



The regenerative revolution: Towards restorative agricultural processes

Insights on the challenges and interventions needed to advance the future of regenerative cotton across Türkiye, Egypt, and China

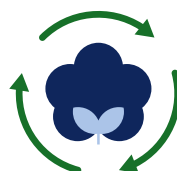
CottonConnect's 2024-25 roundtables in Türkiye, Egypt, and China highlighted regional challenges and opportunities for regenerative cotton. All three countries have compelling reasons to embrace this shift: Türkiye seeks to reduce its significant cotton import dependency, Egypt aims to maintain the premium quality of its world-renowned cotton, and China, as the largest textile exporter, has an imperative to reduce its carbon footprint. This paper is an outcome of discussions and insights from the roundtables under three common themes:



Climate change has uneven effects across geographies, impacting small-holder farmers the most.



There is a need to engage with government bodies, academia and other stakeholders to develop structured training programmes for farmers on regenerative agriculture practices for specific geographies.



Regenerative agriculture will help these nations scale high-quality cotton production, ensure long-term land viability, and remain competitive in an increasingly sustainability-driven market.

The future of the textile and apparel industries relies on our adoption of more sustainable cotton farming practices. Regenerative agriculture offers a way forward. It takes a holistic approach that restores soil health, encourages biodiversity, promotes water efficiency, and reduces greenhouse gas emissions, while improving the livelihoods and resilience of farmers.

In 2024-25, CottonConnect hosted roundtable events in Türkiye, Egypt and China, convening industry leaders and experts from the public and private sectors. The events delved into the unique challenges and opportunities for regenerative cotton across each region.

This paper provides a summary of the key insights from these discussions. It reflects on similarities and differences, as well as highlights solutions to drive the regenerative revolution forward.

The case for regenerative agriculture

Türkiye, Egypt and China all have compelling reasons to embrace regenerative agriculture.

In the case of **Türkiye**, clothing and textiles are among the best-performing sectors, accounting for roughly 6.2% of the country's GDP¹. It has over 65,000 companies active in these sectors, employing over two million people². The country's cotton consumption is projected to be 1.45 million metric tons (MT) in the 2025 – 26 financial years, yet it is expecting to produce just 760,000 MT of cotton during this time³. In other words, current cotton production only meets about 52% of the domestic demand.

Egypt is world-famous for its cotton which has become a brand in and of itself. The strength, lustre and silky appearance of Egyptian cotton makes it among the most valued varieties of the crop, commanding a high premium. Minimising the use of chemical fertilisers and pesticides in farming will be critical to maintain its high-quality standards.

As the world's largest textile and garment exporter, there is also an opportunity – and arguably, an imperative - for **China** to take a lead in this space and reduce its global carbon footprint.

Regenerative agriculture will be essential in helping all three countries to scale up volumes of high-quality cotton, while ensuring their land is productive, viable and resilient for future generations to come. Equally, it will enable them to stay competitive in a market that increasingly values sustainability and imposes penalties on non-compliance.



1. Türkiye Country Report 2. Ibid. 3. Turkey: Cotton and Products Annual



Challenges impeding the regenerative transition

Common challenges identified across all countries in the transition to regenerative practices are the growing impact of climate change, farmer mindsets and the lack of a joined-up approach to farmer education and support. How these challenges manifest across regions, however, differ.

Climate Change is hitting cotton-growing regions unevenly but hard.

Extreme weather events as a result of global warming poses unique challenges for cotton farming communities across Egypt, Türkiye and China.

In Egypt and Türkiye climate change is exacerbating the existing water scarcity challenges for cotton growing communities. Egypt, a predominantly desert country, faces serious trials in expanding arable land, while rising sea levels poses frequent flooding risks in its fertile Nile Delta region. Additionally, shifts in weather patterns have disrupted pest dynamics, altering insect populations and behaviours, and creating further challenges for farmers.

Growing populations will further strain resources, with rural communities, especially in Egypt, being the most vulnerable due to their dependence on cotton and fragile socio-economic conditions.

In China, climate change impacts vary from one corner to the other due to its sheer size. With little or no rainfall and cold, dry winters, its western regions rely heavily on irrigation. However, widespread practice of animal husbandry provides manure for composting, replacing chemical fertilisers and contributing to soil health. Conversely, the humid east grapples with increasingly erratic and intense rainfall, presenting its own set of agricultural complications.



Risk-averse behaviours among farmers slows uptake of alternative methods.

A common challenge across all three countries is the farmers' reluctance in adopting new practices, though the drivers differ regionally. In Türkiye, there is a generational gap, where older farmers are more open to adopting regenerative practices since they resemble traditional methods, whereas younger farmers, less familiar with these approaches, tend to prefer modern techniques and rely heavily on chemical inputs. Conversely, in China, it is the older generation that exhibits more conservatism, particularly concerning upfront costs and perceived risks.



Small-holder farmers make up most of the agricultural workforce in all three countries and often work in isolation.

As they operate with limited plots of land, small-holder farmers struggle to access training and information on the latest agricultural technologies and best practices. The same applies to agricultural machinery, affordable commercial seeds, fertilisers and pesticides. Moreover, the dispersed nature of their landholdings makes coordinated efforts in pest control and the development of effective market access strategies challenging. Ultimately, this lack of scale translates to reduced financial resilience and limits their capacity for innovation and growth.



Paving the way towards a regenerative future

An integrated approach, engaging both the private and public sectors, is required to propel the shift towards regenerative agriculture. All three countries have established strong foundations to build on.

TÜRKIYE

Türkiye's government has in place certification systems and regulations that promote a restorative approach to nature, including its National Organic Regulation and Good Agricultural Practices. The latter has a separate sub-scope for cotton which covers both sustainability and human rights due diligence for farming as well as ginning. The goal is to create an umbrella standard for its cotton that meets international benchmarks.

Its latest Agricultural Production Plan, a programme implemented from 2025, also has a focus on transforming the country's crop production to be more traceable, sustainable, high-quality and efficient.

Two industry associations - Türkiye's Textile and Raw Materials Association, and the Turkish Exporters Assembly (TIM) – have partnered to ensure alignment of the country's textile industry to the European Union's Green Deal.



EGYPT

The Egyptian government and other stakeholders are already providing support and incentives for cotton farmers to adopt regenerative agriculture practices. Its 'Sustainable Agricultural Development Strategy Towards 2030', for example, outlines a plan to modernise Egypt's agriculture sector while promoting the sustainable use of natural resources. Equally, it has issued its Organic Agriculture Law, regulating the use of synthetic inputs.

Another existing programme, coined the 'Egyptian Cotton Project', launched by the United Nations Industrial Development Organisation (UNIDO), aims to enhance the sustainability of the cotton, ensure the inclusion of all stakeholders within the value chain, and help the industry to create value through innovation. It brings together Egypt's Ministry of Trade and Industry, the Ministry of Agriculture and Land Reclamation, as well as local and international private sector stakeholders.

CHINA

The China Cotton Association (CCA), alongside other industry organisations, introduced the Cotton China Sustainable Development Programme in 2021. An important part of this initiative is its sustainable production standards which offers guidance on the management and use of agricultural chemicals, environmental protection, and occupational health and safety during cotton planting.

Overall, regenerative agriculture fits nicely into China's National Strategy that champions sustainable development, eco-conscious farming and reducing carbon emissions. Indeed, the government is increasingly investing in training and support for farmers to adopt more sustainable practices. Its National Soil Fertility Improvement programme is one such example.



Going further

A well-structured educational and promotional programme is essential to train farmers and showcase the benefits of new technologies and regenerative practices.

To make regenerative agriculture work in Türkiye, Egypt, and China, a focused and practical approach is needed. This includes investing in clear, hands-on training and awareness programmes that highlight real benefits like better yields, lower costs, and higher profits.

One of the most effective ways to address the risk-averse mindsets and build trust of farmers is to provide practical demonstrations of how regenerative practices can lead to positive results – including an increase in yield and profitability, and reduced input costs. This is best communicated by members of their own community, leveraging the knowledge and experience of lead farmers to educate and train others.



Governments have a key role to play in supporting the transition to regenerative agriculture.

Despite progress, there is scope for governments to strengthen financial support and incentives in favour of sustainable agriculture. This is especially important during the early stages of transition, when yields and input costs can fluctuate, and farmers need greater stability.

For further information on how CottonConnect is supporting the transition to regenerative cotton farming, please contact us at:
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Cotton is a multi-sectoral product, and therefore, requires a collaborative effort.

Academic institutions, government agencies, including ministries, brands, and NGOs and all industry stakeholders must work together to increase knowledge sharing and to promote widespread adoption of regenerative practices. A joined-up approach beyond just ministries of agriculture is critical to driving meaningful, long-term change.

Brands have a critical role to play too.

As drivers of the cotton value chain, brands are in a unique position to drive real impact. Greater engagement coupled with concrete and tailored actions to promote regenerative agriculture is key. For instance, through marketing efforts, they can educate consumers on the importance of regenerative practices and build demand for fibres using such methods.



With interest in regenerative agriculture growing—and new regulations coming in quickly—now is the right time to act. By focusing on farmer education, stronger government support, collaboration, and brand leadership, we can build a more sustainable and resilient future for cotton.

