SEA and strategic planning in Thailand

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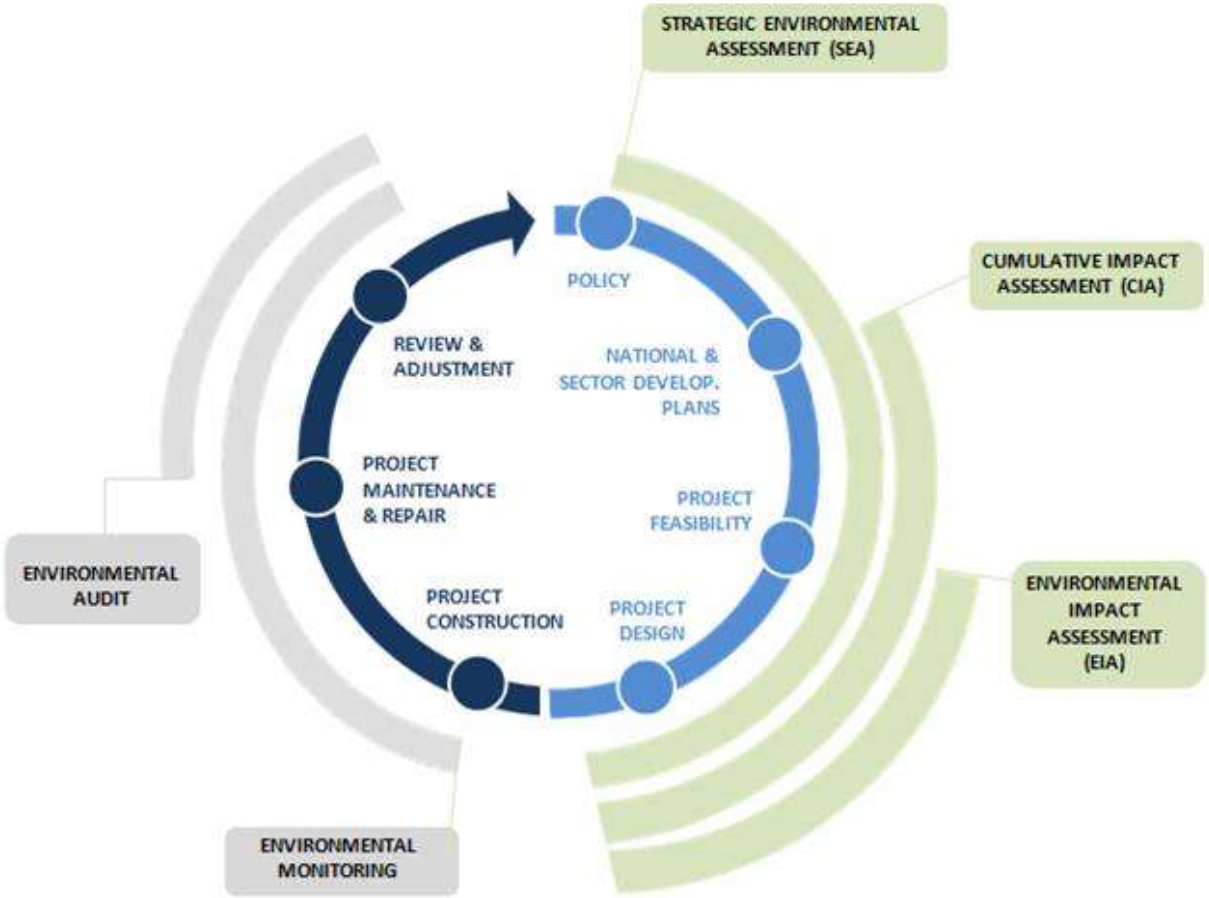
Environmental assessment and monitoring tools



Four main tools for environmental assessment:

- SEA family
- EIA family
- M&E
- Audit family

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This working session is to consider:

- Some cases of failure in sectoral and spatial planning due to stakeholder and public opposition and demands for their participation.
- Some challenging cases in the development/sectoral planning process with and without SEA.

The outcomes of our discussion - Awareness of likely success or failure of strategic planning without and with SEA.

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Key messages

- For effective strategic planning in the face of rapid change, government agencies need to transform to become “learning organisations”
- Strategic assessments have a significant role in supporting and guiding that transition as knowledge brokers, participatory forums and policy advocates

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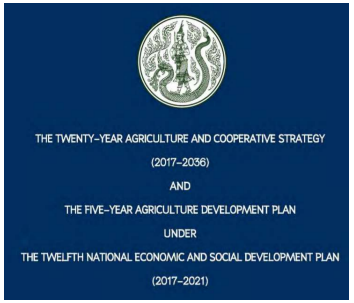
Strategic planning in Thailand – some questions

- Were you involved in preparing your agency's strategic plan?
- To what extent are other staff involved in the process?
- Are other stakeholders involved in the process?
- Has the main vision and objectives changed over the years?
- Could the process of preparing the plan be improved?
- Do you feel the strategic plan content could be improved – how? What is missing?



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Strategic planning systems are facing challenges in a rapidly changing world

- Rapidly changing economic, social and environmental context directly affecting government agency functions

Requires:

- agencies to assess and understand those changes
- agencies to be constantly learning and adjusting to accommodate change
- total commitment from senior public servants to engage in strategic planning in response to change (it can't be delegated)
- adjustment to structures, roles and tools within agencies (?)

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Is strategic planning by govt agencies failing to meet the challenge of change?

OECD found that strategic planning in government has a number of basic obstacles:

- Either the institutional culture does not embrace the value of strategic planning or the organizations' leaders aren't committed to the process– "we are just too busy"
- Current strategic planning processes for sectors and areas tend not to facilitate a debate around what constitutes sustainable development
- There exist sharply defined boundaries within the planning process that constrain open debate – eg sticking to what we have always done well
- A general culture of risk avoidance – many disincentives to change.
- Institutional context does not leave room for broad strategic considerations – rigid structure and responsibilities

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Barriers confronting the public sector in effective strategic development planning

- The process may be too bureaucratic, requiring multiple iterations and consuming too much time.
- It can be internally focused, failing to account for external factors or to learn from the experience of other sectors or similar organizations.
- Lack of inter-departmental or intra-departmental consultation and cooperation – its just too hard
- Failure to involve midlevel managers and limited buy-in among the rank and file, weakening execution.
- It excludes key stakeholders who are needed both for diagnosing challenges and for defining appropriate responses.

Barriers confronting the public sector in effective strategic development planning

- Many government leaders have have little strategy planning experience. As a result they delegate and are not personally invested in the process
- The process is often be focused on short-term outcomes and compliance with rules and regulations rather than on long-term strategic results.
- When new values conflict with the original values and responsibilities, it is very difficult for an agency to accept this new opinion
- There is a disconnect between the strategy and the incentive structure that is meant to promote follow-through on the strategic plan.
- Frequent changes in leadership reduce an agency's focus to day to day responsibilities

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Is the EIA and SEA system failing or is strategic planning by govt agencies failing?

- SEA will not be fully effective unless we understand the limitations and opportunities in current national strategy planning system
- Is there commitment to strategic planning in general
  - (yes there is)
- Is the system open to influence from outside
  - (no - not so much)
- Are needed changes in strategic planning just too hard to achieve in political timeframes – ie the process, incentives and institutional arrangements
  - (No - to some extent but there is a high level of creative initiative in most Thai agencies)
- Where are the important entry points for SEA integration with strategic planning?
  - (the spatial planning system is a good target)

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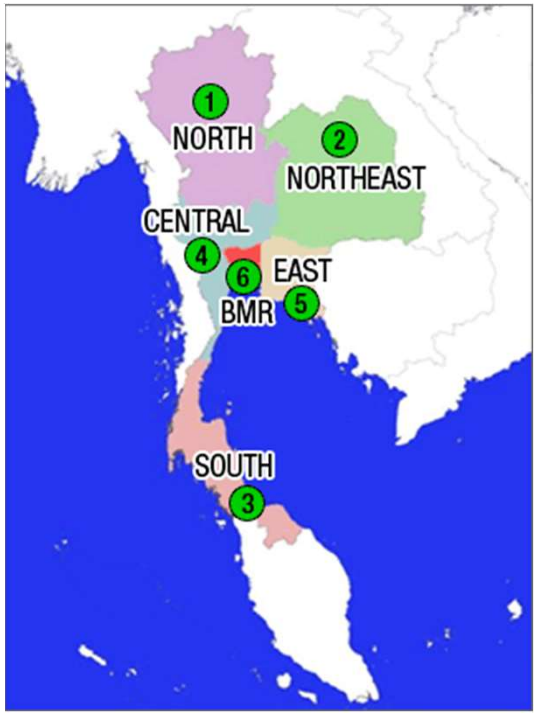
Spatial planning in Thailand – an opportunity for SEA integration

Levels in spatial planning	Plans	Responsible authorities
National	**Policy Planning**: National Economic and Social Development Plan	NESDB
	Sector development strategies and plans	Sectoral ministries and agencies
	Spatial Planning: National Spatial Development Plan	Department of Public Works and Town & Country Planning, Ministry of Interior (DPT)
Regional	Regional Spatial Development Plan (6 regions)	Ministry of Interior (DPT)
Sub-regional	Sub-regional Plan	Ministry of Interior (DPT)
	River basin plans	ONWR
	Adaptive spatial plans	ONEP and DPT
Provincial	Comprehensive Plan	Ministry of Interior (DPT)
Town	Comprehensive Plan	Ministry of Interior (DPT)
Specific area	Specific Plan	Ministry of Interior (DPT)



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SEAs of all colours

1. SEA of the Vu Gia - Thu Bon River Basin Hydropower development plan, ADB (2006 – 2007)
2. SEA of the Hydropower Sector Master Plan, Vietnam, World Bank (2005 – 2006)
3. SEA of the Socio-Economic Development Plan of Con Dao Island, Vietnam, UNDP (2007)
4. SEA of the GMS North South Economic Corridor Strategic Action Plan, ADB (2008 – 2009)
5. SEA of hydropower development on the 3S Rivers, ADB, Mekong River Commission (2009)
6. SEA Hydropower on the Mekong Mainstream, Mekong River Commission (2009 – 2010)
7. SEA of Hydropower Master Plan in the Context of the Power Development Plan VI, SIDA (2010)
8. SEA of the Vietnam Forestry Master Plan 2010 – 2020, World Bank (2010)
9. SEA of the GMS Regional Power Development Plan, ADB (2012 – 2013)
10. SESA - Nepal REDD+ Strategic Environmental & Social Assessment (SESA (2013 – 2014)
11. SEA of the Lancang-Mekong Development Plan, CEPF – MRC (2016 – 2017)
12. SEA of the Hydropower Sector Development in Myanmar, IFC (2016 – 2018)
13. SEA of Rayong Province Mater Plan, NESDC and ADB (2019 – 2020)

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Lessons from my involvement in SEAs in Asia

There is no “one way” to conduct SEAs – the method and mix of tools must be adjusted to according to

- the substantive focus
- the capacities of the SEA team
- the host organisation capacities
- Its receptiveness to absorb the process and results

Two labels tend to be applied to SEAs of plans:

- strategic oriented SEAs which attempt to influence high level policy and to change the strategic planning process
- impact oriented SEAs which look at a range of specific development options and their effects but tend not to influence the strategic planning process

In fact most SEAs are a mix of both orientations - success follows from:

1. use of assessment results to change the content of the target plan
2. influence on wider changes in thinking or to the strategic planning process itself

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A key to success – becoming a "learning organisation"

- A "learning organization" has the characteristics of effective strategic planning and SEAs
- A learning organization facilitates learning among its staff and continuously transforms itself in response to change.
- New ideas are essential if **learning** is to take place
- A successful learning organization is supported by a collaborative learning culture from within
- It requires:
  - Leadership and commitment to creative change in response to evolving challenges
  - A forward-thinking mindset and incentives for innovation
  - Learning from mistakes and continually improving
  - Knowledge generation and facilitation of its transfer and exchange among staff and stakeholders

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Learning and adjustment is cyclical – locked into the development planning cycle

- Enhanced learning in government agencies is key to integrating the SEA process and outcomes into strategic planning
- The goal is a culture that *builds* evidence about what's working and what's not, and then *uses* that evidence, with built-in feedback loops, to refine initiatives and strategies over time – eg with each development planning cycle.
- The focus is on strengthening an organizational culture of learning and continuous improvement.
- SEAs are an important driver in that process of cyclical learning.

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How do SEAs fulfil their role in driving learning and innovation in strategic planning?

There is support for integration between SEAs and strategic planning in general but questions about how to achieve it in practice.

Some suggest that a shift is needed in how SEAs are designed and implemented to emphasise:

- SEAs as knowledge broker and enabling dialogue
- Providing critique of strategic options to inform debate
- Bringing in a greater diversity of views to shift plans more to sustainability
- Contributing to wider consideration of the plan-making processes – not just the plan
- Facilitating greater transparency and more effective public participation at the strategic level;
- Providing a framework for more effective and efficient project-level assessments;
- Providing a base for design and implementation of better projects where project-level assessment is not required

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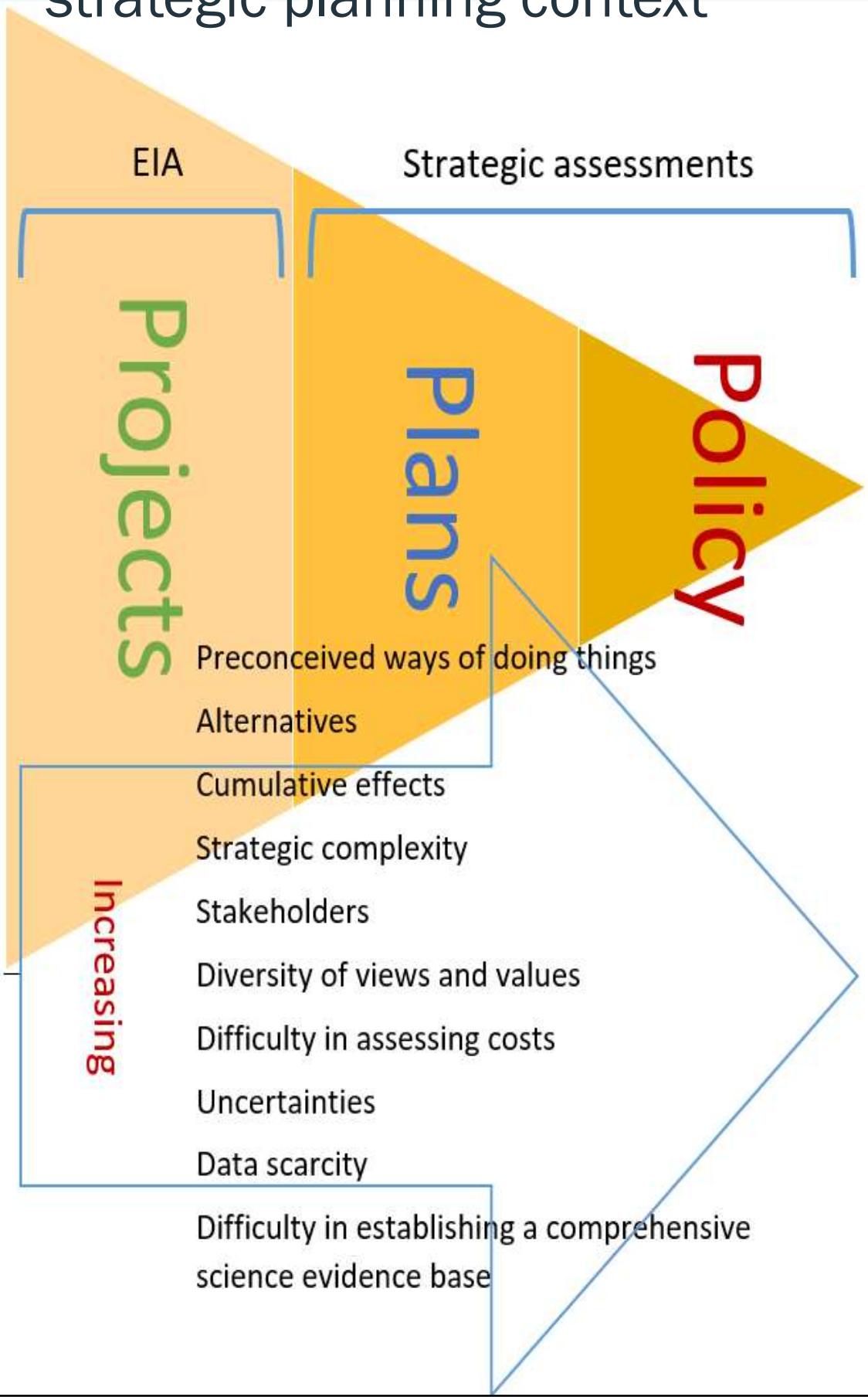
Assumptions about SEAs which inhibit that shift

Some basic assumptions inhibit the shift in the role of SEAs:

- SEAs (like EIAs) are tasked only with providing scientifically rigorous information on likely impacts for use in plan-making
- Only rigorous information will produce better decisions through a process of rational choice between alternatives
- It is not for SEAs to present alternative forms of knowledge and perspectives (for example, the views of local communities), eg. going beyond provision of objective scientific information into values and cultural beliefs

SEAs are not EIAs – a shift is needed to recognise their strategic planning context



Prerequisites to SEAs supporting the creation of government agencies as learning organisations

- The role for SEA in dialogue with plan-makers as (i) knowledge generator, (ii) mediator and consensus builder, (iii) policy entrepreneur, (iv) policy advocate and (v) communicator
- Increasing the authority of SEAs through legislation and political support
- SEAs as consensus builders - need to consider how conflicts are managed and mediated
- Enhancing the level of knowledge of plan-making processes by SEA professionals and vice versa
- Working hand in hand with the plan-makers
- Communicator of new information and view points
- Having sufficient resources, time and space to enable engagement and knowledge generation;
- Engaging an appropriate diversity of stakeholders

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To increase the application and authority of SEAs in Australia – recommendations from the Parliamentary committee inquiry

- Strategic assessment of larger areas and multiple projects must be undertaken according to rigorous, objective and transparent legislative requirements.
- The Strategic Assessment system must:
  - Specify when SEAs are mandatory and increase procedural provisions in regulations
  - Create a 'call in' power for plans likely to have a significant impact.
  - Improve transparency through extensive public involvement.
  - Be based on comprehensive and accurate mapping and data
  - Be undertaken at the earliest possible stage
  - Assess alternative scenarios and cumulative impacts
  - Be linked to regional spatial planning

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IDEA
CONNECTION
CREATIVITY
CONTENT
PEOPLE
LIKE
SHARE
SOCIAL
NETWORK
FRIENDS
COMMUNITY
GROUP
FEEDBACK
WEB
RESEARCH
INFORMATION
GROWTH
ACCESS
TECHNOLOGY
ANALYSIS
MANAGEMENT
STRATEGY
Thank you
WHO
WHEN
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SOLUTION
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SUCCESS
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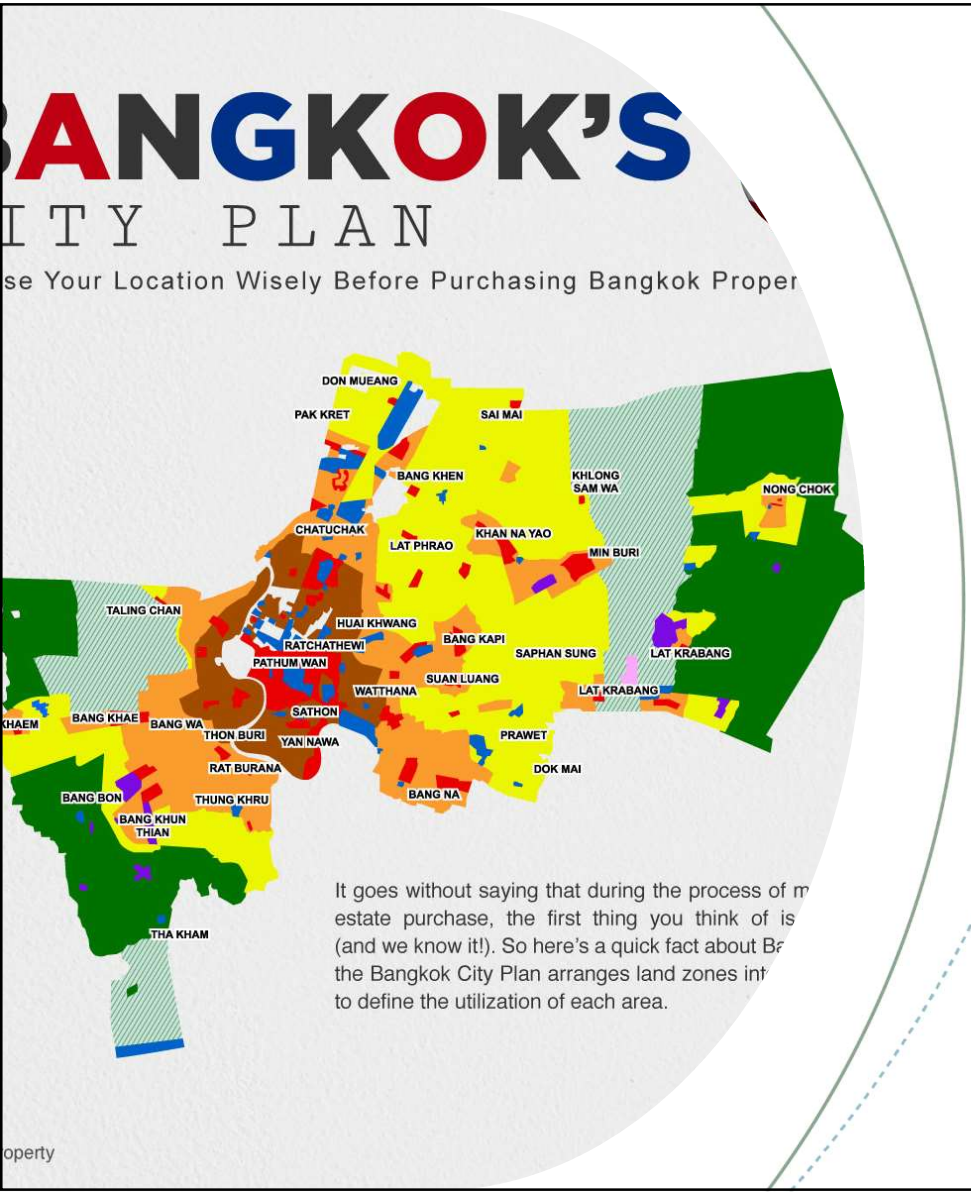
MARKETING
TARGET
SKILLS



SEA concepts and process

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Key messages from first presentation

- For effective strategic planning in the face of rapid change, government agencies need to transform to become "learning organisations"
- Strategic assessments have a significant role in supporting and guiding that transition as knowledge brokers, participatory forums and policy advocates

- SEAs have a key role in strategic planning as (i) knowledge generator, (ii) mediator and consensus builder, (iii) policy entrepreneur, (iv) policy advocate and (v) communicator

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This sessions is addressing the SEA concept and process

1. Strategic-based SEA versus impacted-based SEA
2. How SEA can fit into the planning and decision process
3. At what level can SEAs be applied: multi actors/multi levels (national, local, provincial)
4. What do SEAs focus on, what is relevant, what needs to be given priority, options for sustainability
5. How and what actions should SEAs be engagement in different actions
6. How SEA plays a role in major global challenges: climate changes, biodiversity, application of SDGs

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SEAs role in meeting international challenges – key messages

- SEAs are a tool for integrating international/national sustainability concerns into strategic plans.
- They are a vehicle for addressing:
  - Implementation of the sustainable development goals
  - Climate change
  - Flood and droughts
  - Biodiversity loss and ecosystem degradation
  - Economic cost benefit analysis of externalities and strategic options
- …and for facilitating their integration into national, sector and area wide strategic development plans such as river basin plans

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The new breed of “SEAs” and their future application

Similar tools and processes to SEA being applied in cc vulnerability assessment and adaptation planning - eg:

- “SEA” and climate change assessment of the Mekong Delta Bridges and Roads Development, ADB (2011 – 2012)
- “SEA” - Promoting Climate Resilient Rural Infrastructure in Northern Vietnam (2018-2019) (ADB)
- “SEA” - Building Climate Change Resilience in Asia’s Critical Infrastructure (2017-2020) (ADB)
- “SEA” of Ramsar wetland management plans with climate change in India (2021) (GIZ)
- “SEA” Adaptation and resilience to climate change in the lower Mekong basin (2015-2016) (Mekong ARCC - USAID)
- “SEA” and climate change assessment of the HCMC Master Plan, ADB (2008 – 2009)
- “SEA” into Protected Areas and Development in the Mekong Region (multi donor)

And in other major strategic planning studies:

- “SEA” - National Industrial Pollution Assessment, Vietnam (World Bank)

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How are the new SEAs contributing to resolving global issues (of concern to Thailand)

SEAs as a:

- generator of new information, knowledge and communications on critical sustainability issues
- facilitator of institutional learning and innovation in a rapidly changing world
- forum for exchange and consensus building (within and between countries)
- policy advocate

Two current cases in which SEA methods are being applied:

1. Management of the Tonle Sap sub-basin – Thailand and Cambodia
2. Air pollution control in Lao PDR – and Thailand- Lao $PM_{2.5}$ dispersal

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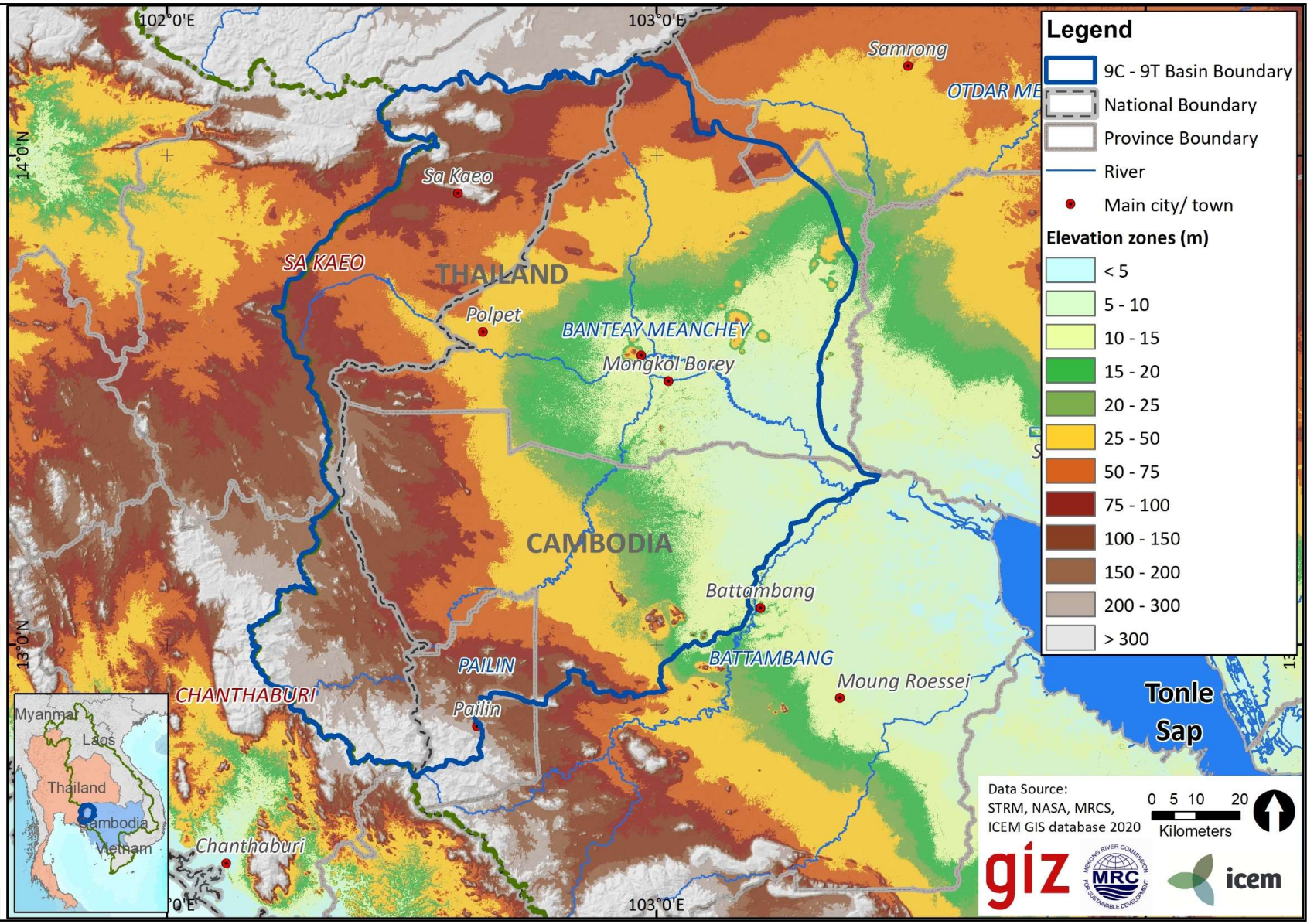
A Tonle Sap sub basin SEA



“Tonle Sap sub-basin” – or “9C-9T Mekong sub-basin”

- Project managed by ONWR (Thailand) and MOWRAM (Cambodia) through MRC 2017 Phase 1 and to 2022 Phase II.
- 30% of the sub-basin is in Thailand – the “Tonle Sap Sub Basin”
- The Thai River Basin Committee has prepared a management plan
- Like other Thai river basin plans it is mainly a list of projects
- Overriding emphasis is on hard infrastructure
- Little or no consideration of sustainability
- For Cambodia’s 70% (the “Stung Mongkol Borey” river basin) there is no basin plan
- But major large scale infrastructure development changing the nature of the basin
- Serious flood, drought, climate change, ecosystem and sustainability issues to address
- Significant upstream – downstream issues to address eg water quality, flooding, wildlife trade, urban development, infrastructure impacts

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"SEA" process and tools in support of the 9C-9T river basin planning

Five year collaborative strategic planning cycle for the 9C-9T sub-basin

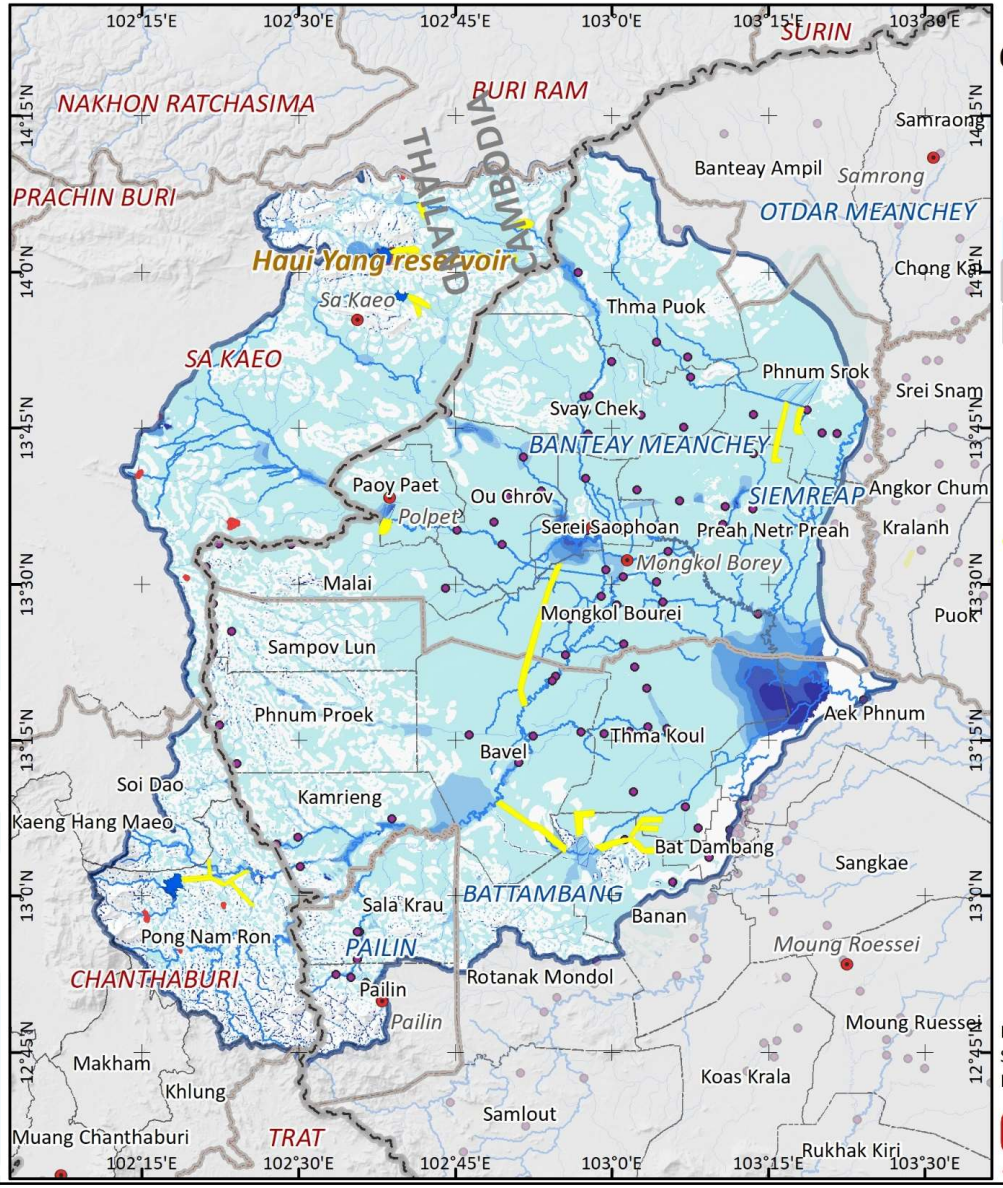
"SEA" process to support the river basin planning

"SEA" baseline includes flood and drought modelling, climate change modelling, and ecosystem health assessments.

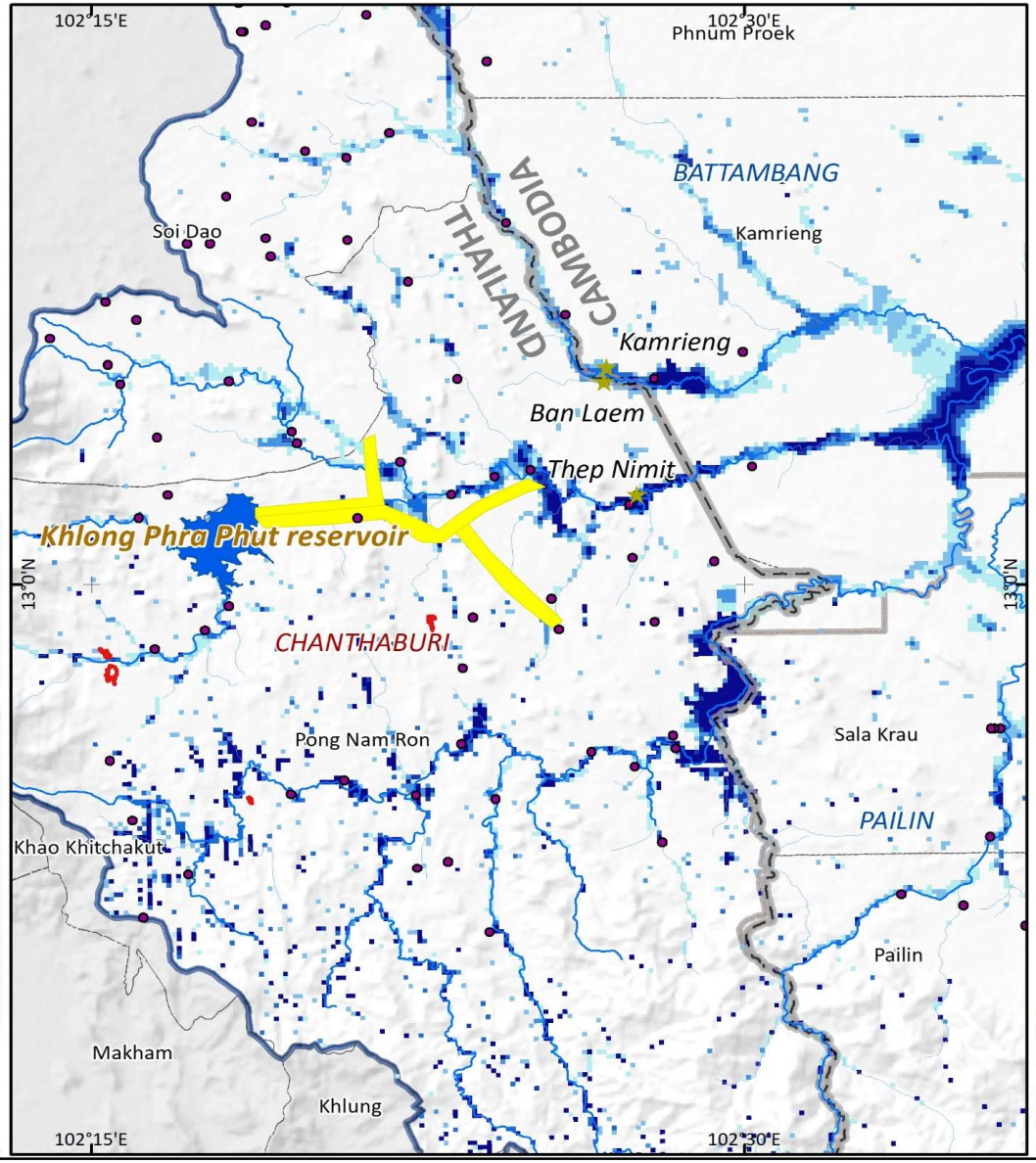
"SEA" development scenarios assessment including sustainability pathway and design of nature based solutions

SEA review of SAP, new knowledge and refreshed sustainability pathway

Flash flood hazard – Tonle Sap Sub-basin



Flood hazard – Chanthaburi – Tonle Sap Sub-basin



CAMBODIA - THAILAND 9C-9T BASIN COMMUNITY HAZARD AT PILOT AREA

Legend

- 9C - 9T Basin Boundary
- National Boundary
- Province Boundary
- District Boundary
- Main city/ town
- Commune Centers
- Reservoir
- Large Canal

Flood Depth (m)

- 0.5 - 1
- 1.1 - 1.5
- 1.6 - 2
- 2.1 - 2.5
- 2.6 - 3
- > 3

Data Source:
STRM, NASA, MRC/JBA 2017
ICEM GIS database 2020

0 1.5 3 6
Kilometers

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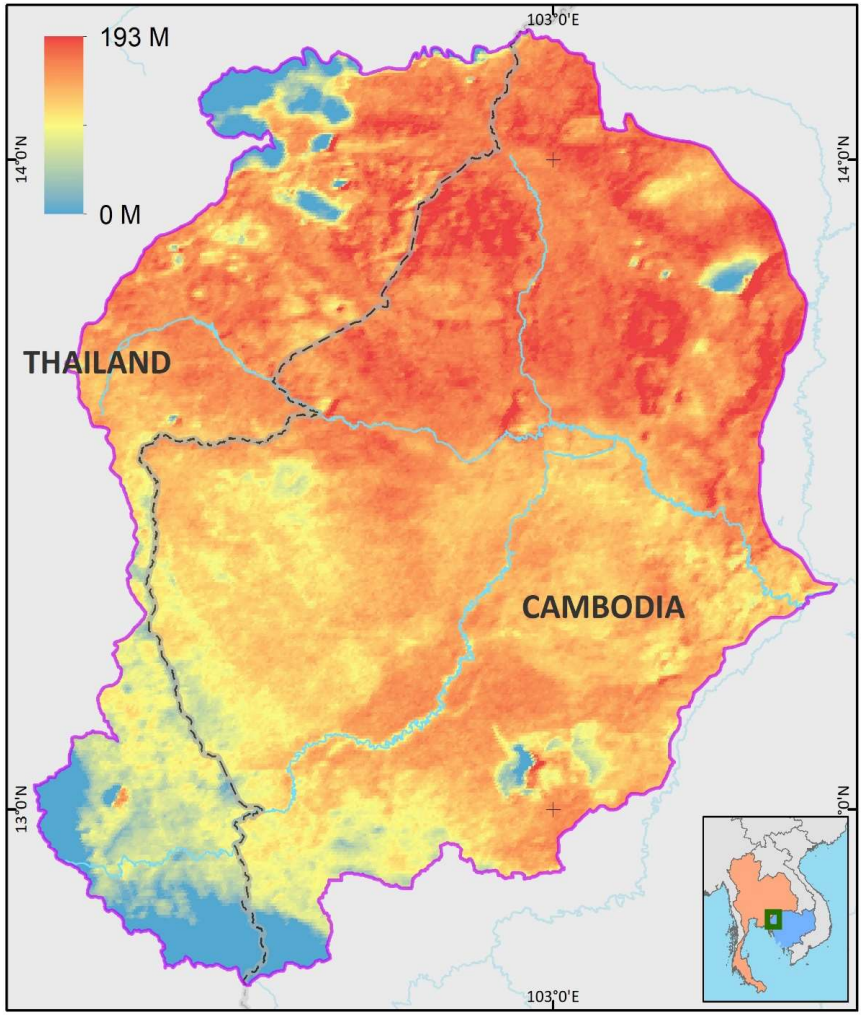
Drought frequency in the Tonle Sap Sub-basin

Number of extreme drought months during 6/2002 - 6/2020

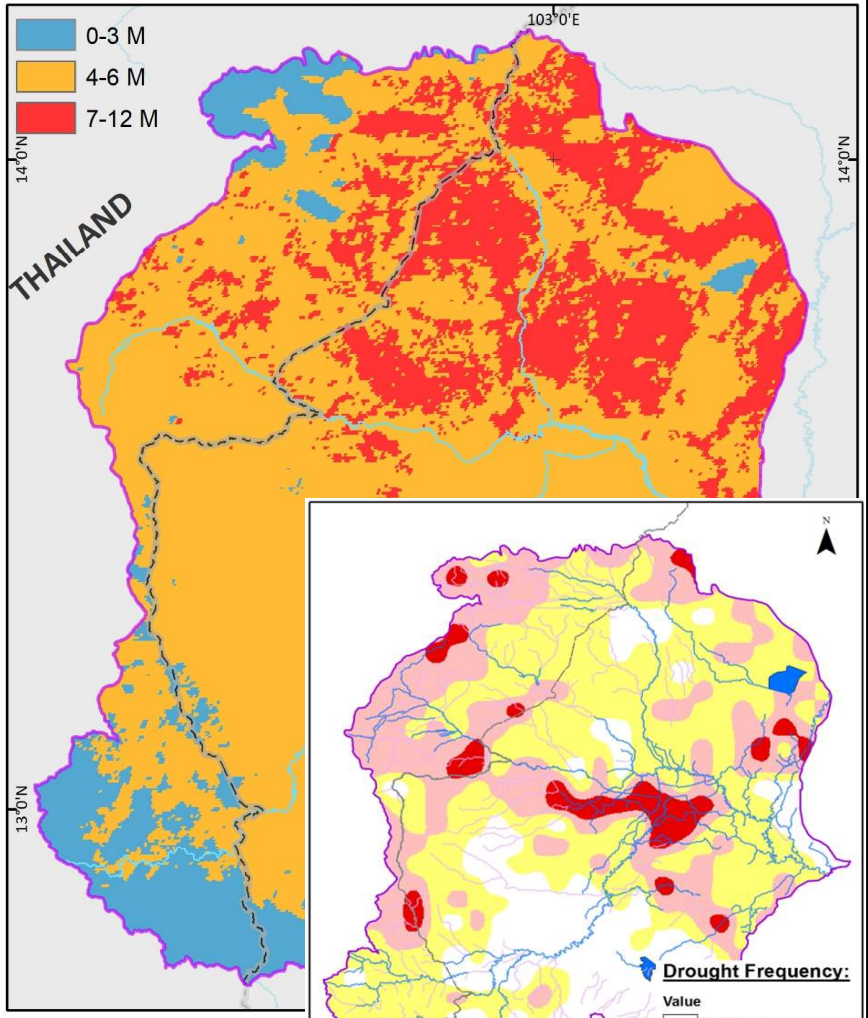


Data Source:
GGE MODIS NDWI
ICEM GIS database

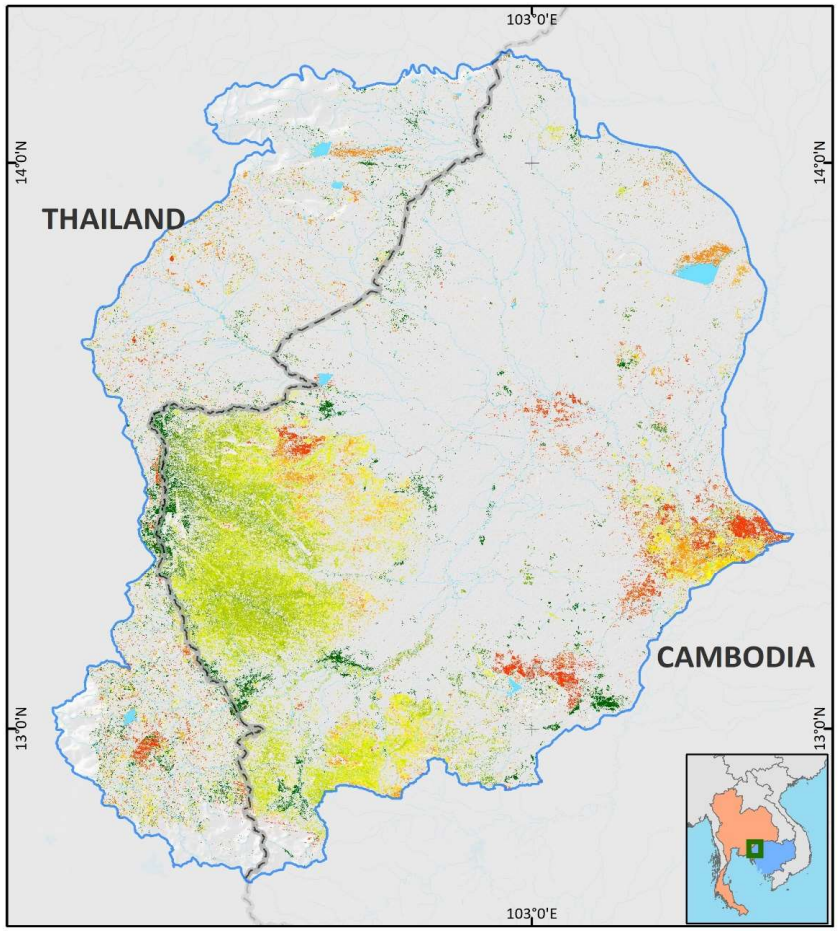
0 10 20 40
Kilometers

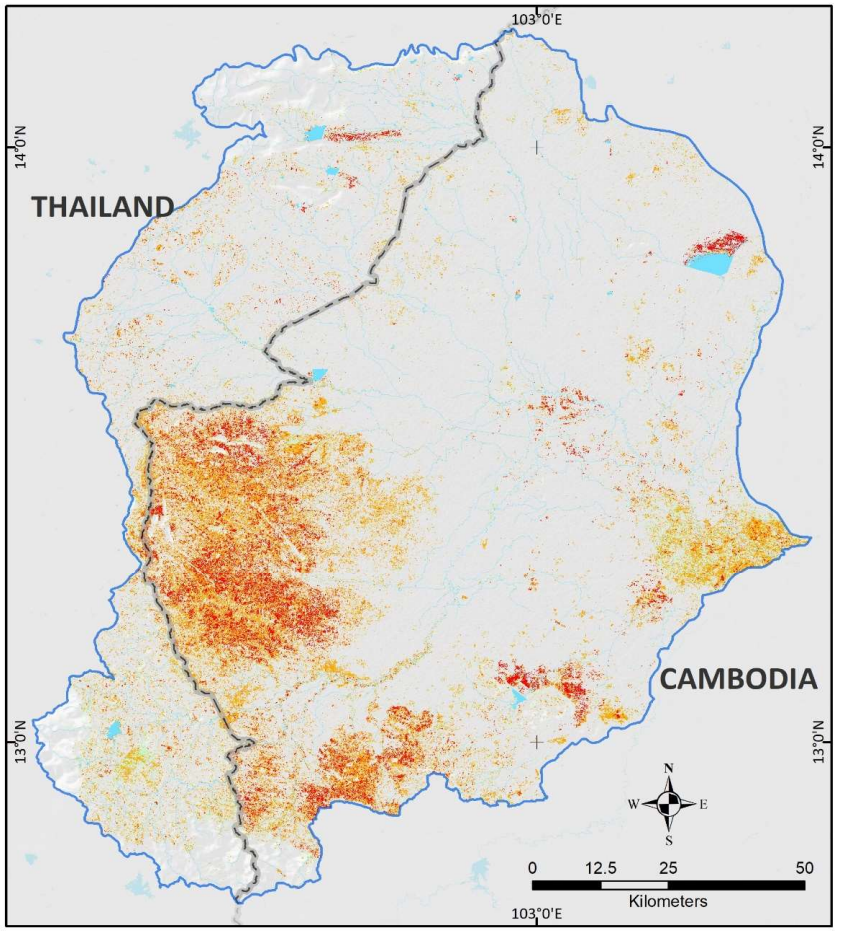
N
W E
S

Number of extreme drought months per year



Disturbance magnitude in the Tonle Sap Sub-basin





Year of disturbance

1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Disturbance magnitude

- No hange
- Low intensity
- Medium intensity
- High intensity
- Water
- 9C - 9T Basin
- National Boundary

Data Source:
Landsat time-series 1990-2020
ICEM GIS database

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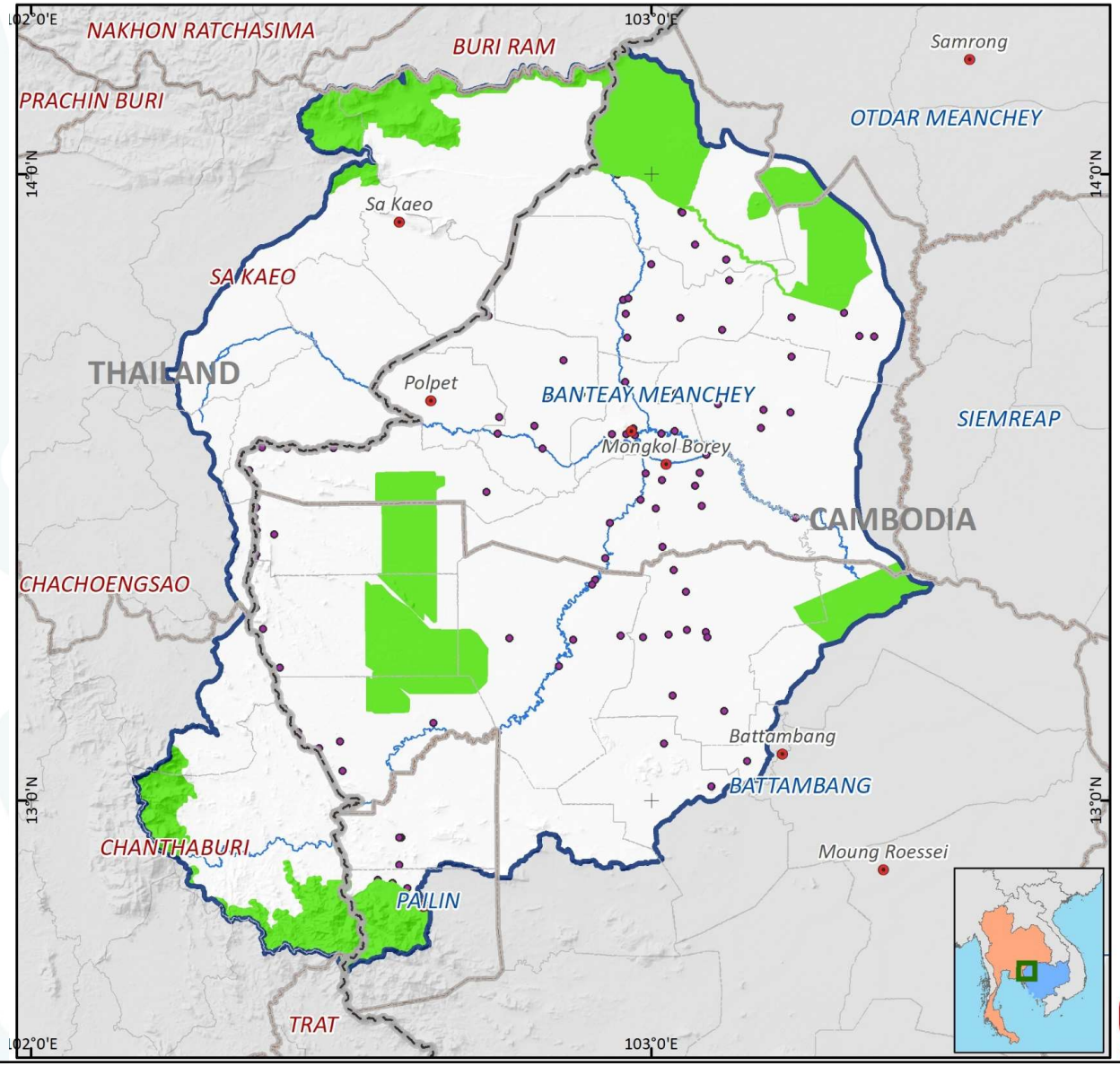
"Protected" areas in the Tonle Sap sub-basin



CAMBODIA - THAILAND 9C-9T BASIN PROTECTED AREAS 2013

Legend

- 9C - 9T Basin Boundary
- National Boundary
- Province Boundary
- District Boundary
- Main city/ town
- Commune Centers
- Protected Area

Data soure: Open Development Cambodia
ICEM GIS database 2020

0 5 10 20
Kilometers

giz MRC icem

Degradation, erosion and drought affecting Sompoi reservoir and watershed

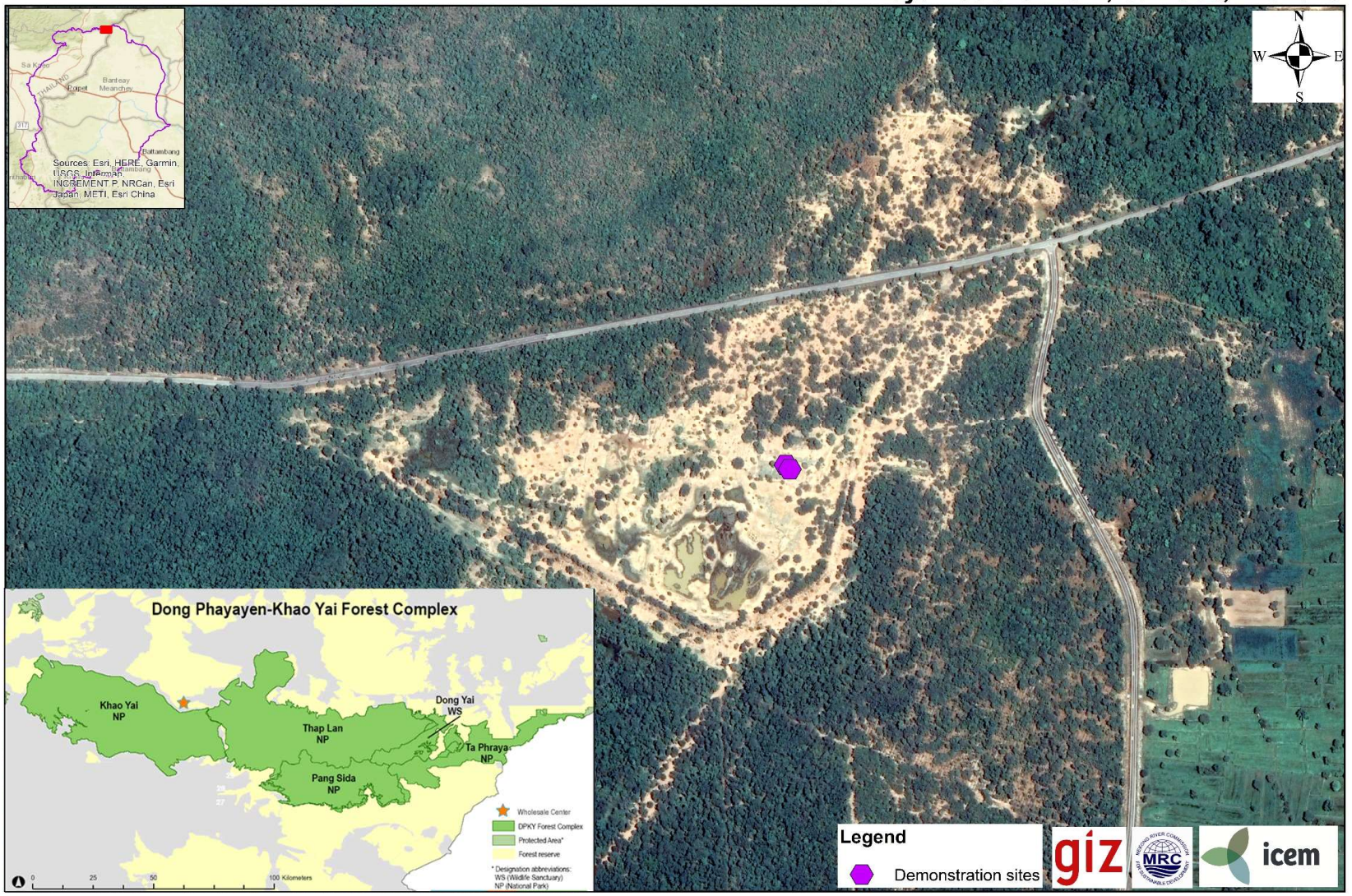
Demonstration project 1 - Sompoi reservoir and watershed

Sa Kaeo, Thailand

Degradation, drought and encroachment in Ta Phraya National Park

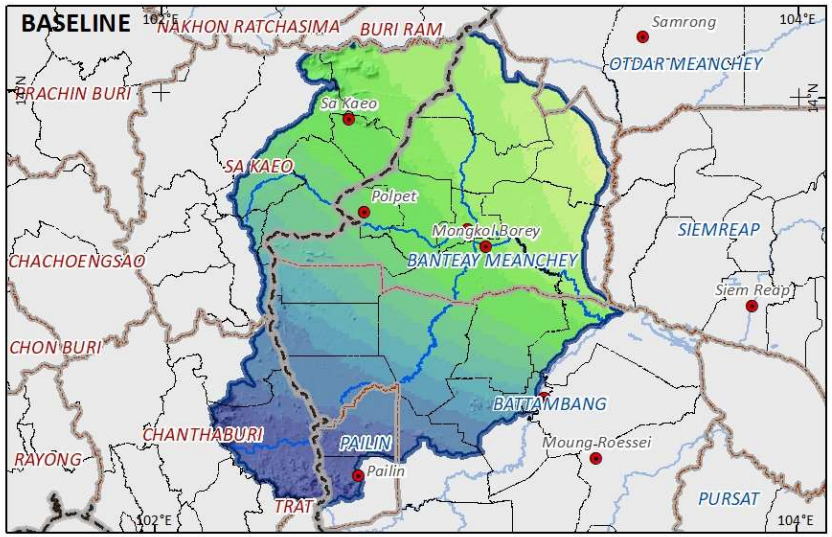
Demonstration project 1 - UN reservoir

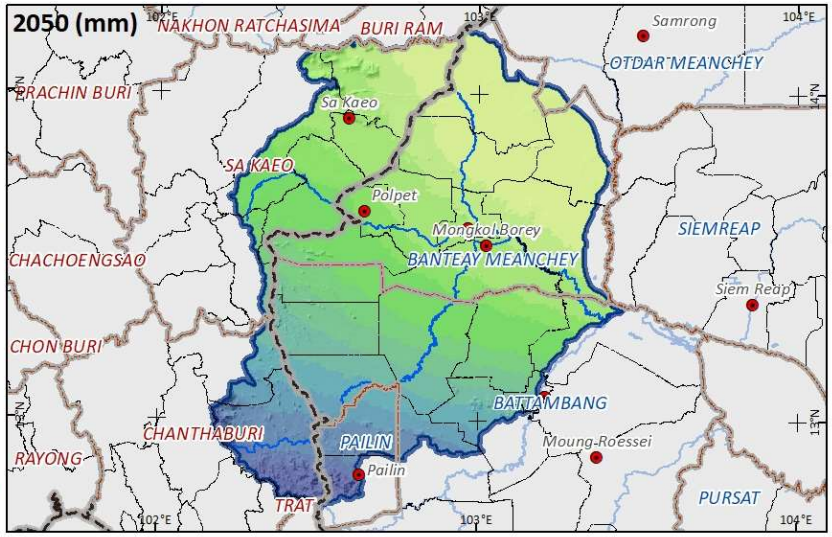
Ta Phraya National Park, Sa Kaeo, Thailand

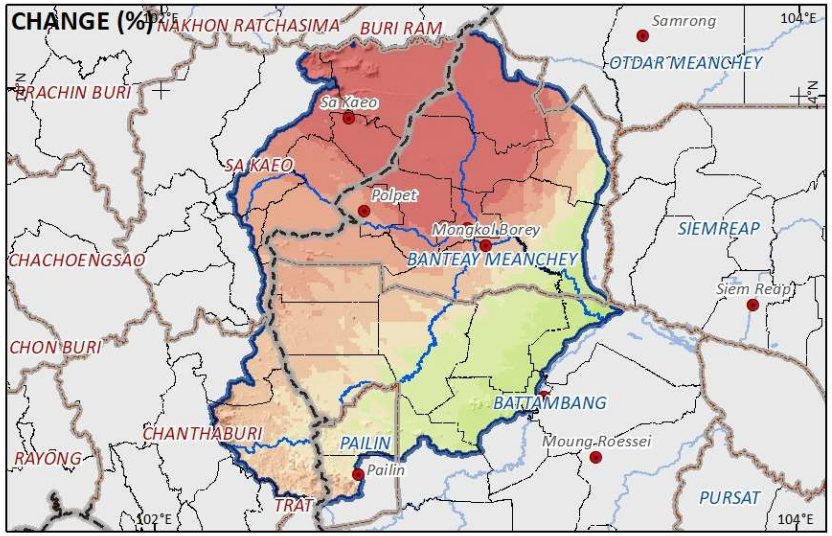


Precipitation in dry season - 2050

CHANGE IN PRECIPITATION IN DRY SEASON CAMBODIA - THAILAND 9C-9T BASIN







National Boundary
Province Boundary
District Boundary
Main city/ town
River
9C - 9T Basin boundary

Precipitation in dry season (mm)

< 140 | 141 - 160 | 161 - 170 | 171 - 190 | 191 - 200 | 201 - 220 | 221 - 230 | 231 - 240 | 241 - 250 | 251 - 260 | 261 - 270 | 271 - 290 | 291 - 300 | 301 - 350 | > 350

Change in precipitation (%)

< -12 | -11.9 - -11 | -10.9 - -10 | -9.9 - -9 | -8.9 - -8 | -7.9 - -8 | -7.9 - -6 | -5.9 - -4 | -3.9 - -0.5 | > 0.5

Data source:
World Clim 1.4 data
GCM: IPSL, RCP 8.5
ICEM Database 2020

0 10 20 40 Km

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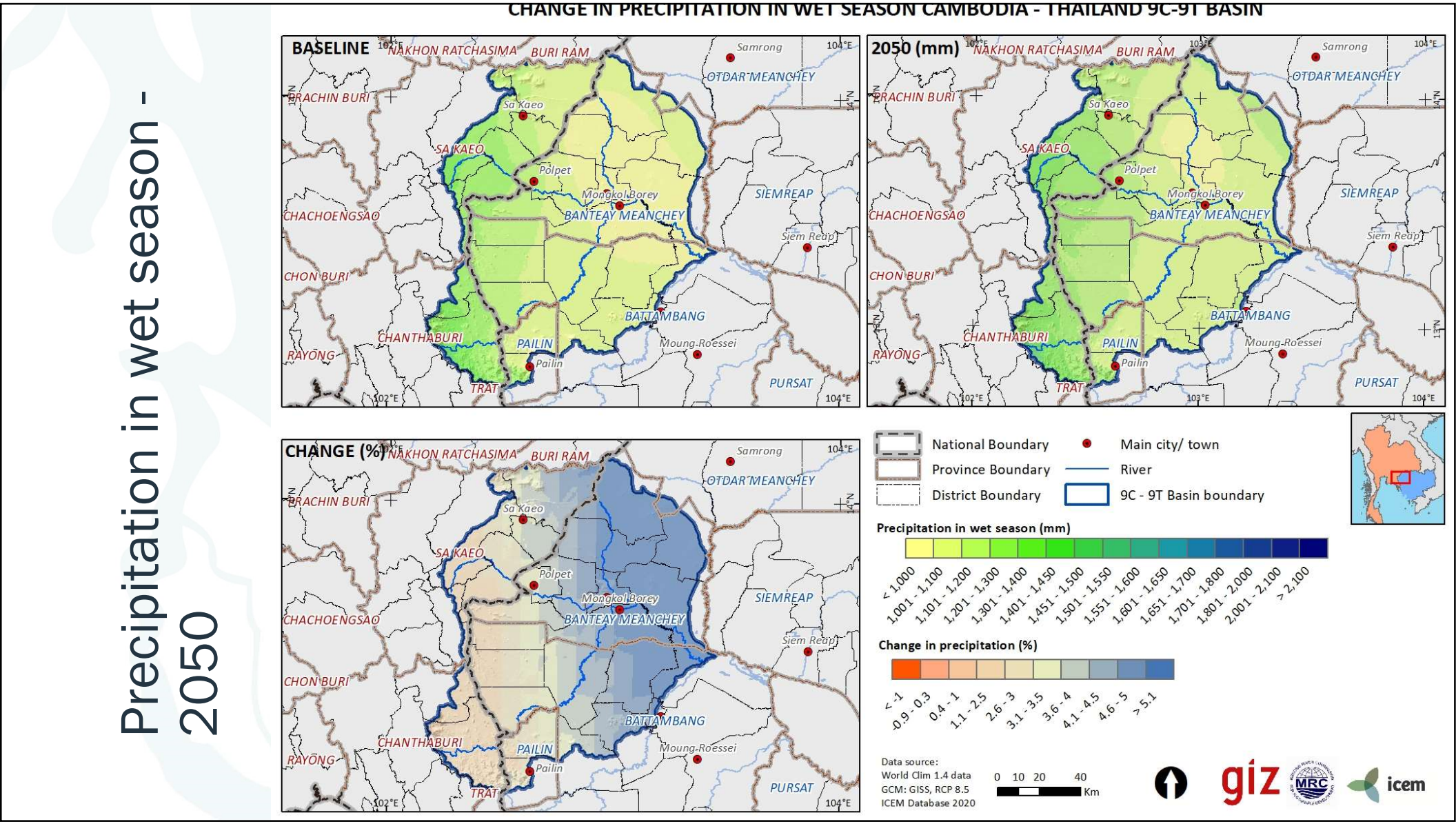
Precipitation in wet season - 2050



Next steps in the 9C-9T strategic planning and "SEA" process

- Review and revision of the sub-basin action plan - 2022
- Financing of major GEF project to support Phase III – 2023 to 2027 includes:
- Formalising the role of the SEA process and tools – *"A transboundary strategic environmental assessment of the 9C-9T basin action plan is conducted".*
- Review and revision of the joint sub-basin action plan and preparation of the Thai and Cambodian plans for their parts of the river basin – 2026

- SEA aims to influence:
  - The joint 9C-9T sub-basin strategic action plan
  - The "Tonle Sap" sub-basin river management plan
  - Formulation of the Stung Mongkol Borey river basin mgt plan
  - The provincial/local government development plans

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Air pollution study ("SEA") in Lao PDR (with regional analysis on sources and dispersal)

- Adopting SEA process and tools
- Generating new information and knowledge

Overview: Stages of SEA

This methodology presents a common set of SEA stages as detailed in the national SEA guidelines.

However it is important to note, that there is *no single best way to conduct an SEA.*

The exact process needs to be shaped by the SEA team, the SEA proponent and the stakeholders, depending on the nature of the plan being assessed, the capacities of the SEA team and the resources and time available.

“SEA” study seeks to influence relevant strategic plans

For example:

- Lao PDR. National Pollution Control Strategy and Action Plan
- Lao PDR National Strategy on Climate Change
- Nationally Determined Contributions to Climate Change
- Policy on clean and green industry strategy
- Agriculture Development Strategy
- In addition to contributing practical support to the national monitoring program and pollution inventory development

Key messages

In summary:

- A new breed of SEA type assessments is developing which is expanding the tools and technologies applied and the kinds of knowledge generated

Drivers for this new breed of SEAs are:

- Climate change forcing more effective integration of the assessments into strategic planning
- Increasing severity of flood and drought
- The need to clarify the costs and benefits of strategic options requiring new tools and ways of determining economic return and costs
- More serious regional and national pollution levels with far reaching public health effects
- More extensive losses in ecosystem health and services with far reaching economic and livelihood effects

Each of those drivers are expressed as area based problems requiring urgent strategic responses from government agencies in all sectors and levels

Strategic assessments are becoming an essential tool in addressing these global challenges

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SEA SYSTEMS IN MEKONG COUNTRIES

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SEA in China

One of the most rigorous mandatory systems in the world:

- A draft plan without an SEA cannot be approved and implemented.
- Projects cannot proceed without an SEA of the umbrella plan
- SEA mandatory for:
  - river basin plans,
  - land use plans,
  - plans for regions and
  - plans prepared by ten main development sectors - industry, agriculture, livestock, forestry, energy, water, conservation, transportation, urban construction, tourism and natural resources development.
- Some 100 SEAs conducted at national level and more than 300 at local government level.

SEA in Vietnam

SEA mandatory for 6 categories of strategies and plans:

1. National socio-economic development plan
2. SEDPs for all sectors (each central govt. agency)
3. SEDPs for 64 provinces and cities
4. Inter-provincial (regional) – land use, forest protection and development, natural resource development
5. Special economic region plans
6. River basin plans

SEA in Vietnam

- Strong legal basis for mandatory SEA of development strategies and plans
- Shifts responsibility for SEAs to plan "owners"
- Must be an open process with stakeholder involvement
- Started with extensive program of piloting SEAs – now all sector SEDPs at national level and all provincial SEDPs.
- SEAs must cover environmental, social and economic effects
- River basins the focus of the most comprehensive SEAs under the new legal framework
- Not been an easy tool to apply – there have been many institutional and capacity obstacles

In the Mekong region, SEAs often "stand in the shoes" of strategic planners

- Often strategic plans are not in place or are not adequate (eg in considering strategic alternatives or cumulative effects)
- With limited information SEAs tend to expand beyond a rapid audit of plans to fill a strategic planning void
- SEAs become an integral part of the planning process by:
  - *Filling critical information and analytical gaps with new research*
  - *Facilitating a consultative process that builds consensus and allows for debate on "hot" issues*
  - *Introducing the consideration of alternatives and the environmental and social consequences*
  - *Assesses the cumulative effects and long term trends*

Some case studies of SEAs and strategic plans

SEA of the Rayong Province Development Plan

SEA of hydropower development on the Mekong River mainstream

SEA of the GMS North South Economic Corridor Strategic Action Plan

SEA of the Vu Gia – Thu Bon River Basin Development Plan, Vietnam

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i. Context: Rayong Provincial Development Plan (RPDP)

Since the mid 1980s, the three Eastern Thai Provinces of Chachoengsao, Chonburi, and Rayong have been promoted as strategic areas for industrial growth and production.

Under the EEC Development Plan, approved in February 2018, these provinces will be the focus of accelerated economic growth, including new industrial areas, new urban centres, expansion of ports and airports and new railway lines toward the goal of developing the region as an arterial hub for trade, investment, tourism and regional transportation.

Why a pilot SEA of the Rayong Province Development Plan?

- Rayong is a government priority for continuing economic investment
- It is Thailand's main energy hub
- It is experiencing serious growing pains as a result of three decades of rapid economic, social and environment change
- Many national line agencies and regional organisations are involved in shaping development in the province opening the way for integrated cross sector planning
- The province has the greater part of two important river basins within its borders allowing for upstream – downstream analysis and consideration of inter-provincial planning
- The RPDP is soon to enter into a new planning phase in which the existing plan will be reviewed and revised leading to a five year 2021-2025 plan
- The Rayong Governor and local administration are strongly supportive of the SEA – and committed to integrating its recommendations into the existing and new plan
- There are 76 provinces in Thailand, and so there is significant potential for replication of SEA best practice as demonstrated in the Rayong SEA and the national SEA guidelines.

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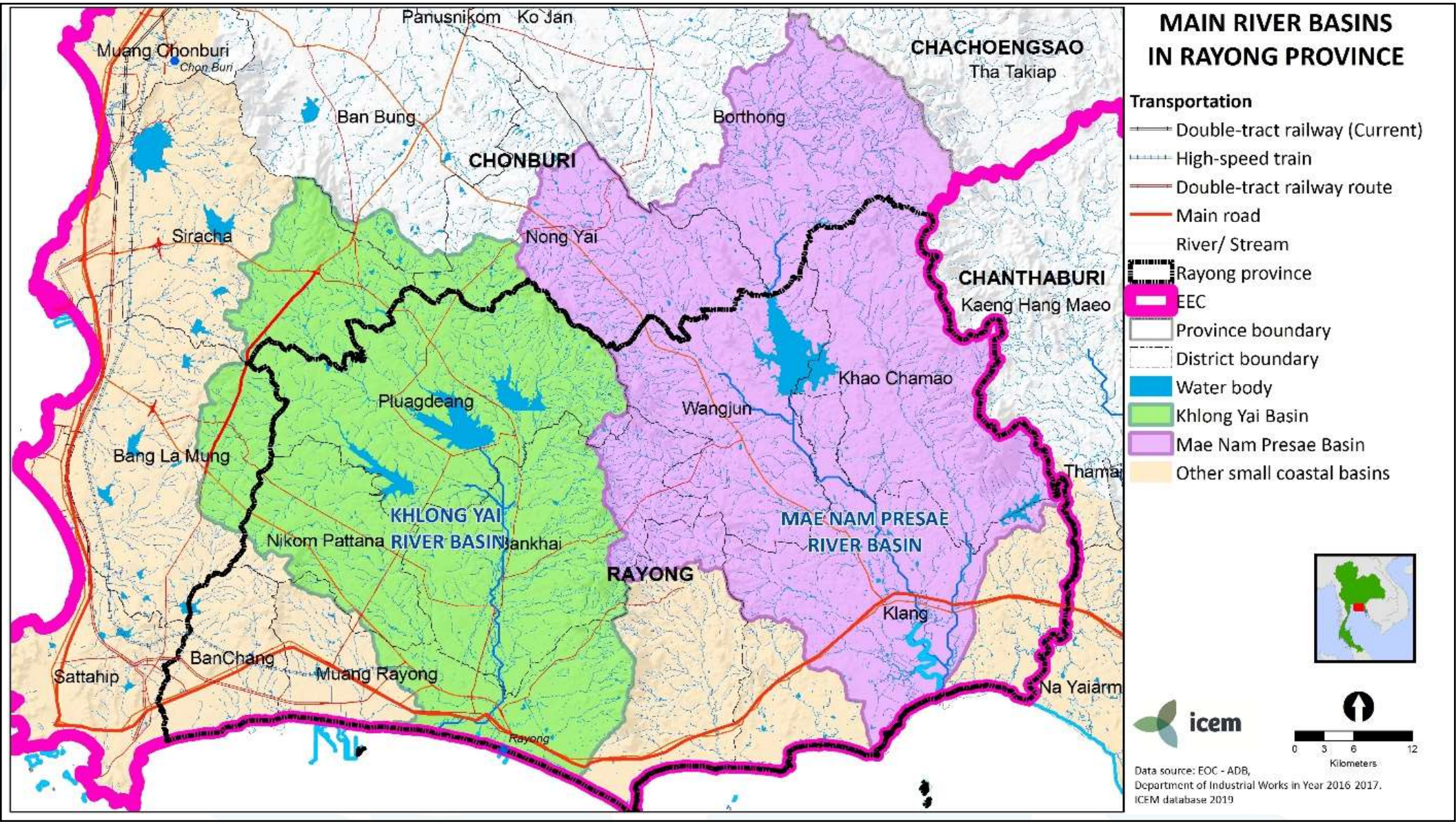
MAIN RIVER BASINS
IN RAYONG PROVINCE
Transportation
Double-tract railway (Current)
High-speed train
Double-tract railway route
Main road
River/ Stream
Rayong province
EEC
Province boundary
District boundary
Water body
Khlong Yai Basin
Mae Nam Presae Basin
Other small coastal basins
Panusnikom
Ko Jan
Muang Chonburi
Chon Buri
Ban Bung
CHONBURI
CHACHOENGSAO
Tha Takiap
Borthong
Siracha
Nong Yai
CHANTHABURI
Kaeng Hang Maeo
Khao Chamao
Wangjun
Pluagdeang
Bang La Mung
KHLONG YAI
RIVER BASIN
MAE NAM PRESAE
RIVER BASIN
Thamai
Nikom Pattana
Bankhai
RAYONG
Klang
BanChang
Sattahip
Muang Rayong
Na Yaiarm
Rayong
icem
0 3 6 12
Kilometers
Data source: EOC - ADB,
Department of Industrial Works in Year 2016 2017.
ICEM database 2019

Stage 1: Scoping – Defining the focus of the SEA

Key questions:

What is the substantive focus of the SEA?

- Strategic issues: What are the most important issues of concern to sustainable development of Rayong Province?
- Strategic themes: Grouping the strategic issues into themes and ranking their importance
- Setting sustainable development objectives for each strategic theme
- Linking indicators to each of the SD objectives

What is the spatial focus?

- What should be the geographic/spatial boundaries of the SEA?

What is the temporal focus?

- How far back and into the future should the SEA go?

SEA substantive scope: Strategic sectors/themes of concern to Rayong's development

Development sectors

1. Water resources
2. Agriculture
3. Industry
4. Urban development
5. Transport
6. Energy and power
7. Fisheries
8. Tourism

Core themes

Quality of life themes

9. Social and livelihoods
10. Biodiversity and forests
11. Environmental quality
12. Climate change

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Stakeholder ranking of strategic themes and issues of concern

- The ranking of 12 strategic themes of greatest concern to stakeholders sharply identified
  - environment quality and urban expansion as the two most important followe
  - climate change and fisheries
- The ranking of 43 strategic issues of concern identified
  - environmental quality, particularly relating to industrial development - 19%,
  - social well-being, particularly “inequitable access to education” and “job competition with migrant workers” - 17%,
  - water resource management issues - 16%, and
  - urban development - 16% in particular “urban expansion affecting environmental quality and social well-being”.

Theme	Score %
Environmental quality	32
Urban expansion	28
Climate change	9
Fishery	7
Biodiversity and forest	4
Water resources	4
Agriculture	4
Power and energy	4
Social and quality of life	4
Tourism and others	4
Transportation	0
Industry	0

SEA spatial scope

- The Rayong Provincial boundary
- The SEA looks beyond the provincial boundary when defining the key drivers of development within Rayong ie:
  - existing and planned development within the linked river basins – Klong Yai and Prasae
  - the adjacent coastal and marine environment
  - the EEC region
- The SEA is seeking to influence all drivers of development within Rayong by establishing a framework of sustainability which all actors must respect

Strategic options assessed

1. A business as usual (BAU) scenario (without the Rayong Provincial Development Plan)
2. Full implementation of the current Rayong Provincial Development Plan implementation scenario
3. A sustainable development pathway scenario

All SEAs need to define a range of strategic “alternatives” to be tested against a set of sustainable development objectives for each sector theme

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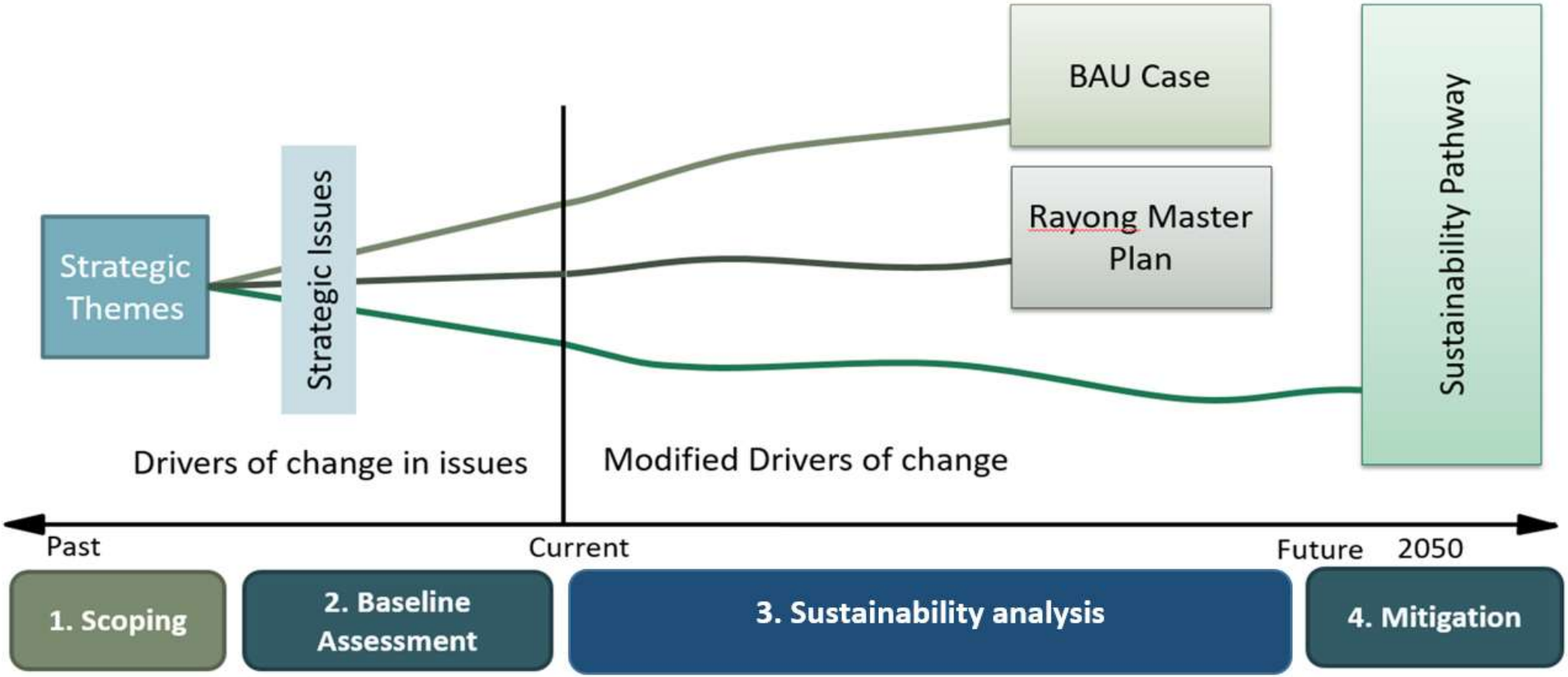
SEA trend analysis



Structure of sustainable development pathways

SD pathway for each of the 12 themes under:

1. Development themes/sectors
2. Quality of life themes

A hierarchy of sustainability measures for each theme:

- SD principles and objectives of Rayong Province
- SD measures directed at the Rayong Provincial authorities
- SD measures directed at the river basin committees (DWR/ONWR)
- SD measures directed at regional agencies – eg EEC and Regional Environment Office
- SD measures directed at national line agencies with activities in Rayong
- Areas for policy reform directed at national government

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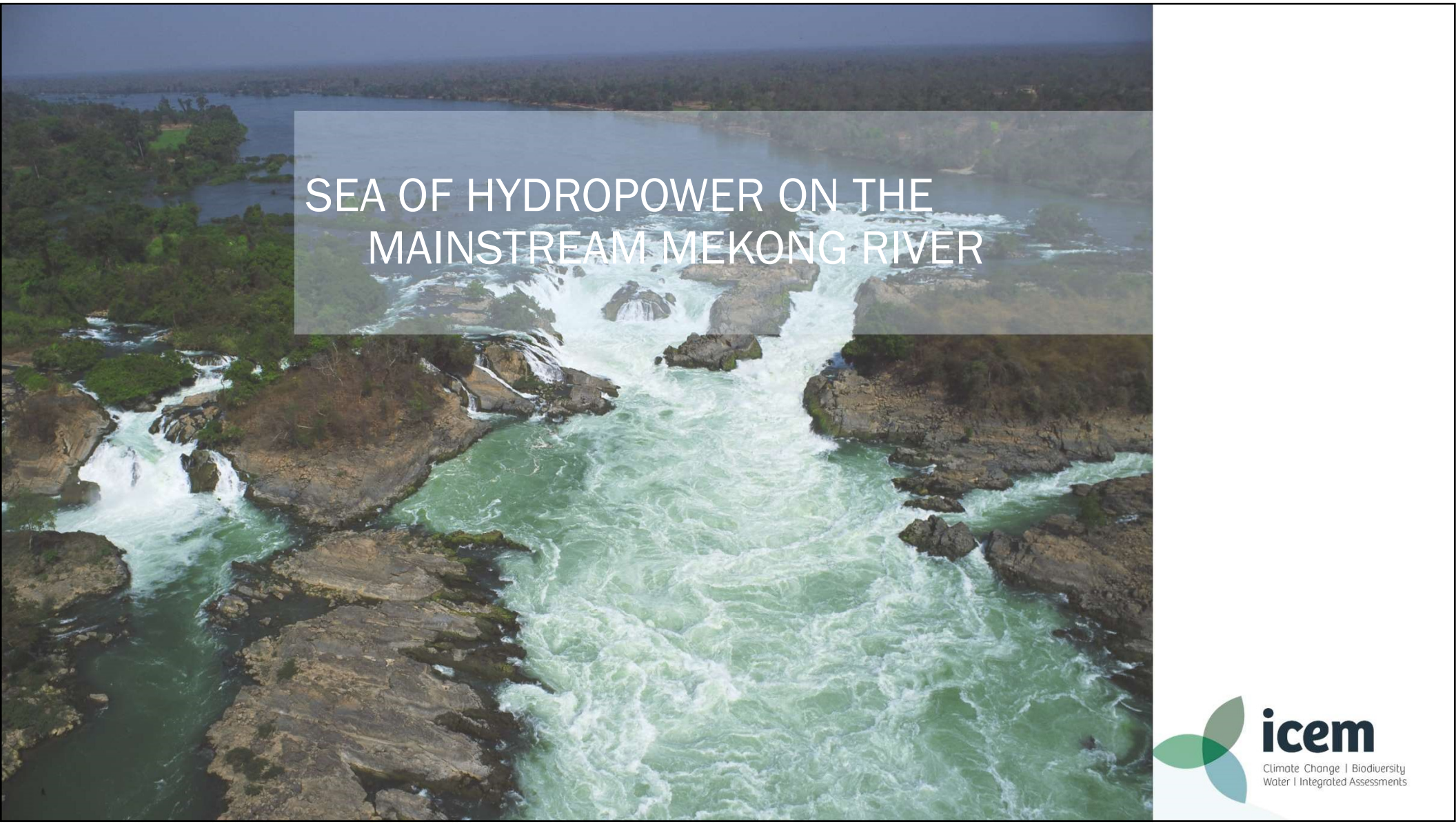

SEA OF HYDROPOWER ON THE MAINSTREAM MEKONG RIVER

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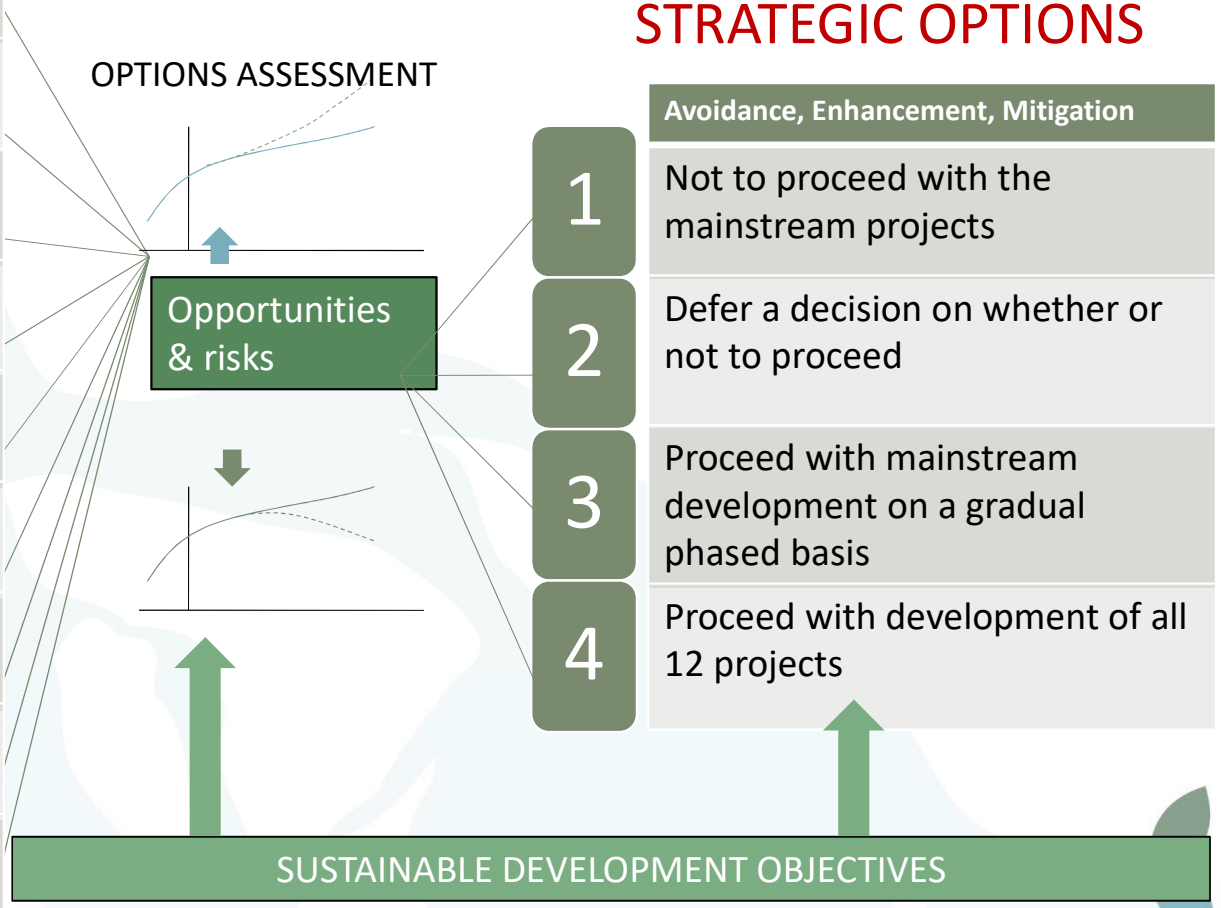
The 12 proposed mainstream projects

No	MAINSTREAM PROJECT	DEVELOPER
1	Pak Beng	**China:** Datang International Power Generation
2	Luang Prabang	**Vietnam:** PETROVIETNAM Power Corporation
3	Xayaburi	**Thailand**: SEAN & Ch. Karnchang Public
4	Pak Lay	**China**: CEIEC & Sino-Hydro
5	Xanakham	**China**: Datang International Power Generation
6	Pak Chom	**Thailand/Laos:**
7	Lat Sua	**Thailand:** Italian Thai Asia Corp. Holdings
8	Ban Koum	**Thailand:** Charoen Energy & Waters Asia
9	Don Sahong	**Malaysia:** Mega First
10	Thakho	**France:** Compagnie Nationale du Rhone and EDL
11	Stung Treng	**Vietnam**
12	Sambor	**China:** Southern Power Grid

SEA Avoidance, enhancement, mitigation process

THEME	KEY ISSUES
Power & Energy	1. … 2. … 3. …
Economic systems	1. …. 2. … 3. …
Hydrology & Sediment	1. …. 2. … 3. …
Aquatic	1. … 2. … 3. …
Terrestrial& agriculture	1. …. 2. … 3. …
Fisheries	1. … 2. …. 3. ….
Social systems	1. … 2. …. 3. ….
Navigation	1. … 2. … 3. ….
Climate change	1. … 2. .. . 3. …



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The SEA stakeholders concluded:

THEME	ISSUE	LAO PDR	CAMBODIA	THAILAND	VIET NAM
Hydrology and sediment	Changes in patterns of maximum water levels, rates of rise and predictability				
	Changes in sediment transport and deposition				
	Changes in nutrient transport				
Terrestrial ecosystems and agriculture	Habitat loss and degradation				
	Changes in Land use				
	Changes in irrigated agriculture				
	Changes in River bank gardens				
Aquatic ecosystems	Change in productivity of aquatic habitats				
	Changes in populations of rare and endangered species				
	Changes in water quality				
Fisheries	Changes in long distance migration				
	Changes in fish species biodiversity				
	Changes in fish production				
Social systems	Changes in poverty and natural resource based livelihoods				
	Changes in health and nutrition				
	Social effects of resettlement, land acquisition and loss of access				
	Changes in cultural values and patterns				
Economics	Contributions to national economy - Export earning				
	Contributions to national economy - Foreign Direct Investment				
	Contributions to local economies (district and community level				
Energy and Power	Achieving energy security				
	Meeting national energy demands				
	Meeting local energy needs				
Climate change	Relative emissions of green-house Gas				
	Direct impacts of climate change on hydropower projects - extreme events & dam security				
	Combined effect of climate change and mainstream dams on food security				

Large negative | Negative | No impact | Positive | Large Positive | Not relevant

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The SEA stakeholders concluded:

Benefits

1. Lao PDR
2. Cambodia
3. Thailand
4. Vietnam

Costs

1. Vietnam
2. Thailand
3. Cambodia
4. Lao PDR

- The Lao group placed highest significance on the power benefit, while the Viet Nam and Thai groups gave the least significance to this benefit – even though they would consume most of the power
- All groups recognised that benefits would be focused on power & economic themes while risks would focus on natural & social systems, particularly fisheries and hydrology & sediment
- All groups were concerned over potential for increased poverty from mainstream development despite recognition of high returns from power sales

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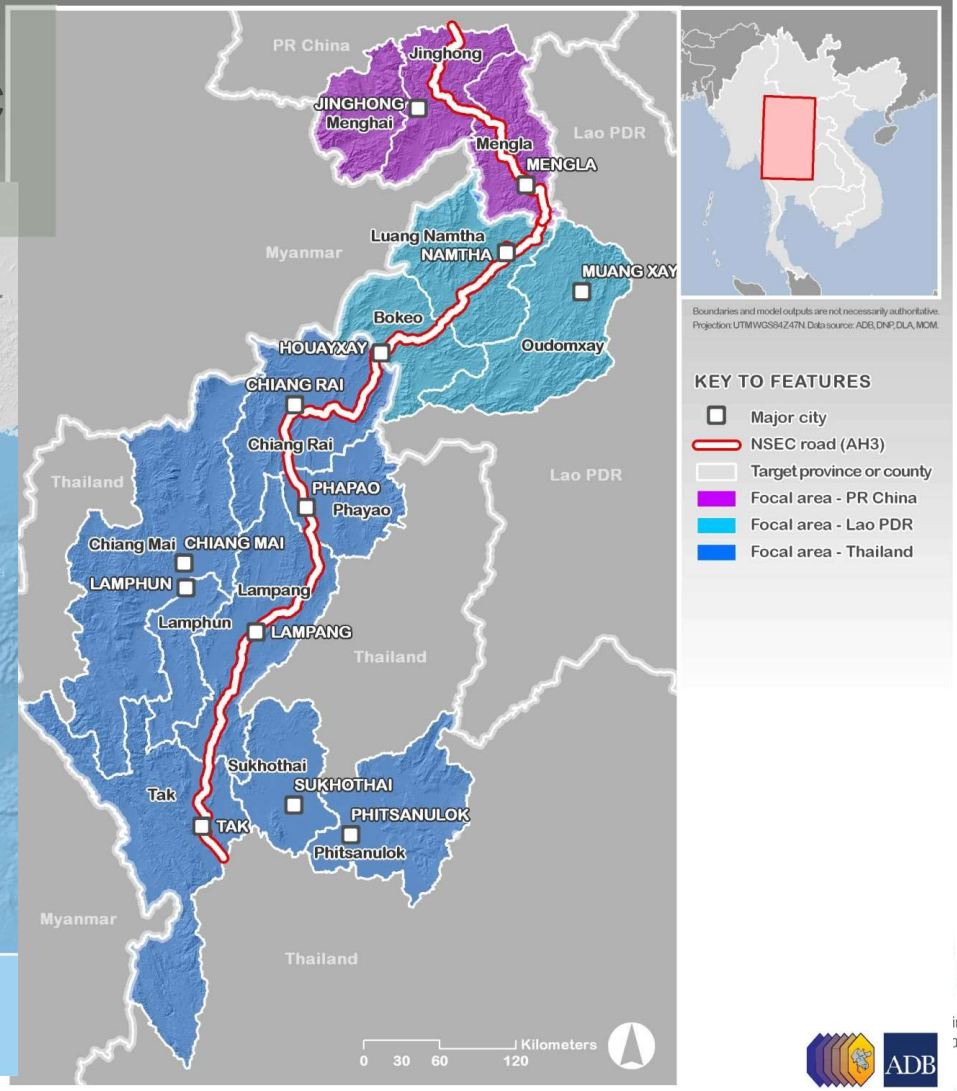
SEA recommendation and influence

- Decisions on mainstream dams should be deferred for a period of ten years (strategic option 2) *with reviews every three years to ensure that essential deferment-period activities are being conducted effectively*.

- Cambodia and Vietnam endorsed the SEA recommendations
- Vietnam funded a follow up "SEA" on impacts of upstream development on the Delta in VN and Cambodia
- MRC conducted/is conducting comprehensive studies as recommended by the SEA
- Lao PDR conducted study to justify and rationalise the cascade
- Thailand sat on the fence
- But – Lao PDR (and Thailand) went ahead with Xayaburi and the other projects follow

SEA OF THE GMS NORTH SOUTH ECONOMIC CORRIDOR STRATEGIC ACTION PLAN



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Intensively consultative assessment process

Thai, Lao and Chinese stakeholders working in national groups:

1. identified critical issues of concern to the three corridor governments and communities,
2. sorted the issues according to economic, social and environmental themes;
3. identified strategic objectives for economic, social and environmental themes and
4. assessed the potential positive or negative effects of each Strategic Action Plan measure against the strategic objective for each theme

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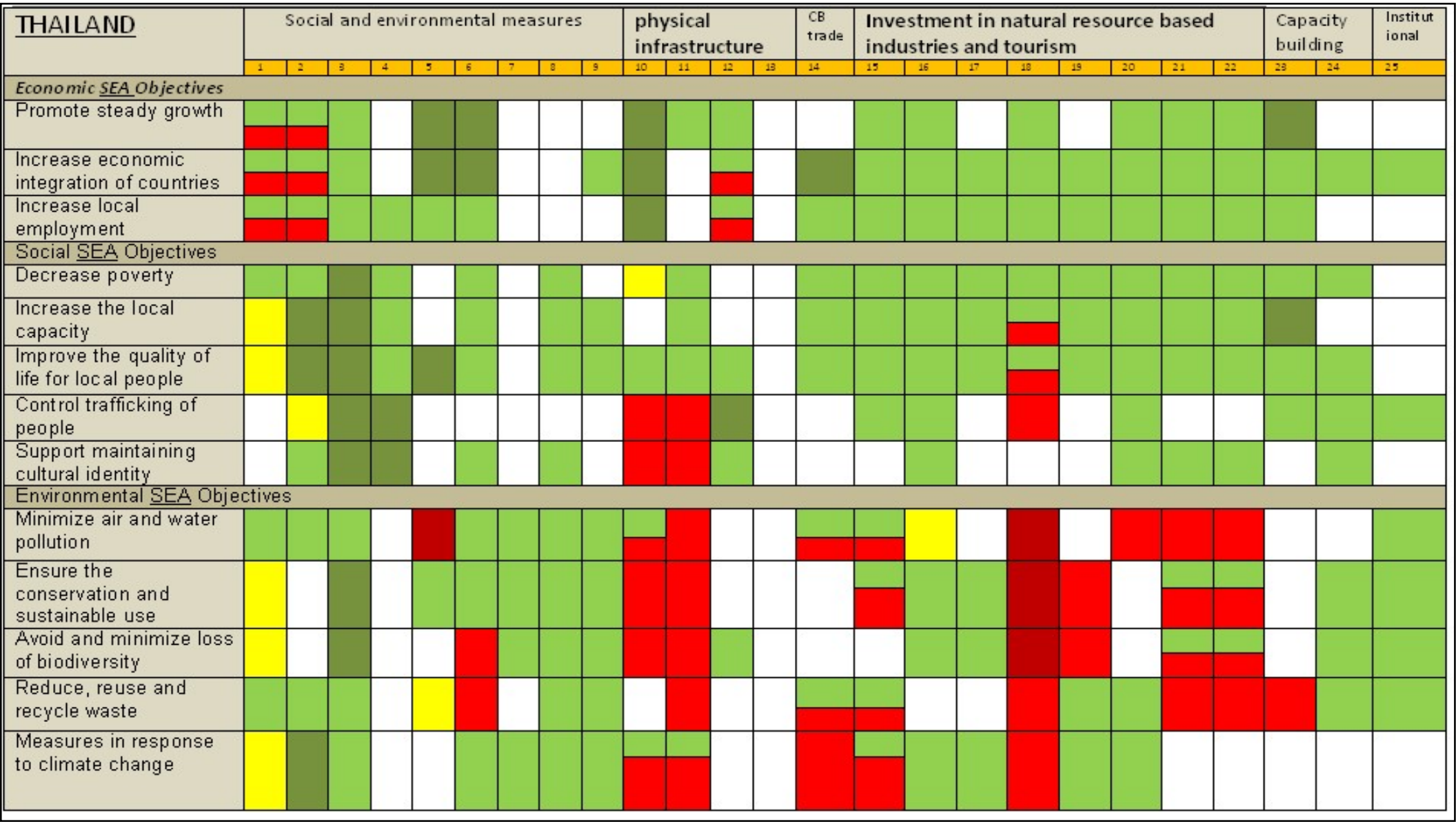
THAILAND
Social and environmental measures
physical infrastructure
CB trade
Investment in natural resource based industries and tourism
Capacity building
Institutional
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Economic SEA Objectives
Promote steady growth
Increase economic integration of countries
Increase local employment
Social SEA Objectives
Decrease poverty
Increase the local capacity
Improve the quality of life for local people
Control trafficking of people
Support maintaining cultural identity
Environmental SEA Objectives
Minimize air and water pollution
Ensure the conservation and sustainable use
Avoid and minimize loss of biodiversity
Reduce, reuse and recycle waste
Measures in response to climate change

The SEA also assessed strategic transport alternatives and routings

- The SAP only identified a road corridor from Kunming to Bangkok passing through 3 provinces of Lao PDR
- The SEA assessed strategic transport options – road, rail, air, water
- Climate change and energy implications of each sub-sector alternative
- In addition to transport sub-sector strategic alternatives the SEA considered the economic, social and environmental implications of various routing for the road applying:
- Multi-criterial analysis modelling
- The CLUE model for future land use simulation
- Vulnerable area modelling (protected areas)

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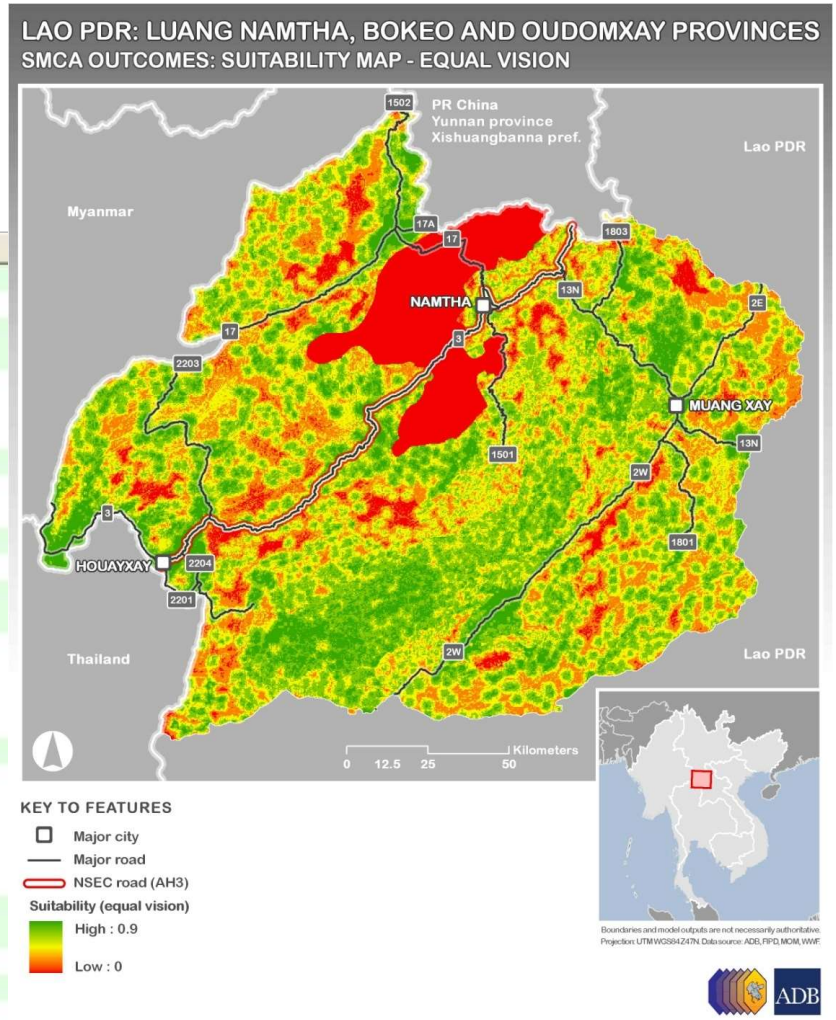
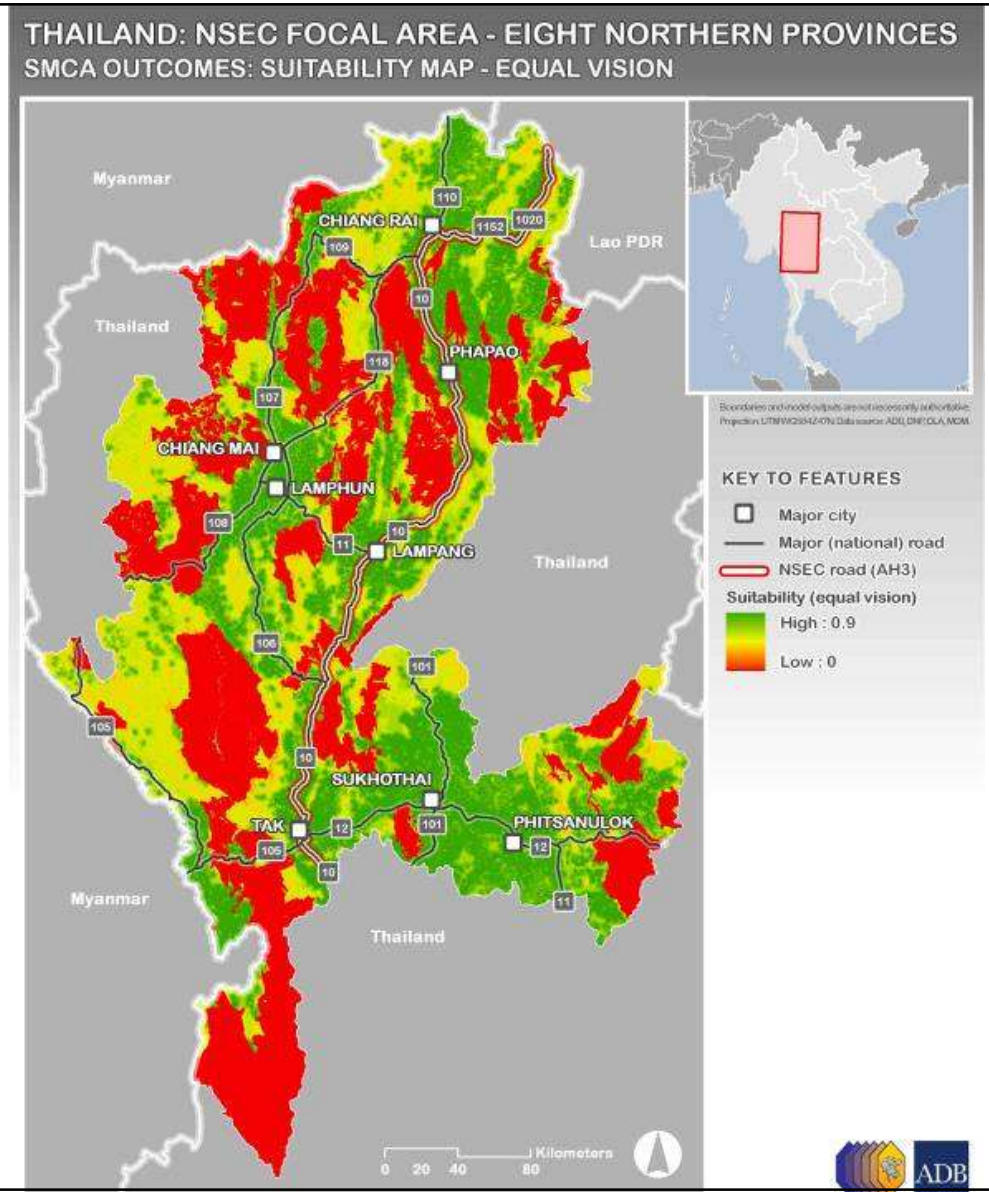
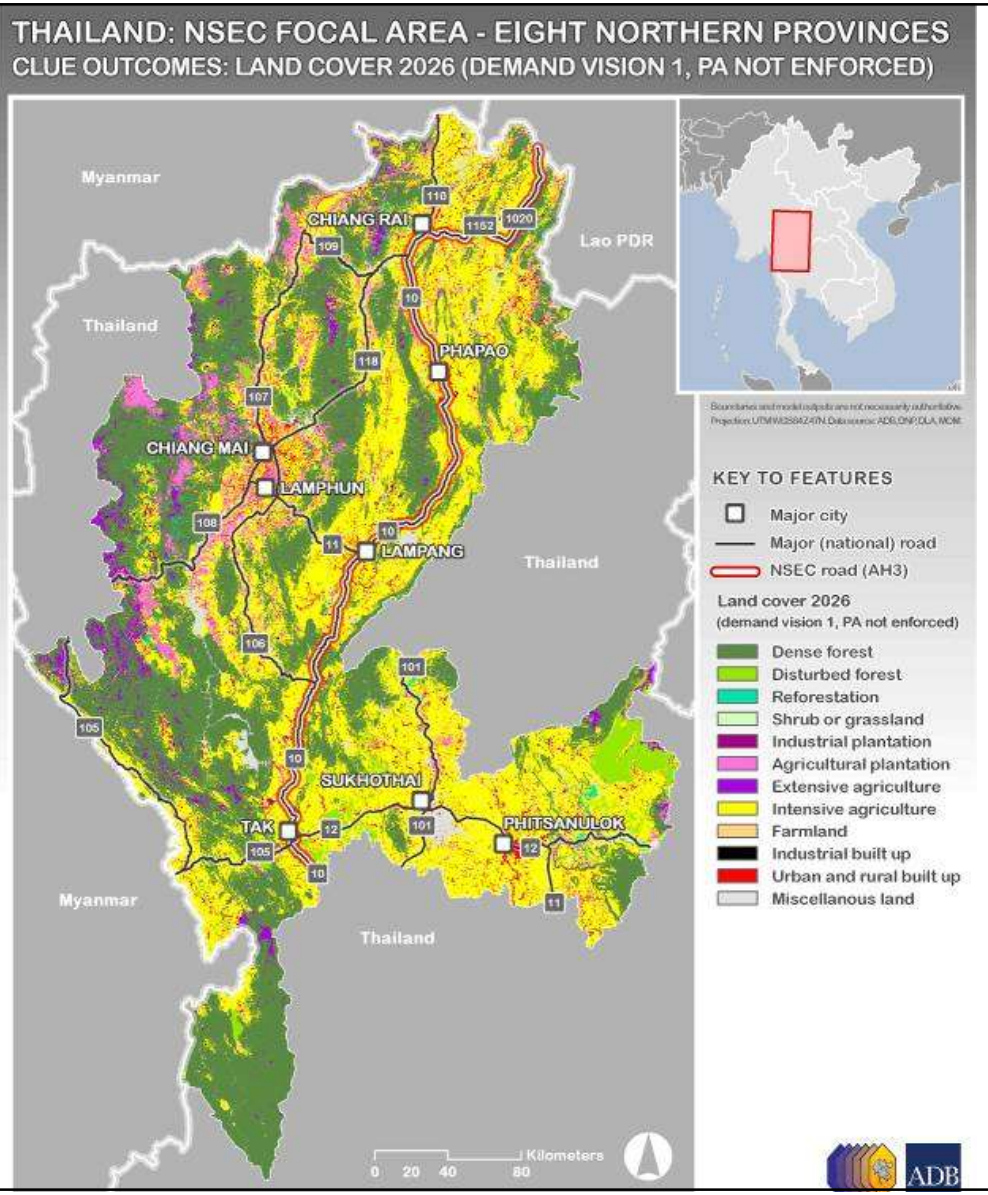
Routing suitability modelling using Spatial Multi Criteria Analysis

Weighting of individual economic, social and ecological criteria defines different development priorities

Criteria Tree	
Suitability Map for the NSEC - Section Lao PDR -- Direct	suit_total
Protected Area - Restriction -- Std:Inside [0,0]	npa250
0.33 Environment -- Direct	suit_env
0.50 Biodiversity -- Direct	suit_env_bd
0.50 Protection Forest (FIPD PFA) -- Std:Maximum	ptf250
0.30 Protected Area - Proximity to -- Std:Goal(0.000,5000.000)	npa_e_dist250
0.20 Forest type -- Std:Convex(0.000,2.000)	fc250
0.10 Water Resources -- Direct	suit_env_wr
0.67 Watershed Protection Area (FIPD WPA) -- Std:Goal(0.000,1.000)	wpa250
0.33 Water bodies and rivers - Proximity to -- Std:Goal(0.000,500.000)	riv_e_dist250
0.40 Terrain	suit_env_terr
1.00 Slope -- Std:Goal(0.000,20.000)	slp250
0.33 Economic -- Direct	suit_eco
0.30 Construction cost -- Direct	suit_eco_constr
0.40 Slope -- Std:Goal(0.000,20.000)	slp250
0.20 Existing road - Proximity to -- Std:Goal(0.000,5000.000)	rd_e_dist250
0.20 Bridges required (Rivers, water bodies) -- Std:Goal(0.000,1.000)	riv250
0.20 Settlements - Proximity to -- Std:Goal(0.000,2500.000)	vil_e_dist250
0.70 Connecting assets -- Direct	suit_eco_asset
0.20 Production Forest - Proximity -- Std:Goal(0.000,10000.000)	pf_e_dist250
0.20 Agricultural areas - Proximity to -- Std:Goal(0.000,5000.000)	agr_e_dist250
0.20 Mining Concessions and Exploration - Proximity to -- Std:Goal(0.000,10000.000)	mng_e_dist250
0.20 Tourist assets (NPA only) - Proximity to -- Std:Goal(0.000,25000.000)	npa_e_dist250
0.20 Settlements - Proximity to -- Std:Goal(0.000,2500.000)	vil_e_dist250
0.33 Sociodemographic -- Direct	suit_soc
0.50 Improving livelihoods	suit_soc_lvlhd
1.00 Settlements - Proximity to -- Std:Goal(0.000,2500.000)	vil_e_dist250
0.50 Health and Security	suit_soc_hsec
1.00 Avoid densely settled areas -- Std:Goal(0.000,500.000)	pop250nn




THAILAND: NSEC FOCAL AREA - EIGHT NORTHERN PROVINCES
SMCA OUTCOMES: SUITABILITY MAP - EQUAL VISION
Myanmar
Lao PDR
Thailand
CHIANG RAI
PHAPAO
CHIANG MAI
LAMPHUN
LAMPANG
SUKHOTHAI
TAK
PHITSANULOK
110
1152
1020
109
10
118
107
108
11
106
101
105
12
KEY TO FEATURES
Major city
Major (national) road
NSEC road (AH3)
Suitability (equal vision)
High : 0.9
Low : 0
Kilometers
0 20 40 80
ADB


THAILAND: NSEC FOCAL AREA - EIGHT NORTHERN PROVINCES
CLUE OUTCOMES: LAND COVER 2026 (DEMAND VISION 1, PA NOT ENFORCED)
Myanmar
Lao PDR
Thailand
CHIANG RAI
PHAPAO
CHIANG MAI
LAMPHUN
LAMPANG
SUKHOTHAI
TAK
PHITSANULOK
110
1152
1020
109
10
118
107
108
11
106
101
105
12
KEY TO FEATURES
Major city
Major (national) road
NSEC road (AH3)
Land cover 2026
(demand vision 1, PA not enforced)
Dense forest
Disturbed forest
Reforestation
Shrub or grassland
Industrial plantation
Agricultural plantation
Extensive agriculture
Intensive agriculture
Farmland
Industrial built up
Urban and rural built up
Miscellanous land
Kilometers
0 20 40 80
ADB

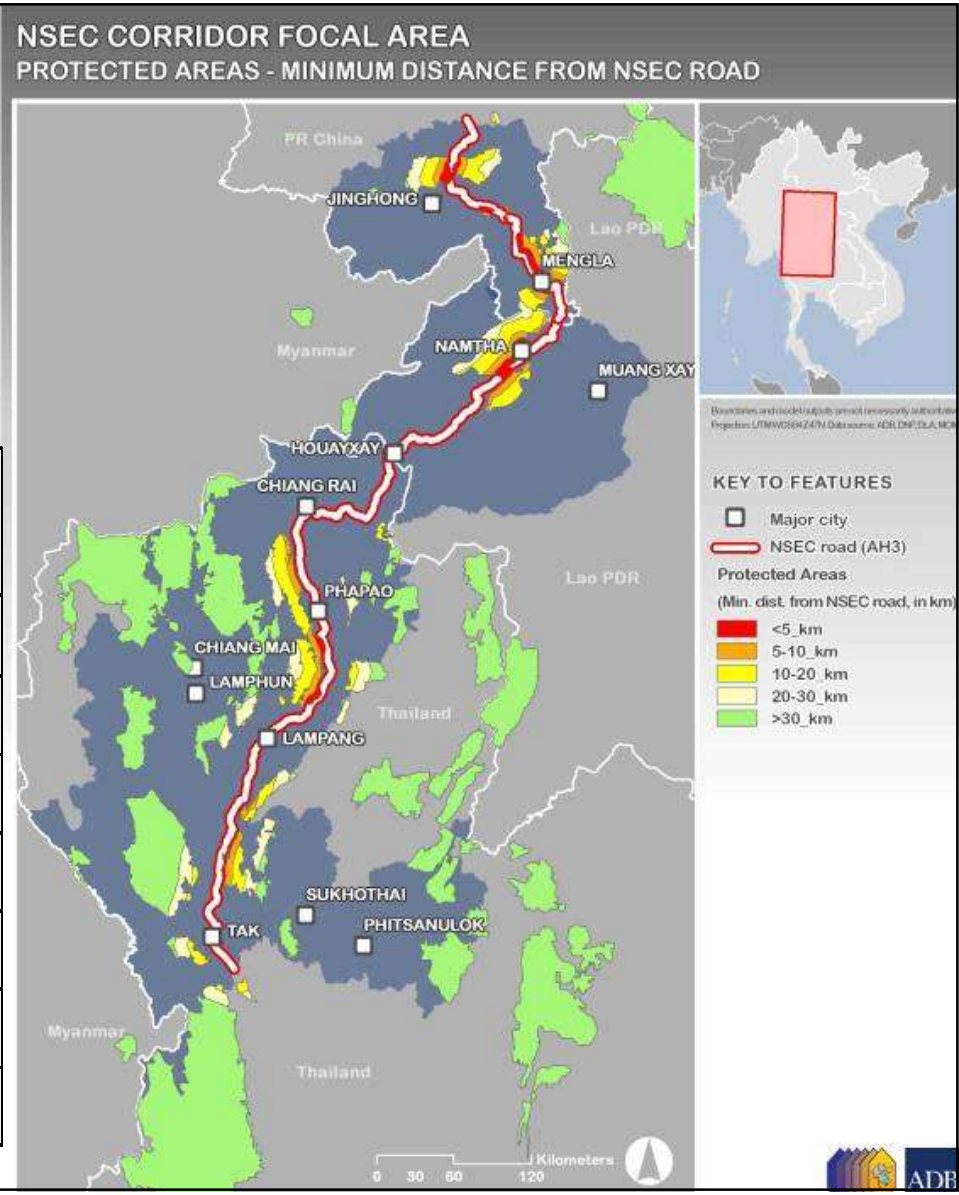
NSEC road suitability assessment

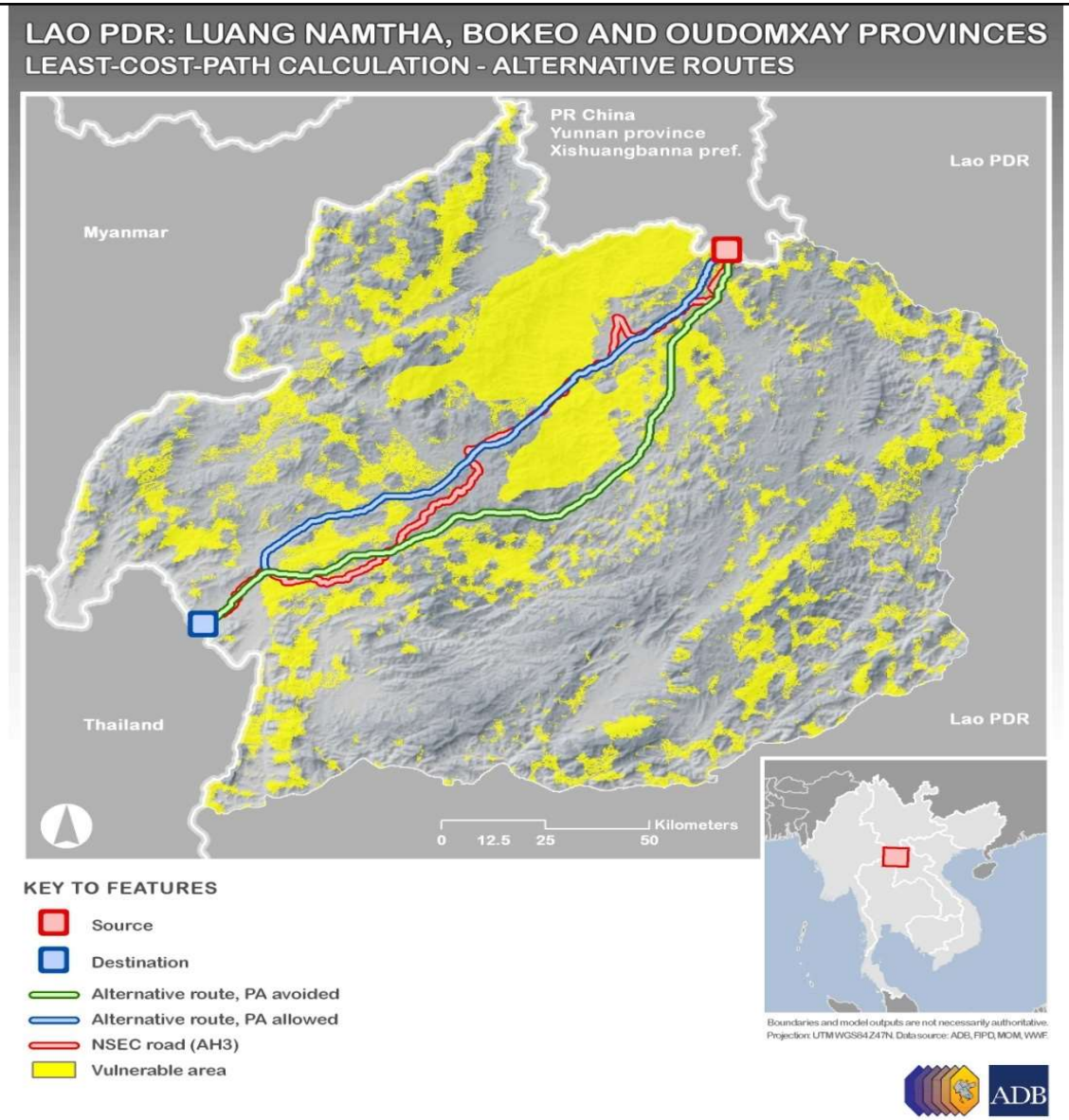
Suitability class	Lao PDR		Xishuangbanna China		Thailand	
	Ha	%	Ha	%	Ha	%
Not suitable	218693	8	291987	15	3009181	33
Low suitable	91281	3	7262	0	26543	0
Moderately suitable	2134293	75	890387	46	2743012	30
Highly suitable	384956	14	725906	38	3354018	37
Total area (ha)	**2829225**		**1915543**		**9132756**	

Vulnerable area analysis

The vulnerable area is much larger when wetlands, sensitive watersheds, natural and cultural heritage areas, and ethnic minority areas are included in the analysis.

Distance from the NSEC road (km)	Lao		Xishuangbanna		Thailand	
	ha	%	ha	%	ha	%
<5	24675	8	47393	15.2	39400	1.3
5-10	59231	19.1	51731	16.6	96500	3.2
10-20	123087	**39.7**	103325	**33.1**	237593	7.9
20-30	58043	18.7	78143	25.1	275256	9.2
> 30	44937	14.5	31400	10.1	2351318	**78.4**
Total	**309975**		**311993**		**3000068**	





Alternative routings

The suitability assessment produced a range of outputs, e.g.:

1. Alternative roads (least-cost-path calculation)
2. Vulnerable areas (below threshold suitability) to target mitigation measures
3. Suitable areas (above threshold suitability) to target development (e.g. for potential rail or feeder roads)

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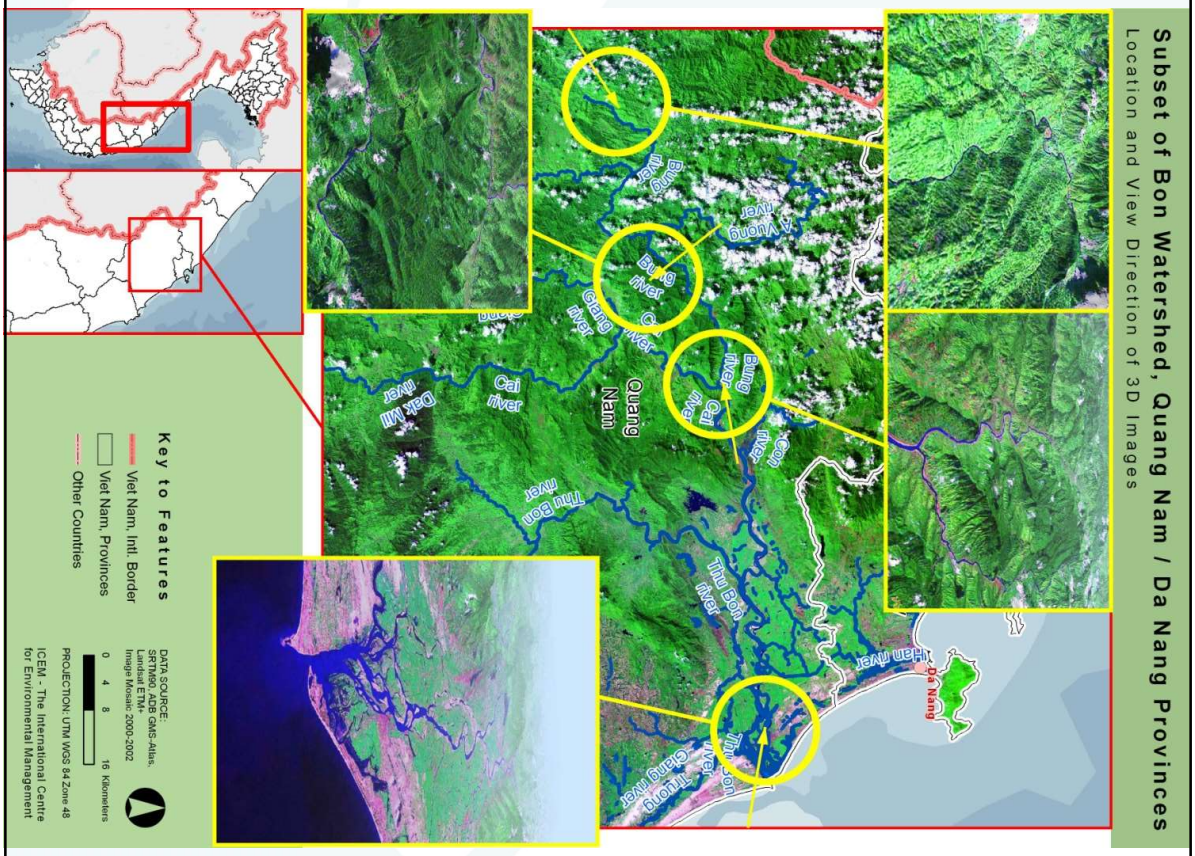
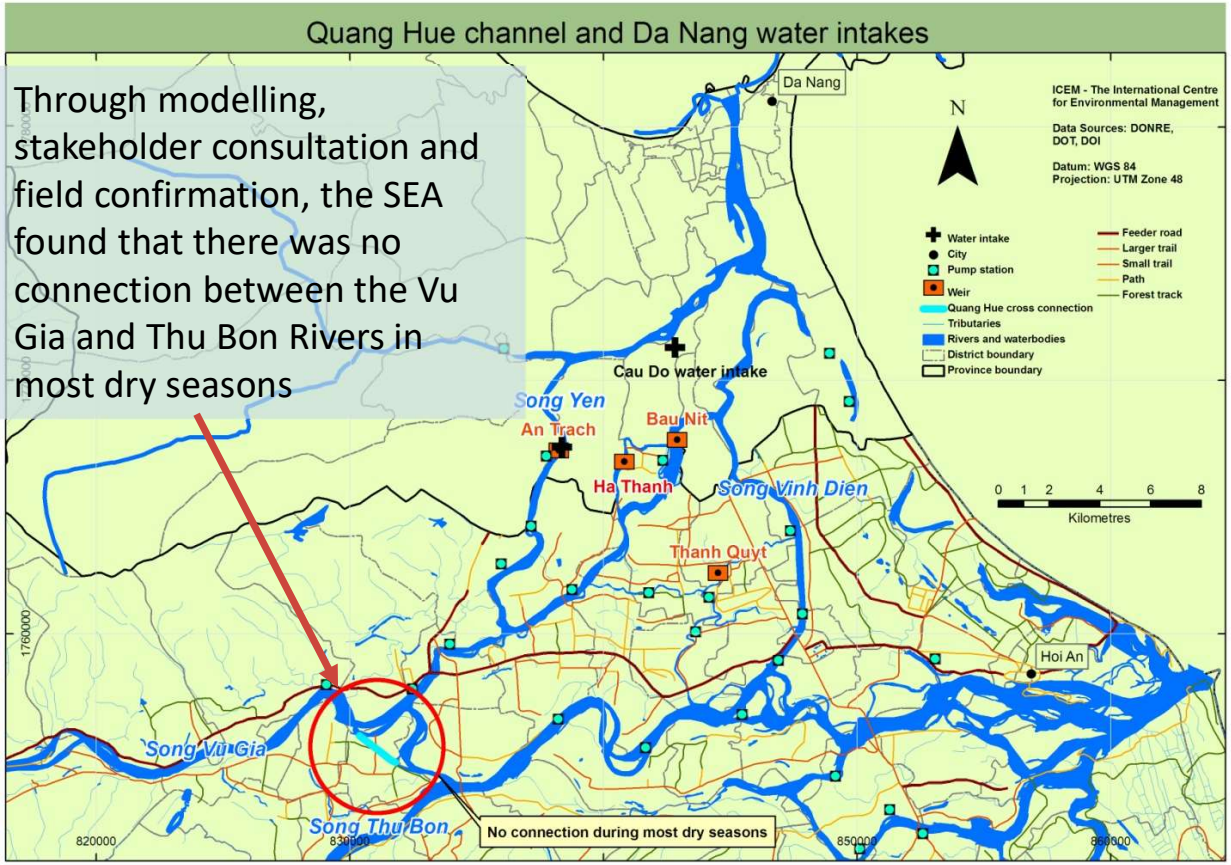
SEA OF VU GIA – THU BON RIVER BASIN DEVELOPMENT PLAN, VIETNAM



Tested strategic development assumptions – a fundamental assumption was found to be incorrect

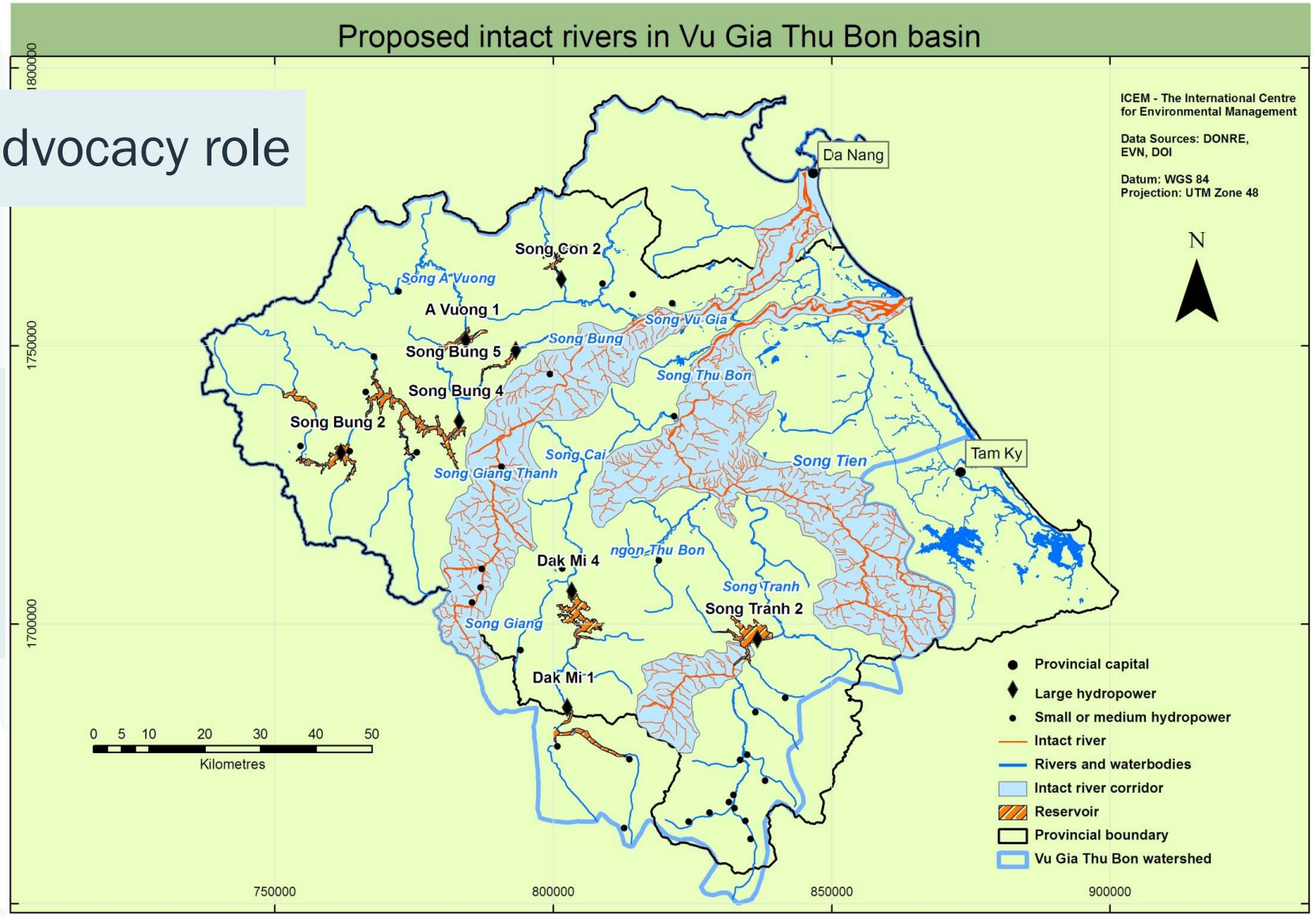
Conflict over impact of proposed development on Danang's water supply

SEA conclusion: The SEA considers that the diversion involved in the current design of the Dak Mi 4 project will create unnecessary and far reaching negative environmental, social and economic impacts in the Basin. The favoured mitigation is to redesign the project without the diversion. This will reduce the power capacity but eliminate the most serious negative risks.



SEA policy advocacy role

Adoption of intact rivers policy by QN Provincial Government



Key messages – mixed results

The SEA cases demonstrated that:

- The assessments applied new modelling and analytical tools to generate important new knowledge on strategic issues
- They each facilitated comprehensive stakeholder involvement – but often failed to mitigate conflicts and promote consensus
- They did assess strategic alternatives not dealt with in the target plans
- Some did have some influence on the target plans and but not all proposed sustainability pathways were accepted by plan makers
- Those which consider major infrastructure development plans tended to come too late in the planning process
- None of the SEA cases were well integrated into national strategic planning processes
- The more recent SEA (ie Rayong) was implemented in a more favourable and receptive strategic policy environment – which implies that SEAs are gaining recognition as important strategic planning tool.

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Thank you

National SEA Guidelines Workshop