MISTRA FOOD FUTURES

Sustainability and preparedness, perspectives from Sweden

Helena Hansson, professor at the Swedish University of Agricultural Sciences, programme director of Mistra Food Futures

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Preparedness with respect to food can be improved through improved resilience

- The food system faces dual challenges – improved preparedness and the transition towards sustainability.
- Both challenges can be handled simultaneously.

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Swedish food system challenges with respect to preparedness

- Significant import dependence
  - Agricultural production inputs
  - Raw material in food production
- Concentrated ’middle segment’ of the food value chain.
- Dietary habits

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Food system sustainability challenges

- Environment
- Health
- Profitability – in particular in the farming sector

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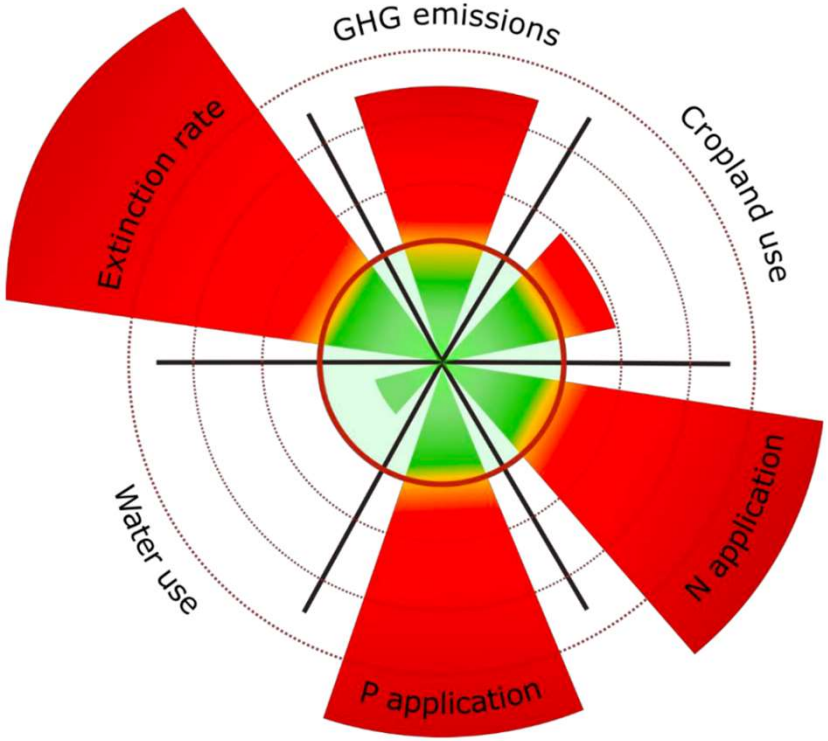
Swedish sustainability challenges, examples

- Agriculture in Sweden is responsible for about 14% of territorial emissions (Swedish EPA, 2024)
- Swedish food consumption: five out of six planetary boundaries are trespassed if scaled to per capita (Moberg et al. 2020)



Moberg et al. 2020

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Improving production, examples

- Well planned crop rotations
- Precision technologies
- Intercropping
- Agroforestry
- ‘Low-input’
- Grazing on seminatural pastures
- Circular systems
- Fossil independent production approaches
- Etc

From literature reviews in e.g. Piñeiro et al. 2020; Naturvårdsverket 2019, Hansson et al. (2024)

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Improving consumption – targets for Swedish food consumption

The Food Agency and the Public Health Agency, February 6th, 2024

Targets to 2035

Food category	Change	Base year
Legumes, vegetables, root vegetables, fruits, berries and	Increase by 50%	2021
Whole grain	Increase by 100%	2010
Seafood	Increase by 20%	2019
Meat	Decrease by 30%	2021
Energy dense foods	Decrease by 50%	2021
Salt	Decrease by 20%	2018

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Resilience

- The capacity of a system to adapt or transform in response to disruptions or changes
  - Robustness
  - Adaptability
  - Transformability

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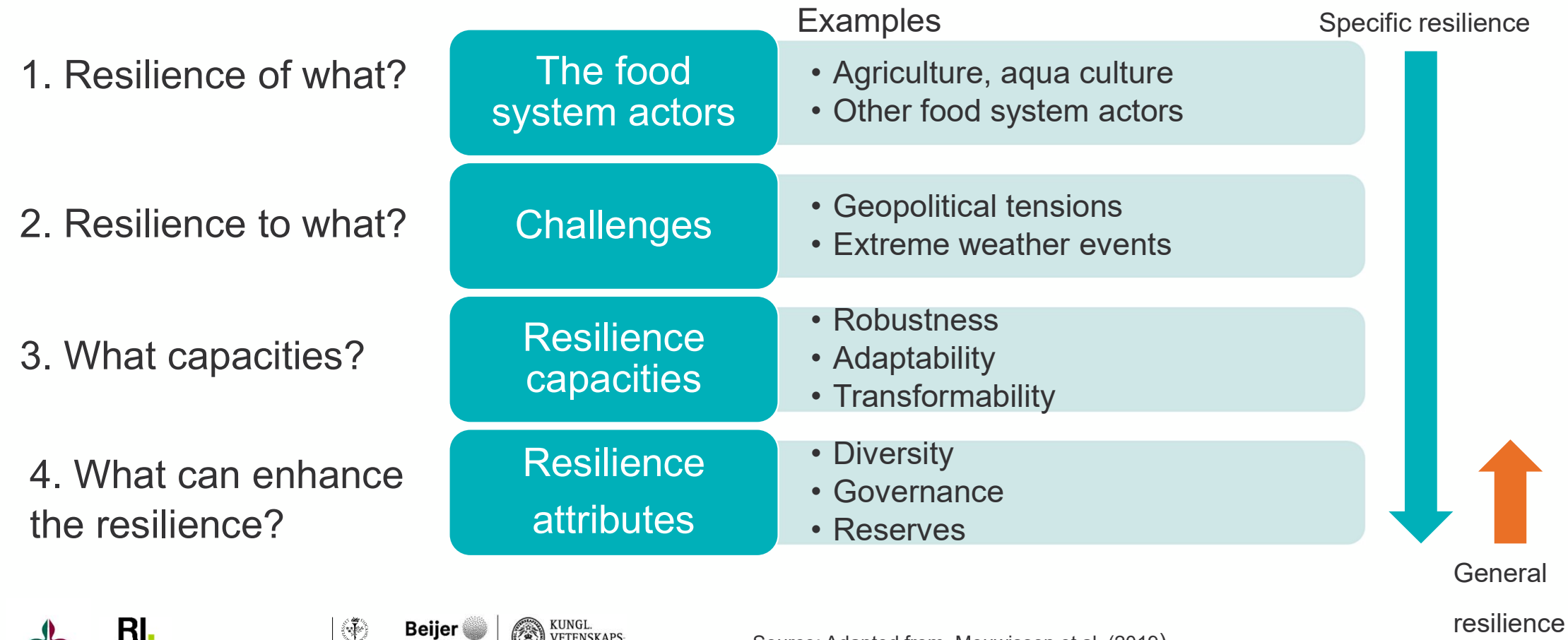

Source: Adapted from Meuwissen et al. (2019)

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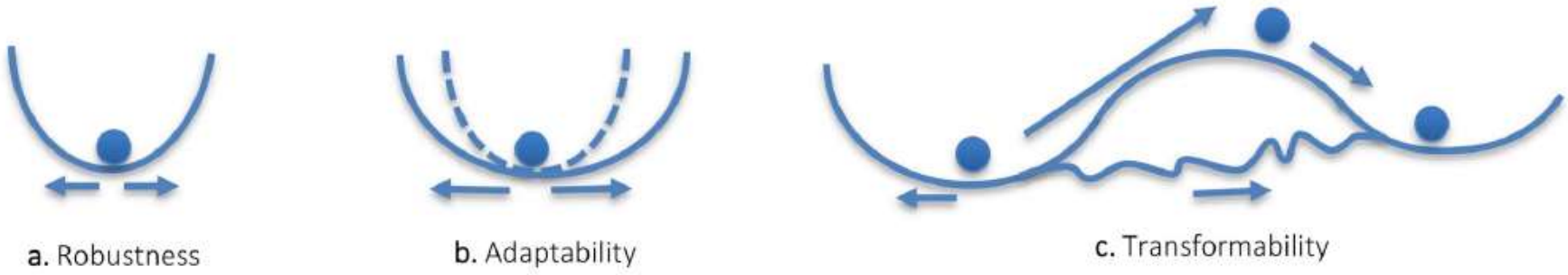
A resilient system can adjust to disruptions – in this way preparedness with respect to food can be achieved



From: Meuwissen et al. (2019)

Stock piling

Flexibility in supply chains, production factors, production orientations, dietary patterns. Diversification.

Considerable re-organisation to maintain production of sufficient amounts of health foods.

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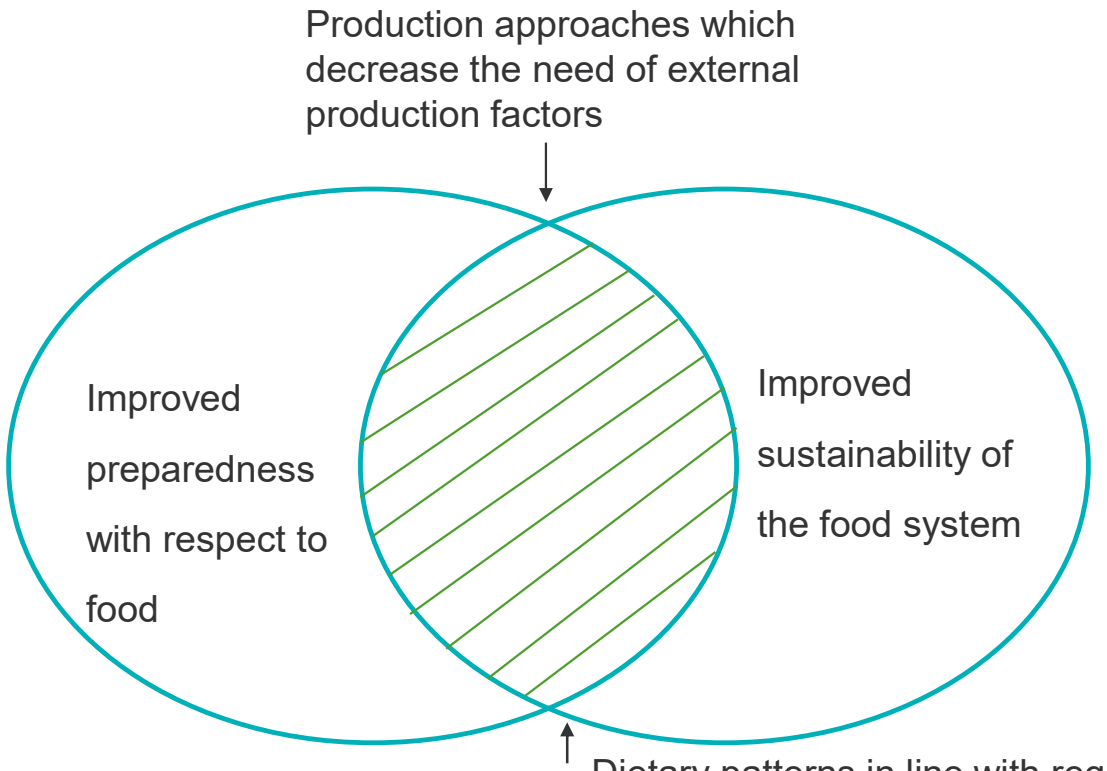
Can we simultaneously achieve preparedness and sustainability?



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Improved preparedness and greater sustainability can be achieved simultaneously

A few examples, more can be found at mistrafoodfutures.se

Röös, E., Zira, S., Salomon, E., Åkerfeldt, M. (2022). Mistra Food Futures Report #11. Minskad klimatpåverkan med vallfoder till gris – beräkning av klimatavtrycket ur ett livscykelperspektiv.

Increase the share of ley in feeding regimens

Moberg, E., Karlsson Potter, H., Bolinder, M., Kätterer, T., Parvin, N., Lang, R. (2022). Mistra Food Futures Report #3. Effect of ley inclusion in crop rotations on soil carbon stocks in a life cycle perspective.

Include ley in crop rotations

Karlsson Potter, H., Blomqvist, J., Passoth, V. (2022). Mistra Food Futures Report #6. Climate impact of some alternative uses for the lignin-rich byproduct from yeast oil production.

Use biproducts for oil and feed production

Lagnelöv, O., Larsson, G., Larsolle, A., Hansson, P-A. (2022). Mistra Food Futures Report #10. El-traktorers potential att minska Sveriges klimatpåverkan – En studie av maskinsystem i lantbruket.

Electrification of agriculture

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Recommendations

- 1. Consider improved preparedness with respect to food and the food system sustainability transformation as interlinked policy areas.
- 2. Short-term solutions need to be complemented with long-term strategies to enable adaptability and transformability (resilience attributes).
- 3. There is already now some knowledge available about how to achieve *sustainable preparedness*
  - Start by implementing measures that we already know can contribute to both improved resilience and sustainability

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A policy brief produced in collaboraiton between *Mistra Food Futures* and the Formas funded research project *Towards sustainable preparedness in Swedish agriculture.*

Available at mistrafoodfutures.se


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Policy brief

Improved preparedness with respect to food can be achieved through sustainable and resilient food systems – examples from Sweden

This policy brief introduces how improved food preparedness can be achieved through methods that simultaneously reduce the negative impact of the food system on climate and the environment by focusing on actions that lead to a more resilient food system. By prioritizing increased resilience, both improved food preparedness and a development in line with a more sustainable food system can be achieved. We use examples from the Swedish food system, but the approach should be useful also for other food systems.

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