



Food and Agriculture Organization
of the United Nations



79th Commission
Session

Innovation in Conservation Agriculture

ESCAP-SCO Side Event:

Enabling Food Systems Transformation through Climate Smart Agri-Innovation

16 May 2023

Bangkok, Thailand

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Why CA?

- All agricultural soils show signs of degradation
- ¼ of the total arable land is degraded
- Climate change – droughts, water scarcity, crop yield decline
- Storms and desertification
- Raising input price
- Governments' commitments to international agreements
- More focus on sustainable production



Why it is happening?



**Conventional agriculture
based on ploughing and
residue burning causes:**

- **Soil erosion**
- **Loss of CO₂ and organic matter**
- **Air and water pollution**
- **Soil compaction**
- **GHG emission and climate change**
- **Destruction of biological life & processes**



What is CA?



Minimum mechanical soil disturbance (i.e. no tillage) through direct seed and/or fertilizer placement.



Permanent soil organic cover (at least 30 percent) with crop residues and/or cover crops.



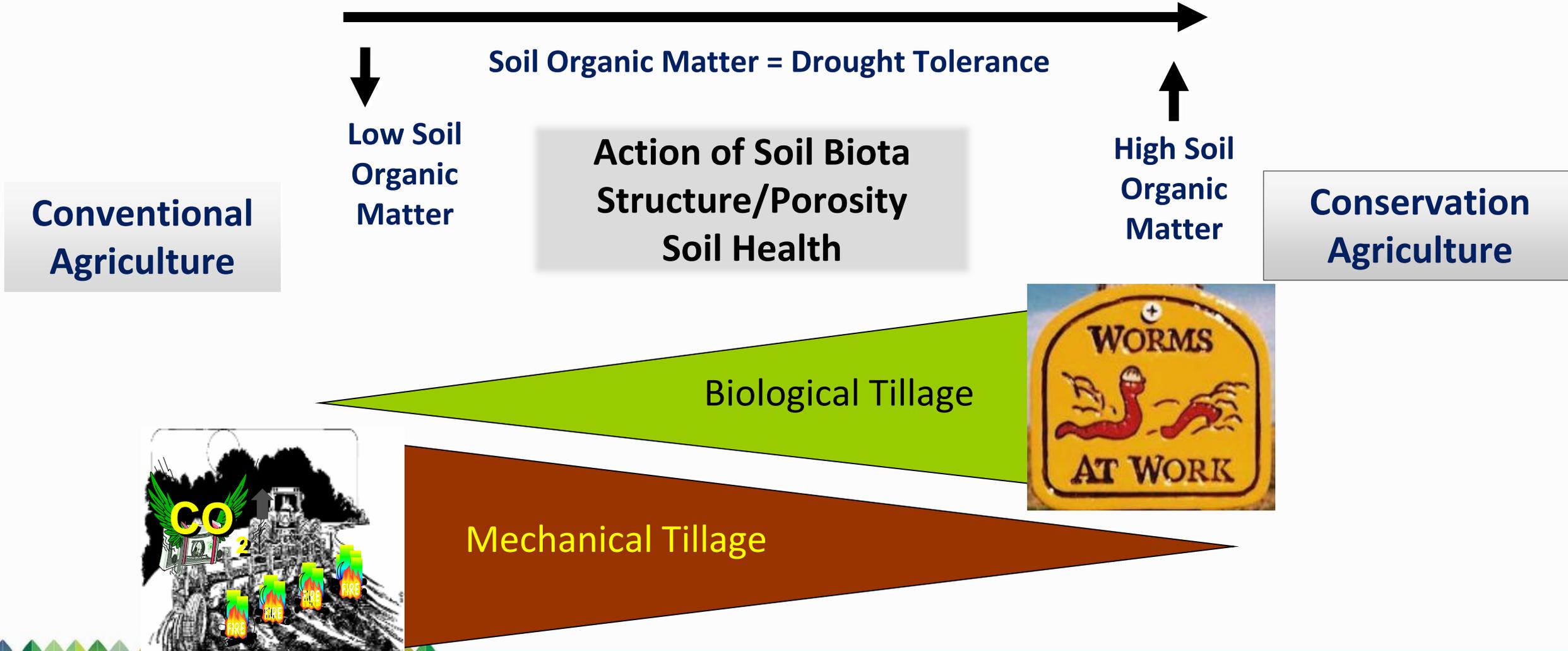
Species diversification through varied crop sequences and associations involving at least three different crops.

<http://www.fao.org/conservation-agriculture/>

Innovation: Precision in land preparation, prevents residue burning, prevents soil erosion, improves its health and fertility followed by increased crop yield and farmers' income.



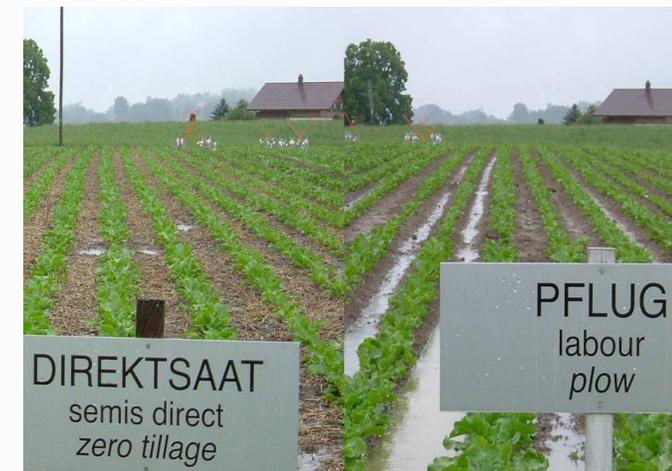
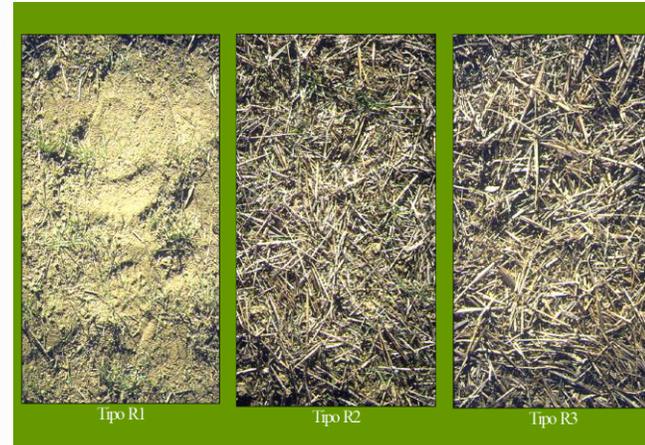
How does CA work?



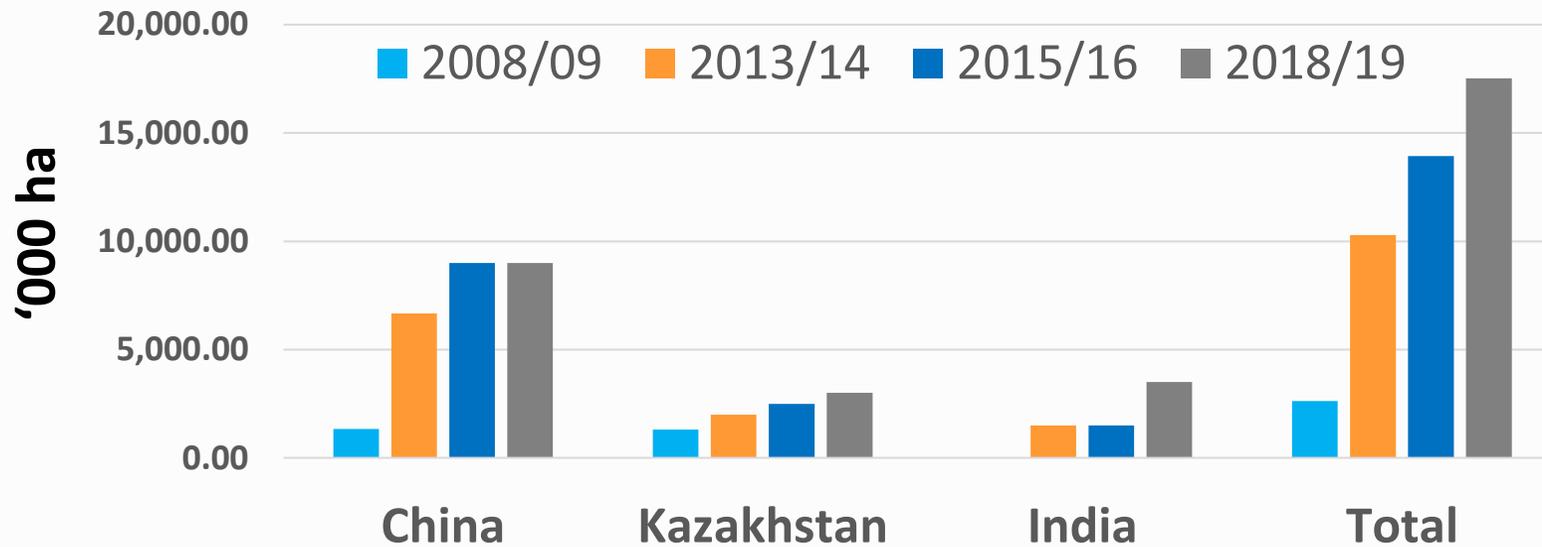
What are the benefits of CA?

CA is a Climate Smart Approach that provides ecosystem services and sustainably increases yield, production and profit.

- Reduces soil erosion
- Improves soils health, structure and water infiltration
- Reduces CO₂ emissions and contributes to climate change mitigation
- Improves water, nitrogen and carbon cycling for healthy environment
- Less fertilizer, pesticides, energy, labour and water



Who applies CA in Asia?



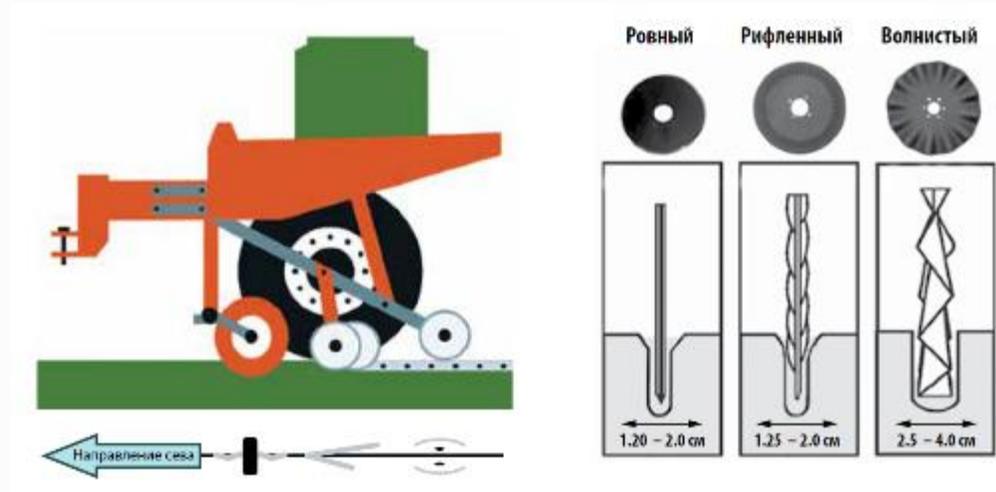
Globally 205 M ha in 2018/19 (15% cropland)

	2008/09	2013/14	2015/16	2018/19
Total	2,630.00	10,288.66	13,930.20	17,529.02

- China, Kazakhstan, India, Pakistan and Iran are actively expanding CA.
- CA Alliance for Asia-Pacific (CAAAP) hosted at the Conservation Tillage Research Centre (CTRC) at the China Agriculture University, Beijing.

What is the proper machinery for CA?

Most of the available drills/seeder are for the large scale production, heavy and not always respond to the requirements



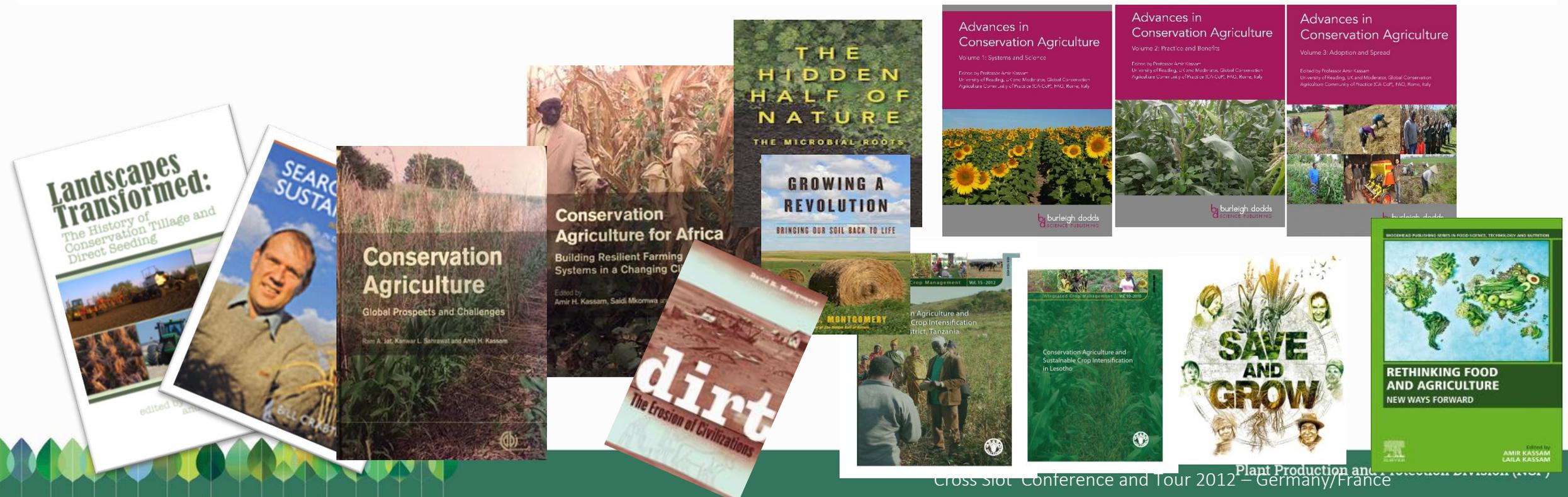
What innovation is being done for machinery?



No-till drills for small farms, planting cover crops, equipment
for chopping, moving and rolling the green biomass

How to further promote CA?

- Document, demonstrate and upscale successful experiences
- Provide policy support (legislation, strategies, incentives)
- Capacity development for leaving no one behind (gender, youth, etc.)





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FAO Global Conference on Sustainable Agricultural Mechanization (GAMC)

*Theme: Efficiency, Inclusiveness, and
Resilience*

Rome, Italy

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