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Nature Sustainability Editor

Dear Dr Contestabile,

Please find attached our manuscript titled "**Food production shocks across land and sea**".

Sudden and unexpected losses (or 'shocks') to food production represent significant challenges for meeting global sustainability targets through their capacity to disrupt food supply and security. Recent research reveals the importance of taking comprehensive and comparable assessments across terrestrial and aquatic food systems[1,2]. Yet our knowledge of global exposure to, and drivers of, food production shocks is limited by isolated investigations of agricultural or seafood sectors. Here we describe global trends in exposure to food production shocks and investigate their drivers across crop, livestock, fisheries, and aquaculture sectors. To our knowledge, this the first attempt to present a standardised and representative view of where and why sudden losses to both terrestrial and aquatic food production occur. We illustrate how environmental and political crises can reach across land and sea, highlighting the feedbacks and interdependencies among sectors, and the challenges these create for human adaptation and sustainability. To what extent and why people are exposed to such production crises contributes to their food security and livelihood vulnerability through time. We discuss how food policies that account for the underlying drivers of these disturbances may be key to addressing persistent inequalities in food availability and access in an increasingly shock-prone world.

We hope you consider this manuscript for publication in *Nature Sustainability*. We suggest the following as possible academic reviewers:

Jessica Gephart (jgephart@sesync.org)
Kyle Davis (kd2620@columbia.edu)
Max Troell (max@beijer.kva.se)
Samir Suweis (suweis@pd.infn.it)

We confirm this manuscript is not under consideration or been published elsewhere and all authors have approved the manuscript and agree with its submission.

On behalf of all authors,

Richard Cottrell

1. Poore, J. & Nemecek, T. Reducing food's environmental impacts through producers and consumers. *Science (80-.).* **360,** 987–992 (2018).

2. Blanchard, J. L. *et al.* Linked sustainability challenges and trade-offs among fisheries, aquaculture and agriculture. *Nat. Ecol. Evol.* **1,** 1240 (2017).