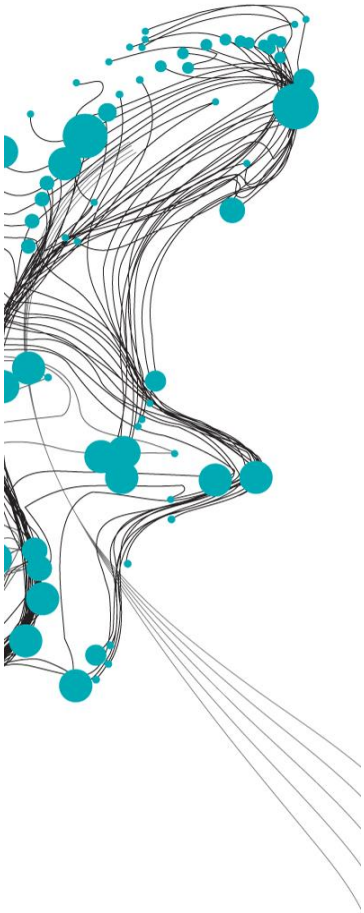
The blue and grey water footprint of industry and domestic water supply

The blue and grey water footprint of industry and domestic water supply for each country annually in the period 1960-2015



The blue and grey water footprint of industrial sectors and domestic water supply are estimated in this research annually for all countries. Until this research sectoral differences, annual variations or trends in time within the industry were not visible. The objective of this research is to estimate the blue and grey water footprint of industrial sectors and the domestic water supply sector per country annually for the period 1960-2015. The industry is classified in different industrial sectors and divisions - Mining and quarrying, manufacturing, electricity, and construction. The domestic water supply sector is defined and treated as a whole.

The blue water footprint is estimated by estimating the water consumption per current US dollar of an industrial sector and multiply it by its gross added value per country and year. The grey water footprint of both industrial and domestic sectors is estimated by multiplying new estimated dilution factors with the effluent of the sectors. These estimations are based on contaminants found in effluents of the sectors or environment around these sectors.

The total industry had a global blue water footprint of 3.86 $*10^{10}$ m^3 in 1960 which increased to $3.02*10^{11}$ m^3 in 2015. The global grey water footprint of the industry was $1.56*10^{12}$ m^3 in 1960 and increased to $3.18*10^{13}$ m^3 in 2015. The construction sector had overall the smallest global blue and grey water footprint. The electricity generation sector has the largest global blue water footprint every year, and the largest global grey water footprint until 1975 when the mining and quarrying industry had the largest global grey water footprint.

The domestic water supply sector had a global blue water footprint of $5.92*10^9$ m^3. This is increased to $1.10*10^{11}$ m^3. The global grey water footprint of the domestic water supply is $1.53*10^{13}$ m^3 in 1960 and $4.24*10^{13}$ m^3 in 2015.

Suggestions are made how to allocate the water footprint geographically per sector based on information of the located industries or population density and the productivity of the industrial sectors.

It can be concluded that this study used a more detailed analysis than before in quantifying the water footprint of different industrial sectors and the domestic water supply per country for a longer period and gives an insight in differences between industrial sectors, countries and years.

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