

Concept Note

Online Training Workshop on Climate Smart Mechanization for Dryland Agriculture in Central Asian Countries

30th September 2020

(14.00 – 16.00 hrs Beijing time)

I. Background

Eradicating poverty, ending hunger, and taking urgent action to combat climate change and its impacts are among the objectives the global community has committed to achieving by 2030 by adopting the Sustainable Development Goals. Agriculture has been used as an important instrument in eradicating hunger, poverty, and all forms of malnutrition and will be a key determinant for achievement of the SDGs. However climate change is expected to act as a key barrier to agricultural growth in many regions, especially in countries heavily dependent on rain-fed agriculture.¹ The impacts of Covid-19 have further aggravated the situation.

Sustainable agricultural mechanization plays a key role in addressing these constraints and balancing the economic, social and environmental dimensions of sustainable agricultural development. It also contributes tremendously in transitioning to a path of modern agriculture and higher rural incomes. Climate smart agriculture is an approach to transform agricultural systems and to support food security under a changing climate by providing context-specific and flexible solutions. As part of climate smart agriculture, climate smart mechanization can provide effective solutions to climate change threats, particularly for drought-stricken areas.

The Training Workshop on Climate Smart Mechanization for Dryland Agriculture in Central Asian Countries is part of a collaborative, strategic initiative of the Centre for Sustainable Agricultural Mechanization of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP-CSAM), Administrative Committee of Yangling Agricultural High-Tech Industry Demonstration Zone, P.R. China, and the World Food Programme China Office (WFP China) to promote sustainable agricultural mechanization and food security. The event will especially focus its attention on climate resilience solutions through sustainable agricultural

¹FAO (2018), Climate Smart Agriculture - Building Resilience to Climate Change

mechanization interventions.

II. Rationale

Countries in Central Asia are landlocked. “During the summer, air temperatures can reach as high as 50 degrees Celsius in the desert areas, whilst minimum winter temperatures drop as low as -45 degrees Celsius in glacial mountain areas. The region falls within arid and semi-arid climate zones and plays host to a wide range of natural conditions including deserts, steppes, fertile valleys, mountains and glaciers”² The whole region is highly drought-prone. Over the past three decades, average annual temperatures have risen by 0.5 degrees Celsius in the region and it is forecasted to increase by 2.0 to 5.7 degrees Celsius by 2085. While climate change will not be uniform across the region, it is set to intensify environmental degradation. Central Asia is projected to experience significant climate change, combined with increased weather volatility.

Agriculture is a key economic sector and a major source of livelihoods for Central Asian countries, especially for the impoverished population. Agricultural production, being sensitive to weather shocks and climate volatility, may be negatively affected by climate change if no adaptive actions are taken. Climate smart technologies could help in strengthening the resilience of agricultural producers in the region to increased weather variability due to climate change.³

Climate-smart agriculture has wide-reaching implications beyond narrowly defined climate change and adaptation to it, and covers a broad spectrum of sustainable development objectives (FAO 2018). Climate-smart mechanization involves technological, institutional and policy solutions. In view of technical intervention, for instance, reduced tillage could lead to decreases in carbon emissions.⁴ Gupta et al. indicate several dozen of such climate smart technologies experimented with in Central Asia for the last decade, such as zero tillage, direct seeding, cutback and zigzag irrigation, double cropping, etc.⁵ The corresponding economic analyses of these technologies also show that many of them have positive cost-benefit ratios,⁶ i.e. could be used as no-regret options for adapting to climate change, sustainably managing soil and water resources, and raising farming productivity and incomes.

²Central Asia Climate-related security risk assessment (2018)

³AlisherMirzabaev, (2018). Improving the Resilience of Central Asian Agriculture to Weather Variability and Climate Change

⁴Branca, G. N. McCarthy, L. Lipper and M.C. Jolejole (2011): Climate Smart Agriculture: A Synthesis of Empirical Evidence of Food Security and Mitigation Benefits for Improved Cropland Management. Mitigation of Climate Change in Agriculture Series 3. Rome, Italy: FAO.

⁵Gupta, R., K. Kienzler, C. Martius, A. Mirzabaev, T. Oweis, E. de Pauw, M. Qadir, K. Shideed, R. Sommer, R. Thomas, K. Sayre, C. Carli, A. Saparov, M. Bekenov, S. Sanginov, M. Nepesov, and R. Ikramov (2009) Research Prospectus: A Vision for Sustainable Land Management Research in Central Asia. ICARDA Central Asia and Caucasus Program. Sustainable Agriculture in Central Asia and the Caucasus Series No.1. CGIAR-PFU, Tashkent, Uzbekistan.

⁶ Pender, J., Mirzabaev, A., &Kato, E. (2009). Economic Analysis of Sustainable Land Management Options in Central Asia. Final report for the ADB. IFPRI/ICARDA, 168.

In addition, the outbreak of the COVID-19 pandemic has resulted in severe consequences socially and economically in the Asia-Pacific region, including for countries in Central Asia. It is pushing large segments of people, in particular, the vulnerable groups, into more distressed situations. The impacts on the agricultural sector, which is already vulnerable due to land degradation and climate change risks, need to be addressed with urgency given the close linkages of the sector with food and nutrition security as well as livelihoods. Mechanization solutions can play a key role in enabling recovery of the agricultural sector in Central Asian countries from the adverse impacts of the Covid-19 pandemic and building resilience to future shocks.

To enhance mechanization for climate resilience in Central Asian countries through knowledge sharing and capacity building, expertise and experiences from different backgrounds will be shared via the training workshop which will expose the audience to innovative technologies and good practices in water efficient application, conservation agriculture, and post-harvest treatment among others.

III. Objectives

The training workshop is expected to achieve the following objectives:

- 1) To promote a better understanding of climate smart mechanization technologies and field practices in the particular of Central Asian countries;
- 2) To provide a platform for knowledge and information sharing on climate smart mechanization amongst Central Asian countries;
- 3) To explore opportunities for collaboration among partners on climate smart mechanization technologies and field practices to promote technology transfer, trade and investment.

IV. Organization and Participation

The training workshop will be organized through online/virtual modality as a joint effort of ESCAP-CSAM, Administrative Committee of Yangling Agricultural High-Tech Industry Zone of China and WFP China Office on 30th September 2020. The workshop will be broadcast live on a tele-conference platform and details will be communicated to the nominated participants separately. The target audience includes representatives at management and technical level of government institutions, research/educational institutes, civil society organizations as well as the private sector from Central Asian countries. The event is also open to other interested stakeholders.

Woman participants are strongly encouraged.

The event will be conducted in Chinese and Russian languages. Notice on how to register and participate in this online event will be circulated in due course.

V. Tentative Programme

30 September 2020

Time	Item
14.00 – 14.05	Moderator, Dr. Yutong LI, Head of CSAM will deliver opening remarks and make a brief introduction to the online training workshop
14:05-14:20	Welcome remarks by: <ul style="list-style-type: none">• Dr. Sixi QU, Country Director, WFP China• Ms. Jing LI, Party Secretary of Yangling Committee• Mr. Nikolay Pomoshchnikov, Head of Office, ESCAP Sub-regional Office for North and Central Asia
14:20 - 14:45	<i>Water Efficient Technologies and Field Practices for Dryland Agriculture- Professor Fucang ZHANG, Northwest Agricultural & Forestry University, China</i>
14:45-15:10	<i>Mechanization for Conservation Agriculture in the Central Asian Context – Dr. Hafiz Muminjanov, Agricultural Officer for Sustainable Intensification of Cropping systems, Food and Agriculture Organization of the United Nations, Rome, Italy</i>
15:10-15:35	Q&A
15:35-15:55	<i>Country Briefings (4-minutes oral briefing by one representative from each country)</i>
15.55-16:00	Concluding remarks by Dr. Yutong LI