INTRODUCTION

- Securing food production under climate change is expected to require fundamental changes in agri-food systems.
- An understanding of transformative adaptation decision-making processes is essential.
- We present an integrated analytical framework that allows a closer look at transformative adaptation measures and their outcomes and how these are considered in adaptation decision-making.
- We apply the framework in Nordic agri-food system context.

ANALYTICAL FRAMEWORK

- Enables identification and assessment of the dynamic and contextual decision-making on transformative adaptation measures in socio-ecological contexts (e.g. agri-food systems).

The framework integrates:
- the typology of transformative adaptation features: 1) how climate risk is targeted, 2) what the mechanism of change is, 3) what the primary object of the adaptation response is (Few et al. 2017) and
- the conceptual tool of ‘activity spaces’ by Pelling et al. (2015) to address the social dimension of transformative adaptation decision-making processes. Seven coexisting and interacting activity spaces are introduced.

Analytical framework to assess transformative adaptation in the agri-food system.

The dashed box illustrates the adaptation activity space that construct the frames for adaptation decision-making.

The transformative change in the agri-food system is indicated with a colour change in the box illustrating the agri-food system before (light pink) and after (dark pink) the transformations and the arrow from the ‘trigger’ to ‘transformation’ and beyond the agri-food system.

Three peachy pointed rectangles illustrate the features of transformative adaptation, The dashed arrow indicates indirect targeting of root causes through changes in practice.

CASE & METHODS

Case regions: European Nordic countries (Finland and Sweden):
- considered to have relatively strong socio-economic conditions for adaptation
- cross-border impacts & high-end & long-term scenarios currently not considered in national adaptation strategies

The perspectives and experiences of 37 Nordic agri-food production actors were examined:
- pair-wise stakeholder interviews, supported by serious gaming

RESULTS

Transformative changes through adaptation involve changes that
(i) have different effects at various temporal and spatial dimensions
(ii) are often related to drivers other than climate risk: other actors, policies, markets and
(iii) involve trade-offs (and related negative externalities) with various actors and objects.

CONCLUSIONS

- There are complexities and dynamics in the relations between different actors and contexts of action.
- Trade-offs, including counteracting rebound effects to mitigation, are not always evident to or considered relevant by the implementing actors.
- Maladaptive outcomes resulting from transformative adaptation may be more complex than those resulting from incremental adaptation.
- Focus from a purely technical problem-solving and systems-based approach to transformation needs to be shifted towards the societal aspects of adaptation decision-making e.g. social drivers for transformative adaptation processes.

REFERENCES:

Pelling et al. 2015. Adaptation and transformation. https://doi.org/10.1007/s10584-014-1303-0