

Analysis of Virtual Water Consumption and Flow

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Abstract: The rapid economic development and urbanization accelerating the water consumption. Water shortage and irrational water use cause a series of questions, such as the imbalance between supply and demand and destruction of natural flow of water resources. Meanwhile, these problems will impose a height pressure over the further development of the social economy. This paper utilized the input-output model to calculate the coefficients of direct water consumption as well as indirect water consumption to explore the virtual water flows in different sectors based on data of Jiuquan City in 2012. Results show that the agriculture sector, having the highest water consumption but creating little economic benefits, virtually flows to food and tobacco manufacturing sectors and service sectors, as the main export sectors. Food and tobacco manufacturing sectors have a lot contribution to the indirect boost of economic system by water resources with the highest indirect water consumption. Finally, we should energetically increase the water saving capacity of agriculture, readjust industrial structure and strengthen the cooperation of water allocation among all sectors in order to promote coordinated and sustainable development of water resources utilization and economy.

Keywords: input-output model; virtual water;