



State-led cotton deregulation in Uzbekistan: Reforms and effects

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Abstract

Uzbekistan's cotton supply chain experienced a wave of deregulation reforms in the last five years. This paper attempts to assess the process and results of the State-driven transition from the centrally planned cotton sector to private cotton-textile clusters. The article employs secondary data sources to analyse the effects of the deregulation policies descriptively. The study reveals that the deregulation reforms increased productivity in the sector. The reform initiatives also vertically integrated the cotton supply chain from production to marketing. However, the reforms failed to transparently incorporate and harmonise the needs of cotton farmers that grow and sell raw cotton. Consequently, the promises of the State-led deregulation reforms and initiatives are eroded. The article highlights the emerging risks and tensions in the current cotton liberalisation and privatisation reforms in Uzbekistan.

Keywords: cotton deregulation, privatization, liberalization, cotton clusters, supply chain

1. Introduction

Uzbekistan has been among the world's largest cotton producers and exporters since the Soviet Union era. Revenues generated and transfers from the cotton export to the State budget played a crucial role in the public expenditure of independent Uzbekistan in the 1990s (Pomfret, 2009). Cotton also served as a domestic cushion against the global food and energy crisis in the 2000s (Rudenko et al., 2008). Cotton continues to be a valuable export commodity in present-day Uzbekistan, bringing the country over one billion dollars annually (Table 1). In 2020, Uzbekistan got 1.2 billion US dollars from its cotton export and ranked the eighth highest cotton exporter globally. Uzbek cotton in 2020 accounted for 9 and 2.7% of the total exports of Uzbekistan and the global cotton exports, respectively.

One way of measuring the relative advantage of Uzbekistan in cotton is by calculating its ‘revealed’ comparative advantage (RCA). The concept of ‘revealed’ comparative advantage refers to the relative trade performance of an individual country in a particular commodity. The RCA is an index value also called the Balassa index, introduced by Bela Balassa in 1965 (Balassa, 1965). The most widely used mathematical formula for RCA index is that of Balassa (1965), which is given by

$$RCA_i^k = \frac{E_i^k/E^k}{E^i/E}$$

where $E^i = \sum_k E_i^k$, $E^k = \sum_i E_i^k$, and $E = \sum_i \sum_k E_i^k$. RCA equals the proportion of a country i exports for a commodity k (E_i^k/E^k) divided by the proportion of world exports for that commodity (E^i/E). A comparative advantage is “revealed” if RCA is greater than one (>1). If the RCA index is less than unity, the country is said to have a comparative disadvantage in the commodity (Hillman, 1980; French, 2017). Accordingly, Uzbekistan’s RCA in cotton was high and above 25 between 2017 and 2020 (Table 1). In 2020, the RCA for Uzbekistan in cotton was almost 32, indicating that the country exports 32 times its fair share of total cotton exports.

Table I. Export value and revealed comparative advantage of Uzbekistan in cotton, 2017-2020

Year	Uzbek cotton export			RCA (index) ^a
	Value (in billion USD)	Share from Uzbek’s total export value (%)	Share from total world cotton export value (%)	
2017	1.08	11.67	2.11	36.07
2018	1.03	9.43	1.77	30.65
2019	1.29	8.66	2.38	28.96
2020	1.20	9.04	2.69	31.91

Source: calculated using export data from the UN Comtrade database [1]

Note: ^a the Revealed Comparative Advantage (RCA) for Uzbekistan in cotton is calculated as:

$$\text{Uz RCA in cotton} = \frac{\text{UZ Cotton Export} / \text{UZ Total Export}}{\text{World Cotton Export} / \text{World Total Export}}$$

Notwithstanding its economic values, the Uzbek cotton supply chain has been historically criticised for being socially, economically, and environmentally repressive (Macdonald, 2012; ILO, 2019; McGuire & Laaser, 2018). Djanibekov and Finger (2018) emphasise that the supply chain was State-regulated with no say of the cotton farmers. Petrick and Djanibekov (2019), Zorya et al. (2019a), and Asfaw (2020) highlight the inefficiency of the supply chain related to resource use, as the State disproportionately used most public funds for cotton production and processing. Micklin (1988) and Rudenko et al. (2012) show that cotton irrigation was ecologically unsustainable and has hugely contributed to the drying up of the Aral Sea. Moreso, Yusupov (2019) highlights that high-end western markets boycotted the Uzbek cotton supply chain for using forced labour in the cotton harvest.

In the early years of Uzbekistan's independence, policymakers were not open to the cotton supply chain reforms despite numerous setbacks and criticisms. Instead, Uzbekistan inherited the Soviet pathway of managing the cotton sector using extractive institutions that maintained a mix of State control, farmers' taxation, and subsidies long after independence (Lombardozi, 2020). The State feared that any radical deregulation in the cotton supply was a risky move towards losing control over its hard-currency needs (Djanibekov et al., 2010; McGuire & Laaser, 2018). In contrast, the new government led by President Shavkat Mirziyoyev adopted several radical deregulation reforms in the cotton supply chain since 2017.

Deregulation in this paper refers to liberalisation and privatisation policies and initiatives. As Belloc and Nicita (2011) point out, liberalisation refers to reducing legal entry barriers, regulations and restrictions by the government, while privatisation refers to the process of allowing shared access to State-owned sectors. The cotton deregulation reforms in Uzbekistan meant lessening the State control and regulations in the cotton supply chain and shifting towards greater participation of private cotton-textile enterprises as organisers of the supply chain. The deregulation process also means the transition from the centrally planned input provision and State procurement to a market-based supply chain, abolishing State regulations of price, production plan, and mandatory sale of raw cotton.

Literature on economic deregulation by Armstrong and Sappington (2006) and Belloc and Nicita (2011) point out that governments struggle to determine whether and how to approach privatisation and liberalisation. They also stress the difficulty of introducing competition and efficiency into regulated sectors. Roland (2008) indicates that international financial institutions push developing and transition countries to implement economic reforms, liberalise their economy and privatise key industries to remain competitive in attracting domestic and foreign investments. However, how governments should approach privatisation and liberalisation is a controversial issue. Similarly, Belloc and Nicita (2011) show that liberalisation and privatisation policies' overall effect on a country's economic development and welfare is context-specific. Also, liberalisation and privatisation generate different results on the actors subjected to the reform. Thus, the impact of deregulation policies depends on the interests of governments.

This paper examines the complexities involved in the State-led cotton sector deregulation process in Uzbekistan. The article investigates the wave of liberalisation and privatisation reforms in the cotton supply chain since 2017 and the early effects. Three specific research questions guide the study. These are: what are the intents and drivers of the State-led cotton deregulation policies? What are the early outcomes of the reform policies? And, how are reform benefits distributed among the actors along the supply chain? The discussions in the paper dwell on the emerging potentials, issues, and risks in the cotton supply chain following the introduction of the privately managed cotton-textile clusters and reduction in the State control. The article has five sections, including this. The next section describes the methods and data used in the study. Section three presents and discusses the main reform strategies adopted by the State. Section four provides the early effects of the cotton deregulation programs. Finally, the paper summarises and concludes the main features of the deregulation reforms in the cotton supply chain.

2. Methods and data

In the absence of access to primary data and research, this study used available secondary sources of information to answer the research questions at hand. The paper reviewed over ten relevant legislation documents and national strategies adopted since 2017 to explore the State-led cotton deregulation policies. The policy documents are accessed from the online national database on legislation [2].

The study descriptively and critically assesses the implementation process and early effects of the reforms by reviewing available institutional reports and news articles. The study uses multiple sources of information to increase the validity of the information and compare findings. It mainly used data from organisation reports and working papers prepared by the World Bank (WB), Cotton Campaign, International Labour Organization (ILO), United States Department of Agriculture (USDA), Uzbek Forum for Human Rights, and RadioFreeEurope Radio Liberty (rferl). The research took methodological considerations while using secondary data and grey literature. It assessed the purpose of the original data, who was responsible for the data collection, and how was it collected. Accordingly, the paper acknowledges that the institutions that gathered the original data did it for other purposes, different from this study. Reporting institutions have different interests and mandates in the Uzbek cotton supply chain. However, the source of grey literature and the primary investigators have reputations for research integrity. In some cases, the documents are also peer-reviewed. Moreover, this study conducted expert consultations with the data managers of the WB and ILO reports (personal key informant interviews in October 2019 and follow-up meetings in 2020).

3. Results

a. *The State-led cotton deregulation programs*

Below is a chronological review of the significant cotton reform policies and interventions since 2017.

The Action Strategy 2017-2021

The current government expressed its initial commitments for reduced farm size, efficient land use, resource reallocation, less State intervention, and social accountability in the cotton sector as part of its broader reform action strategy between 2017–2021 adopted in early 2017[3]. The action strategy served as the basis for State-led reforms in the period. The priorities of the strategy include diversification, modernisation, and import substitution in the agriculture sector. Development partners contribute and align their support to these broader state priorities.

The introduction to a Joint -Stock Company

Consistent with the tasks defined by the five years action strategy and the concept of administrative reform, the president of Uzbekistan passed a decree in 2017 (No. PP-3408) [4] to

radically improve the traditional Soviet-style cotton sector management. The policy was one of the first moves towards deregulation in the cotton supply chain. The legislation announced the establishment of a State-private Joint Stock Company (JSC) called ‘UzPakhtaSanoat’ responsible for implementing the State order for production and marketing of raw cotton. A review of the legislative document reveals that the State promoted the JSC to allow shared access to facilities and shared responsibilities to manage the State-owned cotton industry. The decree mandated the JSC to solve ‘systemic problems’ in the cotton sector management and increase transparency. The management reforms included the introduction of advanced technologies and modern corporate governance methods to produce, process, and sell finished cotton products. The JSC was also mandated to establish an electronic-based information, communication, and accounting system of the cotton supply chain. By having a State-private joint company, the government aimed to optimise the coordination among shareholder organisations, create competitive cotton producers, and favourable legal and organisational conditions for effective cotton supply chains. However, the company was liquidated as of March 2020 as it was no more relevant in the current private cotton cluster model.

Introduction of private Cotton-textile clusters

The State made significant privatisation of the cotton sector in 2018 by introducing the concept of private cotton-textile enterprise or cluster (hereafter called cotton cluster) to organise and manage the cotton supply chain (decree of the Cabinet of Ministers No. 53) [5]. The government expressed its belief that the cluster approach is the fastest and modern way to reform the cotton (and overall agriculture) sector. This State’s early trust in clusters was echoed in a speech the President of Uzbekistan gave at a meeting in September 2018, where he stressed: ‘*the future of agriculture depends on clusters*’ [6]. The 2018 legislation established that the State would provide loans (with collateral) for clusters to cover 60% of their estimated cost of cotton production. The government also committed to supporting clusters through tax, customs, and access to land to grow, process, and produce final cotton products. In return, the State resolution obligates the privately managed cotton clusters to introduce modern technologies and methods in the cotton sector, including efficient agriculture resource use. The State resolution anticipates that cotton clusters will implement supply-chain activities (production, processing, and trade) in a locally manageable and tailored way and vertically integrate the cotton sector in the global market economy.

The Agri-food strategy 2020-2030

Uzbekistan’s ten-year agri-food development strategy adopted in October 2019[7] further justified and backed the deregulation reforms in the cotton supply by providing evidence on the importance of modernising the value chain. The agri-food strategy highlights the dilemma that large cotton farm sizes prescribed by the State farm consolidation program in 2008 do not necessarily bring economic gain or cotton farm efficiency. Accordingly, the agriculture strategy calls for reduced cotton land in areas with lower yields than the country average to diversify other crops for domestic consumption and exports. The agri-food strategy also emphasises reducing and quitting raw cotton export while adding value and jobs within Uzbekistan.

Elimination of State cotton production and procurement regulations

A significant liberalisation reform in the cotton sector came in March 2020 through the presidential decree (PP-4633) [8]. The 2020 decree eliminated the prescription of cotton inputs by the local government, State production quota, and State procurement price. The legislation calls for all cotton production and marketing management to go through private cotton clusters. With the abolishment of State orders on raw cotton production and marketing, the legislation also liquidated the ‘UzPakhtaSanoat’ joint-stock company mentioned above.

b. Early effects of the cotton deregulation reforms

Below are the significant effects of the cotton reforms since 2017.

Rapid-expansion of controversial cotton clusters

Cotton-textile clusters are at the core of the recent cotton deregulation reforms. Almost all the State managed cotton supply chain works in Uzbekistan are currently transitioned to private cotton-textile clusters (Table 2). The State established the first 15 cotton clusters in 2018 on 164 thousand hectares of land in 20 districts an experiment. Cotton clusters rapidly expanded in 2019. The long-term agri-food strategy was an essential push in this aspect, highlighting the importance of the roll-out of the new agro cluster-based approach in the move towards a market economy and the expansion of domestic cotton processing. The number and area covered by cotton clusters grew to 96, covering 86% of the total cotton-growing area in Uzbekistan by 2020. According to the March 2020 legislation (article 6)[8], the plan is to have one cluster in every cotton-growing district of Uzbekistan by 2021.

Table II. Number of cotton-textile clusters and operation area, Uzbekistan, 2018-2020

Year	Number of Clusters	Area covered by clusters (ha)	Cluster's share of the total cotton area (%)
2018	15	164,000	16
2019	75	645,295	63
2020	96	907,783	86

Source: USDA-GAIN, 2020; WB, 2020a; and the Uztexilprom [9].

The cluster model grows cotton in two ways. One is directly on the land leased by the cluster organising private enterprises. The second is on cotton farmers' land that the cluster organiser contracts. The membership-based Uzbekistan textile and garment association (*Uztekstilprom*) coordinates and facilitates the cotton clusters' cotton supply chain works nationally. However, it is not evident how much freedom the association has in decision-making as an independent non-government body.

Available reports reveal that clusters have mixed reputations and complex transactional relationships with cotton farmers. Lombardozzi (2020) highlights that the privatisation intervention results in the decline of State accumulation of wealth and influence but will encourage new forms of private accumulation of wealth. The human rights organisation- Cotton

Campaign (2021) states that the State initiated and promoted the cotton cluster model with little or no consultation with cotton supply chain actors. More so, the State rolled out the cluster model quickly, without taking time to review and adjust the model. According to media reports, cotton farmers had complained against the cluster's contractual agreement as early as 2018. The State, however, did not stop from promoting the expansion of private clusters. This speedy expansion led to critiques on the transparency and establishment process of the clusters. For instance, Putz (2020) questions the corporate integrity of most cluster companies, while Lasslett et al. (2020), based on an analysis of 71 cotton clusters, identified several corporate integrity and good-governance risks in cotton clusters.

An Uzbek economist, Yusupov (2019), expressed his worries that the cluster model is a farmers' 'bondage' by private cotton textile companies rather than the emergence of liberalised cotton markets. Similarly, independent reporters like Synovitz and Ashur (2019) refer to clusters as replacements of the old State control by new government-supported private monopolies. The authors argue that clusters are State designed monopolies because the private textile companies control the access to almost every production and marketing resource needed for cotton supply (like agricultural loans, seeds, fertilisers, fuel, cotton gins, and export licenses).

Increased raw cotton yield

The total cotton farmland declined in the last few years as intended by the government reform policies. With the decline in cotton land area, the total output of raw cotton has dropped in the transition process (Table 3). Nevertheless, cotton production has remained optimum (above 2 million tons) to meet the growing demands of more than 500 domestic textile companies (in 2020) (USDA-GAIN, 2020; WB, 2020a).

Table III. Raw Cotton area and productivity, Uzbekistan, 2016-2020

Item	2016	2017	2018	2019	2020	Difference b/n the 2020 and 2016 values (in %)
Total cotton Area ('000 ha)	1,265	1,201	1,108	1,051	1,051	-17%
Cotton land share of total agriculture land (%) ^a	37	35	33	31	31	-17%
Raw cotton production ('000 tons)	2,959	2,854	2,286	2,692	3,080 ^b	4%
Cotton yield (tons/ ha)	2.34	2.37	2.06	2.56	2.93	25%

Source: Author using the State Statistics Committee of Uzbekistan (SSC) data

Note: ^a total irrigated land is estimated to be 3.4 million ha (SSC, 2020).

^b calculated using data from the ministry of agriculture press (Kursiv.Uz report on December 1, 2020) [10].

The average cotton yield in Uzbekistan increased to 2.6 tons per ha in 2019 after a long stagnation in the late 1990s and 2000 (Zorya et al., 2019b). The USDA report (USDA-GAIN, 2020) attributes the recent improvements in Uzbekistan's cotton productivity to improved

resource use efficiency, adoption of modern technology, and improved agronomic practices in cotton clusters. The World Bank (2020a) indicated that the yields and quality of raw cotton increased after the establishment of clusters. The average productivity in clusters was 2.9 tons/ha in 2019 and was 0.5 tons/ha higher than outside the clusters.

The WB paper (2020a) reports that most clusters inject private capital for soil improvements and seed quality on their farms. They invest in modern agricultural equipment, including irrigation, ginneries that minimise cotton wastage, and harvesters that reduce the cotton-picking cost. Similarly, the ILO (2019) pointed out that the cluster initiative improves raw cotton productivity and quality by efficiently using land, water, and fertiliser. Besides attracting foreign and private investments, the USDA-GAIN (2020) reported that clusters also bring qualified foreign agriculture experts to support the supply chain.

Clusters introduced modern high-yielding and disease-resistant cotton seed varieties in the supply chain and, for the first time, tried out organic cotton production that is certified by the European Union in 2019 (USDA-GAIN, 2020). Clusters also introduced the use of modern drip irrigation systems, increasing water use efficiency and preventing soil salinity (WB, 2020a). Clusters installed water-saving drip irrigation technologies on 3,163 hectares of cotton land in 2018 and rolled out on over 9,000 ha of cotton fields in 2019 (USDA-GAIN, 2020).

The ILO (2019) noted that some clusters perform the roles of farm advisory services. They provide agronomic consultations to cotton farmers in the cluster and promote the adoption of modern technologies. Also, clusters took over the State's distribution and management of input supply and credit, allowing farmers to focus on their farm management (ILO, 2019). Uztextileprom also recorded cases where clusters paid off farmers State debts.

The amount of State credit for the cotton supply chain also grew in recent years. The State distributed a total credit of 7.1 trillion Uzbekistan Soums in 2019, compared to 1.5 trillion UZS in 2016 (WB, 2020a). State revolving credit is provided for 60% of the cotton production cost and at a lower interest rate than the market.

The March 2020 resolution promises future increases in cotton yield. According to article 5 of the resolution, the financial burden of cotton farmers and clusters will lessen with increased access to credit. The participation of other commercial banks in credit provision is anticipated to provide diverse credit package options (WB, 2020a). There is, however, no evidence that cotton farmers can access the credit directly; despite the World bank's claim of increased credit access through private banks. The 2020 resolution also allows cotton farmers to choose their inputs, including the variety of cotton to grow. The policy expects that such freedom for cotton farmers in farm decisions will increase innovation for improved technologies in cotton production.

Increased risk of uncertain land policy

The 2020 resolution did not abolish local authorities' intervention on land allocation for cotton production. Also, the legislation does not guarantee cotton farmers the freedom to cultivate alternative crops on their leased land. Instead, Synovitz and Bobojon (2021) highlight that the expansion of privatised cotton supply chains stirred more fears and vulnerabilities

among cotton farmers that had to transition their production contract arrangements from the State mediated JSC discussed above to private clusters with no clear guidance.

The Cotton Campaign (2021) reported an increased liability in some cotton-growing communities as local authorities forced farmers to give up their land leases, with no compensation, for the direct farming by the cluster organising enterprises. With the continued State's land-crop placement, farmers who lease land and refuse to grow cotton or are not 'efficient' will still lose their land. According to the Cotton Campaign (2021) assessment, most cotton farmers that lost their land to clusters direct farming either lost their means of subsistence from land or became employees of the cluster. Lombardozi (2020) points out that such unregulated resource market transition enables the creation of 'super winners' (in this case, clusters) and 'super losers' (cotton farmers) with high rural inequality.

Cotton farmers are exposed to risky global markets.

The price of raw cotton is a valuable variable in cotton farmers' income (Rudenko et al., 2009). According to the WB (2020b), the price for raw cotton has increased since 2017 and reached the export market price in 2019. The State procurement price for raw cotton was 488 USD/ton in 2019, compared to 231 USD/ton in 2017. Nevertheless, as of 2020, the government abolished its price interventions (article 3 of March 2020 Resolution 4633)[8]. The WB (2020b) anticipates that the withdrawal of the State from the cotton price setting will create room for cotton farmers to negotiate competitively with the buying cluster and adjust the minimum farm-gate prices every quarter of a year based on world market price assessment. Therefore, the government expects cotton farmers to be engaged and motivated by the cotton prices established following the price liberalisation policy. Along this line, Petrick et al. (2017) noted that dependence on international markets might create opportunities for cotton farmers during a price boom and be a solid structural change force, as in Kazakhstan in the early 2000s. However, the new price-setting arrangement and dependence on world prices do not guarantee a price increase for cotton farmers. One risk is the volatility of world prices, and another is declining cotton prices with the cheap innovations in the textile industry (Pomfret, 2009). The deregulation reforms expose cotton farmers to world price movements in the absence of government protection from price volatility and subsidised inputs (Lombardozi, 2020).

Cluster provide cotton farmers with access to the market for their raw cotton based on contractual arrangements. Nevertheless, farmers are obligated to sell their cotton harvest only to a State-designated private cluster organiser enterprise in the district. Such a contract arrangement that does not respect cotton farmers' supply choice maintains farmers' vulnerabilities. Cotton farmers have limited bargaining power over the price they will receive for their output without a market choice. Along with this, economists explain that the absence of competition between and within clusters that could have incentivised higher cotton prices for farmers makes the cluster model 'a failure by design' (Djanibekov et al., 2020; Synovitz & Bobojon, 2021). Based on an interview of cotton farmers, Synovitz and Bobojon (2021) indicate that the farmers are dissatisfied with the terms of their contracts and feel deceived because clusters paid a lower price than agreed.

More so, delays in payment for cotton farmers by cluster organisers, beyond the agreed contract pay date, and disagreements on the quality of cotton supplied by the cotton farmer are some reasons for unfavourable contractual relations. In 2019, clusters could not pay farmers on time, making farmers lose confidence in the cluster model (Synovitz & Ashur, 2019). Delays happen because cluster organisers pay cotton farmers after the raw cotton is semi-processed into fibre and transferred to the textile enterprises.

Along this line, the price offered by cluster organisers is based on a defined quality of cotton and is a matter of contract agreement. Both the buyer cluster and the cotton farmer are supposed to agree upon the acceptable cotton quality. If the two cannot compromise on the cotton quality delivered under the contract terms, then both resort to the use of mediation (Pomfret, 2009). However, local officials are in charge of ensuring that each cotton farmer fulfils the harvest obligations specified in the cluster contracts, raising concerns that local officials could resort to coercion to the advantage of the private clusters (Synovitz & Bobojon, 2021).

Slow labour and mechanisation reform

The cotton reforms since 2017 did not eliminate the use of forced labour in the cotton harvest. Much of the cotton in Uzbekistan is still hand-picked by citizens mobilised during the harvest season. The Uzbek Forum for Human Rights (UFHR, 2020) report indicates that local or district labour employment offices recruit seasonal cotton pickers through temporary contracts. However, available data shows that not all cotton pickers go to the field willingly. An assessment of cotton harvest mechanisation by Swinkels et al. (2016) indicates that cotton farmers with cotton fields far from the population have difficulty attracting cotton pickers. The risk of State-mobilised involuntary labour may be high in such remote areas. The paper further indicates that the forced workers are less qualified, less experienced and less motivated.

Similarly, the ILO reports on third party monitoring of forced labour (2019; 2020) indicate that the use of forced labour in cotton picking is prevalent in labour short cotton-growing areas of Uzbekistan. Local authorities threaten involuntary people (mostly civil servants) and forcibly mobilise them to pick cotton for small pay. The reports highlight that if people refuse to go to the fields, the authorities ask them to find (or pay for) a replacement out of their own pockets.

The government anticipated doing away with the use of forced labour through the March 2020 legislation [8] that abolished the State cotton quota and the responsibility of local authorities in mobilising pickers. At the same time, the reform was expected by many to regain the respectability of Uzbek cotton in global markets (Schweisfurth, 2020). The promises are, however, not met. The involuntary recruitment of pickers makes the cotton sector lose about 1 billion US dollars every year due to the international boycott of Uzbek cotton (ILO, 2021a; Yusupov, 2019).

Cotton reforms promised to eradicate the internationally criticised forced labour practice in two ways. One is by increasing wages paid to cotton-pickers and attracting more voluntary seasonal workers. The second is by mechanising the harvest. In connection with the former solution, an ILO study (2017) on recruitment practices and seasonal employment pointed out

that eliminating forced labour in Uzbekistan cotton farms was a manageable problem. The ILO highlighted that pickers' improved wages and working conditions in the cotton fields would attract many willing and productive pickers. Available evidence shows that the State only partially implemented the recommendations of the ILO study.

Cotton pickers are paid based on the State average pay offer for a kilogram of hand-picked cotton. The pay rate for cotton pickers has gradually increased. For instance, the maximum payment (for the second harvest) increased from 0.07 USD/kg in 2017 to 0.16 USD/kg in 2020, as in Table 4. The State avails credit to the privately managed clusters to cover the cost of cotton pickers. The total number of cotton pickers declined with the decreased cotton area and the slightly increased mechanisation in the cotton harvest (ILO, 2021b). The local authorities mobilised about 1.8 million pickers in the 2020 cotton harvest, compared to 2.8 million in 2017 (Table 4).

Table IV. Total number of cotton pickers, forced labour, and wages, Uzbekistan, 2017-2020

Item	2017	2018	2019	2020
Total no. of cotton pickers ('000)	2,800	2,400	1,750	1,800
No. of forced labour ('000) and proportion from total No. of pickers (in %)	364 (13)	170(6.8)	102(5.9)	72(4)
Payscale (\$USD/kg) for 1st – 2nd harvest ^a	0.05-0.07	0.07-0.13	0.08-0.14	0.10-0.16

Source: ILO, 2021b; Cotton Campaign 2021.

Note: ^a calculated using an exchange rate: 1USD=10,000 UZS

The ILO (2019; 2021) independent third-party monitors indicated that most of the clusters paid pickers on time and in total. Some clusters even topped up pickers' wages above the minimum State wage rates. Also, most cluster operators created decent working and living conditions for cotton pickers for the season they are in the fields (ILO, 2020). Grove (2018) and ILO (2020) show that conducive working conditions made cotton-picking an attractive seasonal rural job for many rural Uzbek households, where more than 80% are women pickers. The total number of pickers in the 2020 harvest was slightly higher than the previous year because of the return of many migrant workers to the rural area due to the Covid-19 pandemic (ILO, 2021a).

Cotton reforms promote the mechanisation of cotton harvest as an option to solve the forced labour problem. However, the rate of mechanisation of harvest is inadequate and slow despite the government's policy for active promotion and ambitious targets of harvest technology in labour shortages areas (Swinkels et al., 2016; Lillis, 2017; ILO, 2021). Pomfret's (2002) argument that mechanised cotton picking will not be efficient in Uzbekistan, given that the running costs outweigh the benefits, still prevails. Only 5% of the total national cotton harvest in 2020 was mechanised, out of the 30% target set by 2026 (WB, 2020a). Along this line, Swinkels et al. (2016) indicated that local cotton pickers prefer manual picking because the payment is a significant advantage to other daily agricultural wage activities. Cotton pickers

(mainly women) in the study by Swinkels et al. (2016) were concerned that cotton harvest mechanisation would negatively impact their livelihood and decline daily wages.

The eradication of forced labour practice in cotton picking is slow (Batmanghelidj & Shaykhov, 2020; Makarenko, 2020). Forced labour use, though declining, is maintained even after the 2020 deregulation of the cotton supply chain (Table 4 above). In the 2020 cotton harvest, 4% of the total pickers (72 thousand people) were forced, compared to 13% (336 thousand) in 2017. According to Synovitz (2020), local authorities continue to mobilise and threaten public employees to work on cotton farms against their free will. The reports on the 2020 harvest by the Cotton Campaign (2021) and UFHR (2020) also indicate that local officials still turned to forced labour to harvest cotton fields, including those fields under clusters.

4. Conclusion

Uzbekistan's strategic cotton supply chain experienced a wave of deregulation reforms since the coming of the new government in 2017. This study reveals the following ten features of the cotton deregulation reforms and the current cotton supply chain in Uzbekistan:

i) the government of Uzbekistan reformed the cotton sector as part of its overall economic development and openness commitments. The deregulation program fits into the country's broader agriculture sector liberalisation, privatisation, and diversification strategy. The reform policies intend for greater participation of private cotton-textile firms, improved productivity, and social accountability in cotton-picking practices. The State hurried to roll out the private cluster-based cotton supply chain model to ensure vertical integration of sector activities, increase foreign investment and nullify raw cotton export.

ii) In the last four years, the cotton total land has reduced significantly, productivity has improved, and the supply chain is increasingly integrated into high-value textile markets. The cotton deregulation reform reduces the State control in the production and marketing of cotton and shifts the responsibility to the private cotton- textile companies.

iii) The incentives for cotton farmers in the deregulation process are ambiguous. The reforms do not ensure horizontal integration of cotton farmers, despite that integration is an essential variable for an ideal agro-based cluster (Galvez-Nogales, 2010). Consequently, the cotton cluster model in Uzbekistan is suffering from poor credibility. Cotton farmers are the most affected actors in the pressure of the deregulation process. The fast expansion of the monopolistic cotton clusters without consensus and voluntarism from contracted cotton farmers contributes to the ambiguity.

iv) The cotton reform policies are formulated based on what the government and its foreign development partners want. The intention and expectation of the deregulation policies to reduce government control are not based on the reality, capacity, and demand of cotton farmers, textile enterprises and others along the supply chain. However, deregulation without building the actors' capacity and participation is not sufficient to solve the complex problems in the traditional cotton supply chain.

v) The deregulation process misses essential principles of competition in the supply chain. The monopolistic cluster organisers do not openly compete for the selection of cotton farmers in the market. The lack of transparency in the cluster system has made it lose its reputation (Lasslett et al. 2020).

vi) The deregulation reforms preserved past land market risks and led to the emerging price-related threats in the cotton supply chain. The reforms exposed cotton farmers to volatile market prices and stringent quality expectations. Also, the cotton deregulation policies do not pay attention to the prevailing weak land tenure rights policy and its effects on the supply chains.

vii) The cotton deregulation reforms did not eliminate the practice of forced labour in cotton harvests. Labour recruitment for cotton pickers is still through State recruitment channels, and local authorities still bear the most responsibility to organise the cotton harvest, even for the clusters. The State transferred the forced labour problem into private hands. However, the cotton clusters do not know how to address every labour problem in the supply chain. There is no evidence that the private cluster organisers can effectively mobilise voluntary cotton pickers through market incentives and without the intervention of local authorities.

viii) The local elite cotton-textile companies with better access to the State-owned farmland, local authorities, and other resources capture the benefits of cotton reforms. The State-led deregulation shifts wealth to private textile enterprises in the cotton supply chain. The reform policies do not pay attention to the fair distribution of resources for all actors within the supply chain. Cotton farmers access to public resources are by- designed distributed through the private cluster -textile companies. There is limited evidence that contracted cotton farmers have easy access to resources including drip irrigation, fertiliser, seed, credit, cotton harvester, and modern ginning.

ix) The overall effect of the cotton deregulation reform on Uzbekistan's human development is ambiguous. The current ambiguity resonates with Pomfret's (2009) doubt about a genuine reform in any area of the Uzbek economy, given experience with non-implemented potential reforms. As it stands now, the Uzbek cotton sector has a long way to go for success to be felt by all. There are misperceptions, primarily where policy intentions are not understood, not adequately carried out, and the reform benefits are not fairly distributed among all actors.

x) Uzbekistan can draw on neighboring Kazakhstan's relevant lessons and insights on market-driven coordination of the cotton sector. Petrick et al. (2017) show that private entrepreneurs, even small farmers, can be successfully integrated into an export-oriented value chain released from government intervention. They also stress the danger of strategies copied from other countries and contexts to an 'innovative' approach to the cotton sector management.

Finally, the paper acknowledges that Uzbekistan has adopted potentially significant reforms in its cotton sector. However, it is difficult to fully assess the potential impacts and the factors affecting the reforms without an empirical study. An extensive analysis of the cotton supply chain actors' experiences due to the deregulation interventions is vital. A critical research questions are how best the supply chain actors can cooperate in the reform process and how to mitigate the negative effects of the reform policies.

Notes:

- [1] See the trade performance of countries at (<https://comtrade.un.org/data/>)
- [2] See the Uzbekistan legislations database at (<https://www.lex.uz/>)
- [3] See the intentions and five priority areas of the government expressed in the Action Strategy for 2017-2021 (Decree of the President NoUP-4947 On 07.02.2017 at: http://www.strategy.gov.uz/ru/pages/action_strategy.)
- [4] See the original decree on measures to radically improve the cotton industry NOPP-3408 on 28.11.2017 at <https://www.lex.uz/ru/docs/3429581>
- [5] See the original legislation for the introduction of cotton clusters (Decree of the cabinet of ministers. No. 53 on 25.01.2018 on measures to introduce modern forms of organisation of cotton and textile production at: <https://www.lex.uz/ru/docs/3527483>)
- [6] See the speech in an interview with a news media, September 12, 2018 at: <http://www.gazeta.uz/ru/2018/09/12/meeting/>
- [7] See the Uzbekistan Agri-food strategy for 2020-2030 adopted in October 2019 following the Decree of the President— PD-5853 at: <https://www.lex.uz/docs/4567337>
- [8] See the March 2020 Decree of the President on cotton liberalisation No. 4633 at: <https://lex.uz/docs/-4756994>
- [9] See the list of the 75 cotton clusters, district, and land area in 2019 at: <https://uztextile.uz/> & the list of the 96 cotton clusters in 2020 is at: [Хлопково-текстильные кластеры – Ассоциация "Узтекстильпром" \(uzts.uz\)](http://uzts.uz/)
- [10] See the news on total cotton harvested in 2020 at: <https://www.kursiv.uz/news/obschestvo/2020-12/v-uzbekistane-sobrali-svyshe-3-mln-tonn-khlopka>

References

- Armstrong, M. and Sappington, D. (2006). Regulation, Competition and Liberalisation, *Journal of Economic Literature*, 32(2): 353-380.
- Asfaw, E. (2020). *Global Practices in Agriculture Knowledge & Innovation System: Lessons for Uzbekistan's AKIS*. Center for Policy Research and Outreach (CPRO), WIUT, Uzbekistan. <http://cpro.wiut.uz/publications>.
- Balassa, B. (1965). Trade Liberalisation and 'Revealed' Comparative Advantage. *The Manchester School of Economic and Social Studies*, 33: 99-123.
- Batmanghelidj, E. and Shaykhov, O. (2020). *The Boycott on Uzbek Cotton Needs to End*. Foreign Policy. Argument published March 28, 2020. [The Boycott on Uzbek Cotton Needs to End \(foreignpolicy.com\)](http://foreignpolicy.com).
- Belloc, F. and Nacita, A. (2011). Liberalisation-Privatisation path: Policies and Politics. European University Institute, Working paper 2011-32, Milano.
- Cotton Campaign. (2021). *A Changing Landscape in Uzbek Cotton Production*. January 27, 2021. Washington, DC. www.cottoncampaign.org/a-changing-landscape-in-uzbek-cotton-production.html Uzbek Forum Key Findings 2020 (cottoncampaign.org).

Djanibekov, N., Rudenko, I., Lamers, J., and Bobojanov, I. (2010). *Pros and Cons of Cotton production in Uzbekistan*. Case Study # 7-9: Food Policy for Developing Countries: The role of government in the global food system, Cornell University.

Djanibekov, N., Charyyeva, S. and Sanaev, G. (2020). *Cotton Sector Reforms in Central Asia*. IAMO Annual.

Djanibekov, U and Finger, R. (2018). Agricultural risks and farmland consolidation process in transition countries: The case of cotton production in Uzbekistan. *Agriculture Systems* 164,223-235. <https://www.sciencedirect.com/science/article>.

French, S. (2017). Revealed comparative advantage: What is it good for? *Journal of International Economics*, 106: 83-103 <https://doi.org/10.1016/j.jinteco.2017.02.002>.

Galvez-Nogales, E. (2010). *Agro-based clusters in developing countries: staying competitive in a globalised economy*. FAO- Marketing Economist Rural Infrastructure and Agro-Industries Division Rome, Italy. See <http://www.fao.org/3/i1560e/i1560e.pdf>.

Grove, T. (2018). Uzbekistan Aims to End Forced Labor in Cotton Fields. *Wall Street Journal*.: <https://www.wsj.com/articles/uzbekistan-picks-away-at-forced-labor-in-its-cotton-fields-11545042600>.

Hillman, A. (1980). Observation on the relation between 'Revealed comparative advantage and Comparative Advantage as Indicated by Pre-Trade Relative Prices. *Review of World Economics*, 116(2): 315-321. doi:10.1007/BF02696859.pdf .

International Labour Organization (ILO), (2017). *Recruitment practices and seasonal employment in agriculture in Uzbekistan*, Fundamental Principles and Rights at Work Branch (FUNDAMENTALS) - Geneva. https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/publication/wcms_561537.pdf.

ILO (2019). *Third-party monitoring of child labour and forced labour during the 2018 cotton harvest in Uzbekistan*, Geneva.

ILO (2020). *Third-party monitoring of child labour and forced labour during the 2019 cotton harvest in Uzbekistan*, Geneva.

ILO (2021a). Systemic forced labour and child labour has come to an end in Uzbek cotton. Press release January 28, 2021. https://www.ilo.org/washington/news/WCMS_767753/lang--en/index.htm.

ILO (2021b). *Third-party monitoring of child labour and forced labour during the 2020 cotton harvest in Uzbekistan*, Geneva. https://www.ilo.org/washington/WCMS_767756/lang--en/index.htm.

Lasslett, K.; Niyazova, U.; and Stanczak, D. (2020). *Out of the Cauldron, into the fire? Risk and the privatisation of Uzbekistan's Cotton sector*. Uzbek Forum for Human Rights and Ulster University. <https://www.uzbekforum.org/wp-content/uploads/2020/06/PB-issue2-v4.2.pdf>.

Lillis, J. (2017). *Uzbekistan: Without Forced Labor, Who will Pick the Cotton?* *Eurasianet article*. See: <https://eurasianet.org/uzbekistan-without-forced-labor-wholl-pick-the-cotton>.

Lombardozi, L. (2020). Patterns of accumulation and social differentiation through a slow-paced agrarian market transition in post-Soviet Uzbekistan. *J Agrar Change* 2020;20:637-658. <http://doi.org/10.1111/joac.12366>.

Macdonald, S. (2012). *Economic Policy and Cotton in Uzbekistan*. USDA, *Economic Research Service*. https://www.researchgate.net/publication/303484701_Economic_Policy_and_Cotton_in_Uzbekistan.

Makarenko, N. (2020). *Uzbekistan dismantles a 70-year-old chain of cotton slavery*. June 23, 2021. <https://www.ozy.com/around-the-world/uzbekistan-dismantles-70-year-old-chain-of-cotton-slavery/308949/>.

McGuire, D. and Laaser, K.(2018). You have to pick’: Cotton and State-organized forced labour in Uzbekistan. *Economic and Industrial Democracy Journal*, 42(3):552-572. <https://doi.org/10.1177/0143831X18789786>.

Micklin, P. (1988). Desiccation of the Aral Sea: A Water Management Disaster in the Soviet Union. *Science*, 241 (4870): 1170-1176. See doi: 10.1126/science.241.4870.1170.

Petrick, M.; Oshakbayev, D.; Taitukova, R.; and Djanibekov, N. (2017). The return of the regulator: Kazakhstan’s cotton sector reforms since independence. *Central Asian Survey* 2017: 36, 4, 430–452. <https://doi.org/10.1080/02634937.2017.1392928>.

Petrick, M.; and Djanibekov, N. (2019). *Farm restructuring in Uzbekistan: What next?* IAMO Policy Brief No. 36. Germany. <https://www.econstar.eu/bitstream/10419/195180/1/1663248095.pdf>.

Pomfret, R. (2002). State-directed diffusion of technology: The mechanisation of cotton harvesting in Soviet Central Asia. *Journal of Economic History*, 62 (1): 170–188.

Pomfret, R. (2009). *Tajikistan, Turkmenistan, and Uzbekistan*. In K. Anderson & J. Swinnen (Eds.), *Distortions to Agricultural Incentives in Europe’s Transition Economies*, 297–338. Washington, DC.

Putz, C. (2020). Kristian Lasslett on Uzbekistan’s Cotton Clusters Conundrum. *The Diplomat*. July 14. <https://thediplomat.com/2020/07/kristian-lasslett-on-uzbekistans-cotton-clusters-conundrum/>

Roland, G. (2008). *Privatisation: Successes and Failures*. Columbia University Press, New York.

Rudenko, I., Grote, U., and Lamers, J. (2008). *Using a value chain approach for economic and environmental assessment of cotton production in Uzbekistan*. In J. Qi and K. T. Evered (eds.), *Environmental Problems of Central Asia and their Economic, Social and Security Impacts*.

Rudenko, I., Lamers, J., and Grote, U. (2009). Can Uzbek Farmers Get More for their Cotton? *European Journal of Development Research*, 21, 283–296. doi:10.1057/ejdr.2009.3

Rudenko, I., Nurmetov, K., and Lamers, J. (2012). State Order and Policy Strategies in the Cotton and Wheat Value Chains. Book Chapter in C. Martius et al. (eds.), *Cotton, Water, Salts, and Soums: Economic and Ecological Restructuring in Khorezm, Uzbekistan*, DOI: 10.1007/978-94-007-1963-7_22.

Schweisfurth, L.(2020). Eliminating Forced Labor in Uzbekistan’s Cotton Sector – A Work Still in Progress. *The Diplomat*, December 15, 2020. <https://thediplomat.com/2020/12/eliminating-forced-labor-in-uzbekistans-cotton-sector-a-work-still-in-progress/>.

State Statistical Committee of Uzbekistan (SSC). (2020). Uzbekistan Agriculture Statistics (2016-2019) bulletin. Tashkent.

Swinkels, R., Romanova, E., and Kochkin, E. (2016). *Assessing the social impact of cotton harvest mechanisation in Uzbekistan*. Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/753131468301564481/Assessing-the-social-impact-of-cotton-harvest-mechanization-in-Uzbekistan-final-report>.

Synovitz, R. (2020). *Uzbek State Workers Say they’re Still Being Forced To Pick Cotton*. RFERL’s Uzbek Service, September 17, 2020. See: <https://www.rferl.org/a/30843866.html>

Synovitz, R. and Ashur, S. (2019). *Uzbek Farmers Get’ Cluster’ Bombed by Reforms*. RadioFreeEurope Radio Liberty (rferl) Uzbek Service on December 16, 2019. <https://www.rferl.org/a/uzbek-farmers-get-cluster-bombed-by-reforms/30328781.html>.

Synovitz R. and Bobojon, S. (2021). ‘Swamp of Poverty’: Uzbek Cotton Farmers Refusing to Work With ‘Cluster’ Monopoly. RadioFreeEurope Radio Liberty (rferl) January 20, 2021. <https://www.rferl.org/a/uzbekistan-cotton-farmers-cluster-reforms-monopoly-scheme/31053736.html>.

United States Department of Agriculture (USDA-GAIN). (2020). Cotton and Products Annual Report, Turkey. [DownloadReportByFileName \(usda.gov\)](https://www.usda.gov/DownloadReportByFileName)

Uzbek Forum for Human Rights (UFHR). (2020). Cotton chronicle: Interim findings on Uzbekistan’s cotton harvest. Germany. [https://www.uzbekforum.org/wp-content/uploads/2020/10/Uzbekistan Cotton Harvest 2020.pdf](https://www.uzbekforum.org/wp-content/uploads/2020/10/Uzbekistan-Cotton-Harvest-2020.pdf).

World Bank (WB). (2020a). *Cotton-Textile Clusters in Uzbekistan: Status and Outlook*. Policy Dialogue on Agriculture Modernization in Uzbekistan. Washington, DC.

WB, (2020b). *Cotton Pricing after 2020. Cotton Sector Reform in Uzbekistan*. Policy Dialogue on Agriculture Modernization in Uzbekistan. Washington, DC.

Yusupov, Y. (2019). The Agricultural Sector of Uzbekistan: Features, Key Problems, the Need for Reforms. Central Asian Bureau for Analytical Reporting (CABAR). March 25, 2019 <https://cabar.asia/en/the-agricultural-sector-of-uzbekistan-features-key-problems-the-need-for-reforms>.

Zorya, S., Babaev, S. and Abdulhamid, A. (2019a). Uzbekistan: Agriculture Public Expenditure Review, World Bank. <https://www.worldbank.org/en/country/uzbekistan/publication/per>.

Zorya, S., Djanibekov, N., & Petrick, M. (2019). Farm Restructuring in Uzbekistan: How Did It Go and What is Next? *World Bank Working Paper*.