

Cool Food Pledge

UMD ENSP Spring 2020 Capstone

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Our Goals and Objectives

- Our team hopes to...
 - Create an **impactful change on campus** by assisting University Dining Services in initiating a **plant-forward and climate-friendly menu**
- Objectives
 1. Understand student preferences regarding dietary change and sustainability efforts
 2. Provide food purchasing recommendations to UDS
 3. Analyze the emissions of UMD's Earth Day Dinner menu



Survey Methodology Findings

Survey Methodology

Methodology: Creating the Survey

- Goal population: all undergraduate students
- All questions relevant to our goals and objectives
 - Attitudes about food and dietary choices
 - Interest in plant-forward dishes
 - Item placement in dining halls
- Pilot of the survey
 - Feedback from students about clarity and length



9. How familiar are you with these food options? *

	I eat this regularly	I eat this occasionally	I have tried this	I am willing to try this	I would not try this	I am not sure	I have never heard of it
Beyond/Impossible meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tofu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Veggie patty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tempeh	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quinoa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algae	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chickpeas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Please rate the following statements *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I can get adequate protein from a plant-based diet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider environmental impact when I choose foods to eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know which foods are sustainable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What I eat has an impact on the global environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would consider changing aspects of my diet if those changes resulted in a more environmentally-friendly diet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable food options are available on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know where to find sustainable food on campus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Survey Findings

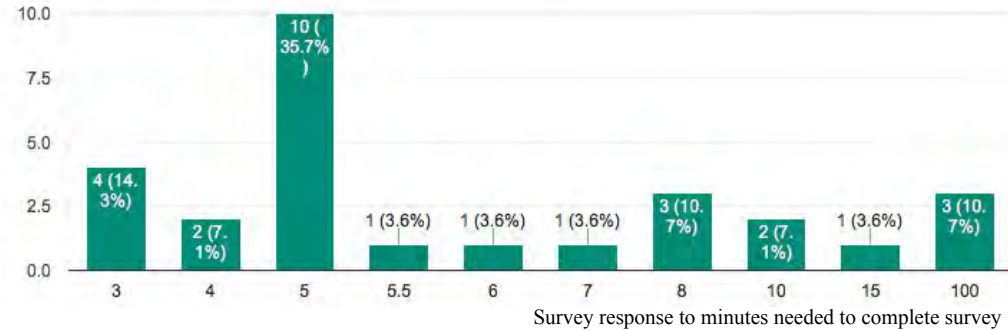
Findings: Survey

From the sample group (n=28):

- 28 responses
- Average time: 5 minutes
- Changed scales on some rating questions
- Added some short definitions
- Clarified the goal of the survey
- Overall good ranking

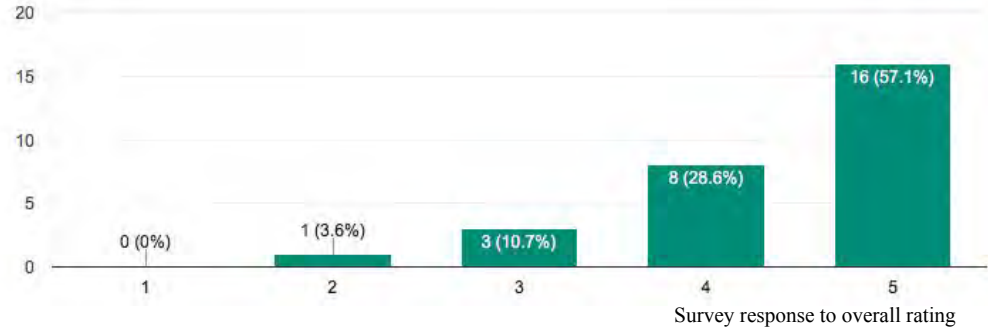
17. How many minutes did it take you to complete the Cool Food Pledge survey?

28 responses



21. On a scale of 1-5, how would you rate this survey?

28 responses



WRI Analysis

Methodology
Findings

WRI Analysis

Methodology

Methodology: WRI Analysis

1. Gathered food purchasing data
2. Generated and analyzed food purchasing scenarios (FPS)
3. Analyzed total carbon costs of each FPS
 - a. *(Emissions from supply chain + carbon opportunity costs)*



WRI Analysis

Findings

Food Purchasing Scenarios (FPS)

Scenario 1: Business as Usual

Scenario 2: Chicken-Forward

Scenario 3: Fish-Forward

Scenario 4: Preliminary EAT-Lancet

Scenario 5: Cool Food Challenge

Scenario 6: Plant-Based

Food Purchasing Scenarios (FPS)

Scenario 1: Business as Usual

Scenario 2: Chicken-Forward

Scenario 3: Fish-Forward

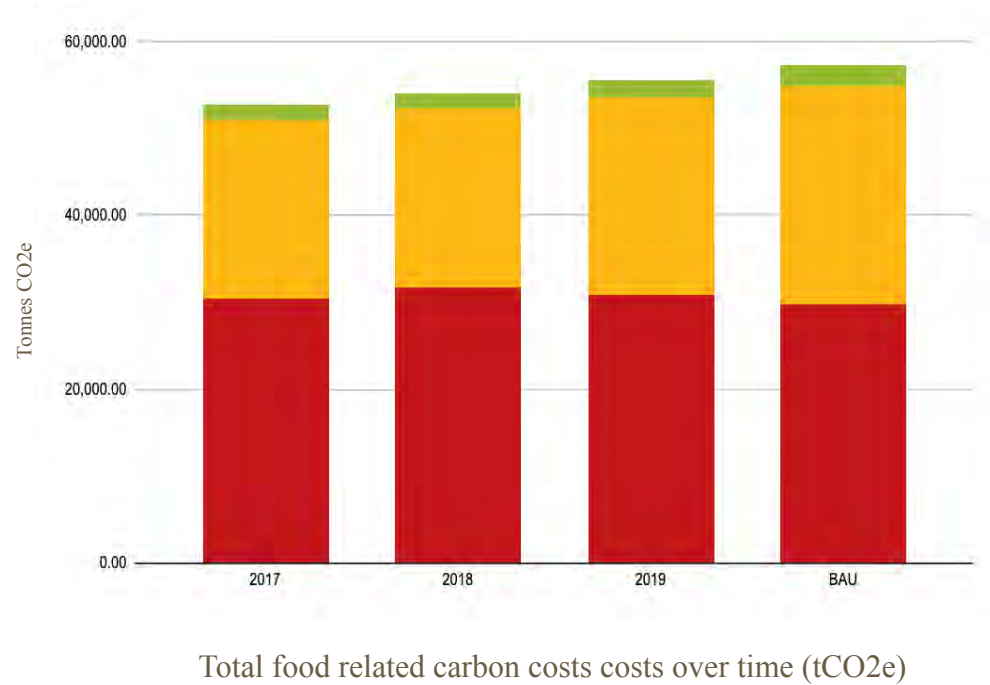
Scenario 4: Preliminary EAT-Lancet

Scenario 5: Cool Food Challenge

Scenario 6: Plant-Based

Scenario 1: Business as Usual

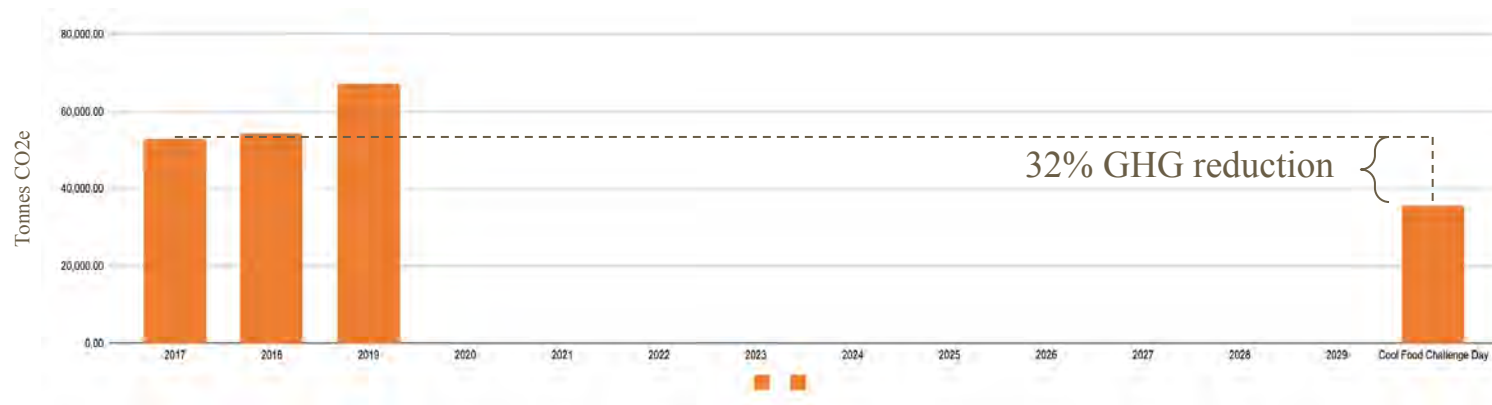
- 2017 → 2019
 - 5.41%↑ GHG emissions
 - 10%↑ food purchased
 - 11%↑ dining hall enrollment
 - 0.06%↓ emissions per person
- **RESULT:** 29%↑ GHG emissions by 2030



Scenario 5: Cool Food Challenge

CHANGE: 1 rotating day per week, no ruminant meat; every day 25%↓ in all animal proteins

RESULT: 32% GHG reduction from 2017 baseline

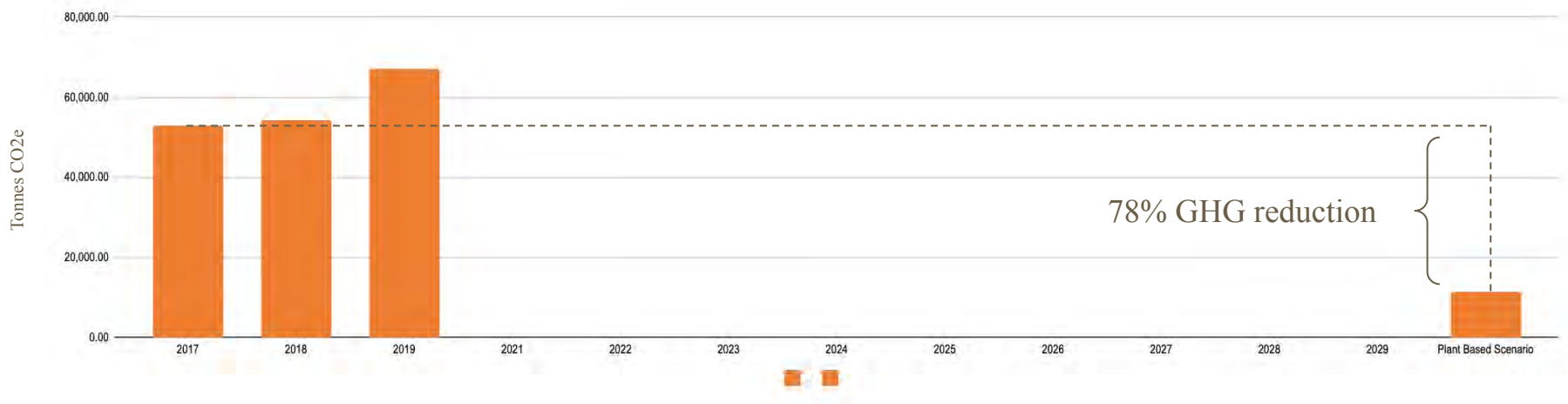


Comparison of total food-related carbon costs (tCO₂e) for the Cool Food Challenge Scenario

Scenario 6: Plant-Based

CHANGE: 100% plant-based foods

RESULT: At least 78% GHG reduction from 2017 baseline



Comparison of total food-related carbon costs (tCO2e) for the Plant-Based Scenario

Earth Day Dinner Analysis

Methodology Findings

Earth Day Dinner Analysis

Methodology

Methodology: Earth Day Dinner

1. **Compare** regular Dining Hall recipes with similar Earth Day Dinner recipes from the same stations and similar ingredients.
2. Used the Vegan Society calculator to have a sample comparison.
3. Finally, was able to use the WRI Calculator to **determine recipe by recipe carbon emissions.**



Methodology: Earth Day Dinner

Recipe Comparisons		
Dining Station (North Campus)	Dining Hall Menu Item	Earth Day Menu Item
Blue Plate	Malaysian Beef Rendang	Lemon Chicken with Taziki Sauce
Blue Plate	Brazilian Sweet Potato and Black Bean Stew	Feijoada

Earth Day Dinner Analysis

Findings

Findings: Earth Day Dinner Analysis

- Comparing these two recipes, and the assumption that the Earth Day recipe would replace the similar regular recipe:
 - Feijoada causes a 264% increase (per 100 servings) in carbon emissions.
 - Feijoada recipe with 50% ↓ in meats, and 50% ↑ in beans, only a 226% increase in carbon emissions.
 - Important to note for future study of meal satisfaction and replacing a percentage of meats with vegetables.



Findings: Earth Day Dinner Analysis

	North Campus Dining Hall		Earth Day Dinner		Earth Day Dinner (Reduced Meat by 1/2, Increased Beans by 1/2)	
Recipe	Sweet Potato Black Bean Stew		Feiojada		Feiojada	
Dining Hall Station	Blue Plate		Blue Plate		Blue Plate	
Servings	4oz, 100 servings		8 servings, converted to 100		8 servings, converted to 100	
Food type	Food purchase weight (kg or l)	% boneless	Food purchase weight (kg or l)	% boneless	Food purchase weight (kg or l)	% boneless
Vegetable oils	0.00		0.00		0.00	
Soybeans (Oil)	0.00		0.00		0.00	
Palm (Oil)	0.00		0.00		0.00	
Sunflower (Oil)	0.00		0.00		0.00	
Rapeseed/canola (Oil)	0.00		0.00		0.00	
Olives (Oil)	0.07		0.36		0.36	
Alcohol						
Barley (Beer)	0.00		0.00		0.00	
Wine Grapes (Wine)	0.00		0.00		0.00	
Stimulants	0.00					
Cocoa	-		0.00		0.00	
Coffee	0.00		0.00		0.00	
Stimulants & Spices (misc.)	0.08		0.18		0.13	
Total	15.04		54.74		49.04	

**Recommendations
and**

**Areas of Future
Study**

Recommendations for UDS

We recommend...

1. **Implementing** the Cool Food Challenge Scenario
2. **Continuing** to analyze the Earth Day Dinner menu options for opportunities to promote dishes that reduce GHG emissions
3. **Incorporating** more vegetables and less meat into existing recipes
4. **Tracking** produce data to be used in the WRI Calculator



Areas of Future Study

1. **Distribute** the survey
2. **Research** types of food that increased/decreased in demand during the pandemic and opinions toward them
3. **Consider** projected number of students on dining plan in the future



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Questions?

