

**Senate Agricultural Affairs Committee
Chair: Senator Jim Guthrie**



University of Idaho

College of Agricultural
and Life Sciences

State of the College: *Michael P. Parrella, Dean*

Research Report: *Juliet Marshall*

Financial Condition of Idaho Ag: *Garth Taylor*

January 21, 2020





LAND GRANT MISSION

- Expand the opportunity for the working class to obtain a higher education; designed to meet utilitarian and "useful" ends
- Emphasize the emerging applied sciences, particularly agricultural science and engineering
- Creation of the **Agricultural Experiment Station** (Hatch Act of 1887) and **Cooperative Extension** (Smith-Lever Act of 1914); all faculty in the college are mandated to extend knowledge and improve the lives of Idahoans

Fast Facts

Enrollment: 11,841

Degrees Granted: 128,613

School Colors: Silver & Gold

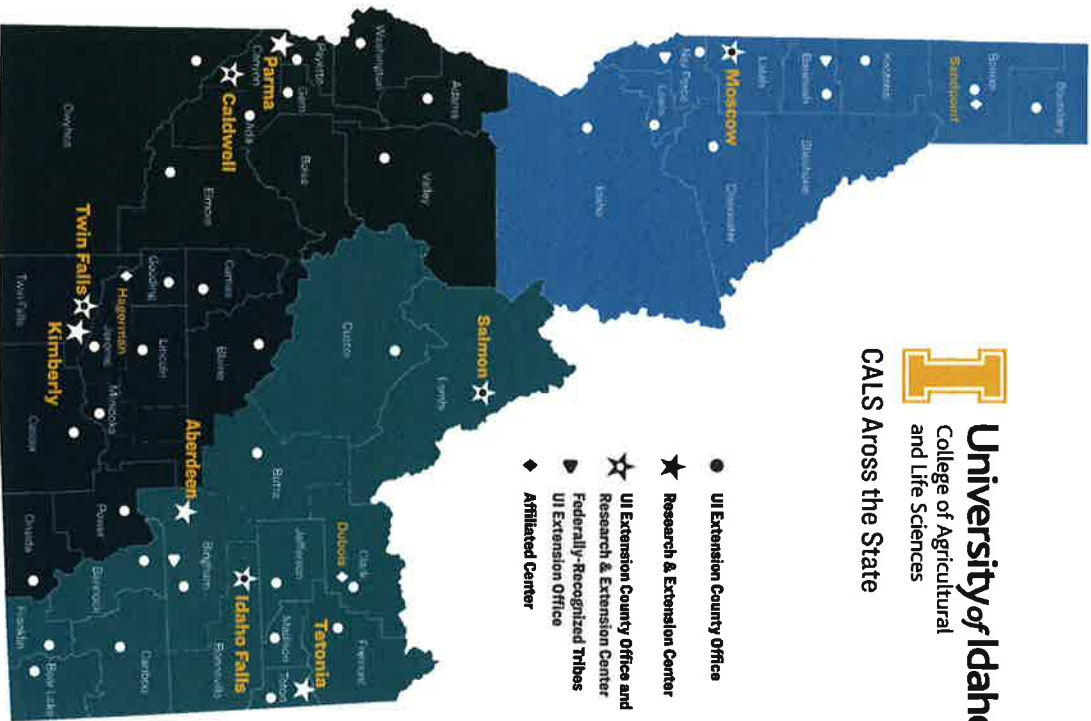
Founded: 1889

President: C. Scott Green

Mascot: Joe Vandal



CALS Across the State



LAND GRANT MISSION

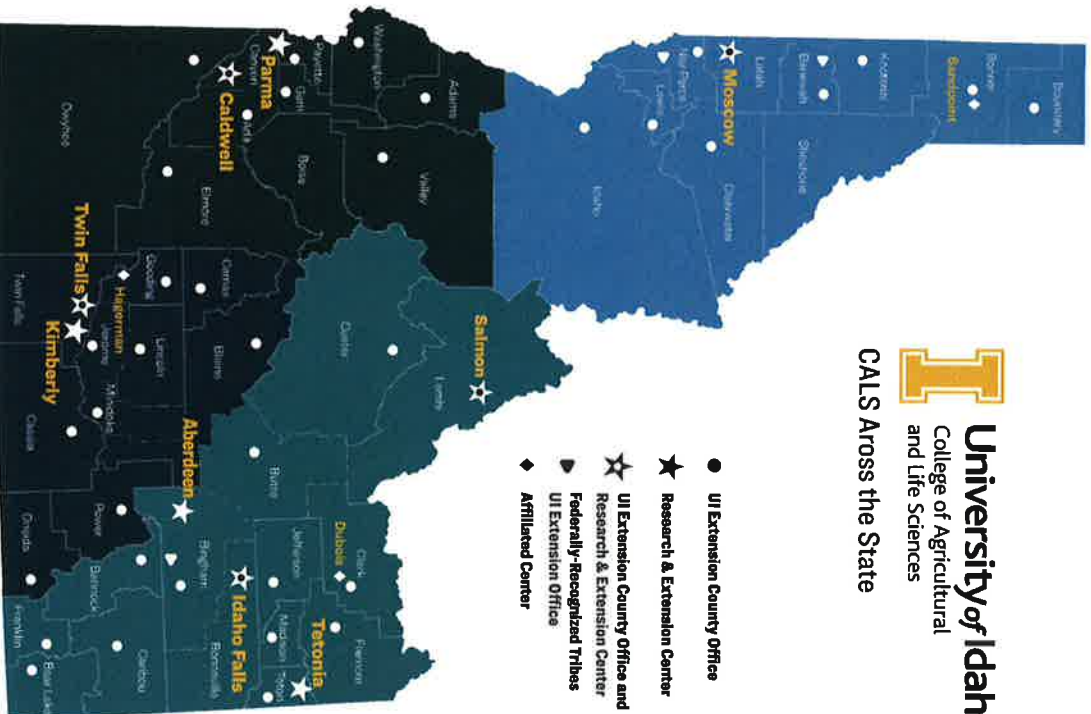
TEACHING, RESEARCH & OUTREACH



- 225 Faculty (half located off-campus)
- 725 Staff
- 9 Research and Extension Centers
 - Access to over 14,000 acres
- UI Extension offices in 42/44 counties and on 3 reservations
 - 81 Educators, 49 Specialists
 - 440,000 face-to-face contacts in 2019
- 875 undergraduate students
- 180 graduate students
- 8 academic departments offering 41 grad/undergrad programs



CALS Across the State



- UI Extension County Office
- ★ Research & Extension Center
- ☆ UI Extension County Office and Research & Extension Center
- ◆ Federally-Recognized Tribes UI Extension Office
- ◆ Affiliated Center

LAND GRANT MISSION

TEACHING, RESEARCH & OUTREACH



- Over 73,000 Idaho youth involved with UI Extension 4-H Youth Development
- Over \$1M in scholarships awarded
 - Most of any college at U of I
- Only institution in Idaho to prepare ag teachers
 - 95/113 districts have ag programs
 - 90% ag teachers have CALS degree
- Top college at U of I in research expenditures
 - 20% of sponsored project activity



COLLEGE INITIATIVES

- Ongoing effort to modernize our facilities but building/renovating existing facilities is expensive
- Three-way partnership: University/CALS + Industry + State
- No one entity can accomplish this effort alone
- Funding committed by CALS comes from local service/research generating activities related to the proposed initiatives
- To learn more about all our initiatives:
 - [Tuesday, January 21 at 11:30 am in Senate Majority Caucus Room](#)



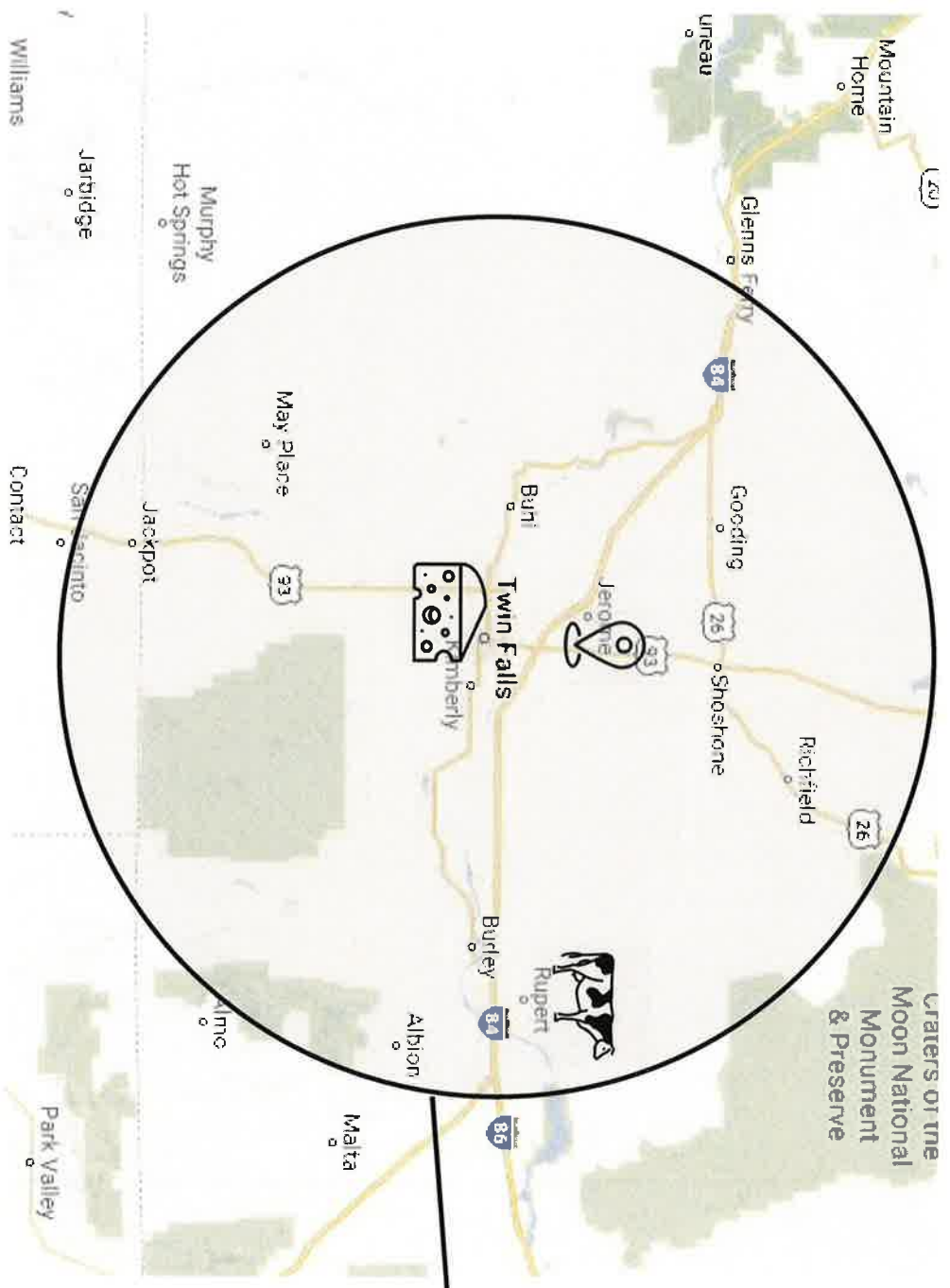
NMCREEC CLASSROOM & OUTREACH FACILITY

- Located at the Nancy M. Cummings Research, Extension & Education Center, will enhance teaching, research and outreach to serve local community and livestock industry
- Funded by partnership between CALS, the Auen and Berger Foundations, Idaho cattle industry, and private producers
- Moved into facility in **December 2019**; Grand opening in **May 2020**
- Comparative research on grazing (irrigated vs. rangeland) conducted with **Rinker Rock Creek Ranch** located near Hailey, ID
- **\$3 million facility**: private donations and CALS



IDAHO CENTER FOR AGRICULTURE, FOOD AND THE ENVIRONMENT (CAFE)

- It is our goal to build and operate the **largest integrated research facility** focused on **dairy and allied industry** in the United States.
- The project will include a **research dairy, agronomic field plots, discovery center and food processing/workforce training facility** located in the Magic Valley.
- CAFE will have both a **physical presence** and a **national and international reputation** that reflects the size, quality and importance of the industry it represents.

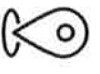


REGIONAL MODEL



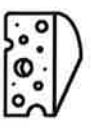
Research Dairy

- Located in Rupert, within 50 miles of discovery complex
- Off-site location ensures biosecurity
- Build a new facility on permitted land
- 2,000 cows



Discovery Complex

- Located at Crossroads Point in Jerome
- Intersection of Hwy 93 and I-84
- High visibility
- Research laboratories and housing
- Tells the story of Idaho agriculture



Food Processing Education

- Located on the CSI campus adjacent to vocational training center
- Focus on expanding future workforce
- Food processing research conducted



CAFE OVERVIEW

PROGRAMMATIC AREAS

- **Animal Related Research** Value added, robotics, genomics, animal welfare
- **Agronomic Research** Crop rotation, soil health, water quality, nutrient management
- **Food Science Research** Processing and product innovation, food safety and quality, sustainability
- **Risk Mgmt Research & Education** Endowed Chair for Risk Management, dairy/crops market risk management strategies for producers and processors
- **Outreach and Extension** Career and technical training, continuing education, agriculture education including K-12, 4-H and FFA
- **Workforce/Economic Development** Distance education, worker safety, build a workforce pipeline for the community; Chobani Scholars Program
- **Data Science Core** Links the various research programs together and develops capacity to handle the vast amounts of data that will be developed



PROGRESS OVER THE PAST 8 MONTHS

- I** SBOE finalized the purchase of the Rupert property in partnership with IDA
 - ✓ Hired a project manager to facilitate dairy construction
 - ✓ Formed an Internal Advisory Board to develop baseline data at the Rupert Site
- I** SBOE finalized the purchase of the Crossroads property
 - ✓ Formed an outreach/advisory committee to design the discovery center
- I** Met with CSI faculty/administration to discuss plans for the food processing facility; improve 2+2 connections; develop 4-year degrees
- I** Dr. Bob Collier, new head for Animal & Veterinary Science (*from U of AZ*)
- I** Fundraising continues; sale of UI property; release of state funds fall '19



IDAHO CENTER FOR PLANT AND SOIL HEALTH

- Renovations to the Parma Research & Extension Center facilities including **equipment and infrastructure** to support research and Extension efforts



- Enhance **recruitment/retention** of best faculty, expand **graduate student** training and attract **nationally competitive** grant funding



- Campaign launched in March 2019
- **\$7 Million** project cost
 - **\$1 Million** contribution by UI CALS
 - Over **\$2 Million** raised from industry to date; including gifts from 7 different commodity groups
- Highlights Parma's impact on **all of Idaho agriculture**



VIDEO





University of Idaho
Extension

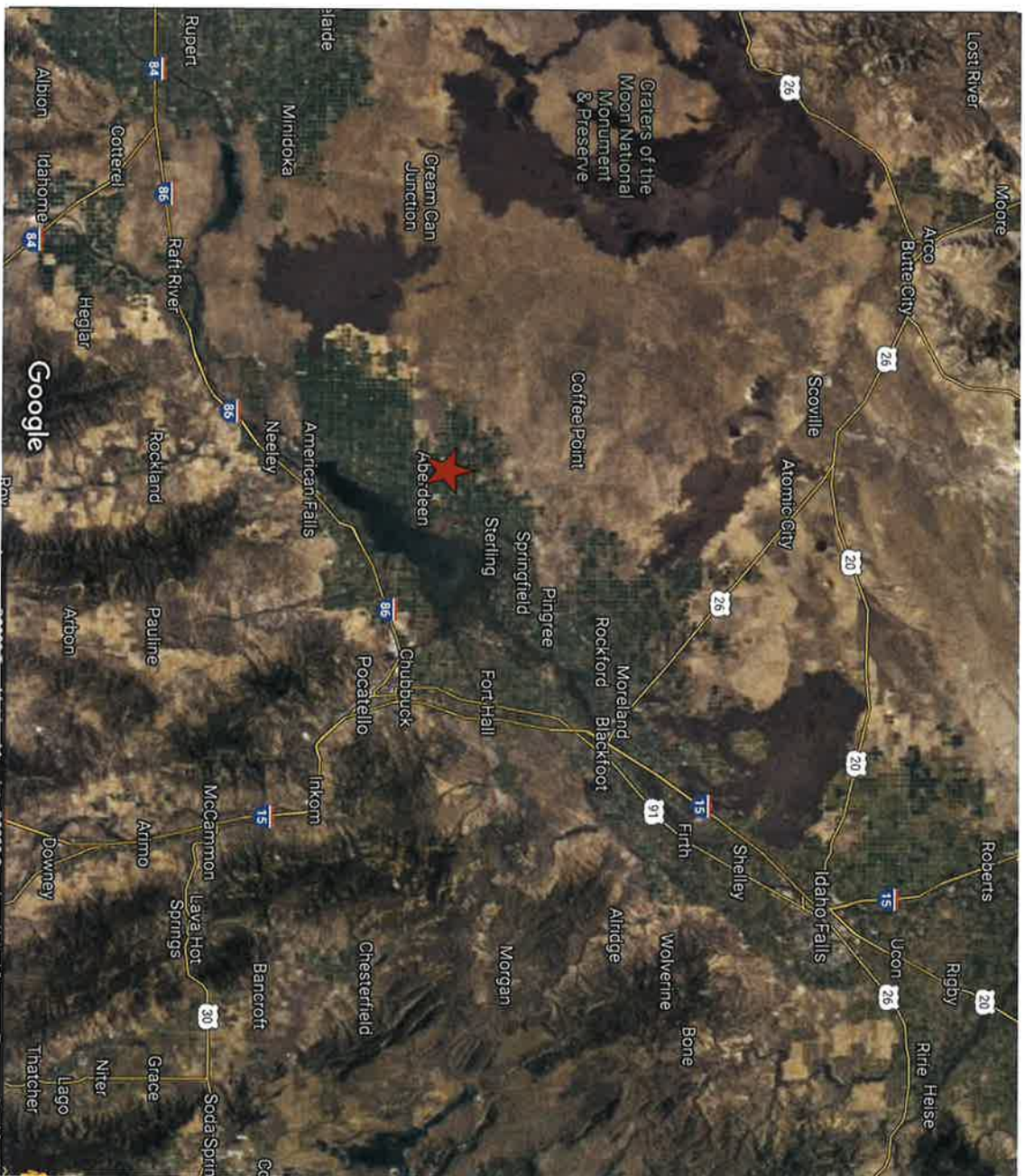
Dr. Juliet Marshall

*Idaho Wheat Commission Endowed Professor
'Potlatch Joe Anderson Cereal Agronomics'*



**ADVANCING
SCIENTIFIC METHODS
TO IMPROVE
AGRICULTURAL
SUSTAINABILITY**

University of Idaho Extension



Aberdeen R&E Center

19 Scientists

9 UI Faculty

9 ARS Scientists

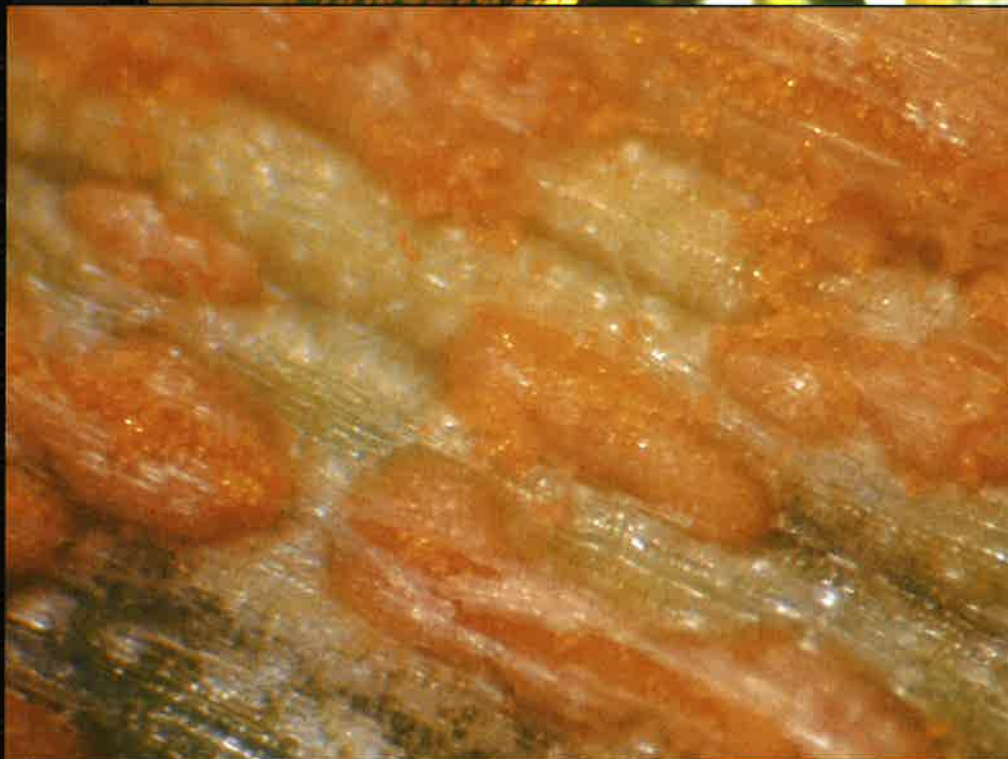
2 NRCS Scientists

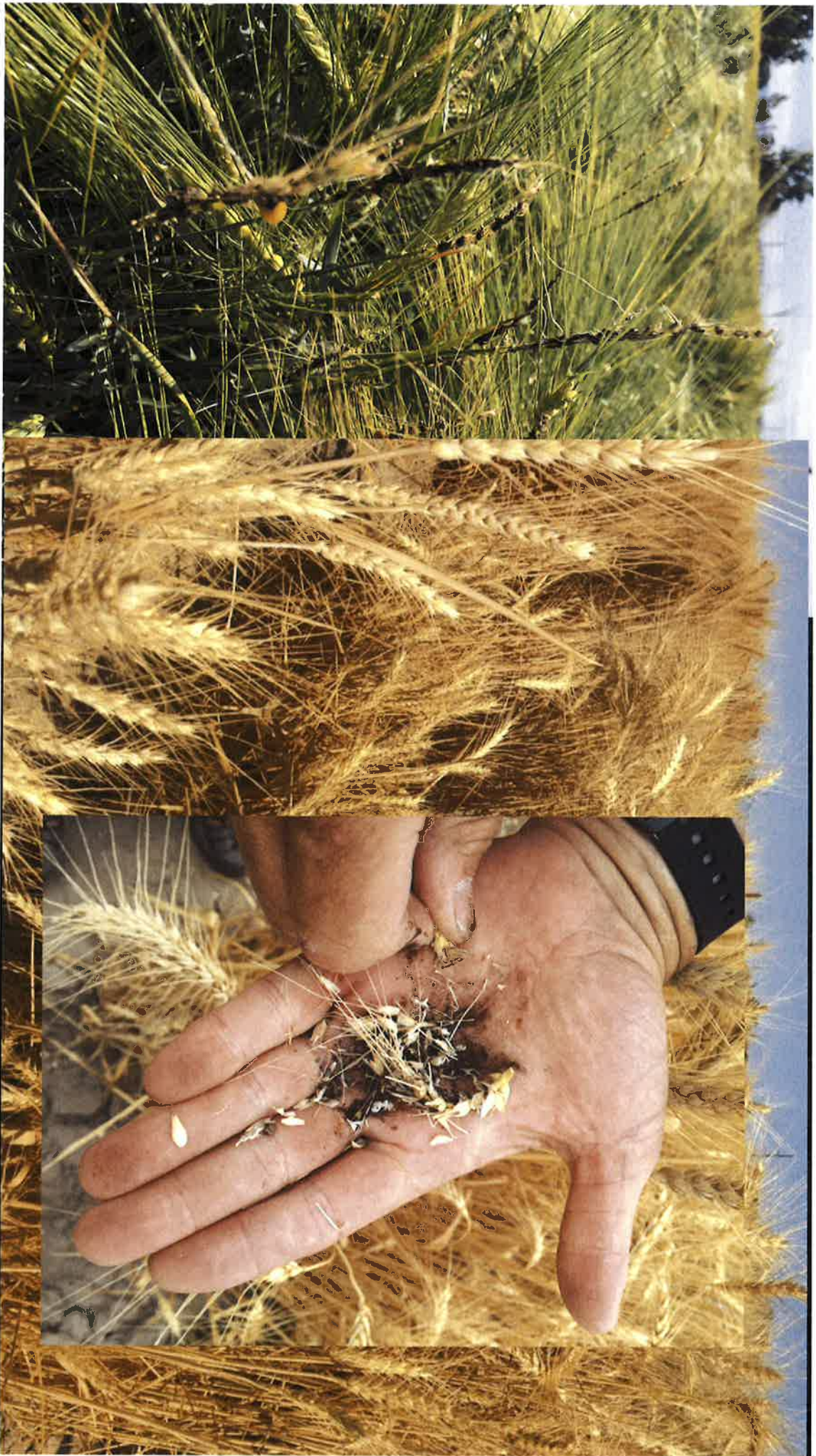
70 Support Staff

9 Graduate students and post-docs











DEVELOPING METHODS FOR AN
EARLY WARNING DETECTION SYSTEM
FOR FOLIAR PATHOGENS

PREDICTIVE DIAGNOSTICS



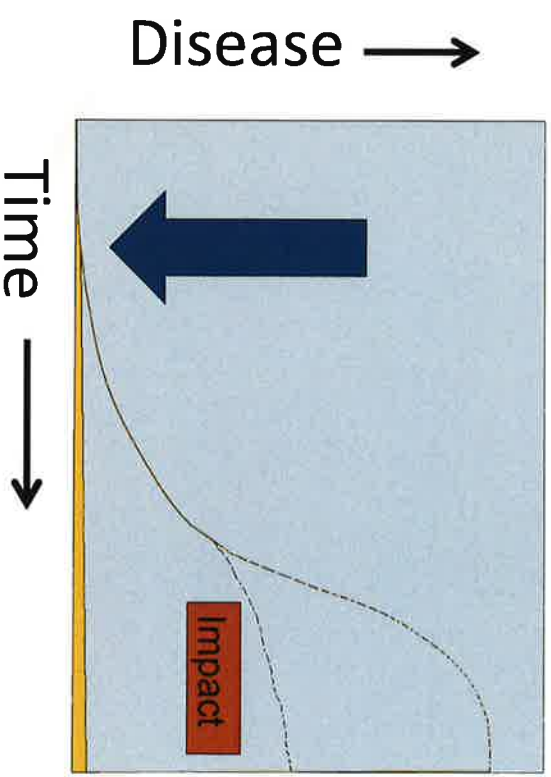
PREDICTIVE DIAGNOSTICS

'Reactive diagnostics'

- Identify causal agent
- Correct rectifying treatment
- Disease intelligence

'Predictive diagnostics'

- Precision agriculture/horticulture
- Planting decisions
- Reduce pesticide inputs & losses

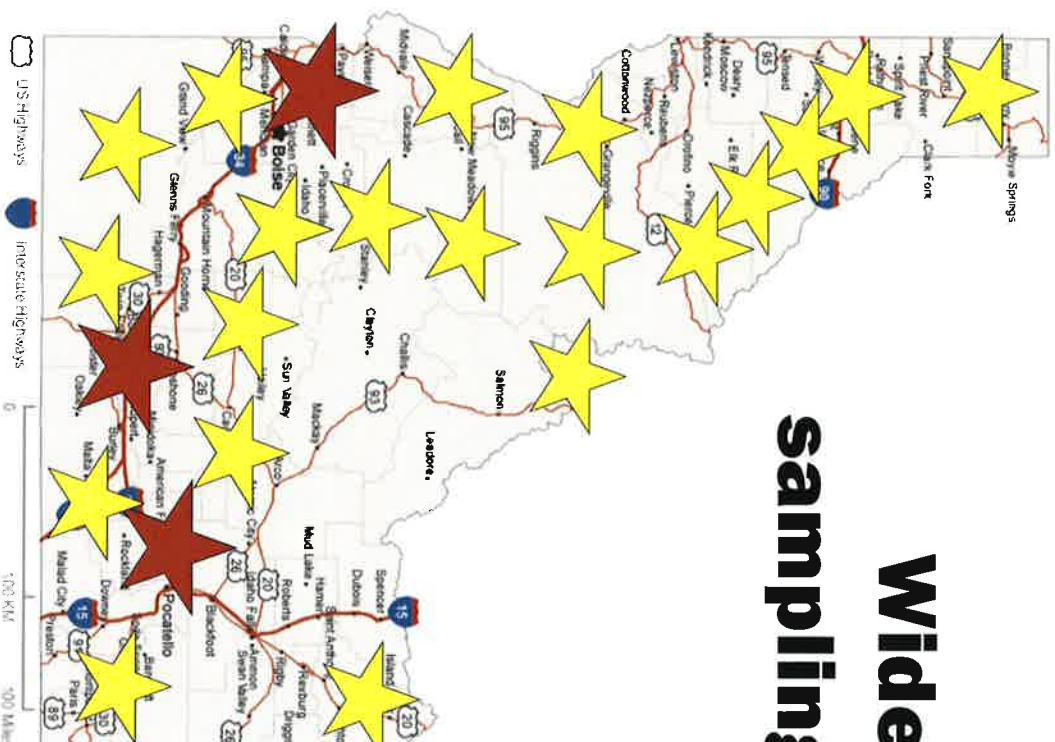


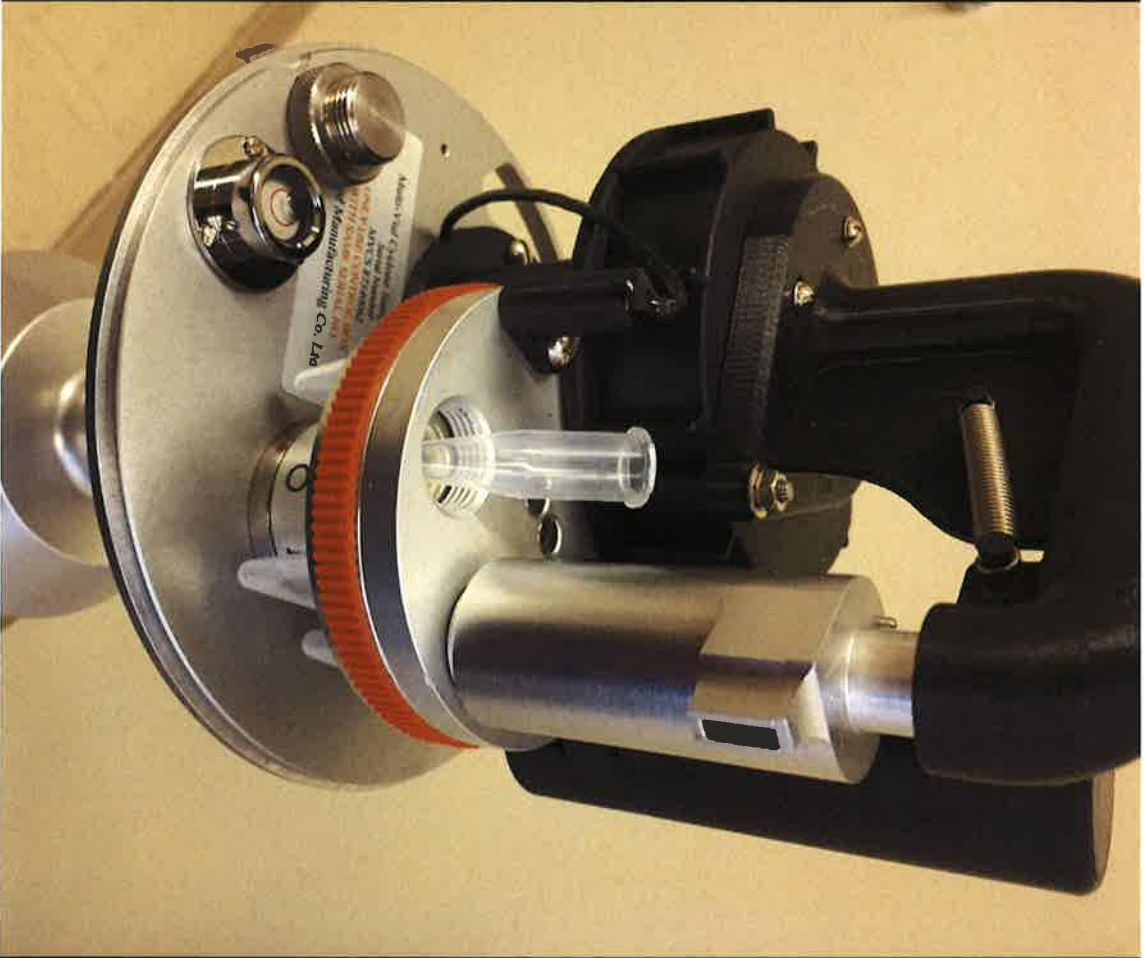
Existing support

from:

- Sugar Beet
- Onions
- Potatoes
- Barley
- Wheat

Wider spore sampling network?





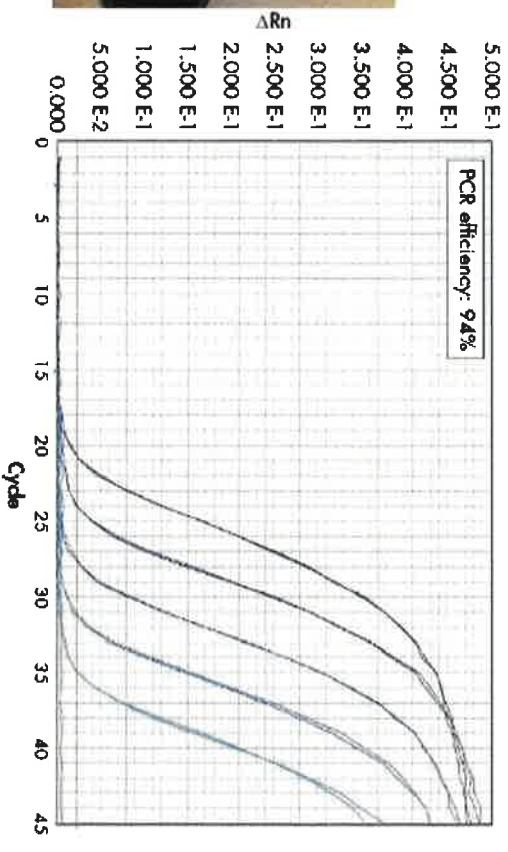
REAL-TIME PCR FROM SPORE SAMPLES IN THE LAB



DNA
extraction



Multiplex Quantitative
real-time PCR



Determine relative
levels of Stripe rust,
Powdery Mildew,
Fusarium head blight

Agricultural and Environmental Benefits

Breeding

- Search for resistant parents
- Resistance is often partial (no silver bullets)
- Gene editing effective in enhancing native resistance

Gene Editing

- Rapid progress with small yet effective change
- No introduction of novel genes
- Modify existing genes to enhance traits which may be difficult to achieve through traditional methods

Access

- Public Sector Institutions provide proof-of-concept
- Work enhances traits and crops not commercially viable
- Environmental and Food Safety is priority





University of Idaho
Extension

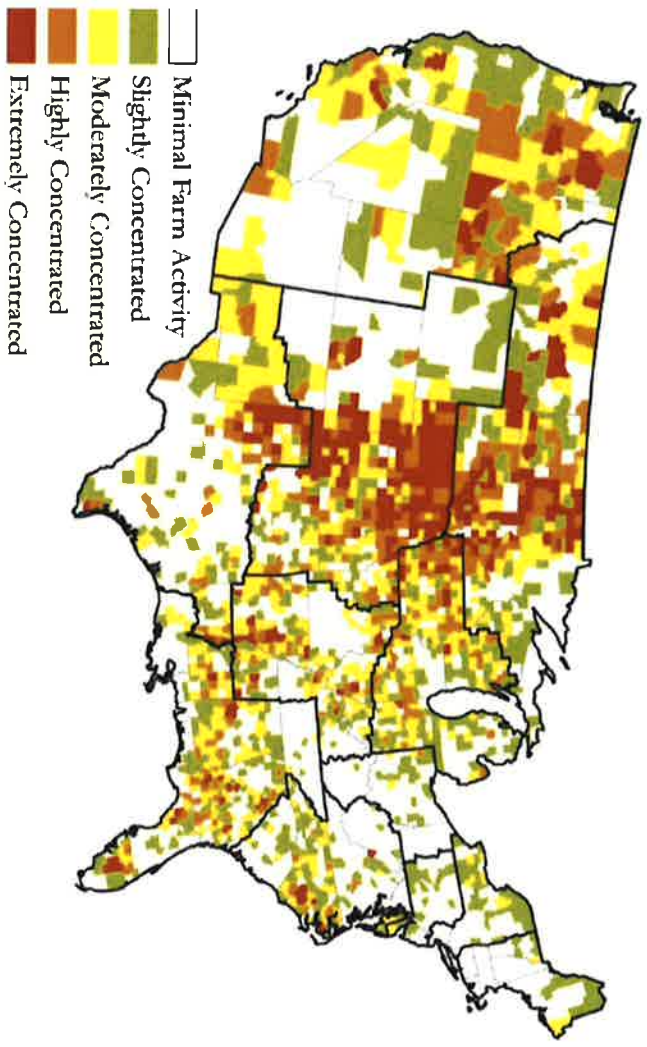
Financial Condition of Idaho Agriculture, 2019

**Senate Ag Committee,
Jan 21, 2020
Rita Du, Ben Eborn, and Garth Taylor**



Ag Dependent Counties

Farm Sector Concentration

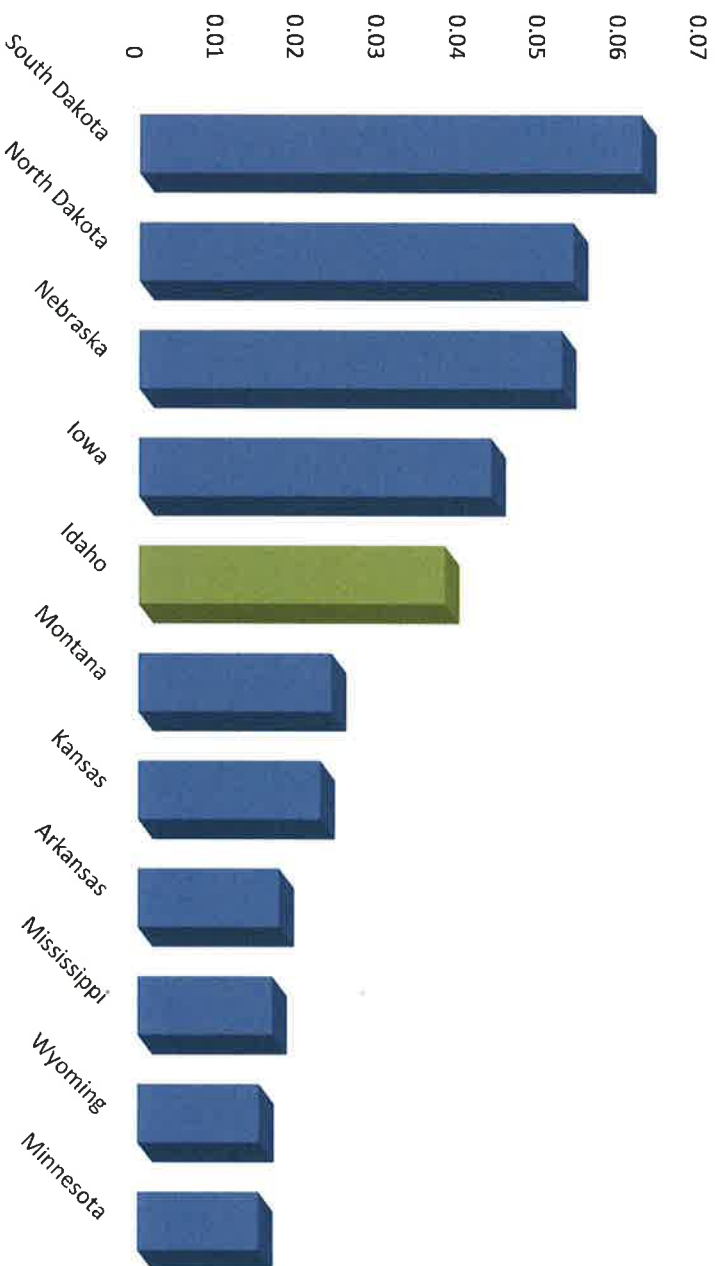


Source: BEA and staff calculations.



Idaho - 5th Largest Ag economy

Farm GDP as percent of State Total GDP 2017



Source: BEA



MULTIPLIER EFFECTS...AGBIZ IDAHO'S LARGEST INDUSTRY



Exports – new dollars - drive an economy

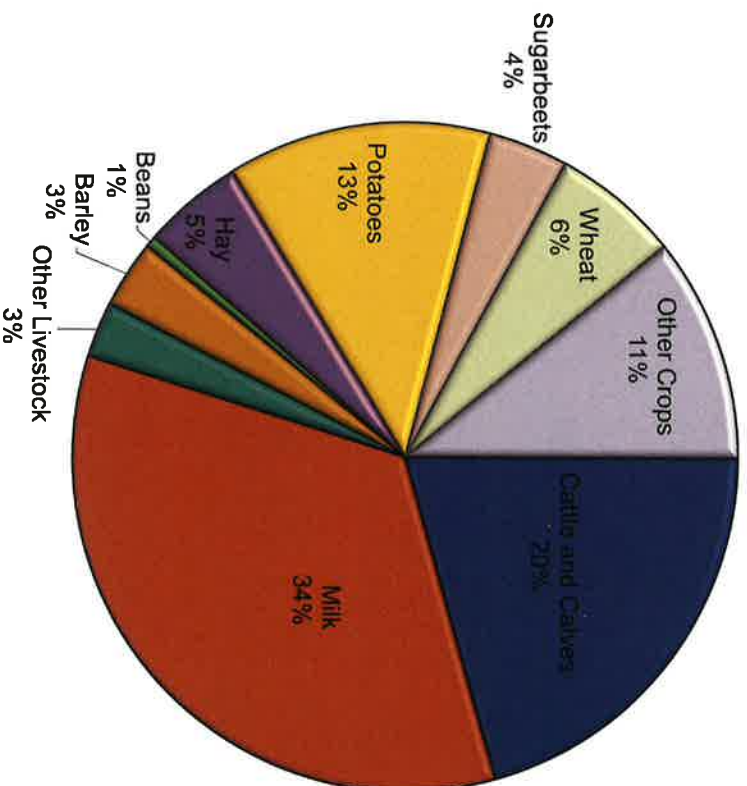
- \$26 billion in sales, 18% of Idaho's total economic output
- 123,000 Idaho jobs, 1 in every 8 jobs in the state
- \$10 billion in value added, 13% of Idaho GDP

Source: Watson U of ID



Second Highest Cash Receipts

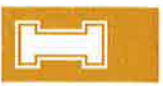
Idaho Cash Receipts, 2019



\$8.3 billion, 2019



\$7.5 billion, 2018



Cash Receipt: Ups & Downs

Crops \$3.6 billion, ↑12%

Livestock \$4.8 billion, ↑10%

Potatoes: ↑15%

Cattle & Calves: ↓1%

Barley: ↑17%

Milk: ↑19%

Wheat: ↓1%

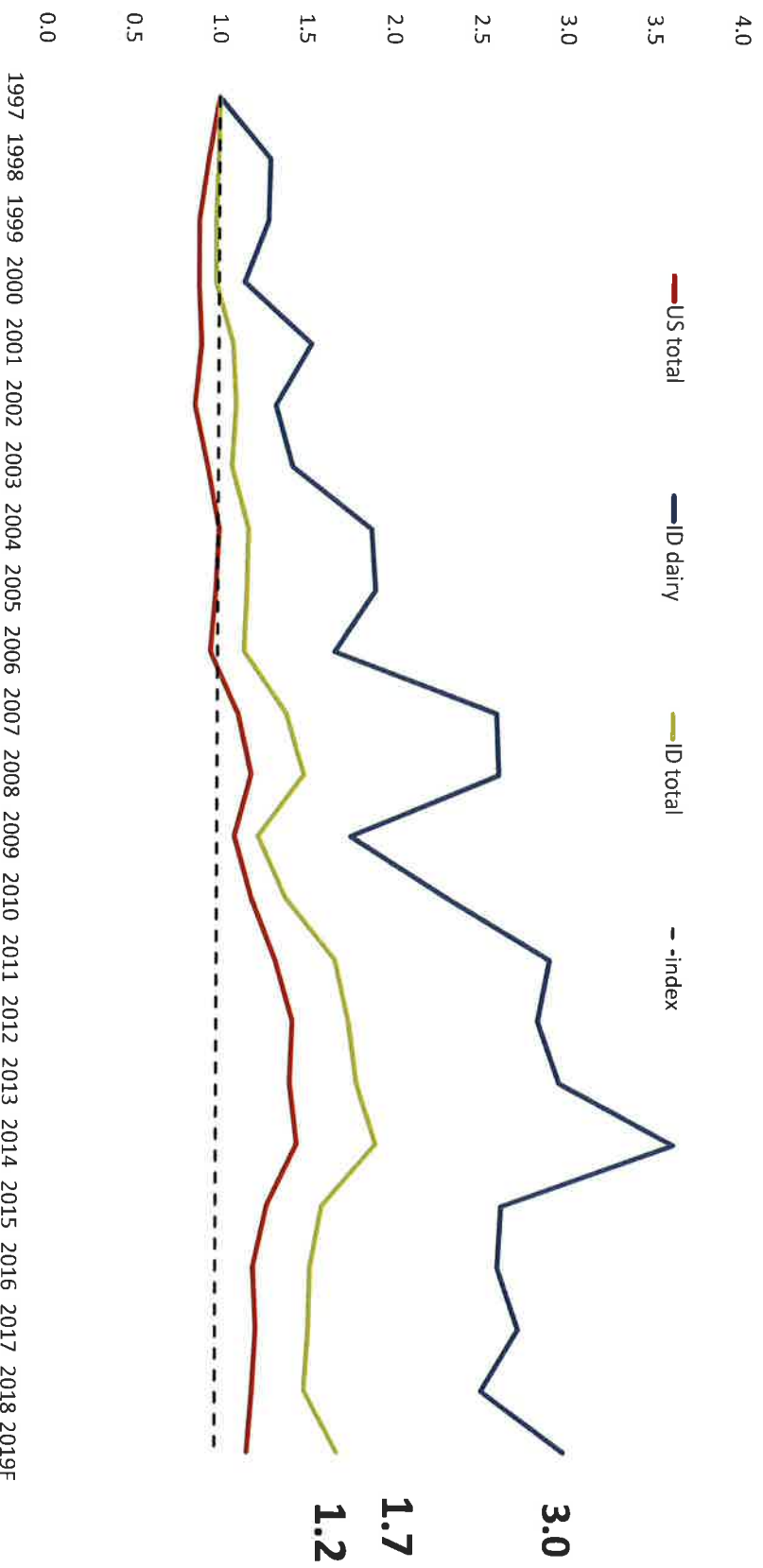
Sugarbeets: ↑12%

Hay: ↓4%



Idaho real cash receipts outgrows US

Index Real Cash Receipts (2019 dollars)

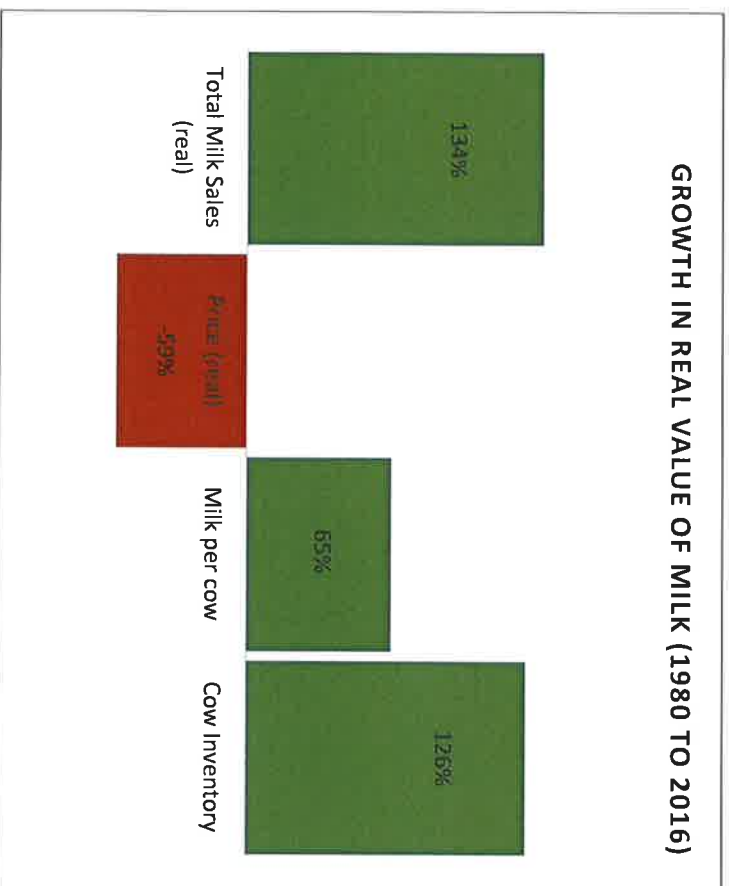


Source: USDA-ERS, University of Idaho

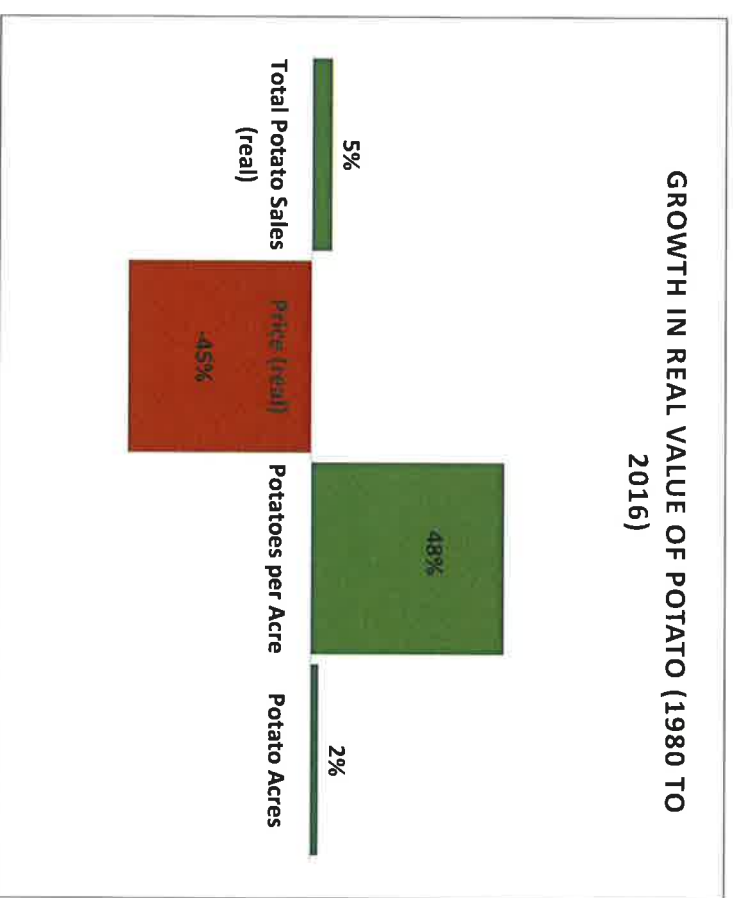


Growth comes from production not price

Dairy



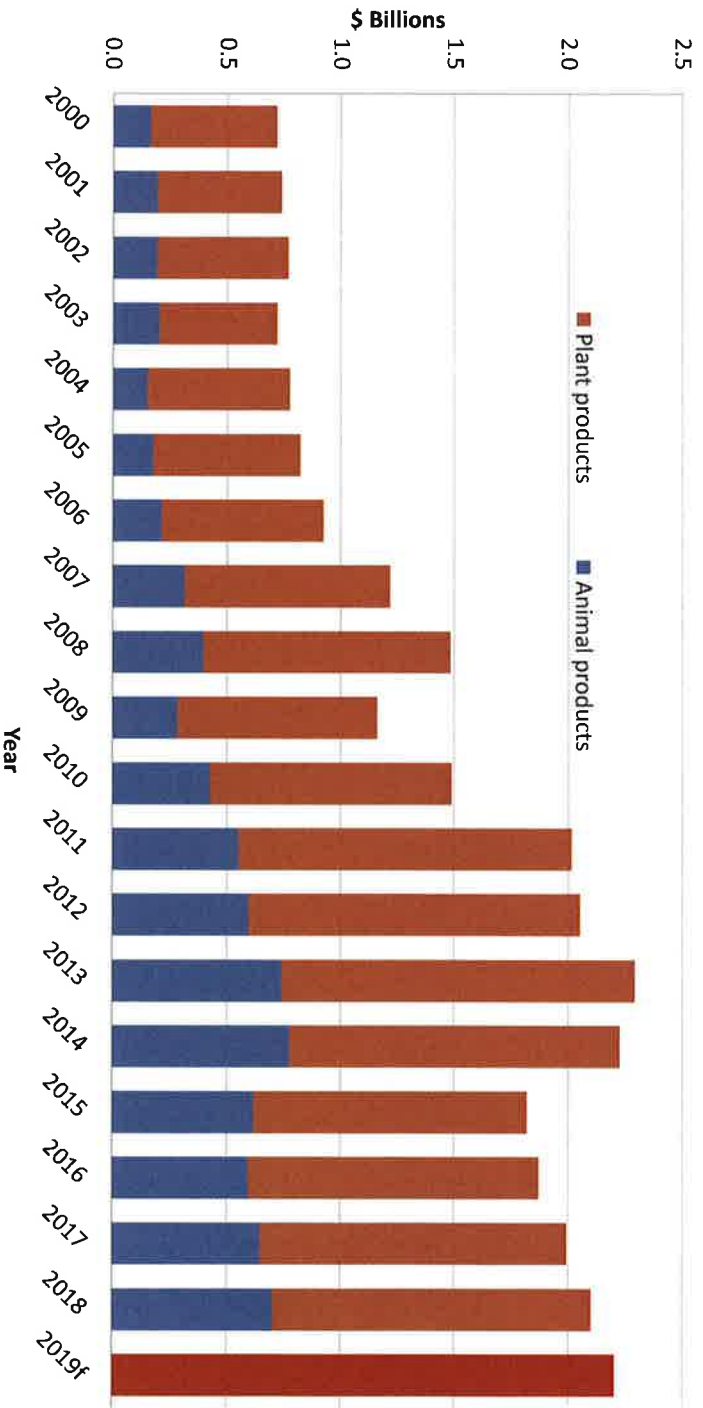
Potatoes





2018, IDAHO'S TOTAL EXPORT \$4 BILLION, AG \$848 MILLION (21%)

Idaho Ag Exports, 2000 to 2019

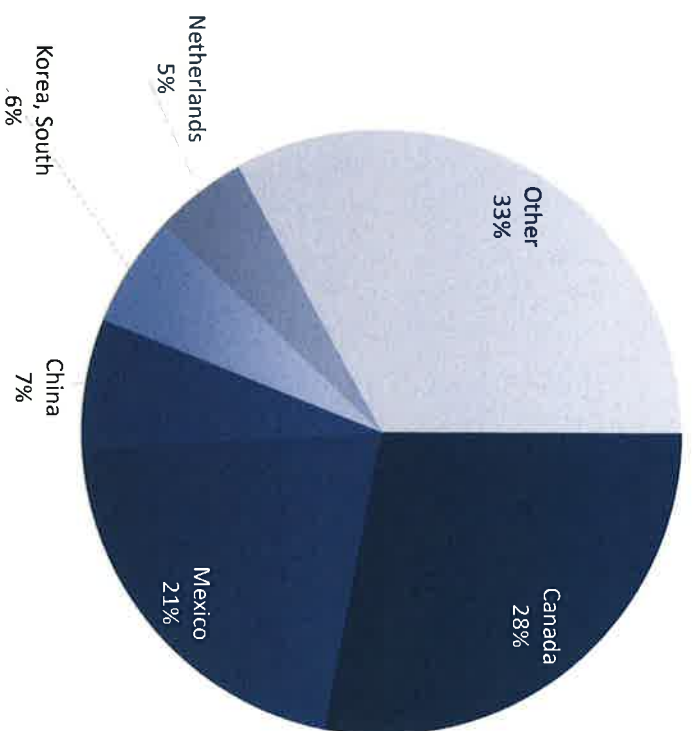


Source: Laura Johnson Idaho Dept. of Ag, USDA ERS, and Global Trade Atlas

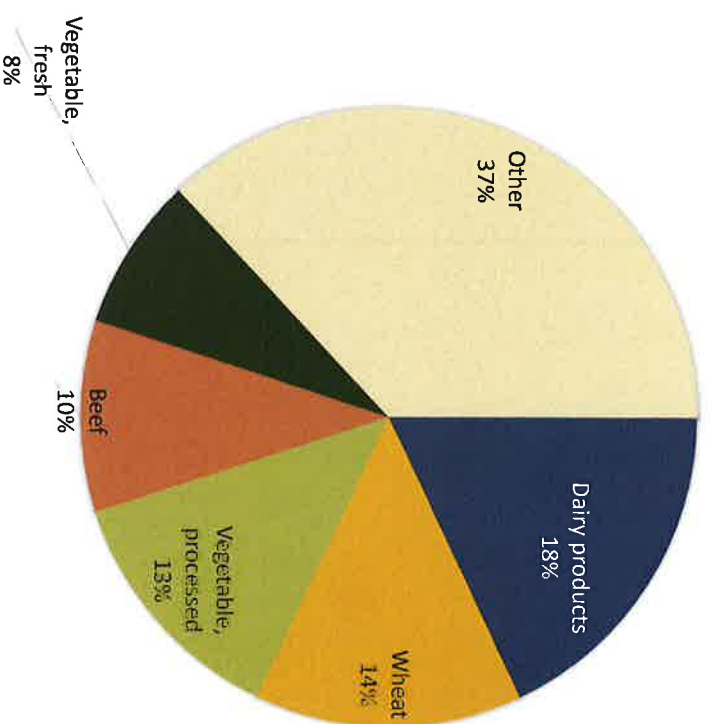


Idaho Ag Exports: Dairy, Potatoes and NAFTA

ID Ag Exports by Country, 2018



ID Ag Exports Share, 2018

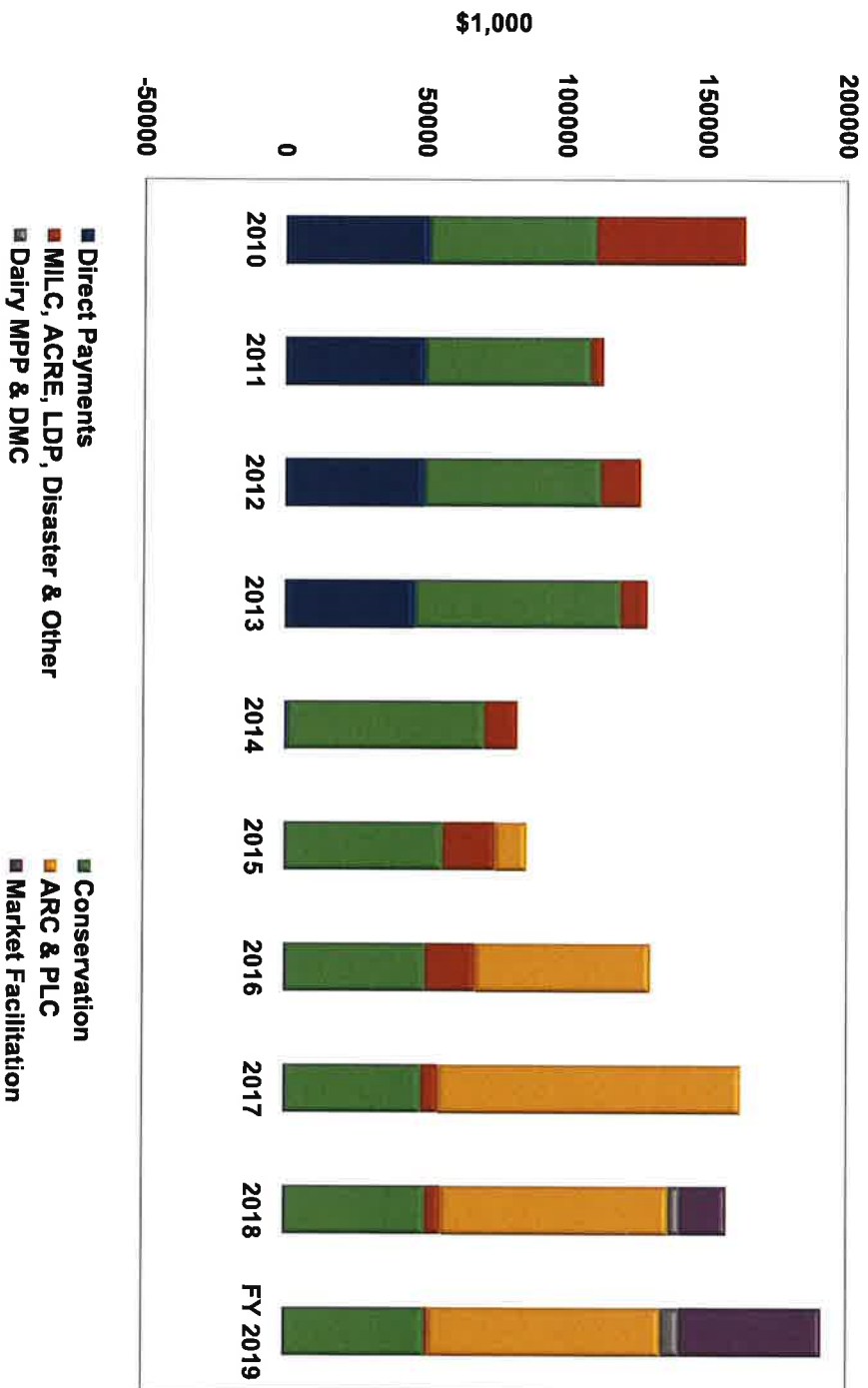


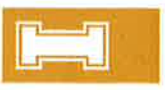
Source: Laura Johnson Idaho Dept. of Ag, USDA ERS, and Global Trade Atlas



Idaho support programs jump

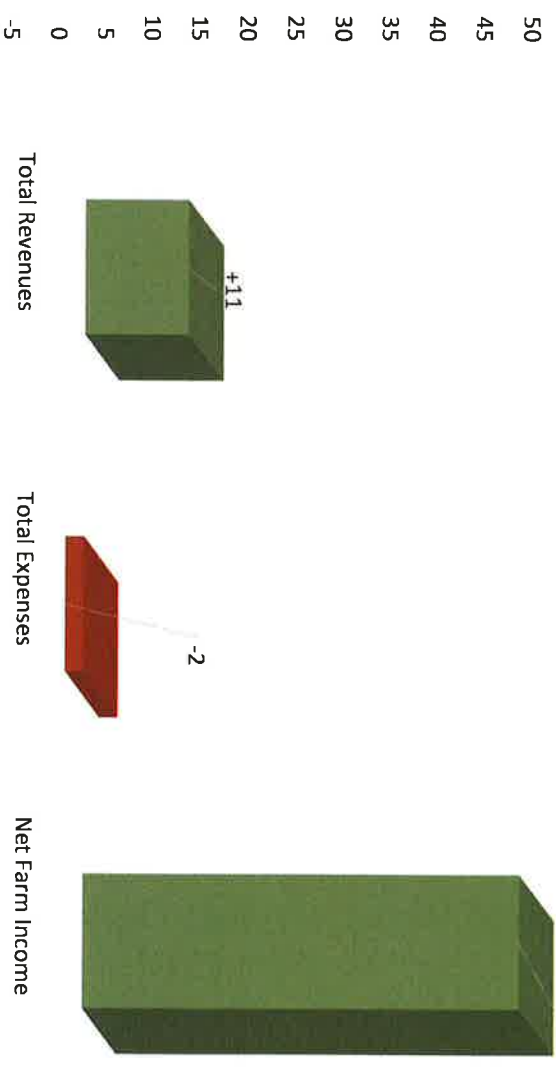
Idaho Government Payments, 2010-2019



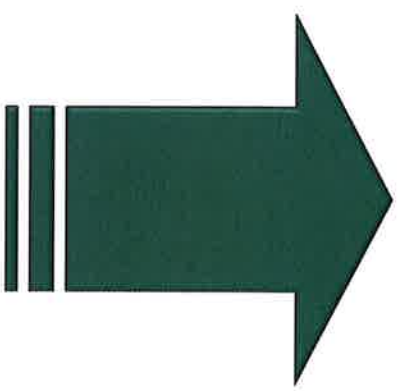


Record High Net Farm Income

Idaho Net Farm Income
(% change from 2018)



\$2.7 billion, 2019



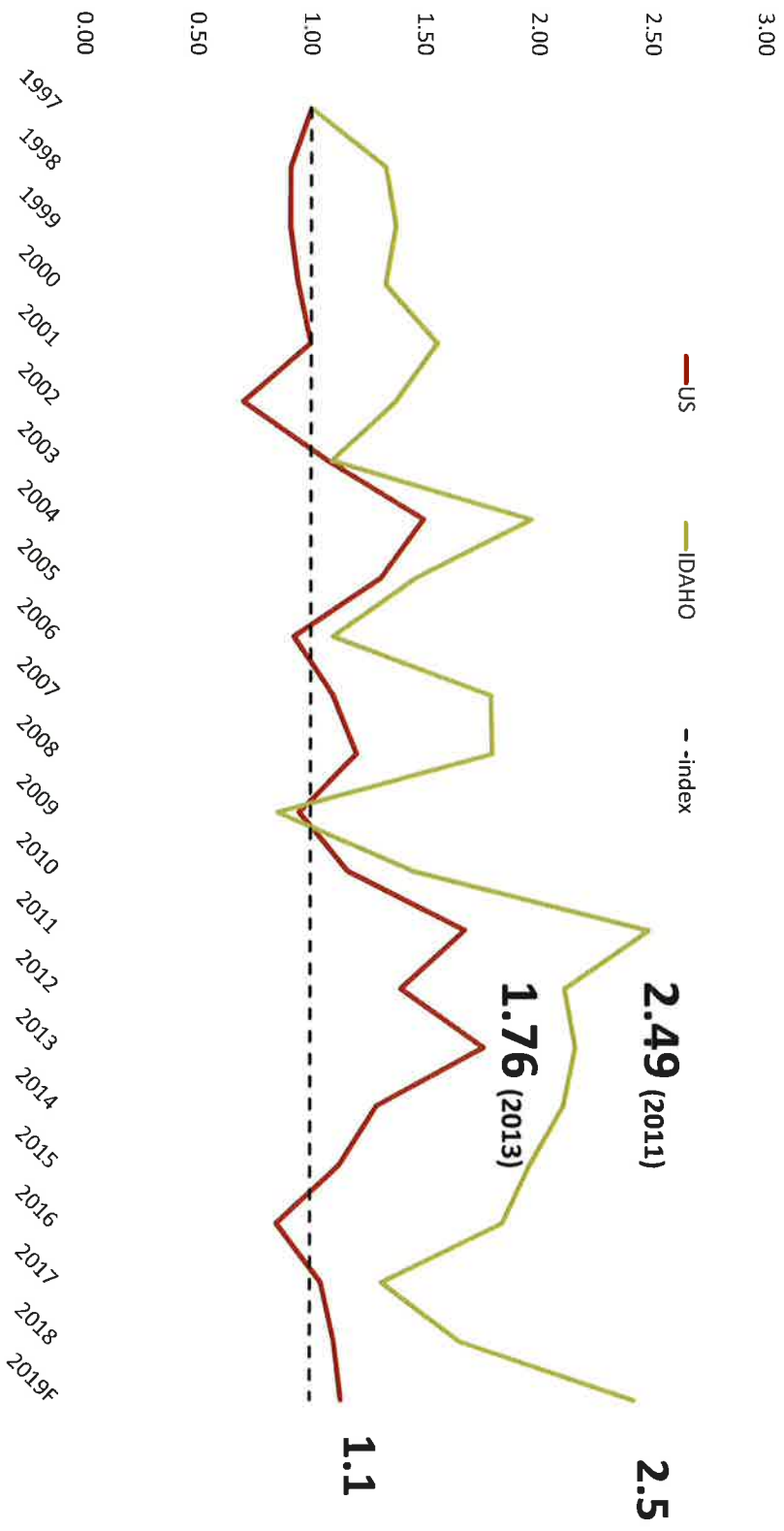
\$1.8 billion, 2018

Source: U of ID



Idaho real net farm income outgrows US

Real (2019 dollars) Net Farm Income Idaho vs US (1997=1)

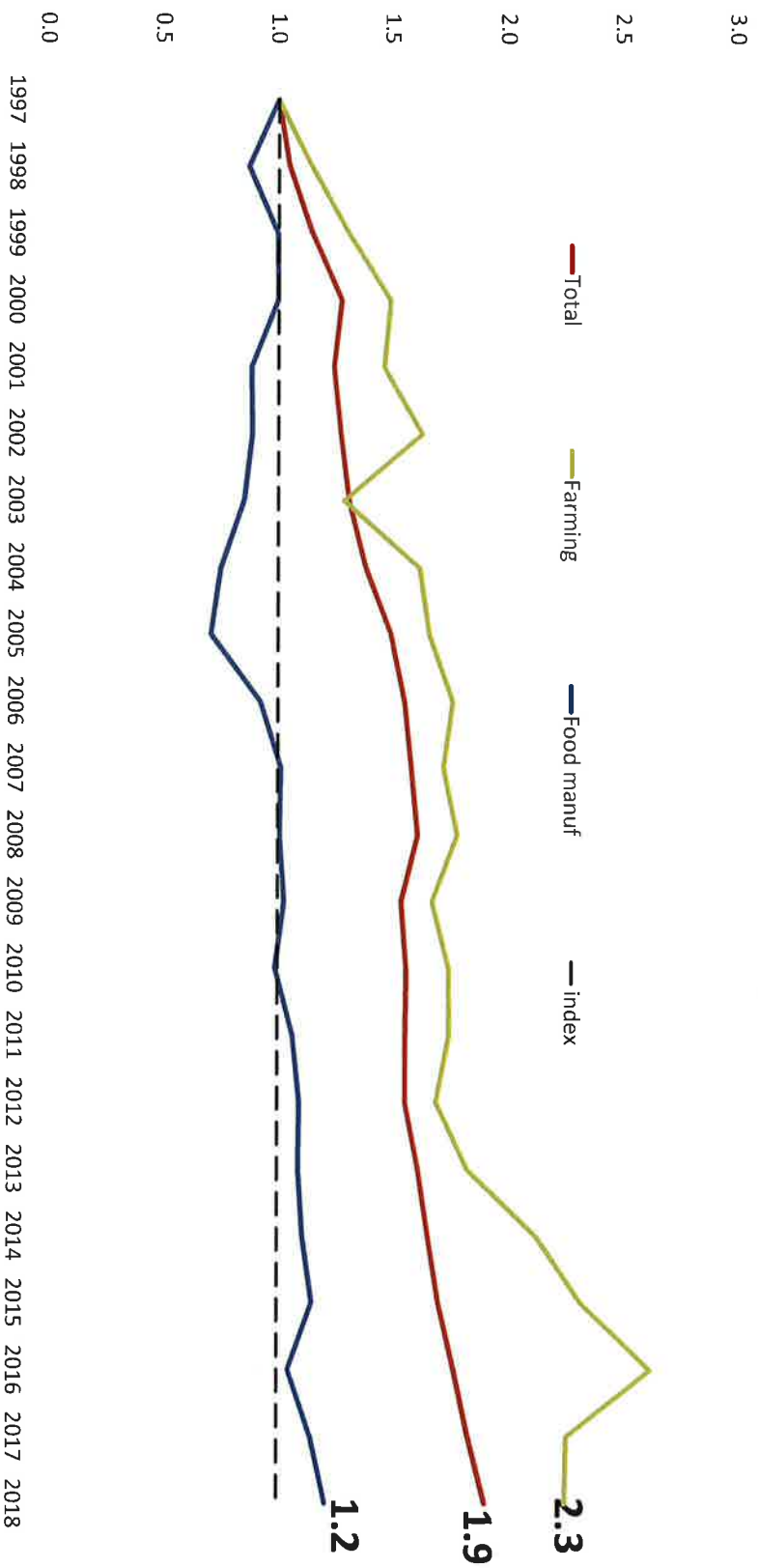


Source: USDA-ERS, University of Idaho



Farm GDP 40% more than Idaho GDP

Indexed Chained Idaho GDP (1997=1)

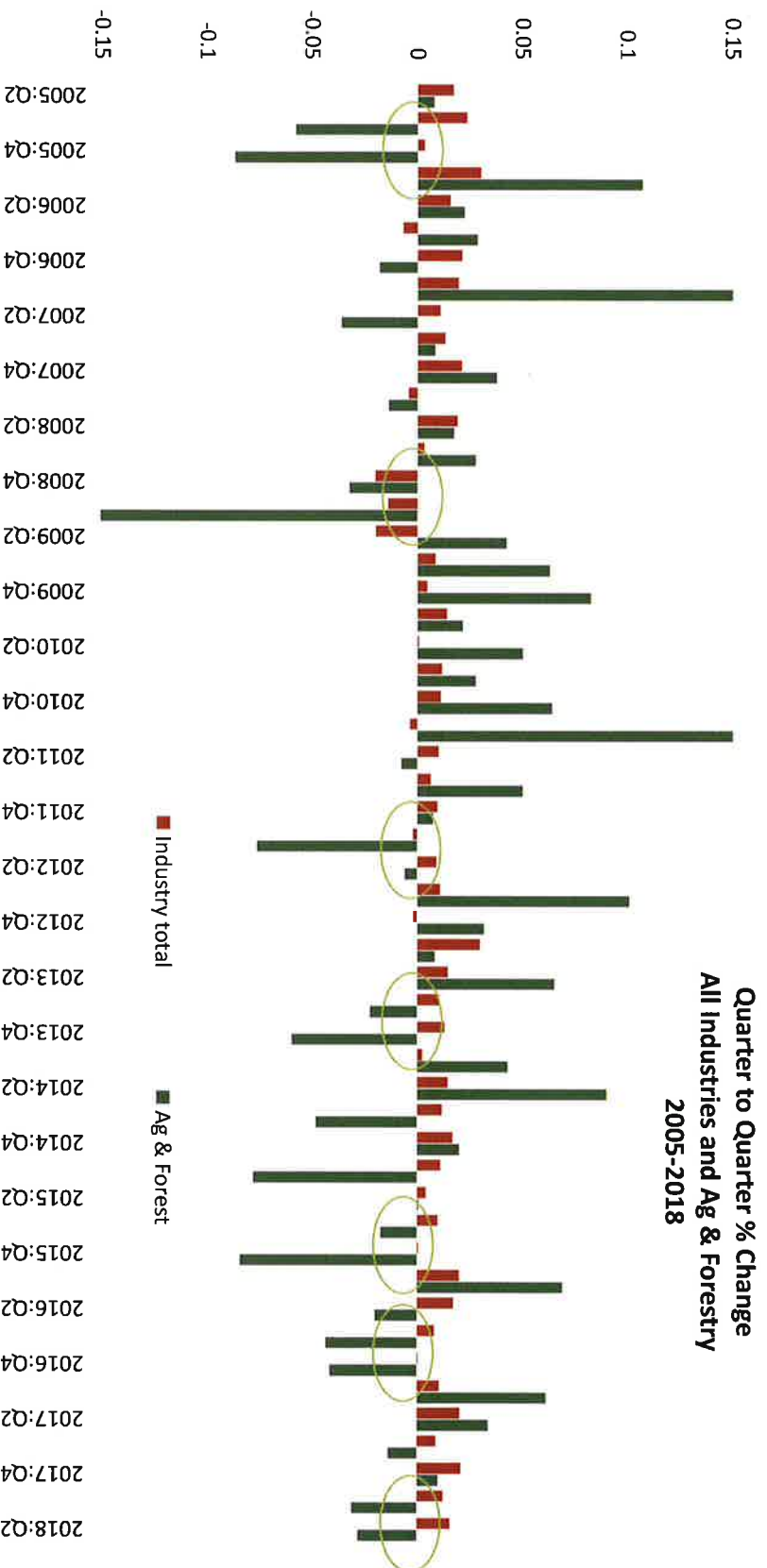


Source: US Dept. of Commerce, BEA



7 Ag recessions since 2005

(quarter to quarter Idaho GDP % change)

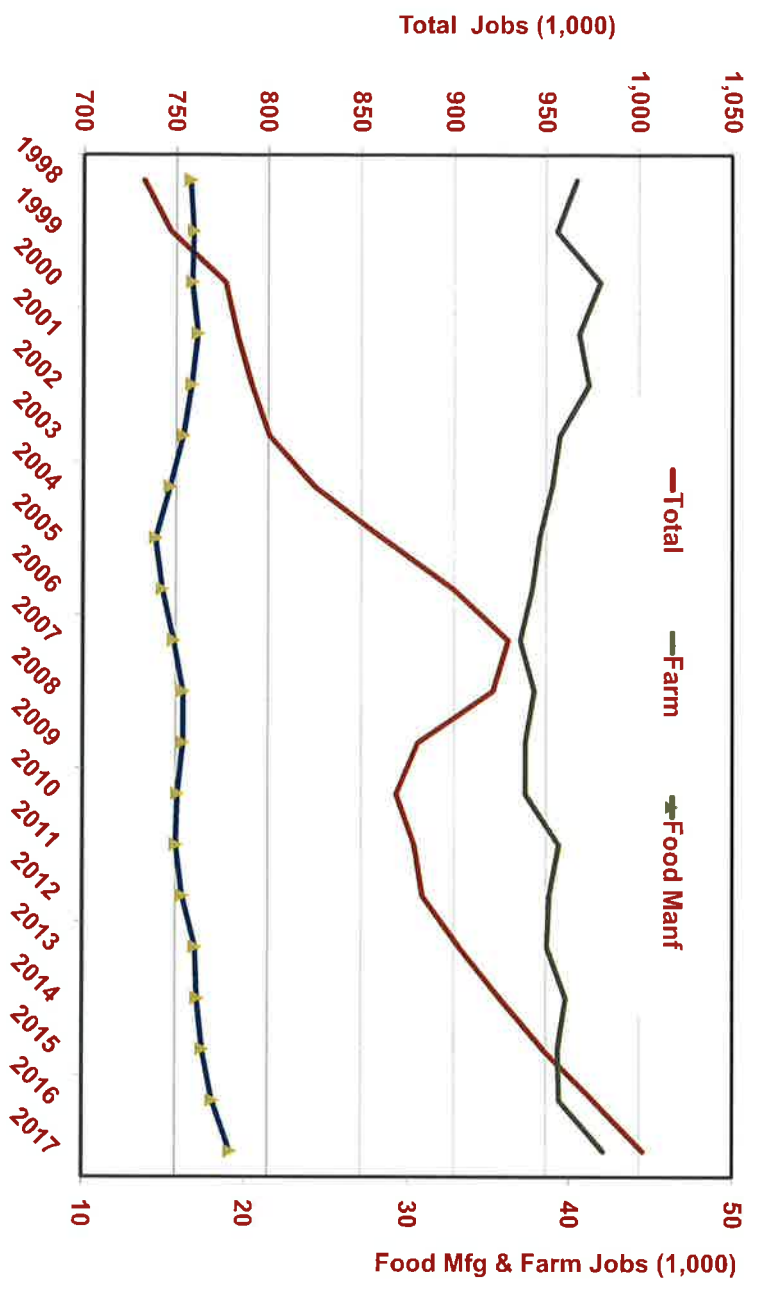


Source: US Dept. of Commerce, BEA



Farming & food manufacturing = steady jobs

Full and Part Time Jobs 1998-2018



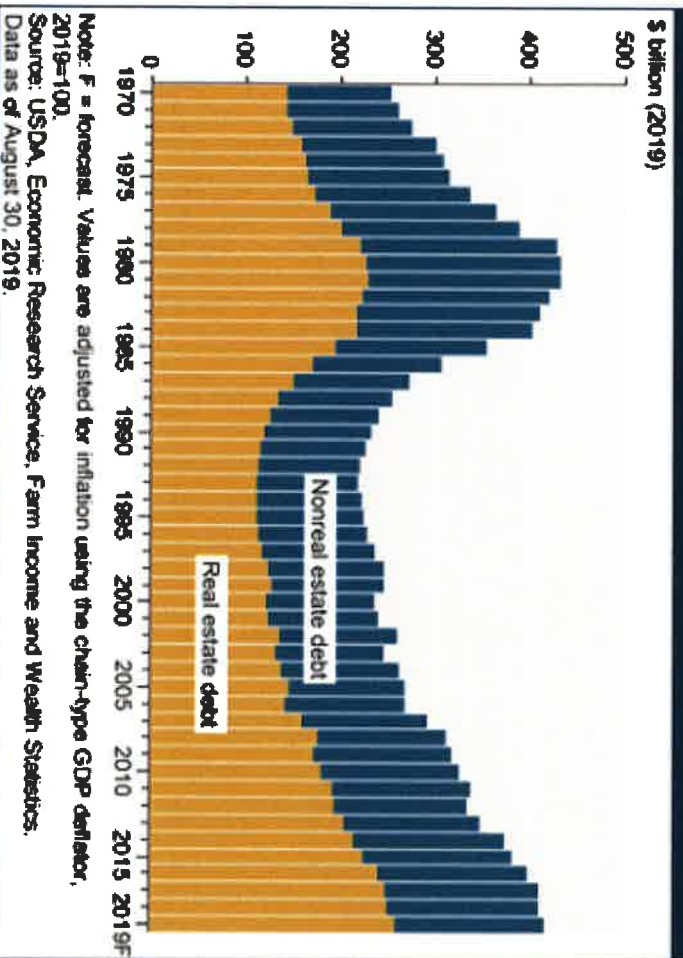
- **Total Idaho**
 - Over one million
 - 1,002,000 jobs
 - Up 3%
- **Farm**
 - 41,000 jobs
 - Down 7%
- **Food mfg**
 - 19,000 jobs
 - Up 1%

Source: US Dept. of Commerce, BEA

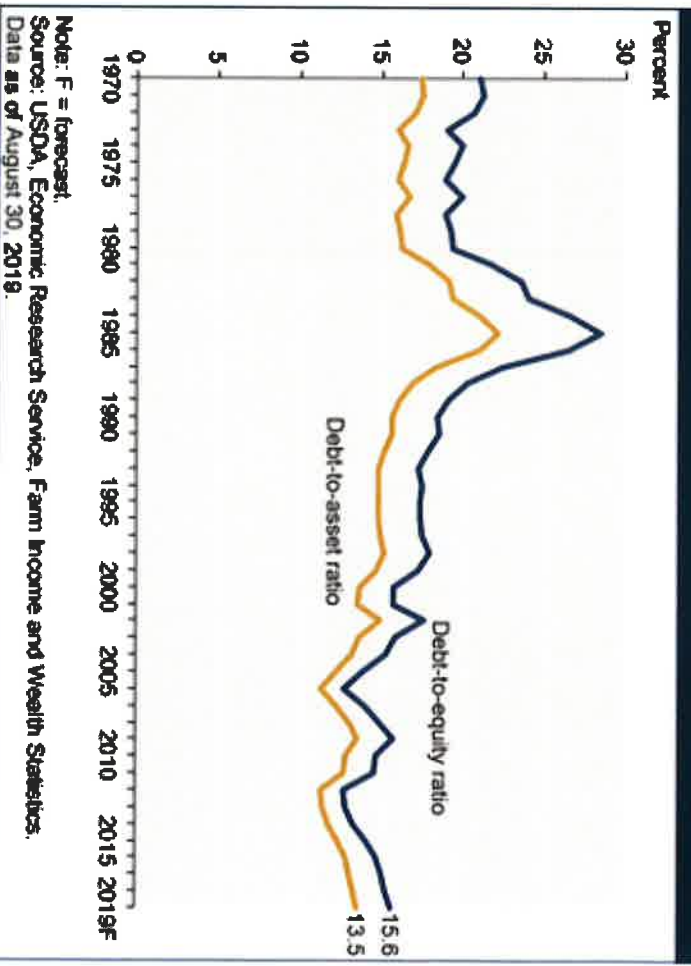


Asset values unchanged and liquidity ratios close to long term averages

Farm sector debt, inflation adjusted, 1970-2019F



Farm sector solvency ratios, 1970-2019F





2020 OUTLOOK GOOD

- **FORWARD INDICATORS**

- Land prices up
- Idaho increasing dairy herds and 2020 forecast good prices
- Beef prices steady
- Forage follows milk prices
- Milk exports are up

- **EXPORTS DETERMINE US COMMODITY PRICES**

- Strongest dollar in 5 years
- Trade problems
- Large grain stocks and Russia the largest exporter

- **STEADY INPUT COSTS**



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QUESTIONS?