



Contested Futures in the Mekong Region

Mekong seminar, June 9th 2014, Finland

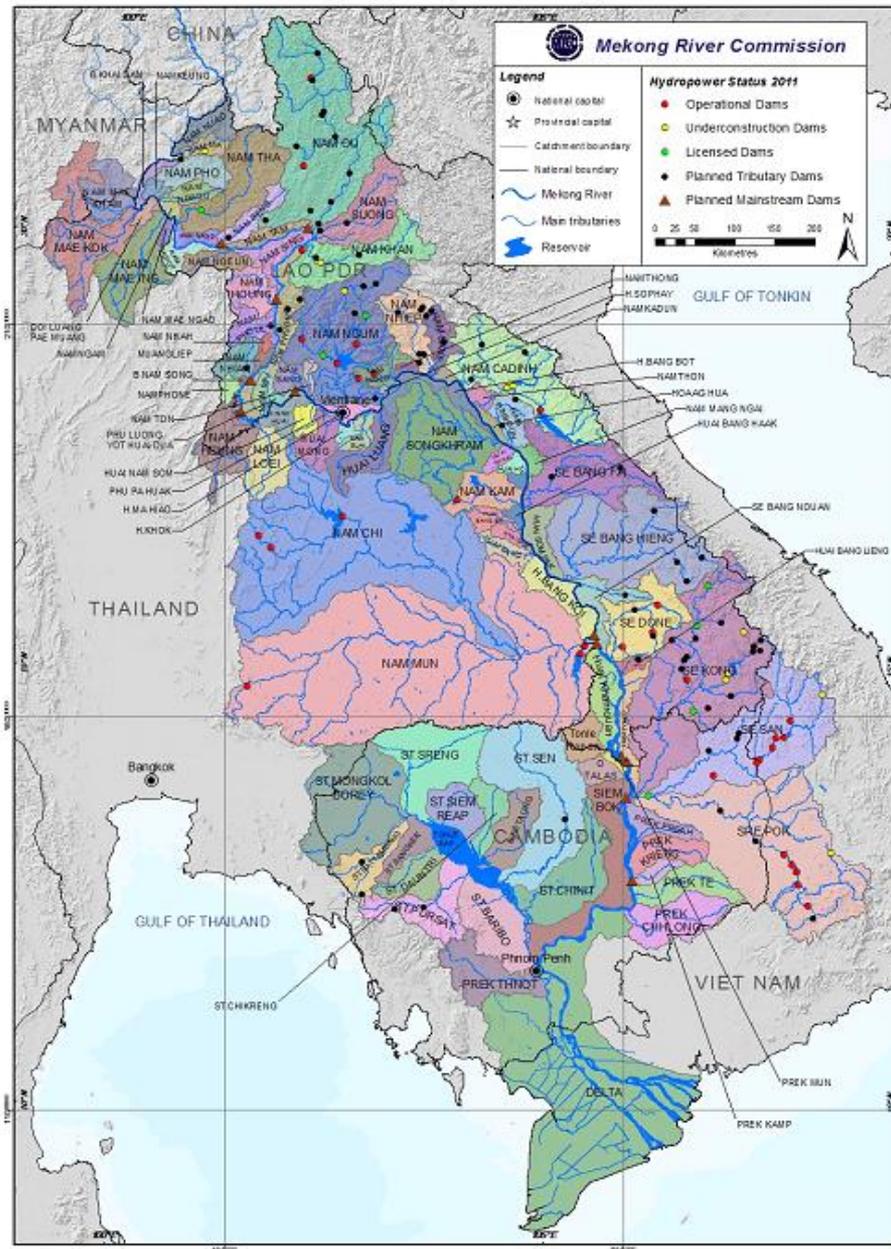
Hydropower development in Cambodia:
An emerging interest in benefit sharing

By Thuon Try

Outlines

1. Introduction
2. Geographical of development
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I. Introduction



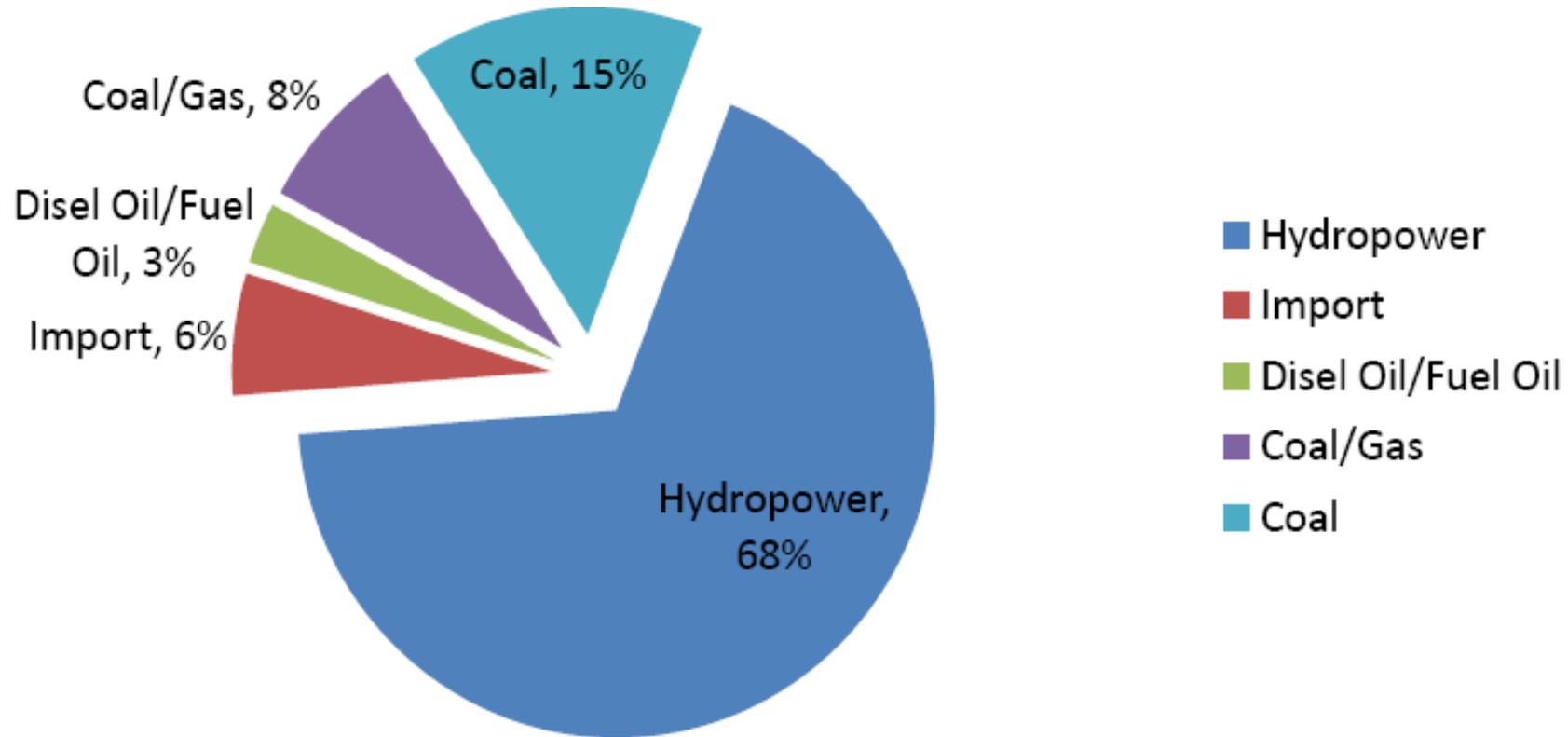
The Mekong and its tributaries

- 27 large tributaries (with catchments over 5000 sq km),
- 50 medium tributaries (with catchments between 1000 – 5000 sq km), and
- 27 small tributaries (with catchments under 1000 sq km).

Introduction

- One of the resource rich country, in particular water: electricity and for economic growth and poverty alleviation.
- Energy demand has increased: by 2009:472MW and 2010: **538 MW**. Phnom Penn has consumed up to 300 MW.
- The master plan of power system development plan (2008-2022) projected that by 2022, the energy demand in Phnom Penh will increase from the current **381 MW in 2010** to 2045.1 MW in 2022 (MIME 2009).

Projected electricity sources and need for 2020



2. Geographical of development

- There are two major parts of the country potential for hydropower development: the coastal and its associated areas and the Mekong and its tributaries.

The coastal and its associated areas:

- there is more advance in term of hydropower development and these include:
- Kamchay (193 MW) has been built and is now operation in Kampot province.
- Stung Tatay (246 MW) in Pursat
- Kirirom 3 (18 MW) in Kampong Spue
- Lower RusseyChrum (338 MW) and Stung Atay (120 MW) in Koh Kong province (China)

Mekong and its tributaries

No.	Projects Name	River Name	Provincial	Install Capacity (MW)	Annual Energy Generation (GWh)
1	Lower Sesan 1	Sesan	Stung Treng	96	485
2	Lower Sesan 2	Sesan	Stung Treng	400	1912
3	Lower Sesan 3	Sesan	Rattanak Kiri	260	1310
4	Prek Liang 1	Prek Liang	Rattanak Kiri	72	324
5	Prek Liang 2	Prek Liang	Rattanak Kiri	56	257
6	Lower Sre Pork 3	Sre Pork	Mondul Kiri	330	1754
7	Lower Sre Pork 4	Sre Pork	Mondul Kiri	235	1233
8	Se Kong	Se Kong	Stung Treng	190	776
9	Stung Pursat 1	Pursat	Pur Sat	40	335
10	Prek Chhlaung 2	Prek Chhlaung	Kratie	24	134.4
11	Battambang 1	Stung Sangker	Battambang	24	120
12	Battambang 2	Stung Sangker	Battambang	36	170
13	Stung Sen	Stung Sen	Kampong Thom	38	210
14	Prek Por	Prek Por	Mondul Kiri	17	N/A
15	Prek Ter	Prek Ter	Mondul Kiri	23	N/A
Total				1841	9,020.4

3. Potential BSM: An emerging interest

- The option below is the result of the national working group scoring and preferences.
- It is a key to promote the sustainability of the hydropower in reducing poverty and closing gaps of inequality of wealth.
- It may pursue different scale-at regional, national tributary and sub-basin and local scale. In this context, I wish to discuss the possibility of introducing National to Local (NTL-BSM).

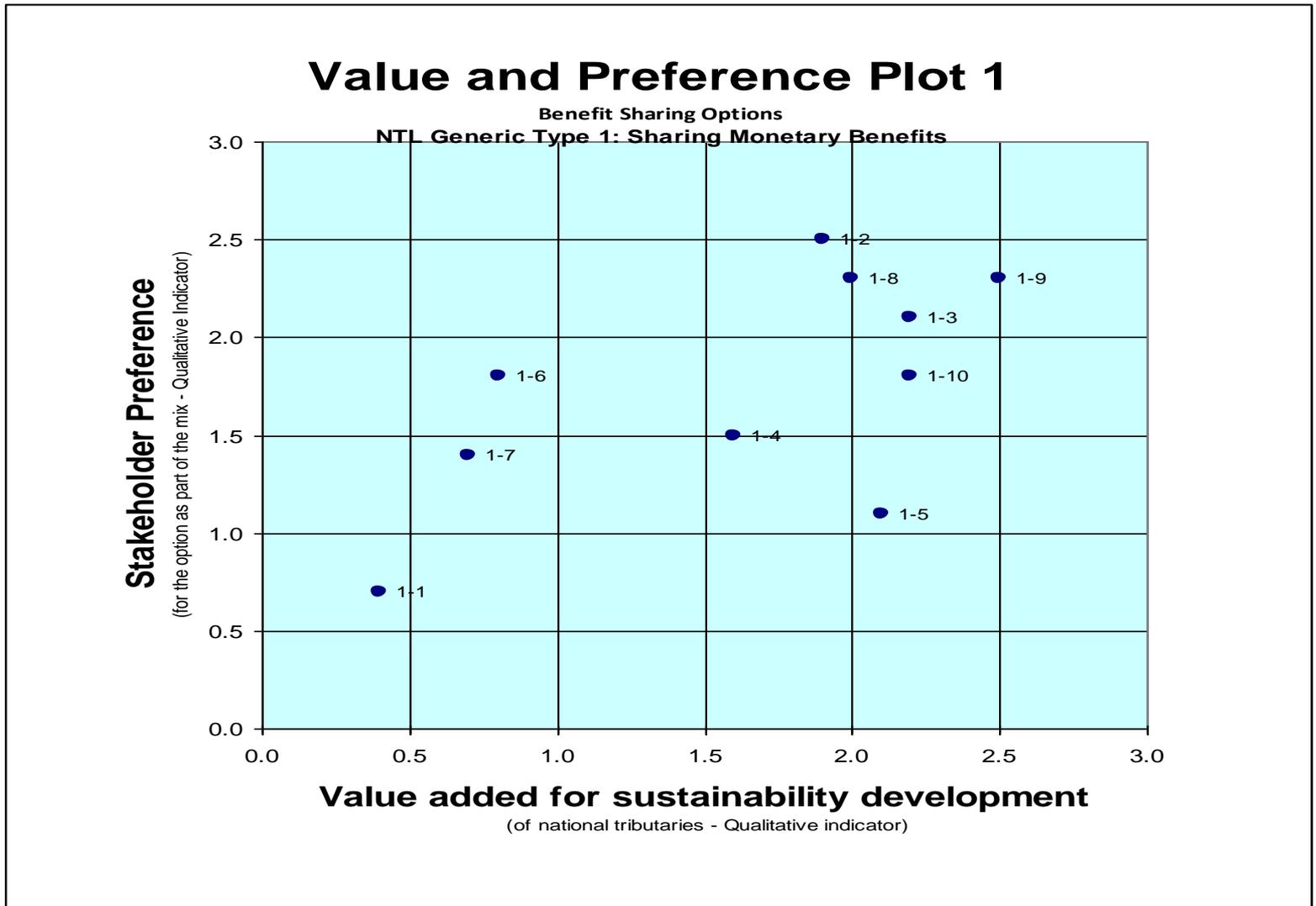
National-To-Local-BSM Options

- Sharing of monetary benefit
- Non-monetary benefits
- Equitable access to project services
- Optimizing additional benefit
- Optimizing additional benefits

Sharing of monetary benefit

NTL1	Options	Value	Preference
1.1	No revenue sharing mechanism is needed to spread monetary benefits of existing or proposed hydropower in Mekong tributaries.	0.4	0.7
1.2	Introduce local revenue sharing using <u>new local (social and environmental fund)</u>	1.9	2.5
1.3	Introduce local revenue sharing by increasing existing <u>commune investment program</u> (local development budgets).	2.2	2.1
1.4	Introduce revenue sharing at <u>district / provincial levels</u> through <u>a Development Fund mechanisms.</u>	1.6	1.5
1.5	Introduce revenue sharing at district / Province levels by increasing <u>existing Provincial Development budgets.</u>	2.1	1.1
1.6	Introduce revenue sharing at the tributary scale using the River Basin entity (RBC/RBO)	0.8	1.8
1.7	<u>Provincial / municipal authorities</u> collect taxes, fees, etc., for land or water used by hydropower projects in tributaries.	0.7	1.4
1.8	Introduce payments for ecological services (PES) also referred to as environmental services.	2.0	2.3
1.9	Set targets for local income improvement for people living in the vicinity of projects linked to poverty alleviation targets for the tributary / Province.	2.5	2.3
1.10	Coordinate among sector funds that hydropower sales contribute revenue to (by Law) to ensure synergies for benefit sharing are identified and optimised.	2.2	1.8

Value and Preference



Optimizing Non-Monetary Benefits

NTL 2	Options	Value	Preference
2.1	<u>No steps beyond existing practices</u> are needed concerning local resource access for project area communities / river communities on tributary hydropower projects (e.g. to enhance or remove barriers to forest, land, water, bio-physical, and cultural resource access).	1.4	0.7
2.2	Introduce procedures to evaluate opportunities to <u>optimize local resource access</u> and non-monetary benefits around <u>existing</u> tributary hydropower projects, engaging with local communities.	2.0	2.8
2.3	Systematically assess scope to <u>optimize local resource access</u> in project studies for <u>proposed (new)</u> tributary hydropower engaging with local communities to identify and prioritize opportunities.	2.5	2.5
2.4	<u>Identify and remove legal constraints</u> to enhance local resource access (forestry, land or water) at national, provincial or local levels, and address them.	1.8	1.9
2.5	Involve <u>river basin entities</u> in assessing opportunities to enhance <u>local</u> resource access in the tributary in relation to the development opportunities and risks of hydropower in the tributary.	2.4	1.8
2.6	Assess ways to combine <u>long-term financial support</u> from hydropower revenue sharing with measures to improve <u>local resource access</u> .	1.8	2.1
2.7	Extend <u>vocational training</u> for new livelihoods, job skills, and income diversification based on natural resource access changes due to hydropower.	2.3	2.7
2.8	Ensure <u>women, youth, vulnerable groups</u> and ethnic groups can actively participate in <u>training</u> activities and decisions regarding local resource	2.5	2.6

Ensuring Equitable Access to Electricity Services

	Option	(Value)	(Preference)
3-1	Current practice are adequate to improve or spread electricity access in the tributary related to existing or proposed hydropower	1.0	0.8
3-2	Introduce a requirement to electrify all resettled households in new tributary hydropower (public + IPP)	2.4	2.7
3-3	Introduce a requirement for connection, refurbishment and strengthening of electrical supply for resettlement host community of existing tributary hydropower.	2.3	2.0
3-4	Prioritize extending/improving electricity supply to communities in the area of tributary hydropower projects within existing rural electrification programmes.	2.3	2.1
3-5	Provide targeted assistance for electrification of the poorest households living in the project vicinity.	2.1	2.2
3-6	Establish a requirement to assess off-grid supply in areas too costly to connect to the grid as part of project preparation studies.	2.1	2.1
3-7	Provide tariff subsidy for communities in the area of hydropower projects for a given period of time.	2.1	2.2
3-8	Provided financial incentives (e.g. investment capital, loan interest and preferential tax support) for individuals / organizations seeking to invest in alternative electrical supply in rural locales where grid connection is costly.	1.7	2.4

Optimizing Additional and Indirect Benefits

NTL4	Option	Score	
		Value	Preference
4-1	Current practices are adequate to spread additional benefits deriving from existing or proposed tributary hydropower.	1.0	0.8
4-2	Introduce guidance to optimize local use and socio-economic benefit from project access roads (e.g. in selecting road alignments and road surfacing, road construction standards).	2.4	2.7
4-3	Introduce guidance to maximize local / sub-regional employment opportunities during construction of tributary hydropower projects.	2.3	2.0
4-4	Introduce guidance to maximize local / sub-regional employment benefits during the operation of tributary hydropower projects.	2.3	2.1
4-5	Introduce guidance for local training and job skills enhancement to optimize local /provincial employment during construction and operation.	2.1	2.2
4-6	Provide additional budget allocations (e.g., from national budget or project capital) for public infrastructure construction in Provinces with tributary hydropower.	2.1	2.1
4-7	Provide additional budget allocations (e.g., from national budget or project capital) for public infrastructure operation and maintenance in the Province / tributary with hydropower.	2.1	2.2

Sources of funding

Revenue sharing is the most common and visible mechanism, but need to balance several factors in deciding the amount. These include:

- Ensure revenue sharing is a meaning amount (% of gross revenue).
- Increase tariffs on consumers is acceptable
- Environmental protection fund
- Present alternative of sharing benefit such as royalties and
- Need political and public support of what should be fair and in the tariff.

Potential BSM in hydropower projects on Cambodia's Mekong Tributaries

9020.4	Gross Generation GWh
9,020,400,000	kWh equivalent
0.07	Valuation Tariff (\$/kWh)
\$631,428,000	USD Equivalent
\$631.4	USD Million equivalent
2.0%	Revenue Sharing %
\$12.6	USD Million equivalent

- ✓ 15 tributary dams in the country could potentially generate 9,020.4 GWh / year.
- ✓ Assuming 2% of net revenue is allocated to local revenue sharing means US\$12.6 million/year to be allocated for affected communities.

Eligibility of Key Beneficiaries

- Provincial level to locally affected community and river residents.
- EIA/SIA and EMMP to inform decisions on what people are eligible to participate in benefit sharing.
- EIA/SIA on hydropower project shall provide clear indication who are the people affected and its geographical areas.

4. Conclusions

- Cambodia are in need of energy and make use of their rich in natural resources.
- Not all project sites are economically and socially benefit to public and poverty alleviation
- Need t rethinking of BSM where resources are allocated back to the affected peoples.