

Why is Agricultural Safety Important ?

by Salah Issa and Bob Aherin

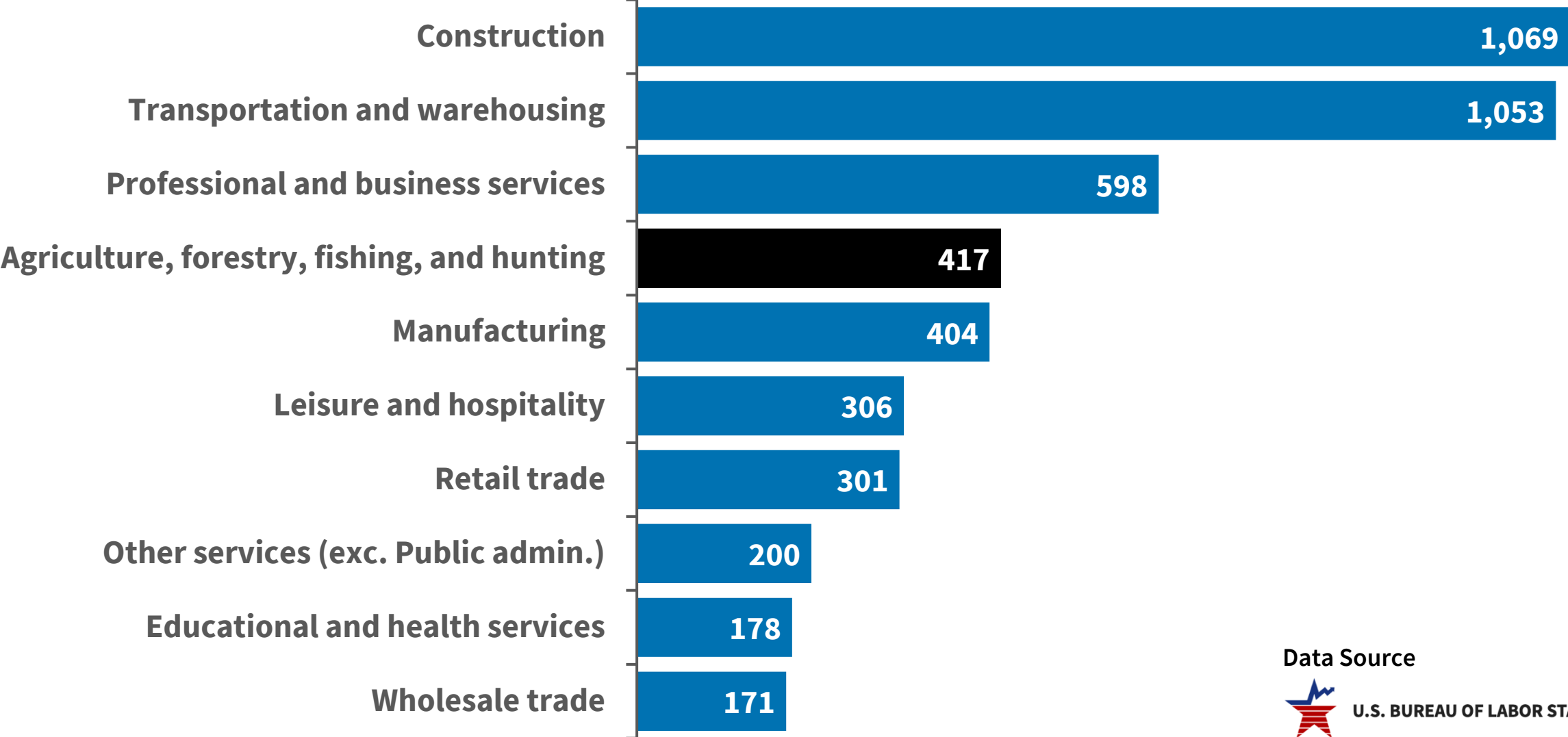


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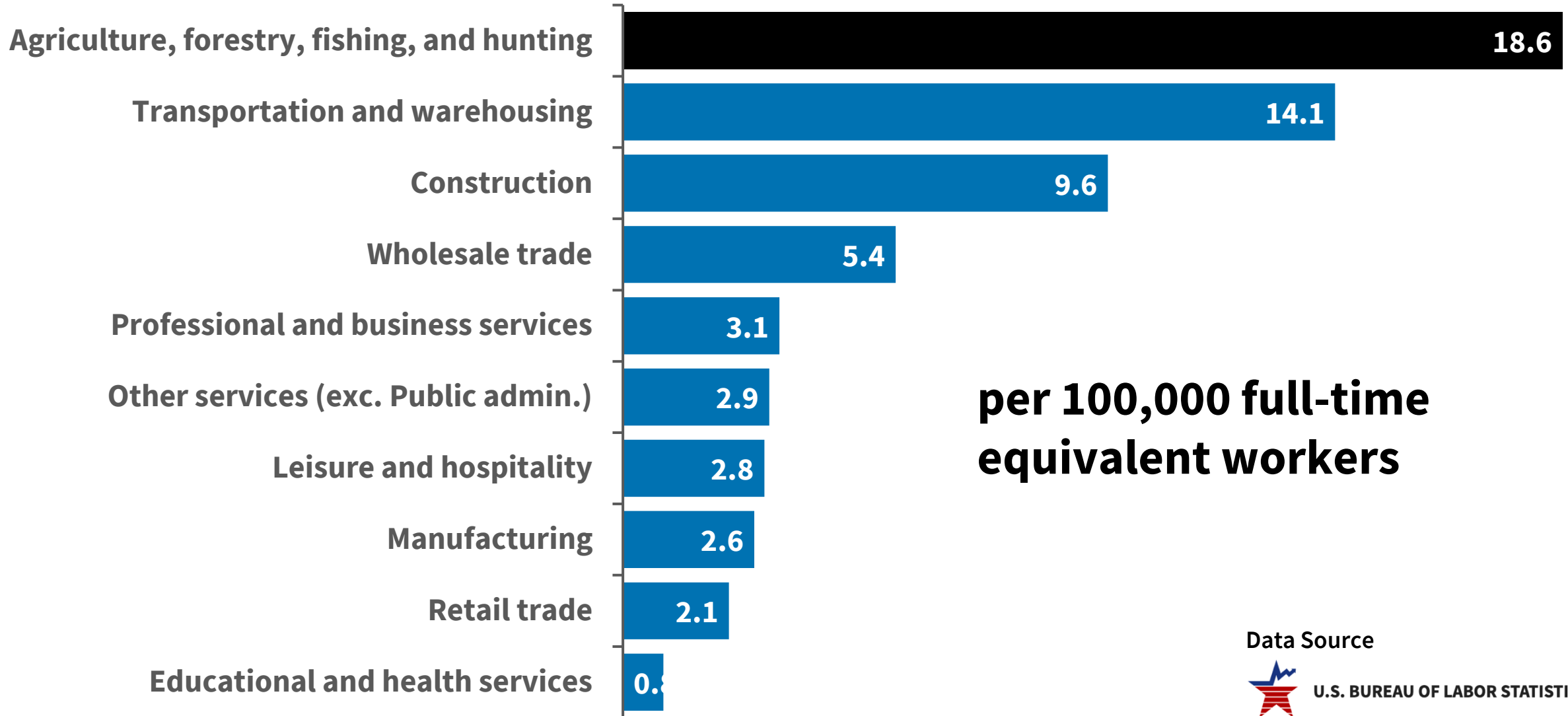
Number of fatal work injuries by private industry sector, 2022



Data Source
 U.S. BUREAU OF LABOR STATISTICS

Ranks among most dangerous industries

Rate of fatal work injuries by private industry sector, 2022



Data Source



U.S. BUREAU OF LABOR STATISTICS

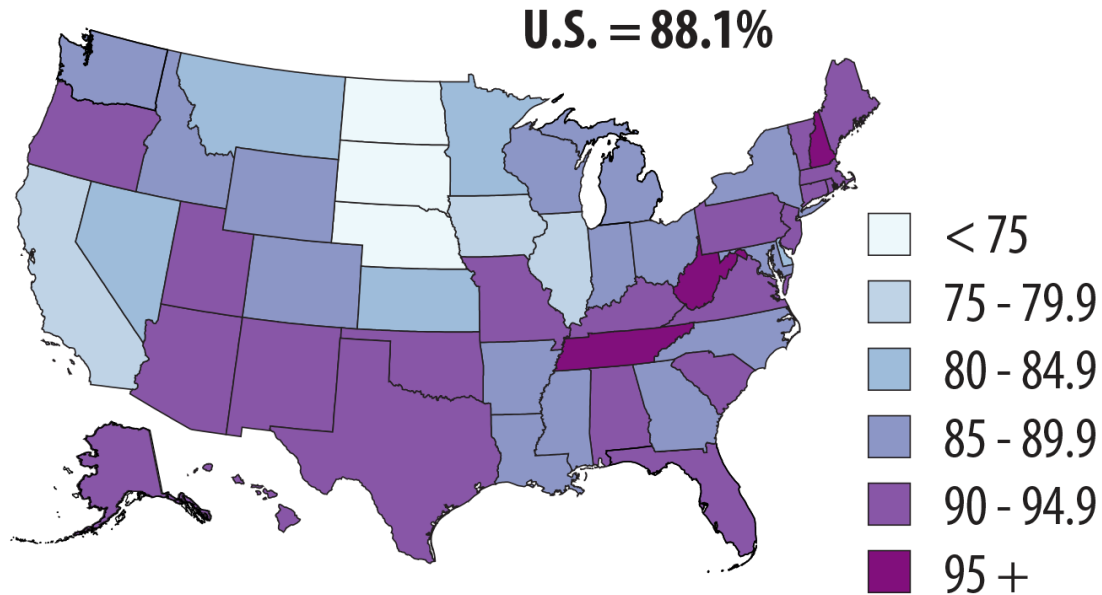
Very different from other industries

Majority are small family farms

Small Family Farms

as Percent of Total Farms, 2017

Small Family Farms Gross Cash Farm Income <\$350,000

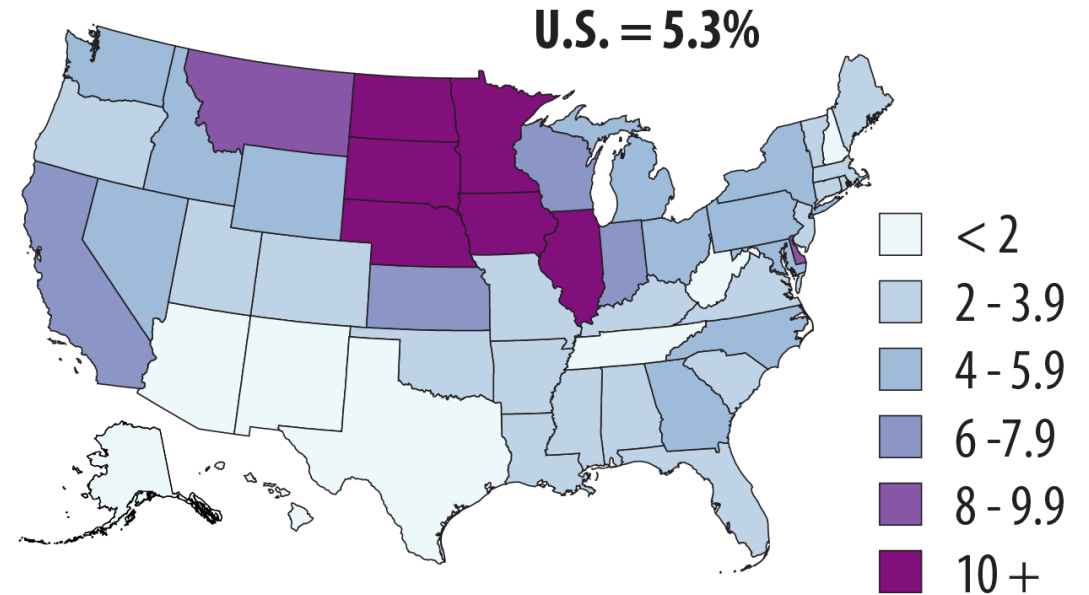


The share of small family farms, particularly those with low sales, is lowest in the Midwest and Northern Plains states, and highest in the South and New England states.

Mid-Size Family Farms

as Percent of Total Farms, 2017

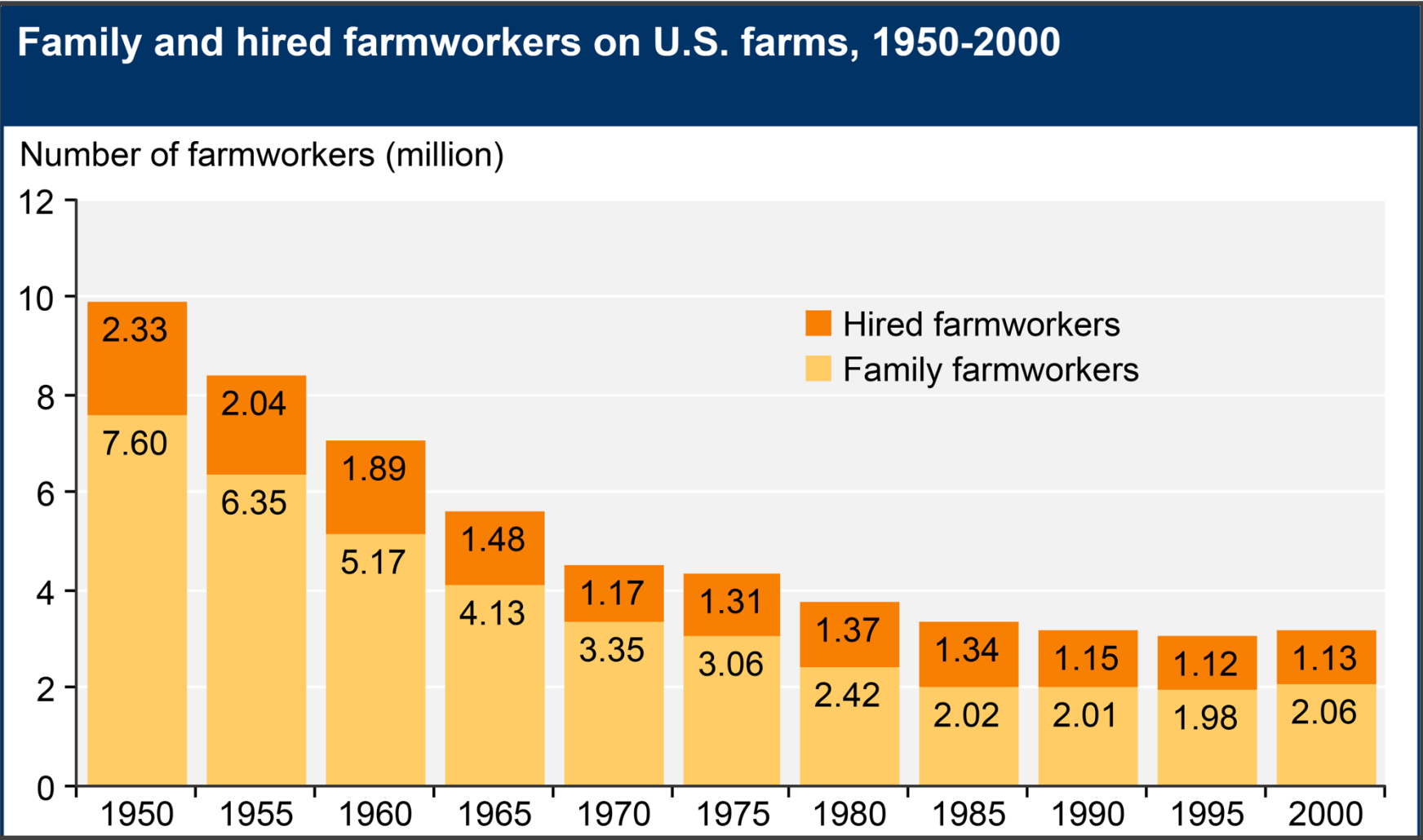
Mid-Size Family Farms Gross Cash Farm Income between \$350,000 and \$999,999



The share of mid-size and large-scale farms is highest in the Midwest and Northern Plains states.

Majority are family workers

Very concentrated only 1.3% of total workforce



Note: Family farmworkers include self-employed farmers and unpaid family members. Hired farmworkers include direct hires and agricultural service workers employed by farm labor contractors.

Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, Farm Labor Survey (FLS). The FLS stopped estimating the number of family farmworkers beginning in 2001. As of 2012, the survey no longer counts contracted agricultural service workers.

Very Diverse workforce

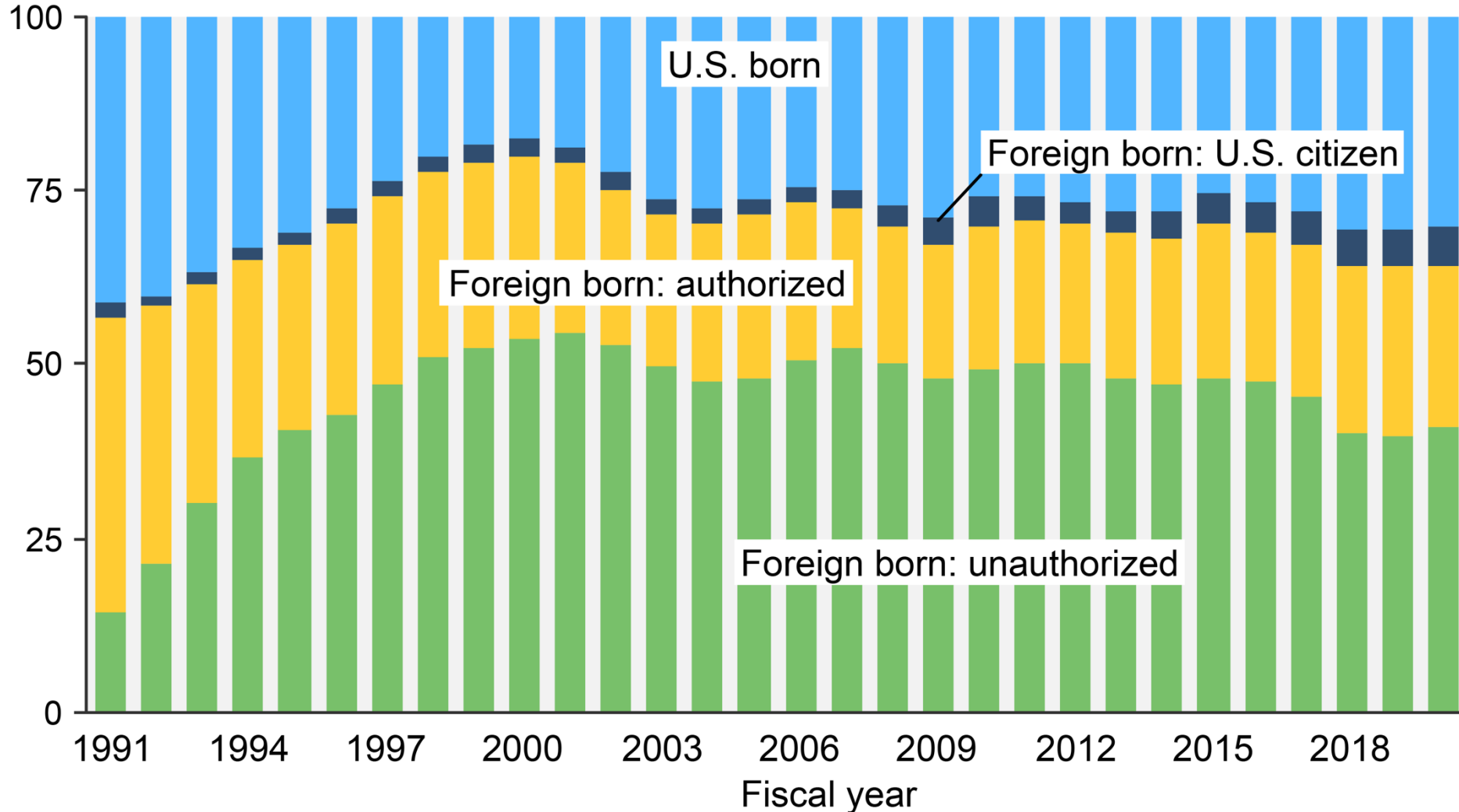
Children, beginning workers, and workers above 65



Hired Workers come from diverse backgrounds

Legal status of hired crop farmworkers, fiscal 1991–2020

Percent



Note: Values for each year are 3-year moving averages to smooth fluctuations due to small sample sizes: e.g. data reported for fiscal 2020 are the average over fiscal 2018-20. U.S. born includes those born in Puerto Rico.

Source: USDA, Economic Research Service using U.S. Department of Labor, National Agricultural Workers Survey.

Tasks vary daily and farmers wears many hats

Businessman or woman

Agronomist

Mechanic

Nutritionist

Scientist

Caretaker

Laborer

Marketer

Engineer

Accountant

Risk Manager

Weatherman

Veterinarian



Under-regulated

Safety and Health regulations do not always apply to agricultural operations.

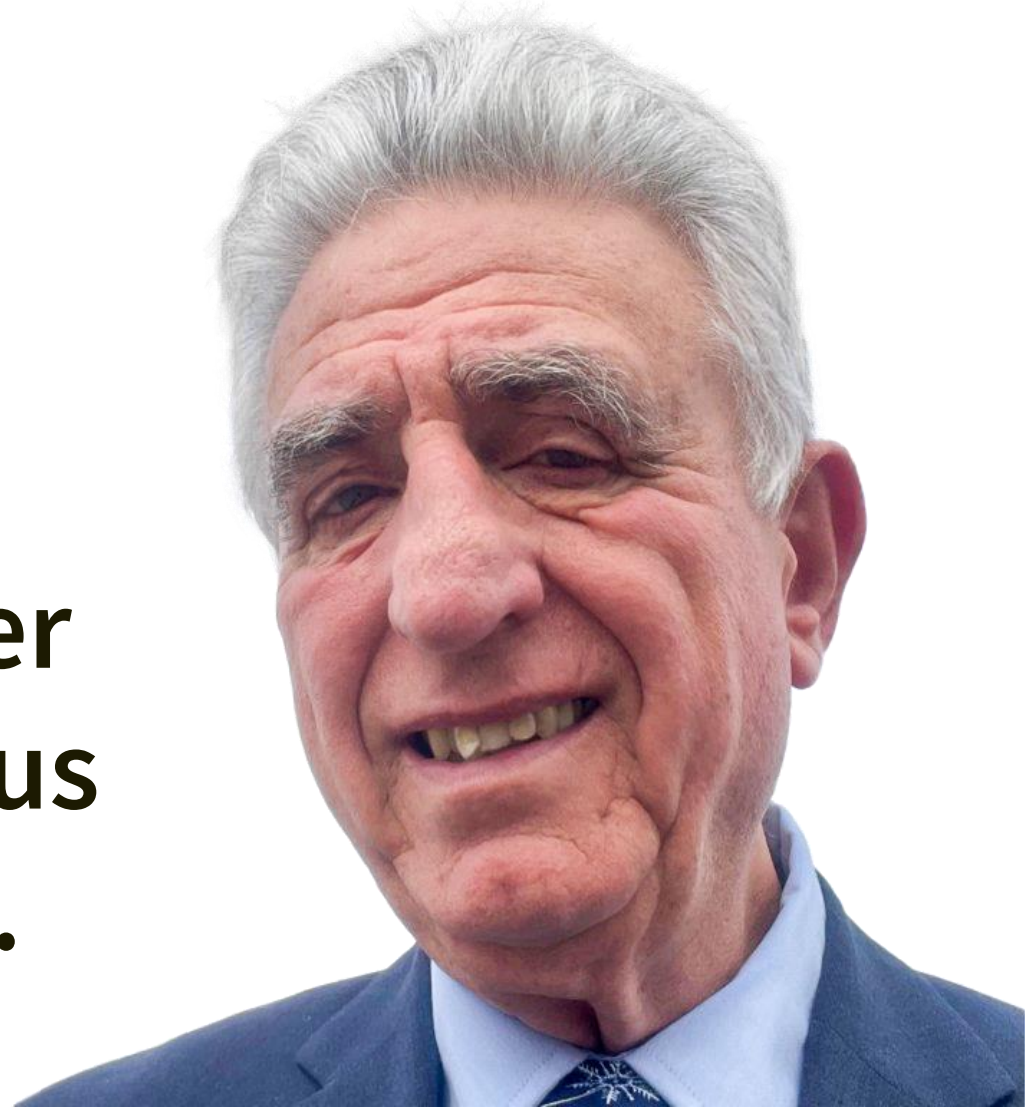
A reflection of the challenges mentioned earlier and history of Agricultural Safety and Health movements



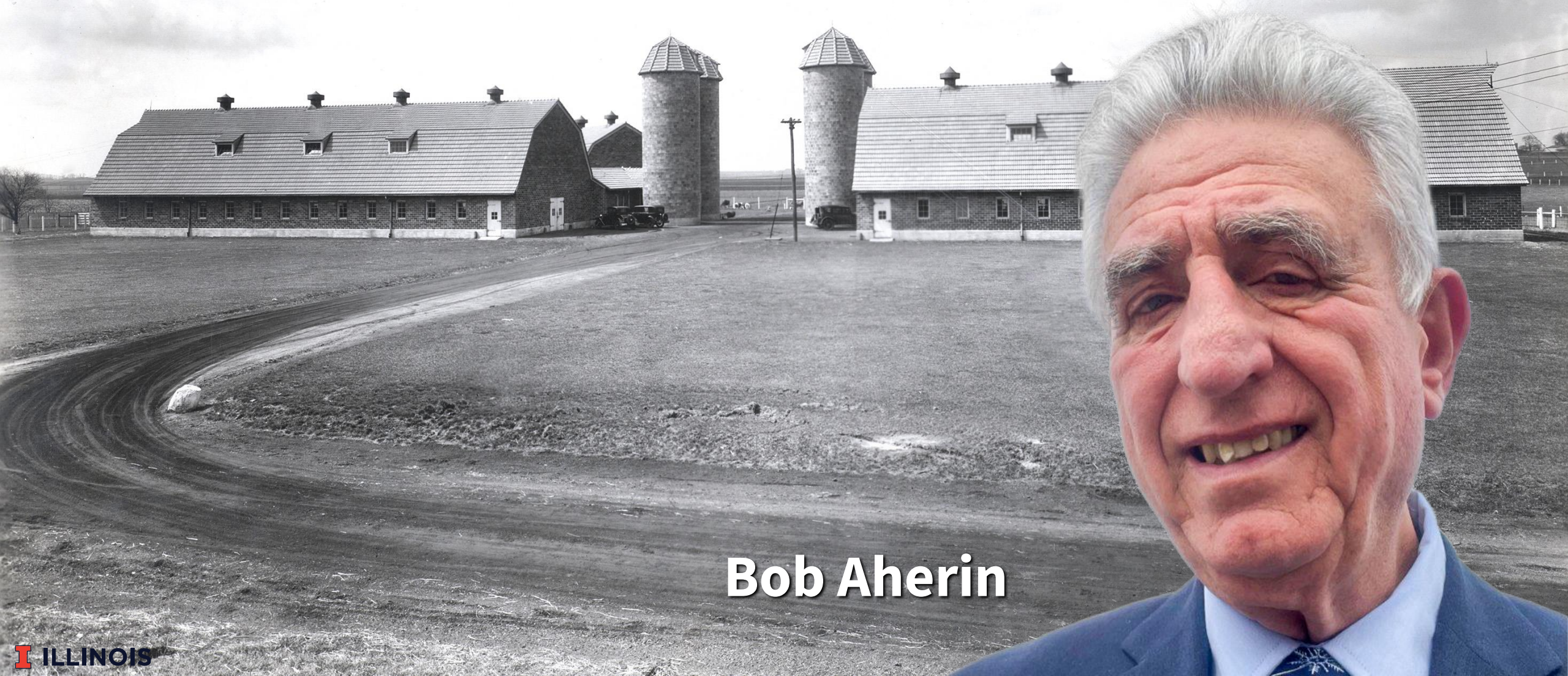
Agricultural Safety & Health Movement

Has been the focus of discussion since the 1940's

We have a great guest lecturer Dr. Bob Aherin to share with us some of the historical trends.



History of Safety & Health in Production Agriculture



Bob Aherin

Safety & Health in Production Agriculture

History less than 80 years

First farmer publication 1918 written by USDA

First research thesis in this area published in 1928 at Iowa State University

1942 First national conference in Chicago

Efforts ramp up in the 1940's

Early 40's President Roosevelt asked NSC to provide leadership in reducing farm accidents – WWII

1944 NSC forms Farm Division (Agricultural Division today) today

Agriculture is an Interest Area within the Business & Industry Division

1944 First **National Farm Safety Week** declared by President Roosevelt

Some states form committees
Illinois & Nebraska 1942,
Kansas 1943

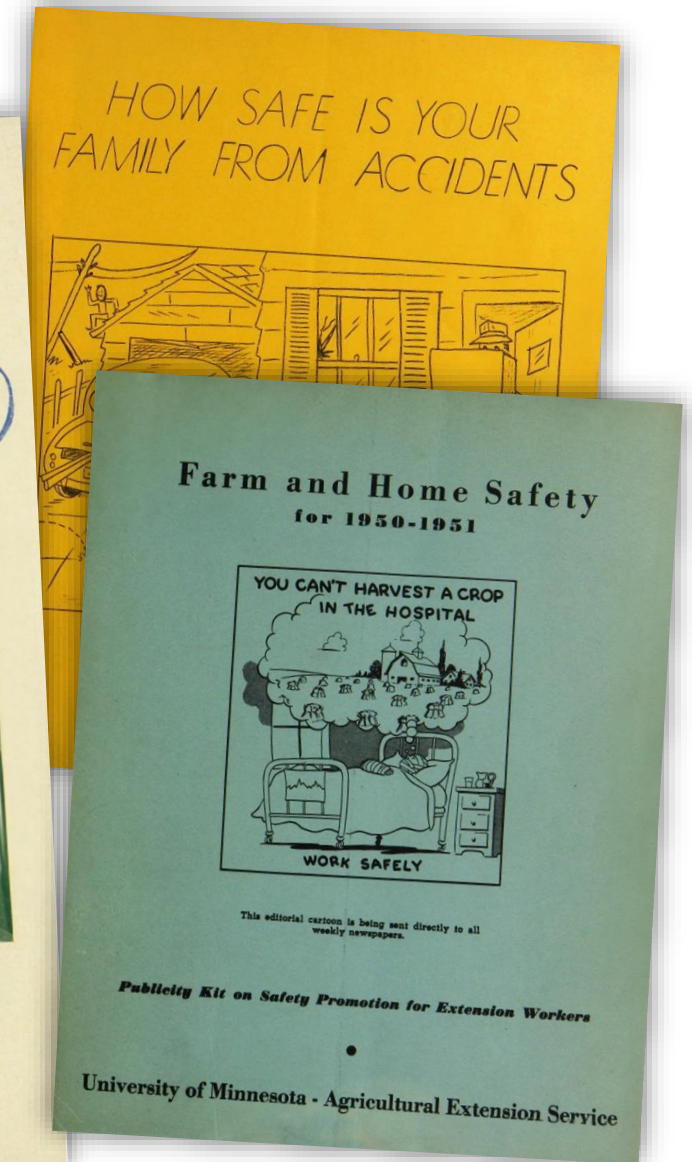
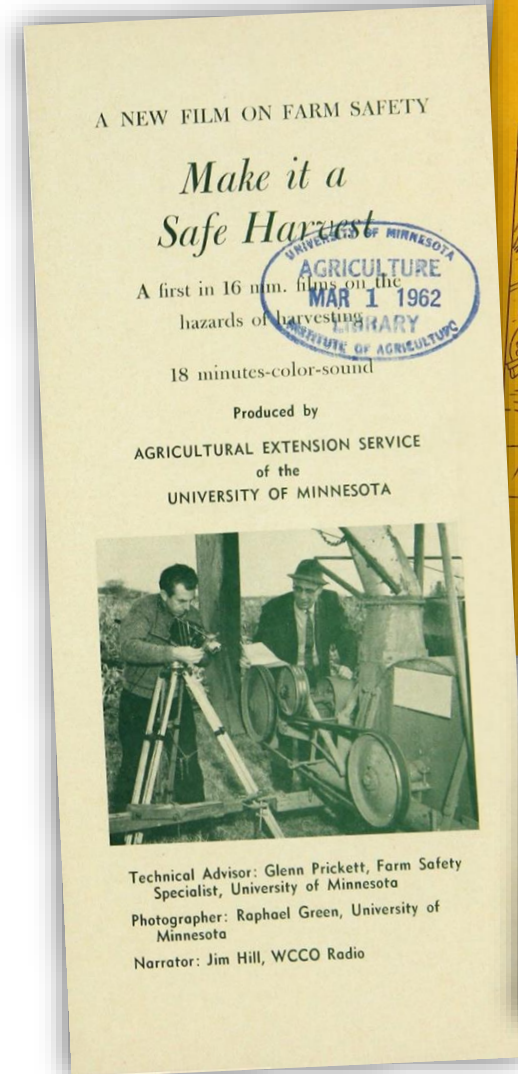


Efforts ramp up in the 1940's

- First national groups involved: Farm Equipment Institute (AEM today), Farm Bureau, ASAE (ASABE today), and Cooperative Extension Service
- 1942 USDA publishes first review of farm and rural home accidents
- 1943 University of Wisconsin appoints first **farm safety specialist** (Ohio & New York 1945, Indiana, Pennsylvania & Michigan 1946)

Agricultural Safety Movement Expands in the 1950's – 1960's

- 1950's Approximately 20 states had Extension farm safety specialists and state organizations
- 1950's to 1970's Programs become more extensive

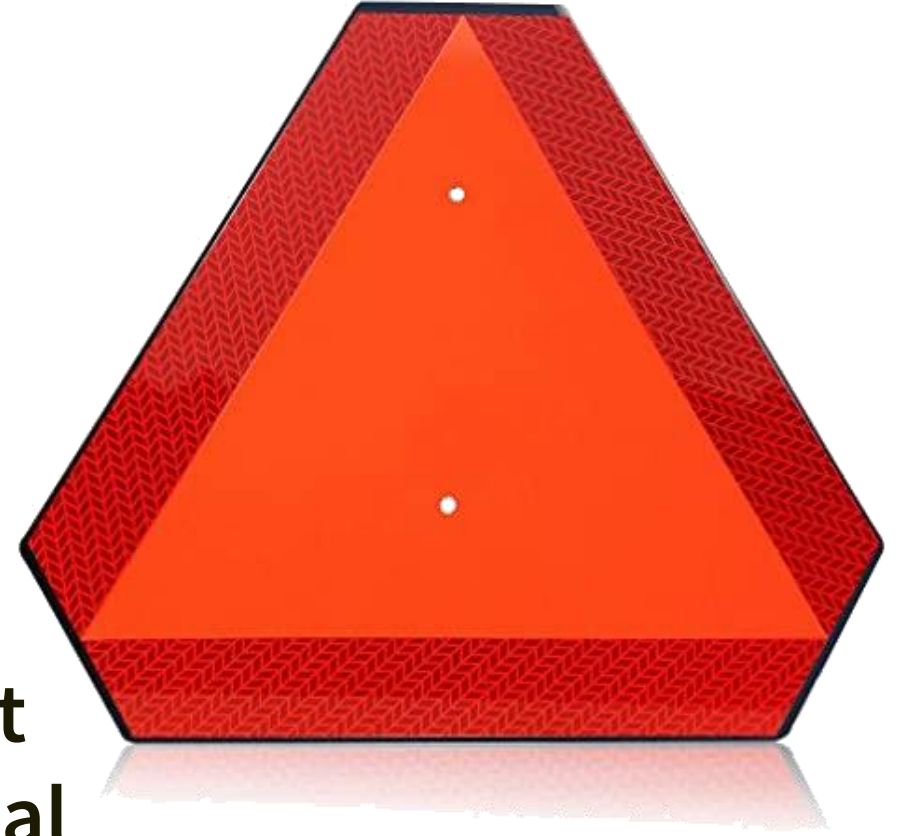


Excitement grows in the 70's

- 1974 Congress appropriates funds for full time Extension safety specialists or expand existing programs
- Primary organizations at the time
 - Farm Division of NSC
 - National Institute for Farm Safety (NIFS – now ISASH)
 - ASAE (now ASABE)
- American Society of Agricultural Engineers (ASAE)
Now called American Society of Agricultural and Biological Engineers (ASABE)
sets goal in 1970 to reduce agricultural accidents 50% by 1980
- Slow Moving Vehicle Emblem & ROPS standards are published.

Slow Moving Vehicle (SMV) Emblem campaign

- The first formal introduction of the SMV emblem was at a University of Iowa Invitational Safety Seminar in 1962.
- Establishment of new standards
- In 1971 the SMV emblem became the first ASAE standard to be adopted as a national standard by the American National Standards Institute (ANSI)



Tractor overturn prevention programs

- The National Safety Council (NSC) established the Tractor Overturn Prevention and Protection Program (TOPP) in 1967
- OSHA approves first standard in 1976
- Achievements and gaps



Early 80's Bring Disappointment

- 1980 Agriculture moves to **top of NSC most hazardous industry list**
- ASAE (ASABE) goal of reducing by 50% results in only an **8% reduction**
- Ag fatality rate improved in the 70's but not as much as mining & construction
- USDA doesn't increase support for Extension safety specialists – some states dropped position or reduced to half time
- NSC reduces ag staff from 3 positions to 1

Last Half of 80's Brings Optimism

- Development of National Traumatic Occupational Fatalities (NTOF) database
- Identified Agricultural Workforce having death rate **3 times the national average**
- Farm Safety for Just Kids launched in 1986
- 1985 ASAE ROPS standard requires all new tractors to be manufactured with a ROPS
- 1988 ASAE president appoints safety study committee to examine the society's role in ag safety

The 90's Brings New Funding

- 1990 Congress appropriates \$11.2 million for research, surveillance, research & interventions (increased to \$18.2 million in 1991)
- 1991 U.S. Surgeon General sponsored national conference on agricultural safety and health – Des Moines, IA
- 1991 W.K. Kellogg Foundation provides \$3 million to support community-based programs
- 1996 Congress appropriates \$5 million per year for five years to address childhood injuries in agriculture to be administered by CDC/NIOSH
- Major Study on lighting and marking of farming equipment completed at Ohio State

The New Millennium

Using the Past and Present to Map Future Actions

March 1-3, 2001 Baltimore, Maryland

AgriSafe Network initiated in 2003
by Rural Nurses focused on building
competency of health & safety professionals



OSHA Grain Safety Education & Enforcement

- Major Grain Handling Safety Initiatives
- Grain Handling Safety Coalition Formed (OSHA, GHSC, NGFA)

New initiatives in ag mental health

What is the state of Ag Safety Now?

We are going to look at some quick statistics about areas of concern including:

- Cost of injuries
- Type of injuries
- Impact on special populations
(young, elderly, women and migrant workers)

Cost of Agricultural Injury

in United States Dollars

Claim Type	Number	Percent	Mean	Median	Sum	Percent
Medical only	570	65.8%	\$1,462	\$488	\$833,094	3.9%
Temporary Disability	178	20.6%	\$18,591	\$7,927	\$3,309,218	15.4%
Permanent Disability	113	13.0%	\$135,210	\$135,210	\$15,278,760	71.1%
Death	5	0.6%	\$416,182	\$289,554	\$2,080,912	9.7%
Overall	866		\$24,829	1,066	\$21,501,985	

Total cost incurred for workers' compensation payable claims by claim type (n = 866).

Disease and Illness

Illness prevalence (%)

- Musculoskeletal pain (59%)
- respiratory conditions (24%)
- hearing loss (53%)
- skin cancer (11%)
- work-related stress (26%)

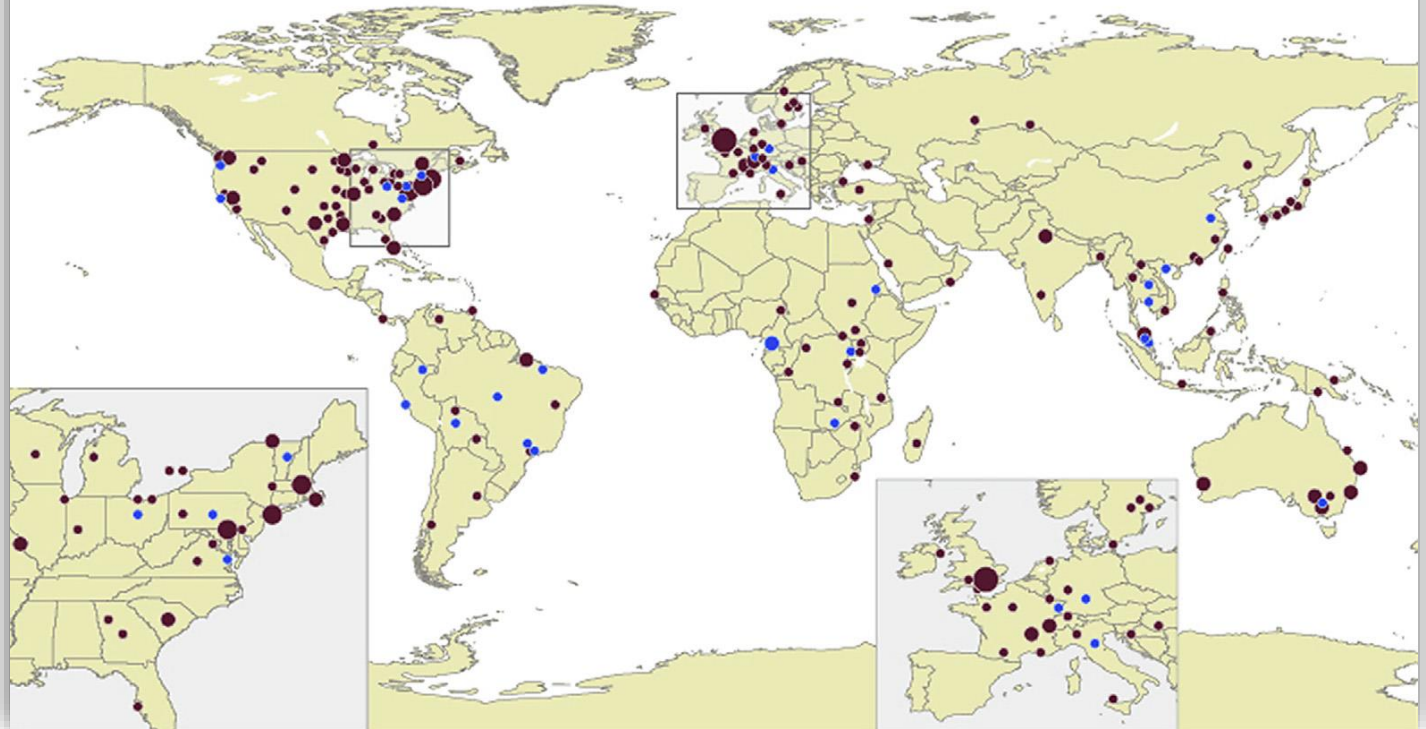
*Respiratory conditions may be related to contact with infectious disease agent.

Emerging Zoonotic Disease Events, 1940-2012

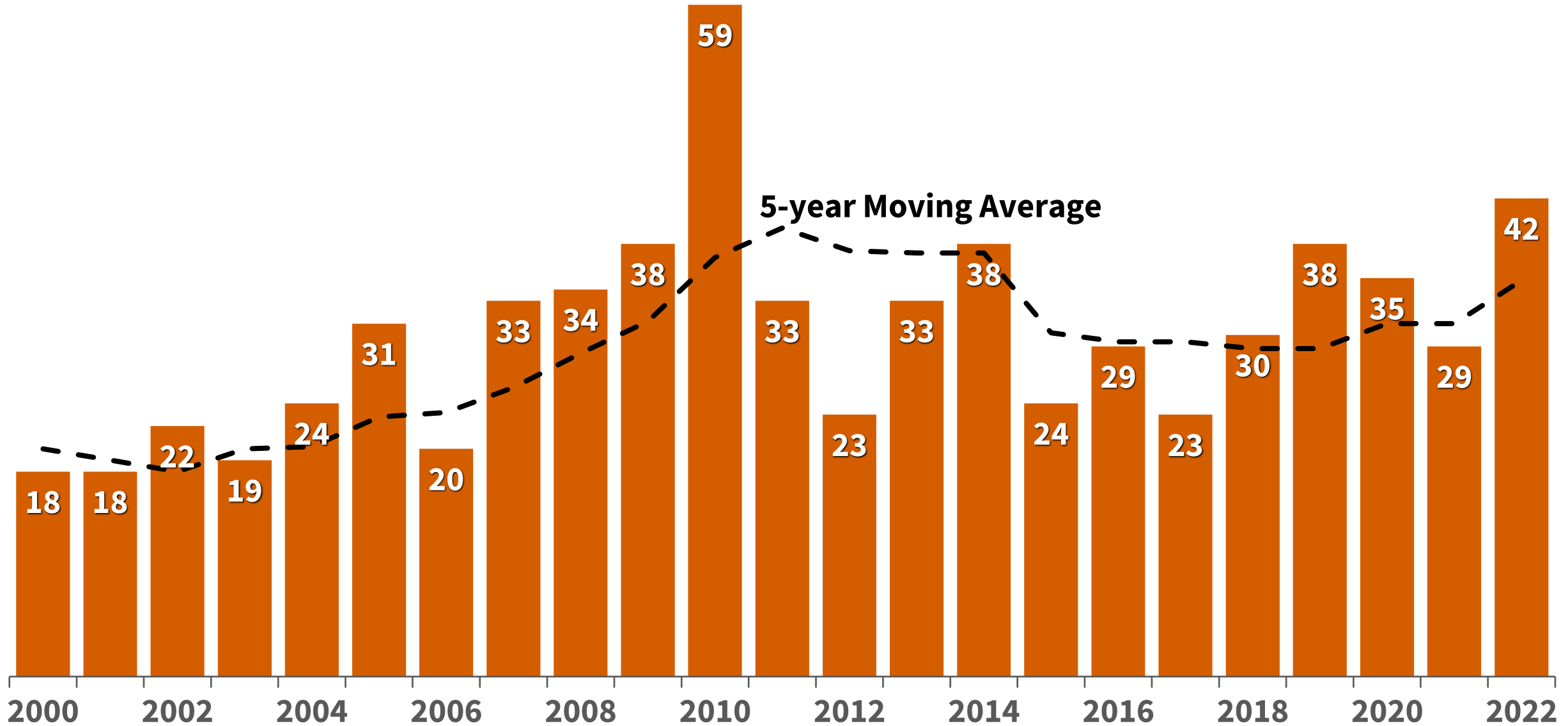
Potential Hotspots in US, Western Europe, Brazil, Southeast Asia

Most emerging human diseases come from animals. This map locates zoonotic events over the past 72 years, with recent events (identified by an ILRI-led study in 2012) in blue. Like earlier analyses, the study shows western Europe and western USA are hotspots; recent events, however, show an increasingly higher representation of developing countries.

• 1 EVENT • 2-3 EVENTS • 4-5 EVENTS • 6 EVENTS • EVENTS IDENTIFIED IN 2012 (recent emergence)

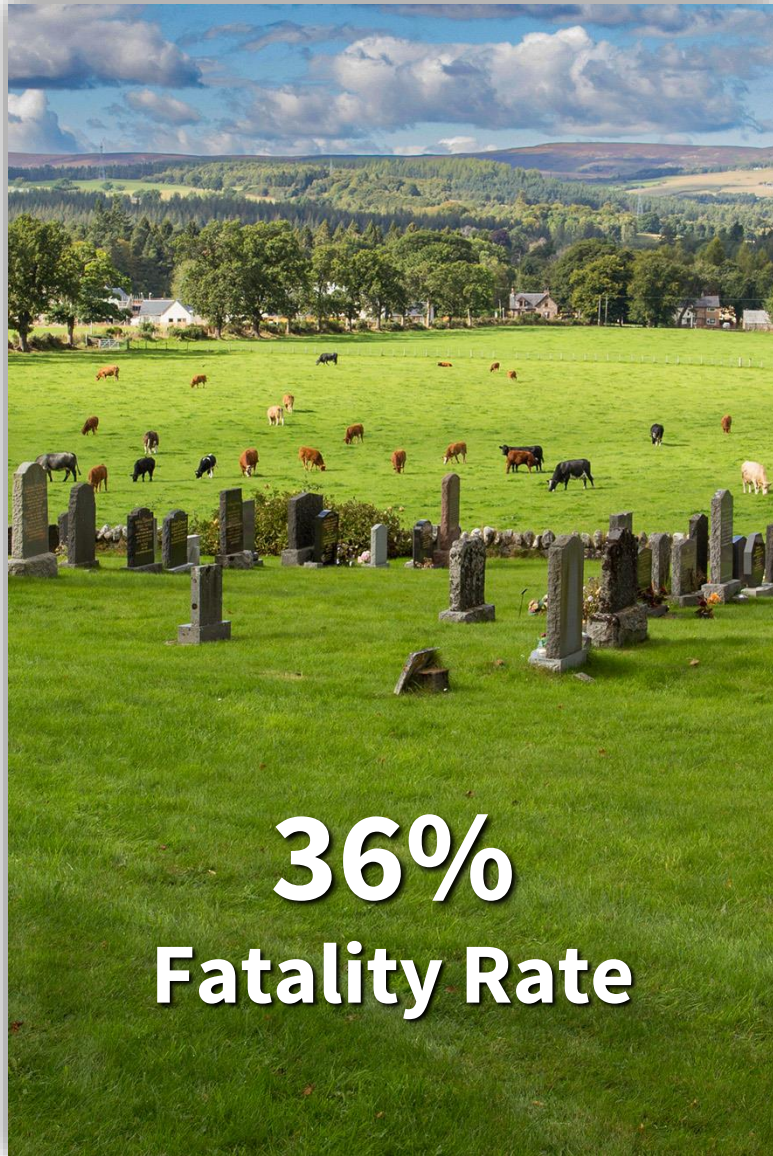


Number of Grain Entrapments



Source: Purdue University Confined Space report

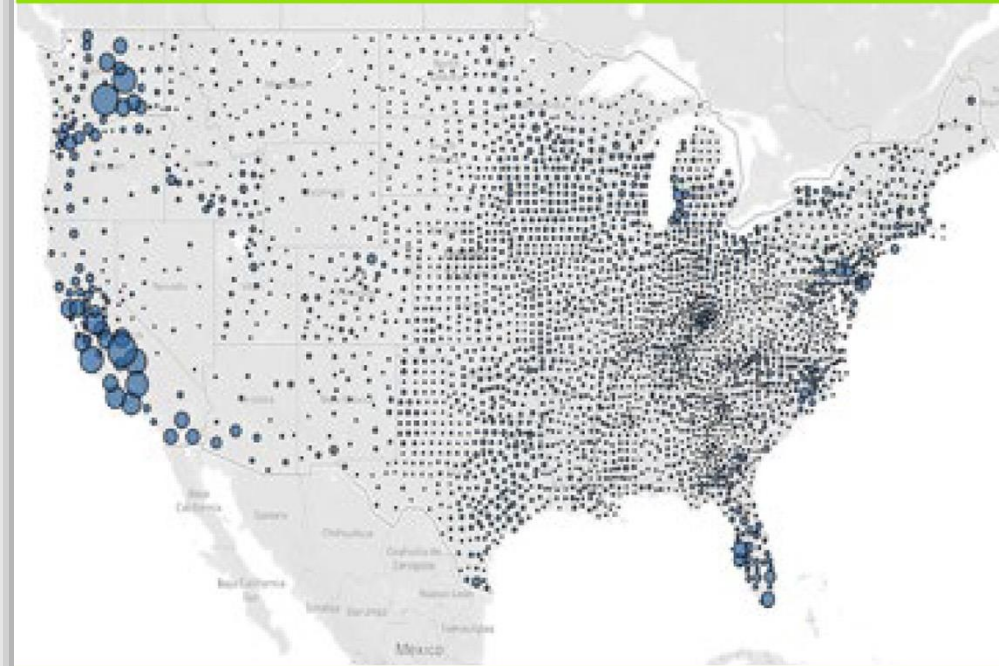
Grain Entrapments Stats - 2022



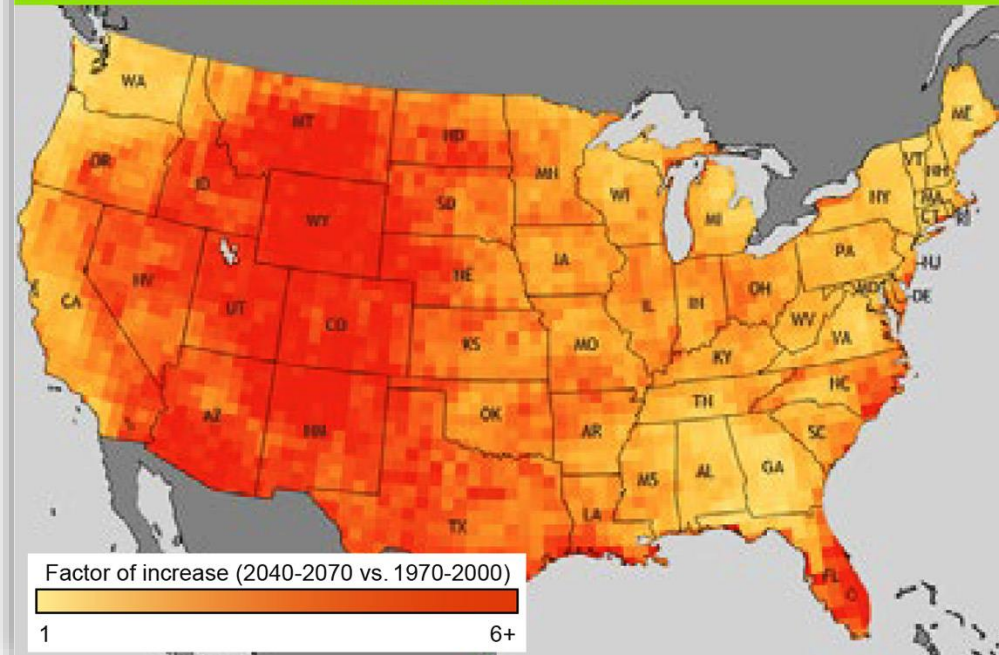
Heat Stress

- Mortality from heat-related illness is 20 times higher for crop workers in the U.S. than private industry and non-federal government workers.
- The average U.S. agricultural worker is currently exposed to 21 working days in the summer growing season that are unsafe due to heat.

DISTRIBUTION OF CROP WORKERS IN THE US



INCREASE IN TOTAL HEATWAVE DAYS

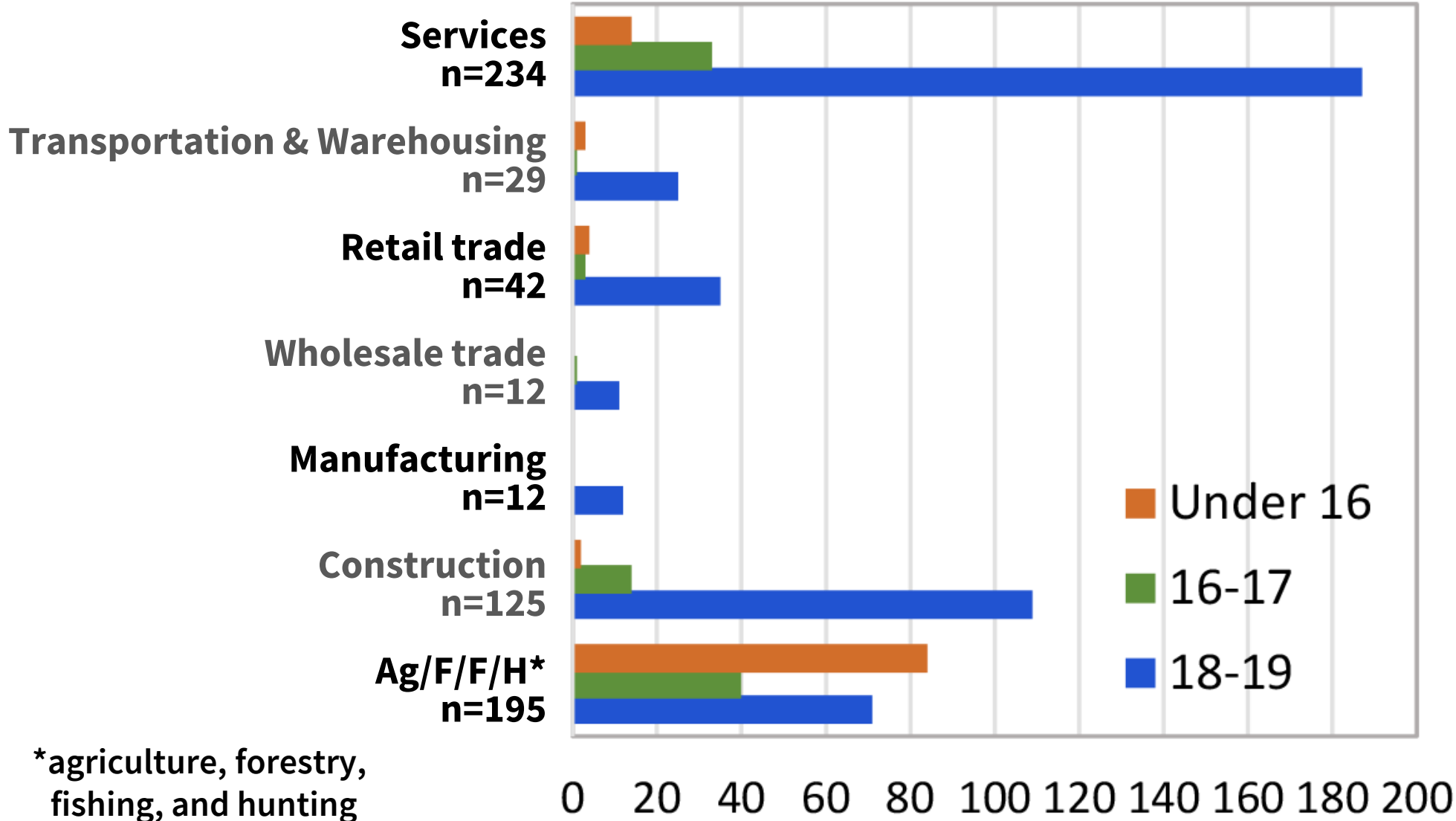


Source:

https://www.edf.org/sites/default/files/2023-07/EDF040_Heat%20Stress_V5.pdf

Number of Occupational Youth Fatalities by Industry

2011 to 2020



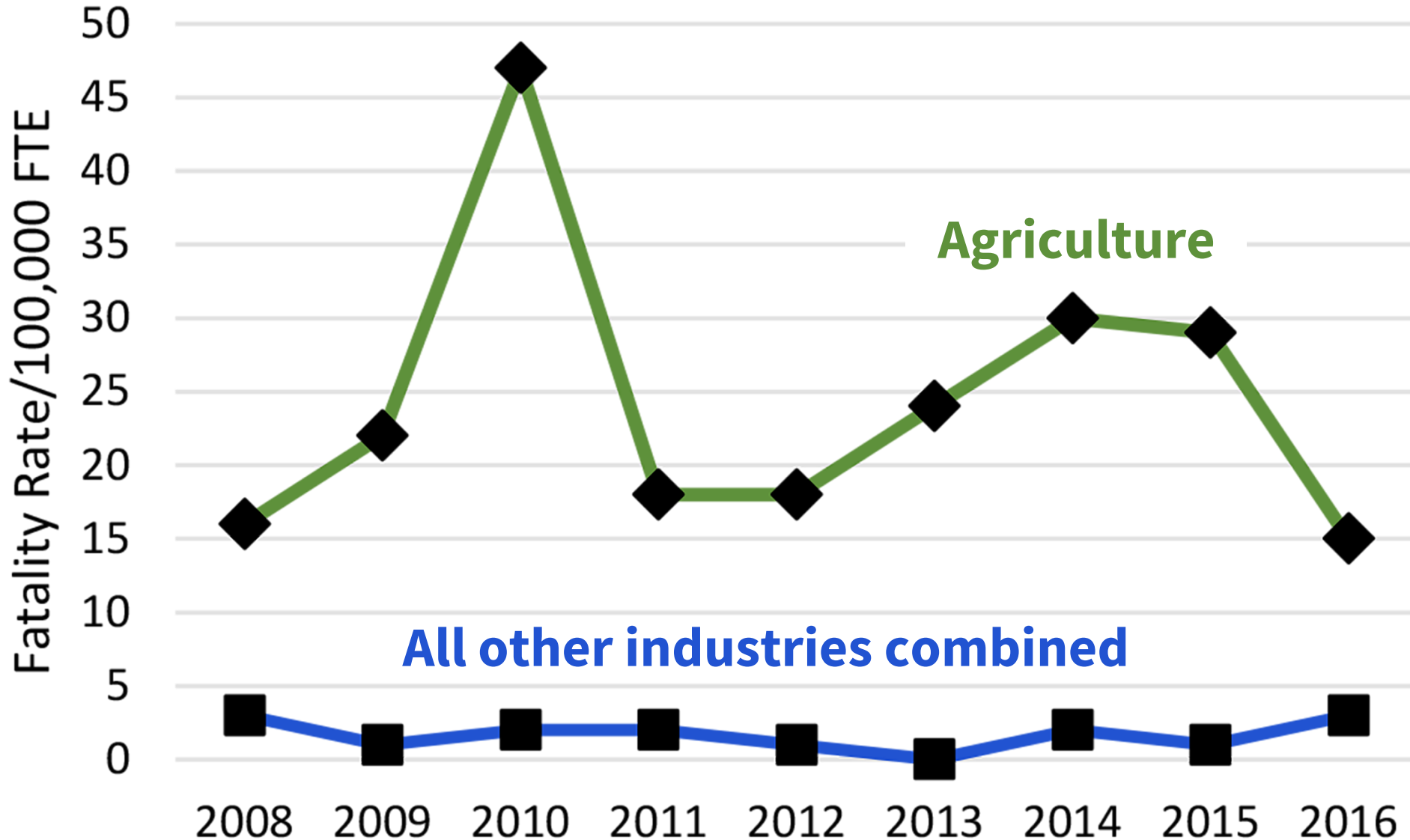
*agriculture, forestry, fishing, and hunting

 Marshfield Clinic
Research Institute

Data from US Bureau of Labor Statistics Census of Fatal Occupational Injuries.

Youth Ages 15 to 17 Fatality Rate by FTE*

2008 to 2016



*FTE = full-time equivalent

 Marshfield Clinic
Research Institute

Data from US Bureau of Labor Statistics Census of Fatal Occupational Injuries.

All other industries combined

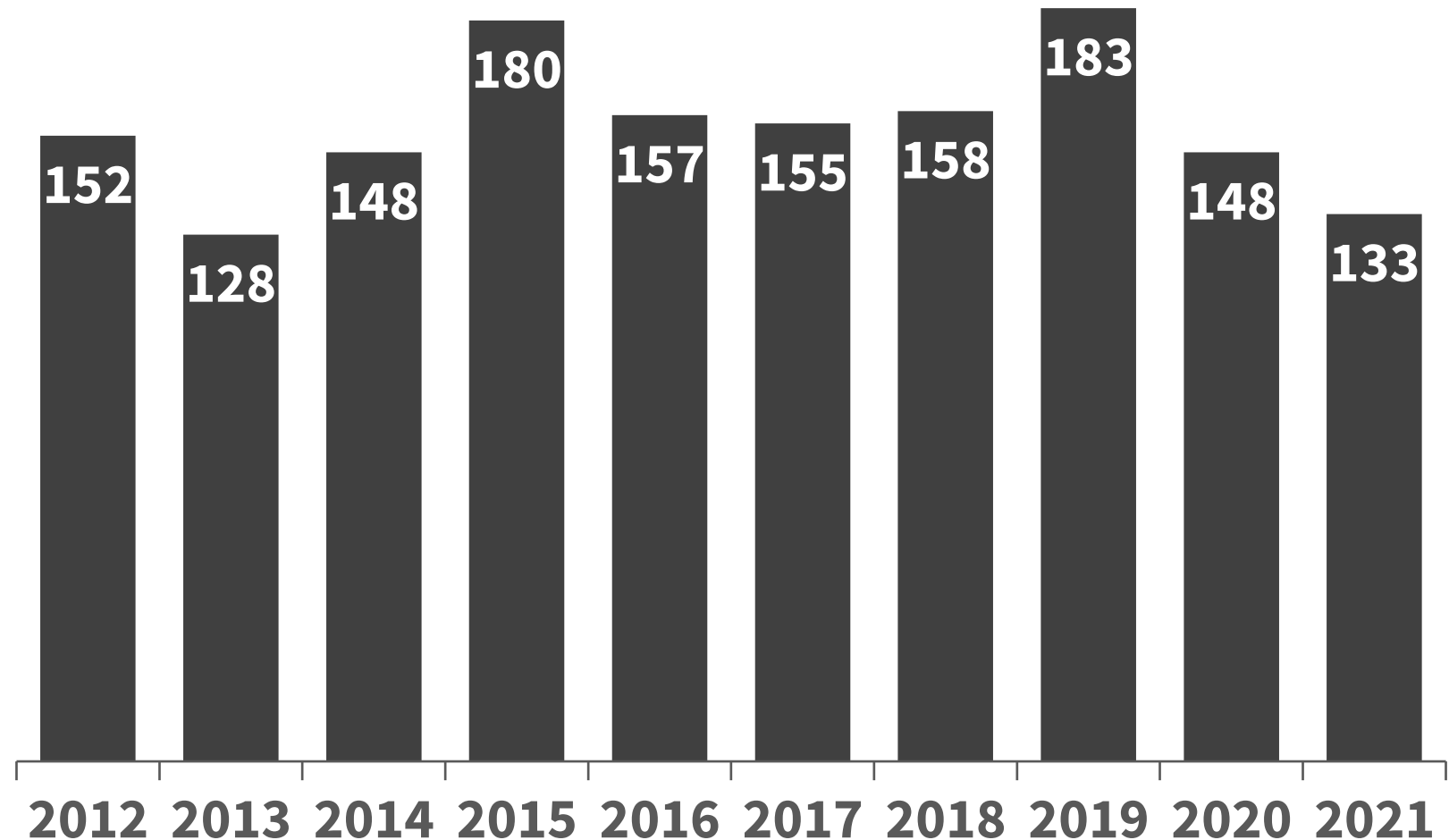
Agriculture

Number of fatal workplace injuries to agricultural workers, 2012 to 2021

40% of injuries occurred to workers above age 55

About 40% of injuries occurred to Hispanic or Latino workers.

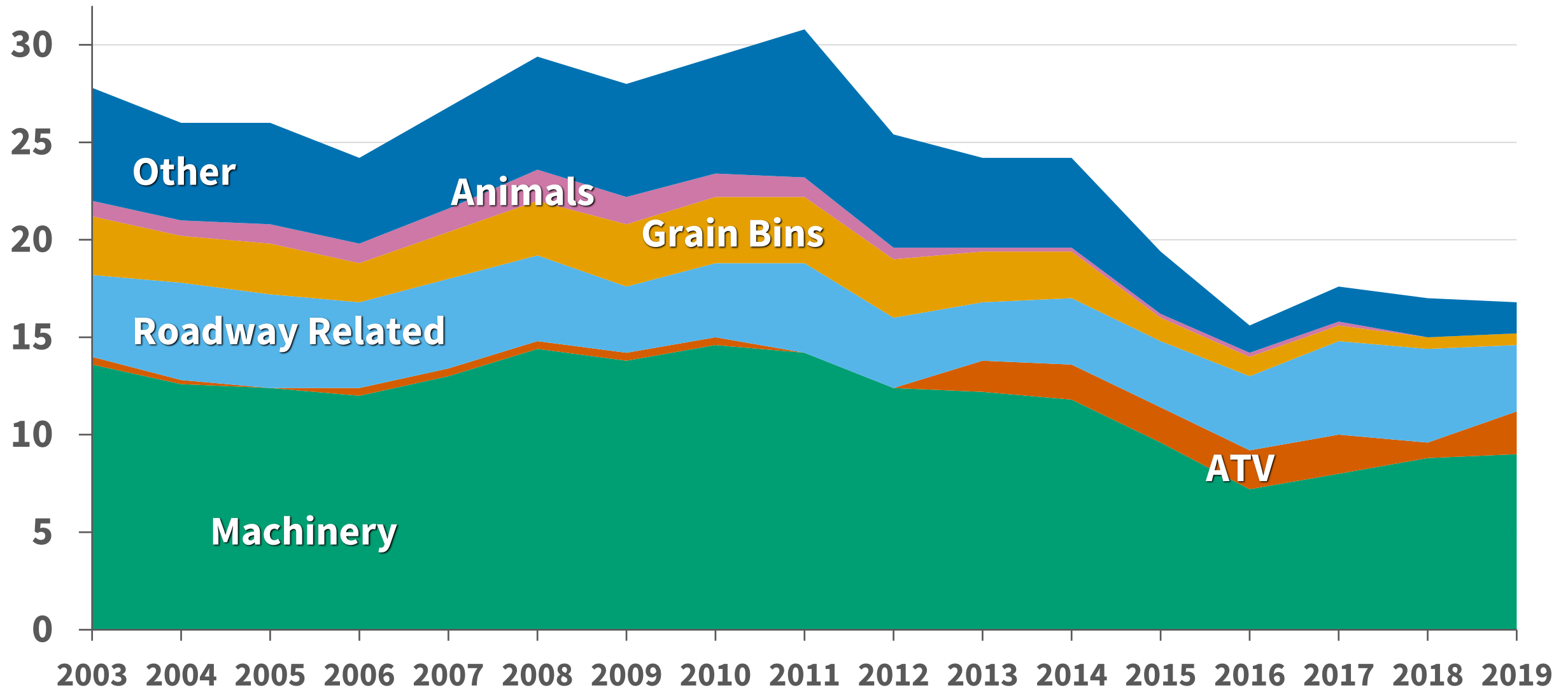
About 30% were self-employed.



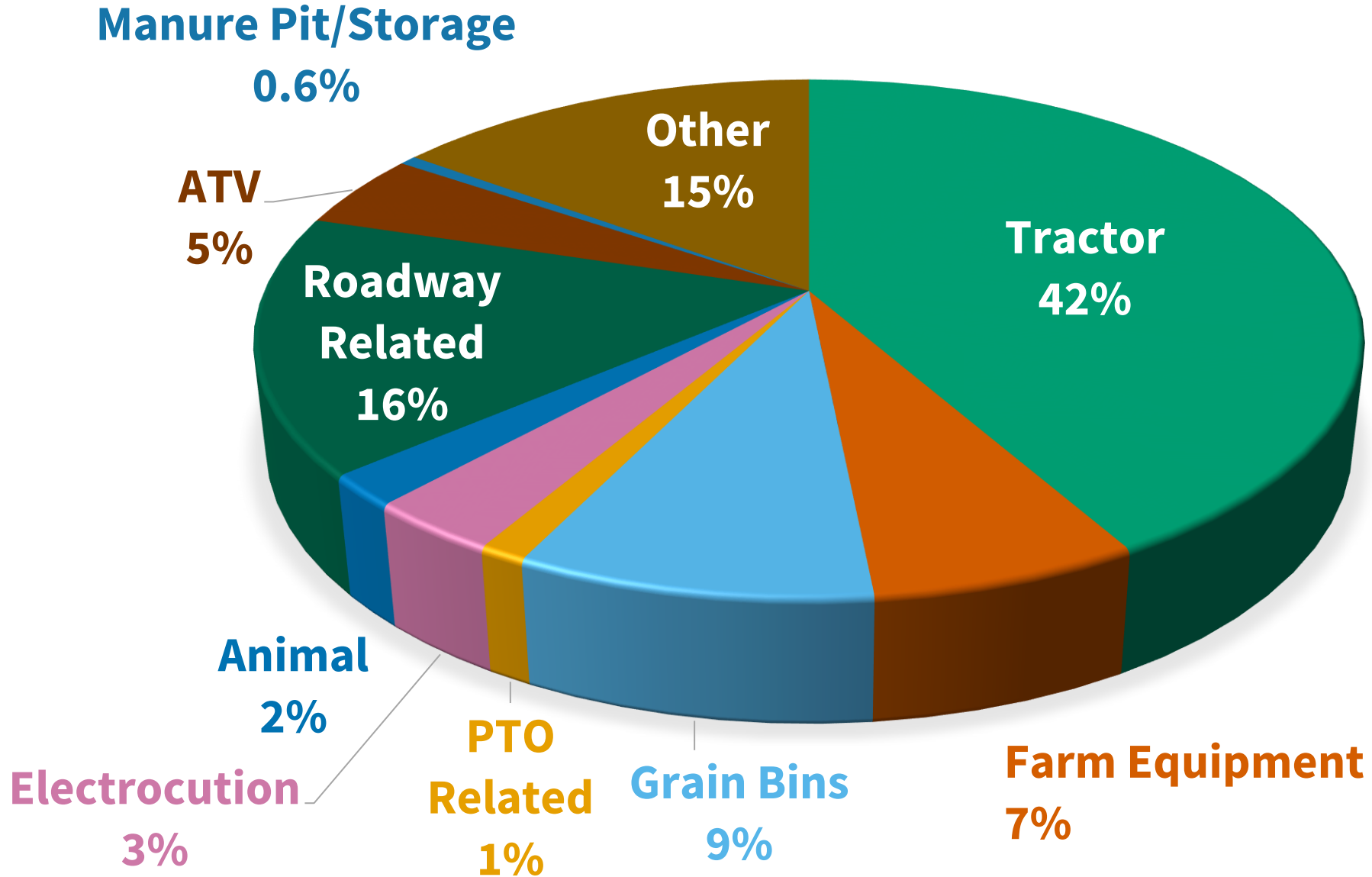
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Illinois Ag Injuries

Fatal Farm Incidents on 5-Year Moving Average



Illinois Farm Fatalities 1999 to 2019



Future of ag is changing

How do we stay safe?



Upcoming 2024 IFES Webinars

January 25

Macro and Farm Financial Update

February 1

South America's Crop Production Under the El Niño Influence

February 8 at 2 pm

Grain Market Outlook

February 15

Farm Policy: Current State & A Look Ahead

February 22

The Renewable Diesel Boom: What Does the Future Look Like?

Upcoming Cultivating Caution: A Monthly Guide to Farm Safety & Health Webinars

February 20

**Preventing the Spread of Infectious Disease
on Farms, Ranches and Ag Workplaces**

March 19

Research and Strategies for Grain Entrapment Prevention

April 16

Farmworker safety and Health

May 21

How will Technology Shape the Farm of the Future

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