

## Publication

# Enabling Tipping Dynamics in Food System Transformation: How Information and Experience with Novel Meat Substitutes Can Create Positive Political Feedbacks

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The food system causes more than a third of the global anthropogenic greenhouse gas emissions, of which half are from livestock. Shifting towards plant-based diets could significantly reduce deforestation, protect biodiversity, and contribute to achieving the Paris climate targets. Yet, deep-rooted eating habits, pleasure, cultural status symbols, and personal freedom are just a few of many bottlenecks to reduce meat consumption. Here, we argue that technological innovation in meat substitutes, if successfully combined with effective informational triggers for behavioral changes, can foster positive political feedbacks to transform the food system. We are particularly interested in assessing the effects of such triggers on accelerating people's reduction of meat consumption and increasing public support for respective food policies. Using advanced machine learning and survey experiments with citizens (N= 2590) in China and the US, the globally largest meat markets, we find that personal experience with new plant-based meat substitutes strongly predicts individuals' intentions to reduce their meat consumption, eat more substitutes, and support public policies that catalyze a transition to more plant-based diets. We also find that in both countries information about the benefits of plant-based diets can increase citizens' behavioral change intentions and policy support. In China, emphasizing social norms in favor of plant-based diets has particularly strong effects on policy support. In the US, prior experience with innovative meat substitutes potentially can boost the positive effects of informational campaigns on public support for meat reduction policies. Overall, the results offer promising implications for a policy sequencing strategy to create positive political feedbacks and enable socio-technical tipping dynamics for food system transformation by fostering innovation in and experience with meat substitutes and highlighting the co-benefits of plant-based diets.

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