

# REDUCING CLIMATE RISK

## SEI Asia Initiatives and Interventions

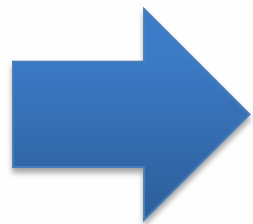
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Research Fellow

# Key challenge in Southeast Asia

- Declining natural resource base and persistent poverty/inequalities in the context of deepening regional/global integration, global environmental change and risk, rapid settlement transition, poor governance across scales and increasing mobilities



ADAPTATION  
KNOWLEDGE  
PLATFORM



**apan**  
asia pacific  
ADAPTATION NETWORK



SEI



Sida



UNEP



SEI

STOCKHOLM  
ENVIRONMENT  
INSTITUTE



# weADAPT

Learn, share, connect

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



## Why weADAPT??



weADAPT.org is an online open space on climate adaptation issues (including the synergies with mitigation) that allows practitioners, researchers and policy makers to access credible, high quality information and to share experiences and lessons learnt. It is designed to facilitate knowledge sharing, learning and collaboration to build a professional community of research and practice on adaptation issues while developing policy-relevant tools and guidance for adaptation planning and decision-making.



- Semantic tagging – pioneered by the weADAPT platform, this intelligently promotes synergies between content
- Signature tools – vulnerability and adaptation assessment tools and guidance
- Integration of downscaled climate data including guidance on interpreting data and uncertainties involved
- Adaptation ‘stories’, QuickShare tools and other user-friendly interfaces for sharing content
- A custom-built architecture means that the platform is flexible and adaptable to changing requirements and new emerging technologies unlike many other platforms that rely on restrictive content management systems

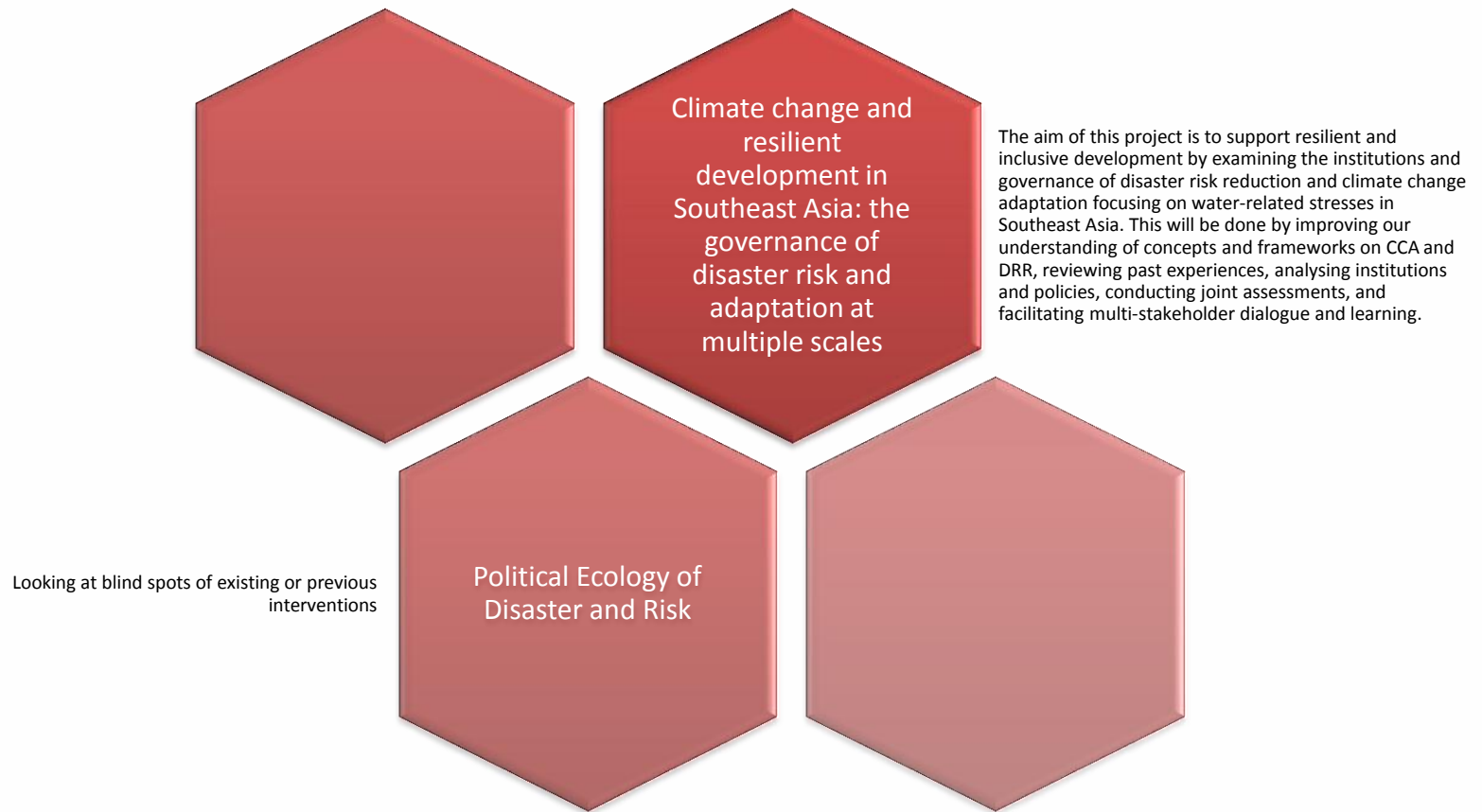
## CURRENT INITIATIVES

- Politics, Governance, Experiences and Responses to Flooding from the Locals’ and Migrants’ Perspectives in ASEAN
- SUSTAINABLE MEKONG RESEARCH NETWORK (SUMERNET)

Phase 2 Research Projects	Countries involved
Vulnerability Assessment of people ‘s livelihood in flooded prone area of Cambodia and Vietnam	Cambodia, Vietnam
REDD Plus – Integrating Community-based Participatory Carbon Measurement and Monitoring with Satellite RS and GIS in a Measurement, Reporting and Verification (MRV) System for Reducing Emissions from Deforestation and Forest Degradation	Vietnam, Laos, Thailand
<b>Communicating water-related climate change risks to improve local adaptation in Mekong Deltas</b>	<b>Vietnam, Cambodia, Thailand</b>
Climate change implications to food security and livelihood of small scale farmers	Philippines, Lao PDR
<b>Sustainable urban tourism through low carbon initiatives: Experiences from Hue and Chiang Mai</b>	<b>Thailand, Vietnam</b>
Climate change adaptation – mitigation prioritization in parts of the Mekong basin-social return on investments (CCCAMP-SROI)	Vietnam, Lao PDR

**More than 100 researchers – 30 national teams – 10 cross-border collaborative projects**  
 Engage with boundary partners, mentorship, knowledge sharing and exchange, capacity building activities, and participation in research and policy dialogues

# Planned New Initiatives



# Bioenergy Development in Indonesia

## Studies reveal palm oil impacts in Southeast Asia, propose EU policy changes

- Palm oil grown in tropical countries is one of the main sources of biodiesel.
- Indonesia and Malaysia together produce 90% of the world's palm oil.
- A major driver of recent growth in palm oil production is the EU market for biofuels.
- The EU's Renewable Energy Directive (EU-RED) has set a target of meeting 10% of the European transport sector's energy needs with renewable energy by 2020 → increase in the use of biodiesel, which accounts for over three-quarters of EU biofuels consumption.



A palm oil plantation in Indonesia, the world's top producer.  
Flickr/Rainforest Action Network.

SEI research shows that as production has soared to meet global demand, driven in part by the EU-RED, communities have been harmed. EU policies should be revised to ensure sustainability!



# LEAP

## Long range Energy Alternatives Planning System

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

- Integrated energy planning and GHG mitigation assessment.
- Local, national, regional and global applicability.
- Energy, emissions and cost-benefit assessment.
- Powerful and user-friendly data management, reporting & scenario building tools.
- Choice of methods: simulation/optimization & engineering/econometrics. Specialized models available for detailed assessment of transport and electric generation sectors.
- 1000s of users in 190 countries including Governments, NGOs, utilities, universities, consulting companies.
- Widely applied by countries undertaking GHG mitigation assessments for their National Communications to the UNFCCC, and for developing Low Emission Development Strategies (LEDS).

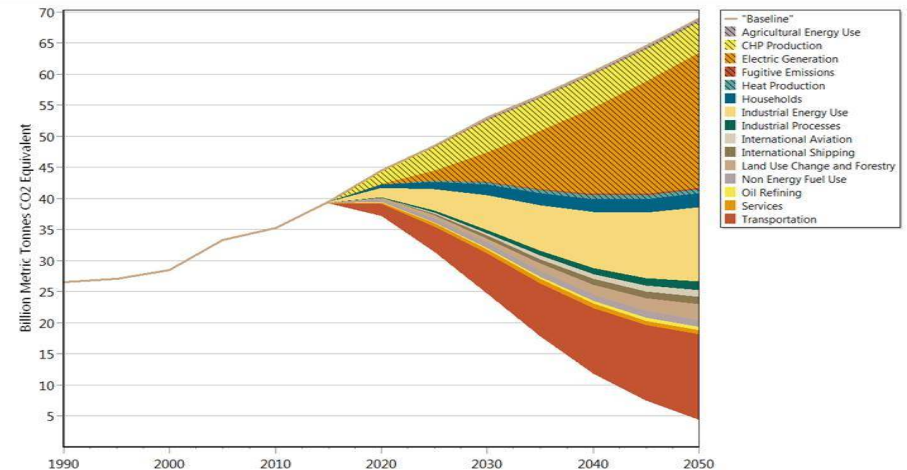




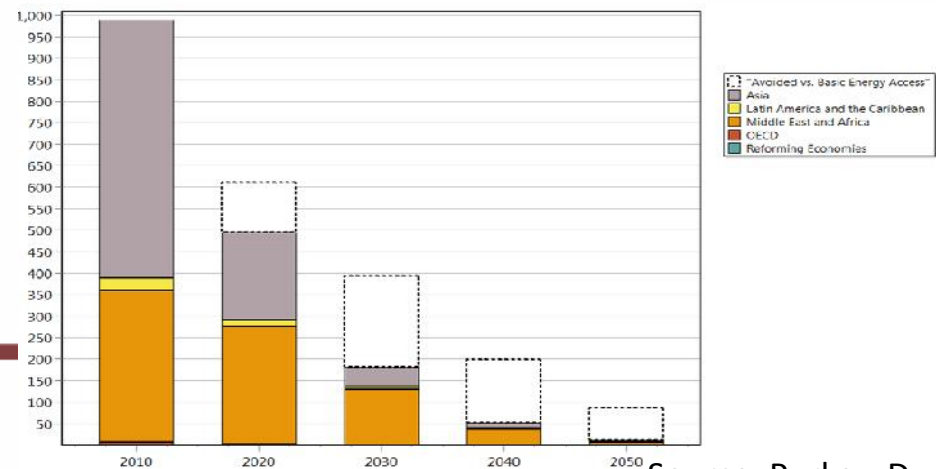
# Energy for a Shared Development Agenda: A Global Assessment for Rio+20, 2012

- Explores how global energy systems can be reconfigured to address sustainability whilst also providing meaningful development and poverty alleviation.
- Study led by SEI with involvement of IIASA, PBL, TERI and WRI.
- Energy and emissions scenarios to 2050 developed in LEAP for 22 global regions.
- Three scenarios:
  - Baseline
  - Basic Energy Access
  - Shared Development Agenda
- Published at Rio+20

## Emissions



## Poverty



Source: Purkey, D.

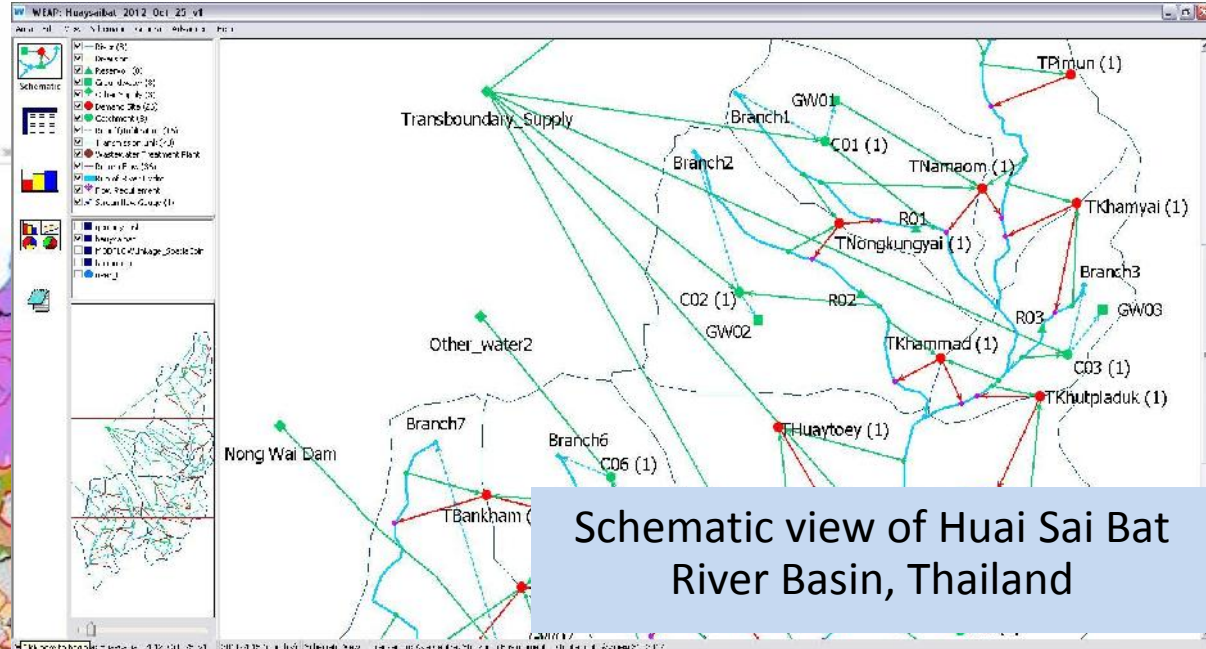
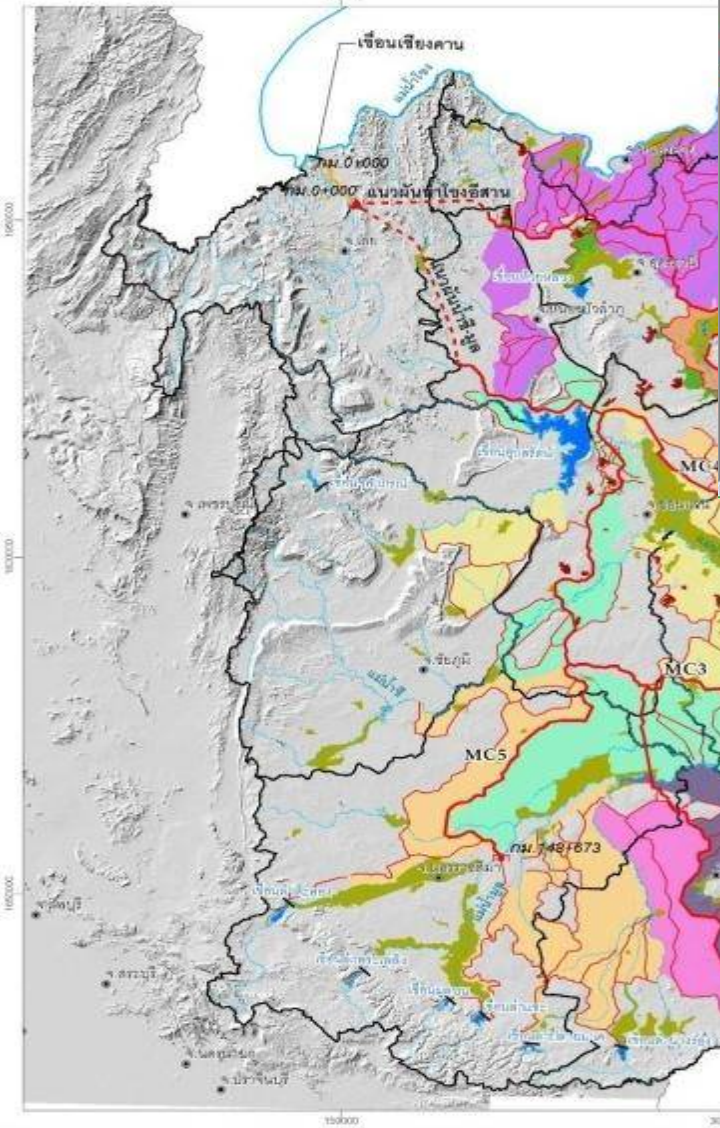


## Water Evaluation And Planning System

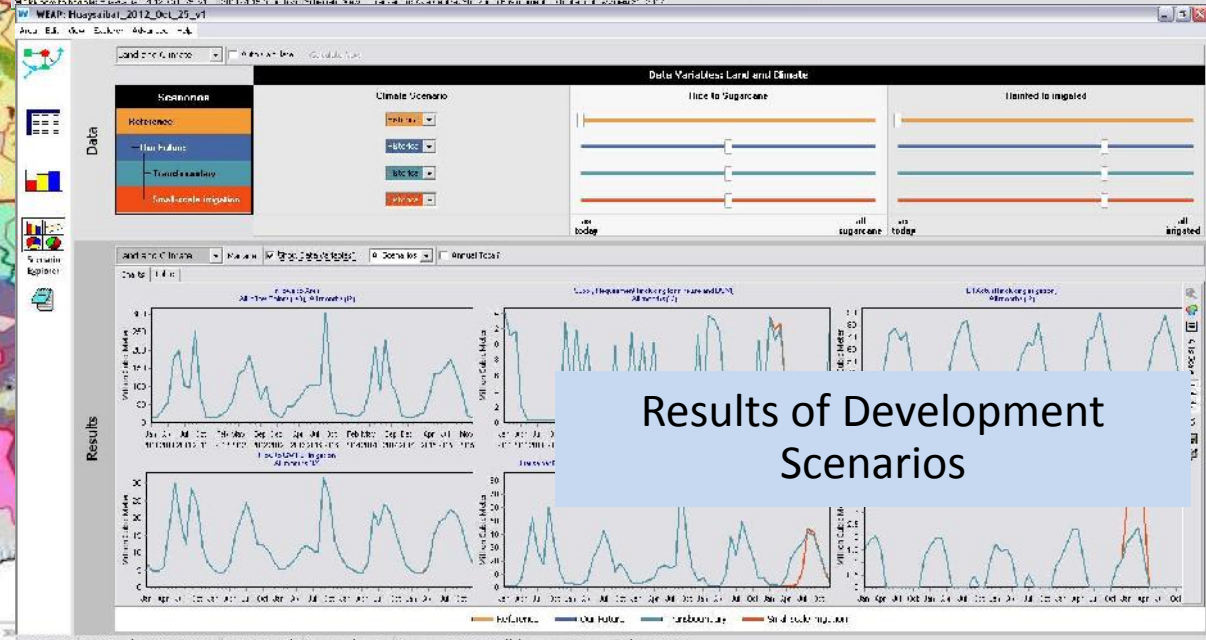
[www.weap21.org](http://www.weap21.org)

- Integrated watershed hydrology and water planning model
- GIS-based, graphical drag & drop interface
- Physical simulation of water demands and supplies
- Additional simulation modeling: modeling equations and links to spreadsheets, scripts & other models
- Scenario management capabilities
- Groundwater, water quality, reservoir, hydropower and financial modules

# WEAP Application in Northeast Thailand

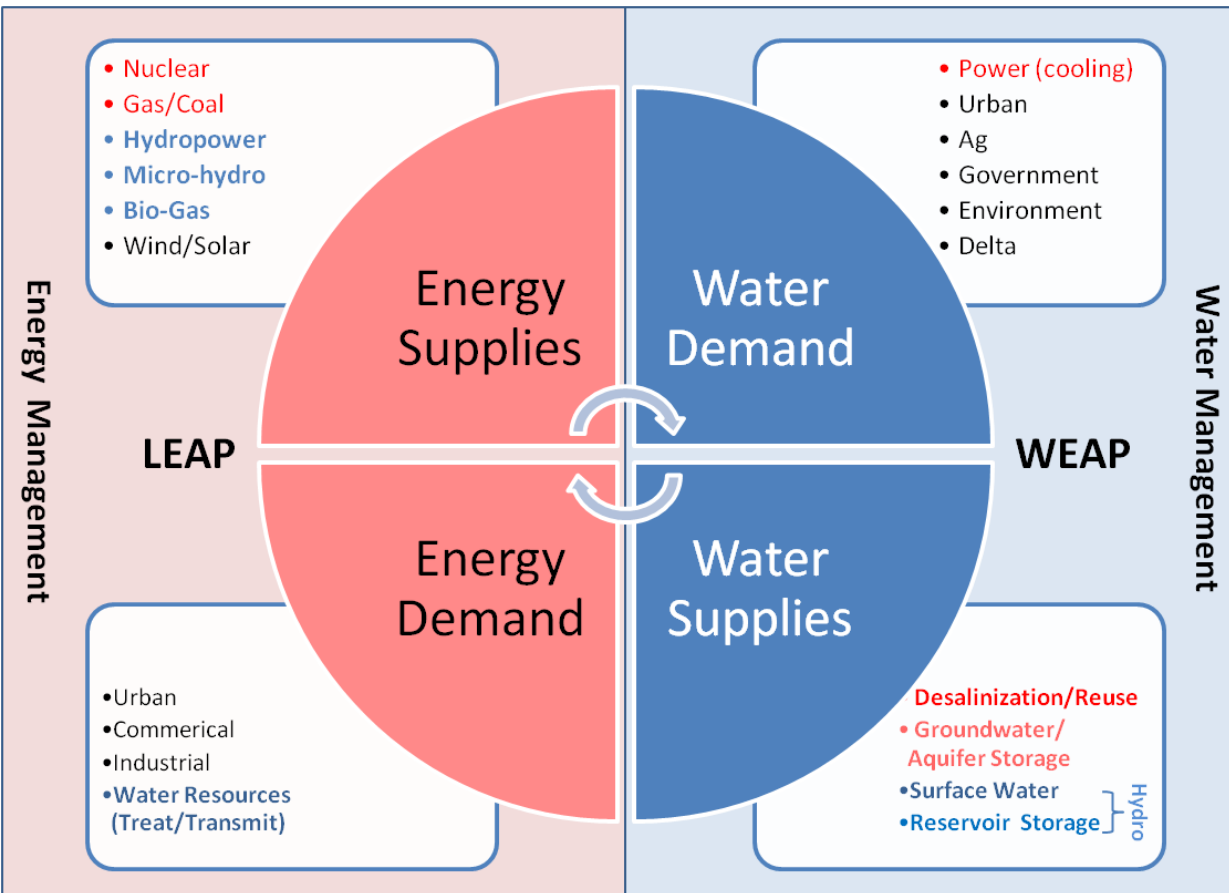


Schematic view of Huai Sai Bat River Basin, Thailand



Results of Development Scenarios

# Integrated Climate-Water-Energy-Emissions Framework



## Links 2 Decision Support Platforms

### WEAP

- climate-driven hydrology
- climate-driven sectoral water demand
- water systems operation
- water allocation

### LEAP

- climate-driven electricity demand
- electricity production and dispatch from various fuels
- GHG emissions

