Solving World Hunger: Leveraging Interaction of Food, Environment and Culture Configurations In a Global Context

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Outline

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Food Security

Food security, as defined by the United Nations' Committee on World Food Security, is the condition in which all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Over the coming decades, a changing climate, growing global population, rising food prices, and environmental stressors will have significant yet highly uncertain impacts on food security.

9 Billion to Feed & Thought For Food

Where will we find the food for 9 billion mouths by 2050

- **Five Step Plan (Source: National Geographic)**
  - **Freeze Agriculture's Footprint**
  - **Grow More on Farms We've Got**
  - **Use Resources More Efficiently**
  - **Shift Diets**
  - **Reduce waste**

- **Thought for Food (TFF) is a movement dedicated to tackling the global challenge of feeding 9+ billion people through bold, breakthrough solutions. It is to happen by harnessing the competencies and creativity of young generation who will be our future leaders**

Thought For Food Mission

- **Thought For Food inspires and mobilizes the next generation of leaders to develop bold, out-of-the-box innovations that help solve the greatest challenge facing our collective future: <u>How to feed 9+ billion people?</u>**

Thought For Food Challenge

- **TFF Challenge is an annual competition to catalyze university students from all fields of study to learn more about the complex challenges surrounding food security, and inspire them to channel their passions and creativity towards developing new ideas that make a difference.**
- **Most importantly, Thought For Food is a one-of-a-kind community of friends, a network that students can count on to support them in their efforts to make the world a better place.**

Food Innovation

Food innovation concerns the whole food chain, from farm to fork: the increasing world population and protein consumption, climate change, scarcity of available resources, socio-demographic changes, protection of health and irreversible and overt changes in the processes of choice and purchase are all important to food innovation. We are changing the ways in which food is produced, processed, distributed, communicated and consumed. Never before in history has man faced challenges so urgent and never before has he had access to the technological infrastructure to address them, and still there remains so much potential to be discovered.

Design Thinking and Food Innovation: Foundation for TFF Challenge

- "Innovation processes based on how people learn offers new opportunities for the food domain.
- Design Thinking highlights empathy, insights, observation, rapid prototyping and open innovation as important tools for learning in a product development process.
- Some initiative always fail, but focusing on experiments for finding errors as quickly as possible, minimizes the cost of failure
- Rapid learning implies many small "test – improve – re-test steps" conducted in interaction with consumers. Innovation teams develop products with consumers, not for them. "

Source: Nina Veflen Olsen

http://centmapress.ilb.uni-bonn.de/ojs/index.php/proceedings/article/viewFile/385/382

Research Focus

Potential for Innovation Pathways & An Estimate of Level of Utilization

- **Food Modification: Form/Production/Waste reduction/Efficiency etc..**
- **Culture Modification: Requires un-learning/re-learning culturally acquired cognitive, affective and behavioral aspects of attitude (eating insects for example)**
- **Environmental Impact: Sustainability issues**

Methodology For Exploratory Study

1. A random sample of 30 projects submitted as part of the TFF challenge was selected.
2. The selected projects were coded for variables of interest.

Variables Analyzed

- Demographics
  - Competitor information
- Innovation Pathway Focus of Project
  - Food Modification
    - High
    - Medium
    - Low
  - Social/Cultural Modification
    - High
    - Medium
    - Low
  - Environmental Sustainability
    - High
    - Medium
    - Low

Preliminary Analysis of Data

For this report, demographic data is not being analyzed as the sample of 30 is too small for meaningful conclusions.

Findings

Innovation Pathway	Project Focus High	Project Focus Medium	Project Focus Low	Number of Projects	Weighted Score
Food	18	9	3	30	78
Social/Cultural	4	8	18	30	46
Environmental	8	15	7	30	62
Number of Projects					30

- **The Chi-Square test of homogeneity is significant at .01 level for the three food innovation pathways**

Comments

- It is justified to consider food innovation from a design theory perspective of innovation.
- Evidence is provided to encourage innovation in areas beyond achieving technological breakthrough in production and distribution issues.
- Further analysis of the demographic data that is available, can find correlational and causal factors that can guide food innovation more efficiently and successfully.
- A broader study of the data from 550 projects that are already available, and more that can be collected.

Thank You for Your Kind Attention