Introduction to Agriculture
Part 1

United States Department of Agriculture
National Agricultural Statistics Service

A Presentation by the NOD-Training Group
Agriculture Overview

- American agriculture: over $300 billion industry
- There are 2.2 million agricultural operations (farms and ranches) in the US
  - Of these, only 395,220 (18%) have more than $100K in sales. Less than 7% have more than $500K in sales
- The total US land in farms is 914 million acres
  - About 1/3 of that is cropland
  - Average farm size is 421 acres
Agriculture Overview (2)

- Most valuable commodities by category:
  - Field Crops: Corn = $77.4 billion
  - Vegetables: Tomatoes = $1.9 billion
  - Fruits: Grapes = $4.9 billion
  - Livestock: Cattle and Calves = $45.2 billion

- Guess who calculates all these (and more) numbers?

- Farm and ranch products are the base of extensive value chains—creating multiple levels of jobs and income
Agriculture Overview (3)

• Only about 2% of the American population actually farm or ranch

• BUT agriculture employs about 15% of the total workforce - nearly 25 million individuals

  • **Input sector**: Supply seed, fertilizer, crop protection chemicals, machinery, fuel, etc.
    • John Deere, Monsanto, etc
  
  • **Production sector**: Produces raw agricultural products (farmers, ranchers, producer cooperatives)
  
  • **Output sector**: Processes and markets raw and value-added products to the public.
    • Tyson (poultry processing), Kraft (processed foods), etc
NASS Farm Definition

• Any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the year

• That includes:
  – Someone with 20 acres of idle cropland who says they are retired
  – Someone that owns five horses, and has never considered themselves a “farm”
  – Someone on the edge of town whose kids have 4-H sheep, hogs, steers and a handful of chickens
  – Someone with a small orchard and some sweet corn that they sell at a roadside stand

• All of these are farm operations

• And every farm is important. Big or small.
Acreage and Land
Acreage and Land (2)

- Remember, almost 1 billion acres of farmland
  - This includes cropland
    - Row crops, small grains, hay, vegetables, fruit, nuts, idle cropland
  - Pasture, rangeland
  - Woods, wetlands, farmsteads, etc
- Under various operating “arrangements”
  - Owned, rented/leased, sharecropped, etc
  - Land prices and rental rates: record highs in many areas
    - But depends on type of land
Acreage and Land (3)

- **Conservation Reserve Program** (CRP)
  - Also WRP, FWP, CREP, etc
  - Pays farmers to “set aside”/idle marginal cropland

- **Farm Service Agency** (FSA)
  - Oversee and administer various farm programs
    - CRP, counter cyclical payments, disaster relief, etc.

- **Natural Resource Conservation Service** (NRCS)
  - “Helping People Help the Land”
  - Funding opportunities for agricultural producers and other landowners to:
    - Reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters
Acreage and Land (4)

• **Animal Unit Month** (AUM): the amount of feed for a cow-calf pair, used as a means of pricing grazing rights on land

• **Irrigation**: artificially watering land. Multiple different systems and means

• **Double cropping**: two or more *different* crops grown and harvested from the same area in one growing season

• **Crop Insurance**: programs/plans to assist farmers experiencing disaster or reduced production
  – Payments can be in various forms (direct, loans, etc)
  – Private companies, but often subsidized/overseen by Risk Management Agency (RMA)
Acreage and Land (5)
Field Crops

• Row Crops
  – Corn (grain & silage), soybeans, cotton, sorghum (grain & silage), rice, sunflowers, (oil & non oil), sugarbeets, dry edible beans, peanuts
  • Many other crops with small acreages
  – Very diverse end uses: livestock feed, ethanol, oils, sweeteners, direct human consumption

• Small Grains
  – Wheat (winter, spring, durum), barley, oats, rye
Row Crops
Small Grains
Field Crops - The big three

- **Corn**
  - 95.4 million acres planted. Harvested for either grain (87.7m ac.) or silage (6.3m ac.)
  - Iowa, Illinois, Nebraska, Minnesota, Indiana

- **Soybeans**
  - 76.5m ac. planted, virtually all harvested as beans
  - Iowa, Illinois, Minnesota, Missouri, Indiana

- **Wheat, all (includes winter, spring, durum)**
  - 56.2m ac. planted, 80% harvested for grain
  - Kansas, North Dakota, Texas, Montana, Oklahoma

- **Cotton (Upland, Pima)**
  - A *distant* fourth with 7.6m ac harvested
  - Texas, Georgia, North Carolina, Arkansas, Mississippi
On-Farm Grain Storage
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• Grain demand is year round
  – Grain supply peaks at harvest
• Grain storage ensures demand aligns with supply
  – And allows producers marketing options
• ONLY on-farm capacity (and stocks)
  – Commercial storage/elevator data is collected separately
    • Growers often rent space in these facilities
    • Must be excluded to avoid double counting
• For capacity: ONLY looking for “permanent” or “normally used” structures
  – Exclude any temporary structures capacity
Hay and Forage
Hay and Forage

• Used for livestock consumption
  – Dry hay
    • Mowed, allowed to dry, and baled
  – Haylage/silage
    • Mowed, chopped and fermented to be fed to ruminants

• Generally multiple cuttings/crops per year
  – Different cuttings can be dry hay or haylage

• Alfalfa: high protein legume
  – Common as both dry hay and haylage

• Other hay: small grain hay, tame hay (grasses and legumes), wild hay
  – Generally dry hay
Horticulture, Floriculture, Nursery, etc.
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- Smaller area BUT high value crops
- Production largely in the South and West Coast
  - Although MI ranks 3rd in Floriculture production
- Horticulture/Floriculture=diverse array of things such as:
  - Bedding/garden plants
    - Annuals, perennials, vegetable plants
  - Cut flowers
  - Nursery products (trees, shrubs, etc)
  - Cut Christmas trees
  - Sod
- Mushrooms (Pennsylvania largest producer)
- Food crops under glass (tomatoes, etc)
- These operations may not consider themselves “farms”
Vegetables, Potatoes, Melons
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- **Potatoes**: 1.052m acres of potatoes harvested in the US
  - Idaho: about 30% of the acres and production
  - WA, ND, WI and CO round out the top 5

- **Fresh market vegetables**: Artichokes to tomatoes = 1.679m acres harvested
  - Sweet Corn: 244k ac; Onions: $944m (followed closely by sweet corn, lettuce, tomatoes); Tomatoes: ($9k/ac)
  - California (~50%), Florida, Arizona, Georgia, New York/Washington

- **Processing vegetables**: Beans to tomatoes = 1.135m acres
  - Sweet corn: 359k ac, Tomatoes: $1.01b
  - California, Wisconsin, Minnesota, Washington, Oregon/Michigan
Fruits, Nuts, Berries
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• Much like horticulture and vegetables, very high $$$ value per acre crops
  – BUT intense growing practices and high production expenses
  – Diverse array of crops (apples to walnuts)

• **Non citrus fruits and berries**: 1.965m acres, $15b value
  – Grapes and apples largest acreage and value of prod.
    • Strawberries third for value (but almost $43k per acre!)
  – California largest overall producer

• **Tree nuts**: 1.247m acres, $7.4b value
  – Almonds (CA only) largest acreage and value of prod.

• **Citrus fruits**: 797k acres, $3.15b value
  – Florida with almost 2/3 of the US production