

Session Cross-cutting: April 12th 11.30 hrs

5s3: Circular Textiles

Farming and Fashion – Integrating Agroecological Principles in Fiber Farming

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In the last 20 years significant advances in the Danish food production system has managed to reduce the environmental impact by incorporating agroecological principles into regulations. Despite of the size of the Danish textile industry, and the fact that 8 % of global agricultural land is used for fiber production, the environmental impact of these farming systems has not been the topic of much scientific research. Despite the widely publicized environmental impacts of the textile industry, the industry continues to grow, in part due to the rise of fast fashion, which relies on outsourcing, cheap production and processing, frequent consumption and short-lived garment use.

Through interviews with 18 textile sourcers and advisors on sustainable practices in the Danish textile industry we examined how industry insiders understand and evaluate environmental risks in their materials supply base and how they are addressing these risks through credible, data-driven strategies.

The interviews high-lighted major knowledge gaps within the textile industry when it comes to encouraging sustainable practices at the beginning of the supply chain. None of the respondents were advising their clients on how to monitor and set science-based targets for a range of parameters based on SDGs like biodiversity, carbon-capture, or water, fertilizer, herbicide, and pesticide use. Several respondents expressed a need for more regulations and for research institutions to develop better tools and best-practices for them to rely on.

Due to the fragmented structure of supply chains in the fashion industry, which have become increasingly globalized and complex, many of the production choices which are made in the very beginning of production are not clear to designers and sourcers. Instead, textile industries rely on certifications like GOTS, OEKO-Tex, and B-Corp to monitor and evaluate their environmental footprint. These certifications, however, do not address the complexity of agricultural sustainability beyond the dichotomy between organic and conventional systems.

This study sets the framework for developing best practices for transparency and risk-evaluation in plant fiber production and recommends relevant parameters to monitor and evaluate them. Finally, we present the research and experimental data needed in order to develop science-based targets along stress- and fertility-gradients, for a wide range of parameters relating to the sustainability of agricultural plant fiber production.

Keywords: fibers, textiles, sustainability, agroecology, environment