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Food Security in Marginalized and Vulnerable Areas of Southeast Asia

Researchers:

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Outlines

- Introducing food security in Southeast Asia
- Selected cases in:
    1. Vietnam
    2. Malaysia
    3. Thailand
    4. Myanmar
    5. Cambodia
- Conclusion

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Introducing food security in Southeast Asia

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- Southeast Asia food security in littoral areas
  - Fragile land and ecosystems
  - Vulnerable to climate change and weather irregularities.
  - Impacts on agricultural and fishery production
  - Vulnerable to food scarcity and food security

- Limited high-quality and reliable evidence, cross-country research to address common issues in marginalized and vulnerable areas.

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1. Salinity intrusion, drought and its impacts on food security in Ca Mau, Vietnam

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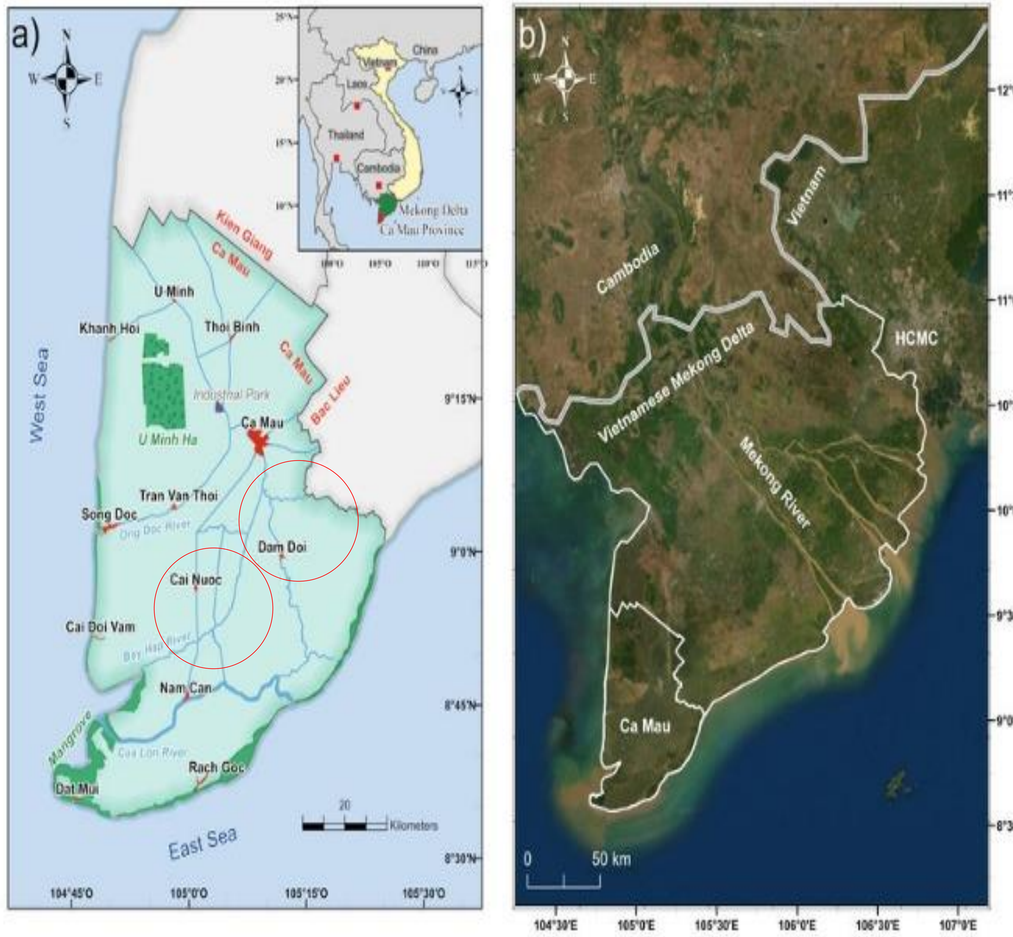
- Salinity intrusion and drought cause huge loss to farmers in coastal areas of Ca Mau, the southern most tip of the Mekong Delta, Vietnam.
  - Tran Van Thoi and Thoi Binh are two districts which suffer the loss the most.
  - About 25,000 hectares of agricultural land suffers the damage caused by the drought in 2024.



Maps of Ca Mau and Tran Van Thoi and Thoi Binh district

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❑ Challenges and issues

- Several adaptive measures have been taken, depending on household livelihood assets.

❑ Research questions

- How do household assets capital determine climate change adaptation measures?
- How do adaptation measures affect household food security in Ca Mau?

❑ Expected outputs

- Providing evidence of the importance of household livelihood assets in choosing adaptation measures and how adaptive strategies affect food security at the study sites.
- Seeking policy implication on the critical intersection of salinity, agriculture, and food security.

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2. Food Insecurity Status, Livelihood Vulnerability and Strategies of Sago Communities to Climate Change in Mukah, Sarawak, Malaysia

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- The Mukah Division in Sarawak is home to Malaysia's main sago-producing region
- The small-scale sago farmers in Sarawak have grown sago on 43,426 hectares of land, whereas estate sago plantations have grown sago on 24,531 hectares.

Photo:https://www.vectorstock.com/

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Issues among Sago Communities

- Sago palm can be harvested 7 to 15 years after planting. Since it might take years for sago palm to mature, majority of people who live in Sarawak's peatlands engage in other agricultural and non-farm pursuits, such as fishing.
- Sago production, fishing, and other peatland activities may be impacted by changes in the annual maximum rainfall brought on by climate change.
- Households depending on the peatland and coastal activities are vulnerable to food insecurity.

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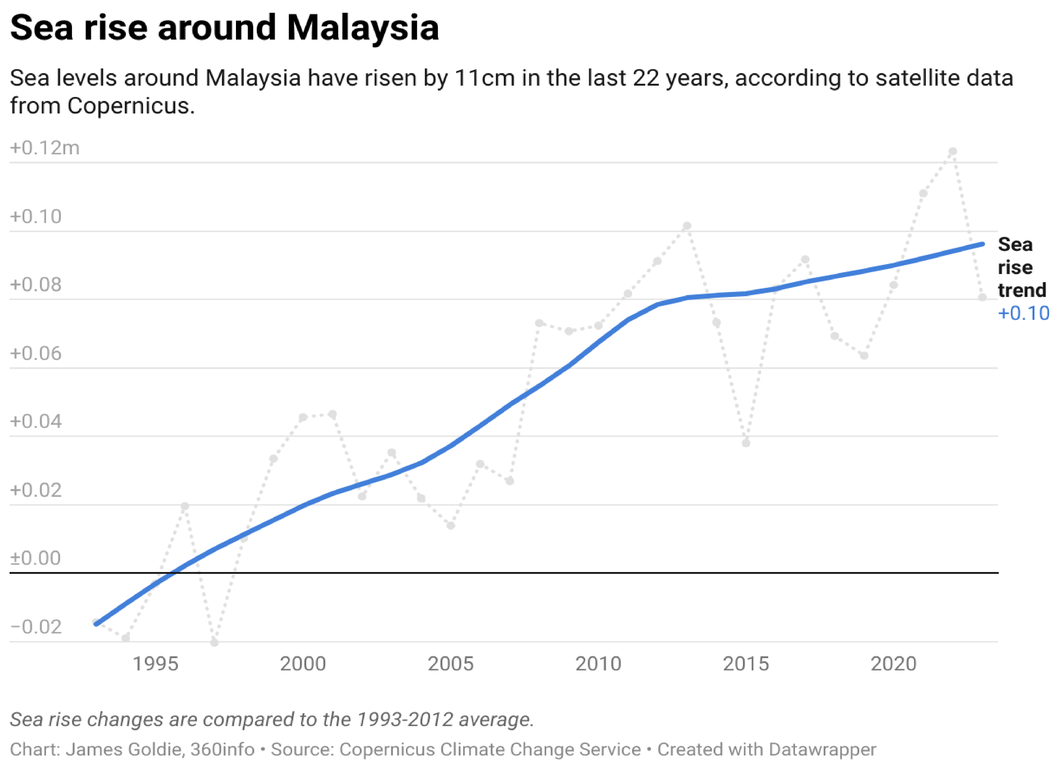

Photo: https://thediplomat.com/2024/11/sea-level-rise-is-a-clear-threat-to-malaysia/

Impact of climate change on Sarawak areas:

1. Rising Sea Levels and Coastal Erosion
   - Flooding
2. Temperature Increases and Extreme Weather
   - Heatwaves
   - Droughts and Rainfall Changes

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Mukah area challenges

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1. Agricultural challenges
   - crop yield declines - crops may suffer from erratic weather, high salinity levels degrade soil quality
   - Pests and Diseases - warmer, more humid conditions favor the spread of pests and diseases
2. Impact on Indigenous Communities
   - Livelihood Disruption – agricultural and fisheries
   - Cultural and Heritage Loss - affecting indigenous identities
3. Food is imported from outside the area.
4. Food insecurity

Research questions: What the level of food insecurity and the livelihood strategies used by households in sago communities in Mukah?

Zulfaqar, Zaher, Aitazaz, Nur, Mohd, & Zafar (2023)

- significant changes in rainfall due to significant increase in temperature either at night and/or day will play a major role in modulating the extremity of the changing climate in Sarawak peatland.

- Higher rainfall intensity during the Northeast (NE) monsoon indicates that Sarawak peatland will be at risk of flood and inundation for a longer period than usual as peatland becomes saturated. This might affect the productivity of the agricultural land in the area

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3. Southern Thailand Island Issues

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- Thailand has 936 islands
- Provinces that have highest number of islands are Phuket (155) and Krabi (154).

Phuket and Krabi in Southern Thailand

Photo source: https://kampatour.com/krabi-or-phuket

Krabi province island issues

- Most ag is econ crops, mainly rubber. Planting alternative crops is still limited.
- Staple food is imported from outside the area.
- Fishery and aquaculture generate income but not as much as tourism.
- Insufficient seafood supply and labor supply during high tourist season.
- Ageing farmers, labour scarcity for farming/fishery.
- Food processing industry is still primary level, generate low value products

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Thailand's Coastal and island challenges

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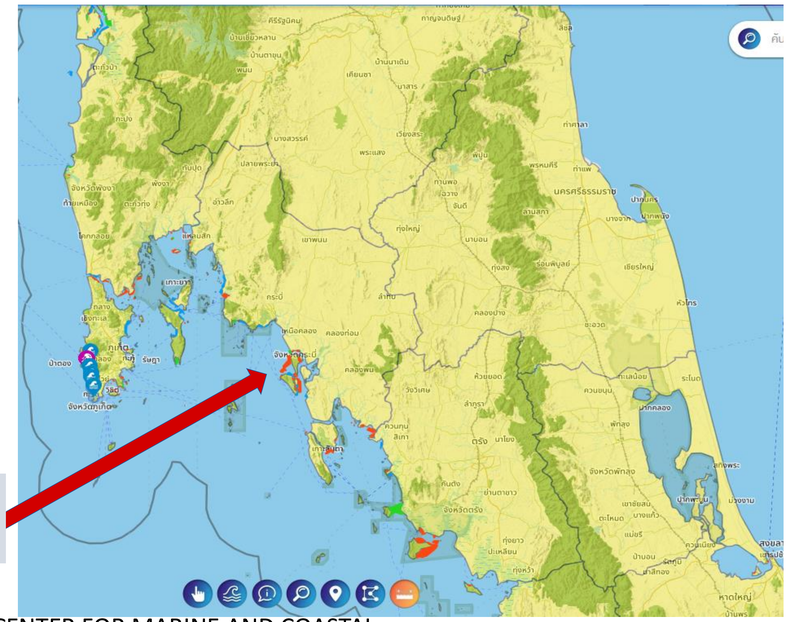
Impact from climate change on coastal and island

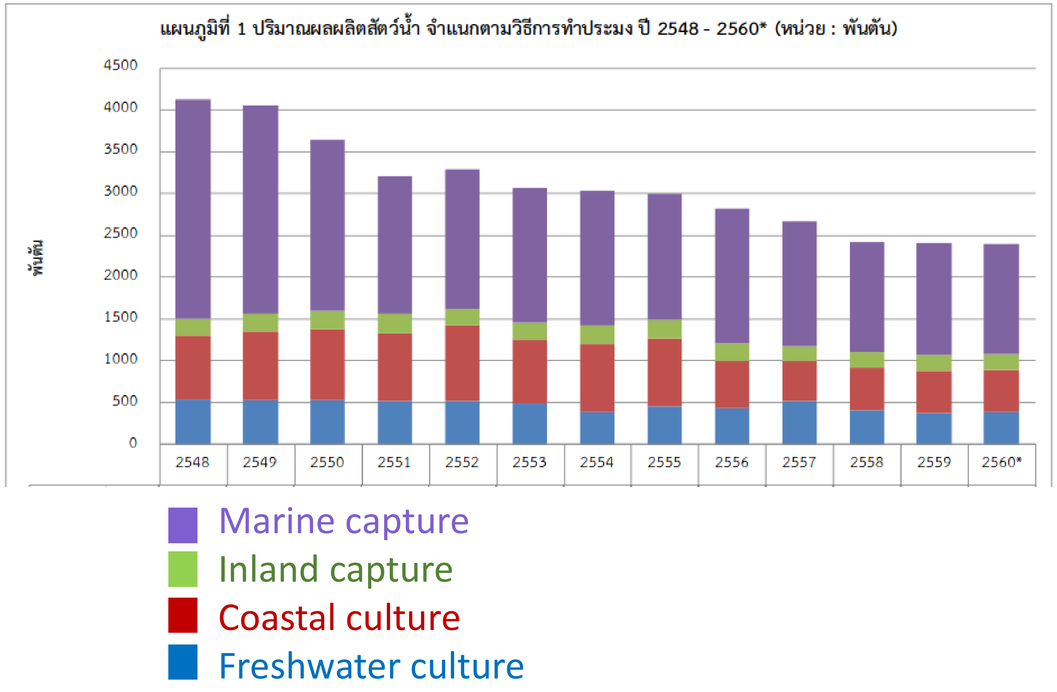
- Rising temperature
- Seagrass degradation
- Coral bleaching



Severe seagrass degradation area shown in red

Source: GEO-INFORMATICS DATA CENTER FOR MARINE AND COASTAL

Declining marine animal products, 2005-2017



Source: Suttasinee Santhirat
Fisheries Policy and Development Strategy Division

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Krabi province, Thailand challenges

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- Declining marine animals implies less income and food availability
- Most ag is econ crops, mainly oil palm and rubber. Planting alternative crops is still limited.
- Food is imported from outside the area.
- Insufficient seafood supply during high tourist season.
- Agricultural processing industry is still primary level.
- Food insecurity

Research questions: How can we improve climate resilience and food security of vulnerable groups on small islands

Source: Krabi province development plan, 2023-2027

4. Climate Change and Food Security among Fisheries Households in Myanmar

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Fisheries play a vital role in economy, national food security, nutrition and rural livelihoods

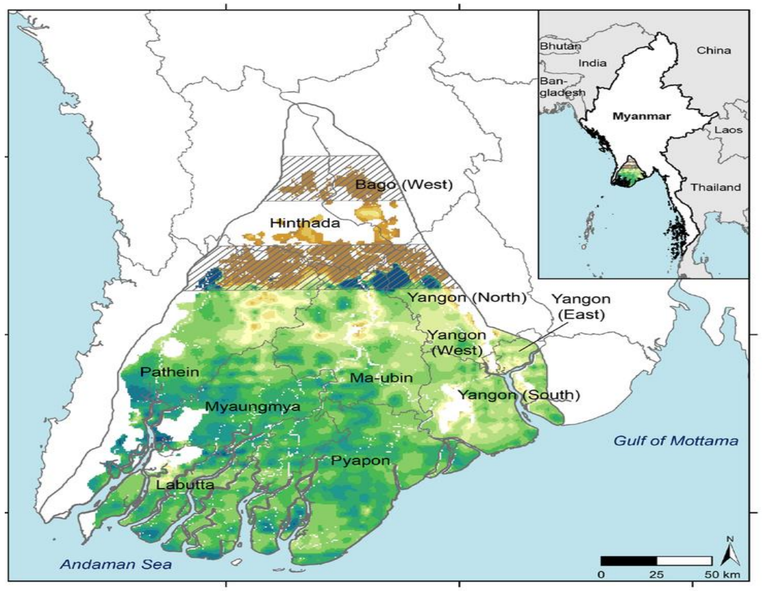
- Livestock and fisheries contribute 8.6% of GDP (DOF 2021).
- Employed 6% of total population (Belton et al. 2015).
- 15 million people in Myanmar earn income from the fisheries sector (Khin et al. 2020).
- Fish consumption: 46.5 kg per person/year.
- Significant participation of women in the fisheries sector (post-harvest activities).
- Over one-third of workers in agriculture, forestry and fisheries sector are female (Chan et al. 2018).

Delta Region: Ayeyarwady, Bago and Yangon

90% of total fish pond areas (DOF 2021).

90% of Myanmar fish production (Karim et al. 2020).

Largest farmed fish wholesale markets in Yangon.



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Climate change impacts on fisheries

- One of the most vulnerable areas (MONERC 2019)
- Cyclones, floods, saltwater intrusion, and intense rain
- Rising temperature
- Damage to fishpond infrastructure (decreased production)
- Decreased availability of fish, and lower fish consumption (Thant et al. 2023)

Research Questions

1. Are fisheries households more (or less) food secure than their (non- fisheries) neighbors?
2. Do fisheries households experience different climate shocks and employ different adaptation strategies than their neighbors?
3. Do climate shocks have greater (or lesser) effects on food security for fisheries households?
4. Does women participation and empowerment in fisheries improve household food security?

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5. A Case Study of Food Security in the Prek Toal Ramsar Site, Tonle Sap Lake, Cambodia

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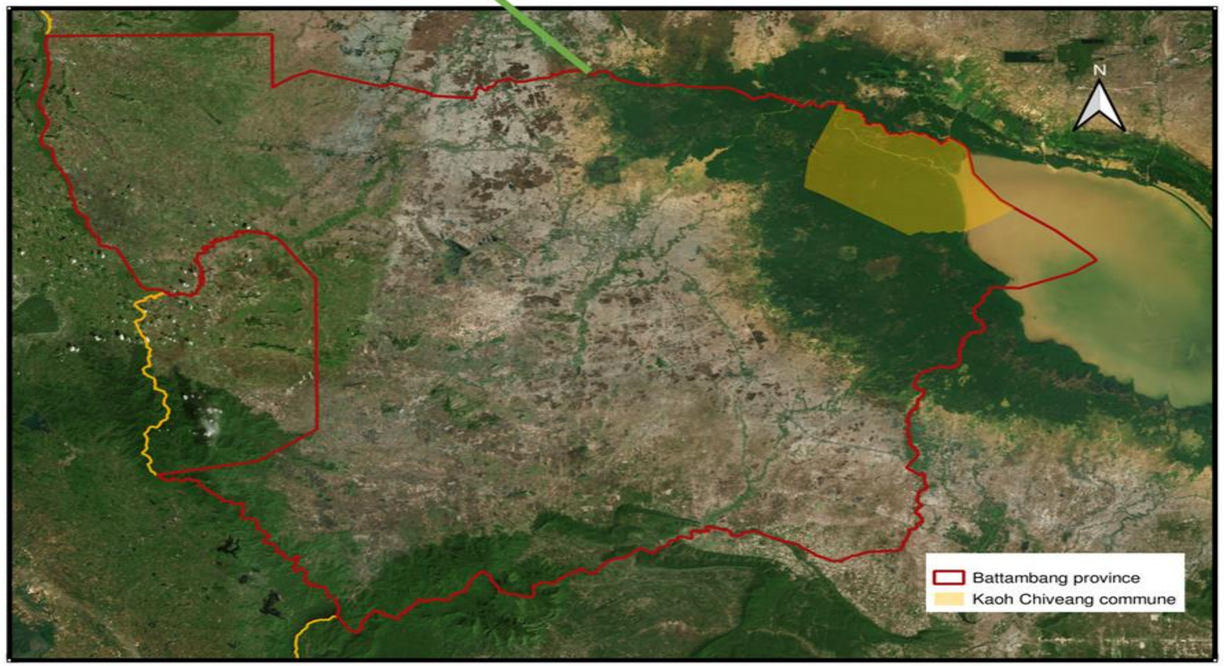
The Prek Toal Ramsar Site

- Locate on the Tonle Sap Lake's northwest of Cambodia
- Is a Core Zone of Biosphere Reserve established by a Sub-Decree in 2001
- Covering 21,342 hectares
- Total 12,424 people and 2,704 households
- It plays a crucial role in biodiversity conservation and supports various economic activities, including fishing and agriculture.



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Issues in the Prek Toal Ramsar Site

- Is a vital wetland ecosystem that underpins the livelihoods of marginalized communities, particularly in the context of food security.
- These communities face significant challenges related to food security, exacerbated by environmental changes, socio-economic disparities, and limited access to resources.

Prek Toal Ramsar Site Landscape, Cambodia

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Research Questions

1. What is the current state of food security among marginalized communities living in and around the Prek Toal Ramsar Site?
2. How do environmental factors, including climate change and land use changes, impact food security in these communities?
3. What socio-economic challenges do community members face that affect their access to food?
4. What coping strategies are employed by these communities to mitigate food insecurity?
5. How do cultural practices and traditional knowledge influence food security and resilience in these settings?

Expected Outputs

1. Providing the evidence of the current state of food security among marginalized communities in/around the Prek Toal Ramsar Site and coping strategies deploy by local in response to food insecurity.
2. Characterization of the environmental and socio-economic factors affecting food security.
3. Foster collaboration with local stakeholders to ensure the research is grounded in community experiences and needs.

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Conclusion

- Regional perspectives on food security:
  - Increasing challenges of food security in vulnerable areas climate-change
  - Marginalized and vulnerable communities will need appropriate policies to mitigate food insecurity problem

- Expected output: State of climate vulnerability, food security and factors associated with scale of food insecurity of selected littoral areas.
- Expected policy influence: Recommendations towards climate resilient and food secured littoral communities.