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Sustainable maize production and consumption in China: practices and politics in transition

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#### ACCEPTED MANUSCRIPT

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#### **Abstract**

China provides a stark and globally significant illustration of how changing patterns of food production and consumption (especially related to increased intake of animal protein) are creating negative impacts on biodiversity, climate, nitrogen and phosphorous cycles and the use of freshwater. However, China's rapidly growing innovation capabilities and dynamic pattern of development also offer a unique opportunity for transitions towards more sustainable and resilient agri-food systems. Applying a 'food practices in transition' framework (Spaargaren et al 2012), this paper discusses the technological, political and socio-cultural factors central to such systemic changes, with a focus on maize as a core case study. In particular it presents and discusses two contending (but not mutually-exclusive) pathways towards more sustainable maize production and consumption. One, which we call the 'indigenous innovation' pathway is framed by 'systemic rationalities' and characterised by a focus on R&D-intensive technologies for agricultural intensification, including the controversial use of transgenic phytase maize. The second, which we term the 'alternative' pathway, is framed by 'lifeworld rationalities' and focusses on improved management practices, shorter supply chains, agro-ecological and participatory research. The two pathways claim different environmental benefits and present different risks and political implications. This paper analyses the food practices in transition in each pathway, identifying links with shifting political conditions and pointing to the increasingly significant role of consumer agency in steering patterns of maize production and consumption in China.

#### **Keywords**

low-carbon innovation, China, transitions, practices, agro-ecology, maize, agriculture, pathways to sustainability

#### **Highlights**

- Introduces two pathways to sustainable maize production and consumption in China
- Analyses the "food practices in transition" that each pathway implies
- Investigates political debates surrounding each pathway
- Considers implications of Chinese food practices for shifts in production and consumption

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