April 2016

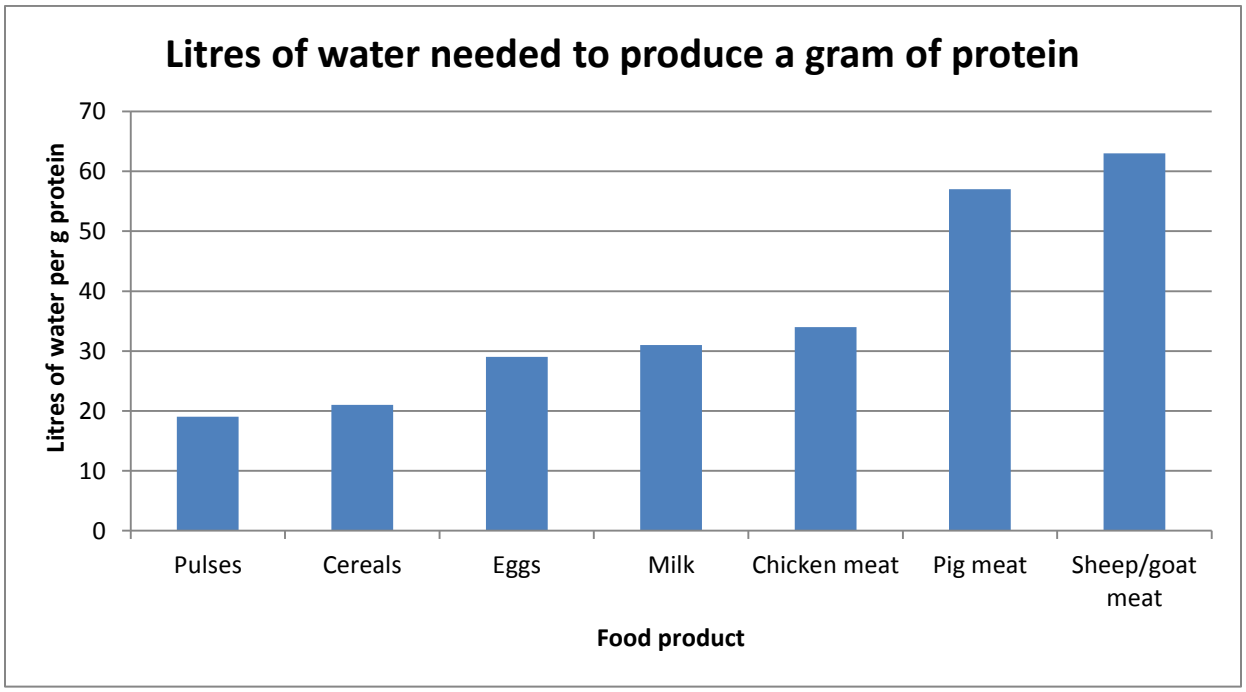
Celebrating Animals | Confronting Cruelty Worldwide

HUMANE SOCIETY INTERNATIONAL
INDIA

An HSI India Report: The Impact of Diet on Water

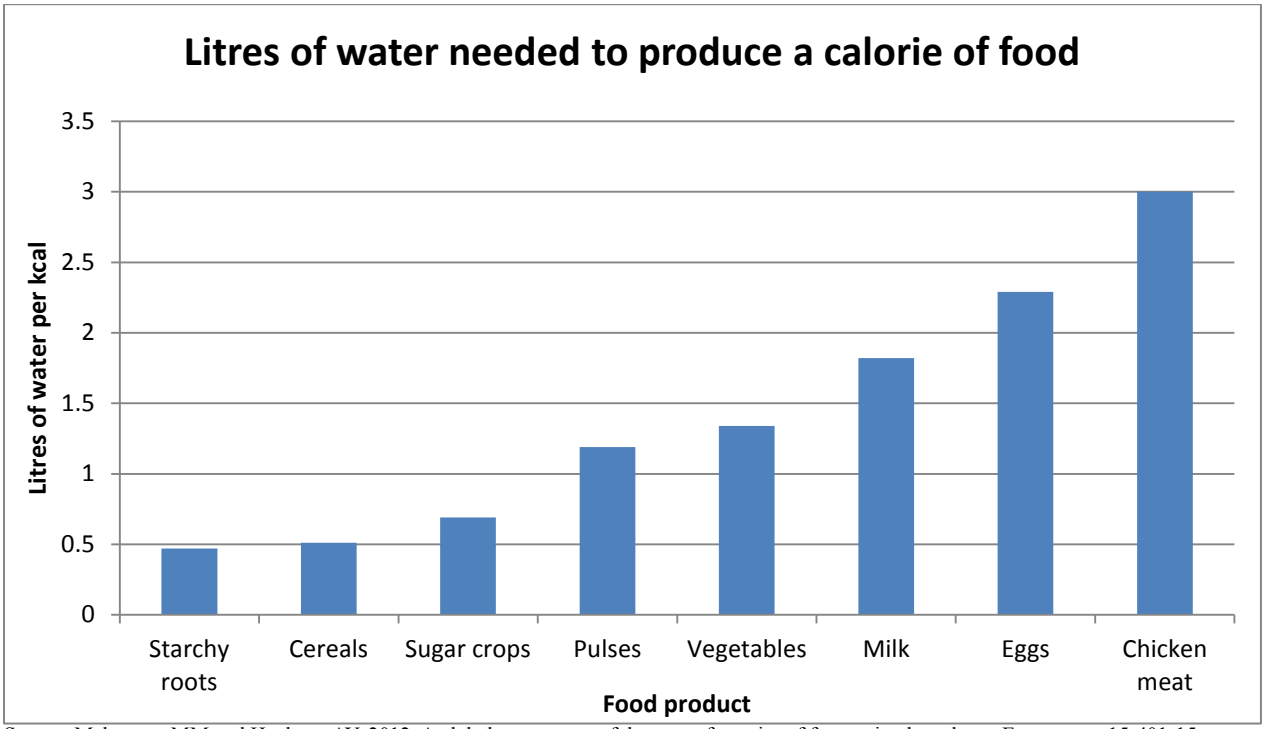
As the states most severely impacted by drought are also amongst the largest producers of egg and meat products, individuals and policy makers alike must examine the impact of animal agriculture on water resources. Globally, the consumption of animal products contributes to more than one-quarter of our water footprint, and that number is likely to grow as the consumption of meat, eggs and milk rises in countries like India.

Not only does animal agriculture require large amounts of water, it is a highly inefficient consumer of water. It takes 1.5 times more water to produce a gram of protein from milk or eggs compared to a gram of protein from pulses. Meat is even less efficient.



Source: Mekonnen MM and Hoekstra AY. 2012. A global assessment of the water footprint of farm animal products. Ecosystems 15:401-15.

With calories, the difference is even greater. Indeed, despite all the scrutiny being placed on sugar crops during the current crisis, much less water is required to produce a calorie from sugar as compared to a calorie from an animal product.



Source: Mekonnen MM and Hoekstra AY. 2012. A global assessment of the water footprint of farm animal products. Ecosystems 15:401-15.

Stemming this rise in egg and meat consumption and enjoying a largely vegetarian diet would dramatically reduce the pressure on our water resources. If a meat eater receiving about 30% of her calories from animal products switched to a lacto-vegetarian diet consisting of about 10% of animal products, her water footprint is reduced 56%. In one year, the difference equates to almost half a million litres of water. However, even lacto-vegetarians have a role to play in reducing water stress in India: The water footprint of cow's milk is 200% larger than the water footprint of soymilk.[1]

In Gujarat, dairy farming intensification has led to increased water use to grow feed. Researchers estimated 2941 litres of water are required to produce a single litre of cow's milk in North Gujurat. For buffalo milk, one litre of milk requires 4546 litres of water.[2] Conflicts have arisen between poultry farmers and local populations over use of water. As more poultry are raised for food and more water is needed, these conflicts will grow.[3]

Not only is the animal agriculture sector a heavy consumer of water, it is increasingly polluting the available water supply. According to the Food and Agriculture Organization of the United Nations (FAO), "The livestock sector…is probably the largest sectoral source of water pollution, contributing to eutrophication, 'dead' zones in coastal areas, degradation of coral reefs, human health problems, emergence of antibiotic resistance and many others."[4] India's water supply is not immune from the dangerous effects of raising farm animals for food, especially on large industrial facilities.

For instance, the poultry industry in India is not only growing rapidly, but the scale of production is expanding.[5] There are a number of ways poultry operations can pollute our water. Poultry waste can contaminate groundwater.[6] Pesticides used to control pests and predators can enter surface water and groundwater. Wastewater generated from slaughterhouse operations may contain animal blood, fat and flesh, as well as chemicals such as chlorine, and even pathogens like Salmonella and Camplyobacter, all of which can enter water bodies.[7] Research has shown that operations in India with more than 10,000 birds are less likely to follow regulations regarding water purity, manure removal and carcass disposal as compared to smaller operations.[8]

In a report prepared for the FAO, the non-profit organisation Intercooperation Social Development India summed up the problems facing India as follows: "Geographically, most large-scale industrial production takes place in and around major cities. This leads to massive pollution in these areas, especially of surface and ground water. The current policy framework often favours the development of large scale industrial production making the poor even more vulnerable."[9]

As part of the report, Intercooperation visited a number of areas in India to see the consequences of farm animal production. A large slaughterhouse in Bangalore was found to have a non-functional 150,000 litre per day treatment system for the waste water produced during the slaughtering process. In Mumbai, they found colonies of milking buffaloes within busy sections of the city. Waste from the buffaloes flowed into open sewage canals. The owners of the animals could not keep the surroundings hygienic because of the high cost and scarcity of water. In many village slaughterhouses in Kerala, blood and urine, along with water used for cleaning, are deposited in open drains. During the rainy season, the drains overflow and contaminate water sources. In some cases, marshy areas composed of waste water and animal organs are formed adjacent to slaughterhouses.[10]

This Earth Day and every day, we can each have a positive impact on the environment and animals by replacing the eggs, meat and dairy products on our menu with healthy, delicious plant-based foods. Numerous studies show that plant based eating is also good for our health! For more information, please visit hsi.org/meatfree.

---

[1] Hoekstra AY. 2012. The hidden water resource use behind meat and dairy. Animal Frontiers 2(2):3-8.
[2] Singh OP, Sharma A, Singh R and Shah T. 2004. Virtual water trade in dairy economy: irrigation water productivity in Gujara. Economics and Political Weekly, July 31.
[3] Mehta R, Narrod CA, Tiongco MM. 2008. Livestock, industrialization, trade and social-health-environment impacts in developing countries: a case of Indian poultry sector. Research and Information System for Developing Countries Discussion Paper 146, December.
[4] Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M and de Haan C. 2006. Livestock's long shadow: environmental issues and options. Rome, Italy: Food and Agriculture Organization of the United Nations, p. 142.
[5] Mehta R, Narrod CA, Tiongco MM. 2008. Livestock, industrialization, trade and social-health-environment impacts in developing countries: a case of Indian poultry sector. Research and Information System for Developing Countries Discussion Paper 146, December.
[6] Mehta R and Nambiar RG. 2007. The poultry industry in India. In: Poultry in the 21st Century: Avian influenza and beyond (Rome, Italy: Food and Agriculture Organization of the United Nations).
[7] Maheshwari S. 2013. Environmental impacts of poultry production. Poultry, Fisheries and Wild Sciences 1:101. doi:10.4172/pfw.1000101.
[8] Mehta R and Nambiar RG. 2007. The poultry industry in India. In: Poultry in the 21st Century: Avian influenza and beyond (Rome, Italy: Food and Agriculture Organization of the United Nations).
[9] Intercooperation in India. 2008. Livestock in the changing landscape in India: its environmental, social and health consequences and responses. Working paper 6
[10] Intercooperation in India. 2008. Livestock in the changing landscape in India: its environmental, social and health consequences and responses. Working paper 6.