

Virtual Water Trade of Indian Maize for Global Food Sustainability

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Water is the renewable resource and its availability varies with time and space. Agriculture is the one sector which is consuming enormous amount of water for production. The hidden or embodied form of water in the commodity is known as virtual water. The international trade of commodities indirectly shows the transfer of water across countries in virtual form. Virtual water trade is an emerging phenomenon which helps in determining country dependency or self-sufficiency on water resources with other countries. The inefficient application of water resources has become an urgent problem restricting the world's sustainable development. The current study aims in determining the virtual water trade in maize crop and crop products of India. Maize is the multipurpose crop as it used as food, feed and as raw material for industries. It is highly demanded as feed by cattle and poultry sector as it supplements high protein content in diet. Poultry and cattle accounts 63 percent of maize consumption whereas human maize consumption is only 8 percent. The results of the study indicates that India is the net virtual water exporter of maize crop and crop products. The average water usage associated with Indian Maize production is 56901 Mm³. The major virtual water flow is diverted to Bangladesh, Nepal, Vietnam and Malaysia. The highest virtual water content exported is 6648 Mm³ in the year 2020-21 and highest virtual water content imported is 898.24 Mm³ in the year 2019-20. Virtual Water Balance for maize in India is negative because the volume of virtual water import is less than virtual water export. Even in situation of negative virtual water balance, the virtual water flow of maize is increasing in recent years which indirectly contributes in achieving the global food sustainability of importing nations.

Keywords: Global Food Sustainability, Indian Maize, Virtual Water Trade