acres.
- **Considerations:**
 - Competing land use interests
 - Implementation, labor and management
 - Leasing public land as a potential source of revenue



Property of Museum of History & Industry, Seattle

Impact on Mass Balance

Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	43%	44%	46%

Increase Crop Production



Shift Production From Horticulture and Floriculture To Edible Foods

- Christmas Trees = 11,785 acres
- Flowers = 1,932 acres
- **Considerations:**
 - Difficult shift from high-valued floriculture production to lower valued vegetables
 - Vegetables require more labor than woody crops



Impact on Mass Balance			
Current Mass Balance	10% Conversion	25% Conversion	50% Conversion
43%	43%	43%	43%

Increase Crop Production



Shift Production From Animal Feed to Edible Foods

- 509,000 acres for corn silage, hay, and pastureland
- **Considerations:**
 - High demand for local meat
 - Increased labor costs in shift to vegetable production
 - Potential increased imports of feed



Impact on Mass Balance

Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	43%	48%	54%

Increase Crop Production



Use Technological Advances and Non-traditional Techniques

- Hydroponics
 - **Considerations:**
 - Potential 1.5 - 8 times increase over conventional farming
 - Energy costs



Impact on Mass Balance			
Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	-	-	-



Extend the Local Growing Season

- Greenhouses/hoop houses
 - **Considerations:**
 - Additional costs for heating/cooling and irrigation systems



Impact on Mass Balance

Current Mass Balance	10% Implementation	25% Implementation	50% Implementation
43%	-	-	-

Localize the Supply Chain



Increase Demand For Local Food

- “Eat Local” campaign
- Incentives for local institutions



Increase Access To Processing For Small-scale Producers

- Vertical integration
- Regional multi-purpose processing center
- Mobile meat processing unit





Localize the Supply Chain

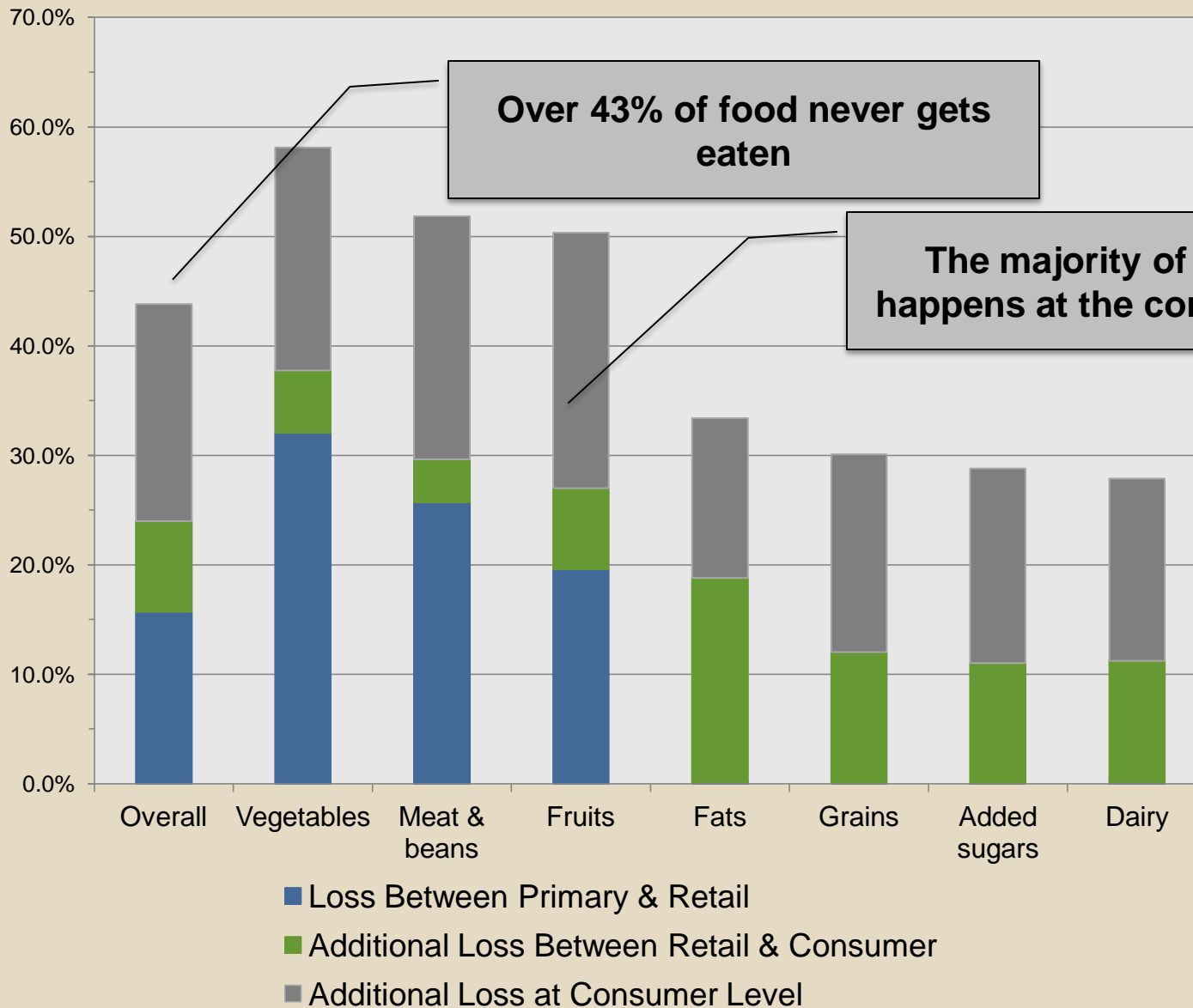
American Farmland Trust



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Reduce Food Waste



Reduce Food Waste



Education of Consumers and Food Service Providers

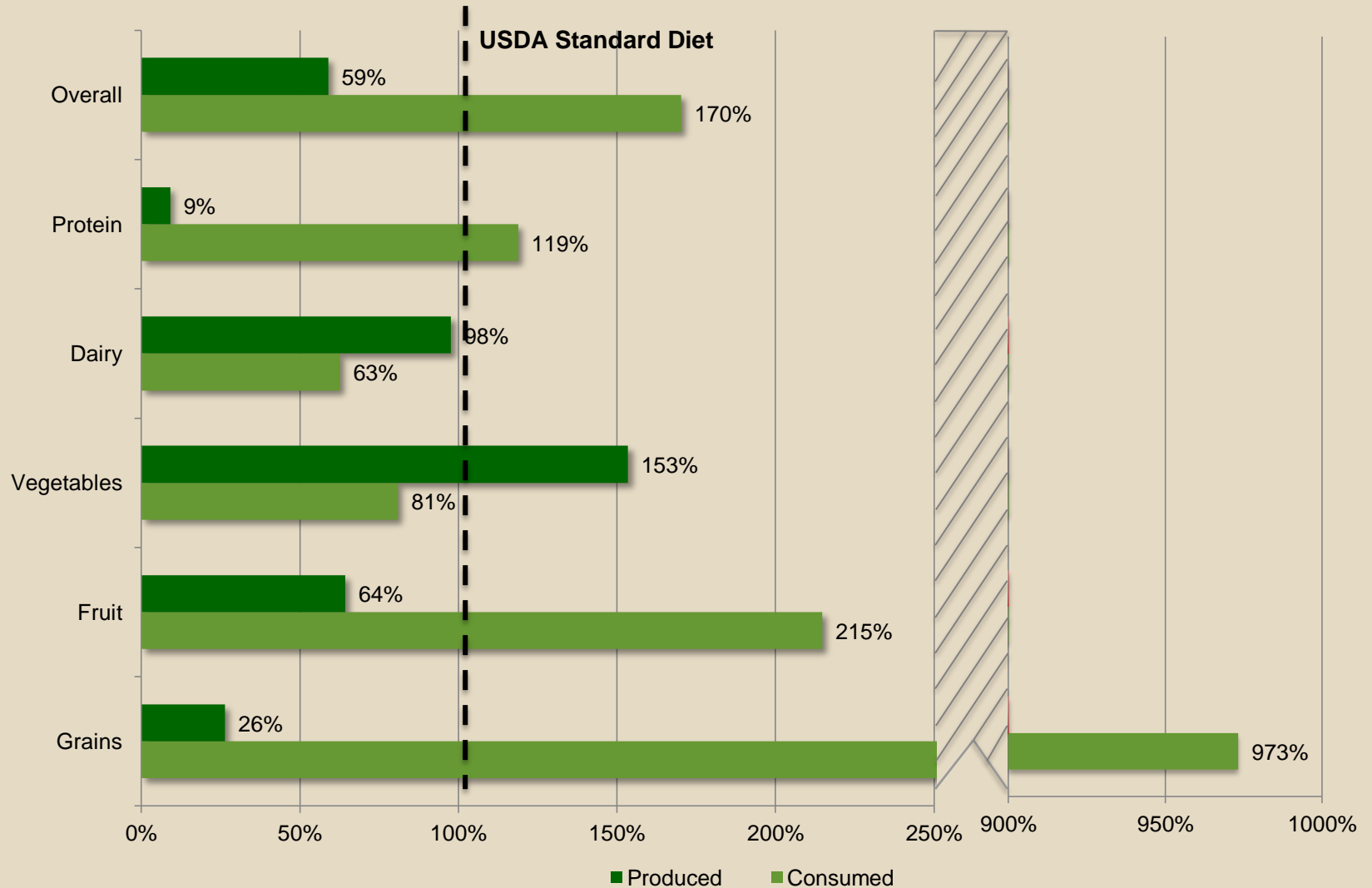


Innovation into Waste Reduction Tools and Packaging

Impact on Mass Balance			
Current Mass Balance	10% Waste Reduction	25% Waste Reduction	50% Waste Reduction
43%	45%	48%	55%

Shift the Local Diet

Production & Consumption as a Percentage of USDA Standard Diet





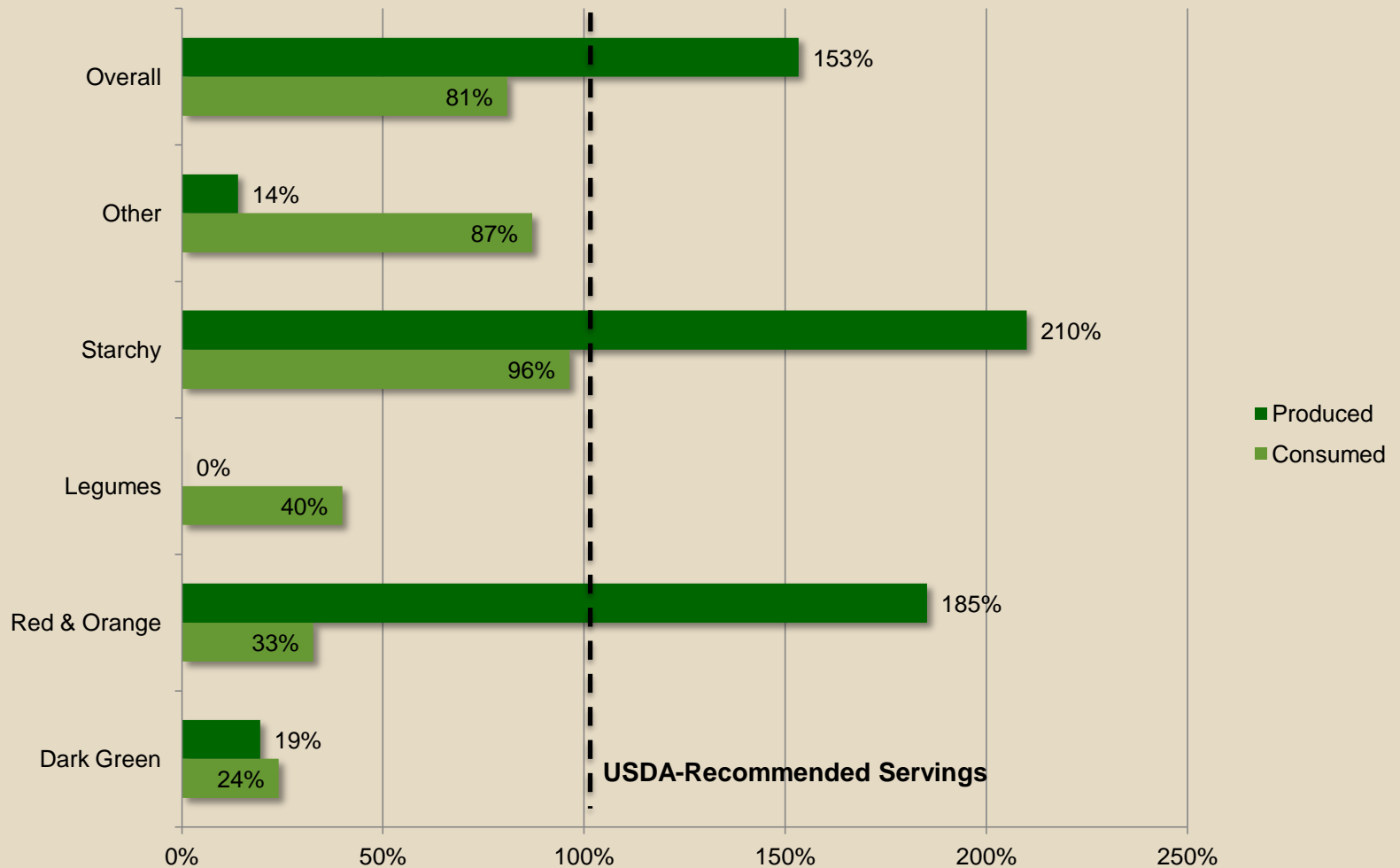
Shift to the Hyper-Local Diet

- Eating only what we produce greatly improves the mass balance
 - Current production could satisfy 59% of the USDA-recommended standard diet
- **Considerations:**
 - Unhealthy
 - Dramatic departure from current dietary preferences
 - Restricted by seasonality



Shift the Local Diet

Vegetable Production & Consumption as a Percentage of USDA-Recommended Consumption



Shift the Local Diet



Promote Adoption of the USDA Standard Diet

- Current production could satisfy 59% of the USDA-recommended standard diet
- Efforts to shift diet can be integrated with other re-localization efforts:
 - Educational programs
 - Buy Local Campaigns
- **Considerations:**
 - Efficacy of dietary
 - Recommendations?
 - Requires complementary shifts in production



Shift the Local Diet



Encourage Production to Support the USDA Standard Diet

- Identify high-demand, low supply crops that are also under-consumed
 - i.e. Broccoli
- **Considerations:**
 - Supply and demand chicken-or-egg problem



Impact on Mass Balance		
Current Mass Balance	USDA Standard Diet	Hyper-Local Diet
35%	59%	170%

Best Strategies

Halt farmland loss

- Promote strong agricultural zoning codes
- Enhance tax incentives

Bring More Land Into Production

- Farm mixed agricultural land
- Farm low-density land

Increase Crop Production

- Extend the local growing season

Localize the Supply Chain

- Increase access to processing for small-scale producers
- Increase demand for local food

Reduce Food Waste

- Promote food waste education

Shift the Local Diet

- Switch to a USDA recommended diet



Some sort of combining strategies discussion





Questions?

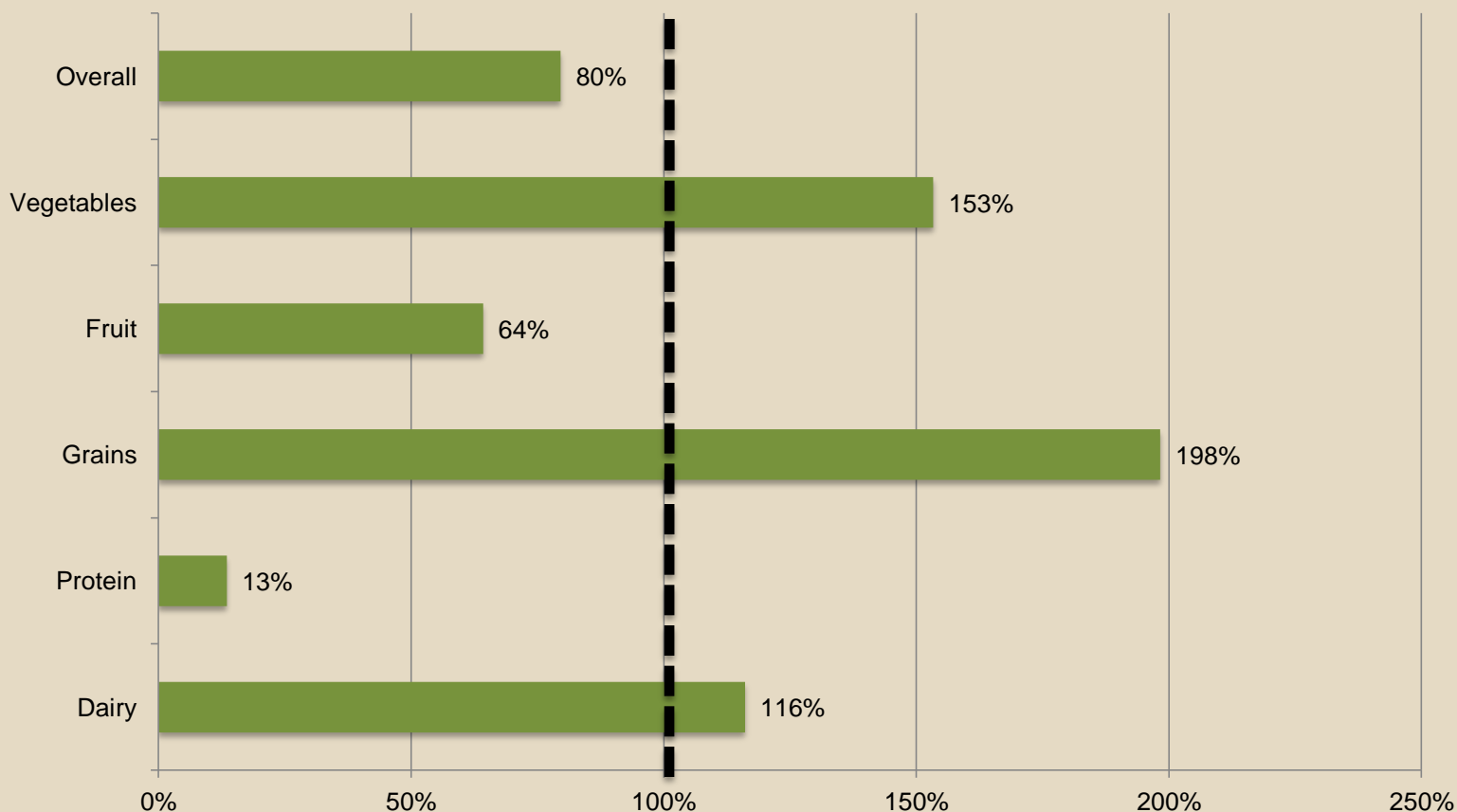


Analyzing the Options

	Balance of Consumption/Production	Other Criteria
Halt farmland loss		
Promote strong agricultural zoning codes	●	●
Enhance tax incentives	●	●
Bring more land into production		
Farm mixed agricultural land	●	●
Farm low-density land	●	●
Farm suburban/urban land	●	●
Farm historic farmland	●	●
Increase crop production		
Extend the local growing season	●	●
Change horticulture, floriculture, horses to edible foods	●	●
Implement non-traditional techniques	●	●
Change animal feed to edible foods	●	●
Localize the supply chain		
Increase access to processing for small-scale producers	●	●
Increase demand for local food	●	●
Increase scale of local producers	●	●
Reduce food waste		
Promote food waste education	●	●
Promote innovation in waste reduction and packaging	●	●
Shift the local diet		
Switch to a USDA recommended diet	●	●
Switch to a hyper-local diet	●	●

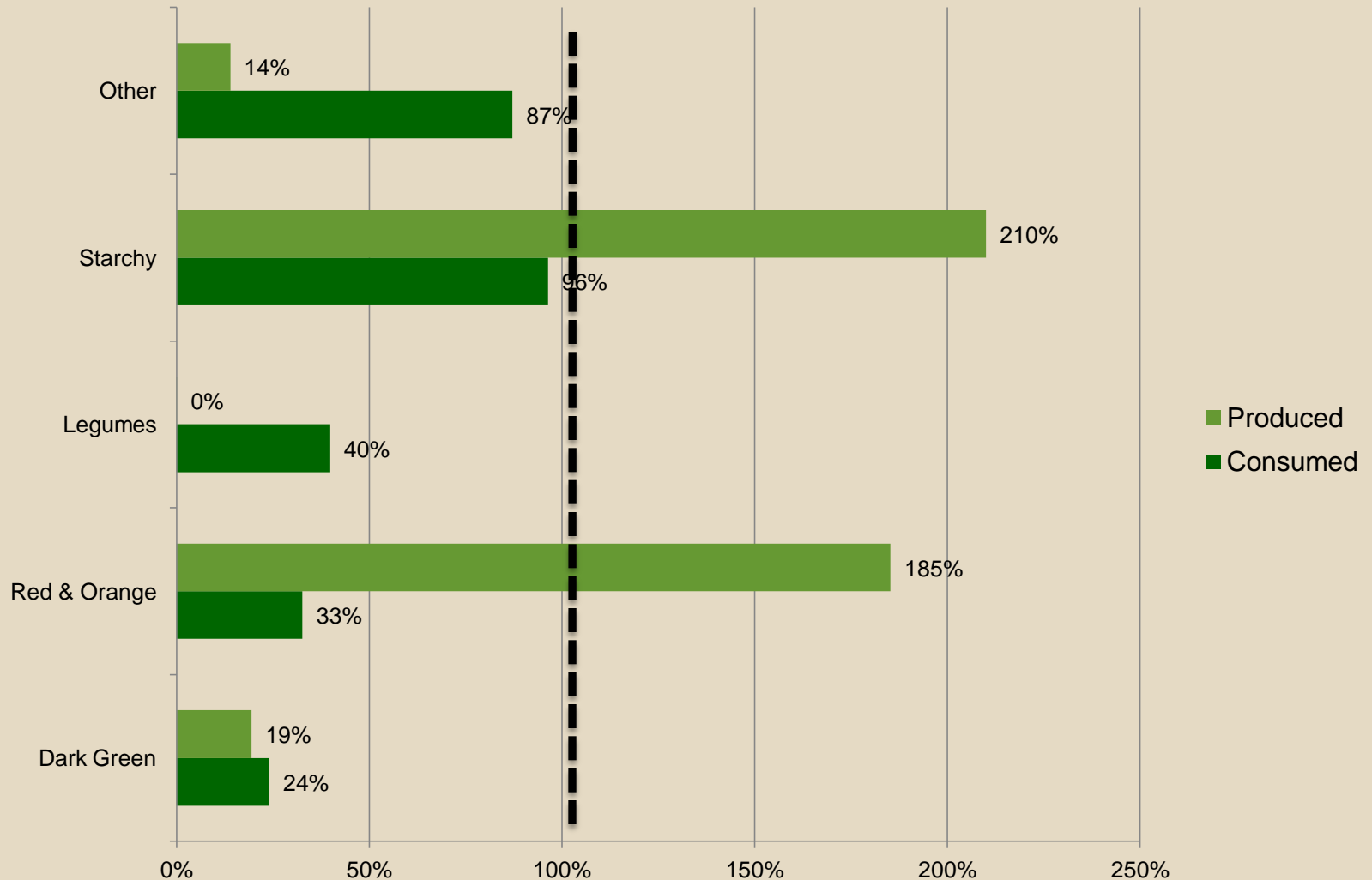
Shift the Local Diet

Production as a Percentage of USDA-Recommended Consumption



Shift the Local Diet

Production & Consumption of Vegetable Sub-Groups as a Percentage of USDA-Recommended Consumption





Shift the Local Diet

Current Production & Consumption as Percentages of USDA-Recommended Consumption

