Sustainable Food Systems Workshop

PART ONE

I. Roundtable Discussions and Presentations (9-10 am)
   a. Salvatore Engel-Di Mauro (New Paltz) - Soil research → Get funded for urban agriculture
      i. Urban Ag: Determinants of trace contaminants in terms of crops.
         1. Rome.
      ii. Impact of acid rain on soil systems in the Catskills.
   b. John Kowal (Cobleskill) - Soil scientist in training. Waste to energy (gasification).
   c. Beth Klein (Cortland) - Sustainability liaison with community. Re-localization of food systems (ex: Numerous milk producers around Cortland but no processing plants → milk has to be sent out to be processed.)
   d. Deborah Howard (SUNY Administration Building) - SUNY Food System Feasibility Project.
   e. Matt Potteiger - (ESF) Food Systems and how designers can design and shape food systems and landscapes. How ecosystems can be productive. Redesigning vacant lots. Larger system approach (connect food systems with community design).
   f. Hannah Morgan (SUNY Administration Building) - SUNY Food System Feasibility Project.

General Discussion:

- Two Main Topics: Urban agriculture and food distribution (and teaching components)
  - Focus=Soil and land
  - Science and Urban Agriculture
- CNY Bounty, Central NY Regional Market, North Country and Cornell (Distribution hubs in Central NY).
- Some things have to happen at the global political level to help out local initiatives.
- Project Globe: Kids collect data and is input into the global system → Soil database should be included so kids can look at it → see what they should do to mitigate the toxins → What type of food system to grow in it.

Discussion Groups (10 am- 12 pm):

Paradigms of What We Want (Deliverables):

- Teacher
- Student
- Impact on Community

Soil Properties:

- Porosity
- Structure
- Bulk Density

First Stage: Soil

Global Research Problem: Soil is being polluted and we are uncertain about the micro-implications of these toxins → How best to remediate soils that are damaged → We are proposing a bottom up solution where we would develop a kit to be used in the K-12 setting → SUNY campuses (Cobleskill, New Paltz,
ESF, Cortland) would test the validity or reliability of student testing kits. We need to involved Cornell at the highest level so we have the significantly highest developed kits. If they are not accurate, we have to change kits. “Identify a protocol at K-12 level that is appropriate enough to assess the level of contamination and soil characteristics in urban soil.”

Scope: What types of protocols are necessary at each level of soil testing (students-1, college-2, cornell-3)?

Kit-Set of Instruments Kids Would Use:

- LaMotte Soil Kit (looking for 4/5 or above 9)
- Penetrometers
- Texture and color
- pH probe-chemical property
  - Plants can’t survive a lower pH than 5 → mobilize heavy metals.

Develop Protocol:

What we are looking for:

- Suitability for food production:
  - Clay
  - pH
  - Organic Matter (Color)
  - Bulk Density

Step 1: Develop Soil Kit, Soil Analysis, Identify Conditions of Soils

- K-12 soil analysis
- K-12 soil analysis checked by college students
- Soil samples sent to Cornell to be sampled.

Step 2: Expand Pilot

Step 3: Educational Component and Professional Development

- Connect to art classes.
- Why was soil polluted-focus on behavioral changes.
- Cultural aspects-immigration → Migratory people.
- Chemistry classes.

Second Stage: Bioremediation

We are anticipating that stage one pilot expands and we can focus on bioremediation of these soils using plants.

- Non-absorptive plants
- Absorptive plants

Anticipated Research:
• Research NRCS and USDA website.
• Research safety issues of protocol (notification).
  o Idea- Have Cornell professors describe to students about soil contamination and also assess sites on whether or not they are suitable sites to research.

Groups to Network With:

• American Community Gardeners Association
• NRCS
• USDA
• Cornell

Research Question:

• Whether basic tests (color, pH, texture) are good indicators of soil quality for food production.
• To what extent could basic soil field base testing methods reveal the viability for food production? The soil survey is too general on the NRCS website (urban environment is excluded).

Deliverable: Develop kit, protocol and interpretive framework.
PART TWO

- Can we effectively collect data at micro-level (is there enough validity at each level)?
- Sampling design
  - What soil types are we looking at?

Protocol:

- Site specific conditions (land use):
  - School yards
  - Areas immediately around a school
  - Any existing soil cover around a school
- Have photos and descriptions of area specific to:
  - Clay
  - Color
  - Density
  - pH
- How many samples from each site
  - 20 to 30 samples per acre on an agricultural field
  - In a city setting, take numerous field samples. Extra soil from each sample will be bulk/compile sampled at the college students.

Questions:

- Is this project too personnel dependent? → Do a pilot before a pilot.
  - Pilot at 4 middle schools.
    - Professor and/or scientist
    - 10 samples per location
    - GPS reading at each location
    - Check NRCS map before hand
  - 2 sites per school

Next Steps:

Matt’s Research:

- Review literature in current urban and suburban agricultural issues.
- Will contact Syracuse Grows
- Checking out ESF participation capacity with soil testing.
- How we frame the problem → Urban community agriculture.

Deb and Hannah’s:

- Contact someone from Cornell who is passionate about the topic.
John’s Research:

- Existing research for tests for Clay, Color, Density and pH (existing research).
- Reach out to soil scientist to see what their ideas are on the project.
- Identify protocol.

Salvatore Engel-Di Mauro:

- Identify protocol and sequential steps in process.

Beth’s Research:

- Education component
- How many kits would they need (4 schools)?