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## Global Dataset of Monthly Crop-specific Irrigated Areas around the Year 2000

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### Abstract

To assess virtual water trade in a globalised world, we need to differentiate water requirements of rainfed and irrigated agriculture. To achieve this differentiation with a higher reliability than in the study of Yang et al.(2006), it is necessary to know which crops grow where and when under either rainfed or irrigated conditions. Here we present the first version of a global dataset of monthly crop-specific irrigated areas around the year 2000. A twin global dataset of monthly crop-specific rainfed areas which is consistent with the irrigated areas is currently being developed. The dataset considers 26 irrigated crops including all major food crops, permanent cultures, cotton, and irrigated grassland. For each month of the year (representative for the time period 1998 to 2002 around the year 2000) the irrigated area of each crop in each 5 minute grid cell (size 8 km × 8 km at the equator) is provided. As data sources national cropping calendars (FAO) and mainly national statistics on harvested areas for both irrigated and rainfed crops (FAO, EUROSTAT, and others) were combined with spatially explicit 5 minute grids of areas equipped for irrigation (Siebert et al., 2005) and a global data set of main crop types (Leff et al., 2004). We present the methods for the map generation, selected elements of the resulting ample dataset, and discuss the limitations of the dataset. Global and regional studies can take profit of this dataset. It might be used for a broad range of applications besides the currently foreseen global water balance calculation with WaterGAP (Döll and Siebert, 2002).

**Keywords:** Global mapping, harvested crop area, irrigation, virtual water, water balance