Proposed Topics for the 2022 Technical Seminar
Working Paper 2

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Recommendation from the Secretariat of the
International Cotton Advisory Committee

December 2021

The following topics are proposed for the 2022 Technical Seminar of the ICAC Plenary Meeting:

1. Regenerative agriculture: Which practices can combat climate change most effectively?
2. Will cotton production be viable without government subsidies?
3. The sustainability challenge of biotech genetically modified cotton

**Topic 1: Regenerative agriculture: Which practices can combat climate change most effectively?**
Soils across the world are degrading rapidly as they are subjected to continuous erosion, chemical pollution, decarbonisation, desertification and loss of fertility and biodiversity. Agricultural scientists have issued warnings that unless proactive measures to build and protect soil organic matter, soil health and soil fertility are implemented, within 50 years mankind could lose the capability to feed and clothe the world and combat the ill effects of global warming. The technical seminar will discuss the recent studies on regenerative agricultural practices and farming systems and their impact on cotton production practices and its value chain.

**Topic 2: Will cotton production be viable without government subsidies?**
Many governments provide input subsidies, price support, crop insurance, schemes to reward exports and encouragement for domestic procurement in cotton production and marketing. Subsidies not only insulate farmers from price risks, they also help to promote cotton production and foster artificial revenues. Government insurance programmes also add a protective cover against crop losses. Critics argue that direct payments to farmers and crop insurance payments within countries are less likely to impact international prices. However, government policies to reward exporters and encourage domestic procurement could favour local produce over imported cotton and impact international trade. The technical session will discuss the economic viability of cotton production across the globe in the absence of government subsidies and support. The discussions will also
focus on the types of government subsidies/support that could have the highest impact on international prices and trade.

Topic 3: The sustainability challenge of biotech genetically modified cotton

Biotech cotton has thus far been approved in 19 countries and is being cultivated across the world for more than 25 years. Biotech cotton is commercially available for insect resistance and herbicide tolerance. Reports indicate significant economic benefits due to effective control of bollworms and weeds. Many countries have become highly dependent on biotech cotton varieties and many believe that cotton production will no longer be viable without the biotech traits. However, a few target insects and weeds have been reported to have developed resistance to Bt and herbicides respectively in recent years to threaten the sustainability of biotech cotton. *Helicoverpa zea* (in the USA) and the pink bollworm *Pectinophora gossypiella* (in India) have developed resistance. Glyphosate resistance was recorded in 13 weed species each in USA and Australia and eight each in Argentina and Brazil. Insecticide usage has been increasing constantly over the past 10 years in India, Pakistan, China, Brazil and the USA for the control of thrips, whiteflies, mealybugs, boll weevils and pink bollworms. Insecticide use for boll weevil control is a major concern in Brazil. Enhanced use of herbicides to control resistant weeds in USA and Brazil is an emerging concern. Research reports show that new cotton varieties have been developed using CRISPR and RNAi and offer promise in combating weeds, insect pests, diseases and drought. The seminar will discuss strategies to improve sustainability of the existing biotech cotton events while exploring the deployment of new technologies to enhance the endurance of biotech cotton.