

Expert Group Meeting on Harnessing Innovative Technologies to Advance Green Transformation for Sustainable Development in North and Central Asia

Leveraging mechanization-based innovation and technologies for sustainable and climate-smart agriculture in North and Central Asia

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27 March 2024

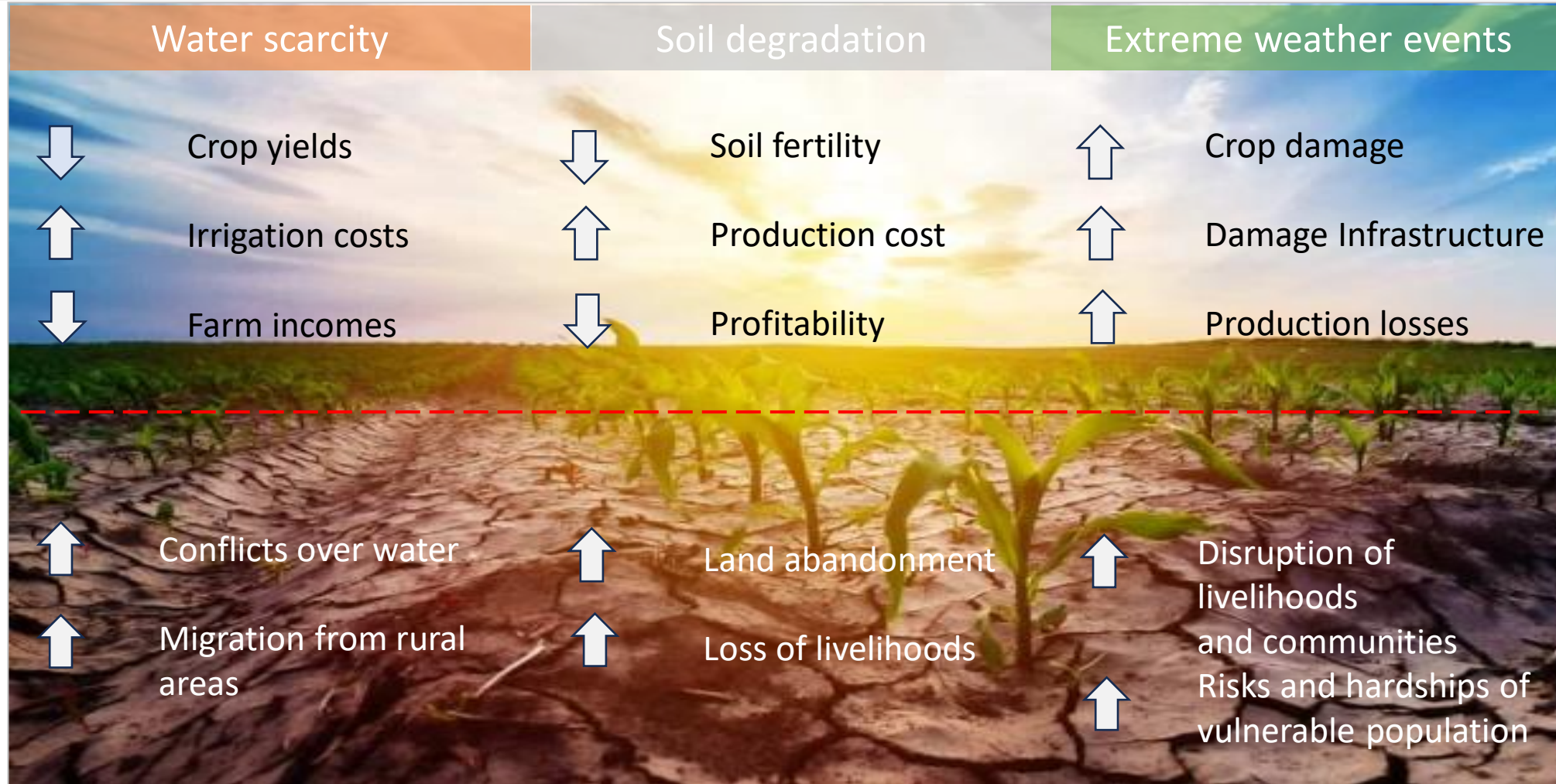


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Climate Change Impacts



Examples of Mechanization-based Technologies and Practices

No tillage and subsoiling stubble traw mulching



Permanent Soil Organic Cover

Solar Power Drip Irrigation



Diversification of Species

Biodegradable and permeable plastic film mulching



High-efficiency water-saving irrigation technologies



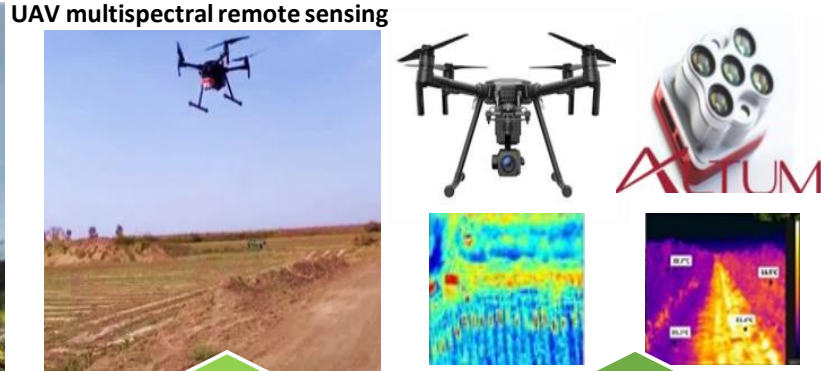
Drones for fertilizer/pesticide/herbicide spaying



Low pressure irrigation technologies



Role of Innovative Mechanization-based Technologies and Practices



Increased productivity

Reduced environmental impact

Enhanced crop quality

Empowerment of small farmers

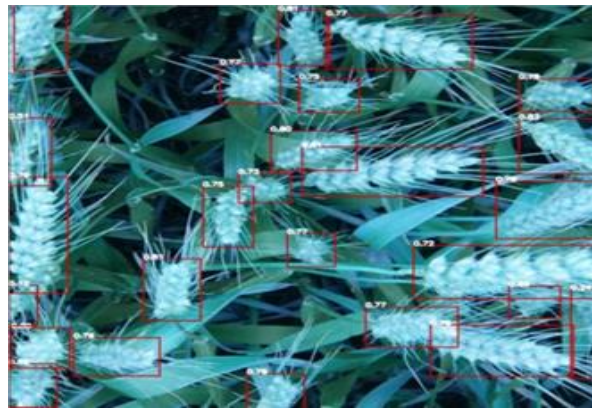
Sustainable agricultural mechanization, tailored to the unique environmental and socio-economic contexts of North and Central Asia, can play a pivotal role in food system transformation

Integration of Digital Devices and Artificial Intelligence (AI)

Weather monitoring + agricultural mechanization



big data of weather + agricultural mechanization



Anti-evaporation pond



UVM for plant protection



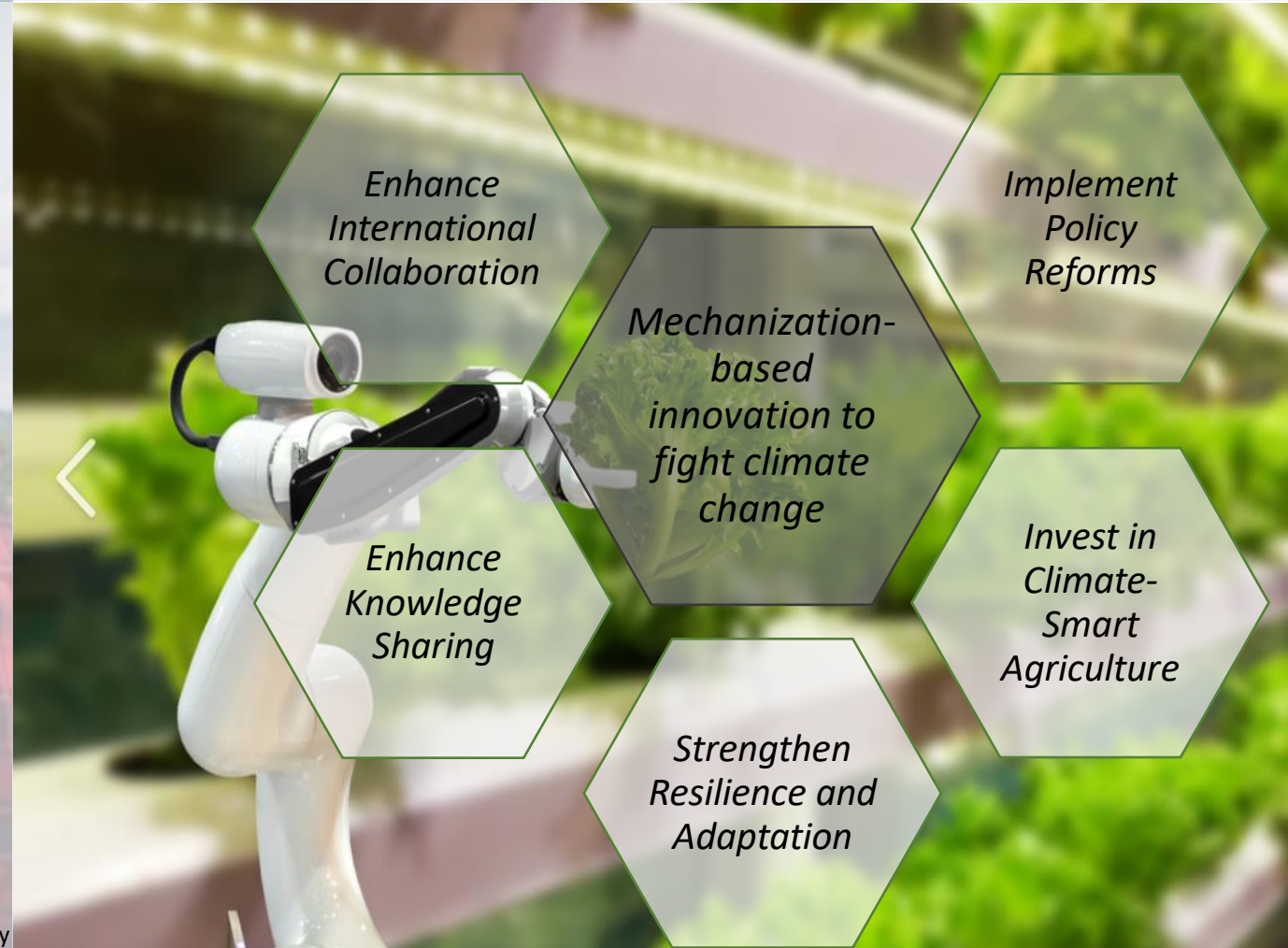
- Digital devices such as smartphones, tablets, and IoT sensors play a pivotal role in modern agriculture.
- They enable farmers to access real-time data, make informed decisions, and optimize resource use.
- AI could help agriculture by enabling predictive analytics, automation, and providing some recommendations.
- AI-powered tools could help to analyze data to provide valuable insights for farmers.

Solutions and Pathways Ahead

Leveraging mechanization-based innovation and technologies for sustainable and climate-smart agriculture

- Policies and investments must prioritize capacity building initiatives
- Accessibility to applicable and affordable technologies
- Development of infrastructure that supports sustainable farming practices
- Strengthened cooperation in climate adaptation strategies at international, regional and sub-regional levels

Photo credits: The agrotechdaily



CSAM's Engagements and Collaborations



Online Workshop on Climate Smart Mechanization for Sustainable Food Systems Transformation in Central Asia
27 September 2021 (14:00 - 16:00 Beijing Time)

Co-organized by ESCAP CSAM, United Nations ESCAP, and WFP China Centre of Excellence.

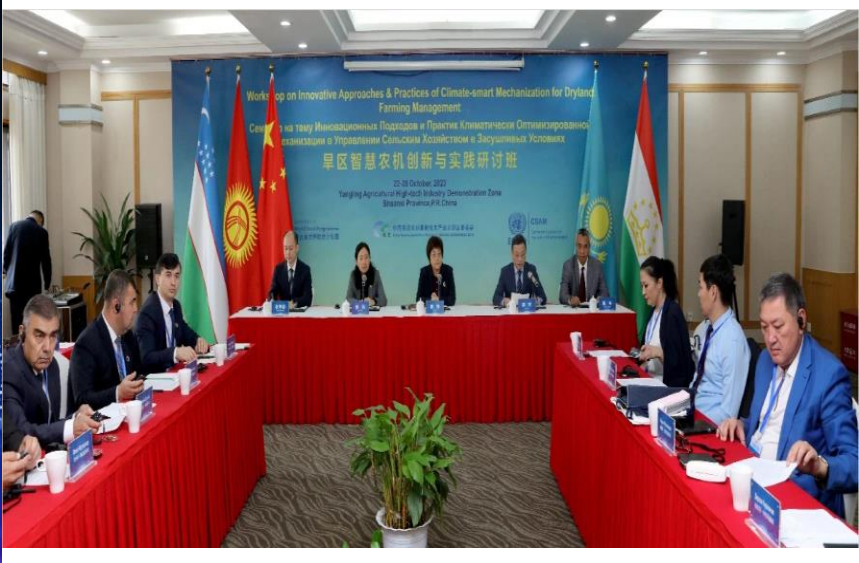
WORKSHOP ON CLIMATE SMART MECHANIZATION FOR TRANSFORMING AGRICULTURE IN ARID AND SEMI-ARID AREAS
28 September 2022 14:00-16:00 (Beijing Time) / 06:00-08:00 (GMT)

Participants include: Mr. Siddharth Chatterjee, Ms. Ling HE, Mr. Sini Qiu, Ms. Xiu Li, Ms. Yutong Li, Ms. Mina Kumari, Mr. Jiehui XU, Mr. Aziz Nurbekov, Mr. Junfeng WANG, Mr. Anshuman Varma, Mr. Abilzhanly Toktar, Mr. Zhayitobek Baldarovich Mad'yarov, Mr. Muminov Botir Nabierich, Ms. Kurbanova Mustazam, and Ms. Aisha Abdulayeva.



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Sci-Tech Empowering Rural Transformation Report 2022/23



**Thank you for your
attention!**



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