

# Research Activity Supporting Low Carbon Society by The Thailand Research Fund

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Thailand Research Fund's Center for Research  
Developments (Thai-GLOB)**



# Supporting roles

- **Creating knowledge**
  - **Research project funding**
- **Capacity building**
  - **Key stakeholder/user included in the research project from the beginning**
- **Networking**
- **Knowledge dissemination**
  - **Assessment/Synthesis**
  - **Meeting and seminar**
  - **Press and media**



# Research areas



# Research activity highlights

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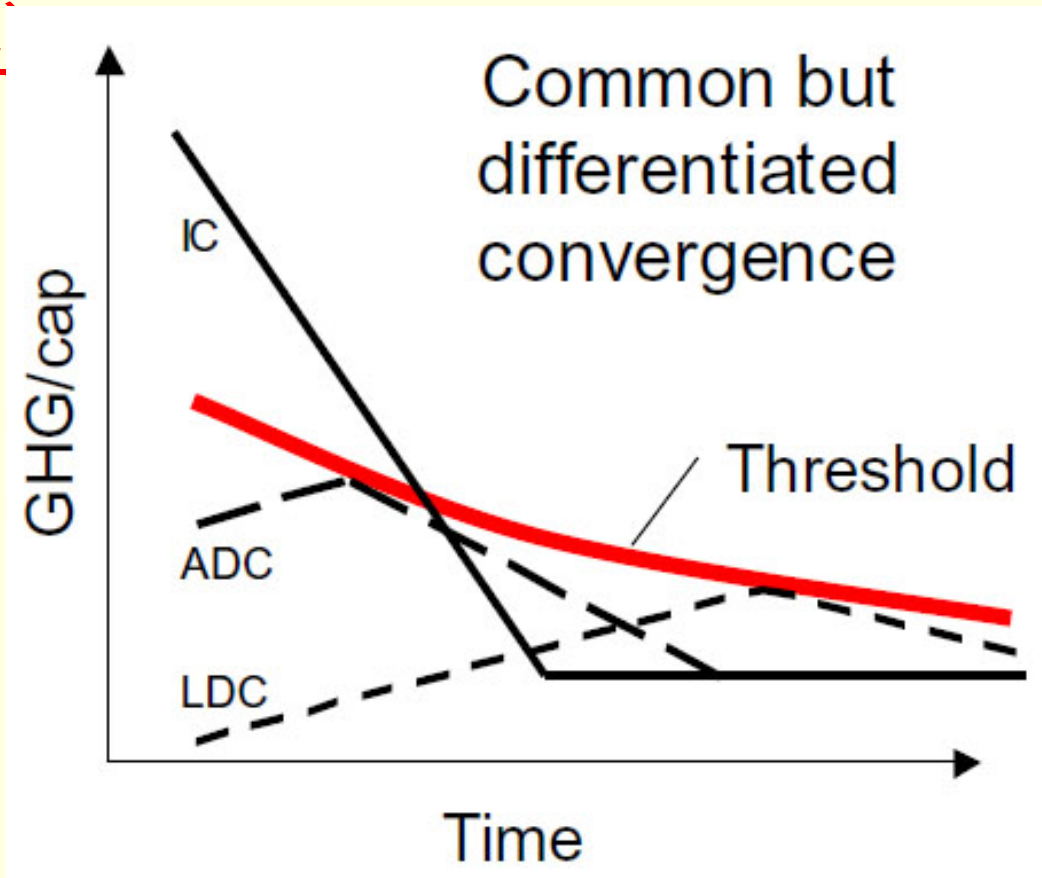
- **Greenhouse gas emissions and mitigations**
  - Inventory
  - Baseline, projection and back casting
- **Impacts and adaptation**
  - **Regulatory effects**
    - Negotiation, target formulation, international trades, ect..
  - **Physical effects**
    - Impact evaluation in prioritized sectors, developing the adaptation concept and approach



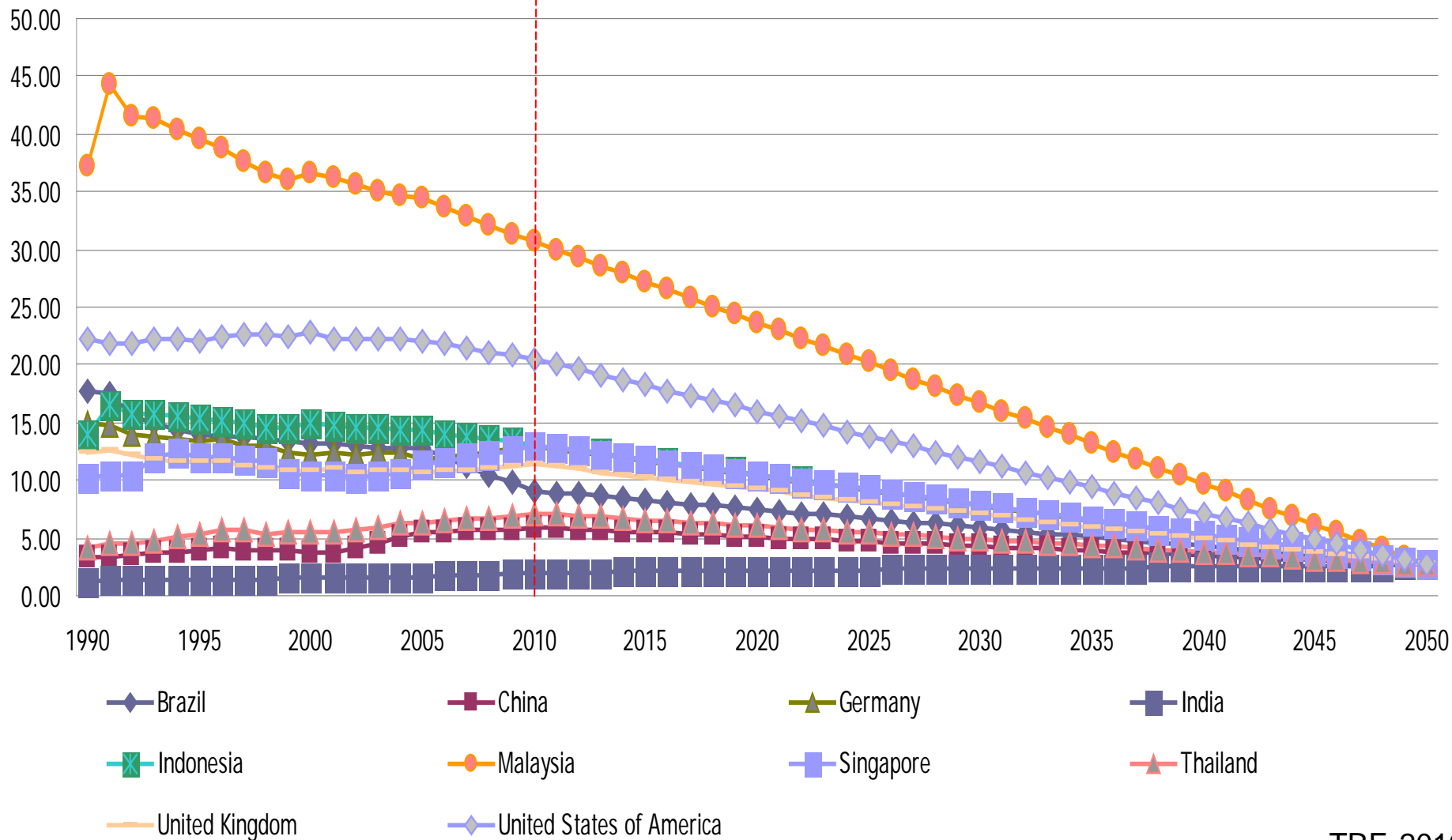
# **Greenhouse gas emissions and mitigations**

# Taking into account the relevant policy

## ■ Common but Differentiated Convergence (CDC)

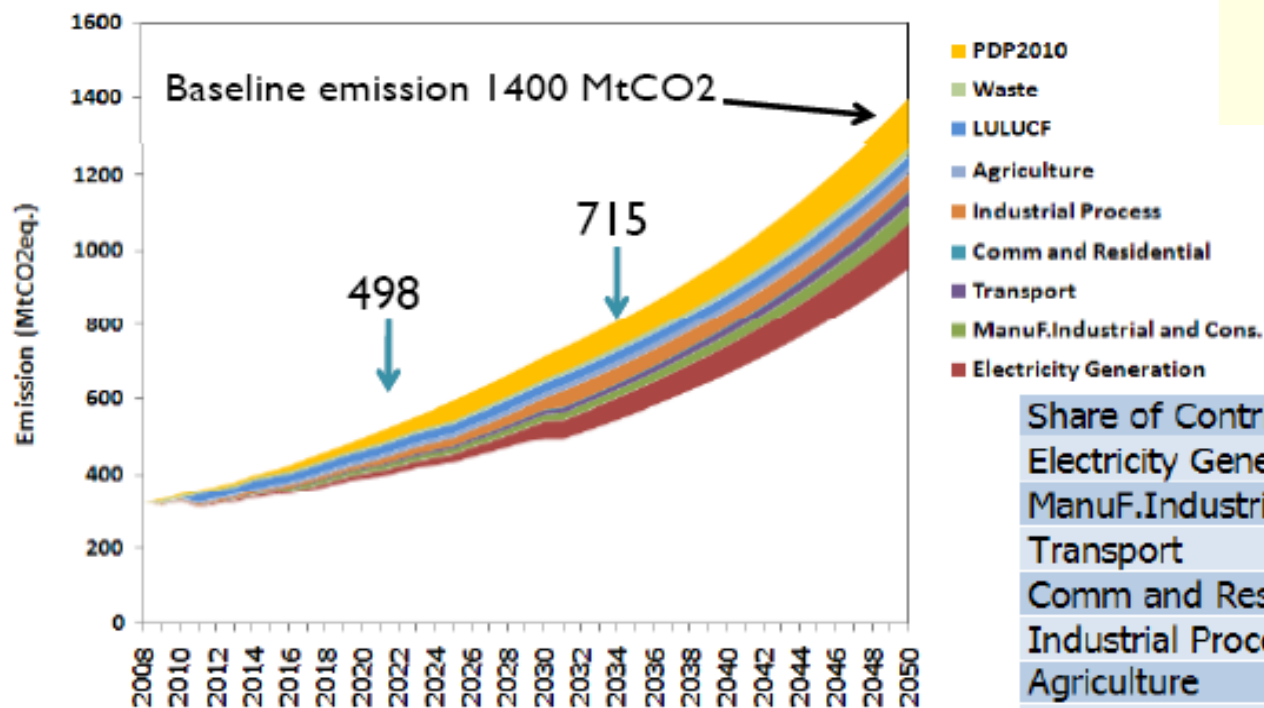


# Per Capita Emission Allocations : Contraction & Convergence Approach (ton CO2-eq per person)



# Contribution of Emission Reduction: BAU, PDP 2010 and Climate Plan Scenario

Contribution of Emission Reduction of BAU, PDP and Climate Plan Scenario 2009-2050



Share of Contribution in 2050 (%)	
Electricity Generation	26.6
ManuF.Industrial and Cons.	10.8
Transport	7.6
Comm and Residential	1.5
Industrial Process	10.0
Agriculture	4.9
LULUCF	6.2
Waste	4.9
PDP2010	27.6

## Total Emission Reduction

	2008	2010	2020	2030	2040	2050
Emission Reduction (MtCO <sub>2</sub> )	0.0	18.6	107.3	218.1	316.5	442.9
Emission Reduction (%)	0.0	5.4	21.5	30.5	32.1	31.7

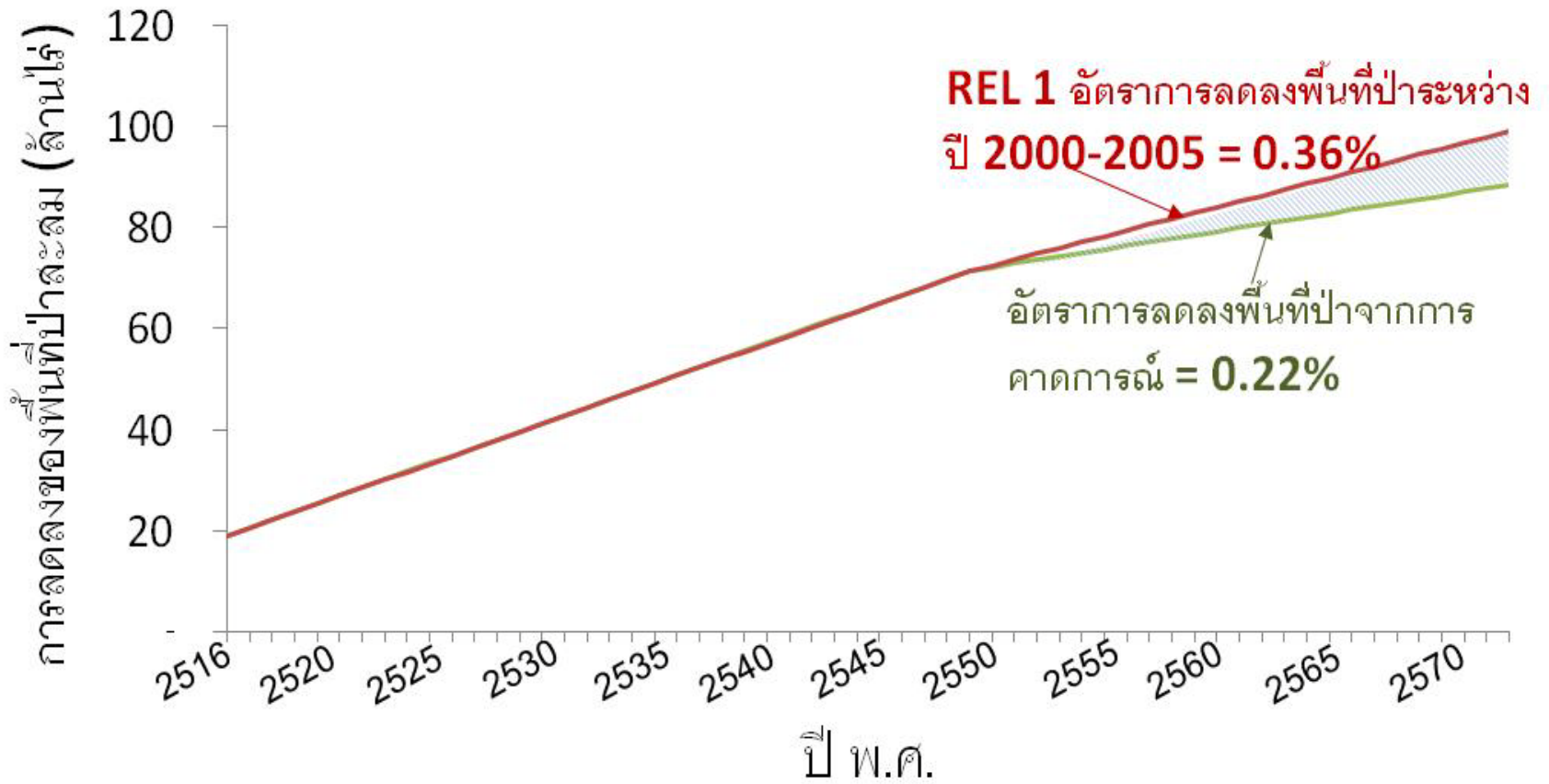


# Measures and Mechanisms

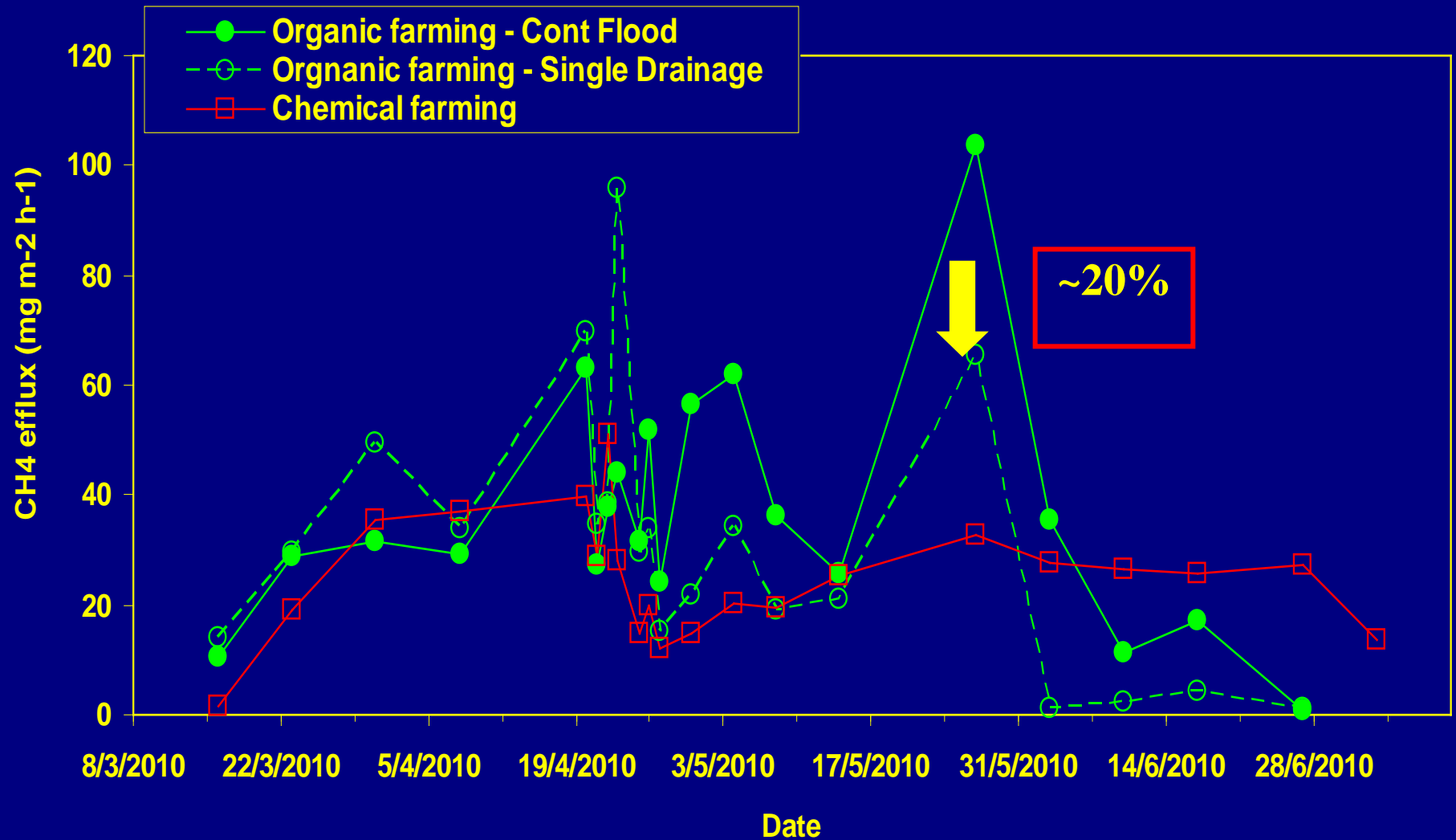
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- **Consumption- vs production-based GHG estimates**
  - **Identifying consumption activity/products with high emissions**
  - **prevent the emission transfer (emission is reduced in one location but emitted somewhere else)**
- **Carbon Footprint, Carbon label**
- **Carbon market, Carbon tax**
- **MRV**

# Role of REDD+



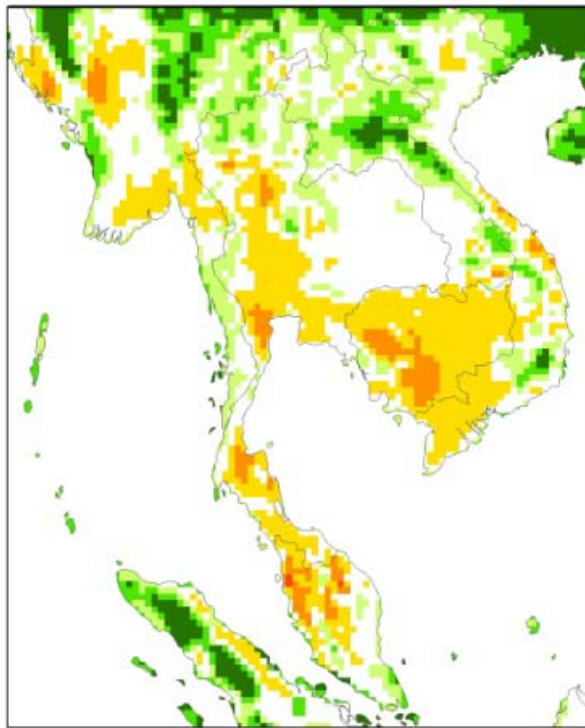
# Roles of organic farming



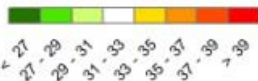
# CH<sub>4</sub> emission reduction from paddy field

Measures	Emission reduction potential (%)	References
<b>Drainage</b>	27-35 (yield: - 7~11%)	Towprayoon et al. (2005)
	55 (yield: + 9%)	Seangchan et al. (2004) (recal.)
	20	Patra et al/ (2010)
<b>Chemical fertilizer</b>	Ammonium sulfate (AS) replacing urea 94 kg/ha: - 9% (yield: -15%) 188 kg/ha : -44% (yield: -21%)	Seangchan et al. (2004) (recal.)

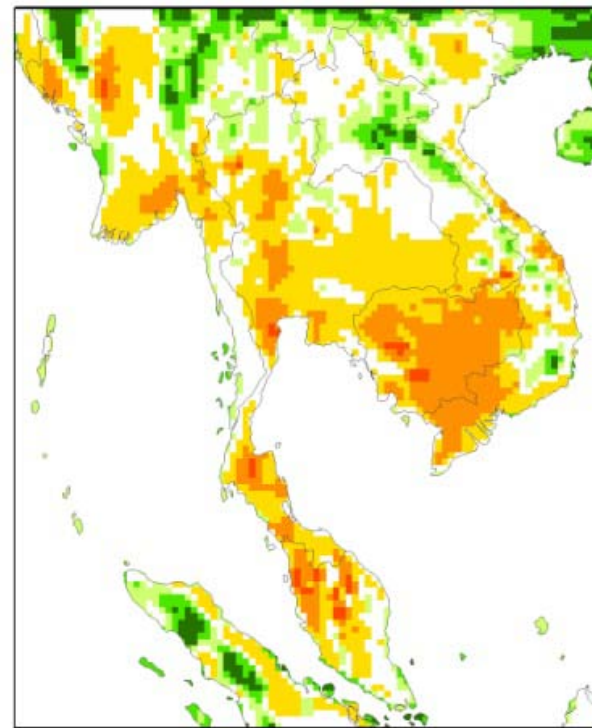
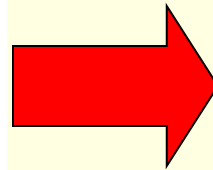
# Impacts & Adaptation



Average maximum temperature (°C)



1980s



Average maximum temperature (°C)



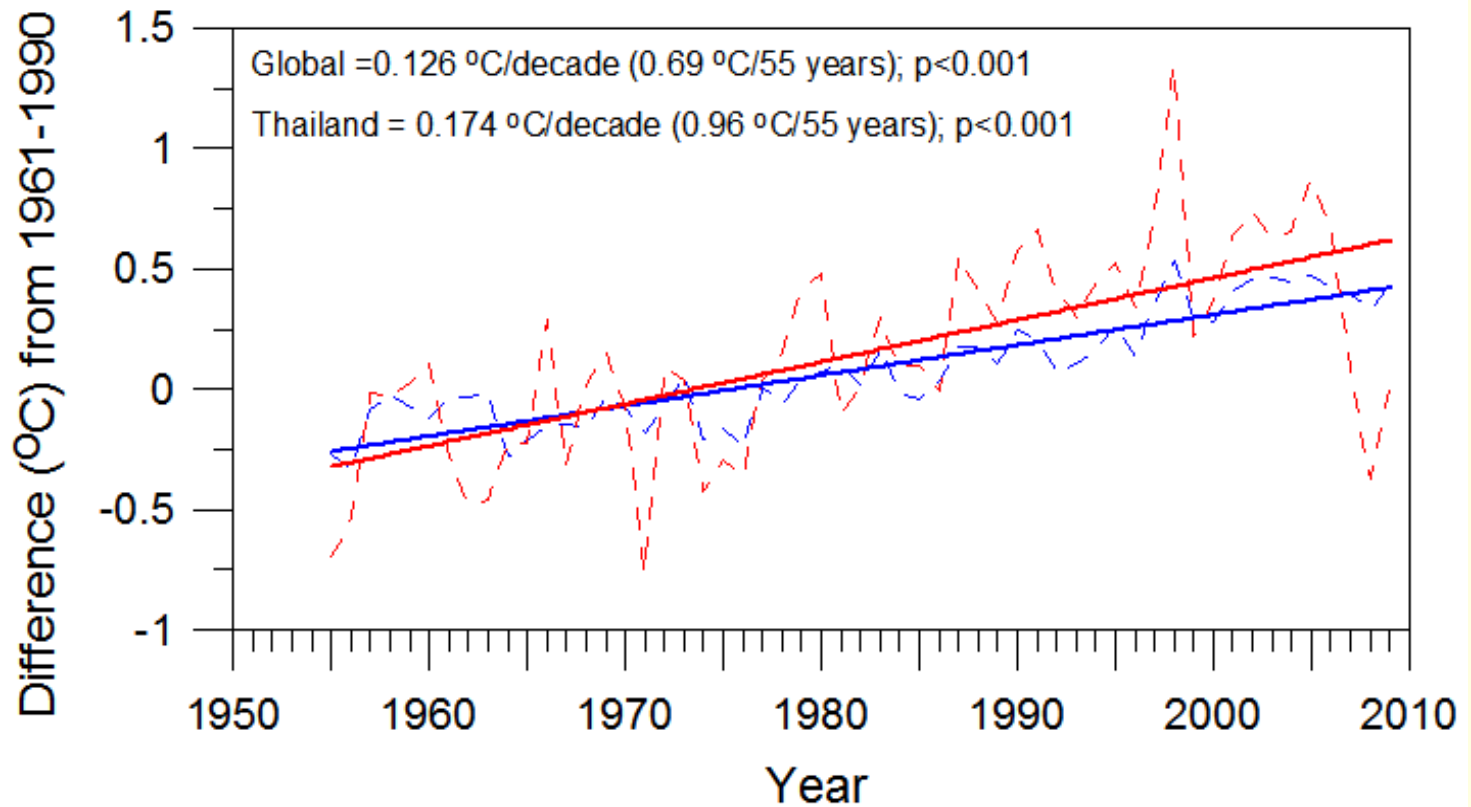
2030s

# We starts with asking—a simple question

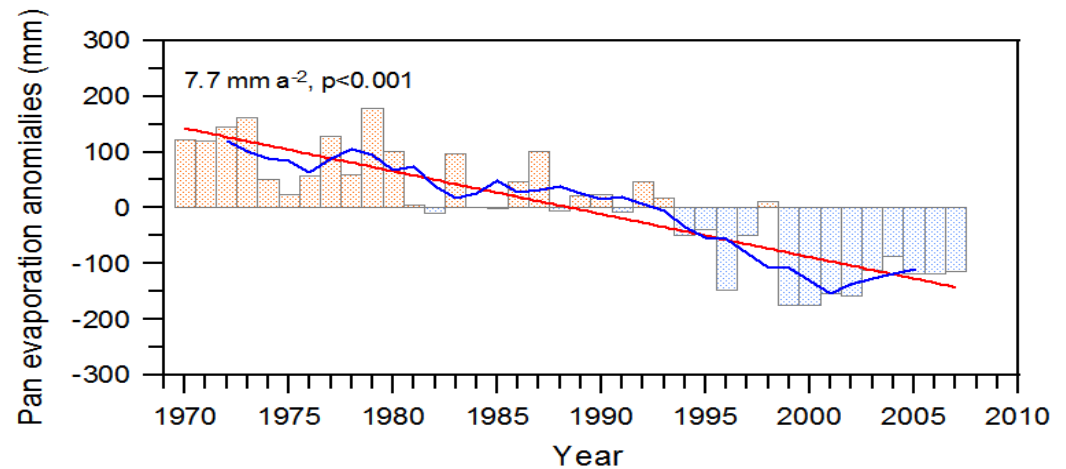
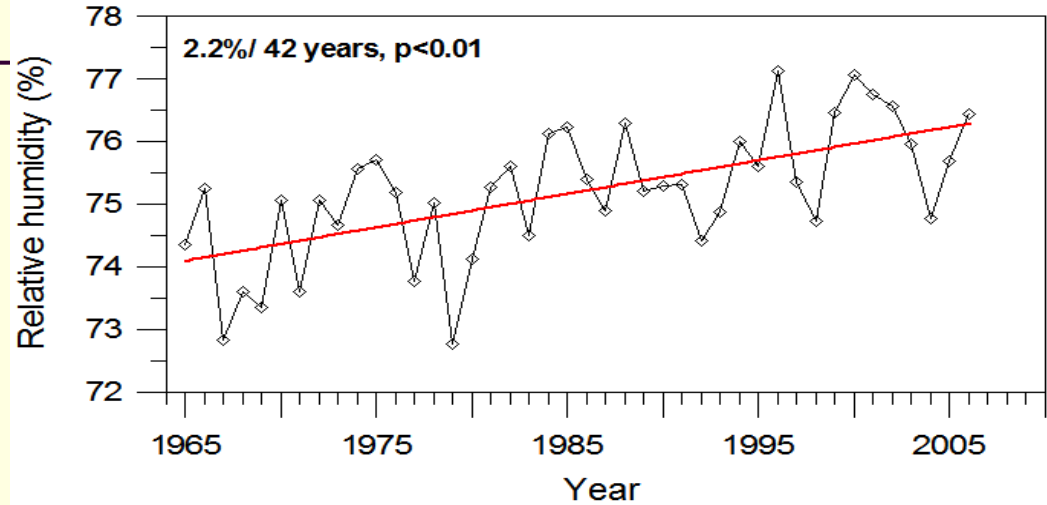
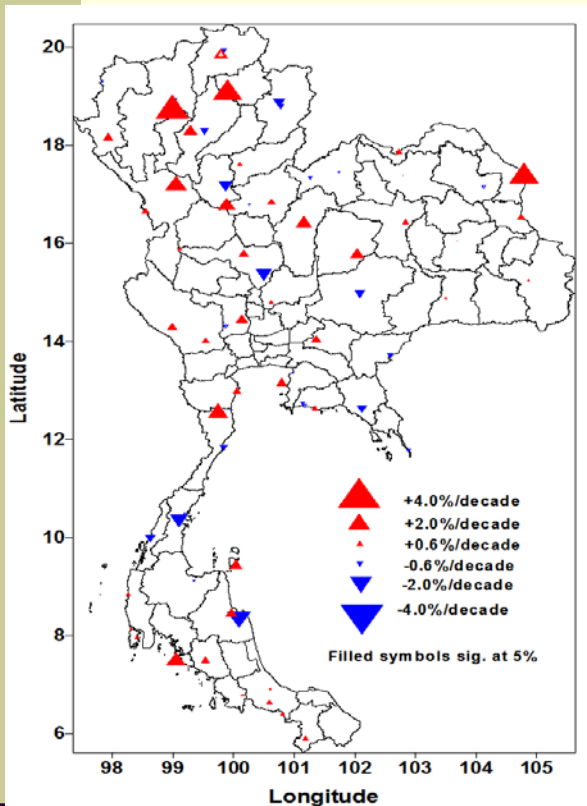
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- **Is Thailand at risk?—Yes, No, Don't know!**
  - **What, when, where, how much?**
- **Approach**
  - **Vulnerability assessment**
  - **Risk assessment & management**

# Identifying the changes-Temperature

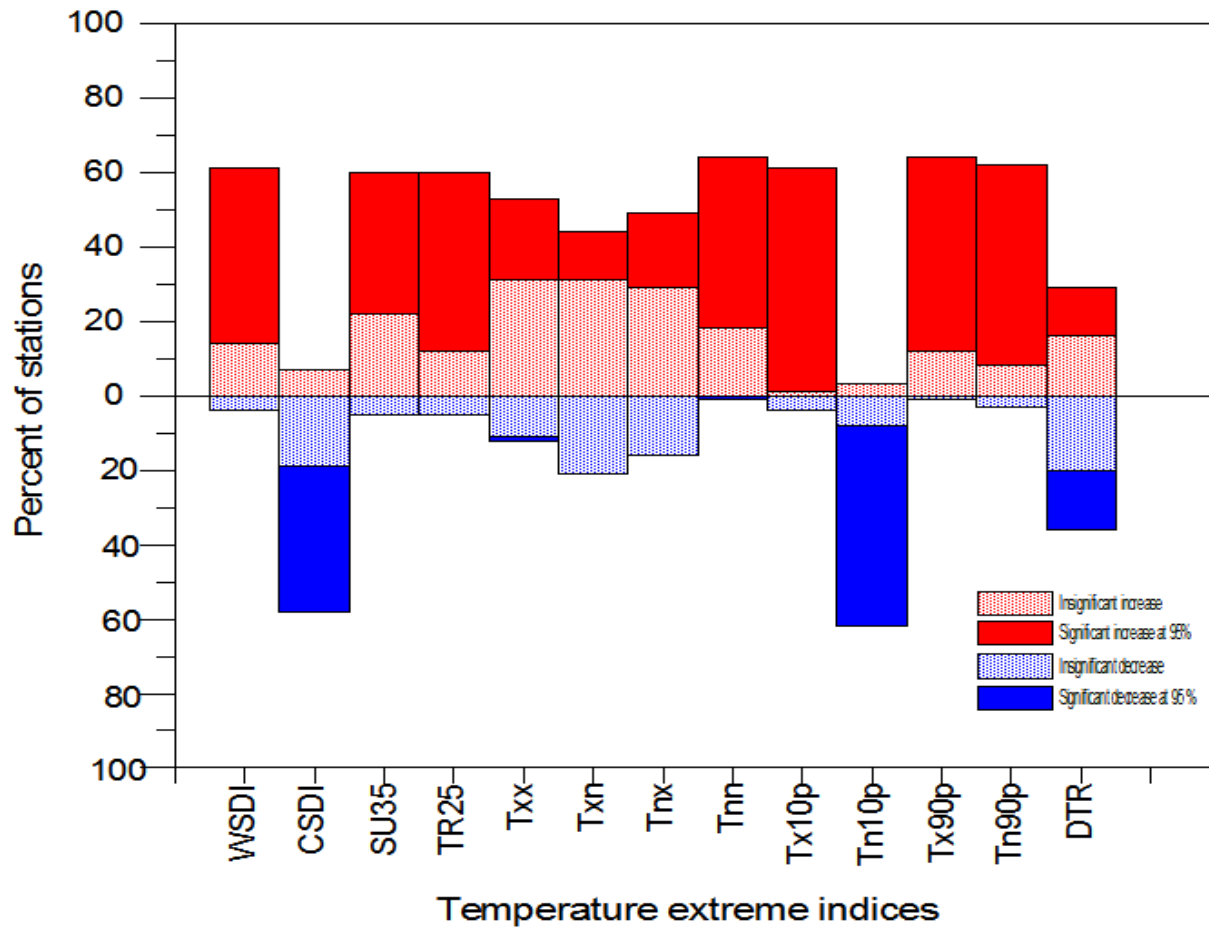


# Identifying the changes: humidity and evaporation

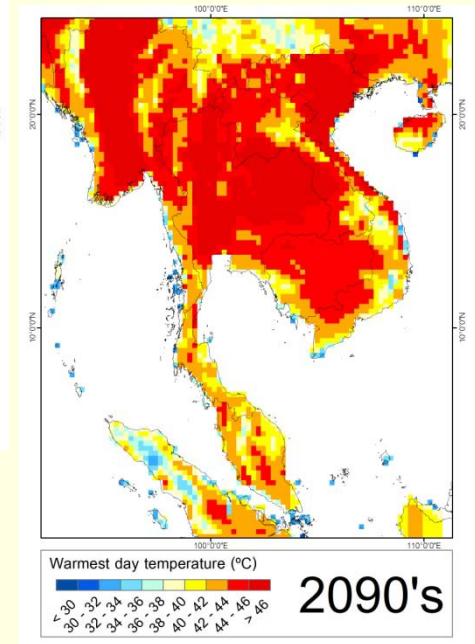
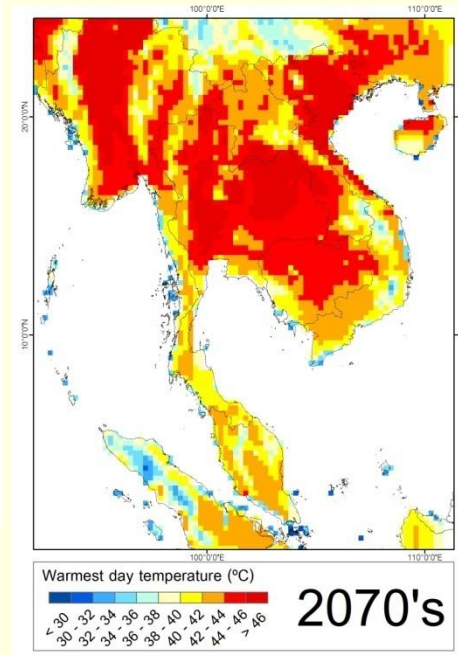
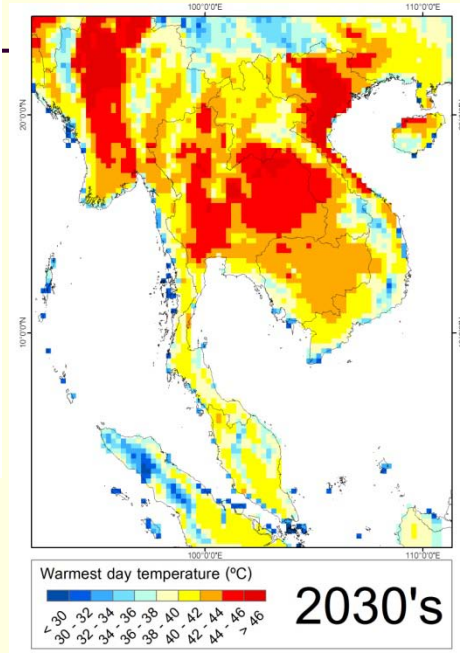
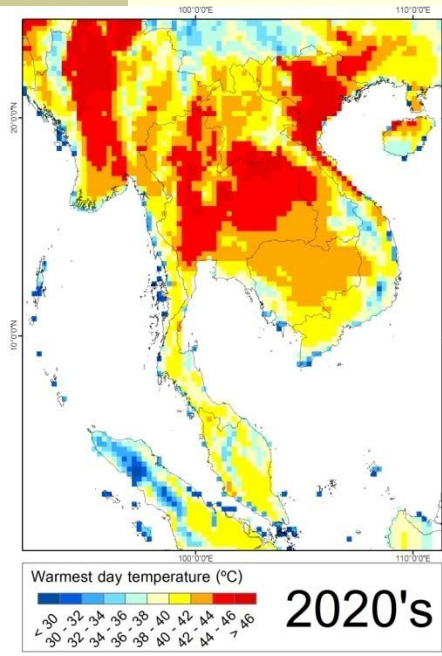




# Identifying the changes: Rainfall

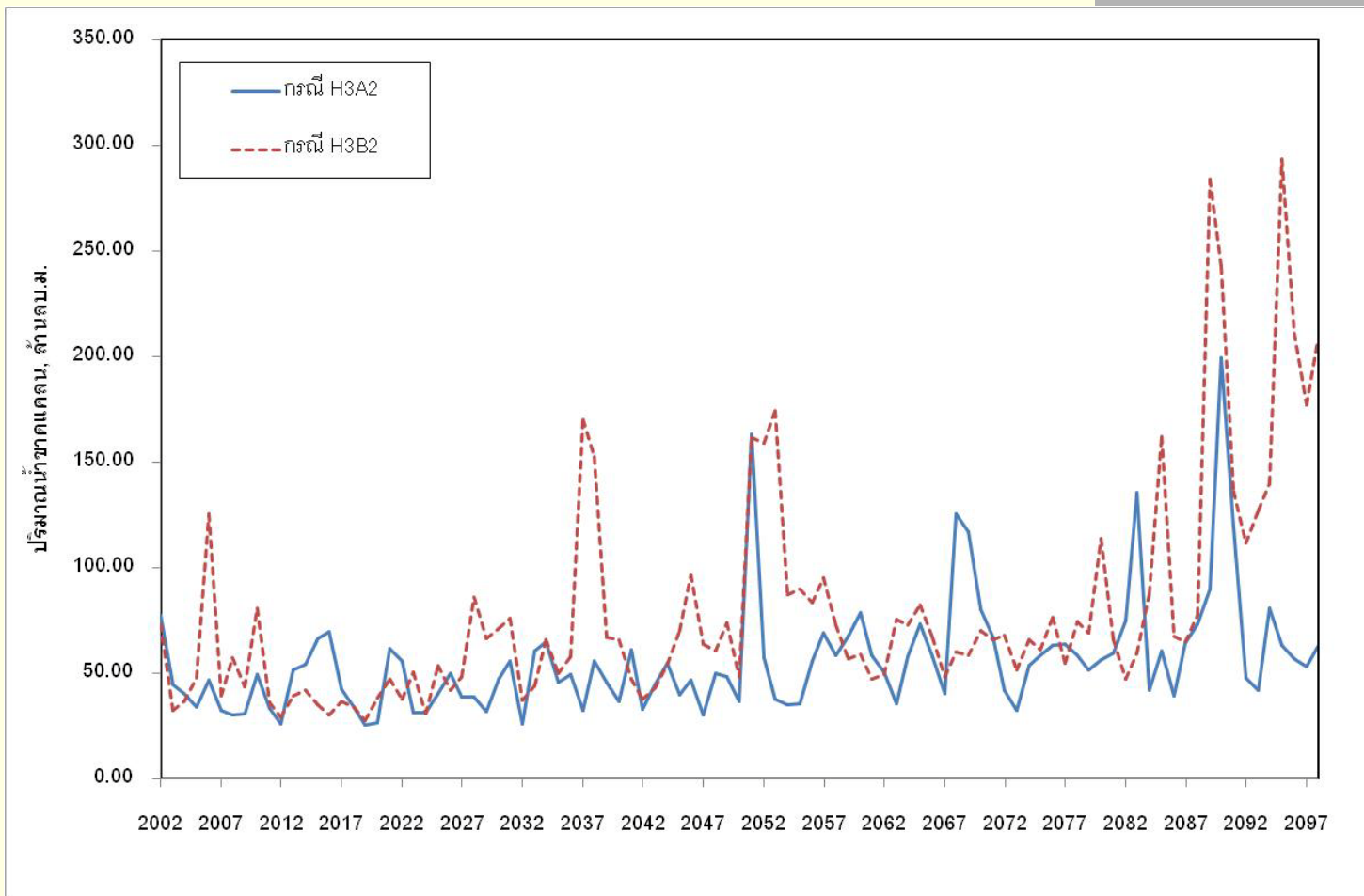


# Scenarios



Maximum Temperature (°C)

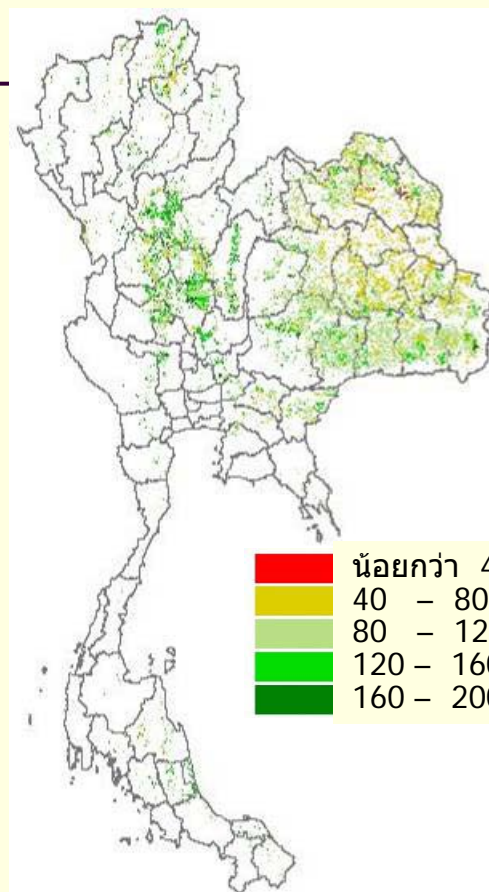
# Evaluating the impacts—water resources



# Rainfed rice productivity changes (%) compared to the average during (1980-1989)



1980-89



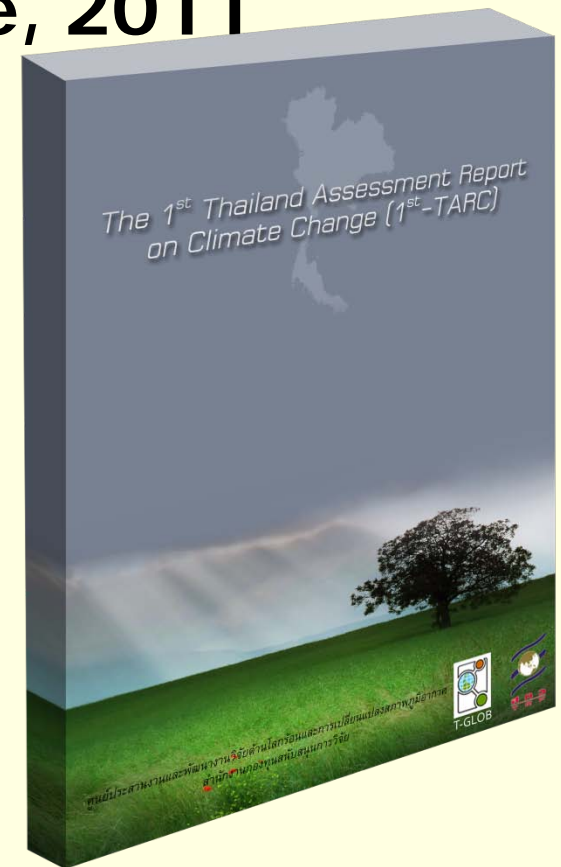
2030-39



2090-99

# Knowledge synthesis & dissemination

- **The 1<sup>st</sup> Thailand First Assessment Report on Climate Change, 2011**
- **Policy brief**





# The Thailand Research Fund

[www.trf.or.th](http://www.trf.or.th)

[www.measwatch.org](http://www.measwatch.org)

[climatechange.jgsee.org](http://climatechange.jgsee.org)