

## **Virtual water concept for economic and ecological restructuring: evidence from Uzbekistan, Central Asia**

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Increases in water demand due to population growth and industrial development necessitate economically efficient allocation of water resources worldwide. This is particularly true in the dryland zones of the world relying on irrigated agriculture for economic development such as in Uzbekistan, Central Asia. Due to inefficient management of water resources and the dominance of high water intensive and low profitable crops, water productivity in the region is very low and ecological costs are very high. This challenges Uzbekistan to upgrade its agricultural sectors and maintain its industrial sectors guided by the principles of "green growth". Therefore, this study aims to evaluate and compare sustainable growth potential of different economic sectors. To this end, we use a national input-output model to estimate backward and forward linkage measures for intersectoral financial and virtual water flows. Our results show that sustainable economic development in Uzbekistan can be maintained by investing on agro-processing industries and the livestock sector rather than pursuing a further specialization towards the production of raw agricultural commodities such as cotton, wheat, and rice. However, to exploit these comparative advantages, the necessary market infrastructure and institutions as well as an increased control over waste waters would need to be implemented.