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# Climate Change and Food Security

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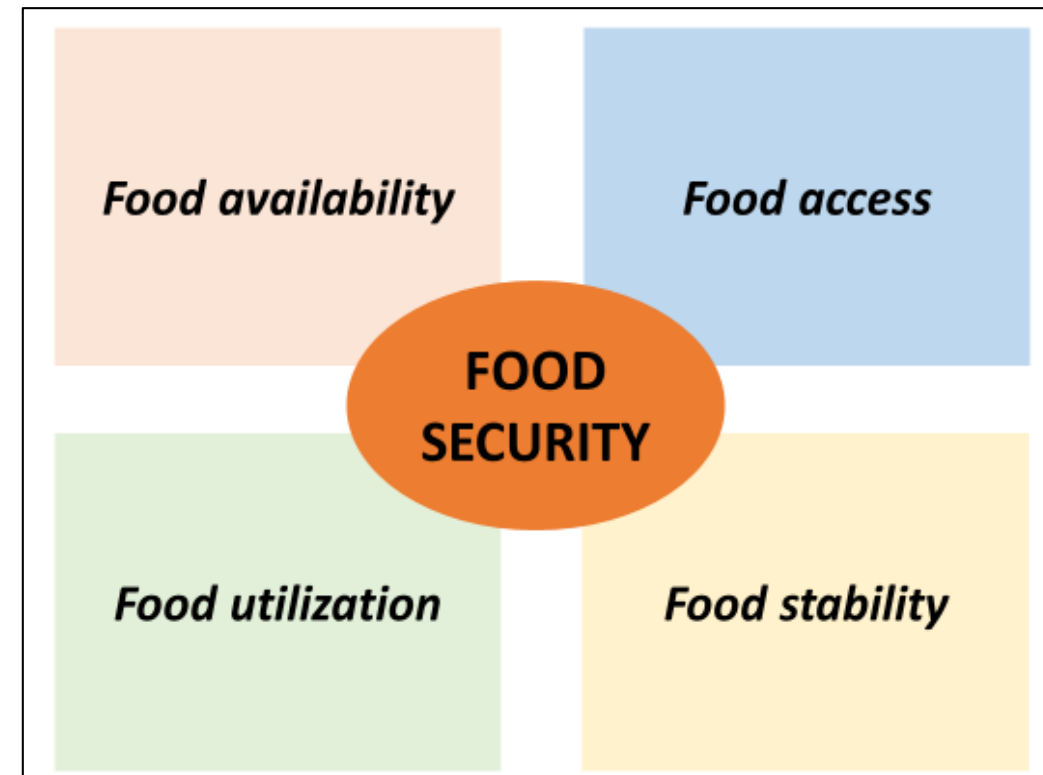
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# What is Food Security?

- ◆ *Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. - 1996 World Food Summit (FAO, 2008)*
- ◆ *People are "food secure" when they have access to sufficient, safe and nutritious food to meet their dietary needs for an active and healthy life. -WFP 2021*





Source: EU Commission



# The world is full of factors contributing to food insecurity!

- The impacts of COVID-19 and the war in Ukraine have elevated food prices, leading to additional food insecurity compared to the pre-COVID period. (WFP, 2023).
- According to the FAO, in 2020, 767.9 million were undernourished in the world, 52 percent in the Asia-Pacific region. FAO estimates that 460 million people in the AP region suffered from **severe food insecurity** in 2021. (FAO, 2022).



# Driving Forces Shaping Future Food Systems

Several external factors are driving structural changes in the food system, presenting opportunities and challenges for sustainability, affordability, nutrition and inclusiveness.

## Demographic Changes and Population Movements

**2/3** will live in cities by 2050; **2** billion in slums  
Africa and Asia will account for **90%** of the increase



## Rising Incomes but Widening Inequality

Food sector generates value-added growth and jobs, but socioeconomic inequality persists



Global Income



Inequality

## Evolving Consumption Preferences, Nutrition and Health

Growing demand for convenience, animal protein and food away from home.

**6** of the top **11** global disease factors are linked to diet



## Rapid Technological Change and Innovation

ICT, automation, biology and artificial intelligence (AI) will affect food system productivity, profits and jobs in multiple ways



## Localized Development and Strong Stakeholder Engagement

Cities and local actors are key to developing innovative solutions - local is the new global



## Climate Change and Resource Scarcity

Post-production food system generates **6%** of global GHG emissions





# Climate change is affecting the Food Security



- Climate change is already affecting food security through increasing temperatures, changing precipitation patterns, and greater frequency of some extreme events (IPCC, 2019).
- The influence on agricultural production is especially evident. In Japan, for instance, elevated temperatures have impacted the cultivation of rice paddies and fruit trees, leading to stunted growth and other issues.
- Small-scale farmers, who constitute the majority in the Asia-Pacific region, are especially vulnerable to the impacts of climate change, which also creates a negative cycle of poverty.





Climate  
Security

~Food Security under Climate Change~



## Our team and focus



Dr. Kei Kurushima (Lead)

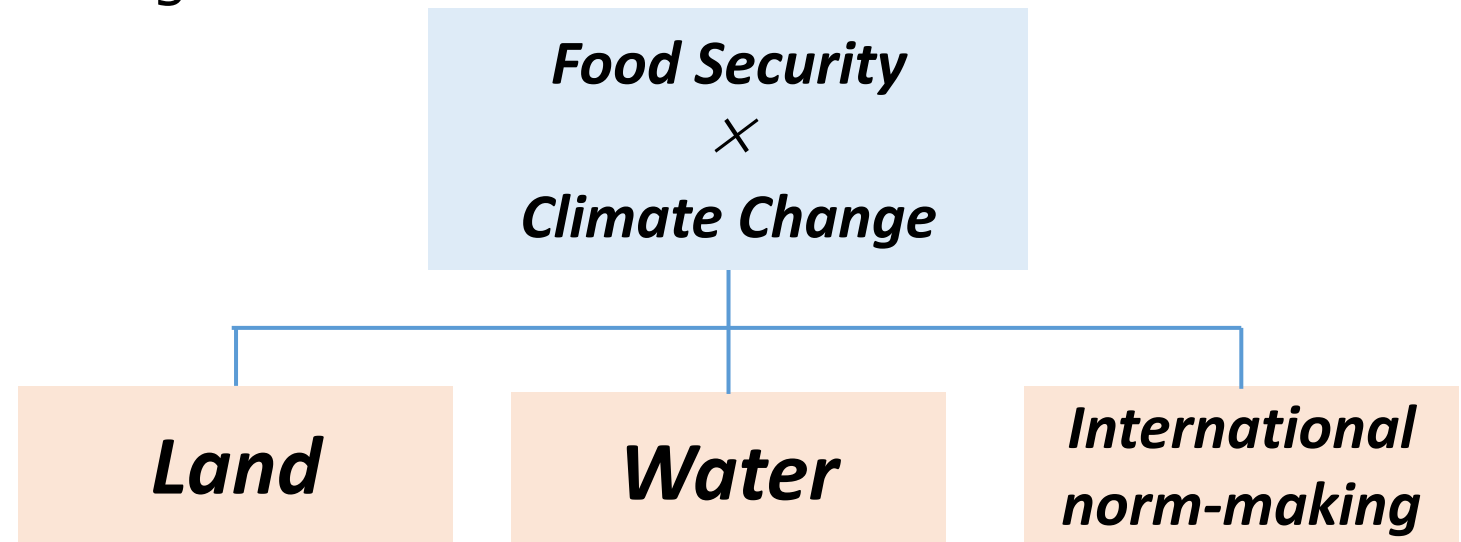


Dr. Naoyuki Okano



Dr. Nazia Hussain

- Our shared background lies in social science research, and will focus on the non-biophysical aspects of food security.
- We will engage in research employing a **political approach**, focusing on specific topics related to food security, to identify a structural framework for the intersection of food security and climate change.





## Land Security

- ◆ *"Land tenure is a key dimension in any discussion of land-climate interactions, and will influence the prospects for both rural adaptation and land-based mitigation. Both climate change and climate action will have possible impacts on land tenure and thus land security, especially of poor people."* (IPCC, 2019)
- ◆ *"Evidence suggests that policies which pay attention to interactions of land and climate and system linkages are more likely to create co-benefits between mitigation, adaptation, and development"* (IPCC, 2019)



**How is land security connected with climate security?**

## Case study of land insecurity in Thailand





## Land Tenure Issues in the Global South

**“Land tenure dualism”** (Coulibaly et al., 2021:2) is a major issue in developing countries. Most forests are public lands, but many communities live in those forests, and some of the lands are used for agriculture (Gilmour, 2016).

- Less than 30 percent of people have tenure rights to the land they use (World Bank, 2017).
- State-owned lands include communities' forests and agricultural lands, creating a divergence between the system and the actual land use.



Farmers are vulnerable, not just to the direct impacts of climate change but also to shifts in land use resulting from climate change and climate policies.

## Way Forward

- Our study recognizes the complexity of food security politics, acknowledging diverse perspectives on aspects of the food system (market, processing, production) and the scale of analysis (individual to international community), and so it is important to clarify the analytical framework of the study.
- Food is integral to our lives, and simultaneously, people sustain their livelihoods by participating in the dynamics of the food system. It is also important to consider what kind of conflicts exist behind our meals and how to reduce these conflicts.





# Thank you very much!!

**For questions & comments:**

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## References

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WFP, 2021, A global food crisis, <https://www.wfp.org/global-hunger-crisis>