



## Water, jobs and food security

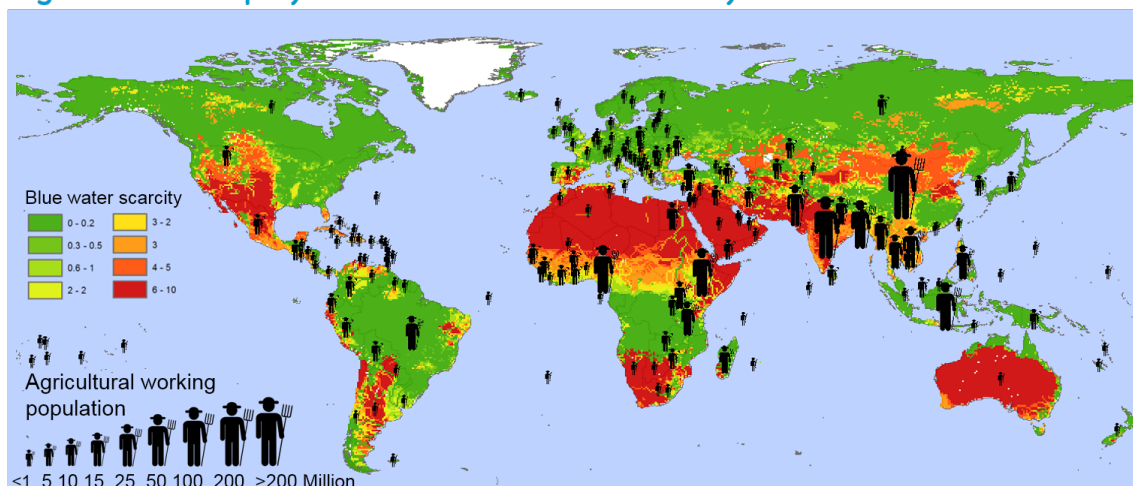
Blog by Ruth Mathews, Executive Director, Water Footprint Network

22nd March 2016

This year's World Water Day (22nd March) asks us to consider the linkages between water and jobs and how the quantity and quality of water available can not only change workers' lives and livelihoods but also transform societies and economies. We have highlighted where jobs, water and food security are inextricably linked and where they are most vulnerable. The results illuminate where we most urgently need to apply our knowledge to manage water better.

Our global economy runs on water. Today, almost half of the world's workers – 1.5 billion people – work in water-related sectors. The agricultural industry directly creates more than 800 million jobs; around half of these are in China and India where 70% and 97% of the population lives under water scarcity at least one month a year, respectively. Growing water scarcity puts these jobs and livelihoods at risk.

### Agricultural employment and blue water scarcity

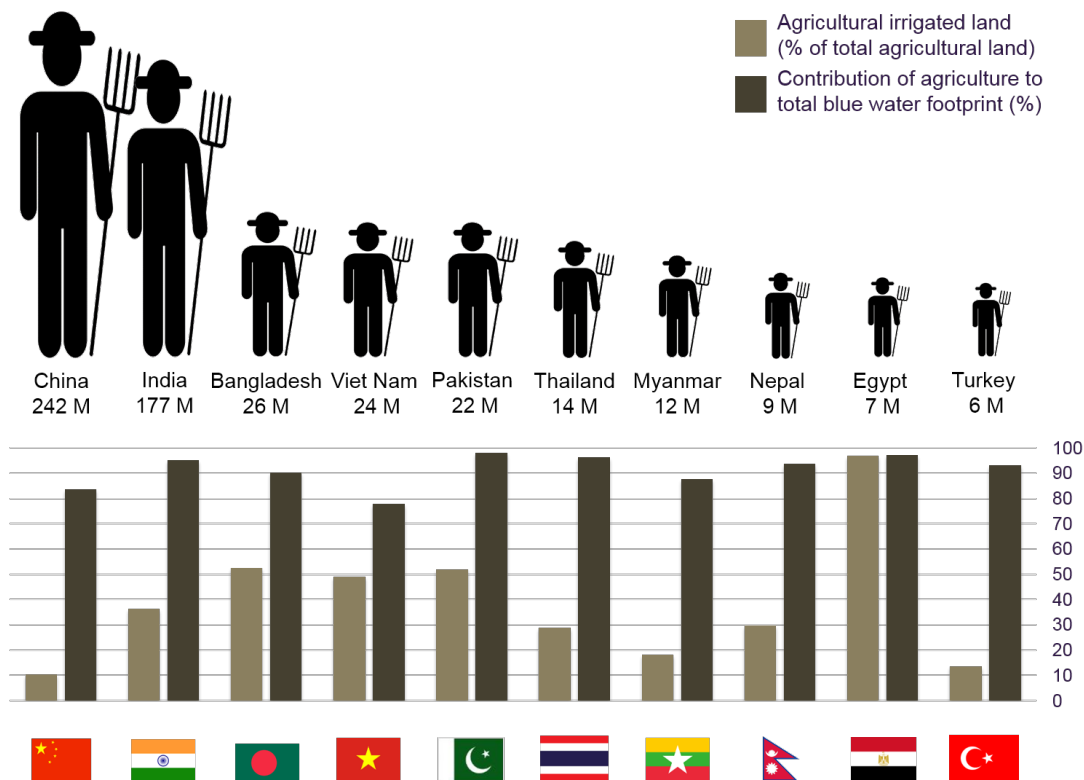


Sources: International Labour Organization ([www.ilo.org](http://www.ilo.org)); Mekonnen, M.M. and Hoekstra, A.Y. (2011) The green, blue and grey water footprint of crops and derived crop products, *Hydrology and Earth System Sciences*, 15(5): 1577-1600; Graphic of farmer by Meaghan Hendricks, License: Creative Commons

Looking at the top countries with large numbers of agricultural employment and high levels of water scarcity underlines the importance of agriculture for

livelihoods, especially in some countries in Asia, and their resulting impact on freshwater resources.

### Top 10 countries with large agricultural employment and blue water scarcity



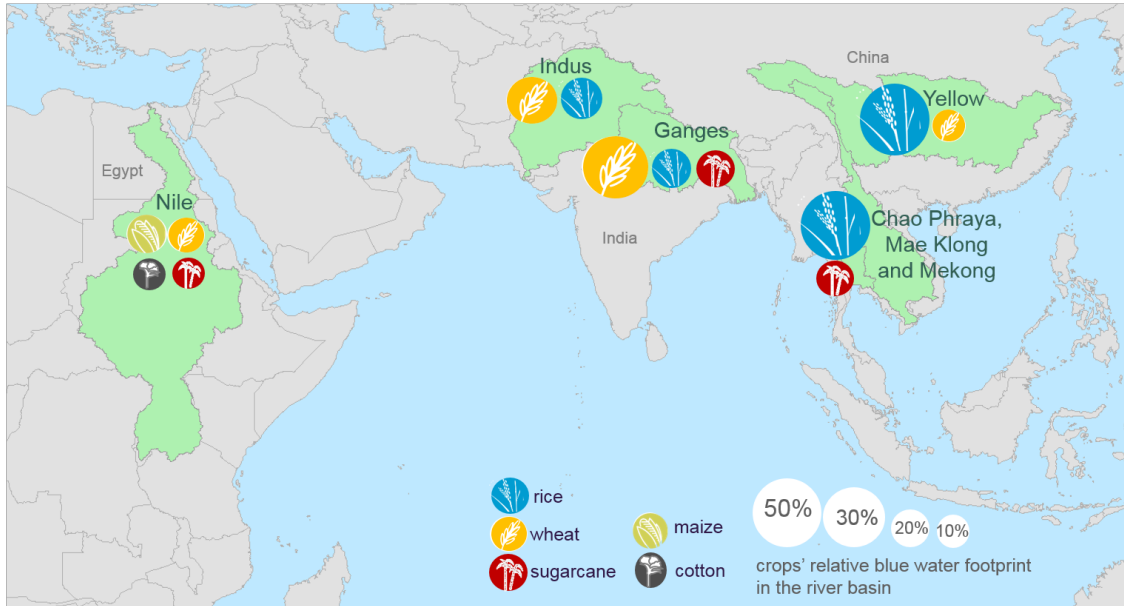
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The data shows not only the pressure that agriculture is putting on fresh water resources in these countries but also reveal how dependent these countries are of their scarce water supplies to irrigate crops. Whilst agricultural land in China and Turkey is mostly rain fed in Egypt, where 100% of the population lives with water scarcity for some months of the year, most available water is used to irrigate crops.

Pakistan, Bangladesh and Viet Nam each employ over 20 million agricultural workers and irrigate half of their agricultural land, using around 90% of their water to do so. In India, less of its agricultural land is irrigated yet it still accounts for 95% of the country's total blue water footprint. Given that a large percentage of the population is employed in agriculture in each of these countries, jobs, food and water security are at particular risk.

Looking at which major crops are grown in water scarce areas with high agricultural employment reveals that most are staple food crops.

## Major crops contributing to water scarcity in river basins with high agricultural employment



Source: Mekonnen, M.M. and Hoekstra, A.Y. (2011) The green, blue and grey water footprint of crops and derived crop products, *Hydrology and Earth System Sciences*, 15(5): 1577-1600. WaterStat; FAO Statistics

Rice is a major crop in water scarce basins, comprising around 60% of the total blue water footprint in the Yellow (China), Mae Klong (Thailand), Chao Praya (Thailand) and Mekong (Viet Nam) River basins. Wheat and rice combined are the major crops in the Indus and Ganges River basins, which are water scarce for more than half the year. Maize and wheat are the main crops in the Nile. These staple crops are essential foods. Following close behind them in water consumption is sugarcane, which is grown in the Nile and basins in South and Southeast Asia.

As the pressure of our collective water footprint increases, we face uncertain times. Sustaining livelihoods will require a concerted effort on the part of many organisations and individuals as we continue to stretch our finite supplies.

Yet our understanding of where and when water is scarce or polluted, and how the water footprint of the goods we produce and consume contributes to these problems, is evolving rapidly. By tackling these problems with innovation and keeping the goal of sustainable development in sight, I believe we can lay the foundations to manage water better and take great strides towards securing and transforming livelihoods and economies through fair and smart water use.

We all need clean, abundant water to survive. Let's give it the care and attention it needs by placing sustainable water use at the heart of our values and lives, not only on World Water Day, but every day.