

ZUR no. 2

ZEF-UNESCO Rivojlanishlari*

May 2008

Science brief from the ZEF-UNESCO project on Sustainable Management of Land and Water Resources in Khorezm, Uzbekistan

Bucking the trend: How the cotton value chain in Uzbekistan can bring in more income at a lower price

Summary

This paper shows economic and ecological win-win solutions for Uzbekistan, a country where cotton still plays a major economic role, by producing and exporting value added cotton goods.

All about cotton

Cotton is of paramount social and economic importance in Uzbekistan. Not only does cotton account for a considerable share of foreign exchange revenues and GDP, but it provides employment and income security for a large percentage of the rural population. Cotton production has, nevertheless, resulted in myriad ecological and social consequences, including the desiccation of the Aral Sea, salinization of water resources and soil, as well as health problems from air and water pollution.

As long as cotton production in Uzbekistan continues, it is important to find ways of improving the economic, social and ecological efficiency of its production, so the development of the country can be sustainable. While Uzbekistan is currently a primary exporter of cotton, a shift towards the production and export of value added cotton goods could reduce the country's vulnerability to external markets, increase economic growth, and create jobs in the country's poorest rural areas.

Scenarios with Value Chain Analysis

To explore the economic, social and environmental gains possible by moving towards the production of value-added cotton products in Uzbekistan, economists in the ZEF/UNESCO project applied a Value Chain Analysis approach in the Khorezm region. This approach highlighted a number of scenarios that could reduce overall cotton production, while postulating a "win-win" scenario: maintaining income both for the state and the farmers, while increasing the environmental sustainability of production through more efficient resource use. Key results showed current revenues from cotton could be maintained while reducing the overall area sown to cotton. Land released from cotton production could then be diversified for alternative crops or land use.

As cotton fibre undergoes more processing stages, its value added increases as it moves down the chain from the producer to the end consumer (Picture). Ultimately, as more production stages are kept within the region,



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An example of value-added goods in Uzbekistan: absorbent cotton and yarn for export

higher revenues can be achieved. To investigate different production strategies that would lead to increased income under more sustainable conditions, multiple scenarios were tested to explore the most economically and ecologically beneficial changes that would similarly ensure overall export revenues did not decrease. All scenarios assumed export revenue was maintained at the 2005 level (~ 87.6 million USD).

Results from this study (summarized in Table below) showed that with the involvement of the local textile enterprises in processing cotton fibre into cotton yarn, the same regional export revenue could be achieved while reducing 30 thousand hectares sown to cotton (or roughly 27% of the current area), 228 million m³ of irrigation water could be saved, and about 6 million USD in explicit subsidies removed. Similarly, a deeper processing of cotton fibre into ready made garments in Khorezm could decrease the fibre production by more than two thirds, and thus release as much as 76 thousand hectares (69% of current the area), saving 567 million m³ of water for irrigation, and reducing the need for subsidies by 14 million USD. Additional results showed that improved management of the ginning sector would reduce the area sown to cotton by 18 thousand ha, save roughly 136 million m³ of irrigation water, and eliminate the need for subsidies by 3 million USD. Likewise, increasing ginning efficiency by just 3 percent would increase cotton fibre output and could support the baseline export revenue with less raw cotton (reduction of 23 thousand ha), less water for irrigation (reduction of 193 million m³) and fewer subsidies for cotton farming (4 million USD reduction).

Much to gain: Positive domino effects

Development, upgrading and streamlining (which means improved coordination) of the Cotton Value Chain can lead to a decrease in raw cotton production, cotton plantations, water used for irrigation and thus a reduction in the adverse impacts of cotton production on the environment. More

efficient production would similarly reduce state spending on cotton in the form of subsidies, while still maintaining current export revenues. The combined economic and ecological demands of the region could be achieved when intensifying raw cotton production on suitable land, thereby releasing marginal, and therefore unsuitable, lands for alternative use. The establishment of less intensive and less expensive land use systems, such as tree plantations, aquaculture, or pastures, would similarly improve the local ecology, while providing more sustainable income, alternative fuels, and fodder for livestock. Combined, such a holistic approach would improve ecological conditions in the region, while increasing the overall sustainability and economic performance of the agricultural sector.

	Required raw cotton, thousand tons	Required cotton area, thousand ha	Reduction in cotton area, %	Irrigation water on field level, mln. cub.m.	Explicit subsidies to agriculture, million USD
Baseline (2005)	287	110	0	824	20
100% fibre export	239	92	17	688	17
Increased ginning efficiency	219	84	23	631	16
Yarn export	207	79	28	596	14
Fabrics export	173	67	39	499	12
T-shirt export	89	34	69	257	6

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* ZUR is an abbreviation of ZEF-UNESCO Rivojlanishlari, meaning ZEF-UNESCO Developments. The ZUR science briefs publish scientific project output with policy relevance on a regular basis.

Published by the Center for Development Research (ZEF)
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