

Cambodia • Lao PDR • Thailand • Viet Nam  
For sustainable development



# Council Study

## Domestic and Industrial Water Use Thematic Sub-scenario

5<sup>th</sup> RTWG Meeting  
Siem Reap, Cambodia  
13-14 August 2015

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

## Contents

1. Proposed Development Sub-Scenarios
2. Assessment of Water Supply and Industrial Demand – BDP2
3. Domestic Water Use and Industrial Water Withdrawal
4. Sand mining
5. Detailed schedule
6. Challenges
7. Summary



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



## Proposed Development Sub-Scenarios

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

### Thematic Sub-Scenarios for Domestic and Industrial Water Use



- Planned Development Scenario 2040 includes level of Domestic and Industrial Water Use in 2040.
- The Domestic and Industrial Water Use will cover the following sub-sectors:
  - Domestic water supply;
  - Industrial development and water consumption; and
  - Sand Extraction.

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

## Proposed Thematic Sub-Scenarios for Domestic and Industrial Water Use



- The sub-scenarios of the domestic and industrial water use are presented as plausible outcomes of the planned development due to varying levels of implementation.
- Three development sub-scenarios are identified to illustrate these likely outcomes, including the driving forces and trends that can affect the level of implementation of the development plans.

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

## Proposed Thematic Sub-Scenarios for Domestic and Industrial Water Use



- **Sub-scenario 1:** Low Development – This sub-scenario is being implemented below planned
- **Sub-scenario 2:** Medium Development – This sub-scenario is being implemented as planned.
- **Sub-scenario 3:** High Development – This sub-scenario is being implemented above planned.

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

## Proposed Thematic Sub-Scenarios for Domestic and Industrial Water Use



- When developing the sub-scenarios, the levels of development can be varied for each sub-sector.
- A sub-scenario may represent a low development level for the domestic water use, medium development level for the industrial water use, and high development level for sand extraction industry.
- Due to the limited number of sub-scenarios (i.e., maximum of three) that can be assessed for the domestic and industrial water use thematic area, it is most likely that each sub-scenario will represent the same level of developments for all sub-sectors of this thematic area.

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

## Assessment of Water Supply and Industrial Demand – BDP2 & Domestic Water Use and Industrial Water Withdrawal



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

## Domestic and Industrial Water Use – BDP2



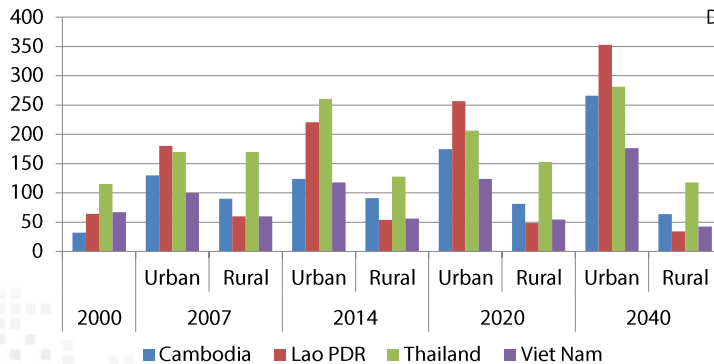
- The water supply assessing during the BDP 2 was mainly based on the population growth, while the industrial demands were taken as 20% of the gross domestic demand.

Country	Average per capita use (lit/day)			
	2000	2007	2030	2060
Lao PDR	64	Rural = 60 Town = 140 Urban = 180	Rural = 80 Town = 160 Urban = 200	Rural = 100 Town = 160 Urban = 200
Thailand	115	170	180	200
Cambodia	32	Rural = 90 Urban = 130	Rural = 100 Urban = 150	Rural = 100 Urban = 170
Viet Nam	67	Rural = 60 Urban = 100	Rural = 80 Urban = 150	Rural = 100 Urban = 175

www.mrcmekong.org

### Estimated population (million)

Country	2007 <sup>(2)</sup>			2014 <sup>(3)</sup>			2040 <sup>(4)</sup>			Source:
	Urban (%)	Rural (%)	Total (person)	Urban (%)	Rural (%)	Total (person)	Urban (%)	Rural (%)	Total (person)	
Cambodia	22	78	14.4	21	79	15.4	45.0	55.0	23.1	(1) UNESCAP, 2013
Lao PDR	31	69	5.9	38	62	6.9	60.8	39.2	8.8	(2) MRC, 2010
Thailand	32	68	63.9	49	51	67.2	52.9	47.1	68.9	(3) Department of Economic and Social Affairs, Population Division, UN, 2014
Viet Nam	28	72	87.4	33	67	92.5	49.4	50.6	116.7	(4) Department of Economic and Social Affairs, Population Division, UN, 2007



### Average per capita use (l/day)

www.mrcmekong.org

## Industrial Water Withdrawal



- According to the UNESCAP (2013), the total water withdrawal of the industrial sector was approximately 1.5% (2006), 4.9% (2005), 4.8% (2007), and 3.7% (2005) of the total water withdrawal for Cambodia, Lao PDR, Thailand and Viet Nam, respectively.

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



## Sand Mining

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

# Sand Mining

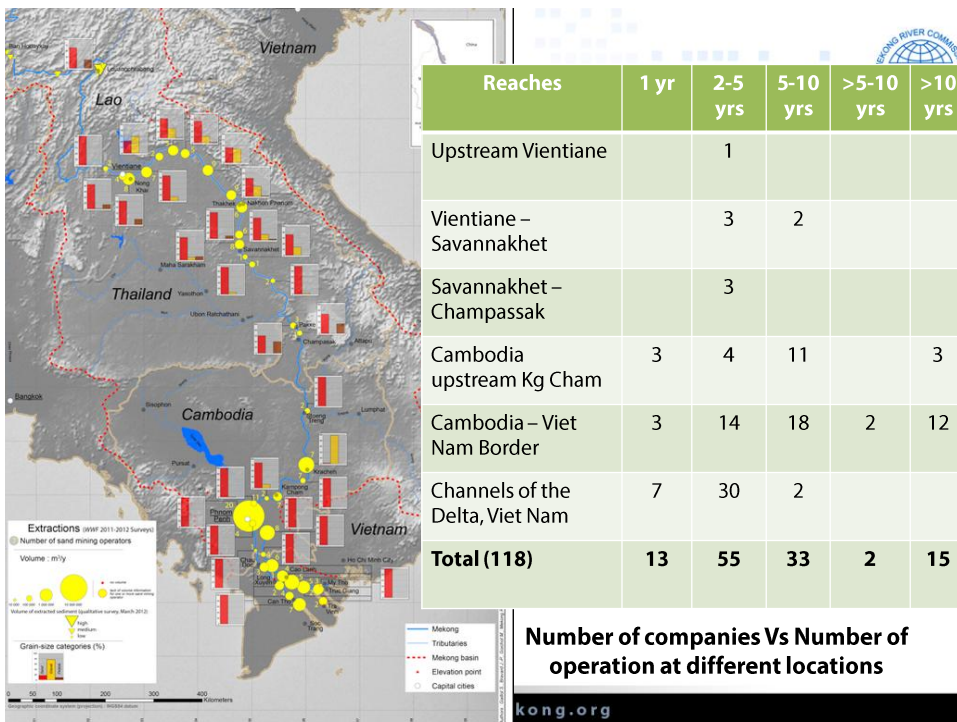
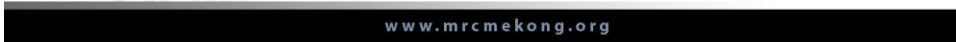
- According to study by EchoGeo (2013), a total volume of 34.48 million cubic metres (55.2 million tons, density of 1.6 ton per cubic metre of dry sand) of sediment were extracted from the Mekong mainstream in Lao PDR, Thailand, Cambodia, and Viet Nam in 2011. Of which, approximately 90% (49.68 million tons) of the total bulk on average could be considered as sand.



Country	Extractions (m <sup>3</sup> /year)				
	Sand	Gravel	Pebbles/Cobbles	Total	%
Cambodia	18,748,503	2,044,940	0	20,793,443	60
Lao	904,100	10,000	454,500	1,368,600	4
Thailand	3,677,200	857,740	0	4,534,940	13
Viet Nam	7,750,000	0	0	7,750,000	22

Source: WWF, 2013

Volume of grain-size categories per country





## Detailed Schedule

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

### Detailed Schedule



Activity	Due Date
1. Draft work plan for the formulation of development scenarios	Completed
2. Progress update – 5 <sup>th</sup> RTWG Meeting	13 – 14 Aug 2015
3. Data collection and Analysis	Aug – Sep 2015
4. National Consultations	Sep – Oct 2015
5. data collection, data gap filling and analysis	Sep – Oct 2015
6. Final draft formulated development scenarios (data and technical document)	Oct 2015
7. Approval of scenarios and data – 6 <sup>th</sup> RTWG	Oct – Nov 2015 (Tentatively)

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



## Challenges



- Taking longer time to recruit the international consultant (no applicant applied for the first time of the announcement)
- Data and information regarding the domestic and industrial water use does not exist in the MRC database, especially data on sand mining

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

## Summary



- Three thematic sub-scenarios are proposed for the domestic and industrial water use
- Most data regarding the domestic and industrial water use need to be collected from the MCs
- National plans for sand mining need to be collected from the MCs

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



The RTWG is specifically requested to:

- Take note of the progress
- Provide feedback and agree if possible with the proposed development scenarios
- Provide feedback and guidance on the approach for determining the level of development and management for each of the proposed thematic sub-scenarios
- When possible, provide inputs on data availability from the MCs and related technical issues

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



**THANKS FOR YOUR KIND  
ATTENTION!**

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