

Diet change – a solution to reduce water use?

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Shifting to a meat-free diet would secure adequate food supply for an additional 1.8 billion people without increasing the use of water resources.

Eating less meat would protect water resources in dry areas around the world, researchers at Aalto University have found.

Reducing the use of animal products can have a considerable impact on areas suffering scarce [water resources](#), as [meat production](#) requires more [water](#) than other agricultural products.

- Diet change together with other actions, such as reduction of food losses and waste, may tackle the future challenges of food security, states researcher Mika Jalava from Aalto University.

Growing population and climate change are likely to increase the pressure on already limited water resources and diet change has been suggested as one of the measures contributing to adequate food security for growing population.

The researchers assessed the impact of diet change on global water resources over four scenarios, where the [meat consumption](#) was gradually reduced while diet recommendations in terms of energy supply, proteins and fat were followed. The study published in *Environmental Research Letters* is the first global-scale analysis with a focus on changes in national diets and their impact on the blue and green water use of food consumption.

Food supply for growing population

Global population is expected to exceed 9 billion by 2050, adding over 2 billion mouths to be fed to the current population, according to the UN. By reducing the animal product contribution in the diet, global green water (rainwater) consumption decreases up to 21 % while for blue water (irrigation water) the reductions would be up to 14 %. In other words, by shifting to vegetarian diet we could secure adequate food supply for an additional 1.8 billion people without increasing the use of water resources. The potential savings are, however, distributed unevenly, and even more important, their potential alleviation on water scarcity varies widely from country to country.

Regional differences

The researchers at Aalto University found substantial regional differences in diet change potential to reduce water use. In Latin America, Europe, Central and Eastern Asia, and Sub-Saharan Africa, diet change reduces mainly green water use. In Finland, for example, turning into a meat free diet would decrease the daily green water use of a Finn over 530 litres but at the same time resulting nearly 50 litres increase in blue water use. In the Middle East region, North America, Australia and Oceania, also blue water use would decrease considerably. In South and Southeast Asia, on the other hand, diet change does not result in savings in water use, as in these regions the diet is already largely based on a minimal amount of products.

More information: "Diet change—a solution to reduce water use?" M Jalava et al 2014 *Environ. Res. Lett.* 9 074016. [DOI: 10.1088/1748-9326/9/7/074016](https://doi.org/10.1088/1748-9326/9/7/074016) . Published 31 July 2014

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