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FROM COMMITMENT TO PRACTICE: APPLYING THE SUSTAINABLE DEVELOPMENT GOALS IN UZBEKISTAN'S COTTON-TEXTILE INDUSTRY

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Abstract

This article examines how far the Sustainable Development Goals (SDGs) have moved from policy commitment to measurable practice in Uzbekistan's cotton-textile industry. The study draws on ILO third-party monitoring reports, export data of the National Statistics Committee, the Sustainable Development Report of the SDSN, and reports by GIZ, Better Cotton and the European Union for 2014-2025. Six indicators linked to SDG targets 6.4, 8.7, 9.2 and 12.2 were compiled and expressed as a level against full coverage, which was then compared with the average and across SDG dimensions. The social dimension shows the highest level: voluntary participation in the cotton harvest rose from 60 percent in 2014 to 99 percent in 2021. Finished goods increased their share of textile exports from 41.1 percent in 2023 to 54.3 percent in 2025. Environmental indicators remain far behind, since Better Cotton principles cover about 3.5 percent of the cotton area, organic cultivation 0.7 percent, and water-saving technologies about 5.2 percent of irrigated land. The highest and lowest coverage levels differ by a factor of 141. The study concludes that SDG practice in the sector is uneven and advances fastest where external monitoring and market access conditions apply, and it proposes an annual sector-level SDG dashboard to guide policy.

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Keywords: Sustainable Development Goals, cotton-textile industry, decent work, responsible production, water-saving irrigation, export upgrading, Uzbekistan.

Introduction

Textile and garment production sits at the intersection of several Sustainable Development Goals, because a single garment passes through cotton fields, irrigation systems, spinning mills and sewing floors before it reaches a buyer. Each stage creates its own social and environmental exposure. Cotton cultivation draws on irrigation water, harvesting mobilises seasonal labour, and wet processing consumes chemicals and energy. For this reason the sector is frequently treated as a test of whether the 2030 Agenda can be translated into production practice. International buyers increasingly ask suppliers to document labour conditions, raw material origin and environmental performance. Access to markets therefore depends on evidence of SDG-related practice as much as on price. Countries that cannot supply such evidence risk exclusion from higher value supply chains, whatever their cost advantages.

Uzbekistan illustrates this link with unusual clarity. In 2011 an international boycott of Uzbek cotton was launched over child and forced labour, and 331 brands and retailers joined it[1]. The Cotton Campaign ended its call for the boycott on 10 March 2022, after monitoring found no central government-imposed forced labour in the 2021 harvest[2]. Since 10 April 2021 the country has held GSP Plus status with the European Union, which requires effective implementation of 27 conventions on human rights, labour rights, environment and good governance, and about 60 percent of EU imports from Uzbekistan now qualify for preferential access under this arrangement, with cotton among the main beneficiaries[3]. The economic stakes are considerable: textile exports

[1]ILO welcomes lifting of Cotton Campaign boycott of Uzbekistan [Electronic resource]. Geneva: International Labour Organization. URL: https://www.ilo.org/resource/news/ilo-welcomes-lifting-cotton-campaign-boycott-uzbekistan (accessed 16.09.2026).
[2]Cotton Campaign ends its call for a global boycott of cotton from Uzbekistan [Electronic resource]. Cotton Campaign, 10 March 2022. URL: https://www.cottoncampaign.org/news/cotton-campaign-ends-its-call-for-a-global-boycott-of-cotton-from-uzbekistan (accessed 16.09.2026).
[3]GSP+ team visits Uzbekistan for a monitoring mission [Electronic resource]. Tashkent: Delegation of the European Union to Uzbekistan, 2025. URL: https://www.eeas.europa.eu/delegations/uzbekistan/gsp-team-visits-uzbekistan-monitoring-mission_en (accessed 16.09.2026).

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amounted to 2.6 billion US dollars in 2025 after a decline of 8.2 percent[4]. Market access for this volume now depends on continued and verifiable progress on sustainability commitments.

Nationally, Uzbekistan adopted National Goals and Tasks in the Field of Sustainable Development for the period up to 2030 together with an action plan for 2022-2026, and a parliamentary commission monitors their implementation[5]. Sector policy has pursued a parallel objective of moving from raw material exports to finished products, supported by Presidential Decree PF-53 of 21 January 2022[6]. What remains unclear is whether these commitments have produced measurable change inside the cotton-textile value chain and whether that change is balanced across the social, economic and environmental dimensions of the SDGs. The research question is therefore stated as follows: to what extent have SDG commitments become measurable practice in Uzbekistan's cotton-textile industry, and which SDG dimensions lag behind? The novelty of the study lies in three contributions. It assembles a sector-level set of SDG-linked indicators that official statistics do not publish together. It expresses these indicators on a common coverage scale, which allows the social, economic and environmental dimensions to be compared directly. It also documents inconsistencies in official figures on water-saving irrigation that affect the credibility of SDG reporting.

Literature review

Niinimäki and co-authors provide the environmental benchmark against which textile sustainability is usually judged. Their review of the textile and fashion value chain estimates that the industry consumes 79 trillion litres of water per year and generates more than 92 million tonnes of waste[7]. On this evidence the

[4]2025-yilda O'zbekiston tashqi savdosi qanday o'zgardi? [How did Uzbekistan's foreign trade change in 2025?] [Electronic resource]. Gazeta.uz, 29 January 2026. URL: https://www.gazeta.uz/oz/2026/01/29/trade-2025/ (accessed 16.09.2026).
[5]Uzbekistan has established a strong foundation for the timely and high-quality achievement of national goals and sustainable development tasks [Electronic resource]. Kyiv: Embassy of the Republic of Uzbekistan in Ukraine. URL: https://www.uzbekistan.org.ua/en/news/6664-uzbekistan-has-established-a-strong-foundation-for-the-timely-and-high-quality-achievement-of-national-goals-and-sustainable-development-tasks.html (accessed 16.09.2026).
[6]Decree of the President of the Republic of Uzbekistan No. PF-53 of 21 January 2022 "On measures to stimulate deep processing and the production of finished products with high added value at textile and garment-knitting enterprises and their export" [Electronic resource]. National Database of Legislation. URL: https://lex.uz/docs/-5833998 (accessed 16.09.2026).
[7]Niinimäki K., Peters G., Dahlbo H., Perry P., Rissanen T., Gwilt A. The environmental price of fast fashion. Nature Reviews Earth & Environment, 2020, vol. 1, pp. 189-200. DOI: 10.1038/s43017-020-0039-9.

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authors call for "fundamental changes in the fashion business model"[8] instead of incremental efficiency gains. The strength of the argument lies in its value-chain approach, which attributes most of the industry's water use to cotton cultivation and wet processing. Its contestable side is the reliance on global aggregates compiled from heterogeneous sources, and the authors themselves acknowledge a range of estimates for emissions. The review also focuses on consumption in high-income markets, so it says little about how producing countries should sequence reforms. For a cotton producer such as Uzbekistan its main value is that it identifies cultivation as the stage where environmental SDG targets are hardest to meet.

Kim and Park approach the Uzbek textile industry from a strategic rather than an environmental angle. Using a SWOT-AHP model, they conclude that Uzbekistan should "gradually shift the industrial structure from raw cotton to finished textile exportation"[9], and they identify obsolete technology, costly imported raw materials and the low education level of workers as the main weaknesses. The model produces a transparent ranking of strategic priorities, which is its main strength. Its weaker side is that AHP weights rest on pairwise comparisons, so the ranking is sensitive to the judgements entered into the model. The study also predates the full implementation of the cluster reform and the end of the boycott, and it treats sustainability mainly as economic upgrading. Kim and Park therefore see value addition as the path to sustainable development, whereas Niinimäki and co-authors warn that expanding manufacturing without changing the business model increases resource pressure. This tension between growth-oriented upgrading and environmental limits is central to SDG practice in Uzbekistan.

Babadjanov and Petrick examine the cluster system that now organises Uzbek cotton production. Drawing on case studies, they find a mismatch between the industrial policy concept of clusters and Uzbek practice, and they argue that the transformation "perpetuated monopsony conditions under which farmers have

[8]Niinimäki K., Peters G., Dahlbo H., Perry P., Rissanen T., Gwilt A. The environmental price of fast fashion. Nature Reviews Earth & Environment, 2020, vol. 1, p. 189. DOI: 10.1038/s43017-020-0039-9.
[9]Kim Y.-J., Park J. A sustainable development strategy for the Uzbekistan textile industry: the results of a SWOT-AHP analysis. Sustainability, 2019, vol. 11, no. 17, art. 4613, p. 1. DOI: 10.3390/su11174613.

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no alternative marketing channels"[10]. Their evidence is qualitative, and the authors describe cluster-based production as complex and context specific, so the scale of the problem across all clusters cannot be inferred from it. The argument is nevertheless well grounded in the observed transfer of supervision over cotton growing from the state to private enterprises. This view contradicts the optimistic reading of clusters as vehicles of upgrading found in Kim and Park's strategy and in government policy. For SDG analysis the contradiction matters, because decent work under target 8.7 can be achieved in harvesting while the bargaining position of farmers, which bears on targets 8.5 and 10.1, remains weak.

Sachs and co-authors measure SDG progress at the national level. The 2025 Sustainable Development Report lists Uzbekistan among the countries that progressed faster than their peers, with a gain of 12.1 points since 2015[11]. The index builds on a peer-reviewed, statistically audited and transparent methodology[12], which makes it the most widely used cross-country benchmark. Its limitation for sector research is structural: a national score cannot show whether progress occurs in a specific value chain, and the report itself cautions that scores and ranks are not fully comparable across editions[13]. The UN Resident Coordinator in Uzbekistan, C. Vidal, described the country as an example of "how the industry can be an agent for sustainable development"[14], yet this assessment is a policy statement and not a measured result. Taken together, these authors leave a clear gap. No study known to the author combines social, economic and environmental SDG indicators for Uzbekistan's cotton-textile chain on a common scale, and this article addresses that gap.

[10]Babadjanov J., Petrick M. Uzbekistan's cotton clusters in the context of the industrial policy debate. Eurasian Geography and Economics, 2025, vol. 66, no. 3, p. 354 (abstract). DOI: 10.1080/15387216.2023.2267093.
[11]Now available: the Sustainable Development Report 2025 [Electronic resource]. Paris: SDG Transformation Center, SDSN, 2025. URL: https://sdgtransformationcenter.org/news/press-release-sustainable-development-report-2025 (accessed 16.09.2026).
[12]Sustainable Development Report 2026 [Electronic resource]. Paris: SDSN, Dublin: Dublin University Press, 2026. URL: https://s3.amazonaws.com/sustainabledevelopment.report/2026/sustainable-development-report-2026.pdf (accessed 16.09.2026).
[13]Sachs J.D., Lafortune G., Fuller G., Iablonovski G. Financing Sustainable Development to 2030 and Mid-Century. Sustainable Development Report 2025. Paris: SDSN, Dublin: Dublin University Press, 2025. DOI: 10.25546/111909.
[14]Speech of Consuelo Vidal, UN Resident Coordinator in Uzbekistan at the Tashkent Textile Forum 2023 [Electronic resource]. Tashkent: United Nations in Uzbekistan, 2023. Unpaginated web page. URL: https://uzbekistan.un.org/en/node/233856 (accessed 16.09.2026).

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Methodology

Secondary data for 2014-2025 form the empirical base of the study. Labour indicators come from ILO third-party monitoring of the cotton harvest, which in 2021 was based on about 11,000 interviews with cotton pickers[15]. Export structure data come from the National Statistics Committee as reported by national and trade media, data on sustainable cotton area from GIZ and Better Cotton, water-saving irrigation data from official statements reported by the press, and SDG Index data from the SDSN. The analysis is conducted at the national level because the sources do not publish these indicators by region, although Better Cotton reports that its cotton is grown in four provinces, namely Bukhara, Navoi, Samarkand and Tashkent[16]. Units are percentages of pickers, of export value, of cotton area and of irrigated land, together with points on the SDG Index scale from 0 to 100.

A descriptive coverage analysis was chosen as the research model. Each indicator is expressed as a level against full coverage of 100 percent, and this level is compared with the average of all indicators and between SDG dimensions. The 100 percent benchmark is official for water-saving irrigation, where the government plans to cover all 4.3 million hectares of irrigated land by 2030[17], and it is normative for the other indicators. This model was chosen because the indicators differ in units and years, the series are too short for econometric estimation, and a common coverage scale is the simplest transparent way to compare dimensions. Its main limitation is that it treats full coverage as the target for every indicator, which overstates the gap for indicators where a lower level may be economically reasonable, for example the share of organic cotton.

[15]Uzbek cotton is free from systemic child labour and forced labour [Electronic resource]. Geneva: International Labour Organization. URL: https://www.ilo.org/resource/news/uzbek-cotton-free-systemic-child-labour-and-forced-labour (accessed 16.09.2026).
[16]Better Cotton in Uzbekistan [Electronic resource]. Geneva: Better Cotton. URL: https://bettercotton.org/where-is-better-cotton-grown/better-cotton-in-uzbekistan/ (accessed 16.09.2026).
[17]Uzbekistan's water crisis spells debts for farmers [Electronic resource]. The Diplomat, 31 October 2025. URL: https://thediplomat.com/2025/10/uzbekistans-water-crisis-spells-debts-for-farmers/ (accessed 16.09.2026).

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Results

Why does the SDG agenda press harder on textiles than on many other manufacturing branches? The answer lies in the length of the value chain and in the visibility of its risks. In Uzbekistan the chain begins with around 1 million hectares of cotton, which occupy approximately 30 percent of agricultural land according to the national textile association data cited by GIZ[18]. Harvesting engages around 2 million people each year, about one in eight adults, and two thirds of pickers are women[19]. Processing has been reorganised around 134 cotton clusters that farm, gin and spin cotton, and the more integrated of them also produce fabric and garments[20]. This structure concentrates social, water and industrial risks within the same enterprises. The UN Resident Coordinator linked the sector explicitly to Goal 8 on decent work and Goal 12 on responsible consumption and production[21]. The problem thus originates in a vertically integrated chain whose performance on several goals is assessed simultaneously by buyers and trade partners.

Existing measurement approaches offer several ways of assessing SDG practice, but none is designed for a single industry. The SDSN index for 2026 combines 123 indicators, 101 of them global, and ranks 169 countries[22]. ILO monitoring measures labour outcomes through large interview samples, while Better Cotton and organic standards measure the area farmed under certified practices. Export statistics capture economic upgrading through the structure of shipments. Each source uses its own unit and period, and none reports the others. As a result, studies of Uzbek textiles tend to discuss one dimension at a time, which the

[18]A textile giant in the making? A look at the textile and apparel sector in Uzbekistan [Electronic resource]. Bonn, Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2024. URL: https://www.giz.de/de/downloads/giz2024-en-a-textile-giant-in-the-making.pdf (accessed 16.09.2026).
[19]2021 Third-party monitoring of child labour and forced labour during the cotton harvest in Uzbekistan [Electronic resource]. Geneva: International Labour Organization, 2022. URL: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_norm/@ipec/documents/publication/wcms_846680.pdf (accessed 16.09.2026).
[20]Better Cotton in Uzbekistan [Electronic resource]. Geneva: Better Cotton. URL: https://bettercotton.org/where-is-better-cotton-grown/better-cotton-in-uzbekistan/ (accessed 16.09.2026).
[21]Speech of Consuelo Vidal, UN Resident Coordinator in Uzbekistan at the Tashkent Textile Forum 2023 [Electronic resource]. Tashkent: United Nations in Uzbekistan, 2023. Unpaginated web page. URL: https://uzbekistan.un.org/en/node/233856 (accessed 16.09.2026).
[22]Sustainable Development Report 2026 [Electronic resource]. Paris: SDSN, Dublin: Dublin University Press, 2026. URL: https://s3.amazonaws.com/sustainabledevelopment.report/2026/sustainable-development-report-2026.pdf (accessed 16.09.2026).

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literature review confirms. A combined measure is needed if the balance between SDG dimensions is to be assessed.

What criterion allows such different indicators to be compared? This study uses the level against full coverage, defined as the share of the relevant population, area or value that already meets an SDG-linked condition. For labour, the population is cotton pickers and the condition is voluntary participation. For raw material, the base is cotton area and the condition is cultivation under Better Cotton principles or organic rules. For irrigation, the base is irrigated land and the condition is the use of water-saving technologies. For economic upgrading, the base is textile export value and the condition is that the product is finished, while the national SDG Index score is added as a reference for the whole economy. The criterion is simple, but it gives each dimension equal weight, an assumption that the discussion revisits.

The resulting imbalance between SDG dimensions is shown by the data in Table 1.

Table 1 SDG-linked indicators of Uzbekistan's cotton-textile industry

SDG target	Indicator	Earlier value (year)	Latest value (year)	Level against full coverage, %*
8.7	Cotton pickers participating voluntarily, % of pickers	60 (2014)	99 (2021)	99.0
9.2	Finished goods in textile exports, % of export value	41.1 (2023)	54.3 (2025)	54.3
12.2	Cotton area under Better Cotton principles, % of cotton area	Formal programme not yet opened (2021)	3.5 (2023)**	3.5
12.2	Organic cotton area, % of cotton area	Not reported	0.7 (2023)**	0.7
6.4	Irrigated land under water-saving technologies, % of irrigated land	Not reported	5.2 (2025)**	5.2
All goals	SDG Index score, points out of 100	69.9 (2022)	73.1 (2025)	73.1

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Source: compiled by the author from ILO, National Statistics Committee, GIZ, Better Cotton, official statements and SDSN data[23], [24], [25], [26], [27], [28], [29], [30].
* Author's calculation. The 100 percent benchmark is official for water-saving irrigation (target year 2030) and normative for the other indicators. ** Author's calculation from reported areas: about 35,000 ha and 7,000 ha out of about 1 million ha of cotton, and 224,000 ha out of 4.3 million ha of irrigated land.

Table 1 data show that SDG practice in the sector is highly uneven. The labour indicator is close to full coverage and the export structure has passed the halfway mark, while the three environmental indicators remain in single digits. The national SDG Index score is many times higher than the environmental levels of the sector itself.

Labour practice shows the highest level in Table 1, with 99 percent of pickers participating voluntarily in 2021. Compared with the 2014 baseline of 60 percent, the share rose by 39 percentage points, or 1.65 times, and by 2015 it had already reached 66 percent[31]. Against the average level of 39.3 percent for all six indicators, the labour indicator stands 59.7 points higher (author's calculation). The main cause is well documented: production quotas were abolished by 2020[32], ILO monitoring continued every year from 2015, and the

[23]ILO monitoring of the cotton harvest in Uzbekistan [Electronic resource]. Geneva: International Labour Organization. URL: https://www.ilo.org/resource/news/ilo-monitoring-cotton-harvest-uzbekistan (accessed 16.09.2026).
[24]Uzbek cotton is free from systemic child labour and forced labour [Electronic resource]. Geneva: International Labour Organization. URL: https://www.ilo.org/resource/news/uzbek-cotton-free-systemic-child-labour-and-forced-labour (accessed 16.09.2026).
[25]Uzbekistan textile and apparel exports slip 3.8% in 2023 [Electronic resource]. Textile Insights, 29 January 2024. URL: https://textileinsights.in/uzbekistan-textile-apparel-exports-slip-3-8-in-2023/ (accessed 16.09.2026).
[26]2025-yilda O'zbekiston tashqi savdosi qanday o'zgardi? [How did Uzbekistan's foreign trade change in 2025?] [Electronic resource]. Gazeta.uz, 29 January 2026. URL: https://www.gazeta.uz/oz/2026/01/29/trade-2025/ (accessed 16.09.2026).
[27]A textile giant in the making? A look at the textile and apparel sector in Uzbekistan [Electronic resource]. Bonn, Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2024. URL: https://www.giz.de/de/downloads/giz2024-en-a-textile-giant-in-the-making.pdf (accessed 16.09.2026).
[28]Uzbekistan's water crisis spells debts for farmers [Electronic resource]. The Diplomat, 31 October 2025. URL: https://thediplomat.com/2025/10/uzbekistans-water-crisis-spells-debts-for-farmers/ (accessed 16.09.2026).
[29]Uzbekistan has risen by 8 positions in the SDG Index international ranking [Electronic resource]. Tashkent: National Statistics Committee of the Republic of Uzbekistan. URL: https://stat.uz/en/press-center/news-of-committee/42619-o-zbekiston-barqaror-rivojlanish-maqsadlari-xalqaro-reytingida-8-pog-ona-ko-tarildi-3 (accessed 16.09.2026).
[30]Uzbekistan among top movers in UN SDG Report 2025 [Electronic resource]. Kursiv Uzbekistan, 3 July 2025. URL: https://uz.kursiv.media/en/2025-07-03/uzbekistan-climbs-in-2025-sdg-index-with-notable-development-gains/ (accessed 16.09.2026).
[31]ILO monitoring of the cotton harvest in Uzbekistan [Electronic resource]. Geneva: International Labour Organization. URL: https://www.ilo.org/resource/news/ilo-monitoring-cotton-harvest-uzbekistan (accessed 16.09.2026).
[32]Is this the end of forced labor for Uzbekistan's cotton industry? [Electronic resource]. Global Voices, 1 October 2024. URL: https://globalvoices.org/2024/10/01/is-this-the-end-of-forced-labor-for-uzbekistans-cotton-industry/ (accessed 16.09.2026).

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boycott ended in 2022 once monitoring confirmed the absence of centrally imposed forced labour. In the short term the result reopened access to international brands, and Better Cotton opened its formal programme in the 2022/23 season[33]. In the long term the gain will hold only if it survives without the pressure that produced it, and here the evidence is weaker. The Cotton Campaign still warns that "human and labor rights risks remain in the cotton sector in Uzbekistan"[34] and points to low capacity for independent monitoring, so the link between reform and lasting compliance should be treated as contested. The remaining gap is concrete: about 1 percent of pickers in 2021 reported direct or perceived coercion, including 0.47 percent who reported threats by mahalla representatives[35], and with roughly 2 million pickers this corresponds to about 20,000 people (author's calculation). The Federation of Trade Unions of Uzbekistan, together with the State Labour Inspectorate, could operate an independent grievance line for pickers and publish annual case statistics by district, which would allow the residual coercion rate to be tracked toward zero and provide verifiable evidence for GSP Plus monitoring.

Is the shift toward finished goods a sign of SDG progress or a side effect of falling yarn sales? The share of finished products in textile exports increased from 41.1 percent in 2023[36] to 54.3 percent in 2025, a rise of 13.2 percentage points or 1.32 times, and the 2025 level exceeds the six-indicator average by 15.0 points. Over the same period total textile exports declined to 2.6 billion dollars, and yarn fell to 27 percent of the total[37]. The shift therefore reflects both growth in finished goods and contraction in yarn, the two effects cannot be separated with published data, and the link to SDG target 9.2 is only partly established. Its direction matches the strategy proposed by Kim and Park, and the incentives of Decree PF-53 offer a plausible policy cause. In the short term

[33]Better Cotton in Uzbekistan [Electronic resource]. Geneva: Better Cotton. URL: https://bettercotton.org/where-is-better-cotton-grown/better-cotton-in-uzbekistan/ (accessed 16.09.2026).
[34]Uzbekistan [Electronic resource]. Cotton Campaign. Unpaginated web page. URL: https://www.cottoncampaign.org/uzbekistan (accessed 16.09.2026).
[35]Uzbek cotton is free from systemic child labour and forced labour [Electronic resource]. Geneva: International Labour Organization. URL: https://www.ilo.org/resource/news/uzbek-cotton-free-systemic-child-labour-and-forced-labour (accessed 16.09.2026).
[36]Uzbekistan textile and apparel exports slip 3.8% in 2023 [Electronic resource]. Textile Insights, 29 January 2024. URL: https://textileinsights.in/uzbekistan-textile-apparel-exports-slip-3-8-in-2023/ (accessed 16.09.2026).
[37]2025-yilda O'zbekiston tashqi savdosi qanday o'zgardi? [How did Uzbekistan's foreign trade change in 2025?] [Electronic resource]. Gazeta.uz, 29 January 2026. URL: https://www.gazeta.uz/oz/2026/01/29/trade-2025/ (accessed 16.09.2026).

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the change keeps more value added inside the country, and in the long term it may create what the former ILO Director-General G. Ryder called "millions of decent full-time jobs in textile and garment manufacturing"[38]. That outcome remains an expectation, because no official series links export upgrading to employment quality. The problem lies in the distance between ambition and trend: the 2030 export target of 9 to 10 billion dollars[39] coexists with declining total exports, and finished-goods exporters have no common format for reporting their sustainability performance to buyers. The Ministry of Investment, Industry and Trade could link export support for garment producers to the publication of annual sustainability reports under the GRI Standards, which would give European buyers comparable evidence for due diligence and strengthen the case for retaining preferential access.

Better Cotton and organic cultivation form the weakest part of the sector's SDG profile. The Better Cotton level of 3.5 percent is five times the organic level of 0.7 percent, yet both lie far below the average of 39.3 percent, by 35.8 and 38.6 points respectively (author's calculation). The distance to the labour indicator is larger still, since the voluntary participation level is 28 times the Better Cotton level and 141 times the organic level. The immediate cause is timing: the Better Cotton programme opened formally only in the 2022/23 season and its office was registered in July 2023[40], so the 2023 area of about 35,000 hectares reflects the first seasons. A structural cause exists as well, because Niinimäki and co-authors show that cultivation accounts for most of the water used in the textile chain, which makes certified farming more demanding than certified sewing. In the short term the small certified base limits the volume of garments that can carry sustainability claims, and in the long term it may restrict access to buyers who require traceable fibre, although this effect is inferred and not observed, because official statistics do not report certified exports. The problem is specific: no certified area is reported for clusters outside the four provinces where Better

[38]Uzbek cotton 'free' of forced labour and child labour [Electronic resource]. Textilegence, 2022. Unpaginated web page. URL: https://www.textilegence.com/en/uzbek-cotton-free-of-forced-labour-and-child-labour/ (accessed 16.09.2026).
[39]Uzbekistan's textile sector: a giant in the making [Electronic resource]. UzDaily, 1 February 2025. URL: https://www.uzdaily.uz/en/uzbekistans-textile-sector-a-giant-in-the-making/ (accessed 16.09.2026).
[40]Better Cotton in Uzbekistan [Electronic resource]. Geneva: Better Cotton. URL: https://bettercotton.org/where-is-better-cotton-grown/better-cotton-in-uzbekistan/ (accessed 16.09.2026).

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Cotton operates, and the 2023 area estimate from GIZ has not been updated in an official series. The Ministry of Agriculture and the Association of Cotton-Textile Clusters could co-finance Better Cotton licensing for clusters in the remaining cotton-growing provinces and require lot-level digital tracking of certified fibre, which would enlarge the certified base and make it verifiable.

How reliable is the water-saving figure on which SDG target 6.4 depends? According to a statement by the President reported in 2025, water-saving technologies were in use on 224,000 hectares, which is 5.2 percent of the 4.3 million hectares planned for full coverage by 2030, while the investment reached 2.6 trillion sums in 2024 and many farmers took on debt to install the equipment[41]. The level is 34.1 points below the six-indicator average and about 19 times lower than the labour level (author's calculation). Reaching the target would require roughly 815,000 hectares of new coverage per year from 2026 to 2030, yet an official quoted by regional media reported that 389,000 hectares were equipped in 2023 alone, including 212,700 hectares of laser land levelling and 74,100 hectares of drip irrigation[42]. A 2025 publication went further and claimed coverage of about half of irrigated land[43]. These figures cannot all describe the same indicator, and the author assumes that they differ in whether laser levelling and other simple methods are counted, but none of the sources discloses its definition. The economic cause of slow uptake is clearer: CGIAR researchers report that drip equipment cost farmers about 25 million sums per hectare in 2023 and that available systems suit fields of roughly 15 hectares or more[44]. In the short term this cost burdens farmers, while in the long term officials expect water savings of 20 to 60 percent where the technology is adopted, so the net SDG effect remains contested until verified monitoring exists. The specific problem concerns farms of 1 to 2 hectares, for which current

[41]Uzbekistan's water crisis spells debts for farmers [Electronic resource]. The Diplomat, 31 October 2025. URL: https://thediplomat.com/2025/10/uzbekistans-water-crisis-spells-debts-for-farmers/ (accessed 16.09.2026).
[42]Uzbekistan seeks to introduce new technologies to improve irrigation of agricultural lands [Electronic resource]. Asia-Plus, 14 February 2024. URL: https://asiaplus.news/en/2024/02/14/uzbekistan-seeks-to-introduce-new-technologies-to-improve-irrigation-of-agricultural-lands/ (accessed 16.09.2026).
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systems are poorly suited. The Ministry of Water Resources could introduce modular drip kits for plots below 15 hectares, supplied through clusters on leasing terms, and publish coverage data by technology type, which would widen adoption among smallholders and make the indicator auditable.

Uzbekistan's national SDG Index score provides the reference against which the sector results can be read. The score rose from 69.9 points in 2022, when the country ranked 77th, to 71.1 points and 69th place in 2023[45], and then to 73.1 points and 62nd place out of 167 countries in 2025[46]. The 2025 score is 3.2 points, or 4.6 percent, above the 2022 level, 33.8 points above the six-indicator average and 14 times the water-saving level (author's calculation). Part of this progress reflects the national SDG framework and the obligations of 27 conventions under GSP Plus, which, according to the European Commission, Uzbekistan has ratified in full without incompatible reservations[47]. The comparison with the sector requires caution, because the SDSN warns that scores are not fully comparable across editions and a national index averages many goals unrelated to textiles. In the short term the rising rank strengthens the country's reputation with investors, while in the long term a gap between national scores and sector environmental performance could weaken the credibility of SDG claims once buyers audit the chain directly. The problem is institutional: no official body publishes SDG indicators for the cotton-textile industry, so the national score of 73.1 points and the environmental average of about 3 percent for the sector are never set against each other in official reporting. The National Statistics Committee, together with the Uztextileprom association, could publish an annual sector SDG dashboard containing the six indicators of Table 1 with stated definitions, which would give policymakers and buyers a consistent basis for tracking progress.

[45]Uzbekistan has risen by 8 positions in the SDG Index international ranking [Electronic resource]. Tashkent: National Statistics Committee of the Republic of Uzbekistan. URL: https://stat.uz/en/press-center/news-of-committee/42619-o-zbekiston-barqaror-rivojlanish-maqsadlari-xalqaro-reytingida-8-pog-ona-ko-tarildi-3 (accessed 16.09.2026).

[46]Uzbekistan among top movers in UN SDG Report 2025 [Electronic resource]. Kursiv Uzbekistan, 3 July 2025. URL: https://uz.kursiv.media/en/2025-07-03/uzbekistan-climbs-in-2025-sdg-index-with-notable-development-gains/ (accessed 16.09.2026).

[47]European Commission, High Representative of the Union for Foreign Affairs and Security Policy. Joint Staff Working Document SWD(2023) 361 final [Electronic resource]. Brussels, 2023. URL: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A52023SC0361 (accessed 16.09.2026).

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Discussion

Comparison with the literature confirms the strategic expectation of Kim and Park and qualifies it. Finished goods now account for more than half of textile exports, which is the structural shift those authors recommended in 2019. The shift, however, occurred while total exports contracted, so the upgrading they envisaged has not yet been accompanied by growth. The environmental findings agree with Niinimäki and co-authors, who place the heaviest water burden at the cultivation stage, and in Table 1 the three indicators tied to cotton farming and irrigation form the lowest group. The results also sharpen the tension identified in the literature review between upgrading and environmental limits, because the country is expanding garment production faster than it is certifying the fibre and water on which garments depend.

On first reading the labour result contradicts Babadjanov and Petrick, since voluntary participation reached 99 percent. The contradiction is only partial. ILO monitoring measures the coercion of pickers, whereas Babadjanov and Petrick analyse the bargaining position of farmers inside clusters, and a high score on the first does not guarantee progress on the second. The European Commission raised a related concern in 2023, noting worrying backtracking in civil and political rights despite broad progress in compliance[48]. A further gap appears when the results are set against the SDSN index. The national score reflects the fastest progress in the region, while environmental coverage in the sector remains in single digits, so national averages overstate SDG practice in this industry.

Theoretically, these findings indicate that SDG practice in an export industry advances unevenly and in the order of external enforcement. Labour conditions improved first, under boycott pressure, ILO monitoring and GSP Plus obligations. Export upgrading followed with state incentives. Environmental practice, which faces no comparable external trigger in Uzbekistan's current trade relations, trails far behind. This sequence is offered as an interpretation, since the data do not permit a causal test. The practical meaning is that sector

[48]European Commission, High Representative of the Union for Foreign Affairs and Security Policy. Joint Staff Working Document SWD(2023) 361 final [Electronic resource]. Brussels, 2023. URL: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A52023SC0361 (accessed 16.09.2026).

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policy should extend to environmental indicators the monitoring conditions that labour indicators already have: published definitions, annual measurement and a link to export support.

Conclusion

In answer to the research question, the evidence supports a clear position. SDG commitments have become measurable practice in Uzbekistan's cotton-textile industry mainly in the social and economic dimensions, while the environmental dimension lags far behind. The social indicator is close to full coverage and the export structure has crossed the halfway mark, whereas certified cotton and water-saving irrigation remain in single digits. This imbalance suggests that the next SDG gains in the sector depend less on further labour reform and more on environmental monitoring and investment at the farm level.

Several limitations apply. The indicators refer to different years between 2021 and 2025, and several are the author's calculations from reported areas. The 100 percent benchmark is normative for most indicators, official figures on water-saving coverage are inconsistent, and the sustainable cotton area is available only from a 2023 donor report. The analysis is national because regional data are not published, and it does not establish causality.

Future research should build a regional panel of SDG-linked indicators for cotton-textile clusters and test whether certification and water-saving adoption affect cluster export performance. Farm-level income data within clusters would connect labour outcomes with the bargaining issues raised by Babadjanov and Petrick. Surveys of garment exporters on buyer sustainability requirements would show which environmental indicators matter most for market access, and such work would turn the present descriptive comparison into an explanatory model.

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