

**#21 Topic: The resilience of international trade: an agent-based model of trust for the study of food crises**

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**Abstract:**

Ensuring food security is a key human development objective. Where countries used to mostly rely on their national production of staple food, they are now embedded in a dense heterogeneous network of international trade. Even though this globalization process significantly improved their resilience to local production shocks, it increased trading interdependencies and countries' reliance on trade, leaving them more vulnerable to systemic risks. Not only do countries show trust in the ability of their trading partners to supply them, but also in the trade system as a whole. However, in times of uncertainty, countries are tempted to put their national interests first at the expense of the trade network, which may undermine trust relations. These protectionist behaviors have been shown to trigger feedback loops of distrust in international trade, leading to food crises.

I would like to introduce a multiagent model of the international trade aimed at capturing both the multi-scale economics of an international price crisis as well as their interactions with trust mechanisms. This model takes a game theoretical approach of trust to simulate nonconservative cascades of price rise in a network. By exploring the concept of resilience in the context of trust mechanisms, this model may be used to identify effective policies to ensure food security.