American Farmland Trust
SAVING THE LAND THAT SUSTAINS US

Supporting Expansion of Agrivoltaics Using Smart Solar Principles

Training for Agriculture Professionals and Educators in North and Central Texas

March 17, 2026

Photos: American Solar Grazing Association (ASGA); University of Minnesota; Texas Solar Sheep

SOUTHERN SARE Sustainable Agriculture Research & Education

USDA National Institute of Food and Agriculture U.S. DEPARTMENT OF AGRICULTURE

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Special Thanks To

Advisory Committee

- Kevin Richardson, *American Solar Grazing Association (ASGA)*
- JR Howard, *Texas Solar Sheep*
- Aaron Hoff, *Tarrant Regional Water District (TRWD)*
- Raina Hornaday, *Caprock Renewables*
- Meredith and Eric DeBorde, *Lazy D Farm*
- Blake Mendez, *CleanCo Energie, Inc.*
- Deydra Steans, *Black Gold Resourcing*
- Ashley James, *Prairie View A&M University Cooperative Extension*
- Jake Thorne, *Texas A&M AgriLife Extension*
- Madeline Milner, *USDA-NRCS*
- Rhett Kirby, *KerTec, LLC*

Agenda

- *Introductions (30 min)*
- *AFT and Smart Solar Initiative (5 min)*
- *Texas Solar Landscape (10-15min)*
  - *Daniel Giese, Solar Energy Industries Association (SEIA)*
- *Why Agrivoltaics, Why Now? (10min)*
- *Project Overview and roadmap (10-15 min)*
- *Q&A (10-15 min)*

Introductions: AFT

Garrett Bader

Texas Smart Solar Specialist

Ethan Winter

National Smart Solar Director

Greg Plotkin

Senior Manager for Smart Solar Outreach and Engagement

Austin Kinzer

Senior Agrivoltaics Technical Specialist

Meredith DeBorde

Texas Implementation Specialist

Sarah Fulton-Smith

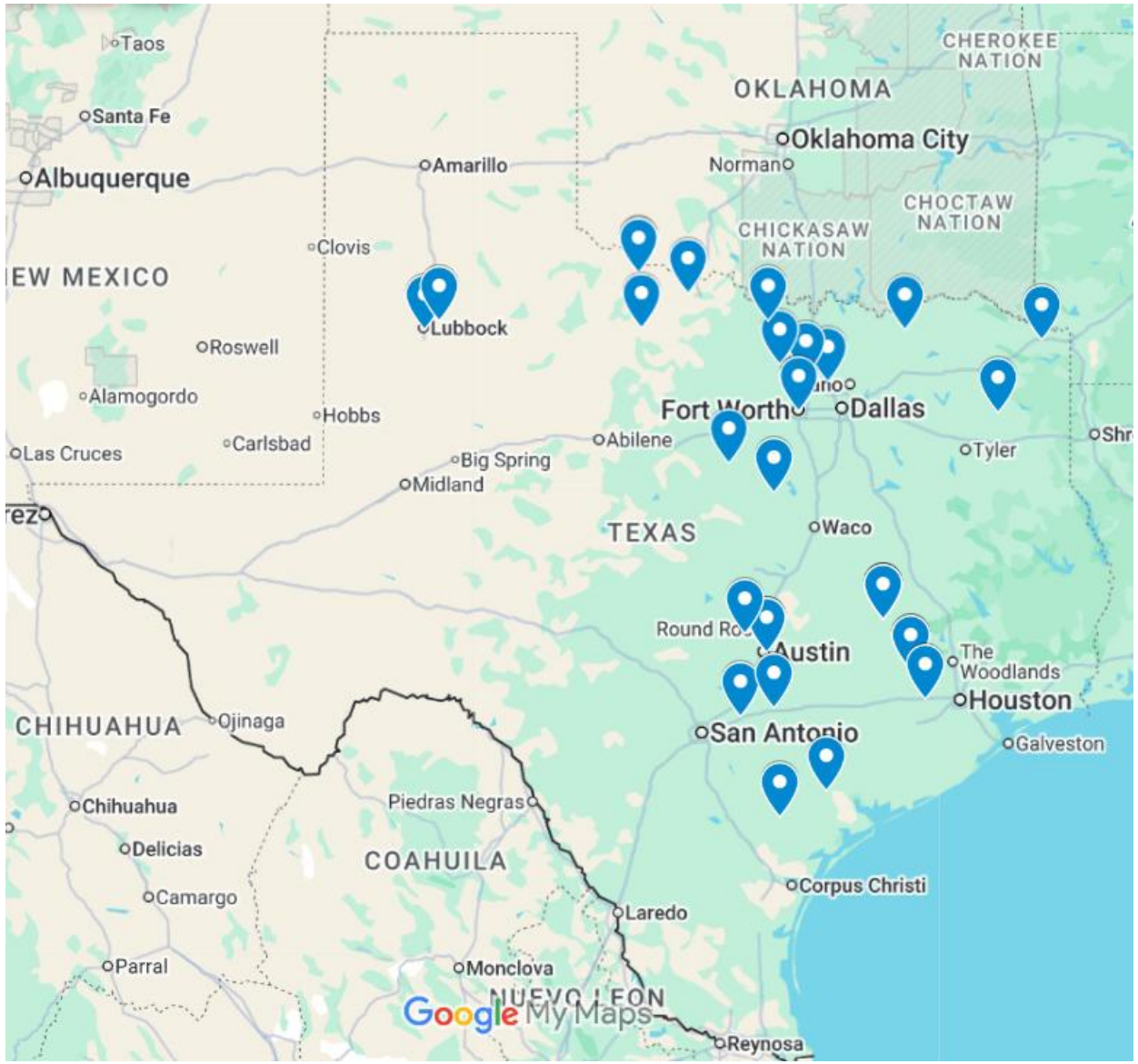
Texas Regional Director

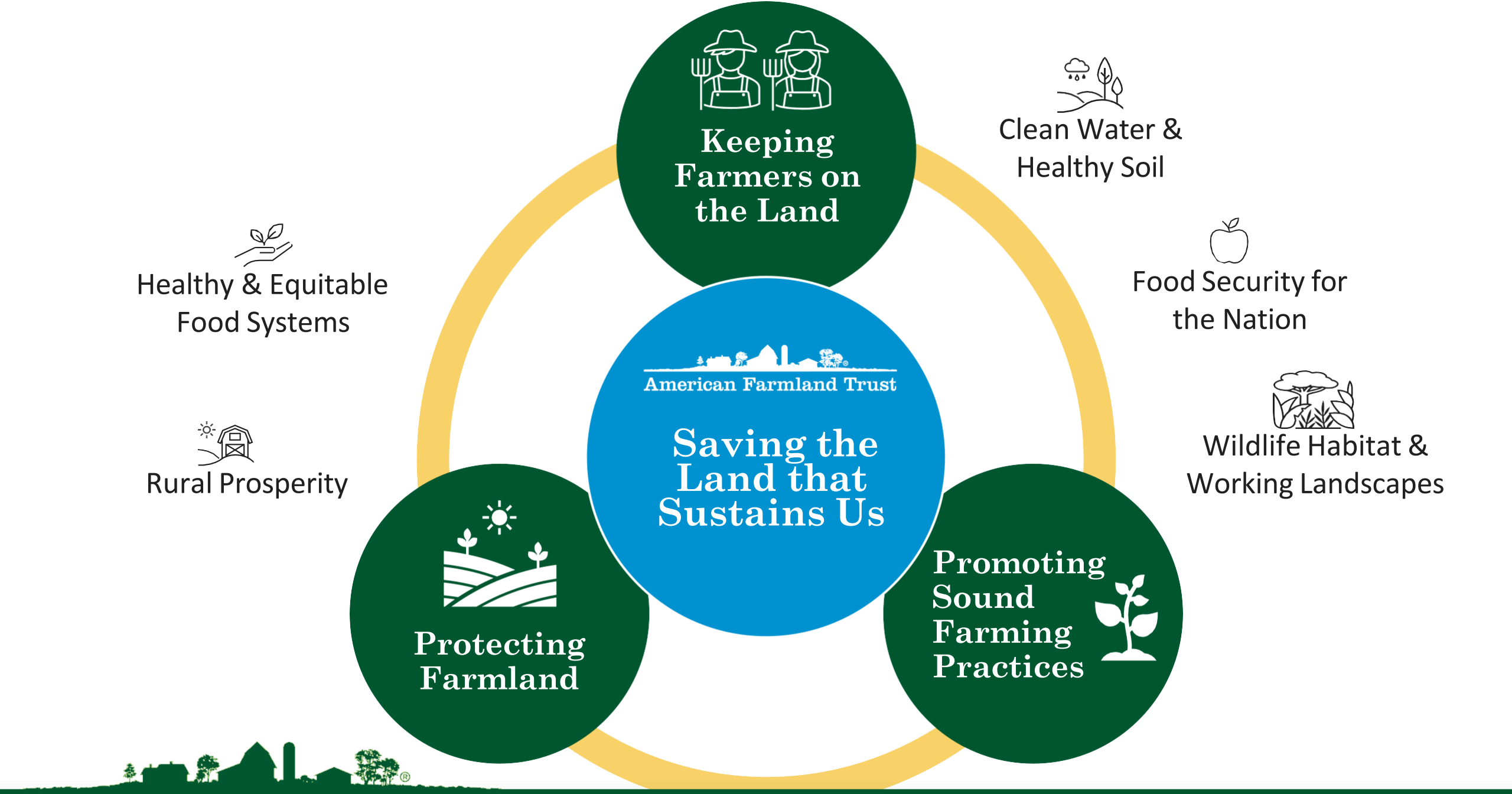
Participant Introductions

Name

Location

Organization




Keeping Farmers on the Land
Clean Water & Healthy Soil
Healthy & Equitable Food Systems
Food Security for the Nation
Rural Prosperity
Wildlife Habitat & Working Landscapes
American Farmland Trust
Saving the Land that Sustains Us
Protecting Farmland
Promoting Sound Farming Practices

Principles to Guide Solar Development

Smart Solar℠ Principles

PRINCIPLE 1

Prioritize solar siting on buildings and land not well suited for farming (unless agrivoltaics).

PRINCIPLE 2

Safeguard soils and the ability for land to be used for agriculture.

PRINCIPLE 3

Grow agrivoltaics for agricultural production and solar energy.

PRINCIPLE 4

Promote equity and farm viability.

Texas Solar Market Context

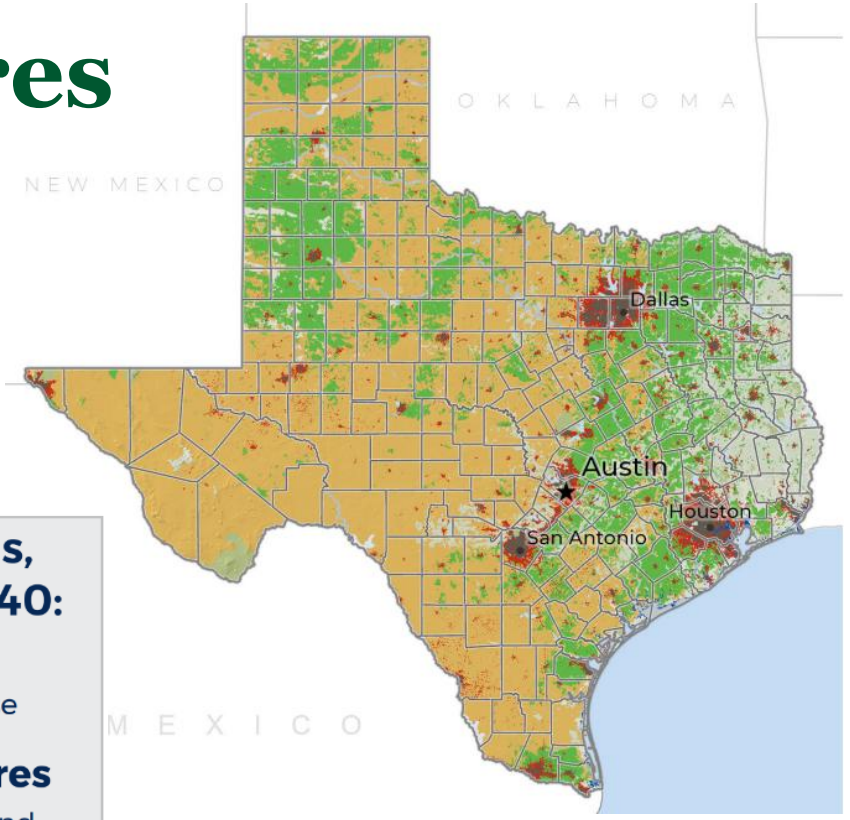
Daniel Giese

Director, State Affairs, Texas

- *Solar Energy Industries Association (SEIA)*

Localized Development Pressures

- 2016—2040
  - 2.2 million acres lost by 2040
- 2017—2022
  - Lost over 17,000 farms
  - 1.6 million acres of farmland
- Solar Development:
  - Key Interconnection Points



On recent trends, from 2016 to 2040:

Texans will pave over, fragment, or compromise

2,192,700 acres

of farmland and ranchland.

That's the equivalent of losing

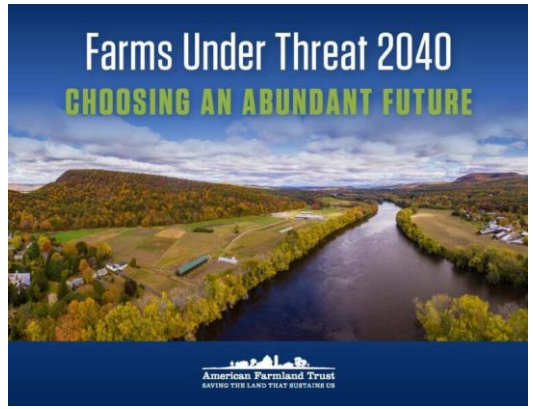
11,900 farms,

$479 million

in farm output, and

26,200 jobs

based on county averages.[1]



What is Agrivoltaics?

The intentional use of land for agriculture and solar energy production

- Generally involves growing crops or grazing livestock underneath or between rows of solar panels
- Does not include pollinator habitats or solar beekeeping (these are considered ‘ecovoltaics’)

Photos: Werner Slocum / NLR; Next2Sun

Agrivoltaics – On-Farm Benefits

- **Water Conservation**
  - Reduced evapotranspiration from partial shading
  - Increased water use efficiency
- **Shelter**
  - Shade reduces heat stress for livestock
  - Protect crops during extreme heat and drought
- **Farm viability**
  - Diversify farm income
  - Additional revenue stream

Source:
AgriSolar Clearinghouse

Agrivoltaics – Broader Impacts

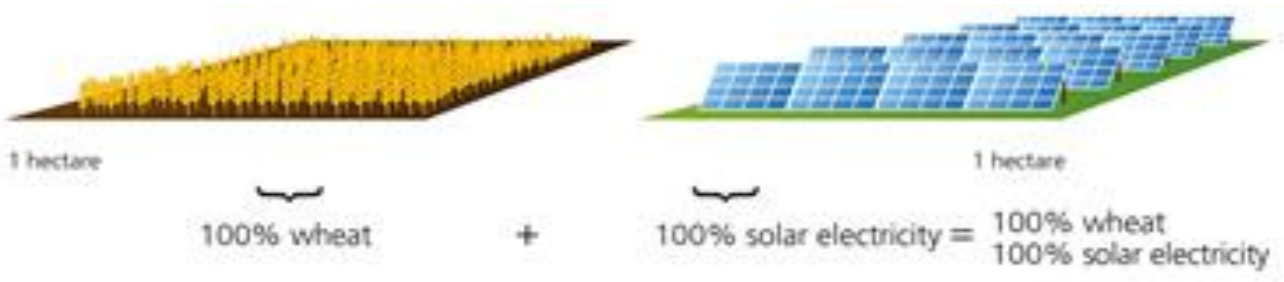
- **Maintain Agricultural Productivity**
  - Preserves working lands
  - Dual land use: food + energy production
- **Support for local economies**
  - Sustains ag operations and economic activity in rural farming communities
- **Land Access**
  - Potential entry point for new and beginning farmers
  - Alternative pathways for farmland use
- **Addressing solar development opposition**
  - Reduces land-use conflicts between ag/solar
  - Provides a compromise between energy development and farmland preservation

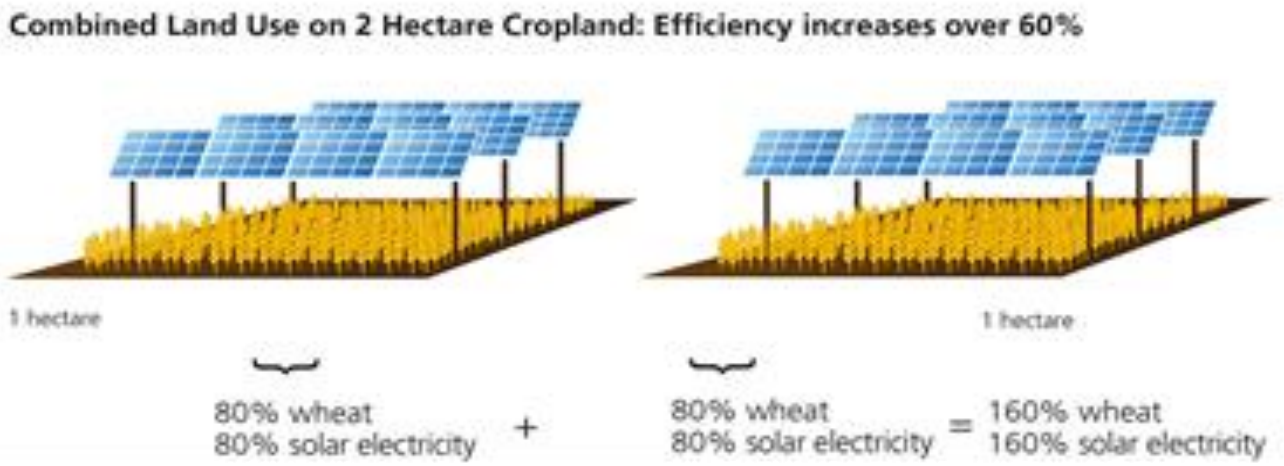
Source:
JR Howard / Texas Solar Sheep

Potential Limitations & Tradeoffs of Agrivoltaics

- **Agricultural production**
  - Complexity of farming around solar panels
  - Limited flexibility once solar panels are installed
  - Potentially limited to certain livestock
- **Crop & Environmental Effects**
  - Shading and uncertain impacts on crop yields
  - Potential for increased disease or pests due to higher moisture levels
  - Lack of appropriate seeding mixes and vegetation establishment
- **Costs**
  - Higher costs if need to be elevated for different crops/livestock
- **Existing infrastructure**
  - Transmission capacity in rural areas

Land-use Efficiency





Source: Fraunhofer Institute

Concept: Land generates more revenue per acre with a combined 'crop' of agriculture and energy

- Slightly less agriculture per acre
- Equal or slightly less electricity per acre
- Total 'crop' per acre is greater than either activity alone

Stacked benefits!

The Solar Scale Continuum

Behind the Meter

Community Scale

Utility Scale

0 ~50

Number of Acres

Texas Solar Survey (2025)

- Top concerns:
  - Ag productivity
  - Tenant farmers
- Solar Leasing & Agrivoltaics
  - 43% of respondents = leasing land, in development process, or interested
    - Supplementary income is primary driver (77%)
    - Strong openness to agrivoltaics (85%+)

I view solar grazing as the single biggest opportunity for new farmers, ranchers, and military veterans to get into agriculture... We've got ideas on how to put eight or nine enterprises on one solar site--bees, broilers, sheep, hay...So many people could make a living off one property."

- Interview 1

"This was a way to stay in the farming and ag sector and try to make a difference in what we do...Our boys are involved in agriculture, and we wanted them to have an operation to come back to, and you know a farm to have...So, this helped us fufill our dream."

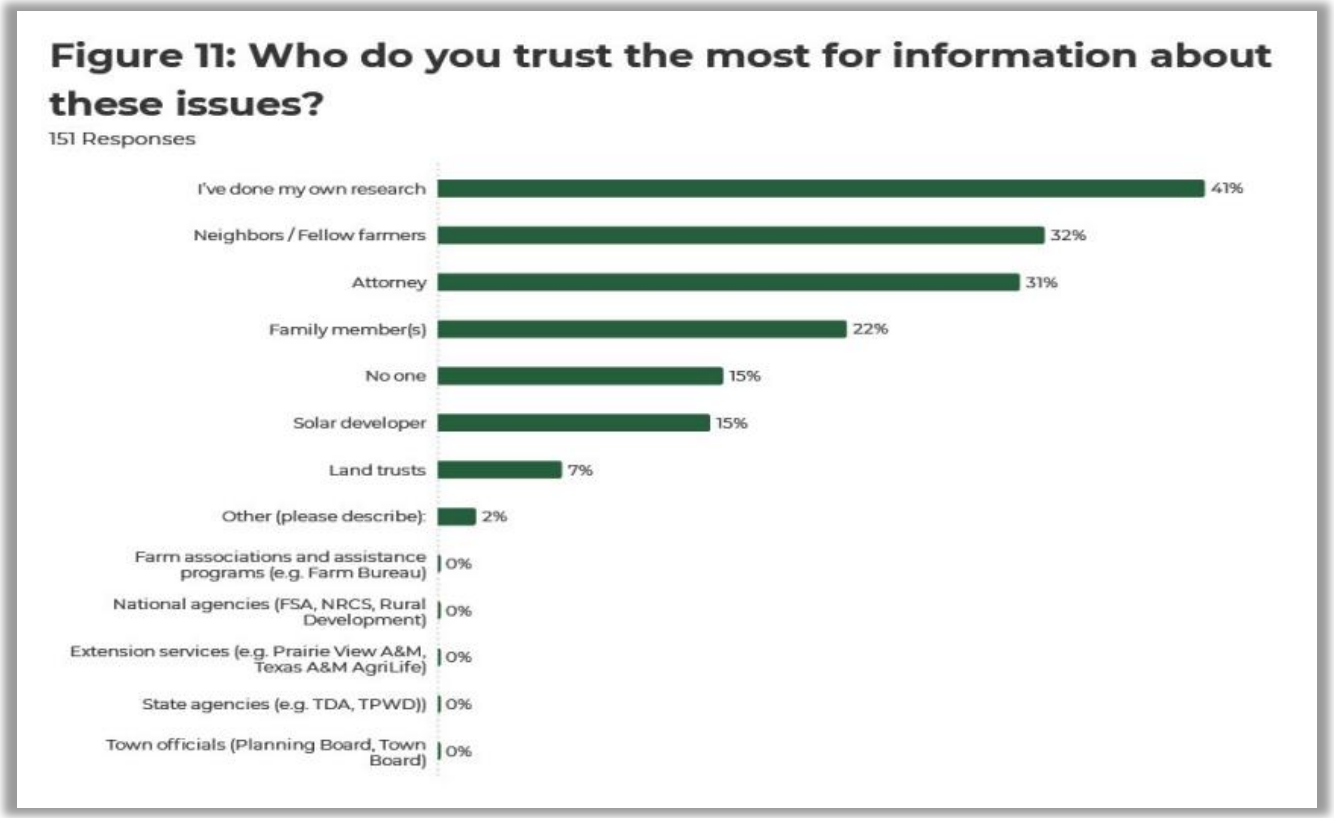
– Interview 2

"There is an opportunity here to create cash flows and certainty with solar. So, we just looked at it as a great diversification for the whole family operation."

– Interview 3

Texas Solar Survey (2025)

- Information needs
  - Financial costs/benefits
  - agrivoltaics options
  - impacts on farmland soils
- Need for trusted sources of information



Supporting Expansion of Agrivoltaics Using Smart Solar Principles

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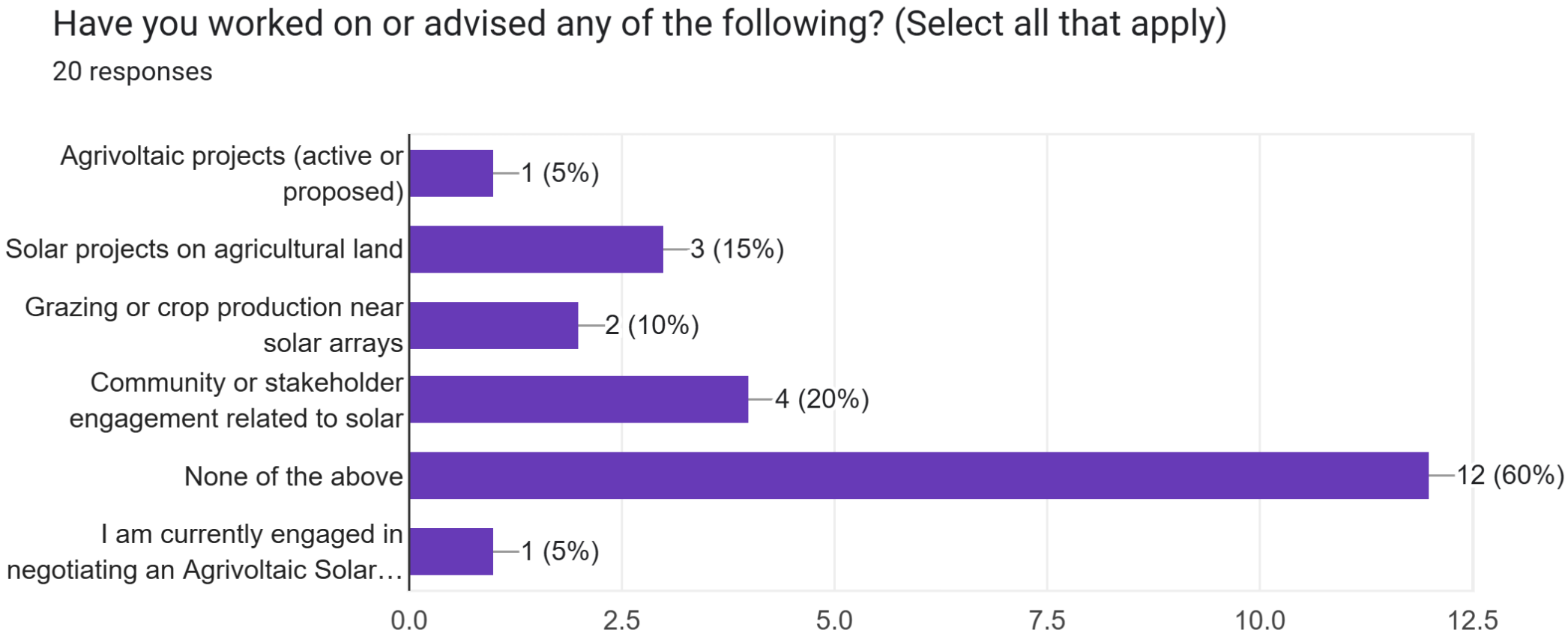
Goal

- Build the capacity of agriculture and conservation professionals to help Texas producers and landowners understand the opportunities and challenges of agrivoltaics to improve economic viability and promote soil health.
- Position participants as trusted resources for producers and landowners interested in exploring solar/agrivoltaics
- Ensure that producers and landowners receive ag-centric support and resources when considering solar projects (not just from a developer)

Intended outcomes

- Increased awareness, basic knowledge, and confidence so participants can engage in informed conversations, answer common questions, and guide producers and landowners to best practices and trusted resources leading to more agrivoltaics projects and better outcomes.

Pre-Participation Survey Insights



Pre-Participation Survey Insights

lowest → highest
0 → 10

Current understanding of agrivoltaics	5.0
Ability to support producers or landowners exploring agrivoltaics or solar-related opportunities	4.1
Engaging in conversations with others about agrivoltaics and utility-scale solar in Texas	3.8
Solar grazing (infrastructure, logistics, contracts, etc.)	3.6
Best-practices related to soils, water, and agricultural land use	3.5
Current agrivoltaics research and its relevance to Texas	3.3
Utility-scale solar development process	3.2
Solar lease agreements and key considerations for landowners	2.9
Differences between various scales of solar systems	2.8

(averages)

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Format and Structure

Curriculum delivery and time commitment:

- 4 Virtual sessions (90 minutes each)
- 2 Site visits to existing agrivoltaics projects (~6 hours)
- One-on-one individual sessions (optional)

Training program and key dates

- March 17, 2026 – Today's kickoff call
- April 6 – Office Hours (Optional): 10am—12:00
- May 11 – Office Hours (Optional): 2-4pm
- May 28, 2026 – In-Person Agrivoltaics Site Visit #1
  - Active site both grazing sheep and with hay production
  - Grazier experiences, ASGA's role, industry expectations
  - 9am—4pm, Sulfur Springs, TX

Timeline and Time Commitment

Key dates (March 2026 – March 2027

- July 21, 2026 – Landowner Considerations for Utility-Scale Solar
- September 22, 2026 – Models to Viable Grazing-Based Operations
- October 22, 2026 – In-Person Agrivoltaics Site Visit #2
  - Landowner/leasing
  - 9/10am—4pm, Elm Branch Solar, Ennis, TX
- January 19, 2027 – Virtual TBD
- March 23, 2027 –Virtual TBD

What Next?

- Calendar Invites
  - Sessions through end of year
- Email with:
  - today's slide deck & link to recording
  - high level syllabus
  - TX Solar Survey results
- Reminders:
  - Complete Pre-Participation Survey
  - Feel free to invite colleagues, others in your network

Questions?

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THANK YOU!

Contact information

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