

# Accepted Manuscript

Systemic risk in the global water input-output network

T. Distefano, M. Riccaboni, G. Marin

PII: S2212-4284(17)30063-4

DOI: [10.1016/j.wre.2018.01.004](https://doi.org/10.1016/j.wre.2018.01.004)

Reference: WRE 110

To appear in: *Water Resources and Economics*

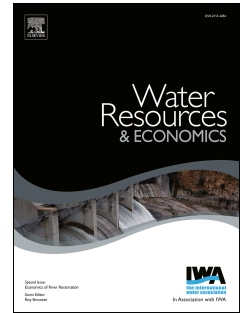
Received Date: 19 May 2017

Revised Date: 25 January 2018

Accepted Date: 25 January 2018

Please cite this article as: T. Distefano, M. Riccaboni, G. Marin, Systemic risk in the global water input-output network, *Water Resources and Economics* (2018), doi: 10.1016/j.wre.2018.01.004.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



# Systemic Risk in the Global Water Input-Output Network

---

## Abstract

The issue of water access and security has been emphasized in the recent policy debate on sustainable development (Sustainable Development Goal No. 6) and adaptation to climate change (CoP21 in Paris, 2015). This study provides new evidence about the Blue Virtual Water Input-Output Network. The main novelty of our approach is the combination of Structural Decomposition Analysis (SDA) with Network Theory. SDA reveals that size-related, technological and structural components have contributed substantially to changes in virtual water use. Network analysis offers new insights about the vulnerability of the system to shocks through trade links across country-sector pairs. Our analysis highlights a possible trade-off in the increasing importance of virtual water trade: the efficiency improvement in granting access to virtual water might come at the cost of increasing systemic vulnerability.

Overall, the great unbalance between water availability and usage combined with rigidity of global consumption and production networks and the risk of cascade effects imply increasing vulnerability of the virtual water network to shocks propagation.

*Keywords:* Virtual water trade, Multi-regional input-output model, Network analysis

**JEL:** C67, Q25, F18

---

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات