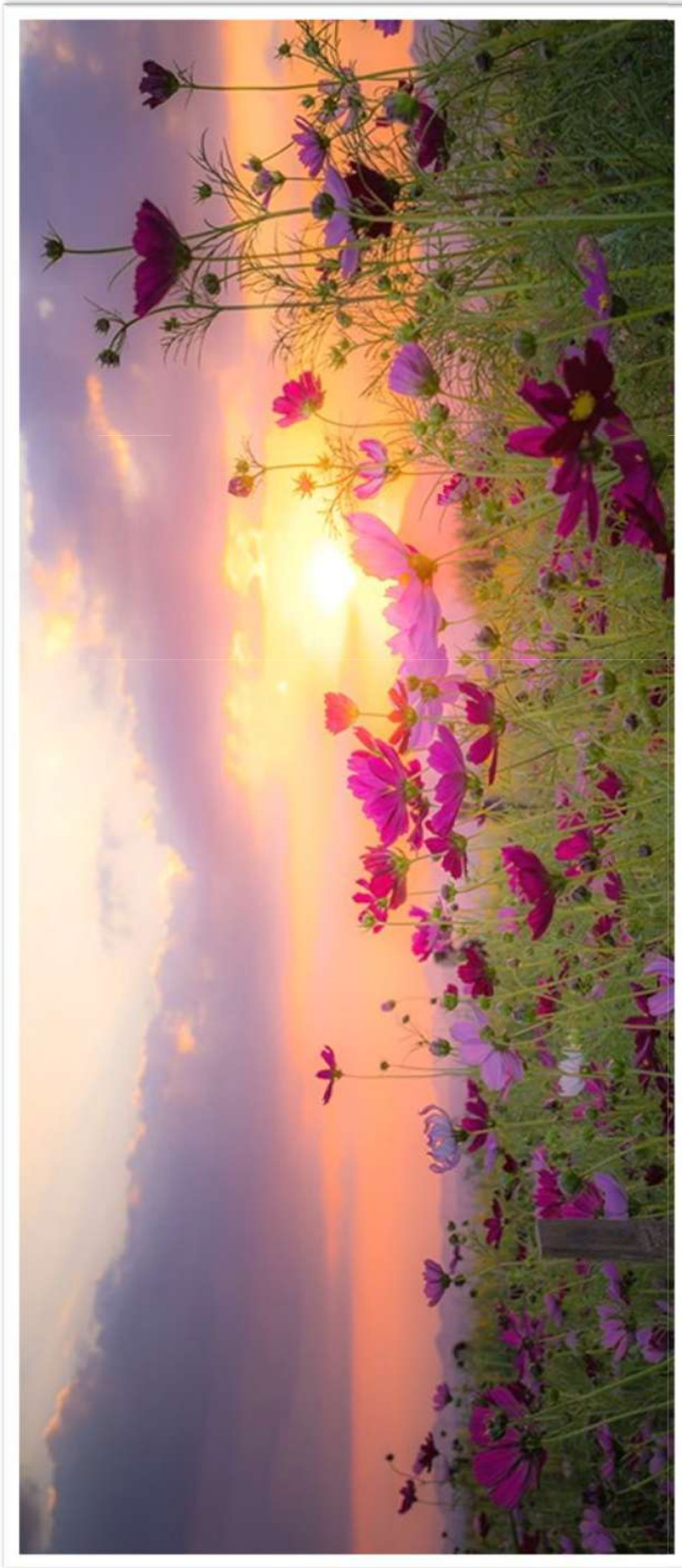




Farming in the north: partnering research and industry for Alaska

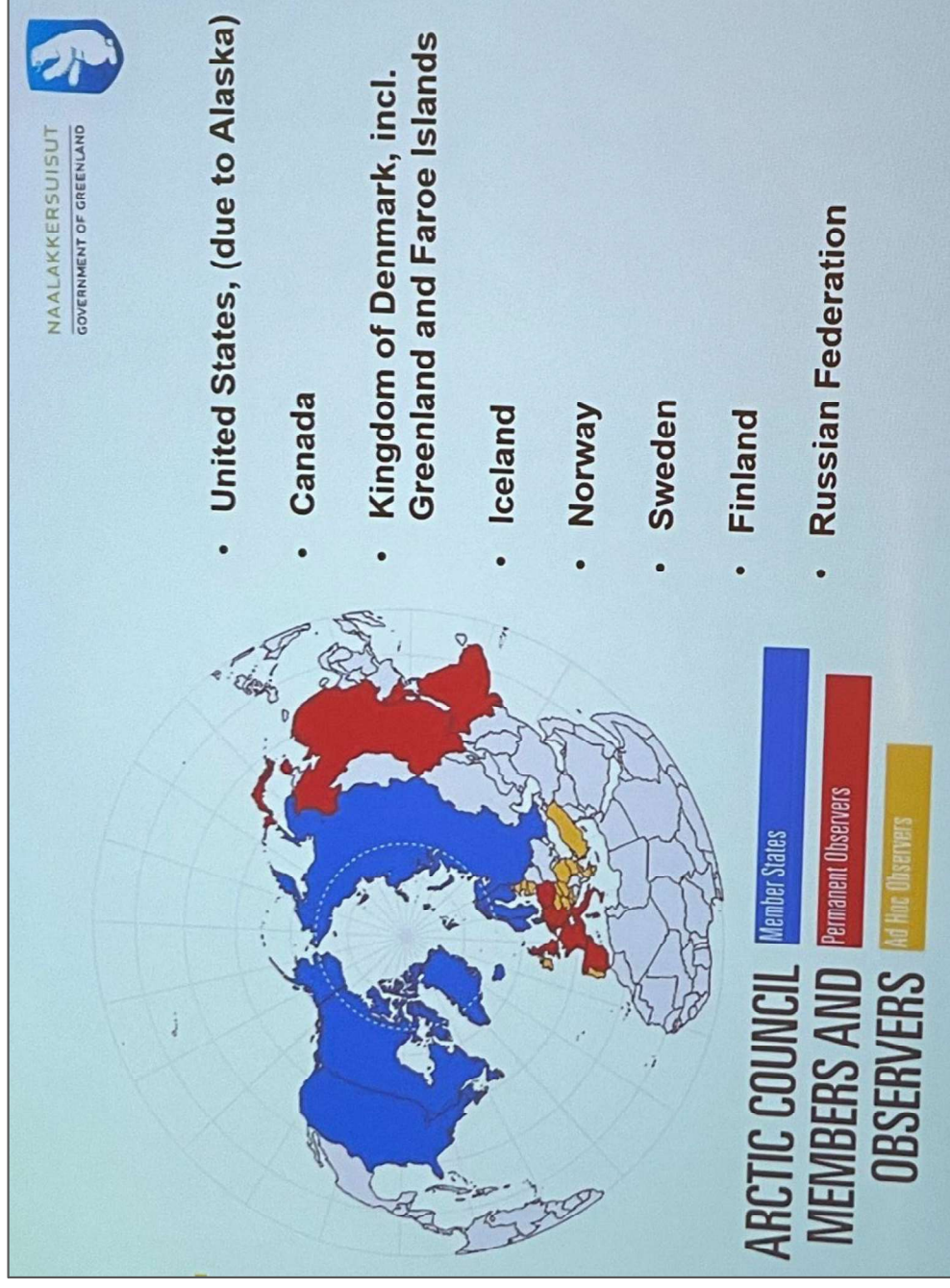


INSTITUTE OF AGRICULTURE,
NATURAL RESOURCES & EXTENSION

University of Alaska Fairbanks

Jodie Anderson
Director
13 February 2025

Circumpolar agriculture includes Alaska



Circumpolar food security includes agriculture

Rank (113 countries)	Overall score				Availability	Quality and Safety	Sustainability and Adaptation
	83.7	91.9	70.5	88.4			
1 st Finland	83.7	91.9	70.5	88.4	82.6		
2 nd Ireland	81.7	92.6	70.5	86.1	75.1		
3 rd Norway	80.5	87.2	60.4	86.8	87.4		
4 th France	80.2	91.3	69.0	87.7	70.3		
5 th Netherlands	80.1	92.7	70.7	84.7	69.2		
6 th Japan	79.5	89.8	81.2	77.4	66.1		
=7 th Sweden	79.1	91.9	68.3	85.0	68.3		
=7 th Canada	79.1	88.3	75.7	89.5	60.1		
9 th United Kingdom	78.8	91.5	71.6	77.6	71.1		
10 th Portugal	78.7	90.0	77.0	79.8	64.5		
11 th Switzerland	78.2	89.2	76.8	73.5	69.5		
12 th Austria	78.1	91.3	67.1	81.2	69.7		
13 th United States	78.0	87.1	65.1	88.8	69.4		

We share more than latitudes

Arctic Norway agriculture

Short and cool growing season and long winter season.
0.8% of total land area is cultivated

Mainly dairy and meat producers
5% produce horticultural products
Multi-functional farms.

Challenges:

- A decline in the population in many rural municipalities
- The number of farmers has more than halved the last two decades - from 6000 farmers to today's 3000 farmers.
- Centralization



Norway

Iceland

- Iceland's geographical position limits the assortment of food of plant origin that can be produced
- Huge fish export
- International trade of food is of great importance for Iceland
- But at the same time we need to protect our agriculture to avoid the effects of international threats to food security

Finland

- 98 000 farms (1995) – under 50 000 farms (2020)
- Average farm size 51 hectares (EU 15 ha; USA 180 ha)
- Average farmer age 53 years
- 86 % family-run farms
- Almost 70 % plant production
- Little less than 30 % livestock (dairy)
- Around 14 % organic farms

Challenges and costs

- Increased winter stress – less snow cover and unstable winters
- Challenging hardening conditions for perennial crops
 - More autumn/spring rain
 - Flooding and erosion
 - Soil compaction
 - Harvest failure (cereal, potato, vegetables)
 - More weeds, pests and diseases
- Dry summers – summer drought, lower yield

Agriculture in ~~Norway~~ Alaska the Arctic

We need species/cultivars which:

- Can utilize the prolonged growing season
- Are winter hardy
- Keep photosynthetic activity late summer/autumn
- Have low respiration rate in darkness

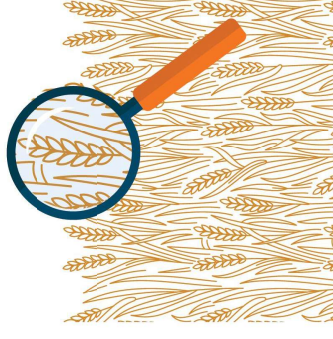
They have to be adapted
to the light conditions in the north

How to ensure resilience in the food production under climate change?

Strong need for new resilient plant varieties that are adapted to the new climate conditions - varieties which can produce high quality food for a growing human population



UAF Institute of Agriculture, Natural Resources and Extension



WHERE OUR RESEARCH HAPPENS

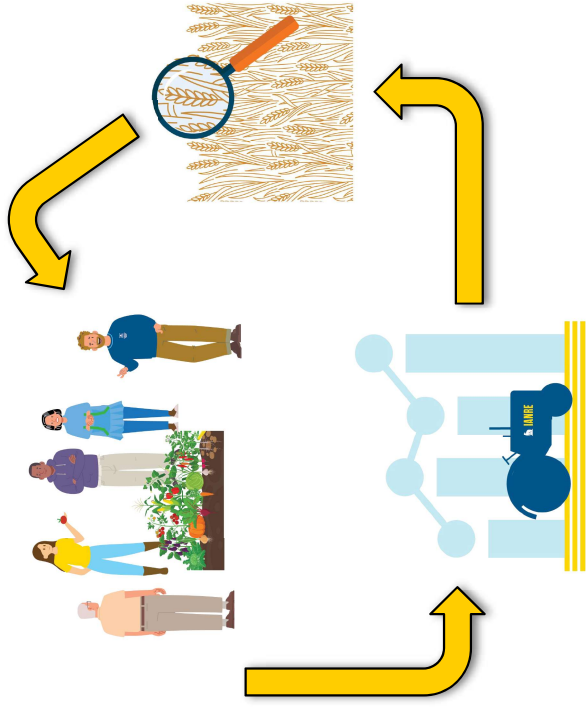
2,340 acres of farmland
2 Experiment Farms
1 Botanical Garden
7 research labs
11,608 square feet of greenhouse space

OUR OUTREACH EFFORTS ARE STATEWIDE

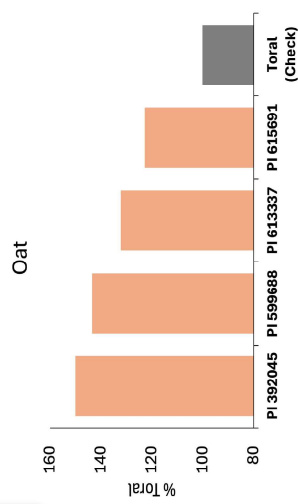
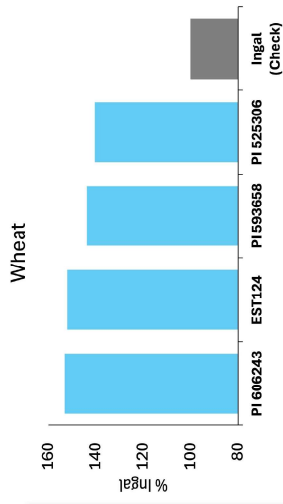
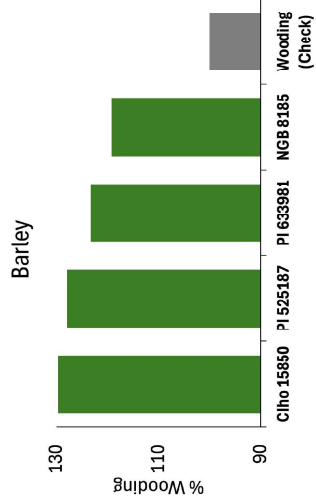
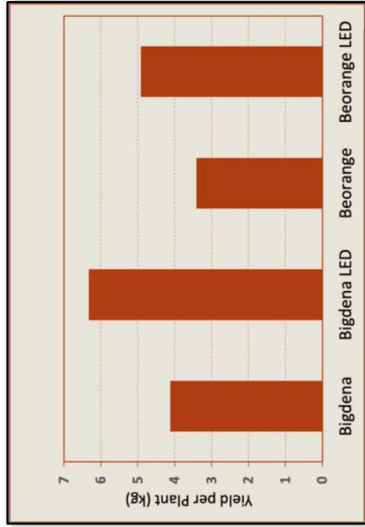
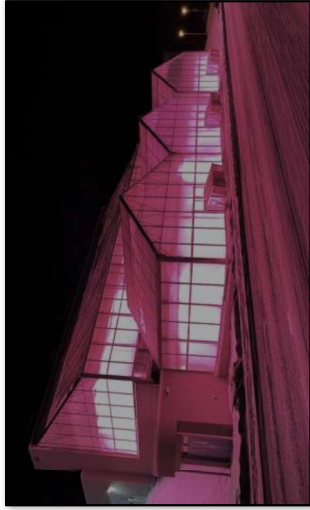
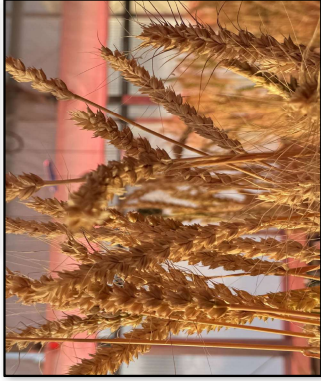
350+ Informative publications on everything from planting food to keeping your home safe
300+ Classes, taught by experts and offered across the state
2200+ Youth served through 4-H programs statewide



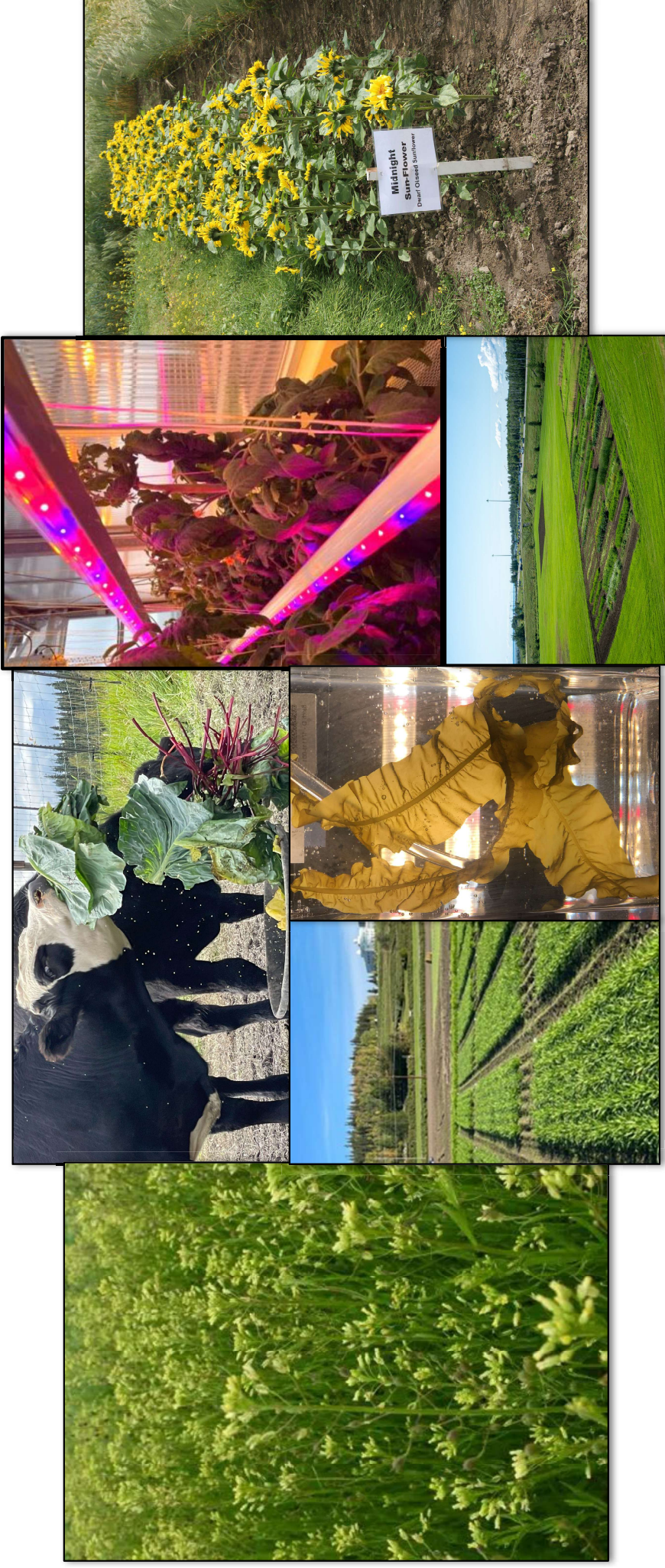
UAF Institute of Agriculture, Natural Resources and Extension



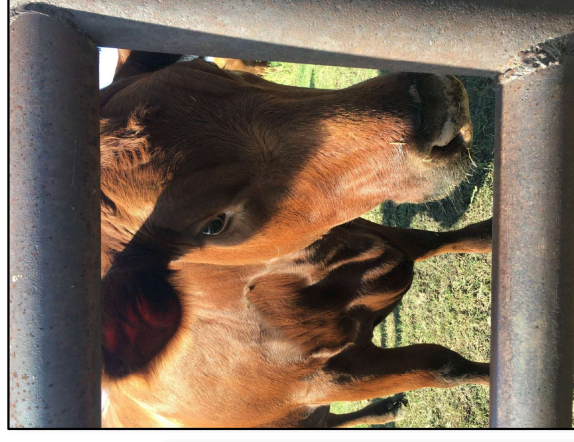
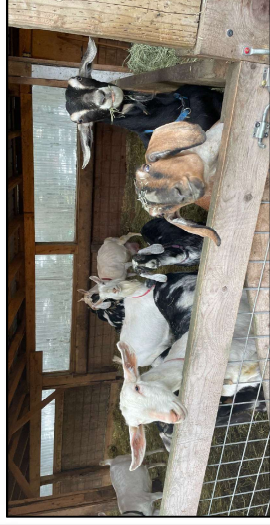
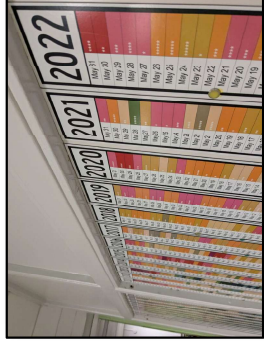
UAF agricultural research success



Future agricultural research opportunities



Why does the research matter?



Our funding success

Since FY23. . .

Percent Increases

55% ICR Funds

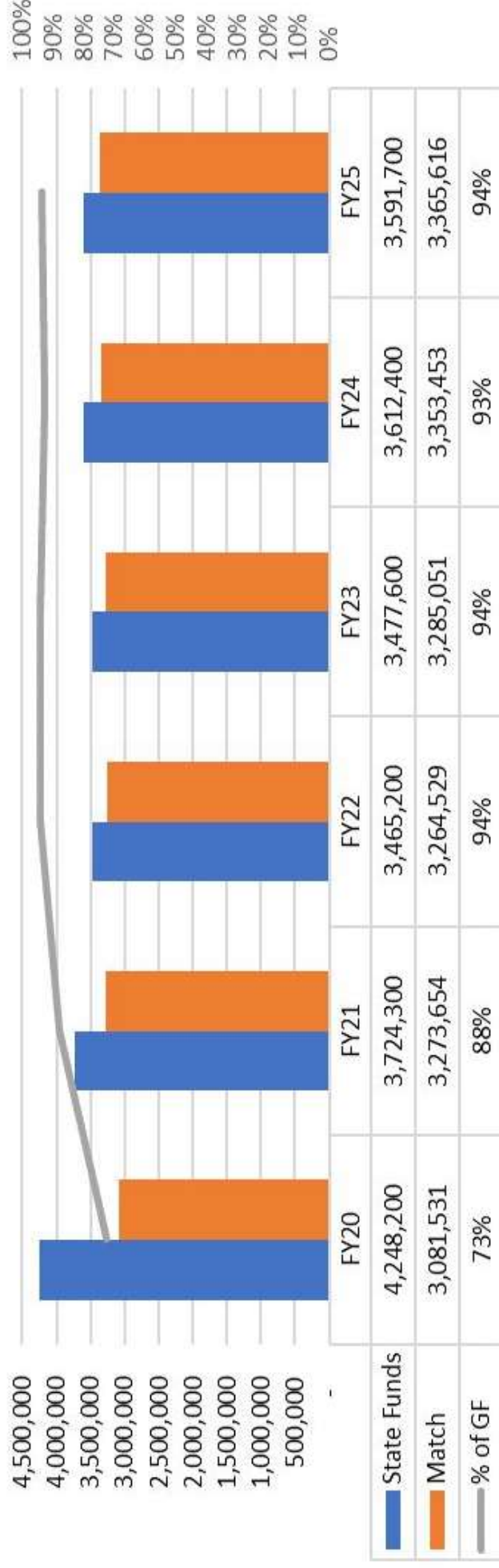
262% Competitive Funds

70% Capacity Project Participation



Federal Match Requirements

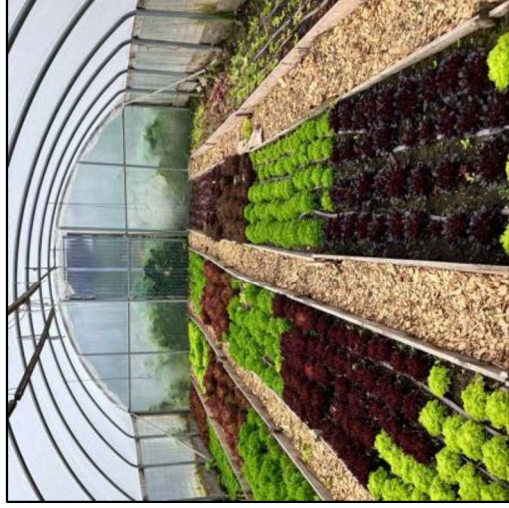
FY20-25 IANRE
State Funding v. Capacity Match



Our funding requests for FY26



\$200,000 Program



\$5M Capital Research

Future plans as we get funding



Agronomist



Floriculturist



Livestock
(ruminant)



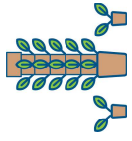
Ag engineer



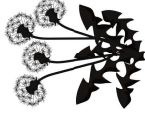
Pomologist



Ag hydrologist



Hydroponics/vertical
growing



Weed scientist

\$\$\$



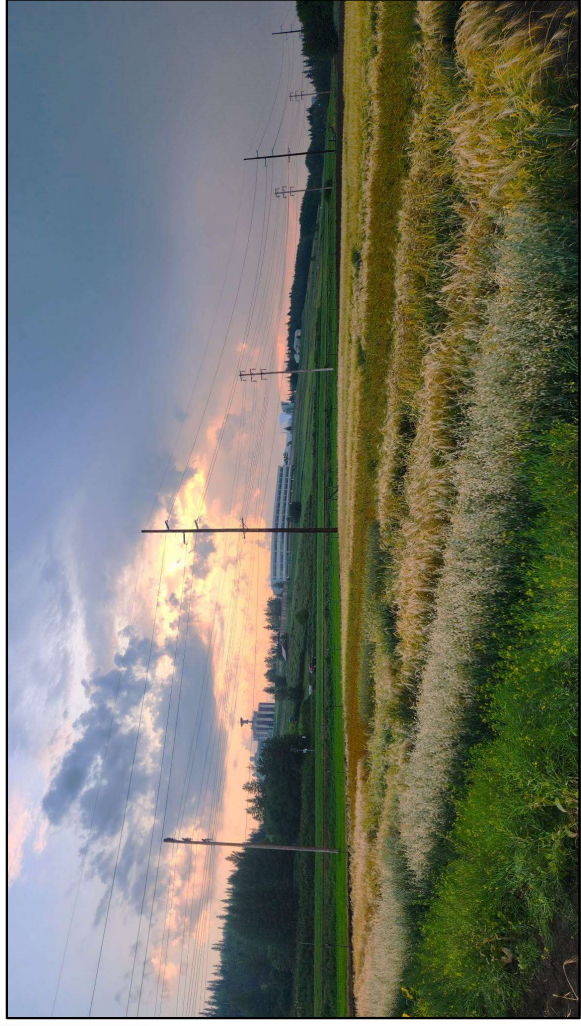
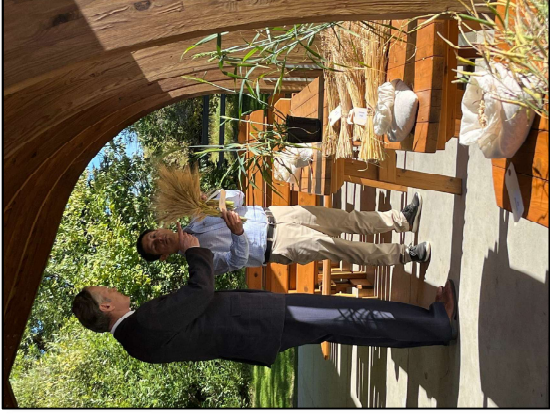
Ag economist



Livestock
(non-ruminant)



Plant
geneticist
(horticulture)



Thank you