Floods in China will affect the United States far more than the European Union

February 20th, 2019

Photo: openDemocracy (www.flickr.com)

Global network

All countries are connected in a global network of supply chains and trade relations. A flood in one country, leading to production losses, affects economic sectors elsewhere via supply shortages, changes in demand, and price effects. At the same time, economic sectors elsewhere may benefit from the flood because demands will shift to non-affected suppliers. The flexibility of the global economic system thus dampens the economic shocks caused by flood events.

Direct production losses and their indirect repercussions in the global economic network have been assessed for projections of near-future fluvial floods until the year 2035. In this study, the current level of adaptation to floods was kept constant until 2035.

Strong losses in China have little impact on EU

The study shows that, in the absence of large-scale structural adaptation, the total economic losses due to fluvial floods will increase in the next 20 years globally by 17% despite partial compensation through market adjustment within the global trade network. Large direct

losses are observed in China, the United States, Canada, India, Pakistan and various countries of the European Union. China will suffer the strongest direct losses, with an increase of 82%.

For the vulnerabilities of the United States and the European Union, their trade relations with China are particularly relevant. Although the United States and the European Union are affected by Chinese supply-chain losses to a similar extent, the European Union has a competitive advantage when it comes to exports to China; since there are stronger trade relations between the European Union and China than between the United States and China, the European Union is in a better position to increase exports and temporally replace affected Chinese producers. Thus, the balanced trade relations between the European Union and China are more advantageous for loss mitigation than the unbalanced situation between the United States and China. These balanced trade relations with the EU are also advantageous for China: they help sectors in the Chinese economy that are not affected by floods to keep up production in the disaster aftermath and to mitigate indirect losses.

Balanced trade relations to climate-proof economies

The European Union is well adjusted for the future increase in flood events in China, the scientists conclude. Over the past two decades, European exports to China were able to catch up with the growth of Chinese exports to the European Union, thereby balancing trade relations. By contrast, the US trade deficit with China has significantly increased.

The scientists stress the importance of building balanced trade relations between world regions: this might be a viable strategy to climate-proof regional economies and help to protect a national economy against a global intensification of weather extremes.

Source: Willner et al., Nature Climate Change 8: 594-600.