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A full value-chain Water Footprint Assessment to help informed decision in corporate sustainability strategies

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This study evaluated the water footprint (WF) of five production facilities along Muyuan Foodstuff Co. Ltd's (Muyuan) value chain, and assessed the sustainability and impact of their water footprints at the river catchment level. Muyuan, a large-scale, integrated pig breeder and producer in China, is keen to fulfil its corporate social responsibilities and committed to ensuring food quality and security, promoting environmental protection, and participating in catchment water resources management. Formulating corporate water related sustainability strategies, however, has been challenging. This study carried out a comprehensive Water Footprint Assessment (WFA) for Muyuan's full value chain to assist in formulating such strategies and setting up action plans with water footprint reduction targets.

The study showed that that the water footprint of the supply chain, resulting from crops and crop products used in Muyuan's feed production facility is a major contributor to Muyuan's facilities' water footprint. From the perspective of the direct WF at the facilities, addressing the impact on water quality from effluents (i.e. the grey water footprint) at hog farms is a critical component of any water sustainability strategy. From the blue WF perspective, there are opportunities to reduce blue water consumption at hog farms through improved technology and implementation of best practices.

The water footprint sustainability assessment in this study indicated that Muyuan operates in a catchment which is already under water stress and is a hotspot in terms of both blue water scarcity and water pollution level. The study helped identify potential water-related risks and opportunities for improving Muyuan's water use efficiency as well as ways Muyuan could contribute to sustainable water resources management in the catchment within which it operates.

This is an innovative application of WFA in the livestock sector and supports the development of Muyuan's corporate water sustainability strategy. The results of the study were also used in the development of the national water footprint standard for organisations.