Growing Food for Nine Billion
Hour One

Introduction

Experts estimate the human population will top 9 billion individuals by 2040. Considering this, an increasing amount of attention is being directed towards the question, how will we feed another 2 billion people and how will we do it in an ecologically and socially responsible manner? When factoring in the already stressed ecological systems of the Earth, climate change, dwindling fossil fuel resources, and a growing urban population this equation grows in complexity. The following TED Talks (www.ted.com) and articles shed light on this question and provide potential pathways for action.

Jonathan Foley: The other inconvenient truth (17:46)

- **Introduction:** In his Ted Talk, Jonathan Foley summarizes the state of the food system, showcasing the negative consequences of large scale agriculture on Earth while asking the big questions: How do we feed the world without destroying it? How do we feed a human population set to hit 9 billion people by 2040 on an ecologically weakened planet undergoing unprecedented (in human history) climate change using fewer fossil fuels?
- [http://www.ted.com/talks/jonathan_foley_the_other_inconvenient_truth.html](http://www.ted.com/talks/jonathan_foley_the_other_inconvenient_truth.html)


- **Introduction:** This short FAO article addresses the relatively unknown and under addressed issue of domesticated crop extinction. The FAO estimates 75% of crop diversity was lost between 1900 and 2000. A genetically diverse crop bank has historically been used to cope with environmental stresses including drought, pest and disease outbreaks, and increases in salinity and have been used to create higher-yielding, faster growing crops. Considering the uncertainty surrounding future weather and pest and disease patterns associated with climate change, genetic diversity in domesticated crops is of paramount importance for sustaining a human population estimated to reach 9 billion people by 2040.


- **Introduction:** This NPR article explores the issues of “Food Deserts”, areas traditionally in urban settings that lack access to markets with fresh produce. Inhabitants are generally minorities and/or low income individuals. This story sheds light on the issues of equitable distribution and accessibility of the food we grow.
Mark Bittman: What’s wrong with what we eat? (20:03)

- **Introduction:** It is critically important to not only critique how we grow our food but also what food is being eaten by consumers. Mark Bittman does exactly that and shows how what humans eat doesn’t just affect their bodies; it is stressing the planet to its ecological limits! Bittman suggests our addiction to meat is the biggest culprit and we must change what we eat and shift how we value and think about food.

**Discussion Qs:**

- How do the perspectives in each talk differ from each other and how can they be applied together to help solve the problem?
- What does a solution to the problem of growing enough food for a growing population look like to you?
- Does urbanization (some expert estimates suggest roughly ¾ of the world’s population will live in urban areas by 2050) complicate or simplify the equation?
- How can you begin to contemplate and study “Growing Enough Food” on campus?
  - What issues should you take into account?
Towards Sustainability

Hour Two

Introduction

You shouldn’t contemplate growing enough food for humans on the planet without considering how this food is grown, processed and distributed. Humans have accomplished awesome feats with modern agricultural techniques, effectively thwarting Malthusian predictions of food shortages. However, this has not been without cost. Our agricultural lands are dependent on tremendous amounts of petrochemical and fertilizer inputs to maintain productivity levels. As a result the waterways, lands, atmosphere, wildlife and humans of this world have suffered. It is critical for us to grow food in a manner that will balance food production with ecological and social health. Now, people are attempting to do just that. The following resources explore the sustainable food initiatives some innovative thinkers are employing.

Tristram Stuart: The global food waste scandal (14:15)

- **Introduction**: In addressing how we grow food, it is critically important to also address how much of that food is actually being consumed by humans. In his TED talk, Tristram Stuart illustrates how being critical of the entire life cycle of food is an extremely important first step in understanding what needs to change in the food system. Stuart analyzes the food system and finds that an unfathomable amount of food is wasted. Verifying his conclusions with shocking data, Stuart calls for a more responsible use of global food resources as the first step in addressing food issues.
  - [http://www.ted.com/talks/tristram_stuart_the_global_food_waste_scandal.html](http://www.ted.com/talks/tristram_stuart_the_global_food_waste_scandal.html)

Dan Barber: How I fell in love with a fish (19:02)

- **Introduction**: In this TED Talk, Chef Dan Barber pushes the boundaries on ecologically responsible aquaculture. The Spanish aquaculture farm depicted represents a lofty bar for sustainable food initiatives to strive towards and Barber’s inquisitive journey to find truly sustainable food represents the considerable value shift in the human-food relationship that is necessary if we are to realize a sustainable food system.
  - [http://www.ted.com/talks/dan_barber_how_i_fell_in_love_with_a_fish.html](http://www.ted.com/talks/dan_barber_how_i_fell_in_love_with_a_fish.html)


- **Introduction**: This article explores how holistic range management, a calculated cattle grazing technique, may be as close to a panacea regarding soil and grassland degradation as you can get. While conventional wisdom suggests reducing the number of cattle/acre, these Midwestern farmers are applying a grazing style adopted from Allan Savory that runs more heads of cattle/acre on the land, mimicking the natural grazing patterns of bison.
## Discussion Qs:

- When thinking about “sustainable agriculture”, why is it important we consider what we are sustaining?
- Should our campus be considering regenerative agriculture as seen in Dan Barber and Allan Savory’s TED Talks?
- What are some of the shortcomings of these initiatives? Why is it important to be constructively critical of said initiatives?
- How can our campus apply some of the bigger concepts outlined in the above resources?
- What changes are you going to make?

## Final Discussion Qs:

- What do you see as being the most pressing issues associated with the current food system?
- How will our campus begin making the shift from a contributor to the unsustainable food system to a member of a sustainable food system?
- What will be your initial steps to ensure our campus has a sustainable food system?
Additional Food for Thought...

The University at Buffalo’s Dr. Samina Raja, world renowned for her work exploring food security issues in the US and the founder of the only food systems planning research lab in the US, has outlined eight reasons why our current food system is, as she says, “broken”. Additionally, Dr. Raja has provided five ideas for creating sustainable food systems on University campuses. Dr. Raja’s insights are explored in the following text.

What’s wrong?

1. Where are all the processors and distributors?
   - Dr. Raja has metaphorically compared the number of farmers, processors and distributors, and retailers in New York to an “hourglass”. The many farmers in the top portion of the hour glass feed into a very small pool of processors and distributors in the middle, constricting the ability of local produce to get to the many retailers (and subsequently consumers) in the large, bottom portion of the hourglass. This constriction hinders the progress of the local food economy. Food is being grown locally but most is not making it through the very narrow portion of the hour glass (processors and distributors) and therefore must be processed and distributed by other means.

2. Farmers don’t receive enough money!
   - Simply put, farmers only receive 12 cents on the dollar. So, for instance, for every dollar worth of beans that are sold, the farmer that grew those beans receives only 12 cents. This skewed revenue distribution acts not only as a barrier of entry to local markets but also as a barrier of entry to individuals attempting to join the farming side of the local food industry.

3. Where is fresh food distributed?
   - There is an increasingly evident disparity between different races and social classes and the exposure to fresh foods they received. As a generality, a white individual is much more likely to be exposed to fresh foods and less likely to be exposed to traditional “junk foods” whereas a black individual is much less likely to be exposed to fresh foods and much more likely to be exposed to traditional “junk foods”. This trend holds true based on income level as well. The statistically “poor” are much less likely to be exposed to fresh foods and much more likely to be exposed to “junk foods”.

4. Marketing is where the money is.
   - There is a stunning amount of money spent on marketing food in comparison to food education. Just three companies, the makers of Coke, M&Ms and Wrigley gum, spend $371,400,000 in marketing per year whereas the entire food education campaign struggles to reach $300,000,000. This creates an artificial demand for products that your body doesn’t need while simultaneously decreasing the effectiveness of food educational campaigns.
Two Hour Exercise  

Food Sustainability Informational Campaign

5. Profit over health
   - Amazingly, there is an overarching trend where highly nutritious foods realize low profits whereas low nutrition foods are highly profitable. So, companies are making more money selling food people’s bodies are essentially unable to use than companies selling foods that ensure a healthful body and mind.

6. Detrimental environmental effects
   - Simply put, the practices used to grow food aren’t sustainable in the least. Current techniques are causing biodiversity loss on a continental scale and are generally dependent on large inputs of petrochemicals, herbicides, pesticides and fungicides resulting in non-point source pollution. Amazingly, agriculture and associated activities account for 30% of the world’s carbon emissions. Growing food is destroying the ecological integrity of the planet.

7. Where are the fruits and veggies?
   - People aren’t eating nearly enough fruits and vegetables. This trend is taking its toll on public health. Obesity is now considered an epidemic by the Centers for Disease Control and Prevention. The Surgeon General warns that obese individuals have a 50 to 100% greater risk of premature death than those that are not obese yet US obesity percentages are consistently among the world’s highest.

8. Who is tackling the issues?
   - Well, to answer the question above, no one. No one is taking the responsibility of mending the food system in its entirety. Even with growing movements like Locavore, Organic, and Slow Food, there isn’t enough attention being paid to the system as a whole and the minutia that are so important to a functioning sustainable food system like ample processors and distributors!

A solution?

The broken food system can seem overwhelming. However, there are concrete steps you can take to heal our school’s food system. Dr. Raja has outlined five ideas to do just this.

1. Integrate the campus’ food system
   - Take the landscaping budget and use it to plant edible plants around campus. The campus will be beautiful and edible! Edible landscaping also serves as an educational tool for the administration, faculty, students, and community.

2. Demonstrate food sustainability on campus!
   - Secure a considerable amount of land on campus for a farm; not just a garden. The farm is an educational tool and produces a considerable amount of food! In addition to securing land for a farm, acquiring as much food as possible from within 30 miles demonstrates an ambitious and necessary commitment to sustainability.
3. Educate, educate, educate!
   - Education is an amazing tool. However, it can be even more effective if you educate the right people first to ensure the push for a sustainable food system is effective. Dr. Raja suggests educating the administration, faculty, students, and then community, in that order. Decisions are made by the administration and then cascade downward. Gaining administrative and faculty buy in can mean the difference between a successful and unsuccessful sustainable food system campaign.

4. Assessment
   - Assessing the sustainable food system movement on campus is extremely important. An assessment provides crucial information for gauging progress, showcasing improvements, discovering trends, and identifying potential issues. When measuring, make sure you use tangible measurements! Simplicity and clarity are extremely important.

5. Sustaining the sustainable food system?!
   - None of your work will matter if the “sustainable food system” breaks down, rendering it...unsustainable. Make sure there is accountability to the system throughout the administration, faculty, students, and community. This increases the probability that the sustainable food system will become an indispensible part of campus and the surrounding area.

What can you do?

1. Be an informed consumer and support local food producers, processors, and distributors.
   a. Push to leverage our campus’ predictable food purchases and enter into purchasing agreements to buy food that is grown, processed, and distributed locally in an environmentally and socially responsible manner.
   b. Purchase less meat

2. Grow your own food
   a. Work to establish a garden and/or farm on campus to help supplement local food orders. The garden/farm should represent an attempt to balance considerable food production with a robust and healthy garden ecosystem.

3. Promote healthy student eating habit patterns through education and improved on-campus access to healthy and ecologically sustainable foods.
   a. Increase the availability of fresh vegetables and number of vegetarian options.
   b. Purchase/consume meat only to ensure protein requirements (and substitute with ecologically sustainable non-animal protein wherever possible)
Moving Forward

The SUNY Office of Sustainability is working to leverage the predictable food purchases of SUNY institutions to support local agriculture and the processing, manufacturing, distribution, and business centers necessary to create a viable sustainable food system in New York. The Office of Sustainability and participating SUNY institutions are moving forward with “SUNY Commits to New York State Agriculture” with a Pizza Sauce pilot program. The Pizza Sauce pilot entails SUNY institutions agreeing to purchase a fixed amount of pizza sauce made and shipped entirely by local farms and businesses. This pilot allows the Office of Sustainability and participating SUNY institutions to learn from the experience and adaptively manage larger-scale purchasing strategies moving forward. In addition, the pilot serves as a market indicator for local businesses showing a growing demand from a reliable source (SUNY institutions), suggesting the supply should grow (Local farms, processors, manufacturers, and distributors).

If you would like to explore the local food options available to our college please see the Department of Agriculture’s “Farm Fresh Guide” here: http://www.agriculture.ny.gov/AP/FFGSearch.asp.

The Food Sustainability Informational Campaign provided by the SUNY Office of Sustainability. Questions? Contact Adam Costello at Adam.Costello@suny.edu.