



The agricultural water footprint of EU river basins

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This work analyses the agricultural water footprint (WF) of production ($WF_{prod,agr}$) and consumption ($WF_{cons,agr}$) as well as the resulting net virtual water import (netVW_{i,agr}) for 365 EU river basins with an area larger than 1000 km². Apart from total amounts, also a differentiation between the green, blue and grey components is made. River basins where the $WF_{cons,agr,tot}$ exceeds $WF_{prod,agr,tot}$ values substantially (resulting in positive netVW_{i,agr,tot} values), are found along the London-Milan axis. River basins where the $WF_{prod,agr,tot}$ exceeds $WF_{cons,agr,tot}$ are found in Western France, the Iberian Peninsula and the Baltic region. The effect of a healthy (HEALTHY) and vegetarian (VEG) diet on the $WF_{cons,agr}$ is assessed, as well as resulting changes in netVW_{i,agr}. For HEALTHY, the $WF_{cons,agr,tot}$ of most river basins decreases (max 32%), although in the east some basins show an increase. For VEG, in all but one river basins a reduction (max 46%) in $WF_{cons,agr,tot}$ is observed. The effect of diets on the $WF_{cons,agr}$ of a river basin has not been carried out so far. River basins and not administrative borders are the key geographical entity for water management. Such a comprehensive analysis on the river basin scale is the first in its kind. Reduced river basin $WF_{cons,agr}$ can contribute to sustainable water management both within the EU and outside its borders. They could help to reduce the dependency of EU consumption on domestic and foreign water resources.