



The importance of Regenerative Cotton Agriculture in Egypt and the Way Forward

Adopting regenerative practices is critical for Egypt's agricultural future as it fundamentally transforms natural resource management and fosters long-term sustainability.

By emphasising the restoration of soil vitality and optimizing water efficiency, these methods build a robust foundation that protects the environment and guarantees the continued productivity of Egypt's lands for generations to come.

Cotton is not only Egypt's flagship agricultural export but also a cornerstone of its national identity. Renowned worldwide for its superior quality, Egyptian cotton underpins a robust value chain—from seed to fabric—that caters to high-end international markets. Yet, increasing consumer demand for sustainable products and the escalating impacts of climate change have underscored the urgent need for a transition toward regenerative agricultural practices.

In the cotton industry, regenerative approaches underpin a shift toward more sustainable and resilient production systems. Techniques such as crop rotation, inter-cropping, and integrated pest management enhance soil fertility and water retention while reducing dependence on chemical inputs. This strategy enables cotton farmers to secure stable yields and maintain the exceptional fibre quality demanded by global markets, positioning the industry to meet rising consumer expectations for sustainably sourced textiles.



This insights paper distils key perspectives from a recent roundtable in Egypt hosted by CottonConnect, Cotton Egypt Association (CEA) and Cotton Research Institute (CRI). The event brought together government representatives, industry experts, private sector leaders, and academics to discuss the challenges and opportunities for scaling regenerative cotton agriculture. Their discussions have helped shape a multi-pronged approach to transform Egypt's cotton sector while preserving its legacy of excellence.



Khaled Schuman, Chief Executive Officer of the Cotton Egypt Association, said: "We are thrilled to be a part of such a tremendous opportunity to push forward the REEL Regenerative Egyptian Cotton Programme with CottonConnect and Cotton Research Institute. The discussion at the roundtable was a step in the right direction towards improving regenerative practices for the sustainability of Egyptian Cotton. I feel optimistic about the future of the programme and what we can accomplish together."

Dr. Abdel Nasser Radwan, Director of the Cotton Research Institute, added: "At the Cotton Research Institute, we are committed to equipping farmers with the knowledge and tools they need to effectively adopt regenerative agriculture practices. Through collaboration with CottonConnect and the Cotton Egypt Association, we are not only sharing technical expertise but also ensuring that Egyptian cotton remains at the forefront of sustainability. Regenerative farming plays a crucial role in improving soil health, optimizing water consumption, enhancing biodiversity, and mitigating the impact of climate change—reducing the use of chemical pesticides and synthetic fertilisers, which ultimately improves farmers' livelihoods and safeguards the future of the industry."



Why Is Egypt an Attractive Market?

Egypt's cotton sector holds several strategic advantages:

- **Premium Quality:** Possessing the highest cotton quality in the world, Egyptian cotton is prized for its long and extra-long staple, which delivers exceptional strength, lustre, and a silky texture.
- **Complete Value Chain:** From seed to finished fabric, Egypt's fully integrated supply chain ensures quality control and traceability.
- **Non-GMO Crop:** The absence of genetically modified crops reinforces the natural authenticity of Egyptian cotton.
- **Supportive Government Policies:** Egypt has a very well defined structured cotton system for governance and management.
- **Strong Domestic and Export Markets:** A trusted spinning and weaving industry serves both local needs and international markets—including key destinations like the European Union.



Key Challenges Facing Regenerative Cotton in Egypt

The roundtable identified several challenges that currently threaten both agricultural productivity and the long-term sustainability of Egypt's cotton sector:

1. WATER SCARCITY

- **Irrigation Inefficiencies:** Traditional surface irrigation systems consume large quantities of water, even as efforts continue to reclaim more land.
- **Resource Management:** Enhancing the soil's ability to retain water and adopting water-saving irrigation techniques are urgent priorities.

2. SOIL HEALTH DEGRADATION

- **Intensive Cultivation Practices:** The practice of cultivating lands twice a year—combined with heavy tillage and excessive use of chemical fertilizers and pesticides—has led to soil compaction and nutrient depletion.
- **Erosion and Loss of Organic Matter:** Continuous cropping without adequate regenerative measures has diminished soil fertility over time.

3. CLIMATE CHANGE IMPACTS

- **Extreme Weather Conditions:** Rising temperatures, Egypt receives very little annual precipitation, and prolonged droughts are intensifying water scarcity and stressing crop productivity.
- **Shifting Pest Dynamics:** Changes in insect populations and behaviour have increased the need for chemical controls, further impacting sustainability.

4. FRAGMENTED LAND HOLDINGS

- **Smallholder Dominance:** With around 80% of Egyptian farmers operating small, fragmented plots, coordination for pest management and the adoption of modern practices is challenging.
- **Limited Access to Resources:** Fragmentation also hampers the efficient delivery of training, technical expertise, and new technologies.

5. HIGH INPUT PRODUCTION COSTS

- **Escalating Prices:** Inflation and devaluation have driven up the cost of essential inputs like fertilizers and pesticides, squeezing farmer incomes.
- **Inefficient Resource Use:** There is a pressing need for improved crop management practices to optimize input usage and reduce waste.

6. SOCIO-ECONOMIC PRESSURES

- **Rural Livelihoods at Risk:** Cotton is central to the social structure of rural communities. Economic or climatic stresses could have far-reaching impacts on social stability.
- **Capacity and Coordination Gaps:** Limited access to credit, fragmented knowledge sharing, and uneven technical skills further impede the transition to regenerative practices.

Key Solutions and Actions to Accelerate the Transition

To overcome these challenges and fully realise the potential of regenerative cotton agriculture, stakeholders at the roundtable proposed a comprehensive suite of solutions:

GOVERNMENT INITIATIVES

Policy Support and Incentives:

- Implement subsidies, low-interest loans, and grants specifically designed to support the shift to regenerative practices.
- Ensuring the availability of regenerative agriculture inputs, such as bio-pesticides and bio-fertilisers, in agricultural cooperatives at affordable prices is crucial for supporting farmers in adopting sustainable practices.
- The Egyptian government should implement policies that support sustainable agriculture, including subsidies, incentives, and grants, to encourage farmers to adopt regenerative practices. These measures are essential for scaling up regenerative farming in the country.
- Invest in research to develop innovative, climate-resilient agricultural technologies.

Infrastructure Investments:

- Upgrade irrigation systems—adopting drip and sprinkler technologies—to conserve water and boost efficiency.
- Establish robust certification and traceability frameworks to ensure the authenticity of sustainably produced cotton.



PRIVATE SECTOR ENGAGEMENT

Innovation and Technology Deployment:

- Foster partnerships with technology firms to introduce precision agriculture tools, decision support systems, and satellite imaging for improved crop and water management.
- Encourage public-private collaborations that leverage shared expertise and resources.

Market-Driven Initiatives:

- Develop sustainable supply chains capable of securing a premium for cotton produced under regenerative standards.
- Collaborate with international brands to connect sustainable production practices with enhanced market access.

FARMER EMPOWERMENT

Education and Capacity Building:

- Launch comprehensive training programs to educate farmers on soil health, integrated pest management, and efficient water use.
- Utilise demonstration plots and 'lead farmer' networks to facilitate peer-to-peer learning and broader dissemination of best practices.

Access to Finance and Resources:

- Develop tailored financing solutions to help smallholders invest in regenerative inputs and modern irrigation systems.
- Implement support programs that facilitate the aggregation of fragmented land holdings to improve resource efficiency.

TECHNOLOGICAL SOLUTIONS

Adoption of Modern Tools:

- Embrace precision agriculture techniques to optimize input usage and monitor crop health in real time.
- Leverage digital platforms and mobile applications for knowledge sharing, weather forecasting, and market information.

Sustainable Soil and Water Management:

- Implement soil regeneration strategies which promote inter-cropping, reduce tillage and adding compost and FYM to restore organic matter and improve water retention.
- Develop advanced water management systems to minimise wastage and secure long-term water availability.

For further information on how CottonConnect is supporting the transition to regenerative cotton farming in Egypt, please contact us at:

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Eng. Mohamed Zalouk from CATGO: "CATGO is committed to supporting REEL Regenerative Agriculture in Egypt as part of our broader mission to promote sustainable agriculture. We closely monitor every stage of seed cotton handling—from sorting at collection centers to processing lint cotton for export or domestic spinning mills—ensuring strict separation between REEL Regenerative cotton and traditional cotton. In collaboration with CottonConnect, we are implementing a comprehensive cotton tracking program across the supply chain."

Conclusion

Egypt stands at a pivotal crossroads in its cotton journey. The globally celebrated quality of Egyptian cotton offers a unique platform to pioneer regenerative practices that address soil degradation, water scarcity, and socio-economic challenges. By leveraging supportive government policies, private sector innovation, and robust farmer empowerment programs, Egypt can transform its cotton sector into a model of sustainability and resilience.

CottonConnect's role is to support this transition by:

- Localising regenerative frameworks to align with Egypt's unique agricultural landscape.
- Driving stakeholder collaboration through continuous education and capacity-building initiatives.
- Support in establishing a dedicated sustainability unit under the Ministry of Agriculture, in collaboration with relevant entities, will help define and customize sustainable procedures and criteria tailored to the Egyptian context.
- Promoting data-driven, scientific approaches to optimize inputs and enhance overall farm management.

Through a unified effort, Egyptian cotton can continue to thrive as an economically vibrant and environmentally sustainable resource for generations to come.

