

# Growing Seed as a Farm Enterprise

Holly Whitesides



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- ❖ Who is Against the Grain?



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- ❖ Who is Against the Grain?
- ❖ Why grow seed crops?



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- ❖ Why grow seed crops?
- ❖ Basic techniques and considerations of major crop groups
  - ❖ Wet Processing
  - ❖ Dry Processing



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- ❖ Who is Against the Grain?
- ❖ Why grow seed crops?
- ❖ Basic techniques and considerations of major crop groups
  - ❖ Wet Processing
  - ❖ Dry Processing
- ❖ Resources, questions and discussion



# Against the Grain





# Against the Grain





# Against the Grain





# Our Markets



Watauga County Farmer's Market



# Our Products



Sorghum molasses and cornmeal



# Our Markets Cont....

Cooperative CSA and  
Cooperative Wholesale  
Distributor





# Our Markets Cont....

Seed Companies





# Why Grow Seed?

❖ Empowering



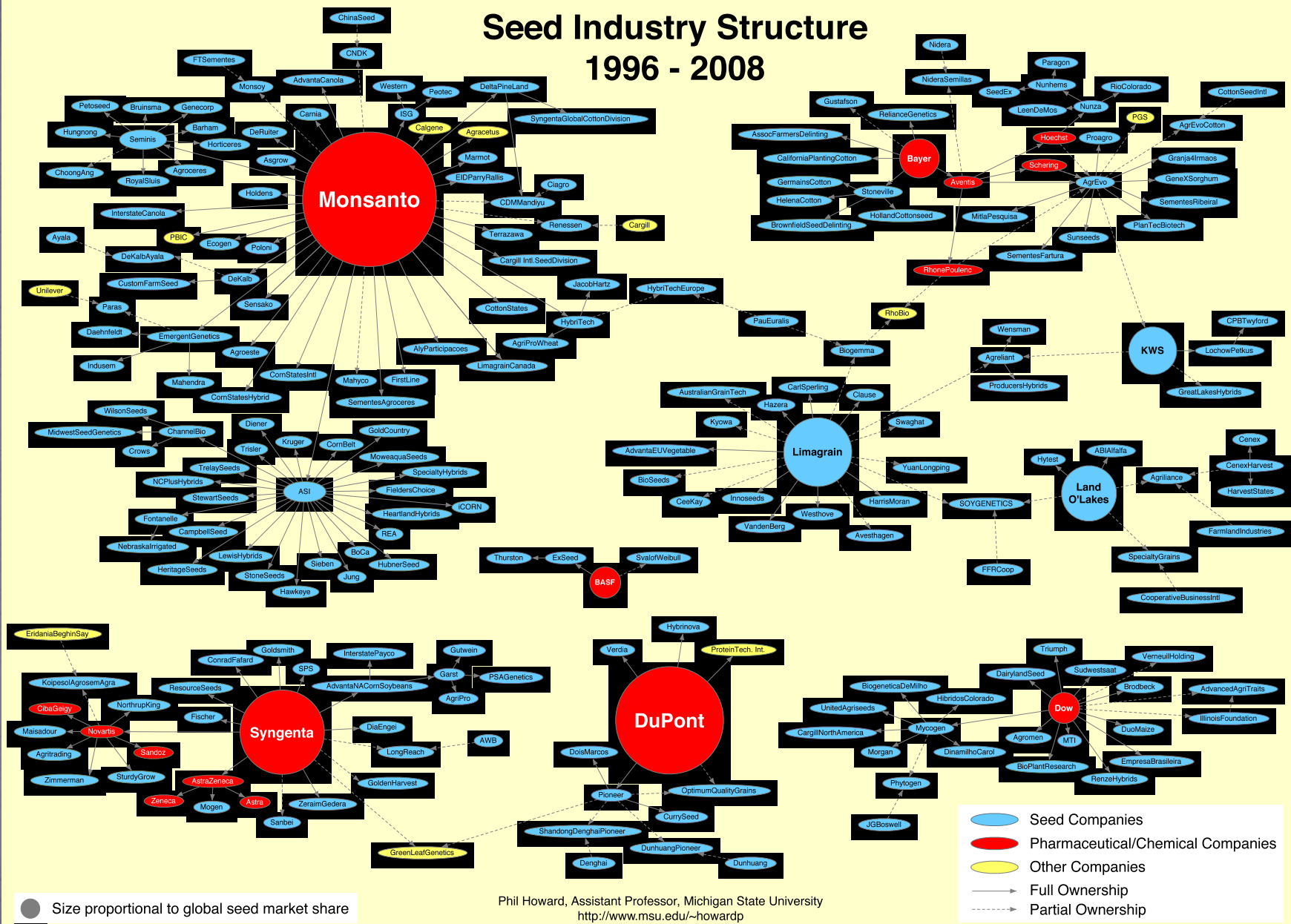


# Why Grow Seed?

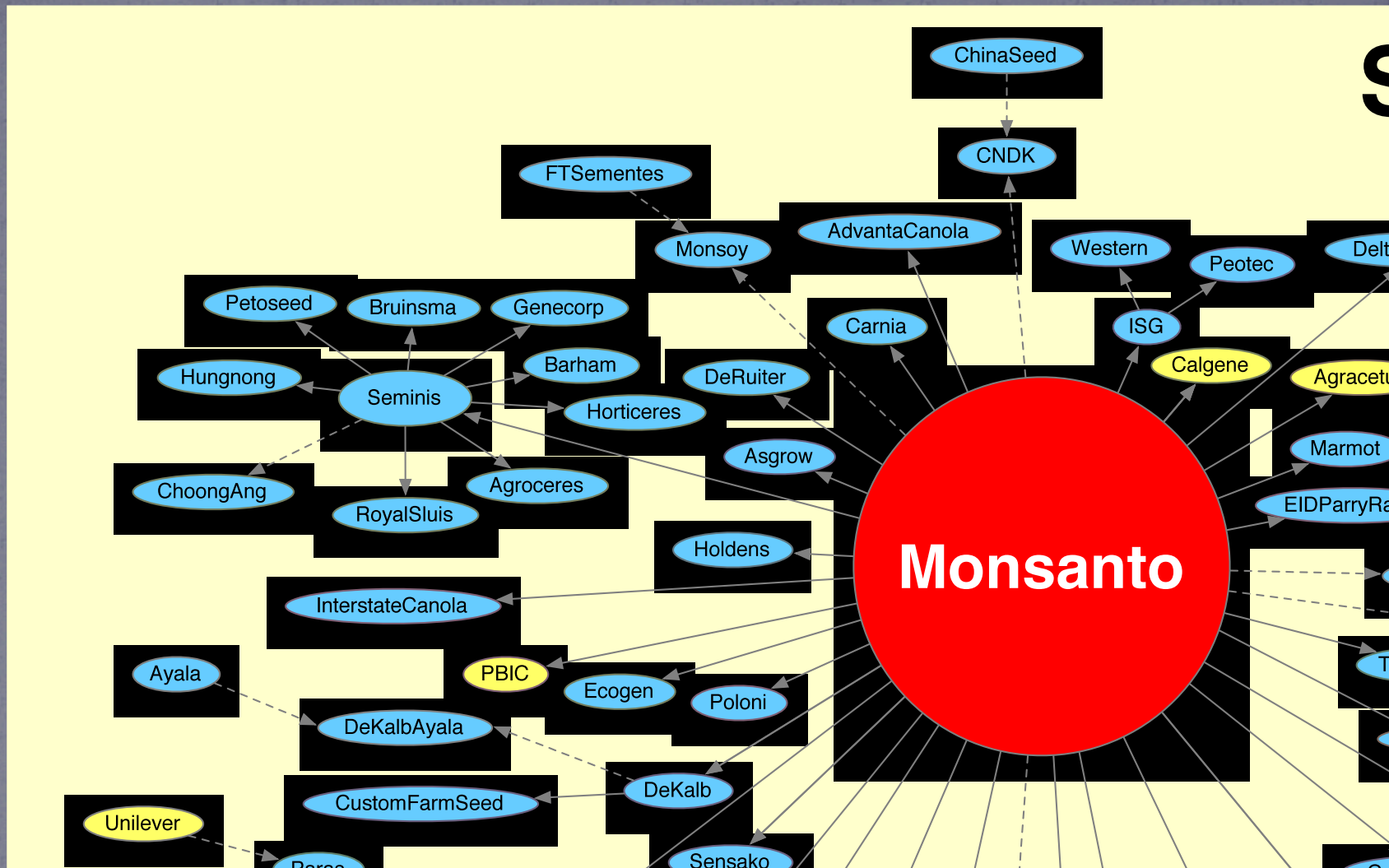
- ❖ Empowering
- ❖ Decentralizes Seed Systems



# Seed Industry Structure 1996 - 2008







Seminis = 40% of U.S. vegetable seed market



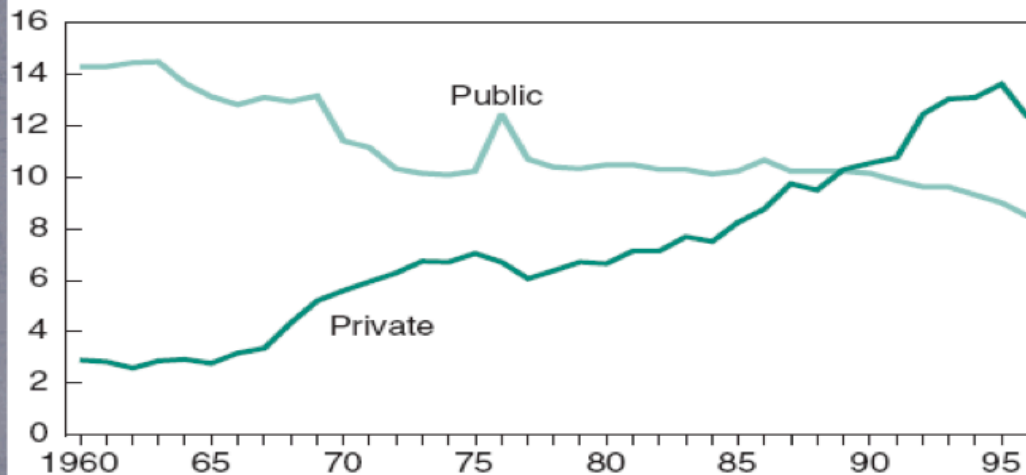
# How Did We Get There?

- ❖ Bayh-Dole Act of 1980
  - ❖ Private investments surged:  
\$850 million to \$4.5 billion



**Plant breeding as a share of total agricultural R&D expenditures**

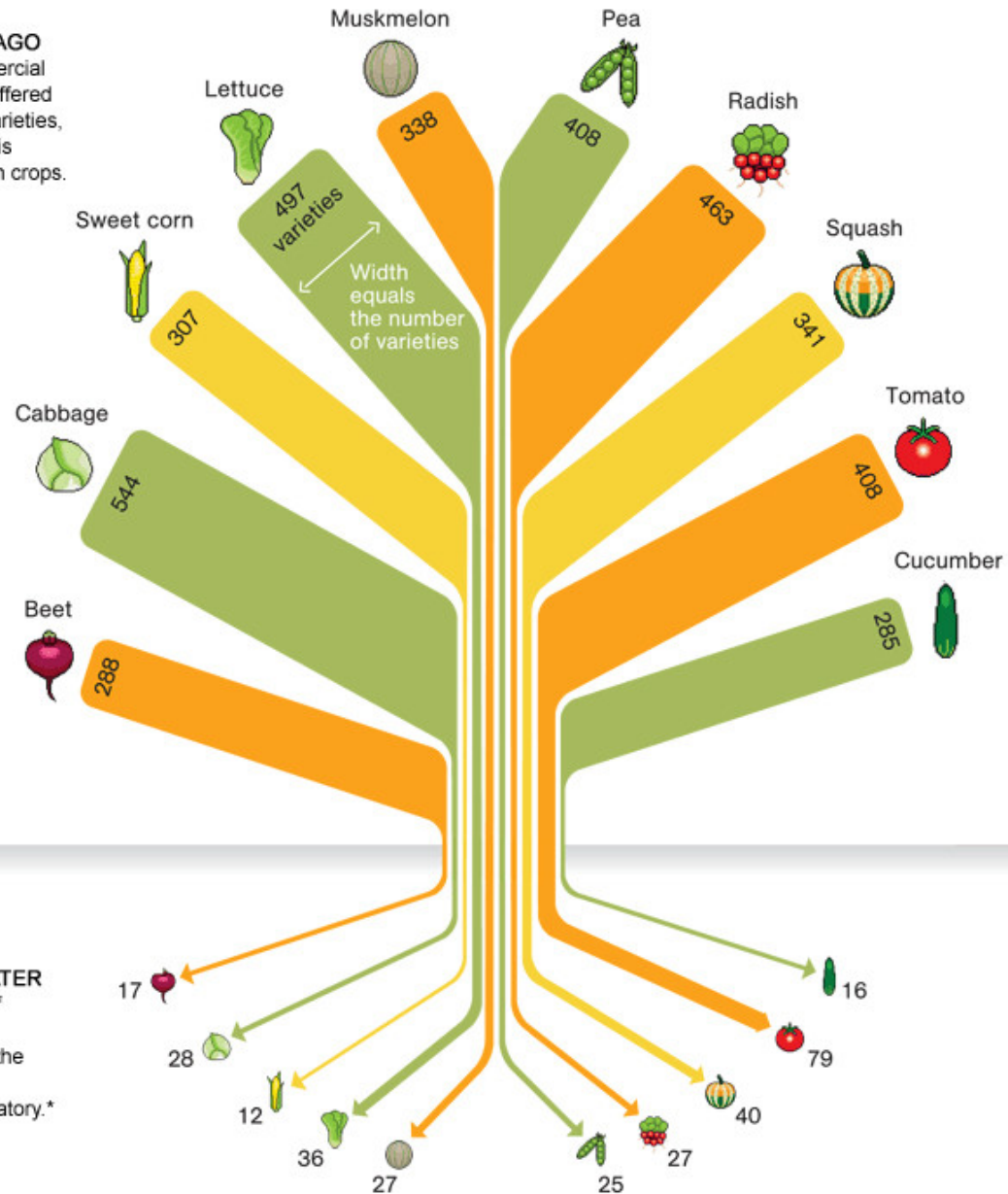
Percent





United Nations  
says by  
2005, 75%  
of world's  
garden  
vegetable  
varieties  
were lost

**A CENTURY AGO**  
In 1903 commercial  
seed houses offered  
hundreds of varieties,  
as shown in this  
sampling of ten crops.



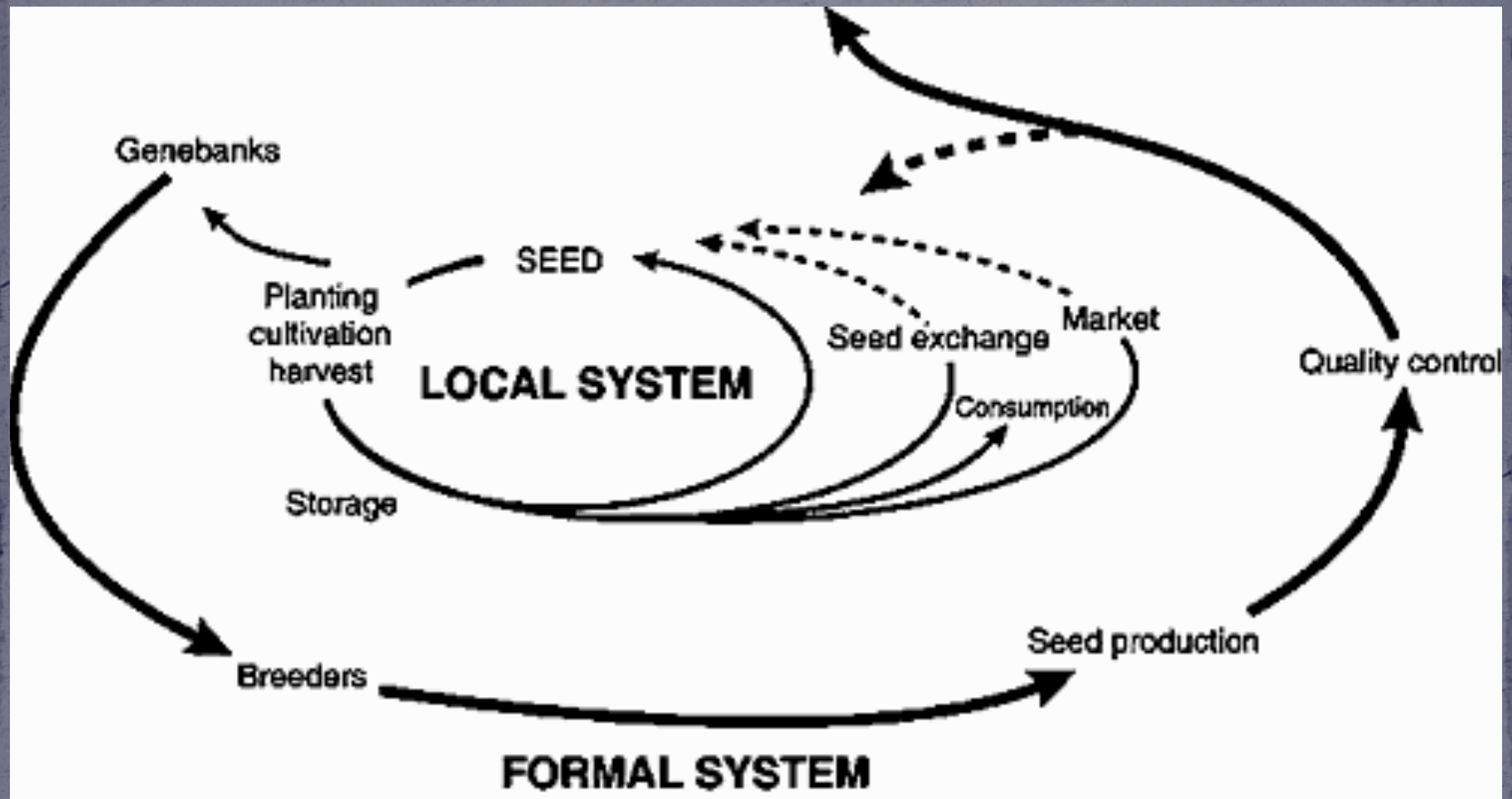
**80 YEARS LATER**  
By 1983 few of  
those varieties  
were found in the  
National Seed  
Storage Laboratory.\*

\* CHANGED ITS NAME IN 2001 TO THE NATIONAL  
CENTER FOR GENETIC RESOURCES PRESERVATION

JOHN TOMANIO, NGM STAFF. FOOD ICONS: QUICKHONEY  
SOURCE: RURAL ADVANCEMENT FOUNDATION INTERNATIONAL



# What Can We Do?



2012 Calumet Quarter, "Food Security and Agriculture"  
University of Chicago



# Why Grow Seed?

- ❖ Empowering
- ❖ Decentralizes Seed Systems
- ❖ Similar Equipment as Food Crops
  - ❖ Food as Seed and Seed as Food



# Why Grow Seed?

- ❖ Empowering
- ❖ Decentralizes Seed Systems
- ❖ Similar Equipment as Food Crops
  - ❖ Food as Seed and Seed as Food
- ❖ Viable Revenue Stream



# The Basics

- ❖ Which crops to start with?
  - ❖ General Thoughts
  - ❖ Specific Considerations





# Which crops to start with?

## ❖ General

- ❖ What do you already like to grow?



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- ❖ What grows well on your farm?



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- ❖ Where was crop domesticated?



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- ❖ Where was crop domesticated?
- ❖ When are your heaviest work loads?



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- ❖ Where was crop domesticated?
- ❖ When are your heaviest work loads?
- ❖ Previous experience?



# Which crops to start with?

## ❖ General

- ❖ What do you already like to grow?
- ❖ What grows well on your farm?
- ❖ What weeds grow on your farm?
- ❖ Where was crop domesticated?
- ❖ When are your heaviest work loads?
- ❖ Previous experience?
- ❖ Lack of varieties?



# Which crops to start with?

## ❖ Specific Considerations

- ❖ Isolation distances



# Isolation Distances

## Example: Beans

- ❖ Ashworth: 0-1 mile
- ❖ USDA: 0 ft
- ❖ SOS (home use): 20ft
- ❖ Sow True 2011: 10ft
- ❖ Sow True 2012: 50ft





# Isolation Distances

## Example: Peppers

- ❖ Ashworth: 500ft
- ❖ USDA: 30ft
- ❖ SOS (home use): 40-75ft
- ❖ Sow True 2011/2012: 500ft
- ❖ Fedco 2012: 1000ft





# Isolation Distances

Time and physical barriers





# Isolation Distances

## Example: Pumpkin

- ❖ Ashworth:  $\frac{1}{2}$  mile
- ❖ USDA:  $\frac{1}{4}$  mile
- ❖ SOS (home use): 600ft
- ❖ Sow True 2011:  $\frac{1}{2}$  mile





# Which crops to start with?

## ❖ Specific Considerations

- ❖ Isolation distances
- ❖ Population Size
  - ❖ Inbreeding-20 plants
  - ❖ Outbreeding-100 plants





# Which crops to start with?

## ❖ Specific Considerations

- ❖ Isolation distances
- ❖ Population size
- ❖ Diseases



# Diseases

## ❖ Brassicas:

- ❖ Black rot
- ❖ Black leg

## ❖ Carrots:

- ❖ White rot
- ❖ Botrytis neck rot

## ❖ Onions:

- ❖ Bacterial blight
- ❖ Alternaria and cercospora blight



# Diseases, cont.

- ❖ Lettuce:

- ❖ Lettuce mosaic virus

- ❖ Tomatoes:

- ❖ Tomato mosaic virus
  - ❖ Bacterial canker and spot





# Which crops to start with?

## ❖ Specific Considerations

- ❖ Isolation distances
- ❖ Population size
- ❖ Diseases
- ❖ Equipment and Techniques
  - ❖ Dry Processing
  - ❖ Wet Processing



# Dry Processed Crops

- ❖ Beans
- ❖ Grains
- ❖ Basil
- ❖ Lettuce
- ❖ Peas
- ❖ Brassicas
- ❖ Carrots
- ❖ Beets/Chard





# Dry Process-Equipment

## TARPS





# Dry Process-Storage





# Dry Process-Threshing





# Dry Process-Thresher





# Dry Process-Thresher





# Dry Process-Screening





# Dry Process-Screening



12" X 12" screens-horizonherbs.com



# Dry Process-Winnowing





# Dry Process-Thresher





# Dry Process-Thresher





# Dry Process-Sort





# Dry Process-Winnnow





# Dry Process-Screen



Final cleaning-small  
debris and rouge any  
ugly beans





# Wet Processed Crops

- ❖ Tomatoes
- ❖ Eggplants
- ❖ Peppers
- ❖ Vine crops





# Wet Process- Harvest





# Wet Processing- Seed Extraction





# Wet Processing-Ferment





# Wet Processing-Ferment



You Grow Girl,  
[www.yougrowgirl.com](http://www.yougrowgirl.com)





# Wet Processing- Rinse, Pour and Drain



Baker Creek Heirloom Seeds, [www.rareseeds.com](http://www.rareseeds.com)



# Which crops to start with?

## ❖ Specific Considerations

- ❖ Isolation distances
- ❖ Population size
- ❖ Diseases
- ❖ Equipment and Techniques
- ❖ Economics and Labor



# Economics and Labor

Ex: Hopi Red Amaranth

Row Ft: 70 ft

Labor: 5.5hr

plant/prep: .5hr

cultivate/hoe: 1.5hr

spray: n/a

harvest: 3hr

thresh/clean: 1hr

Final Weight: 5.3lbs

Gross Income: \$186 (\$33.80/hr)





# Economics and Labor

## Example: October Bean

Row Ft: 130ft (260ft)

Labor: 7hr

plant/prep: .5hr

cultivate/hoe: 2.5hr

spray: 1hr

harvest: 2hr

thresh/clean: 1hr

Final Weight: 22lbs

Gross Income: \$176 (\$25/hr)





# Economics and Labor

Ex: Indigo Rose Tomato

Row Ft: 300 ft

Labor: 26.5hr

plant/prep: 5hr

mulch/trellis: 4hr

spray: 1.5hr

harvest: 8hr

extract/clean: 8hr

Final Weight: .5lb

Gross Income: \$240 (\$8.80/hr)





# Which crops to start with?

## ❖ Specific Considerations

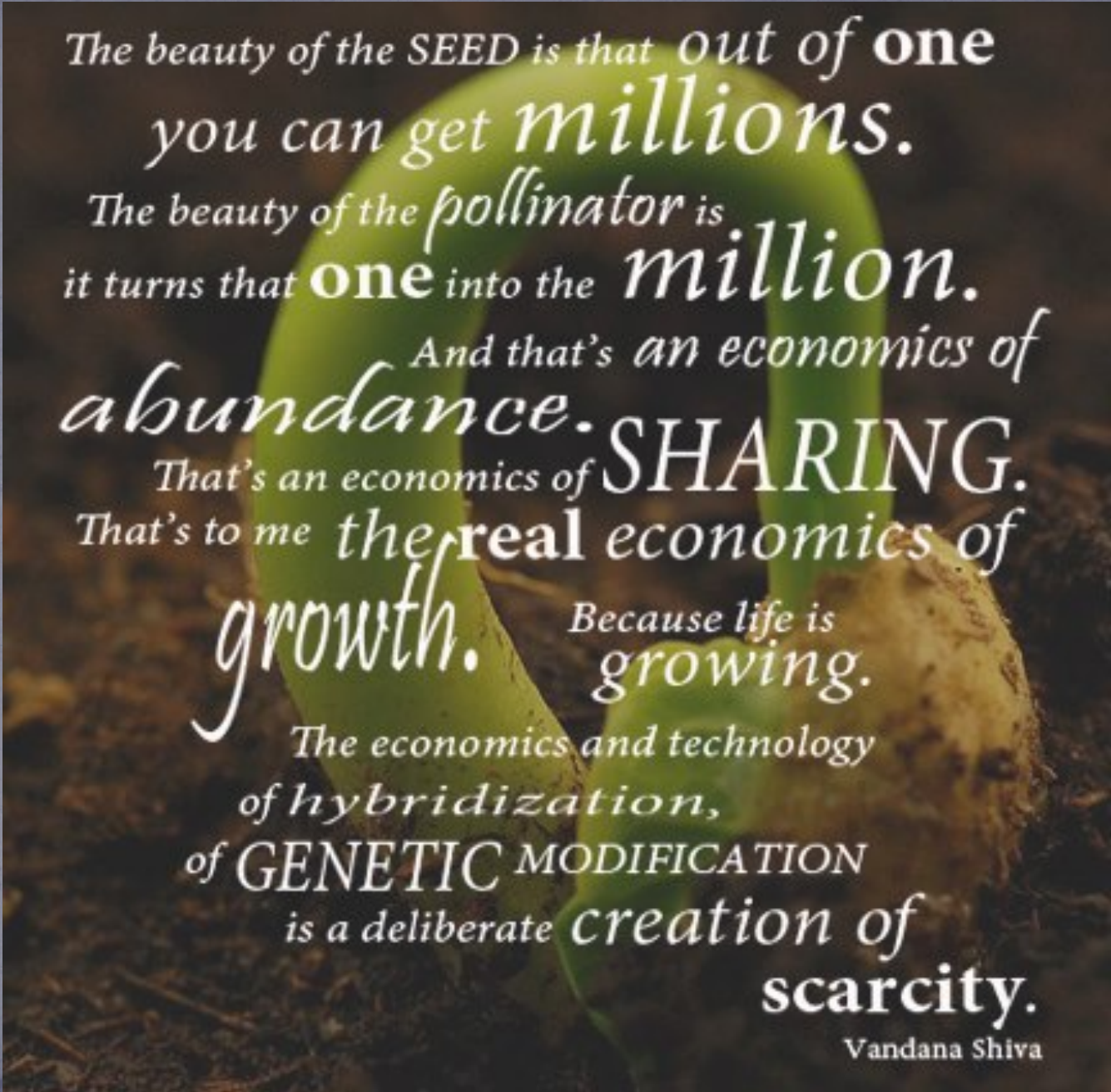
- ❖ Isolation distances
- ❖ Population size
- ❖ Diseases
- ❖ Equipment and Techniques
- ❖ Economics and Labor
- ❖ By-products



# Value-Added Products







The beauty of the SEED is that out of **one**  
you can get *millions*.

The beauty of the *pollinator* is  
it turns that **one** into the *million*.

And that's an economics of  
*abundance*.

That's an economics of **SHARING**.  
That's to me the **real** economics of

*growth*.

Because life is  
*growing*.

The economics and technology  
of *hybridization*,  
of **GENETIC MODIFICATION**

is a deliberate *creation* of  
**scarcity**.

Vandana Shiva



# Resources

## ❖ Saving Our Seeds

❖ [www.savingourseeds.org](http://www.savingourseeds.org)

- ❖ Isolation distances
- ❖ Seed growing manuals
- ❖ Equipment lists and plans

## ❖ Vegetable Seed Saving Handbook

❖ [www.howtosaveseeds.com](http://www.howtosaveseeds.com)

## ❖ Organic Seed Alliance (OSA)

[www.seedalliance.org](http://www.seedalliance.org)

- ❖ “education” link has online tutorials





# Resources cont.

- ❖ Horizon Herbs, LLC
  - ❖ [www.horizonherbs.com](http://www.horizonherbs.com)
  - ❖ Seed saving screens
- ❖ Sow True Seed
  - ❖ [www.sowtrue.com](http://www.sowtrue.com)
- ❖ Seed to Seed by Suzanne Ashworth
- ❖ The Organic Seed Grower by John Navazio
- ❖ The Seed Underground by Janisse Ray