



Virtual Water Trade and Savings in Horticulture and Its Significance

Lamia Wanx*

Department of Horticulture, University of Peking, Beijing, China

ABOUT THE STUDY

Virtual water trade is the concept of transferring water resources from one region to another through the trade of agricultural products that require water for their production. Virtual water trade can help save water in regions that face water scarcity or stress, by importing water-intensive products from regions that have water surplus or abundance. Virtual water trade can also enhance food security and economic development in both exporting and importing regions, by diversifying their agricultural production and markets [1,2].

Horticulture is a branch of agriculture that deals with the cultivation of fruits, vegetables, flowers, ornamental plants, spices, herbs, and nuts. Horticulture is an important source of income, nutrition, and livelihood for many people around the world, especially in developing countries. However, horticulture also consumes a lot of water, as many horticultural crops are irrigated and have high evapotranspiration rates [3,4]. According to a study by Chapagain and Hoekstra, horticultural crops account for about 22% of the global virtual water trade in crop products.

Virtual water trade can offer significant savings for horticulture, by reducing the pressure on local water resources and increasing the efficiency of water use. For example, a study by Aldaya et al. found that virtual water trade in horticultural products between Spain and the United Kingdom saved about 550 million m³ of water per year [4,5]. This is equivalent to about 11% of the total irrigation water use in Spain, or about 25% of the total domestic water use in the United Kingdom. The study also found that virtual water trade in horticultural products between Spain and other European countries saved about 1.7 billion m³ of water per year.

However, virtual water trade also poses some challenges and risks for horticulture, such as:

Virtual water trade can have negative impacts on the environment of both exporting and importing regions, such as soil degradation, salinization, pollution, biodiversity loss, and

greenhouse gas emissions³. For example, a study by Chico et al. found that virtual water trade in horticultural products from Spain to Germany caused significant environmental impacts in terms of land use change, fertilizer use, pesticide use, energy use, and carbon footprint [6,7].

Virtual water trade can have social impacts on the farmers and communities involved in horticultural production and trade, such as income distribution, labor conditions, human rights, food sovereignty, and cultural values³. For example, a study by Allan et al found that virtual water trade in horticultural products from Morocco to Europe had mixed effects on the livelihoods of smallholder farmers in Morocco [8,9]. While some farmers benefited from increased income and market access, others faced increased vulnerability and marginalization due to unequal power relations and unfair trade practices.

Virtual water trade can have economic impacts on the competitiveness and sustainability of horticultural sectors in both exporting and importing regions. For example, a study found that virtual water trade in horticultural products from Africa to Europe reduced the domestic availability of food crops in Africa due to land conversion and export orientation. This could undermine food security and self-reliance in Africa while increasing dependency on food imports [10].

Therefore, virtual water trade in horticulture should be managed carefully and responsibly to ensure that it contributes to water savings without compromising environmental quality, social justice, and economic development.

REFERENCES

1. Banno F, Kita T, Fernandez JA, Yanamoto H, Tashima Y, Kokame K, et al. Exacerbated venous thromboembolism in mice carrying a protein S K196E mutation. *Blood*. 2015;126(19):2247-2253.
2. Brandt M, Giokoglu E, Garlapati V, Bochenek ML, Molitor M, Hobohm L, et al. Pulmonary Arterial Hypertension and Endothelial Dysfunction Is Linked to NADPH Oxidase-Derived Superoxide Formation in Venous Thrombosis and Pulmonary Embolism in Mice. *Oxid Med Cell Longev*. 2018;2018:1860513.

Correspondence to: Lamia Wanx, Department of Horticulture, University of Peking, Beijing, China, E-mail: lamia00@ac.cn

Received: 01-Jan-2023, Manuscript No. GJBAHS-23-20253; **Editor assigned:** 03-Jan-2023, PreQC No. GJBAHS-23-20253(PQ); **Reviewed:** 17-Jan-2023, QC No GJBAHS-23-20253; **Revised:** 24-Jan-2023, Manuscript No. GJBAHS-23-20253(R); **Published:** 31-Jan-2023. DOI: 10.35248/2319-5584.23.12.159

Citation: Wanx L (2023) Virtual Water Trade and Savings in Horticulture and Its Significance. *Glob J Agric Health Sci*. 12:159.

Copyright: © 2023 Wanx L. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

3. Clozel JP, Holvoet P, Tschopp T. Experimental pulmonary embolus in the rat: a new in vivo model to test thrombolytic drugs. *J Cardiovasc Pharmacol.* 1988;12(5):520-525.
4. Kay IS, Armstrong DJ. Phenylbiguanide not phenyldiguanide is used to evoke the pulmonary chemoreflex in anaesthetized rabbits. *Exp Physiol.* 1990;75(3):383-389.
5. Singh S, Houng A, Reed GL. Releasing the Brakes on the Fibrinolytic System in Pulmonary Emboli: Unique Effects of Plasminogen Activation and alpha2-Antiplasmin Inactivation. *Circulation.* 2017;135(11):1011-1020.
6. Walls AC, Park YJ, Tortorici MA, Wall A, McGuire AT, Veesele D. Structure, function, and antigenicity of the SARS-CoV-2 spike glycoprotein. *Cell.* 2020;181(2):281-292.
7. Abdullahi IN, Emeribe AU, Ajayi OA, Oderinde BS, Amadu DO, Osuji AI. Implications of SARS-CoV-2 genetic diversity and mutations on pathogenicity of the COVID-19 and biomedical interventions. *J Taibah Univ Med Sci.* 2020;15(4):258-264.
8. Makizako H, Tsutsumimoto K, Doi T, Makino K, Nakakubo S, Liu-Ambrose T, et al. Exercise and horticultural programs for older adults with depressive symptoms and memory problems: A randomized controlled trial. *J Clin Med.* 2019;9(1):99.
9. Gong Z, Zhu JW, Li CP, Jiang S, Ma LN, Tang BX, et al. An online coronavirus analysis platform from the National Genomics Data Center. *Zool Res.* 2020;41(6):705.
10. Wu F, Zhao S, Yu B, Chen YM, Wang W, Song ZG, et al. Author Correction: A new coronavirus associated with human respiratory disease in China. *Nature.* 2020;580(7803):7.