Maintaining Quality Research With Reduced Funding

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Most of us have by now heard the forecast there will be 9.2 billion people in the world of 2050.

But current projections suggest human numbers will not stop there – but will keep on climbing, to at least 11.4 billion, by the mid 2060s

This is the great difference from the global food scarcity of the 1960s. Then the constraints seemed to be around skills and technology.

The generous sharing of modern agricultural knowledge and technology in the Green Revolution was partially able to overcome the food shortage problem.

In 1900 every human had 8 hectares of land to sustain them

Today the number is 1.63 and falling.

Put another way, between 1990 and 2005, world demand for food grew 15 times faster than the area of land being farmed.

Today the world faces looming scarcities of just about everything necessary to produce high yields of food

- water
- land
- nutrients
- oil
- technology
- skills
- stable climates

Each one playing into and compounding the others.

In developed countries we throw away from a third to half of all food produced, in developing countries we lose similar amounts post-harvest.

All told, the Stockholm Institute calculates we waste 2,600 out of every 4,600 kilocalories of food harvested (56%).

Research in Agriculture

- Improvers the quality of life
- Ensures a safe and nutritious food supply
- Stimulates the economy
- Is an investment in disease prevention
- Enables farmers and ranchers to produce the highest quality food and fiber in the world
- Is important to maintaining good health
- Fosters sustainable communities

Source: The Coalition on Funding Agricultural Research Missions

There appears to be an “obvious” increasing need for agricultural research

So Why Is Agricultural Research Funding Being Reduced?

Less Money Available?

Change in Priorities?

Change in Policy?

Maintaining Quality Research With Reduced Funding

- Is it something we can do?
- Should we even try?
- Should we re-evaluate the Mission Statement of our Research Facilities?
- Should we be considering non-USA needs for agricultural information?

Please Make this Presentation Interactive

- Please Comment as We go along
- Jump In With Your Experience

Local things we can do (at our stations)

- Eliminate All Irrelevant Research
  - What is irrelevant?
  - Who makes the determination?
  - How do we prioritize needed research?

Local things we can do (cont)

- Critical Needs Survey

- Survey of Producers, Shipper, Handlers, and Suppliers of Critical Research Needs

  - Assure Industry Support for Grant Applications
  - Increase Industry Funding of Research

Local things we can do (cont)

- Creative Accounting
- Foundation Account
  Less Administrative Overhead Taken Out
- Have Donations Placed in The Foundation
- Have Farm Sale Revenue Placed in the Foundation?

Local things we can do (cont)

- Cover Crops
  - Stop Post-Plant Irrigation in the fall
    - Rely more on rainfall
  - Plant more Legumes
    - Reduce need for nitrogen fertilizers

Local things we can do (cont)

- Reduce Cost of Travel to Off-Campus Research Facility
  - Use of Internet for Meetings Between Research Scientists and Farm/Field Crew
  - Use of E-mail Attachments for transfer of Plot Protocol
  - Use of E-mail for transfer of Plot Data

Local things we can do (cont)

- Reduce Cultural Operations
- Reduce Number of Times over Field with Implements
- Scout more intensely to: Reduce Spray Numbers

Local things we can do (cont)

- Eliminate Over-time
- Better Planning of Projects
  - Use of Macro - Schedules to eliminate “forgotten” operations.
  - Encourage scientists to plan in advance.
    - Some scientists seem to function in “Crisis Mode” continuously.
  - Flexible Hours
    - Eliminates Overtime
    - Allows for a longer period in the field

Local things we can do (cont)

- Equipment

- Take care of what you have
- All Equipment Repair Review
  - Schedule Repairs in off-season if possible
  - Do it yourself if possible
- Hold-Off on New/Replacement Purchases
- More Surplus Equipment
- Buy it Used
  - This is currently very difficult
  - Purchasing Rules will need to be changed

Local things we can do (cont)

- Anticipate needs better

- Purchase in Bulk
- Purchase during low-demand times for cheaper cost and cheaper delivery
- Research value, quality, durability, and multiple use
- Search for cheapest price for same quality
  - Frequently not done due to rush or convenience

Local things we can do (cont)

- Use On-Line Services
- For Information Search
- To Purchase needed items

Local things we can do (cont)

- Cross -train our personnel
- To service equipment
- To repair equipment
- To purchase needed items
- To run the irrigation system
- To spray the plots

Local things we can do (cont)

- Do NOT Go SHOPPING

- Develop a Long-Term Plan With Needed In-Puts
- Develop a “Needs” list.
- Develop a Chronological needs List
  - To not forget a particular item
- Only buy What is on the List

Lastly …
For researchers to reduce costs …

- Consider Using Secondary Data
  - "Researchers doing secondary data analysis need to not only understand research concepts related to designing a new study, but additionally must be aware of challenges specific to conducting research using an existing data set."

For researchers (cont)

- Using Secondary Data
  - If an existing data set is suitable for answering a new research question, then a secondary analysis is preferable since:
    - it can be completed in less time
    - It can be completed for less money
    - It can be completed with far lower risks
  - The researcher must carefully consider if the existing data set's available power and data quality are adequate to answer the proposed research questions.

For researchers (cont)

- Share research design and cost and the resulting data with scientists from other disciplines.
  - Scientists need to be trained in the requirements of other disciplines and their data requirements.
  - Many times a research project can fulfill the data requirements of several disciplines with a small variation in the protocol and data collection.

For researchers (cont)

- Share research design and cost and the resulting data with scientists from other disciplines (cont).
  - This requires: ***"COOPERATION"***
    - Sharing costs equitably
    - Sharing the work
    - Sharing credit in the resulting publications
    - "Cooperation" Increases the number of publications on a scientist's resume per year (More "bang" for the buck)

Suggestions?

- Questions?
- Ideas?
- Thanks
  - Merritt Taylor