CONSERVATION AGRICULTURE

Current Capacity: 0.75 Million ha cropland

Achievable Potential: Reduction of 0.5 Mt CO₂ in 2030

Technical Potential: Reduction of 0.7 Mt CO₂ in 2030

Carbon Abatement Cost: Ranges from 2 to 7 (2017$/t CO₂-e in 2030)

- In 2017, Georgia has about 1.5 million ha of cropland and majority of the cropland are distributed in the southern region.

- On average, about 50% of the current cropland are under conservation agriculture practices in Georgia (about 1.5% adoption rate).

- Higher cost to certain crops, lack of awareness and credible information, higher uncertainties are key obstacles for fully adopting conservation agriculture practices in Georgia.
Conservation Agriculture
Future trends: Base line, achievable and technical potential

Baseline = The current adoption rate of 1.5% annual growth decreases about 0.03 MtCO$_2$-e in yearly emissions by 2030.

Achievable Potential = Reduction of 0.46 MMtCO$_2$-e in 2030 by doubling the baseline adoption rate between 2020 and 2030.

Technical Potential = Adoption of 100% cropland into conservation agriculture practices yields 0.7 MMtCO$_2$-e reduction in 2030.

About 0.75 million ha of cropland are currently under conservation agriculture
An additional 0.75 million ha of cropland available in Georgia to adopt conservation agriculture

+ Enhanced soil health
+ Less soil erosion
+ Less water, soil and air pollution
+ Low food prices
Conservation Agriculture Achievable Potential
Substantial reductions possible by 2030

About 3% adoption rate of conservation agriculture by 2030

0.6 million ha of cropland shifts to conservation agriculture practices
Costs and Benefits of Adopting Conservation Agriculture Practices

Improvements in soil health and carbon sequestration leads to high net benefits

Achievable potential: 3% adoption rate

Cost: Cost to the farmers to implement conservation Ag. practices

Benefits: Expected long-term benefits

Benefits (million $)

Cost (million $)
Stakeholder Analysis of Conservation Agriculture

**Risks**
- Consumers
- Trade/Commodity Groups
- Farmers Group
- Conservation & Environmental NGOs

**Rewards**
- U.S. Department of Agriculture (USDA)
- State and County Extension Agencies
- Natural Resources Conservation Service (NRCS), Economic Research Services (ERS)

**Potential Champions**
- GA Farm Bureau
- GA Cotton Commission, GA Peanut Commission
- Georgia Department of Agriculture, UGA Extension Services.
Conservation Ag. Solution Interactions

**Composting**
- Conservation agriculture practices benefits from composites by displacing fossil-derived fertilizers

**Plant-Rich Diet**
- Conservation agriculture practices improve crop yields and reduce carbon footprints of plant-rich foods.
Conservation Agriculture: Challenges and Promising Approaches

Barriers & Challenges
- Weed competition with organic farming
- Land tenure & pressure for land development
- Farmer perceptions and lack of role models
- Crop residue trade-offs
- Management costs

Promising Approaches
- Market and policy innovations to promote low- and no-tillage
- Extension & Peer Network Initiatives
- Cover crop initiative

Tools & Accelerants
- Optimization of equipment
- Crop insurance policies
- Markets for additional crops
- Peer networks
- Public-private collaborations
• **Improved soil health** enhances the long-term soil fertility for food production

• **Minimizes nutrient losses** by maintaining soil cover with minimal soil disturbance/erosion

• **Decarbonizes the soil** by crop rotation and leaving the residues in the soil.

• **Increased productivity** is expected in some crops due to increased soil organic matter and results in lower food prices.

Source: UGA Extension
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