Cool Food Pledge

UMD ENSP Spring 2020 Capstone

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https://www.coolfoodpledge.org/
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
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? *

<table>
<thead>
<tr>
<th></th>
<th>I eat this regularly</th>
<th>I eat this occasionally</th>
<th>I have tried this</th>
<th>I am willing to try this</th>
<th>I would not try this</th>
<th>I am not sure</th>
<th>I have never heard of it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beyond/Impossible meat</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Tofu</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Veggie patty</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Tempeh</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Quinoa</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Algaes</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Chickpeas</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
13. Please rate the following statements *

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can get adequate protein from a plant-based diet.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I consider environmental impact when I choose foods to eat.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I know which foods are sustainable.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>What I eat has an impact on the global environment.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would consider changing aspects of my diet if those changes resulted in a more environmentally-friendly diet.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Sustainable food options are available on campus.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I know where to find sustainable food on campus.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
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
WRI Analysis  Methodology
Findings
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. \((\text{Emissions from supply chain} + \text{carbon opportunity costs})\)
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

Total food related carbon costs costs over time (tCO2e)
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

32% GHG reduction
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
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

<table>
<thead>
<tr>
<th>Dining Station (North Campus)</th>
<th>Dining Hall Menu Item</th>
<th>Earth Day Menu Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Plate</td>
<td>Malaysian Beef Rendang</td>
<td>Lemon Chicken with Taziki Sauce</td>
</tr>
<tr>
<td>Blue Plate</td>
<td>Brazilian Sweet Potato and Black Bean Stew</td>
<td>Feijoada</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Recipe</th>
<th>North Campus Dining Hall</th>
<th>Earth Day Dinner</th>
<th>Earth Day Dinner (Reduced Meat by 1/2, Increased Beans by 1/2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dining Hall Station</td>
<td>Blue Plate</td>
<td>Blue Plate</td>
<td>Blue Plate</td>
</tr>
<tr>
<td>Servings</td>
<td>4oz, 100 servings</td>
<td>8 servings,</td>
<td>8 servings, converted to 100</td>
</tr>
<tr>
<td>Food type</td>
<td></td>
<td>converted to</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Vegetable oils</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Soybeans (Oil)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Palm (Oil)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Sunflower (Oil)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Rapeseed/canola (Oil)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Olive (Oil)</td>
<td>0.07</td>
<td>0.36</td>
<td>0.36</td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beer</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Wine (Grapes, Vins)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Stimulants</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Caffeine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15.04</td>
<td>54.74</td>
<td>49.04</td>
</tr>
</tbody>
</table>

The highlighted values indicate the significant contributors to the nutritional analysis.
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
Acknowledgements

- **Caroline Boules**, Instructor of ENSP Capstone
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- **Rich Waite**, Senior Research Associate for Food Program at WRI
- **Yishan Ding**, Statistical Consulting Team for Research Commons at McKeldin Library
- **All others who have contributed to this project!!
Questions?