

InoCottonGROW – Reducing the Water Footprint of the Global Cotton Textile Industry

Water as a Global Resource (GRoW)

Germany is a country rich in water. Yet we also utilize substantial quantities of water from other countries whose water resources are far sparser. Our demand for water-intensive cotton textiles such as jeans, T-shirts or bedding is one of the main contributors to water scarcity and water pollution in the majority of cotton producing countries in Asia. What is more, population growth and climate change further exacerbate what are already huge water economy challenges in these countries. Using case studies and demonstration projects in Pakistan, the German-Pakistani joint research project InoCottonGROW aims to achieve sustainable water use along the cotton-textile supply chain – from the cotton field to the coat hanger. A key component of this is the concept of the water footprint.

Advancing the Concept of the Water Footprint

Pakistan is the world's fourth-largest producer of cotton and a major exporter of textiles to the German market. Vast quantities of water are used in the irrigation of cotton plants as well as in dyeing and other finishing processes in the textile industry. In addition, rivers, soil and groundwater are increasingly being contaminated due to salination, the excessive use of pesticides and fertilizers as well as the discharge of untreated wastewater from textile manufacturing.

In InoCottonGROW, 14 research and industry partners from Germany and 13 partners from Pakistan work hand in hand to identify technically, economically and institutionally feasible ways of increasing the efficiency and productivity of water use along the entire cotton textiles supply chain in Pakistan. The water footprint, i.e. total water consumption, will be used to help achieve this. The goal is to further develop the concept of the water footprint such that it can be used as a management tool to aid Pakistani decision-makers in managing scarce water resources as well as help German consumers make informed choices when purchasing textiles.

More Sustainable Water Use in Practice

The project partners begin with an analysis of current water use and pollution in cotton farming and the textile industry and evaluate the effects on human health, ecosystems and competing uses. In five demonstration projects in the Pakistani province of Punjab, the partners show in practice how the water footprint of the cotton textile

industry can be reduced to a level that is more in line with UN Sustainable Development Goals (SDGs):

The project explores a wide range of options including effective irrigation strategies, the use of environmentally compatible dyes, water-saving textile machinery, different textile wastewater treatment technologies, pollutant analytics, and water quality monitoring to enable authorities to control wastewater discharge limits.



Textile wastewater flows through drains into the River Chenab and the River Ravi

Up till now, the method used to calculate water footprints has not been specific enough to evaluate the impacts of far-reaching technical and political decisions at regional level and to influence decision making. For this reason, a regional database and a method for evaluating effectiveness is to be added. This new approach is used to model the impact the cotton textile industry has on water scarcity, human health, ecosystems and freshwater resources in Punjab. It also establishes a link to selected UN SDG indica-

tors, such as Goal 6 “Clean Water and Sanitation”. Subsequent scenario analyses enable the researchers to examine the extent to which a low water footprint for the cotton textile industry can contribute to the implementation of UN SDGs. The project also looks at Turkey with respect to the transferability of the findings in Pakistan to other cotton producing countries around the world.



Warabandi canal irrigation system for cotton plants. Groundwater is pumped when there is insufficient water in the canals.

Implementing Measures and Raising Public Awareness

To facilitate widespread implementation of the measures investigated, workshops are held and local expertise developed in cooperation with Pakistani partners, including agricultural organizations, textile firms, universities, official bodies and ministries. To sensitize global brands and retailers as well as German consumers to the importance of sustainably produced textiles, the InoCottonGROW project also involves the development of various public awareness measures. In the planning are short documentaries, an internet-capable water footprint tool and research into an effective water footprint label for textiles.



Textile finishing plant in Faisalabad (Punjab province)

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Water as a Global Resource (GRoW)

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