

## Local Practical Responses to Climate Change: Experiences of Local Governments and Schools in Thailand

2nd High Level Seminar on Environmentally Sustainable Cities  
Kitakyushu, March 15-16, 2011

Chamniern Paul Vorratnchaiphan PhD.

[chamniern@tei.or.th](mailto:chamniern@tei.or.th)

Thailand Environment Institute ([www.tei.or.th](http://www.tei.or.th))

## Thailand Environment Institute Initiatives

supporting local governments,  
communities and schools  
in coping climate change

## Cities for Climate Protection Campaign (CCP)



- implementation period: 2002-2005
- A global campaign of ICLEI-local governments for sustainability
- 6 cities in Thailand participated (Chiang Mai, Phuket, Nonthaburi, Klang, Rayong and Tungsong)

(more info about ICLEI campaign—[www.iclei.org](http://www.iclei.org))



## Objectives

Assist cities to adopt policies and implement quantifiable measures to reduce local greenhouse gas emissions, improve air quality, and enhance urban livability and sustainability



## 2. Energy efficiency for streetlights



- Retrofitting incandescent lamps with CFL.
- Retrofitting of traffic lights with LEDs and using solar cell
- Installing low loss ballast

Energy saving 77,900 kWh / year  
Total GHG emission reduction 44 tonnes / year

### 3. City Greening



- Planting trees in public area
- Reforestation mangrove forest

Total GHG emission reduction 41 tonnes / year

### 4. Waste minimization

#### 4.1 Producing Fertilizer from Organic Waste and Transforming bio-gas to Energy

- Reducing organic waste sent to landfill 60 tonnes/day
- Producing Fertilizer 5,800 tonnes/year
- Producing electricity from biogas 5,100 KWhr/year
- Total GHG emission reduction 14,179 tonnes/year



Methane Capture



### Stop Global Warming

Local Initiatives: Local Governments and Schools



Since 2005, TEI in collaboration with Toyota Motor Japan and Thailand

- to create better understanding about climate change and global warming and encourage the participating schools and municipalities
- to efficiently manage their resources as part of the efforts in reducing greenhouse gases emissions
- to encourage the co-operation among local governments, schools and communities to work together to reduce GHG emissions.

### Project Main Activities

1. Training Workshop of Stop Global Warming Task Force, consisting of municipal staff and school teachers
2. Young Generation Leaders. Youth camp: Climate Change Knowledge, leadership training, Stop Global Warming Commitments and Initiatives, collaborative action plans
3. Launching Stop Global Initiatives in each city and schools
4. Learning and Sharing: Monitoring, Evaluation, Exhibition, Awards

### Output of the Project

- 187 municipalities 252 schools in 76 provinces
- 534 activities such as sustainable transportation, waste minimization} promoting energy efficiency and urban greening
- Total GHG emission reduction 3,235 tonnes/year

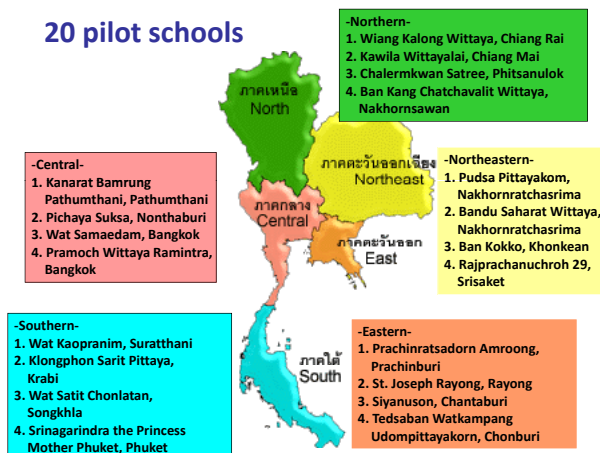




## Objectives

1. To support teachers in educating and raising awareness of school-children on global warming and climate change issue; and
2. To enhance the role of schools in improving country-wide actions for better climate and mitigate global warming problems

## 20 pilot schools



### Knowledge Management Manual for Teachers in Protecting Climate

#### Part I Content

- Climate System
- Radiative Energy Balance
- Climate Change
- Impact of Climate Change
- Climate Change Protection
- How to Make Different for Better Climate

#### Part II Guideline for learning activities

#### Part III Examples of Learning Activities



## Training on Climate Change for Municipalities

In 5 Regional Learning Centers of Municipal League of Thailand



## Objectives

1. To develop operational guidelines on Climate Protection and Global Warming Abatement for Local Government Organization
2. To provide knowledge and understanding on Climate Change and Global Warming for Executives and municipal staff
3. To promote participation of Local Government Organization in climate protection related to current situations and problems

## Project Main Activities

1. Develop curriculum and training material
2. Municipal staff training on global warming and climate change
3. Support the pilot municipalities to do projects on Climate Change Protection and Global Warming Abatement
4. Resulting reporting and monitoring and evaluation to the pilot municipalities

## Output of the project

### VCD

- Part 1 – Global Warming
- Part 2 – Example of municipal activities on Global Warming Abatement



### Global warming exhibition



คู่มือ...

Local Governments :

### How to Mitigate GHG



### Content composed of:

- Statistic and date on temperature increasing
- How the Global temperature increasing?
- Impact of Global Warming to cities
- What we are doing to abate the Global Warming?
- How the LGO participate in Global Warming Abatement?
- Example of LGO's project on Global Warming Abatement

สถาบันสิ่งแวดล้อมไทย (สถก.)  
Thailand Environment Institute (TEI)

## Key Success Factors

- Political Leadership
- Methodology (data collection, concrete results)
- Participations (schools, communities, local governments, local NGO, etc.)
- Partners (private sectors, international organizations, NGOs, etc.)

## Adaptation Framework to Global Warming

Study the risks of communities and other groups  
(at a level of impact might cause the different damages on communities and groups)

Community's Risk Evaluation  
from the impacts of climate  
change

Capacity and Adaptation Evaluation of  
different groups and community

Community ↔ Technician/Researcher ↔ Government

### Adaptation to Climate Change

Local wisdom + Economic and Social Mechanism + Government Policy  
Reduce impacts (Prevention) + Reduce damages (Increase Capacity)

## Sufficiency :

## A Road to Reduce Global Warming

An Initiative and Contribution from Private Energy Provider Sector to  
5 Regional School Networks



## Objectives

1. To advocate high potential schools to conduct a curriculum reform under the concept of "Sufficiency: A Road to Reduce Global Warming (S-ReGlow)" in order for these schools to serve as a learning source and model for other schools in the region in the context of energy and environmental conservation, global climate protection, as well as global warming mitigation.
2. To disseminate the guidelines for the curriculum reform in relation to the climate change and global warming mitigation to at least other fourteen schools in every regions.
3. To promote children's roles in the participation and initiatives of promoting the public awareness in the issues of climate change and global warming.

## Project Main Activities

1. Select high potential schools to serve as the learning centers for each region.
2. Provide the training to ten teachers from each learning center.
3. Establish seven learning centers in every region in the country.
4. Conduct a contest of the learning media.
5. Extend the network to be two schools for each learning centers for the total of 14 schools.
6. Hold a workshop to gather the participants from fourteen schools in the network.
7. Organize the exhibition on "Youths of the next generation care for the global climate".
8. Produce the media and publication regarding the global warming in order to disseminate to the general public.



## Asian Cities Climate Change Resilience Network (ACCRN)

### City Engagement and Capacity Development

THE  
ROCKEFELLER  
FOUNDATION



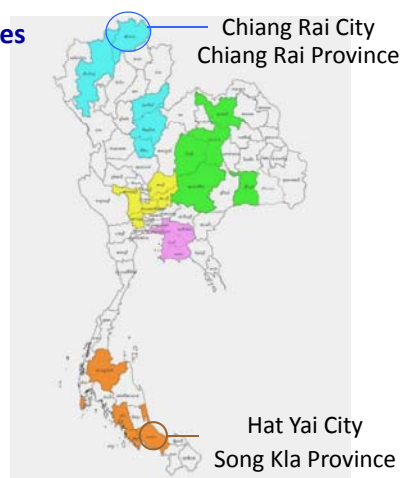
## Objectives

1. To engage and build awareness and capacity for urban climate change resilience in Chiang Rai and Hat Yai, through multi-stakeholder processes to identify and assess current and future city-level climate risks and vulnerabilities.
2. To facilitate the creation of Thailand city network to share knowledge, practice and experience on urban climate change resilience
3. To identify, develop and launch pilot projects in conjunction with city stakeholders based upon clearly articulated objectives and criteria

## Objectives

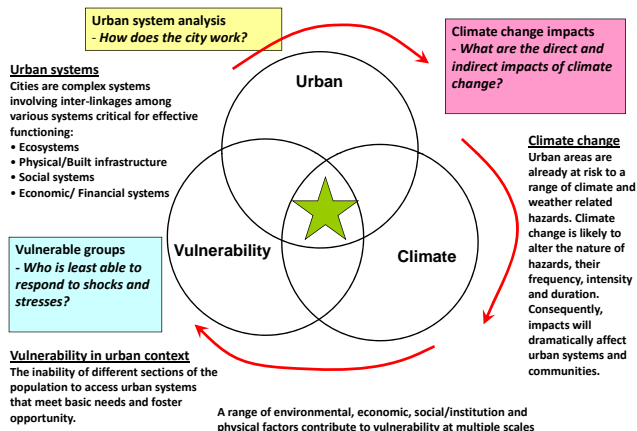
4. To develop a city climate resilience strategy for the two core cities with possible interventions
5. To landscape and pursue opportunities to engage national agencies, ministries and departments that could help advance broader funding and policy support for urban climate change resilience in Thailand

## Selected Cities Thailand



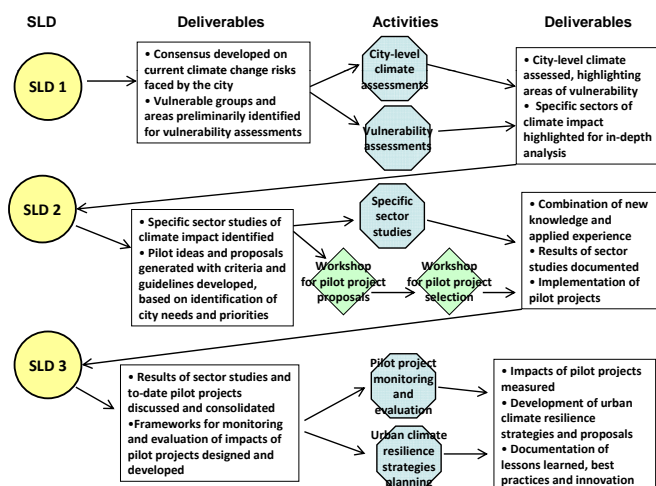


### Urban Climate Vulnerability



### "Shared Learning Dialogues (SLD)"

is the process to build cities' understanding of concepts, frameworks and applied methodologies for shared learning and resilience planning



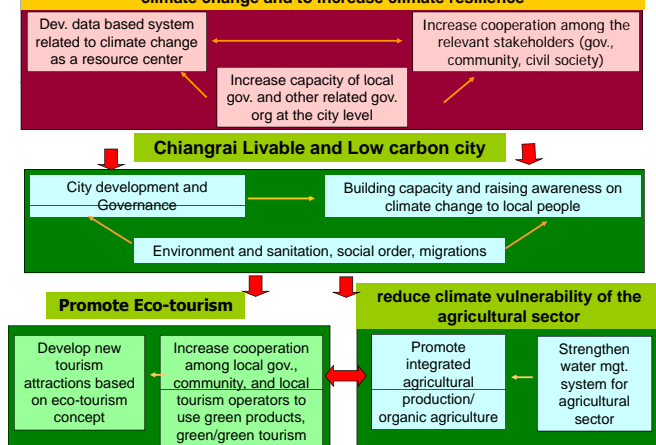
### Chiang Rai City Climate Resilience Strategy

climate resilience strategies and planned specific adaptation actions are **to tackle water issues**



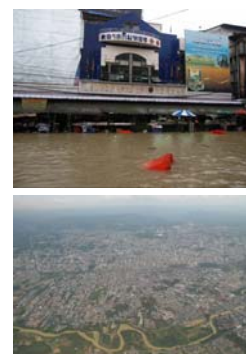
**Vision :** The people of Muang Chiang Rai gain knowledge and understanding of and adapt to changing climate and its impacts

### Capacity building of all stakeholders for participatory planning to prepare for climate change and to increase climate resilience

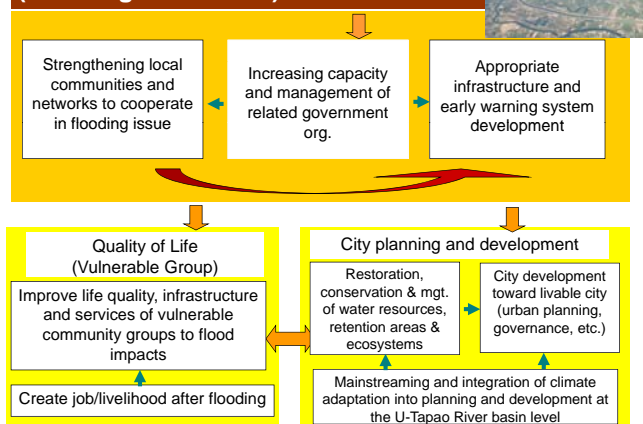


### Hat Yai City Climate Resilience Strategy

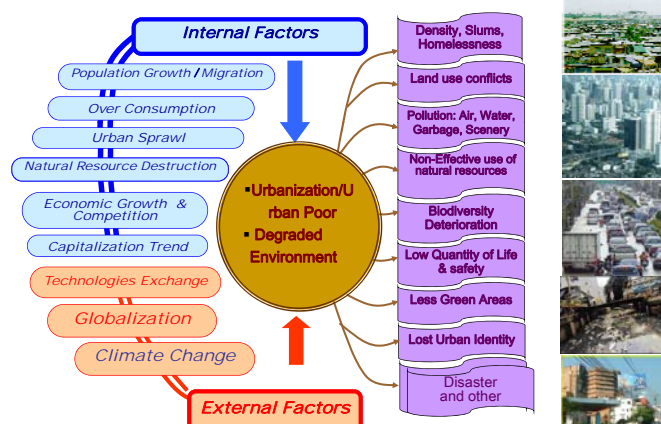
- The short-term strategies (2011-2013) are specifically **to tackle immediate flood issues**,
- The long-term strategy plan (to 2020) **focuses on the water resource management of the Songkhla Lake Basin**, which encompasses management practices of water supply, water pollution and flood



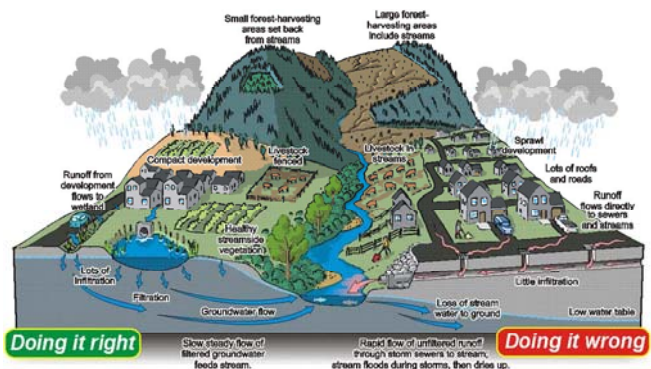
## Hat Yai Climate Resilience Strategy (Flooding Prevention)



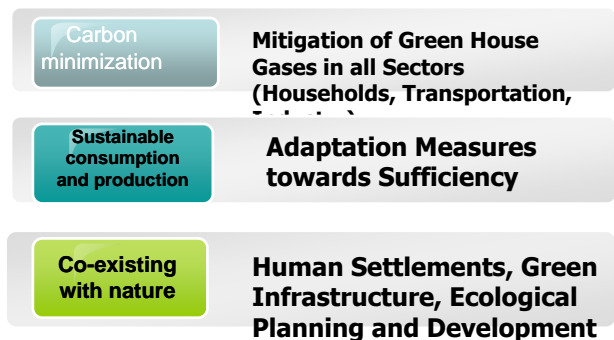
## Causes and Effects of Urban Environment in connection to Climate Change



## Holistic and Integrated View of Environment and Climate Change



## Strategies Towards Low Carbon Society, City and Community



## HM King's Philosophy of "Sufficiency Economy"

### The Middle Path



Wisdom Condition  
(an application of knowledge with due consideration and prudence)

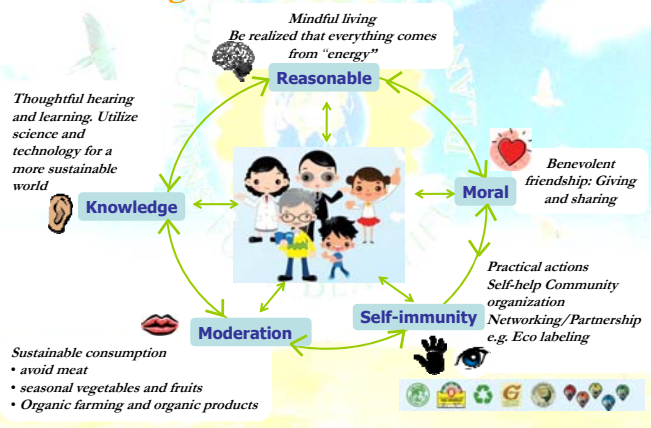
Moral Condition  
(honesty, integrity, diligence, patience, perseverance)

Leading to

Life/Economic/Social

Balance/Stable/Sustainable

## Change Now for All Tomorrow







Chamniern Paul Vorratnchaiphan  
Senior Director

Thailand Environment Institute (TEI)  
16/151 Muang Thong Thani,  
Bond Street Road, Bangpood, Pakkred  
Nonthaburi 11120

Tel.+66 (0) 2503 3333 ext 206  
Fax. +66 (0) 2504 4826-8  
Website : [www.tei.or.th](http://www.tei.or.th)