National Discussion Paper
Activity ISH13

“Benefit sharing options for hydropower on Mekong Tributaries evaluated by 2013

Working Draft
Prepared by the national BSM Working Group BSM, Cambodia

Supported by the
MRC Initiative on Sustainable Hydropower (ISH)
August 2013
ការពារកម្មវិធីៃិរៃតរភាពវារីអគ្គីសី (ISH13)

ប្រការ និងការរៀបចំទូរស័ព្ទប្រព័ន្ធការពារកម្មវិធីៃិរៃតរភាពវារីអគ្គីសី (ISH) នៃក្រុមហ៊ុនជាតិសម្រាប់សកម្មភាពទី១៣ នៃកម្មវិធីៃិរៃតរភាពវារីអគ្គីសី (ISH)

្បៃដារ ឆ្នាំ២០១៣

ប្រការ និងការរៀបចំទូរស័ព្ទប្រព័ន្ធការពារកម្មវិធីៃិរៃតរភាពវារីអគ្គីសី (ISH) នៃក្រុមហ៊ុនជាតិសម្រាប់សកម្មភាពទី១៣ នៃកម្មវិធីៃិរៃតរភាពវារីអគ្គីសី (ISH)

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ការណែនាំពីពិធីម៉ាស៊ីបបង្កើតការងាររៀនរបស់កម្មវិធីសាសន៍អង្គភាពអាសតរជាតិ។ សកម្មភាពអាសតរជាតិមានប្រសាទៗបន្តនៅពេលដែលការងារម៉ាស៊ីបបង្កើតការងាររៀនរបស់កម្មវិធីមានការបូរោះបញ្ហា។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ជីវភាពសាសន៍ប្រការប្រការការសិក្សារៀនរបស់កម្មវិធី។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។

មានដំណើរការរបស់កម្មវិធីអាសតរជាតិទៅកាន់ការងាររៀនរបស់កម្មវិធី។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ជីវភាពសាសន៍ប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ជីវភាពសាសន៍ប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។

ការងាររៀនរបស់កម្មវិធីអាសតរជាតិទៅកាន់ការងាររៀនរបស់កម្មវិធី។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ជីវភាពសាសន៍ប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ជីវភាពសាសន៍ប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។ ការងាររៀនរបស់កម្មវិធីបានប្រការការច្រើនប្រសិនបើមានការសិក្សារៀនរបស់កម្មវិធី។
ទំង្បីកម្មការជាសាជិករួម្មបាណជាង្ជាឯកសារមៅឆ្ាំមនាេ្ធៃធាៃម្ឆ្ាជាតិសង្គមរូបសាស្រសតទមៃេចម្រតង្ិង្កិងមម្រអាង្ទមៃេមម្គ្ង្គ។ ឯកសារមៃេះម្ិៃមធាើការពិភាកាៃូវយៃតការសតីពីគ្មម្រាវាយតនម្េមៃេះអាែយកអៃុវតតជាម្ួយវារីអគ្គិសៃីមៅកាុង្អាង្ទមៃេមផសង្ៗមទៀតផង្ចៃរមៅម្របមទសកម្ពុជា ចៃែសថិតមៅការងារចផៃការអភិវឌ្ឍៃ៍អាង្ទមៃេមម្គ្ង្គ។

នៃទមៃេទំង្មៃេះគ្ឺជាចផាកម្ួយ១០១៣តំបៃ់មម្គ្ង្គថ្នាំការសតីពីយៃតការចែករំចែកផែម្របមោជៃ៍ម្របម្រពឹតតមឡើង្មៅម្រគ្ប់បណ្តតម្របមទសជាសាជិកក៏ៃូែជាការមរៀបែំនានា ិង្កិងសិកាខសាលាបៃតបនាាប់ជំហាៃកាែពីទមៃេមម្គ្ង្គ។ សកម្មភាពទីតម្រម្ូវការទំង្មៃេះសំមណើអភិវឌ្ឍៃ៍វារីអគ្គិសៃីមៅតាម្នៃទមៃេមម្គ្ង្គសាធារណៈសម្រម្ួែជាតិរបេ់កេាវិធីឬមម្រែើៃៃូែចៃែបាៃពណ៌។

សកម្មភាពកំណកៃីែាប់ជាចៃែម្របមម្ើែលិរលតរភាពនៃនៃទមៃេមម្គ្ង្គថ្នាំមែតតិង្ការវិភាគ្ការកាុង្មនាេះតុិង្សកាតៃុពែផែិតវារីអគ្គិសៃី។

ចៃែមកើតឆ្ពោះនៃទមៃេទំង្ម្ូែ់ទមៃេមម្គ្ង្គប៉ងាំង្ៃែ់មែតតសាឹង្។

ប្រសិនបើវាកែសុមៈការជាតិមែើកទឹកែិតតម្របះំង្ៃែ់មែតតសាឹង្វារីអគគីេលីមៅកាុង្សិកាខសាលាថ្នាំជាតិមែើកទឹកែិតតរួម់កម្ពុជា។ ប្រសិនបើវាថ្នាំតំបៃ់មម្គ្ង្គថ្នាំមែតតដើម្បីប៉ងាំង្ៃែ់មែតតសាឹង្វារីអគគីេលីមៅកាុង្សិកាខសាលាថ្នាំជាតិមែើកទឹកែិតតរួម់កម្ពុជា。 ប្រសិនបើវាមោជៃ៍ភាពបងា ាញចៃែទមៃេវារីអគ្គិសៃីលីបែ់បង្គាត់កន្លងមែតតសាឡូរបស់កម្មវិធីវារីអគ្គិសៃី។

ប្រសិនបើវាកែសុមៈការជាតិមែើកទឹកែិតតម្របះំង្ៃែ់មែតតសាឹង្វារីអគគីេលីលីនៃការកាុង្មនាេះតុិង្ស�ាតៃុពែផែិតវារីអគ្គិសៃី។

កូនកែវ: (ISH 12) (ISH 13)

1មកពីការរួម់ការទំង្ម្ូែ់ទមៃេមម្គ្ង្គ។ សាធារណៈសម្រម្ួែជាតិរបេ់កេាវិធីប៉ងាំង្ៃែ់មែតតសាឹង្។

2មកពីការរួម់ការទំង្ម្ូែ់ទមៃេមម្គ្ង្គ។ សាធារណៈសម្រម្ួែជាតិរបេ់កេាវិធីប៉ងាំង្ៃែ់មែតតសាឹង្។

3មកពីការរួម់ការទំង្ម្ូែ់ទមៃេមម្គ្ង្គ។ សាធារណៈសម្រម្ួែជាតិរបេ់កេាវិធីប៉ងាំង្ៃែ់មែតតសាឹង្។

4មកពីការរួម់ការទំង្ម្ូែ់ទមៃេមម្គ្ង្គ។ សាធារណៈសម្រម្ួែជាតិរបេ់កេាវិធីប៉ងាំង្ៃែ់មែតតសាឹង្។

5មកពីការរួម់ការទំង្ម្ូែ់ទមៃេមម្គ្ង្គ។ សាធារណៈសម្រម្ួែជាតិរបេ់កេាវិធីប៉ងាំង្ៃែ់មែតតសាឹង្។
អនុវត្តការបញ្ជាក់បញ្ហាសម្រាប់ការបោះលុយបញ្ហាសម្រាប់ការថែរក្សា៖
(1) ពេលព្រមប្រមាស់ក្នុងការប្រការជូន់ក្នុងការបោះលុយបញ្ហាសម្រាប់ការថែរក្សា
(2) ពេលប្រការជូនក្នុងការបោះលុយបញ្ហាសម្រាប់ការថែរក្សា 
(3) ពេលប្រការជូនក្នុងការបោះលុយបញ្ហាសម្រាប់ការថែរក្សា

សិប្បនិភ័យថ្នាក់ពីការបោះលុយបញ្ហាសម្រាប់ការថែរក្សា

- ការបោះលុយបញ្ហាសម្រាប់ការថែរក្សានៃការធ្វើវិសាលភាពមួយ (NTL): 
  - NTL បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 
  - NTL បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 
  - NTL បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 
  - NTL បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវิសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 

- ការបោះលុយបញ្ហាសម្រាប់ការថែរក្សានៃការធ្វើវិសាលភាពមួយ (TB): ការធ្វើវិសាលភាពមួយ 
  - TB បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 
  - TB បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 
  - TB បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 
  - TB បុក្រេ ២: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 

- ក្នុងរដូវកាលកម្រិតសេរី (cross cutting) មានការមើលការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ (CC): ការធ្វើវិសាលភាពមួយ 
  - CC-1: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 
  - CC-2: ការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយក្នុងការធ្វើវិសាលភាពមួយ 

4
វារីអគ្គិសៃី។ បំព្រារីការសម្រម្រងវារីអគ្គិសៃីមែើកកម្ពស់ៃូវកិែចសម្រាប់យៃតការចែករំចែកផែម្របមោជៃ៍។

ការណ៍ ពិសាត រីង្ជួយបំព្រារីការសម្រម្រងវារីអគ្គិសៃីមែើកកម្ពស់ៃូវកិែចសម្រាប់យៃតការចែករំចែកផែម្របមោជៃ៍។

បញ្ហារីម្របមោជៃ៍មែើកកុមារីទី២៣ រីង្ក្ហួយៃីម្ួយៗតនម្េឬសូវៃត។

យៃតការចែករំចែកផែម្របមោជៃ៍

ការអភិវឌ្ឍម្របកបមោយៃិរៃតរភាពនៃវារីអគ្គិសៃីមែើនៃទមៃេ។

យៃតការចែករំចែកផែម្របមោជៃ៍

បន្ទាប់ពីការអភិវឌ្ឍម្របកបមោយៃិរៃតរភាពនៃវារីអគ្គិសៃីមែើនៃទមៃេ។

យៃតការចែករំចែកផែម្របមោជៃ៍

បន្ទាប់ពីការអភិវឌ្ឍម្របកបមោយៃិរៃតរភាពនៃវារីអគ្គិសៃីមែើនៃទមៃេ។
ប្រយោគដោយសារអំពីការផ្ទៃោតំណាងរបស់ប្រទេសកម្ពុជានៃការលើកឡើង។

ម៉ាស៊ីនថ្មីត្រូវបានបង្កើតឡើងនៅក្នុងប្រទេសកម្ពុជាដែលមានការលើកឡើងខ្ពស់ប្រចាំឆ្នាំ 3 ឆ្នាំចៃវិកាប់ពីមេឃធិបរិសាថប័ៃមេះអាែពម្រង្ីកបចៃថម្មៅៃែ់តំបៃ់មគែមៅmx

ខ្មែរឆ្លង្ការនៃរឿងក៌វីឌ្ឍិតអំពីអំពីការអំពីការគ្រប់ប់កន្លែង។

បញ្ចប់នៃការផ្ទៃោតំណាងរបស់ប្រទេសកម្ពុជាដែលមានការលើកឡើងខ្ពស់ប្រចាំឆ្នាំ 3 ឆ្នាំចៃវិកាប់ពីមេឃធិបរិសាថ ៃពិភពមលាក។ មេឃធិចៃែាៃម្រសាប់ពីសាថប័ៃមេះអាែពម្រង្ីកបចៃថម្មៅៃែ់តំបៃ់មគែមៅmx

ខ្មែរឆ្លង្ការនៃរឿងក៌វីឌ្ឍិតអំពីអំពីការគ្រប់ប់កន្លែង។

បញ្ចប់នៃការផ្ទៃោតំណាងរបស់ប្រទេសកម្ពុជាដែលមានការលើកឡើងខ្ពស់ប្រចាំឆ្នាំ 3 ឆ្នាំចៃវិកាប់ពីមេឃធិបរិសាថ ៃពិភពមលាក។ មេឃធិចៃែាៃម្រសាប់ពីសាថប័ៃមេះអាែពម្រង្ីកបចៃថម្មៅៃែ់តំបៃ់មគែមៅmx

ខ្មែរឆ្លង្ការនៃរឿងក៌វីឌ្ឍិតអំពីអំពីការគ្រប់ប់កន្លែង។
ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតប

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្រងការងារទំព័រស៊ូចការសម្រាប់ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ

ការប្រឈមការគ្រប់ទីក្រុងនិងក្រុងធំមការឆ្លើយតបដោយម្រប់ម្នែៃ
ប្រទេសកម្ពុជា ប្រសិនបើក្រោយប្រចាំដូចជានេះ គឺមកពីការប្រការិកដែលបានការពារជាប្រជាជនកម្ពុជា និងការប្រការិកដែលបានការពារជាប្រជាជនកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការរីកចម្រើនក្នុងការគ្រប់គ្រងត្រឹមត្រូវការប្រសិក្ដនីកម្ពុជា ហើយការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

ការប្រការិកប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រសិក្ដនីកម្ពុជានៅក្នុងការប្រណាំងការប្រការិក។

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៣. ក្រសួងអាជីវកម្មអពីរឿងរមេសេរីថ្មីតាមរយៈការសម្រេចៗទៅក្នុងការប្រឈម និងការរៀបចំការអភិវឌ្ឍន៍អនាក្មែលខ្លះដូចតាមរយៈការទទួលបានទំនិញរបស់យុក្តិវិទ្យាលំដាប់ប្រកួតរបស់សាលាផ្នែកវិជ្ជាលី។

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Summary

The collaborative evaluation of benefit sharing options for hydropower on tributaries of the Mekong River is identified in the MRC Basin Development Strategy endorsed at the MRC Council level in January 2011. ISH13 is undertaken by the four NMCS with MRC support from the Initiative on Sustainable Hydropower (ISH).

ISH13 is part of a group of activities that all MRC Programmes and Initiatives were assigned to undertake as input to on-going discussions under the MRC Framework to implement the Basin Development Strategy (BDS) and the 1995 Mekong Agreement more generally. ISH13 may also inform national policy dialogue processes in each Member Country on this topic.

The Background

Benefit sharing has been a recurrent theme in international and national debates about hydropower and sustainable management of water and other natural resources for decades. Today it is increasingly seen to be a powerful, practical way to spread natural resource utilization benefits across the economy, catalyse broader-based growth and support social equity policies.

The potential for benefit sharing mechanisms (BSM) to foster sustainable forms of hydropower development and management and implement the 1995 Mekong Agreement is explicitly recognized in MRC Programme work and the MRC Basin Development Strategy.

National-to-local forms of BSM are of a group of measures applied in a systematic, consistent, and transparent manner:

(i) To equitably and reasonably share a portion of the monetary benefits that arise from hydropower from the national level (where such benefits normally accrue) with provincial, sub-basin or local levels where the projects are located;

(ii) To optimize non-monetary benefits, especially natural resource access for people living in project areas and river communities in tributary basins (i.e. forest, land, and reservoir access, etc.), in part to help offset resource transformations due to hydropower in the locality;

(iii) To provide equitable access to electricity services for people living near hydropower projects and in tributary basins with hydropower projects, so they are among the first to benefit and not the last, and

(iv) To enhance and optimize additional benefits derived from national investments in hydropower and related public infrastructure in the river basin, such as various economic benefits arising from improved access roads, local employment, and the economic stimulus the project may bring to local or district/provincial economies.

There are also transboundary dimensions of BSM arising from hydropower on Mekong tributary basins shared by two or more countries, as described in the MRC Basin Development Plan (BDP) and analysis supporting the BDS work.
The proposed hydropower developments on Cambodia’s Mekong tributary basin which include the portion of the Sesan and Srepok rivers are used to focus this preliminary multi-criterion evaluation of BSM policy options for hydropower, but the evaluation results apply equally to hydropower in other river basins in Cambodia. The Cambodia National Paper does not discuss mechanisms on specific hydropower projects. These tributaries form part of the 3-S tributary system, which contributes 25% to the dry season Mekong flow at Stung Treng and 17% of the overall Mekong flow. They are significant from hydrological, socio-economic, river morphology (including sediment balance), natural resource management, ecosystem services (including fisheries) and hydropower generation perspectives.

The ISH13 Tasks

ISH13, “Benefit-sharing options for hydropower on tributaries evaluated and reported” by 2013 responds to requests by MRC Member Countries for support:

- To improve awareness and understanding of national-to-local BSM options and strategies and help draw lessons on concepts and practices from the growing body of Mekong region and international experience; and
- To enable Member Countries to prepare for discussions on benefit sharing envisaged under the MRC framework, as set out in the Basin Development Strategy.

These needs were confirmed in the first Cambodia national BSM workshop held 10-11 October 2011 in Siem Reap Province. Over 50 participants from the CNMC Secretariat, national Line Agencies, provincial and municipal government levels and MRCS attended the workshop.

The ISH Guidance Package on which the format and evaluation method of the National Paper is based was prepared by the ISH. This offered a consistent approach for all four countries and describes the three main activities for ISH13 in detail, namely:

1. Preparation of National Papers on BSM options for hydropower on tributary systems in NMCS-led processes;
2. Holding 2-day national BSM options workshops in each Country to enable multi-stakeholder comment on draft versions of each National Paper; and
3. Preparation of a Regional Synthesis Paper by MRCS, which bring together the four Member Country Papers.

To assist the NMCS in the evaluation a small National Working Group (WG) consisting of representatives of the main NMCS stakeholder interests was formed. The WG undertook the initial evaluation. That result was captured in the draft Working Paper, which was circulated to CNMC stakeholders who participated in the national-level workshop noted in (2) above. The National Discussion Paper now incorporates the National Workshop discussions and outcomes.

Approach to the Options Evaluation

The preliminary evaluation shows there is scope to consider various BSM options for Cambodia’s Mekong tributary hydropower, namely:

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1 The BSM workshops held in each Member Countries, as well as the preparation and follow-up was a first step to implement the BDS activity designated as ISH13, “Benefit-sharing options for hydropower on tributaries evaluated and reported” approved by the MRC Council level. ISH13 is to be completed by 2013 and for practical purposes ISH13 will be implemented as a core part of the ISH 2012-2013 work plan under Output 4.1c.
National-to-Local Types (NTL):
- NTL Type-1: Sharing of monetary benefits - 10 options evaluated
- NTL Type-2: Facilitating non-monetary benefits - 8 options evaluated
- NTL Type-3: Equitable access to project services – 8 options evaluated
- NTL Type-4: Optimizing indirect and additional benefits – 8 options evaluated

Transboundary Dimension Types (TB): relating to tributary hydropower
- TB Type-1: Increasing benefits “to the river” – 7 options evaluated
- TB Type-2: Increasing benefits “from the river” - 10 options evaluated
- TB Type-3: Reducing costs “because of the river” - 5 options evaluated
- TB Type-4: Increasing benefits “beyond the river” – 7 options evaluated

In addition, a number of Cross-Cutting Considerations were evaluated using five questions:
- CC Type-1: What legal instruments may be considered to introduce BSM? - 5 considerations evaluated.
- CC Type-2: What measures may be considered relating to the size and scale of hydropower projects in tributaries? - 4 considerations evaluated.
- CC Type-3: What measures may be considered to imbed benefit sharing considerations in hydropower planning and at each stage of the Project Cycle? - 7 considerations evaluated.
- CC Type-4: What measures may be considered for hydropower projects for power export or national supply? - 3 considerations evaluated.
- CC Type-5: What measures may be considered for transparency, dispute avoidance and settlement? - 4 considerations evaluated.

In total 61 BSM NTL and TB Dimension options as well as 23 Cross-Cutting Considerations were qualitatively scored and ranked by National Working Group members for two main dimensions of Value and Preference, using the qualitative sub-criteria explained in the National Paper and in this Regional Synthesis Paper’s Annex Volume (Annex 1).

- The Value dimension has five sustainability sub-criteria that qualitatively measure the value of each BSM (option or consideration) in terms of its potential value-added contribution to sustainable development of hydropower and the tributary basin more generally (i.e., sub-criteria for environment, economic, social, the flexibility to adapt operation over time and practicality).
- The Preference dimension is a measure, or indicator, of the relative preference for each BSM (option or consideration) by different NMCS stakeholder interests (e.g., environment sector organizations, power sector organizations, river basin entities, civil society, the private sector and others).

After completing the multi-criteria scoring and ranking, all options with moderate to high scores were placed into one of two categories, namely: options recommended for consideration in a
comprehensive BSM approach, and options recommended for further study to help decide whether to keep or drop them from further consideration, and where more information is needed. The National Discussion Paper has two parts (i) the short Main Paper, and (ii) the larger Annex Volume. Sections 4 and 5 of the Main Paper offer comments on the results of this preliminary BSM options evaluation and Next Steps. The Annex Volume shows the detailed multi-criteria scores for each BSM (option or consideration; Annex 3) and a summary bullet point description of each option type (Annex 2).

General Results of the ISH13 Options Evaluation

Overall the results show that benefit sharing is not a single option, but rather a group, or family of mechanisms that complement and reinforce each other – or a “package” of measures to systematically apply at different stages of planning, and hydropower development and management. This promotes cooperation on the development and sustainable management of tributary basins and locating decisions about hydropower in a river basin (IWRM) perspective.

Looking at the four National-To-Local forms of benefit sharing in turn:

For sharing monetary benefits, assuming 2% of the net revenue generated by hydropower projects in Cambodia is allocated in a revenue sharing formula, which is more or less typical for developing country situations; means about US$12.6 million would be available each year. This assumes (i) full development of the potential 15 tributary dams on Cambodia parts, which include Sesan and Srepok rivers (9,020.4 Gwh/year), (ii) the formula of 2% of gross energy generation GWH/yr, and (iii) the unit value of an average 7.0 US cents per KWh.2 The ISH13 preliminary evaluation suggests the preference was to share monetary benefits at provincial and local levels through Development Funds, where delivery of benefits would be arranged according to the wishes of the beneficiaries.3 Normally any such Fund would have a governing body or steering committee appropriate for that level (e.g. community representatives in a Local Area Fund, provincial representatives in a Provincial-level Fund). Appropriate legal provisions would typically be required.

Given the resource dependence of rural populations in Cambodian tributaries, the non-monetary benefits (NTL Type- 2), particularly those to enhance access to natural resources and addressing downstream development opportunities and risks were seen to have Value and Preference as a package of BSM measures. Many of these measures or mechanisms are currently within the remit of Provincial, District and local government bodies (e.g., permissions and permits). To help organise the arrangements the idea of specified development zones or green development zones was suggested by Participants and included as an option to explore (the case of Lower Sesan 2 has proposed eco-tourism zone).

For NTL Type- 3 measures concerned with equitable access to electricity, applying the existing Cambodia Rural Electrification Fund (REF) programme in areas around the tributary hydropower projects may be considered as the best mechanism, which is actually an existing mechanism. This

2 See discussion in Section 4 on the revenue sharing calculation.
3 For the 2% of the EVN valuation of generation (GWh) from Viet Nam’s Mekong tributary hydropower projects on Sesan and Srepok river would result in US$ 11.3 million and US$ 4.9 million annually to fund benefit sharing measures in the Viet Nam’s upper Sesan and Srepok basins, respectively.
is not only for resettled communities but also other communities living the project area and immediate catchment.

The Rural Electrification Fund contains many NTL Type-3 measures identified in the ISH13 Guidance material from international good practice. It is currently implemented with Development Partner GEF sources. Existing GEF funds may be targeted to hydropower areas, or the actual measures that the REF Fund contains and the mechanisms to deliver them may be financed in part or wholly by revenue sharing (Type-1 measures).

There is also scope to systematically enhance the additional and indirect benefits of hydropower (e.g., related to improved road access, local jobs and stimulus to the local and provincial economies). One primary area where measures could be considered was to enhance skills development and trade training to maximise local employment in construction and operating phases of hydropower projects and to participating in supplying local goods and services to the project.

The working group decided to exclude option (2.1) on “existing practices are adequate”, indicating there is scope to improve non-monetary forms of BSM on Cambodia’s proposed tributary hydropower beyond what is expected in current practice.

Looking at the cross cutting considerations in turn:

There are five types of Cross-Cutting Considerations on BSM. Overall, multi-stakeholder participants agreed with selected options prepared by the working group with some wording simplified. Key highlight was mostly focused on legal instruments of CC Type-1. This means there is need to look at existing laws in Cambodia that is to review all existing laws that have a benefit sharing aspect and then compare this to practices elsewhere to highlight gaps and opportunities. Furthermore, MRCS will continue playing a key role in supporting RBOs; provide additional trainings to NMCs staff on related legal aspects of BSM.

Looking at the four Transboundary considerations for tributary hydropower in turn:

TB-BSM has been an outstanding discussion among the national stakeholders during the workshop. There are four types of Transboundary Benefit Sharing:

- **TB Type-1**: Increasing benefits “to the river” – 7 options evaluated
- **TB Type-2**: Increasing benefits “from the river” - 10 options evaluated
- **TB Type-3**: Reducing costs “because of the river” - 5 options evaluated
- **TB Type-4**: Increasing benefits “beyond the river” – 7 options evaluated

There is not much objection on proposed TB types. However, there are need to bring any transboundary of hydropower that cause impact on Tonle Sap basin and potential benefit sharing consideration for existing and proposed upstream hydropower development, not only on 3S basins and border areas where BSM need to be considered.

Overall, it was suggested that MRC should use the TB Type-1 category in a wider process in preparing: (i) Guidelines for sustainable development and management of hydropower on Mekong mainstream and tributaries, and (ii) Guidelines to establish a MRC mechanism for monitoring and evaluation of operation on mainstream and tributary in upstream areas.
Other Important Things to Note

The government may consider the BSM options evaluated in this ISH13 process along with other options when it decides on a policy about benefit sharing for tributary hydropower. Cambodia, like other Mekong Countries already has some aspects of all the forms of benefit sharing discussed in the National Papers, but to varying degrees. This is on top of the benefits that Cambodian society (including all electricity consumers) may derive from exploiting indigenous, renewable energy sources like hydropower for domestic and export sales.

What is important is a systematic, comprehensive approach to BSM to take advantage of all the opportunities to achieve sustainable forms of hydropower development and management, and in the current development context, to maximize the spread of the resource utilization benefits across the economy and within the tributary basins. This is while catalysing broader-based growth and supporting social equity policies.

The Next Steps

- An underlying consideration in next steps is support for on-going information sharing among CNMC stakeholders in the government, private and civil sectors on the BSM theme.
- This includes information sharing with other Member Countries who present their National Papers at the Regional Workshop, as well as MRC Stakeholders and Development Partners, and in particular international practitioners of BSM who will share comments based on their lessons and experience.

For regular ISH Support (2013-2015) under Output 4.1c:
- Development plan for information workshop/studies e.g., policy review to support for key Cambodian agencies on NTL BSM awareness raising.
- Explore BSM pilot project in RSAT process and include BSM topic in the MRC RSAT assessment (RSAT work in mid 2013) (Lower Sre Pok3 project).
- Development and seek pilot project finance - if a pilot is decided by CNMC and government.
- Other ISH Support in ISH 5-year work plan (e.g. Mekong and International BSM study visits and site visits, Knowledge Based update and others).

For MRC Support (2013-2015) under the BDP-led BDS Process:
- There is a need to evaluate benefit sharing under the MRC Basin Development Strategy (BDS) which includes transboundary benefits sharing on Mekong mainstream dams as well as dams on significant tributaries of the Mekong and sharing in multiple sectors not only hydropower (e.g., navigation, fisheries, irrigations, as in the full BDP).
- TORs have been circulated to NMCS by the BDP to scope out MRC support for multi-sector regional benefit sharing as a strategic priority under the BDS.
- MRC Support for Guidelines:
  i. Guidelines for sustainable development and management of hydropower on the Mekong mainstream and tributaries, and
  ii. Guidelines to establish a MRC mechanism for monitoring and evaluation of operation on mainstream and tributary in upstream areas.
- Cambodia stakeholders are interested in information on innovative finance by Public Private Partnership (PPP) models in the context of Cambodia. These may expand benefit sharing opportunities via multi-purpose projects.
Acknowledgements

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Finally, we wish to acknowledge the support of the three NMCS colleagues from riparian countries, Vietnam, Thailand and Lao PDR for their cooperation, understanding and being friends throughout the ISH13 process.

H.E Mr. Te Navuth
Secretary General
Cambodia National Mekong Committee
Chairman of Cambodia National Working Group on BSM

Readers please note nothing in this Discussion Paper is binding on MRC Member Countries, or the MRCS as a regional intergovernmental-river basin organization, or national governments. The purpose of the ISH13 Papers is to inform on-going national policy dialogue on sustainable hydropower and sustainable development of Mekong tributaries, and the relevant discussions under the MRC Framework around the MRC’s Regional Basin Development Strategy.
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# List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>BDS</td>
<td>Basin Development Strategy</td>
</tr>
<tr>
<td>BSM</td>
<td>Benefit sharing mechanisms</td>
</tr>
<tr>
<td>CC</td>
<td>Cross-cutting considerations</td>
</tr>
<tr>
<td>CNMC</td>
<td>Cambodia National Mekong Committee</td>
</tr>
<tr>
<td>CSO</td>
<td>Civil society (and social organizations)</td>
</tr>
</tbody>
</table>
| EdC     | Electricity du Cambod 
| ERAV    | Electricity Regulatory Authority of Viet Nam |
| GEF     | Global Environment Fund |
| GWH     | Gigawatt-hour = 1000 MWH |
| HPP     | Hydropower Project |
| IPP     | Independent Power Producer |
| ISH     | MRC Initiative on Sustainable Hydropower |
| IWRM    | Integrated Water Resources Management |
| KB      | Knowledge Base (referring to the MRCS knowledge base on benefit sharing assembled by the ISH) |
| KW      | Kilowatt |
| MAFF    | Ministry of Agriculture, Forestry and Fisheries |
| MIME    | Ministry of Industry, Mine and Energy |
| MoE     | Ministry of Environment |
| MOWRAM  | Ministry of Water Resource and Meteorology |
| MRCS    | Mekong River Commission Secretariat |
| NGO     | Non-government organizations |
| NMCS    | National Mekong Committee Secretariat |
| NTL-BSM | National-to-Local benefit sharing mechanisms |
| NWRS    | National Water Resources Strategy |
| PDMP    | Power Development Master Plan |
| PES     | Payments for forest ecological services |
| RBO     | River Basin Organization |
| SHJC    | Hydro Power Joint Stock Company |
| TA      | Technical Assistance |
| TB-BSM  | Trans-boundary benefit sharing mechanisms |
| TSA     | Tonle Sap Authority |
| WG      | National Working Group for ISH13 |
| WWF     | World Wildlife Fund |
Section 1: Introduction and Background

1.1 Background to Benefit Sharing

As part of efforts to implement the Basin Development Strategy, the MRC assigned ISH the responsibility to lead the Activity called ISH13, “Benefit-sharing options for hydropower on tributaries evaluated and reported” by 2013. This work includes the consideration of national-to-local (NTL) forms of benefit sharing, as well benefit sharing mechanisms (BSM) that may address the transboundary dimensions of tributary hydropower in the Mekong context.

ISH13 work includes three main tasks:

1. Preparing four National Papers on BSM Options for Mekong Tributaries;
2. Holding National BSM Options Workshops in each Member Country (multi-stakeholder); and
3. Preparing a Regional Synthesis paper on BSM Options for Mekong Tributaries.

Benefit sharing has been a recurrent theme in international and national debates about hydropower and sustainable management of water resources for decades. Today benefit sharing is increasingly acknowledged to be a powerful, practical way to spread resource utilization benefits across the economy, catalyse broader-based growth and support social equity policies.

International experience shows it is important to formulate BSM in a collaborative way involving the key stakeholders and interested parties. This includes the intended beneficiary groups and the media. The role of the media is important to help the public understand and support BSM measures, especially when measures such as revenue sharing are ultimately factored into consumer electricity tariffs.4

In broader terms, benefit sharing is an important tool (or set of measures) to equitably share the benefits of sustainable development in the Mekong River basin, not only in the hydropower sector, but also in other sectors such as mining, forestry, tourism and large-scale agriculture.

The potential for benefit sharing to foster sustainable forms of hydropower and to help implement the 1995 Mekong Agreement is recognized in MRC Programme work and the MRC Basin Development Strategy. Benefit sharing is explicit in the seven strategic priorities in the Mekong Basin Development Strategy (BDS), namely:5

---

4 This establishes, for example, revenue sharing as sharing (benefits and costs) between the main consumers of electricity services in towns, cities and industry who benefit from electricity generation and riverine communities where hydropower projects are located and the development opportunities and risks the hydropower creates are greatest.

5 The BDS posted on the MRC website identifies the 7 strategic priorities for the development of the Mekong Basin as:
   1. address opportunities and consequences of the on-going developments including development in the Lancang-Upper Mekong Basin,
   2. expand and intensify irrigated agriculture for food security and poverty alleviation,
   3. improve the sustainability of hydropower development,
   4. acquire essential knowledge to address uncertainty and minimise risk of the identified development opportunities,
   5. seek options for sharing the potential benefits and risks of development opportunities,
Strategic Priority 3:  
Improve the sustainability of (Mekong) hydropower development, and

Strategic Priority 5:  
Seek options for sharing the potential benefits and risks of development opportunities.

This National Discussion Paper along with the other National Papers will be the basis for the ISH13 Regional Synthesis Paper.

1.2 Objectives of the ISH13 National Discussion Paper

The objectives of this Paper derive from the objectives set for “Benefit Sharing Options on Mekong Tributaries evaluated” by 2013 in the MRC Basin Development Strategy, and the strategy for the MRC Initiative on Sustainable Hydropower developed by Member Countries through national and regional level consultation processes starting in 2008.

In this context, the objectives of the ISH13 National Paper are broadly:

i. To highlight information arising from the initial review of existing national policies and practices relevant to benefit-sharing on hydropower in MRC Member Countries;

ii. To highlight the range of options to considered in developing a systematic and comprehensive approach to benefit sharing, both (i) responding to expectations of NMCS Stakeholders, (ii) reflecting Member Country policies on the benefit sharing and sustainable development of hydropower and river basins (either existing policies or formative policies), and (iii) the MRC Basin Development Strategy;

iii. To provide a preliminary qualitative evaluation on selected benefit sharing options for tributary hydropower using multi-criteria techniques.

Broader aims of the Paper and consultative ISH13 process to prepare it include:

- Improving awareness and understanding of national-to-local BSM options, the value they add to sustainable development of Mekong tributaries with existing or planned hydropower,
- Provide access to experience and lessons from international experience available to inform national policy dialogue and policy implementation processes underway now,
- Facilitate the sharing of information and experience among Member Countries on benefit sharing policies, legislation and implementation, and
- Enable Member Countries to better prepare for the conversations envisaged under the MRC framework on benefit sharing in the Basin Development Strategy – recognizing the focus of ISH13 is on existing and proposed tributary hydropower.

The expectation is the National Papers will be presented in a regional workshop (facilitated by the MRCS) where MRC Stakeholders and international practitioners and policy makers with experience in this field from other regions of the world can offer observations on the National Papers based on their own experience.

6. Adapt to climate change, and
7. Integrate basin development planning considerations into national systems.
During the national workshop held on 7-8 February 2013, key preliminary findings, scoring and ranking of the three types of benefits sharing were discussed and presented. Key sections such as tributary profile, guideline for scoring and ranking template, selected key policies and programs both for Cambodia and other countries in the region were also highlighted in detailed in annexes volume.

1.3 The 12 Steps to Implement ISH13

To implement ISH13, the MRCS through the ISH supported NMCS to engage national consultants to help prepare the material in a systematic way. A small national Working Group was formed to facilitate and provide a preliminary identification and evaluation of BSM options for Mekong tributaries as presented in this Paper. The ISH also prepared the ISH13 Guidance Package for the national BSM Consultants and NMCS to implement these steps in a consistent way and share information on work in progress.

The 12-steps extracted from ISH13 Guidance Note 1 are as follows:

Step 1: Review key materials in the Guidance Package. Ask the ISH Team and/or NMCS questions, if needed, to clarify any aspect of the Guidance.

Step 2: Prepare concise profiles of Tributary systems in the country (using templates) and reconfirm the objectives of BSM for tributary hydropower.

Step 3: Assemble an initial list of BSM options for each generic type of BSM. Prepare a summary matrix describing the options selected to evaluate in ISH13 (adapting and using templates).

Step 4: Adapt spreadsheet templates to provide a multi-criteria scoring & ranking of the BSM options identified in Step 3 (adapting and using templates).

Step 5: Group the options ranked in Step 4 informed by the multi-criterion ranking and plotting of results (adapting and using templates).

Step 6: Facilitate a 2-3 day seminar of a multi-stakeholder national Working Group (WG) for ISH13, appointed by MRCS/NMCS (for WG Tasks in ISH13 Guidance Notes 1 and 3).

Step 7: Write-up the WG Seminar and prepare additional analysis of selected BSM options based on the advice of the ISH13 Working Group, NMCS and the Guidance Notes.

Step 8: Prepare a national Working Paper for ISH13 based on the WG Seminar outcome and provisional Table of Contents (Annex 1 of Guidance Note 1 – i.e. this Paper).

Step 9: Support NMCS with presentations at the 2-day national BSM Options Workshop and help facilitate breakout session discussions. Prepare concise minutes of the National BSM Workshop (ISH13 Guidance Note 2).

Step 10: Turn the Working Paper into the draft version of the ISH13 National Review Paper based on the national workshop discussion and outcomes. After incorporating comment on the draft, submit the final version for NMCS endorsement.

Step 11: Present the National Papers to Mekong stakeholders and international BSM policy-makers/practitioners at a Regional BSM Workshop sponsored by MRCS and Development Partners (Q4 2012).

Step 12: Comment on the MRCS Regional Synthesis Paper draft based on the four National Papers and the Regional BSM Workshop outcome.
1.4 Information Sources to Support the ISH13 Work

In order to undertake ISH13 tasks efficiently, it was important to build on Cambodia’s related laws, regulations, experience and also on the existing MRC Programme work relevant to the benefit sharing theme and Mekong hydropower issues.

In particular these works include:

- Cambodia Laws on Environment Protection, Forest, Biodiversity, Fisheries, Electricity, and on Taxation, etc., and their related decrees/circulars,
- The Tributary Significance Studies the MRC is preparing, and
- The documents in the ISH Knowledge Base on Benefit Sharing assembled by the ISH.

For more information on laws/decrees/announcements issued by Cambodia government related to benefit sharing, the reader may have a look in Annex A.

There is also a lot of material on benefit sharing compiled by the MRCS that was shared with NMCS and their stakeholders. For example, as a first step to implement ISH Output 4.1c, “Benefit Sharing Mechanisms Elaborated at Regional, National and Community Levels”, the Mekong River Commission (MRC) Initiative on Sustainable Hydropower (ISH) in mid-2011 compiled a set of documents namely BSM Knowledge Base (KB).

This KB is in CD format. It contains over 120 documents on topics that range from the theory and practice of benefit sharing to case studies and examples of national legislation and regulation. Volume 1 of the KB is a report on the Theory and Practice in the Mekong and around the world. One aim of the KB is to foster a common understanding of evolving experience with benefit sharing and enable Member Countries to cooperate in drawing lessons, not only from the Mekong and wider Asian Region, but also from the growing pool of world-wide experience.

ISH prepared a Guidance Package for NMCS and BSM National Consultants to share information and help to implement ISH13 in a consistent way. The ISH13 Guidance package consists of:

- Presentations:
  - A Power Point Presentation on the ISH13 Guidance Package
- Three Guidance Notes:
  - Guidance Note 1: NC Team support to NMCS to Implement ISH13
  - Guidance Note 2: National BSM Workshop – Preparation and Programme
  - Guidance Note 3: National Working Groups for Benefit Sharing
- Templates:
  - Template 1: Mekong Tributary Profile Sheet
  - Template 1b: Worked example using Template 1 (Nam Ou Tributary)
  - Template 1c: Worked example using Template 1 (Lower Srepok)
  - Template 2: Generic Categories of BSM Options
  - Template 3a: Summary Matrix on NTL Options
  - Template 3b: Summary Matrix on Transboundary Dimension Options
- Template 3c: Other crosscutting considerations for BSM options
- Template 4: Series of BSM scoring, ranking and plotting spreadsheets (8 templates, one for each generic NTL and TB type with examples)
- Template 4b: Worked Example for Template 4 (illustrative)
- Template 5: Revenue sharing calculation sheet

- Key resource documents:
  - A selection of key MRC Reports relevant to ISH13 including MRC IWRM Basin Development Strategy, MRC Significant Tributary Studies (hydropower, navigation, and ecological significance)
  - Reports on the first four BSM National Workshops in 2011 (NMCS and ISH implemented)
  - The BSM Knowledge Base (120 documents) noted above assembled in 2011 including presentations, case studies, reports, and examples of BSM legislation and regulation from around the world.
  - RSAT appraisal done in Cambodia (see Piloting the Rapid Sustainability Assessment Tool (RSAT): Applying the RSAT in the context of the Lower Srepok River Basin).
Section 2: Existing Tributary Situation in Cambodia

This Section provides an overview of tributaries system characteristics and then reviews the generic types of BSM options for the hydropower proposed for these tributaries.

2.1 Mekong tributary systems

The lower Mekong river basin reportedly consists of one hundred and four (104) tributary catchments. In reports prepared for the MRC Tributary Significance Studies (i.e. in the ecosystem significance report), the 104 tributaries are divided into three general groups:

- 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).

The Tributary Significance Report that provides indicators for hydropower significance indicates that 26 Mekong tributaries have hydropower sites above 20 MW, based on existing and potential sites now listed in the MRC Hydropower database.

As noted, all hydropower projects in Mekong tributaries with a significant amount of seasonal storage in principle will have a trans-boundary dimension (+ve and −ve) upstream and downstream of the tributary confluence with the mainstream in the Mekong system. The extent of these linkages is both complex and tributary specific. Overall each Member Country is different in terms of the number of Mekong tributaries it has (i) wholly within the country and (ii) share with other countries.

Figure 1 shows the main Mekong tributaries with hydropower potential. Six of the 26 Mekong hydropower tributaries span more than one Mekong riparian country.6

Section 2.2 looks more closely at tributary systems in Cambodia together with the profiles provided in the Annex Volume of this Paper.

6 Data are extracted from tables in the draft MRC Hydropower Tributary Significance Study, prepared by Dr. Terence C. Muir, September, 2010.
Figure 1: Lower Mekong hydropower project: Sub-catchments
2.2 Characterization of Mekong tributary systems in Cambodia

This section provides a list of possible hydropower projects within Cambodia’s Mekong tributary which include the portions of the Sesan and Srepok tributaries in Cambodia to illustrate the evaluation of benefit sharing options from the Cambodia perspective. The results would apply to hydropower in other basins in Cambodia.

**Figure 2: List of possible hydropower projects in Cambodia’s Mekong Tributary**

As noted in the summary of the paper, the Sesan and Srepok rivers are significant tributaries of the Mekong mainstream in every respect (e.g., regarding hydrological, socio-economic, natural resources including fisheries connected to the Tonle Sap engine of fish production, river morphology, including sediment flows and hydropower potential). Cambodia shares the 3-S tributary basins with Viet Nam and Laos as noted in Table 2.1.
Table 2.1: comparison of 3Ss Basin profile

<table>
<thead>
<tr>
<th>Sub-Area per country and per basin</th>
<th>Cambodia</th>
<th>Laos</th>
<th>Viet Nam</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Km²</td>
<td>Km²</td>
<td>Km²</td>
<td>Km²</td>
</tr>
<tr>
<td>Se Kong</td>
<td>5,565</td>
<td>22,565</td>
<td>690</td>
<td>28,820</td>
</tr>
<tr>
<td>Se San</td>
<td>7,630</td>
<td>0</td>
<td>11,260</td>
<td>18,890</td>
</tr>
<tr>
<td>Srepok</td>
<td>12,780</td>
<td>0</td>
<td>18,160</td>
<td>30,940</td>
</tr>
<tr>
<td>Total</td>
<td>25,975</td>
<td>22,565</td>
<td>30110</td>
<td>78,650</td>
</tr>
<tr>
<td>Total %</td>
<td>33%</td>
<td>28.7%</td>
<td>38.3%</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: ADB (2010) Key topic 6: Catchments /watershed and land use changes, ADB-RETA 40082

Annex 1 provides details on the 3-s tributaries in Cambodia using the ISH13 template format designed to cover all the tributary significance factors discussed in the MRC Tributary Significance study series (see section 1.4 on information resources for the studies).

The basin profiles help, firstly, to understand the relevance of various types of BSM measures for the development circumstances of those basins. As noted these basins have high poverty levels, low levels of household electricity access and a high dependency on traditional natural resources for livelihoods and subsistence. Secondly, the basin profiles that are compiled from various information sources also help to understand, and in some cases quantify the relative significance of selected BSM measures, such as the money to be derived from potential revenue sharing (e.g., from Type-1 measures sharing monetary benefits).

There are no existing large hydropower projects on Cambodia’s portions of the Sesan and Srepok tributaries at present, although several sites have been identified. Therefore, one interest is how the various national-to-local forms of BSM may be integrated in the planning, design and the agreements that may be reached on new projects and the legal framework generally.

Cambodia also has some potential in rivers that do not drain into the Mekong. Overall, an updated data-base provided by the national WG indicates 15 sites are proposed for hydropower projects on Cambodian territory of Mekong tributaries as shown in table 2.2. These sites have a potential of 1,841 MW with 9,020.4 GWh.
Table 2.2 List of possible hydropower projects in Cambodia (Installed Capacity > 10MW) located in the Mekong River Basin

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

*Source:* updated data from national WG 2013.

For 3Ss upstream portion of Viet Nam, its hydropower potential on these river basins is almost fully developed, with 14 large scale projects already constructed and operational and one in the planning (total 2,649 MW).

The first Cambodia national BSM workshop in October 2011 in Siem Reap indicated that options for BSM relating to the transboundary dimensions of tributary hydropower are of interest to Cambodia. This is with respect to mechanisms appropriate for mutually beneficial development of shared tributary systems (e.g., addressing the development opportunities and development risks that are set out in the MRC Basin Development Strategy).

### 2.3 Cambodia’s national policy and experience related to hydropower BSM

The survey conducted by the national BSM consultant for ISH Output 4.1c in late 2001 showed there are some policies and laws related to different aspects of resource-based benefit sharing in Cambodia’s current legal framework, but they do not deal directly with benefit sharing for hydropower.
For instance, the national Law on Environmental Protection and Natural Resource Management (1996) mentions an “Environmental Endowment Fund (EEF)” for industry, agriculture, tourist and infrastructure projects, which may contribute to environmental protection and social development based on Project Concession Agreements.

The national Sub-Decree on EIA (1999) also lists companies and industries that are to pay: service work for EIA reviewing and monitoring and the EEF as mentioned in the Law on Environmental Protection and Natural Resource Management (1996), article 19.

Another prospective policy is called “Environment and Social Fund”. It is a joint declaration between Ministry of Environment (MOE) and Ministry of Economic and Finance (MEF) where the fund is expected to get contributions from project proponents as agreed in the EIA report. In 2012, the office of the “Environmental and Social Fund” of MOE was established to implement this potential funding and financing source. However, fund contributions from project proponents will be complied after up to 15 years after construction, when the companies are able to make benefits lasting up to 9 years.

The concept of this proposed policy is that infrastructure projects will contribute to government budgetary requirements for environment management and social development in project areas and for national capacity building. The communities impacted and/or hosting these infrastructure projects are expected to receive indirect funding (benefits) from the government programmes once the policy is being applied.7

Pilot trials of the “Environment and Social Fund” mechanism are reportedly being implemented for the Kamchay Dam, Russey Chrum and Lower Sesan 2. While these funds will be managed by government agencies, there is no indication whether a community-driven development approach will be adopted, or if a community committee will be established to monitor and help decide the local expenditures within the framework provided by regulation and law. At present, the project authorities deal directly with local communities on local development matters affected by projects.

Other aspects of these two legal instruments that indirectly relate to benefit sharing concepts and practices include:

1. Law on Environmental Protection and Natural Resource Management 1996: Chapter VIII, Article 19 which states:

   - A special treasury account, the EEF, shall be created and administered by the MOE for environmental protection and natural resource conservation in the Kingdom of Cambodia in accordance with the Finance Law.
   - The EEF, which comes from contributions from the Royal Government, grants from international organizations, donations from charitable individuals, donations from non-governmental organizations, and other lawful sums, shall be included in the National Budget in order to provide the above special account.

7 Reportedly the policies are under consideration in principle based on experience of MoE and MIME with the Russey Chrum dam in Koh Kong.
• EEF is to date paid by project owners on a voluntary basis since the approval of the law.

2. Environment and Social Fund: this policy has been initiated two years ago (YEAR???) and is not yet being implemented officially.

• Declaration cost of service for EIA review and Monitoring (join declaration of MoE and MEF) in 2000 and this has still valid for every project. This declaration is only for MoE staff to charge from the project owner only, rather than mentioned on how much money go to local communities.
• These are not exactly benefit sharing, but sometimes similar to the concepts. The major focus is on environmental protection and development, but does not focus on the local communities.

The first multi-stakeholder workshop on BSM for hydropower held 10-11 October 2011 in Siem Reap Province considered steps to develop benefit sharing on proposed hydropower in Cambodia and related to MRC Programme work.8 Over 50 participants from the CNMC Secretariat, national line agencies, provincial and municipal government levels and MRCS attended the workshop.

Annex 6 provides a summary of the first Cambodia BSM Workshop outcome, which in brief, notes:

• The Workshop offered a first opportunity for participants to collectively hear about BSM experience with hydropower in the Mekong and other regions, and to openly discuss its relevance to Cambodia and the wider MRC situation.
• Because BSM is a complex issue, the participants view was more workshops would be needed over time in Cambodia, including local-area level workshops.
• One internal priority would be to identify the institutional responsibilities to lead the dialogue on national-to-local forms of BSM; where CNMC could lead discussions on the transboundary forms.
• It was recognized that national-to-local forms and transboundary forms of BSM are intertwined.
• A BSM pilot project in Cambodia would help facilitate understanding of the concepts and mechanisms required for successful implement benefit sharing at local, or project levels.
• There was general understanding among participants of the distinction between transboundary benefit sharing approaches (called for in the MRC facilitated discussions under the BDS) and national-to-local benefit forms of BSM, where national policies/laws/regulation are needed.
• There was also a need to provide background information and awareness on transboundary forms of benefit sharing for the MRC basin development strategy activities.
• It was also understood tasks to implement ISH13 (Benefit-sharing options for hydropower on tributaries evaluated and reported) which fed the BDS process needed to receive priority in the ISH 2012 work plan.

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8 The BSM workshops held in each Member Countries, as well as the preparation and follow-up, thus represent a first step to implement the BDS activity designated as ISH13, “Benefit-sharing options for hydropower on tributaries evaluated and reported” approved by the MRC Council level.
In respect to ISH13, Cambodia’s view was that ISH13 should include transboundary forms of benefit sharing not only related to tributary dams but also related to proposed LMB mainstream dams.

Apart from discussion of BSM concepts and practices, a number of issues were raised by participants specific to the Cambodia situation. Among these discussions were:

- On Cambodia wanting to draw lessons from BSM experience in other Mekong Countries and also internationally;
- On stakeholders distinguishing between short-term compensation, resettlement support, livelihood restoration and longer term benefit sharing;
- On institutional Arrangements and lead Ministry responsibility for any BSM regulation;
- On consideration of a BSM Pilot Project and criteria for selecting a pilot;
- On views of the BSM activities for 2011 and a Road Map for 2013-15 for ISH support to Cambodia on BSM matters;
- On additional FAQ proposed by Cambodian workshop participants.

Finally, among the immediate priorities that CNMC requested the MRC to also consider were:

1. Support for some initial local area workshops on benefit sharing, and in particular, to focus on awareness raising and the role of CNMCS,
2. Support for the development of a BSM pilot project for Cambodia. It was noted one way forward was to explore the opportunity to leverage existing funds that currently available within Member Countries for benefit sharing related activities, as well as the possibility of obtaining additional funding from MRC Development Partners active in the Member Countries.
3. Support for further translation of the most relevant documents on BSM to Cambodia language including a simplification of the concepts to support CNMC discussion with its stakeholders at the local level, including NGO and CSO groups.
4. Longer term support for the study of legal frameworks for benefit sharing.
5. Support to prepare for the transboundary BSM discussions as part of the BDS.

These questions were thus considered in the design of the ISH13 activities and 12-Steps noted in Section 1-3 of this Paper.

There are other areas of national policy relevant to the different forms of benefit sharing raised in the National Workshop. Among these were discussion of Cambodia’s Rural Electrification Policy and its relationship to “Equitable Electricity Access (NTL Type- 3)”.

Presently the Cambodia Rural Electrification Fund (REF) has three programmes relevant to NTL Type measures namely:

**Power to the Poor Program**

- This REF program provides interest free loans for poor rural households to help them meet expenses for connection, deposit, meter wires from the meager to the house and in house wiring fees.
- The loan is up to 120 U.S. dollars per rural household.
• The household pays back the loan in monthly installments over 36 months without any interest.
• There are strict eligibility criteria on how poor households are defined.

This program facilitates poor households in rural areas access to electricity by enabling them to meet the up-front costs of connection of electricity. Most often they do not have sufficient money for one time payment for connection of electricity to their household. There are many household in this situation who live nearby existing and proposed tributary hydropower projects, who will not be resettled and thus will not receive any support.

Solar Home Systems (SAS)
• This second program is really suited to households very far from the electricity grid network where it is difficult to connect in the short to medium term, but also they are river basin residents who deserve electricity access;
• Bulk purchase and installation of SAS for non-electrified rural households reduces the costs of the solar homes.
• The REF provides a subsidy of $100 U.S. per SAS. It is not free. Repayment is allowed in installments up to a maximum of 48, plus there is free maintenance service over a period of four years where the cost of spare parts is paid by the beneficiary.
• To date there are some 12,000 SAS installed in the provinces in Cambodia.

Program for Improvements in Electricity Infrastructure in Rural Areas
• The purpose of this program run under the REF is to facilitate access to money for licensees to develop new electricity infrastructure (LV – or low voltage mainly) to supply licensed areas and improve levels of electricity service and reliability.
• The licensee can be a local community organization or business.
• The REF has a limited amount of funds for this purpose for low density areas (and low voltage networks). This kind of program can be extended in watershed of hydropower projects if revenue-sharing funds were to be tapped to support it.
• Under this program, EDC guarantees a loan from a commercial bank for licensees to participate. Any direct financial assistance to the licensee is paid back in monthly installment with no interest under the REF.

Other existing policy aspects raised in the Workshop that deserves mention include:
• Cambodia’s D&D (decentralization and de-concentration) policy adopted by government since 2005. The policy also complements with provincial, district and commune development guidelines, which cover various sectors in the sub-national development reform. In this regard, BSM would reinforce, in particular within PIP (provincial investment fund and CIP (Commune Investment Program).
• National policy and strategic plan (2013-2030) on Green Growth, which was officially launched by the Prime Minister in early March 2013. The strategy focuses on four principles: economic, environment, social and culture.
Section 3: Identification of BSM Options for Cambodia Tributaries

This section provides an overview of the BSM options evaluated in the ISH13 process by NMCS stakeholders. Readers may see the Annex Volume (Annex B) for descriptions of each type of option (BSM and benefit sharing considerations).  

3.1 General considerations

ISH13 aims to identify a sufficiently comprehensive range of BSM options for tributary hydropower to evaluate in a national process with CNMC stakeholders. This evaluation informs national processes, as well as the MRC Basin Development Strategy process.

Figure 3 illustrates the areas of analysis that ISH13 tasks involve, namely: desired outcomes of BSM, the evaluation of mechanisms to achieve the outcomes, and exogenous conditions.

Figure 3 also shows:

- It is important to clarify the desired outcomes upfront. This enables people to identify options that respond to objectives agreed. It recognizes the objectives (or desired outcomes) shape the selection of options to be evaluated.
- It also shows the evaluation of BSM options is an iterative process.
- Part of which involves clarifying the basic characteristics of the tributaries, again focusing on characteristics that may influence which options may be most practical, e.g. for:
  - The size of the tributary, the population and socio-economic status,
  - The number and types of existing and planned hydropower in the tributary,
  - The existence (or not) of functional river basin authorities,
  - The number of Provinces sharing the tributary, and so forth to help with implementation.

Readers may look in the ISH13 Guidance Note for more details.

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9 Please See Templates 3a, 3b and 3c.
Figure 3: Procedure to analyze options for implementation of BSM

3.2 Objectives assumed for BSM on Tributary Hydropower

In the absence of specific BSM policies for hydropower in Cambodia, general objectives assumed for the ISH13 exercise are illustrated below. These are derived from the ISH13 Guidance Notes and reflect MRC Programme work and the MRC BDS, as well as experience with BSM in the Mekong region. They are:

i. To advance sustainable forms of hydropower development and management.

ii. To provide stable, long-term mechanisms to maximize the socio-economic contribution of hydropower for the benefit of all citizens in-line with electricity development policy.

iii. To reinforce national efforts to close the income gap between urban and rural populations in a period of accelerated growth and modernization and boost local development in minority areas and areas of difficult or extremely difficult socio-economic conditions where many hydropower projects are located;

iv. To support implementation of relevant domestic law and international commitments to advance sustainable land and water resource management practices where the management of hydropower projects is an important consideration;

v. To ensure the protection of State interests and the rights and benefits of relevant organizations and individuals and the ecological environment in rural areas;
vi. To promote equitable electricity access to people living in remote and remote areas affected by hydropower development, including a large portion of ethnic peoples; and

vii. To enhance entitlements for natural resource access and ensure local communities have financial support to take advantage of local development and entrepreneurial opportunities that hydropower projects offer.

The Cambodia Working Group formed by CNMC decided to evaluate all BSM options suggested by the ISH13 Guidance material for Mekong tributaries. These fall under three generic types, namely national-to-local (NTL), transboundary dimension (TB), and cross-cutting considerations (CC).

It is important to remind the reader also that ISH13 focuses on with Mekong tributary hydropower projects and not proposed LMB mainstream projects.

3.3 Options for National-to-local forms of BSM on tributary hydropower

The National-to-local (NTL) BSM options are summarized in Table 3.1. Details of these options are provided in the Annex 3 (Template 3a).

Table 3.1: Generic types of National-to-local (NTL) BSM options to be evaluated for Mekong tributaries.

<table>
<thead>
<tr>
<th>National-To-Local Forms (NTL Options)</th>
<th>General description of options (Enhancing existing or introducing new measures to spread resource utilization benefits across economies catalyze broader-based growth and support social equity policies)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NTL Type- 1: Sharing of monetary benefits</strong></td>
<td>Sharing a portion of the economic/financial gains of hydropower that typically accruing at the national level (sharing “economic rent”) with sub-national levels possibly including provincial, tributary basin and local levels.</td>
</tr>
<tr>
<td><strong>NTL Type- 2: Facilitating non-monetary benefits</strong></td>
<td>Enhancing local natural resource access to help local and riverine communities offset resources access loss due to hydropower and balance downstream development opportunities and risks from reservoir operation.</td>
</tr>
<tr>
<td><strong>NTL Type- 3: Equitable access to electricity services</strong></td>
<td>Enhancing household and local community access to electricity and improved supply reliability for household in the wider project area.</td>
</tr>
<tr>
<td><strong>NTL Type- 4: Optimizing indirect and additional benefits</strong></td>
<td>Optimizing the additional and indirect benefits that arise from the project (e.g., opportunities for local jobs, roads, public infrastructure, local economic stimulus, etc.).</td>
</tr>
</tbody>
</table>
3.4 BSM Options for transboundary dimensions of tributary hydropower

Transboundary (TB) options are briefly described in Table 3.2. More details of these transboundary dimensions may relate to tributary hydropower are provided in the Annex (Template 3b).

Table 3.2: Generic types of Transboundary (TB) BSM options to be evaluated for Mekong tributaries.

<table>
<thead>
<tr>
<th>Generic Types of BSM Options to evaluate for Mekong Tributaries</th>
<th>General description of options</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB Type-1: increasing benefits “to the river”</td>
<td>Investments/measures, for example, related to the protection of water quality, biodiversity and overall sustainability</td>
</tr>
<tr>
<td>TB Type-2: increasing benefits “from the river”</td>
<td>Investment /measures, for example, relating to improved water resources management and all uses (consumptive and in-stream)</td>
</tr>
<tr>
<td>TB Type-3: reducing costs “because of the river”</td>
<td>Benefits arising from reducing tension in regional relations; shift to cooperation away from dispute/conflict – less money spent</td>
</tr>
<tr>
<td>TB Type-4: increasing benefits “beyond the river”</td>
<td>Trade arrangements beyond the water &amp; electricity sectors, integration of regional infrastructure, etc.</td>
</tr>
</tbody>
</table>

To account for transboundary dimensions of tributary hydropower, the Guidance offered was to consider potential direct (or indirect) effects of tributary hydropower in two cases:

- Case A - where two or more riparian countries are physically sharing the same tributary basin with existing or proposed hydropower projects (e.g. 3-S tributaries);
- Case B - where there are significant (+ve or –ve) impacts on other riparian countries upstream or downstream of the tributary system’s confluence with the Mekong mainstream.

Tributary hydropower projects may also supply both domestic and export power markets. Therefore, there is already an arrangement for sharing the benefit of tributary hydropower in those situations, between at least two countries (the exporter and importer of power).

The options in the ISH13 Guidance material for the TB dimensions of tributary hydropower reflect the approach set out in the MRC Basin Development Strategy. Nonetheless, the ISH13 Guidance noted that NMCS would decide which TB dimension options (if any) are included in the WG Seminar discussions and the national Working Papers. This recognizes that Member Countries may have different perspectives on what should be addresses in their respective national papers, which is normal because world-wide upper and lower riparian hold different views on what to emphasize.
3.5 Other cross-cutting considerations

In addition to options for the national-to-local and transboundary dimensions of benefit sharing, a number of cross-cutting considerations that may apply.

These considerations include:

- **Legislation/regulation/agreements** - What form of legislation/regulation/agreement? Whether to use regional and/or bilateral agreement mechanisms?
- **Size and types of Hydropower Projects** - What size of projects should BSM measures apply to? Should measures like revenue sharing formula vary according to the project size? Should projects for export and national supply are the same as projects only for national supply?
- **Targeting of beneficiaries** - What groups to target at sub-national levels (e.g. provincial, municipal, and local levels, vulnerable or poor groups, etc.)
- **Sources of finance** - What alternative sources of finance to use for monetary benefits (e.g. hydropower revenue sharing, tax measures, government budgets, etc.)?
- **Institutional mechanisms** - What institutional mechanisms to use to implement policy and provide monitoring and evaluation.
- **Delivery of BSM** - What mechanisms to deliver benefits to river basin residents (e.g. via government programmes, grant programmes, funded civil society initiatives, or hydropower project companies).

For the purposes of the ISH13 work; the evaluation of cross-cutting considerations was structured around the following five questions:

**CC Type- 1** What legal instruments may be considered to introduce BSM? And whether to use regional and/or bilateral agreement mechanisms?

**CC Type- 2** What measures may be considered relating to the size and scale of hydropower projects in tributaries?

**CC Type- 3** What measures may be considered to imbed benefit sharing considerations in hydropower planning and at each stage of the Project Cycle?

**CC Type- 4** What measures may be considered for hydropower projects for power export or national supply?

**CC Type- 5** What measures may be considered for transparency, dispute avoidance and settlement?

Details are provided in Annex 2 in Template 3c.
Section 4: Preliminary Evaluation of BSM Options for Cambodia

This section summarizes the method and results of the preliminary evaluation of BSM options for tributary hydropower by the Working Group (WG) for ISH13 established by CNMC.

The options were initially evaluated in a preliminary manner by the WG in a 3-Day seminar with follow-up meetings. The evaluation was captured in the national working paper by the Cambodia BSM Consultants. On 7-8 February 2013, the 2-day National Workshop was held to present the preliminary evaluation result to 65 participants from all CNMC stakeholder interests including senior government officials with relevant ministries, provincial departments, civil society, academy and research institutions, and private sector.

Workshop participants were also assigned to Breakout Groups to discuss among themselves and comment on the options, scoring, rankings, and grouping with some minor simplifications in terms of Khmer versions. Participants were invited to suggest additional options and comment on the evaluation method overall. (See Annex for National Workshop Agenda).

The Annex Volume of this Paper provides more information on the scoring of options by various sub-criteria. Again it is important to note this is a preliminary, qualitative evaluation to inform dialogue and government-led processes would look at the issues and options in more detail.

4.1 Multi-criterion evaluation framework

For ISH13 a simple qualitative approach was needed. It also had to be robust, reflect the MRC’s IWRM-based thinking and be comfortable for CNMCS stakeholders from different disciplines to use.

(ii) To achieve this, the evaluation was done along two main dimensions:

1. Value Added - a qualitative indication of the potential contribution of the option, as part of an “options mix”, or package of measures to advance sustainable development of the tributary/sub-basin and Mekong River basin overall, and
2. Stakeholder Preference – a qualitative indication of the views that different CNMC stakeholder interests have of the option, in terms of relative preference.

(iii) Sub-criteria and the scoring system for each dimension give details on how Value and Preference are defined. And here it was important to use all the sub-criteria that stakeholders wanted to use to evaluate Value and Preference.

(iv) Sub-criteria could be weighted to reflect what people consider to be the most significant criterion, or all sub-criteria could be given equal weight.
(v) Each option was qualitatively scored against the sub-criteria using a simple high, low, medium score. For example, to measure Value a 0, 1, 2 or 3 score was used, where 0 means the stakeholder felt the option offers no value and 3 means the option offers high value for the particular sub-criterion like social advancement or environment protection.

(vi) Similarly, the Preference indicator was based on weighted averages of views of the representatives of government representatives at different levels (in unofficial capacities), and of representatives of RBO/RBCs, civil society, hydropower developers/operators, etc.;

(vii) The qualitative “scores” for each option was then plotted on a chart in the form of a Value & Preference matrix that is easy to understand visually. Options scoring highest in Value and Preference appeared in the upper right of the Result Plot.

The CNMC Working Group for ISH13 decided to use the criteria offered in the ISH13 Guidance Note 1 and apply equal weigh to these criteria. This meant the following criteria were used:

**For the Value Dimension:**

<table>
<thead>
<tr>
<th>Meanings</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>The VALUE of the option under consideration in terms of its potential contribution to sustainable development of the tributary and wider Mekong River Basin (1995 Agreement), as well as sustainable hydropower development and management. From the legal definition of sustainable development, value needs to consider the harmonious advancement of the economic, social, environmental aspects, as well as poverty reduction and intergenerational equity.</td>
<td></td>
</tr>
</tbody>
</table>

Five sub-criterions applied to all options to evaluate Value were:

1. (Social Advancement): contribution to poverty reduction & social advancement in the sub-basin (consistency govt policies) – 20% weight
2. (Environmental Protection): contribution to environment protection aims in the sub-basin (consistency govt policies) – 20% weight
3. (Economic stimulus): help to economic stimulus of sub-basin and local areas (consistency govt policies) – 20% weight
4. (Intergenerational equity/flexibility): Flexibility to adapt/modify the measure over time to adjust to values of society – 20% weight
5. (Practicality & Capacity to implement) – 20% weight

**For the Preference Dimension**

This means the relative Preference for the option under consideration as expressed by different stakeholder interests in the tributary. This includes stakeholders at different levels of government (i.e. national, provincial and local levels), as well as river basin organizations, and representatives of civil society and the private sector with an interest in hydropower and local development issues.

Five sub-criterion used to evaluate Preference were:

- (National Level Government Line Agencies, a non representative sample) – 20% weight
• (Provincial Level Government, a non representative sample) – 20% weight
• (River Basin Organization) – 20% weight
• (Civil Society, a non representative sample) – 20% weight
• (Hydropower Developers/Operators, a non representative sample) – 20% weight

The following tables indicated the scoring system.

**Scoring for the Value Added sub-Criteria**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td><strong>Does not add value</strong> – This option definitely does not add value for this sub-criteria in terms of potential contribution to sustainable development in the Tributary and wider Mekong River Basin situation.</td>
<td>This option definitely does not add value for this sub-criteria in terms of potential contribution to sustainable development in the Tributary and wider Mekong River Basin situation.</td>
</tr>
<tr>
<td>1</td>
<td><strong>Potentially adds value</strong> - This option may add some value for this sub-criterion; however, more information is needed to assess the potential contribution of the measure to sustainable development in the Tributary and cooperation on sustainable development of the wider Mekong River Basin.</td>
<td>This option may add some value for this sub-criterion; however, more information is needed to assess the potential contribution of the measure to sustainable development in the Tributary and cooperation on sustainable development of the wider Mekong River Basin.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Does add some value</strong> – This option does add some value for this sub-criterion and may be part of the “options mix” in a comprehensive approach to sustainable development in the Tributary and cooperation on sustainable development of the wider Mekong River Basin.</td>
<td>This option does add some value for this sub-criterion and may be part of the “options mix” in a comprehensive approach to sustainable development in the Tributary and cooperation on sustainable development of the wider Mekong River Basin.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Definitely adds measurable value</strong> - This option will add measurable value for this sub-criterion as part of the “options mix” in a comprehensive approach to sustainable development in the Tributary and cooperation on sustainable development of the wider Mekong River Basin.</td>
<td>This option will add measurable value for this sub-criterion as part of the “options mix” in a comprehensive approach to sustainable development in the Tributary and cooperation on sustainable development of the wider Mekong River Basin.</td>
</tr>
</tbody>
</table>

**Scoring for Stakeholder Preference sub-Criteria**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td><strong>Not relevant and not preferred</strong> – from the perspective of this evaluator (stakeholder interest) this option is not needed in the country policy framework, or is not appropriate in the Mekong situation at this time.</td>
<td>This option is not needed in the country policy framework, or is not appropriate in the Mekong situation at this time.</td>
</tr>
<tr>
<td>1</td>
<td><strong>Likely Relevant</strong> – This option and some generic measures of this type may be appropriate for Mekong tributary hydropower in the country. However, more information on the option is needed to properly evaluate the relative preference.</td>
<td>This option and some generic measures of this type may be appropriate for Mekong tributary hydropower in the country. However, more information on the option is needed to properly evaluate the relative preference.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Moderately relevant</strong> – This option (and measures of this generic type) are appropriate for Mekong tributary hydropower in the country. This option and related measures can be part of a comprehensive approach to BSM and examples need to be shown to NMCS stakeholders.</td>
<td>This option (and measures of this generic type) are appropriate for Mekong tributary hydropower in the country. This option and related measures can be part of a comprehensive approach to BSM and examples need to be shown to NMCS stakeholders.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Definitely relevant and preferred</strong> - This option (and measures of this generic type) is definitely appropriate for Mekong tributary hydropower in the country. It is a preferred option in a comprehensive approach to benefit sharing.</td>
<td>This option (and measures of this generic type) is definitely appropriate for Mekong tributary hydropower in the country. It is a preferred option in a comprehensive approach to benefit sharing.</td>
</tr>
</tbody>
</table>
4.2 Results of the Preliminary evaluation of BSM Options

The results of the preliminary evaluation of BSM options for tributary hydropower are presented under the three main categories.

i. NTL Types (national-to-local) - 4 generic types
ii. CC Types (cross-cutting), and - 5 topics/questions
iii. TB Types (transboundary) - 4 generic types

A two page format is used where:

- Page 1 shows the result plot showing the value and preference of various options under each generic type (starting with options for sharing monetary benefits). This is followed by a table describing each option and providing the preliminary evaluation scores for Value and Preference.
- Page 2 has a bullet point observation/comment on the result and a table that puts the options into one of two categories (i) options recommended to be considered in a comprehensive BSM approach, and (ii) options recommended for further study to decide whether to keep or drop them from further consideration. Lowest scoring options are eliminated.

The Annex VOLUME provides a summary description of each option evaluated in ISH13.

Overall, the participants of the National Workshop supported the evaluation criteria and methods and agreed with the preliminary evaluation done by the National Working Group. Some new options were added. Some Breakout Groups indicated where they felt the priority options may be adjusted. While there were some differences, consensus agreed on the basic thrust of the evaluation presented. The WG preferred not to change the scoring results in the National Discussion Paper, but acknowledges that some amendments responding to national context can be considered in next steps.
4.2.1 Preliminary evaluation of national-to-local options

**NTL Type- 1: Sharing Monetary Benefits of Hydropower**

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

- The lowest score option (1.1) “no measure beyond current practice” suggests there is scope to consider monetary forms of BSM for tributary hydropower.
- Options with the highest Value and Preference scores in this preliminary evaluation were “Introduce local revenue sharing using new local (social and environmental fund)” (Option 1-2) “with targets to raise incomes of people living in project areas” (Option 1-9).
- Payment for Ecological Services (Option 1-8) scored high, with actions like paying local communities to plant headwater trees to benefit both hydropower and raise local incomes.
- Options for further study include Option 1-6 (involving RBC/RBOs in basin-level benefit sharing); Option 1-4 (consider revenue sharing for provinces, e.g., a royalty), and Option 1-7 (raising money to finance local benefit sharing through hydropower municipal taxes).
- Further study would eliminate mutually exclusive options (e.g. eliminate Option 1-3, if Option 1-2 is the preferred mechanism to fund local level BSM).
- Option 1-10, “coordinate and optimise different funds (e.g. environment protection funds, water resource protection funds, PES funds, etc,) to ensure synergies for benefit sharing” received a high score. BSM experience show is important to minimize confusion.
- Option 1.5 Sharing funds with the Province where the project is located showed moderate value but low preference in this preliminary evaluation.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(on basis of relative Value and Preference)</strong></td>
<td></td>
</tr>
<tr>
<td>1.2 Introduce local revenue sharing using <strong>new local (social and environmental) fund</strong></td>
<td>Possibly linked to current draft decree SE fund of MOE</td>
</tr>
<tr>
<td>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.</td>
<td>Initial targets. Modify targets over time.</td>
</tr>
<tr>
<td>1.8 Introduce payments for ecological services (PES) also referred to as environmental services.</td>
<td>Example jaws in other Member Countries</td>
</tr>
</tbody>
</table>

**Do further study**
(To decide to keep or drop from the compressive BSM approach)

| 1.3 Introduce local revenue sharing by increasing existing **commune investment program** (local development budgets). | Possibly link to on-going CIP/CDP |
| 1.4 Introduce revenue sharing at **district/provincial levels** through a Development Fund mechanism. | Provinces share it tributary basin share |
| 1.6 Introduce revenue sharing at the tributary scale using the River Basin entity (RBC/RBO) | Once RBC/RBO functional |
| **Provincial/municipal authorities collect taxes, fees**, etc., for land or water used by hydropower projects in tributaries. | As alternative/additional measure |
| 1.10 Coordinate among sector funds that hydropower sales contribute revenue to (by Law) to ensure synergies for benefit sharing are identified and optimised. | International practice shows this is important to (i) optimize benefits, and (ii) minimize overlap or confusion |
## NTL Type- 2: Optimizing Non-Monetary Benefits (including facilitating local resource access)

**Value and Preference Plot 2**

### Options

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

- The lowest ranked option (2.1) was “existing practices are adequate”, indicating there is scope to improve non-monetary forms of BSM on Cambodia’s proposed tributary hydropower beyond what is expected in current practice.
- Most options showed similar high Value and Preference.
- This suggests there is an opportunity to systematically optimize local resource access (fish, forest, water and land) and non-monetary around hydropower in discussions with local area people and riverine communities.
- And take steps to increase existing measures like vocational training for new livelihoods, job skills for income diversification based on the natural resource changes due to hydropower (both positive and negative changes).
- And also target women, youth and vulnerable groups in deciding priorities to enhance resource access and provide non-monetary benefits in line with current policy.
- One option suggested was to consider balancing development opportunities and risks to people immediately downstream and along the reservoir perimeter in decisions about by reservoir operating policies (e.g., reservoir drawdown, flood and drought operation).
- Summary description of non-monetary options may be found in Annex 2a.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on the basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2 Introduce procedures to evaluate opportunities to optimize local resource access and non-monetary benefits around existing tributary hydropower projects, engaging with local communities.</td>
<td>Can evaluate procedures as part of project preparation studies (e.g., EIA, EMMPs, etc.)</td>
</tr>
<tr>
<td>2.3 Systematically assess scope to optimize local resource access in project studies for proposed (new) tributary hydropower engaging with local communities to identify and prioritize opportunities.</td>
<td>e.g. as part of project studies and EMMPs</td>
</tr>
<tr>
<td>2.7 Extend vocational training for new livelihoods, job skills, and income diversification based on natural resource access changes due to hydropower.</td>
<td>Enhance existing programmes.</td>
</tr>
<tr>
<td>2.8 Ensure women, youth, vulnerable groups and ethnic groups can actively participate in training activities and decisions regarding local resource access.</td>
<td>Consistent with existing policy</td>
</tr>
</tbody>
</table>

**Do further study**

(To decide whether to keep or drop options from further consideration)

<table>
<thead>
<tr>
<th>Options</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4 Identify and remove legal constraints to enhance local resource access (forestry, land or water) at national, provincial or local levels, and address them.</td>
<td>e.g. access to forest product, aquaculture, reservoir fishing;</td>
</tr>
<tr>
<td>2.6 Assess ways to combine long-term financial support from hydropower revenue sharing with measures to improve local resource access.</td>
<td>Link to above 2.4</td>
</tr>
<tr>
<td>2.5 Involve river basin entities in assessing opportunities to enhance local resource access in the tributary in relation to the development opportunities and risks of hydropower in the tributary.</td>
<td>Also to strengthen RBO-type functions by Departments/Ministries</td>
</tr>
</tbody>
</table>
NTL Type-3: Ensuring Equitable Access to Electricity Services

<table>
<thead>
<tr>
<th>NTL 3</th>
<th>Option</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1</td>
<td>Current practice are adequate to improve or spread electricity access in the tributary related to existing or proposed hydropower</td>
<td>1.0</td>
</tr>
<tr>
<td>3-2</td>
<td>Introduce a requirement to electrify all resettled households in new tributary hydropower (public + IPP)</td>
<td>2.4</td>
</tr>
<tr>
<td>3-3</td>
<td>Introduce a requirement for connection, refurbishment and strengthening of electrical supply for resettlement host community of existing tributary hydropower.</td>
<td>2.3</td>
</tr>
<tr>
<td>3-4</td>
<td>Prioritize extending/improving electricity supply to communities in the area of tributary hydropower projects within existing rural electrification programmes.</td>
<td>2.3</td>
</tr>
<tr>
<td>3-5</td>
<td>Provide targeted assistance for electrification of the poorest households living in the project vicinity.</td>
<td>2.1</td>
</tr>
<tr>
<td>3-6</td>
<td>Establish a requirement to assess off-grid supply in areas too costly to connect to the grid as part of project preparation studies.</td>
<td>2.1</td>
</tr>
<tr>
<td>3-7</td>
<td>Provide tariff subsidy for communities in the area of hydropower projects for a given period of time.</td>
<td>2.1</td>
</tr>
<tr>
<td>3-8</td>
<td>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.</td>
<td>1.7</td>
</tr>
</tbody>
</table>
Observations on the Results: NTL Type- 3

- Most options for equitable access to electricity and improved service levels showed high Value and Preference. The current practice is adequate option scored lowest and is dropped.
- Cambodia has among the highest electricity tariffs and lowest electrification ratios in Asia. The national electrification ratio (house connection rates) of about 26% at present is even lower in remote tributary areas.
- The evaluation suggests considering a “package of measures” may be appropriate with a systematic way to ensure all options are explored by local communities with power authorities.
- One option is Cambodia has a Rural Electrification Fund under GEF financing under MIME implemented by EdC. The Fund has most, if not all the ISH13 NTL Type- 3 options as elements of the RE programme.
- One approach is to ensure the RE is implemented around tributary hydro projects either through the existing funding (if it is sufficient) or via revenue sharing (Type 1 mechanisms), or some mix.
- The reader is referred to Template 3a in the Appendices for summary information on options.
- Overall, the participants during the national workshop suggested 3.7 and 3.8 should be higher priorities for current Cambodia context.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3-1</strong> Current practice are adequate to improve or spread electricity access in the tributary related to existing or proposed hydropower</td>
<td>Lowest score and thus eliminated</td>
</tr>
<tr>
<td><strong>3-2</strong> Introduce a requirement to electrify all resettled households in new tributary hydropower (public + IPP)</td>
<td>Ensure all IPPs do the same as EdC Normally reflected in Concession Agreements.</td>
</tr>
<tr>
<td><strong>3-3</strong> Introduce a requirement for connection, refurbishment and strengthening of electrical supply for resettlement host community of existing tributary hydropower.</td>
<td>Normally reflect in project Concession Agreements</td>
</tr>
<tr>
<td><strong>3-4</strong> Prioritize extending/improving electricity supply to communities in the area of tributary hydropower projects within existing rural electrification programmes.</td>
<td>Rural Electrification Fund strategy</td>
</tr>
<tr>
<td><strong>3-5</strong> Provide targeted assistance for electrification of the poorest households living in the project vicinity.</td>
<td>Can be financed in part by Type-1 revenue sharing measures</td>
</tr>
<tr>
<td><strong>3-6</strong> Establish a requirement to assess off-grid supply in areas too costly to connect to the grid as part of project preparation studies.</td>
<td>Consistent with Rural Electrification Fund strategy</td>
</tr>
<tr>
<td><strong>3-7</strong> Provide tariff subsidy for communities in the area of hydropower projects for a given period of time.</td>
<td>For a period of time. Those in immediate area of project.</td>
</tr>
<tr>
<td><strong>3-8</strong> 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.</td>
<td>MIME policy or Rural Electrification Fund strategy</td>
</tr>
</tbody>
</table>

**Do further Study**
(To decide whether to consider in future update of policy)

---
**NTL Type- 4: Optimizing Additional and Indirect Benefits**

![Value and Preference Plot 4](image)

<table>
<thead>
<tr>
<th>NTL 4</th>
<th>Option</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-1</td>
<td>Current practices are adequate to spread additional benefits deriving from existing or proposed tributary hydropower.</td>
<td>1.0</td>
</tr>
<tr>
<td>4-2</td>
<td>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).</td>
<td>2.4</td>
</tr>
<tr>
<td>4-3</td>
<td>Introduce guidance to maximize local/sub-regional employment opportunities during construction of tributary hydropower projects.</td>
<td>2.3</td>
</tr>
<tr>
<td>4-4</td>
<td>Introduce guidance to maximize local/sub-regional employment benefits during the operation of tributary hydropower projects.</td>
<td>2.3</td>
</tr>
<tr>
<td>4-5</td>
<td>Introduce guidance for local training and job skills enhancement to optimize local/provincial employment during construction and operation.</td>
<td>2.1</td>
</tr>
<tr>
<td>4-6</td>
<td>Provide additional budget allocations (e.g., from national budget or project capital) for public infrastructure construction in Provinces with tributary hydropower.</td>
<td>2.1</td>
</tr>
<tr>
<td>4-7</td>
<td>Provide additional budget allocations (e.g., from national budget or project capital) for public infrastructure operation and maintenance in the Province/tributary with hydropower.</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Observations on the results for NTL Type-4 options:
- All options to improve and enhance additional and indirect benefits showed a similar pattern of high Value and Preference (see the cluster in Plot 4).
- The single highest rank measure by Value and Preference was Option 4-5, “Introduce guidance for local training and job skills enhancement to optimize local/provincial employment during construction and operation.”
- This suggests a comprehensive approach would ensure all practical and reasonable measures are exploited fully during project construction and operation.
- The reader is referred to Template 3a in the Appendices for summary information on options.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(On basis of Relative Value and Preference)</td>
<td></td>
</tr>
<tr>
<td>4-1 Current practices are adequate to spread additional benefits deriving from existing or proposed tributary hydropower.</td>
<td>Already part of local economy functioning</td>
</tr>
<tr>
<td>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).</td>
<td>Mainly operation jobs that are limited</td>
</tr>
<tr>
<td>4-3 Create guideline to maximize local/sub-regional employment opportunities during construction of tributary hydropower projects.</td>
<td>Possible</td>
</tr>
<tr>
<td>4-4 Introduce guidance to maximize local/sub-regional employment benefits during the operation of tributary hydropower projects.</td>
<td>Possible measure under provincial Investment program</td>
</tr>
<tr>
<td>4-5 Introduce guidance for local training and job skills enhancement to optimize local/provincial employment during construction and operation.</td>
<td>Less likely as these are existing projects</td>
</tr>
<tr>
<td>4-6 Provide additional budget allocations (e.g., from national budget or project capital) for public infrastructure construction in Provinces with tributary hydropower.</td>
<td>Provincial Investment Program is expected to be the main source</td>
</tr>
<tr>
<td>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.</td>
<td>Effect is finished because these are existing projects</td>
</tr>
</tbody>
</table>

**Do further Study**
(To decide whether to consider in future update of policy)
### 4.2.2 Preliminary ranking of cross-cutting considerations

**CC Type- 1: What legal instruments may be considered to introduce benefit sharing mechanism?**

<table>
<thead>
<tr>
<th>CC 1</th>
<th>Option</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Value</td>
</tr>
<tr>
<td>1-1</td>
<td>Incoperate benefit sharing in national legislation and country legal framework (e.g., policy review of water law, electricity law, environmental law, or a new Decree Laws specific to BSM).</td>
<td>2.4</td>
</tr>
<tr>
<td>1-2</td>
<td>Involve River Basin organizations in delivery of benefit sharing mechanisms</td>
<td>2.4</td>
</tr>
<tr>
<td>1-3</td>
<td>Incorporate official poverty reduction targets in BSM planning and implementation arrangements in the vicinity of tributary hydropower. Relevant in situations where communities in the project vicinity live well below national/provincial income averages.</td>
<td>2.4</td>
</tr>
<tr>
<td>1-4</td>
<td>Include provinces that have hydropower in their tributary in revenue sharing, where Provinces feel development impacts (+ve or –ve) of hydropower.</td>
<td>2.6</td>
</tr>
<tr>
<td>1-5</td>
<td>Incorporate benefit sharing provisions related to transboundary dimensions of significant Mekong tributaries in MRC Procedures conditional on successful negotiation under the Basin Development Strategy and MRC Framework.</td>
<td>1.4</td>
</tr>
<tr>
<td>1-6</td>
<td>Lead Ministry - Have Ministry of Industry, Mine and Energy (MIME) sponsor or be responsible for BSM regulation or Law.</td>
<td>1.6</td>
</tr>
<tr>
<td>1-7</td>
<td>Lead Ministry - Have MOWRAM (Cambodia) sponsor or be responsible for BSM regulation or Law.</td>
<td>1.5</td>
</tr>
<tr>
<td>1-8</td>
<td>Lead Ministry - Have Joint Ministry sponsorship of BSM Law or Regulation (e.g. Government Decree or MEF, MOE, MIME, MoWRAM)</td>
<td>2.9</td>
</tr>
</tbody>
</table>
**Observations/comments on the preliminary evaluation results:**

- Considerations 1-3 and 1-4 ranked the highest Value and Preference overall.
- Option 1-4 includes Provinces with tributaries that have hydropower in their territory in the NTL revenue sharing arrangements. Option 1-3 is to incorporate official poverty reduction targets in BSM planning and implementation arrangements.
- Overall, participants feel that 1-1 should be high priority as there is need to review existing laws related to BSM to compare, highlight gaps and opportunities.
- An additional option was to request MRC for further training on BSM related laws, not only in the water and electricity sector.
- It was also suggested MIME can be lead agency in preparing any legal instrument related to BSM in Cambodia, in particular those that involve the revenue-sharing arrangements and the improving electricity access, but all relevant Ministries needed to be involved.
- Readers are referred to the Template 3c in the Annex Volume (Annex 2) for summary information on each consideration.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on the basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8 Lead Ministry - Have Joint Ministry sponsorship of BSM Law or Regulation (e.g. Government Decree or MEF, MOE, MIME, MoWRAM)</td>
<td>BSM could not be done in one institution like MIME as the lead</td>
</tr>
<tr>
<td>1-1 Incorporate benefit sharing in national legislation and country legal framework (e.g., within existing Water or Electricity Laws an Acts, or in new Decree Laws specific to BSM)</td>
<td>Because revenue sharing aspects requires a law to be applied consistently on all projects</td>
</tr>
<tr>
<td>1-3 Incorporate official poverty reduction targets in BSM planning and implementation arrangements in the vicinity of tributary hydropower. Relevant in situations where communities in the project vicinity live well below national/provincial income averages.</td>
<td>e.g., a mix of targeting low income groups and giving priority to income raising activities in the “menu” of BSM measures communities may choose.</td>
</tr>
<tr>
<td>1-4 Include Provinces that have hydropower in their tributary in revenue sharing, where Provinces feel development impacts (+ve or –ve) of hydropower intended for the national benefit (e.g. to support river communities or watershed management.</td>
<td>Various approaches like including provinces in the revenue sharing formula (e.g., Argentina and Brazil examples) or royalties to the Province (e.g., provinces in Canada) as explained in BSM Knowledge Base documents.</td>
</tr>
</tbody>
</table>

**Do Further Study**  
(To keep it or drop options from further consideration)

<table>
<thead>
<tr>
<th>Options</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Involve River Basin Committees or organizations in delivery of benefit sharing mechanisms</td>
<td>RBC/RBOs in what ever form. May be also the Provincial or Nation body responsible for river basin planning in the tributary</td>
</tr>
<tr>
<td>1-5 Incorporate benefit sharing provisions related to transboundary dimensions of significant Mekong tributaries in MRC Procedures conditional on successful negotiation under the Basin Development Strategy and MRC Framework.</td>
<td>Consideration related to transboundary dimensions of tributary hydropower</td>
</tr>
</tbody>
</table>
CC Type-2: What measures relating to the size and scale of the tributary hydropower?

<table>
<thead>
<tr>
<th>CC 2</th>
<th>Option</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Value</td>
</tr>
<tr>
<td>2-1</td>
<td>Apply BSM policy equally to all grid-connected hydropower projects with a legal requirement for an environment impact assessment (EIA).</td>
<td>2.2</td>
</tr>
<tr>
<td>2-2</td>
<td>Projects over 1 MW: BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 1.0 MW)</td>
<td>1.8</td>
</tr>
<tr>
<td>2-3</td>
<td>Projects Over 10 MW: BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 10 MW)</td>
<td>2.0</td>
</tr>
<tr>
<td>2-4</td>
<td>Have a different percent and regulations for revenue sharing for hydropower projects of different size categories (e.g. based on MW installed capacity or energy production (GWh))</td>
<td>1.8</td>
</tr>
<tr>
<td>2-5</td>
<td>Have the same percent and regulations for revenue sharing for all hydropower projects of different size categories.</td>
<td>1.9</td>
</tr>
</tbody>
</table>
Observations/comments on the preliminary evaluation results:

- All five considerations ranked similar highly Value and Preference, even though some are mutually exclusive considerations.
- For example, Option 2.2 proposes to apply BSM measures like revenue sharing to all hydropower projects above 1 MW, while Option 2.3, proposes to apply measures to hydropower projects above 10 MW.
- Because many considerations are mutually exclusive, they are placed in the category of “Do further study” in the table below to decide which ones to keep or drop.
- Readers are referred to Template 3c in Annex 2 for summary information on each consideration.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on the basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Do Further Study</strong> (To keep it or drop options from further consideration)</td>
<td></td>
</tr>
<tr>
<td>2-1 Apply BSM policy equally to all grid-connected hydropower projects with a legal requirement for an environment impact assessment (EIA).</td>
<td>Approach adopted in Viet Nam Draft Decree Law</td>
</tr>
<tr>
<td>2-2 Projects over 1 MW: BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 1.0 MW)</td>
<td>Thailand used projects over 6 MW for the Power Development Fund (PDF)</td>
</tr>
<tr>
<td>2-3 Projects Over 10 MW: BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 10 MW)</td>
<td></td>
</tr>
<tr>
<td>2-4 Have a different percent and regulations for revenue sharing for hydropower projects of different size categories (e.g. based on MW installed capacity or energy production (GWh))</td>
<td>In some countries royalties that fund BSM are calculated on the size of the project (MW and energy Generation. Thailand’s PDF adjusts the area qualifying for revenue sharing on the basis of project size</td>
</tr>
<tr>
<td>2-5 Have the same percent and regulations for revenue sharing for all hydropower projects of different size categories.</td>
<td>Most straightforward and common</td>
</tr>
</tbody>
</table>
### Generic CC Type- 3: What measures may be considered have benefits sharing for each stage of the Project Cycle?

<table>
<thead>
<tr>
<th>CC3</th>
<th>Options</th>
<th>Value</th>
<th>Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1</td>
<td><strong>Planning Stage</strong> - Consider benefit sharing in basin planning studies, SEAs and hydropower ranking for identification of new tributary hydropower projects (It was acknowledged that BSM should be considered from this stage).</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>3-2</td>
<td><strong>Project Preparation Stage</strong> - Consider benefit sharing in project preparation studies (feasibility and EIA/SIA studies, resettlement plans etc.) for new tributary hydropower projects</td>
<td>2.5</td>
<td>2.3</td>
</tr>
<tr>
<td>3-3</td>
<td><strong>Detailed Design Stage</strong> - Consider scope to improve physical design of hydropower projects for greater flexibility for adaptive management and optimize how benefits and costs (direct and indirect) are distributed in the tributary to different stakeholder/development interests.</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>3-4</td>
<td><strong>Construction Stage</strong> - Assess opportunities to optimize benefit sharing during the construction phases of tributary hydropower projects.</td>
<td>2.6</td>
<td>2.5</td>
</tr>
<tr>
<td>3-5</td>
<td><strong>Operation Stage</strong> - Assess opportunities to optimize benefit sharing in the operation phase of tributary hydropower projects.</td>
<td>2.8</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Observations/comments on the preliminary evaluation results:

- All considerations show similar high Value and Preference, reflecting the Value of factoring benefit sharing thinking into all stages of the planning and project cycle. It was acknowledged that BSM should be considered from the planning stage).
- Consideration 3-5 scored the highest Value and Preference, “Assess opportunities to optimize benefit sharing in the operation phase of tributary hydropower”. This is logical, as it is most relevant to long-term BSM and revenue sharing.
- Consideration 3-4 scored second highest, which is to have BSM measures apply during the construction stages which may last from 3 to 7 years or more, such as to optimize training and local jobs and boost to the local/provincial economy.
- Project Design and Preparation Stages also scored high in Value and Preference “e.g., incorporate concise assessments of the potential to optimize benefit sharing measures in project EIAs linked to the identification of social and environmental impacts of construction and operation phases of tributary hydropower.” This helps prepare for the long-term BSM arrangements and take advantage of opportunities during the construction phase.
- Readers are referred to Template 3c in the Annex 2 for summary information on considerations.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on the basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5 Operation Stage - Assess opportunities to optimize benefit sharing in the operation phase of tributary hydropower projects.</td>
<td>Most BSM measures apply at this stage</td>
</tr>
<tr>
<td>3.4 Construction Stage - Assess opportunities to optimize benefit sharing during the construction phases of tributary hydropower projects.</td>
<td>May last 3-7 years or more when several BSM measures come into play maximizing local benefit</td>
</tr>
<tr>
<td>3.3 Design Stage - Consider scope to improve physical design of hydropower projects for greater flexibility for adaptive management and optimize how benefits and costs (direct and indirect) are distributed in the tributary to different stakeholder/development interests.</td>
<td>Important to build in physical flexibility to modify operations affecting the distribution of benefits and impacts.</td>
</tr>
<tr>
<td>3.2 Project Preparation Stage - Consider benefit sharing in project preparation studies (feasibility and EIA/SIA studies, resettlement plans etc.) for new tributary hydropower projects.</td>
<td>Important to plan BSM measures and involve stakeholders</td>
</tr>
<tr>
<td>3.1 Planning Stage - Consider benefit sharing in basin planning studies, SEAs and hydropower ranking for identification of new tributary hydropower projects.</td>
<td></td>
</tr>
</tbody>
</table>

Do Further Study
(To decide whether to keep or drop options from further consideration)

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10 Readers are also referred to relevant Section in the Viet Nam Draft Decree Law that explains the rationale and explains the specific measures that may be considered at each stage.
**CC Type- 4: What BSM measures may be considered for hydropower projects for power export or national supply?**

<table>
<thead>
<tr>
<th>CC4</th>
<th>Option</th>
<th>Value</th>
<th>Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-1</td>
<td>New tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>4-2</td>
<td>Existing tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
<td>2.5</td>
<td>2.2</td>
</tr>
</tbody>
</table>
Observations/comments on the preliminary evaluation results:

- These two considerations showed similar high Value and Preference. The Workshop participants confirmed they should be treated the same.
- This means existing and proposed hydropower may be treated equally in national BSM regulations, through the actual revenue collection mechanism may vary between hydropower projects for domestic sales only, and hydropower projects designed for domestic + export electricity sales.
- Readers are referred to Template 3c in Annex 2 for summary information.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(on the basis of relative Value and Preference)</td>
<td></td>
</tr>
<tr>
<td>4-1 New tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
<td>Applies in the Cambodian situation</td>
</tr>
<tr>
<td><strong>Do further Study</strong></td>
<td></td>
</tr>
<tr>
<td>(To decide whether to keep or drop options from further consideration)</td>
<td></td>
</tr>
<tr>
<td>4-2 Existing tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
<td></td>
</tr>
</tbody>
</table>
CC Type- 5: What measures may be considered for transparency, dispute avoidance and settlement?

<table>
<thead>
<tr>
<th>CC5</th>
<th>Option</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-1</td>
<td>Include steps to strengthen transparency and dispute settlement mechanisms in BSM Laws or Agreements.</td>
<td>2.0</td>
</tr>
<tr>
<td>5-2</td>
<td>Prepare transparency and accountability measures for all fund mechanisms used to collect or distribute money for revenue sharing on tributary hydropower.</td>
<td>2.0</td>
</tr>
<tr>
<td>5-3</td>
<td>Prepare social accountability plans for all Local Area/Local Development Funds established for benefit sharing on tributary hydropower.</td>
<td>1.6</td>
</tr>
<tr>
<td>5-4</td>
<td>Make clear how disputes and appeals will be handled in the administration of money related to financial management of revenue sharing on tributary hydropower at different levels.</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Observations/comments on the preliminary evaluation results:

- All considerations to enhance transparency and accountability in the implementation of BSM measures showed similar moderate to high Value and Preference.
- Option 5-2 was ranked the highest, “Prepare transparency and accountability measures for all Fund Mechanisms (or Community Projects) used to collect or distribute money for revenue sharing on tributary hydropower”.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on the basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-2</td>
<td>Prepare transparency and accountability measures for all Fund Mechanisms (or Community Projects) used to collect or distribute money for revenue sharing on tributary hydropower. See BSM Knowledge Base Volume 1 for definition for further explanation</td>
</tr>
<tr>
<td>5-1</td>
<td>Include steps to strengthen transparency and dispute settlement mechanisms in BSM Laws or Agreements. Can be local as well as any disputes arising between provinces sharing tributaries – for example.</td>
</tr>
<tr>
<td>5-4</td>
<td>Make clear how disputes and appeals will be handled in the administration of money related to revenue sharing on tributary hydropower at different levels. Again at all national to local levels important for BSM implementation.</td>
</tr>
</tbody>
</table>

**Do further Study**
(To decide whether to keep or drop options from further consideration)

| 5-3 | Prepare social accountability plans for all Local Area/Local Development Funds established for benefit sharing on tributary hydropower. See BSM knowledge on Volume 1 for definition of social accountability plans for local areas fund – essentially local transparency measures on who is eligible, money flow in and out of local funds, who gets grants, etc. |
### 4.2.3 Preliminary Ranking of Options for Transboundary Dimensions

#### Generic TB Type- 1: increasing benefits “to the river”

<table>
<thead>
<tr>
<th>Options</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assume addition measures beyond current practice are not essential for benefit sharing on transboundary dimensions of tributary hydropower.</td>
<td>1.0</td>
</tr>
<tr>
<td>Provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in MRC Programmes and MRC Procedures.</td>
<td>2.4</td>
</tr>
<tr>
<td>Require and provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in strategic plans and strategies developed by tributary RBC/RBOs.</td>
<td>2.5</td>
</tr>
<tr>
<td>Coordinate/align BSM-related provisions for watershed management in tributary basins with hydropower shared by two or more countries.</td>
<td>2.0</td>
</tr>
<tr>
<td>Expand available financing for measures to protect/enhance water resource quality using hydropower revenue in tributary basins shared by two or more countries.</td>
<td>2.3</td>
</tr>
<tr>
<td>Enhance riparian cooperation in preparing environment flow assessment and provision in reservoir operation/management strategies in tributaries shared by two or more Countries.</td>
<td>2.3</td>
</tr>
<tr>
<td>Highlight/incorporate the explicit evaluation of establishing a “Mekong Fund” to facilitate benefit sharing on the transboundary dimensions of tributary hydropower and potentially LBM UMB mainstream hydropower</td>
<td>2.5</td>
</tr>
</tbody>
</table>
Observations/comments on the preliminary evaluation results:

- Option 1-1 “no measures beyond current practice” scored lowest, which suggests there is scope to consider increasing benefits to the river on the transboundary dimensions of tributary hydropower. All other options showed moderate to high Value and Preference.

- Among the three highest scoring options in Value and Preference were:
  - Option (1-3), “Require and provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in strategic plans and strategies developed by tributary RBC/RBOs”.
  - Option (1-6), “Enhance riparian cooperation in preparing environment flow assessment and provision in reservoir operation/management strategies …”.
  - Option (1-7), “Highlight/incorporate the explicit evaluation of establishing a “Mekong Fund” to facilitate benefit sharing on the transboundary dimensions of tributary hydropower and potentially LBM UMB mainstream hydropower”.

- The MRC has developed tools for this kind of action, like the Integrated Basin Flow Management (IBFM) approach developed as part of the MRC Decision Support Framework or DSF, and more recently the RSAT (Rapid Sustainability Evaluation Tool) developed by the ISH and pilot tested on tributary basins with hydropower in each Member Country.

- Overall, participants suggested MRC should use this type category (TB Type- 1) in a wider process in preparing: (i) Guidelines for sustainable development and management of hydropower on Mekong mainstream and tributaries, and (ii) Guidelines to establish a MRC mechanism for monitoring and evaluation of operation on mainstream and tributary in upstream areas.

- Readers are referred to Template 3b in Appendix 2 for summary information on these options.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on the basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in MRC Programmes and MRC Procedures.</td>
<td>MRC may help to provide guidance jointly developed</td>
</tr>
<tr>
<td>1-3 Require and provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in strategic plans and strategies developed by tributary RBC/RBOs.</td>
<td>MRC may help to provide guidance jointly developed</td>
</tr>
<tr>
<td>1-4 Coordinate/align BSM-related provisions for catchment management in tributary basins with hydropower shared by two or more countries</td>
<td>MRC may help to provide guidance jointly developed. RSAT and other tools assess opportunities</td>
</tr>
<tr>
<td>1-5 Expand available financing for measures to protect/enhance water resource quality using hydropower revenue in tributary basins shared by two or more countries</td>
<td>MRC Programmes</td>
</tr>
<tr>
<td>1-6 Enhance riparian cooperation in preparing environment flow assessment and provision in reservoir operation/management strategies in tributaries shared by two or more Countries.</td>
<td>MRC has developed the (IBFM) approaches s part of MRC Decision Support Framework or DSF</td>
</tr>
</tbody>
</table>

**Do further Study**
(To decide to keep or drop from the comprehensive BSM approach)

| 1-7 Highlight/incorporate the explicit evaluation of establishing a “Mekong Fund” to facilitate benefit sharing on the transboundary dimensions of tributary hydropower and potentially LBM UMB mainstream hydropower | MRC has provided concept notes to MRC join committee. |
Generic TB Type-2: Increase benefits “from the river”

<table>
<thead>
<tr>
<th>TB2</th>
<th>Options</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1</td>
<td>Current practice is ok - additional measures to increase benefits from the river are not essential for benefit sharing around TB aspects of tributary hydropower.</td>
<td>0.4</td>
</tr>
<tr>
<td>2-2</td>
<td>Ensure strategies for infrastructure provision (proposed projects) and operation (existing projects) on Mekong tributaries conform to the MRC Basin Development Strategy and IWRM/sustainability principles.</td>
<td>1.9</td>
</tr>
<tr>
<td>2-3</td>
<td>Assess the scope to optimize operation of existing and planned tributary reservoirs for multi-purpose functionality, giving due consideration to the transboundary dimensions.</td>
<td>2.2</td>
</tr>
<tr>
<td>2-4</td>
<td>Assess the scope to optimizing reservoir operations for downstream benefit/risk balance concerning tributary hydropower on tributaries shared by two or more countries.</td>
<td>1.6</td>
</tr>
<tr>
<td>2-5</td>
<td>Introduce national regulatory provisions for new or retrofit hydropower design to routinely build-in the flexibility to modify operations and bringing new technology over the life of hydropower assets.</td>
<td>2.1</td>
</tr>
<tr>
<td>2-6</td>
<td>Assess scope to improve coordination of reservoir operations on aspects such as flood management, sediment management/fish passage in multi-reservoir cascades (existing and new) on tributaries shared by two or more countries.</td>
<td>0.8</td>
</tr>
<tr>
<td>2-7</td>
<td>Prepare guidance to factor the explicit valuation of ecosystem services into project preparation studies and decisions about hydropower and related infrastructure development and management on shared Mekong tributaries.</td>
<td>0.7</td>
</tr>
<tr>
<td>2-8</td>
<td>Prepare guidance to routinely assess opportunities to optimize other grid-connected renewable energy (RE) and power system benefits presented by tributary hydropower and factor these into discussions of transboundary dimensions (e.g., To include rural electricity plan).</td>
<td>0.4</td>
</tr>
</tbody>
</table>
Observations/comments on preliminary evaluation results:

- The lowest score was Option 2-1 “no measures beyond the current practice”, which suggests there is scope to increase benefits “from the river” with respect to the transboundary dimensions of tributary hydropower.
- Option 2.2 “Assess the scope to optimize operation of existing and planned tributary reservoirs for multi-purpose functionality, giving due consideration to the transboundary dimensions” shored the highest Value and Preference.
- The other options included in this preliminary evaluation scored from moderate Value and Preference. This suggests further study of some Options may be appropriate.
- Readers are referred to Template 3b in Appendix 2 for summary information on these options.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-5</td>
<td>Introduce national regulatory provisions for new or retrofit hydropower design to routinely build-in the flexibility to modify operations <strong>and bringing new technology</strong> over the life of hydropower assets.</td>
</tr>
<tr>
<td><strong>Do further Study</strong> (To decide to keep or drop from the comprehensive BSM approach)</td>
<td></td>
</tr>
<tr>
<td>2-3</td>
<td>Assess the scope to optimize operation of existing and planned tributary reservoirs for multi-purpose functionality, giving due consideration to the transboundary dimensions.</td>
</tr>
<tr>
<td>2-4</td>
<td>Assess the scope to optimizing reservoir operations for downstream benefit/risk balance concerning transboundary dimensions of tributary hydropower on tributaries shared by two or more countries.</td>
</tr>
<tr>
<td>2-6</td>
<td>Assess scope to improve coordination of reservoir operations on aspects such as flood management, sediment management/fish passage in multi-reservoir cascades (existing and new) on tributaries shared by two or more countries.</td>
</tr>
<tr>
<td>2-7</td>
<td>Prepare guidance to factor the explicit valuation of ecosystem services into project preparation studies and decisions about hydropower and related infrastructure development and management on shared Mekong tributaries.</td>
</tr>
</tbody>
</table>
Generic TB Type-3: Reduce cost 'because of the river'

<table>
<thead>
<tr>
<th>Options</th>
<th>Value</th>
<th>Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSM measures to avoid or reduce cost because of the river are not essential for benefit sharing around the transboundary dimensions of tributary hydropower.</td>
<td>0.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Explicitly assess opportunities to reduce costs of sustainable development on shared tributaries via BSM as part of the MRC Basin Development Strategy Process.</td>
<td>1.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Consider linking and having planning/technical exchanges between RBC/RBOs in shared tributaries facilitated by the MRC as the main regional RBO.</td>
<td>2.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Enhance cooperation between upper and lower Riparian on shared tributaries for drought and flood management.</td>
<td>1.6</td>
<td>2.4</td>
</tr>
</tbody>
</table>
Observations/comments on preliminary evaluation results:

- The lowest score was option 3-1 “No BSM measure beyond current practice”. All other options were moderate to high Value and Preference.
- The highest score was Option 3-3, “Consider linking and having planning/technical exchanges between RBC/RBOs in shared tributaries facilitated by the MRC as the main regional RBO.”
- There also need to strengthen cooperation of the riparian country both upstream and downstream along shared tributary in terms of flood and drought management (Option 3-4) and to assess opportunities to reduce costs and enhancing sustainable development of the shared tributaries as part of MRC basin Development Strategy (Option 3-2). Overall, participants suggested option 3-4 should be highest priority (enhance cooperation between upper and lower Riparian on shared tributaries for drought and flood management).
- Readers are referred to Template 3b in Appendix 2 for summary information on these options.

<table>
<thead>
<tr>
<th>Options recommended for a comprehensive BSM approach (on the basis of relative Value and Preference)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-3</td>
<td>Consider linking and having planning/technical exchanges between RBC/RBOs in shared tributaries facilitated by the MRC as the main regional RBO.</td>
</tr>
<tr>
<td>3-4</td>
<td>Enhance cooperation between upper and lower Riparian on shared tributaries for drought and flood management</td>
</tr>
</tbody>
</table>

**Do further Study**  
(To decide to keep or drop from the comprehensive BSM approach)

| 3-2 | Explicitly assess opportunities to reduce costs of sustainable development on shared tributaries via BSM as part of the MRC Basin Development Strategy Process. | Could be part of the BDP and MRC Programme work. |
Generic TB Type- 4: Increase benefits 'beyond the rivers'.

<table>
<thead>
<tr>
<th>Options</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>No explicit provision for this form of benefit sharing on transboundary dimensions of tributary hydropower is needed in the current situation.</td>
<td>Value</td>
</tr>
<tr>
<td>Riparian governments need further strengthening the trade cooperation and add more free trade zones in hydropower projects at border to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>2.1</td>
</tr>
<tr>
<td>Riparian governments consider promoting direct or indirect industrial offsets and countering trade to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>2.2</td>
</tr>
<tr>
<td>Riparian governments consider the scope for cooperation on strategic infrastructure agreements, (e.g., agreements on transport integration such as for road, rail, air or water transport facilities).</td>
<td>2.4</td>
</tr>
<tr>
<td>Riparian governments consider the scope for concession rates on export power trade, or arrangements at the utility level (power trade agreements) to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Observations/comments on preliminary evaluation results:

- The lowest score was option 4-1, “no measure beyond current practice”. All other options were Value above 2.0 and Preference between 1.5 and 2.5.
- The highest Preference score was Option 4.2 “Riparian government need further strengthening the trade cooperation of goods at border and services to overcome negotiation hurdle and valuing and share benefit of hydropower on shared tributary.
- A highest Value score was Option 4-4 “Riparian governments need more thinking on consider the scope for cooperation on strategic infrastructure agreements, (e.g., agreements on transport integration such as for road, rail, air or water transport facilities). This is where riparian countries choose to focus on direction and indirect industrial offsets and counter trade.
- Readers are referred to template 3b in the Annex 2 for more information on these TB options.

<table>
<thead>
<tr>
<th><strong>Options recommended for a comprehensive BSM approach</strong></th>
<th><strong>Remark</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(On basis of Relative Value and Preference)</em></td>
<td></td>
</tr>
<tr>
<td><strong>Do further Study</strong></td>
<td></td>
</tr>
<tr>
<td><em>(To decide to keep or drop from the comprehensive BSM approach)</em></td>
<td></td>
</tr>
<tr>
<td>4-2 Riparian governments need further strengthening the trade cooperation at border and add more free trade zones in hydropower projects to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>Using bilateral and/or regional approaches</td>
</tr>
<tr>
<td>4-3 Riparian governments consider promoting direct or indirect industrial offsets and countering trade to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>Using bilateral and/or regional approaches</td>
</tr>
<tr>
<td>4-4 Riparian governments consider the scope for cooperation on strategic infrastructure agreements, (e.g., agreements on transport integration such as for road, rail, air or water transport facilities).</td>
<td>Using bilateral and/or regional approaches</td>
</tr>
<tr>
<td>4-5 Riparian governments consider the scope for concession rates on export power trade, or arrangements at the utility level (power trade agreements) to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>Using bilateral and/or regional approaches</td>
</tr>
<tr>
<td>4-2 Riparian governments explore the scope to enhance cooperation in trade of goods and services to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>Using bilateral and/or regional approaches</td>
</tr>
</tbody>
</table>
4.3 Supplemental evaluation of selected options

The ISH13 Guidance Package notes that, in addition to the multi-criterion evaluation presented in Section 4, supplemental analysis of selected BSM options may be helpful for clarity. For example:

- **Scenarios analysis:** Scenarios may be constructed to illustrate how robust the ISH13 results are for different assumptions. This could involve, for instance, changing the weighting of key Value sub-criteria. At the moment the “default setting” for the ISH13 evaluation is the five sub-criteria are given equal weight (20%) for the Value dimension.

- **Additional analysis of selected BSM options:** Additional analysis may be provided to better define selected options so people can understand them better; for example, as mentioned in Section 1, a calculation to illustrate the amount of Type-1 revenue from existing or planned hydropower may be helpful.

**Additional Analysis for Revenue Sharing**

For the purposes of this Paper the quantity of revenue sharing from hydropower on the Cambodian Mekong tributaries to show the relative amount of money involved. This assumes a revenue sharing formula equivalent to 2.0 percent of gross annual generation, based on general international experience in BSM as noted in the ISH13 BSM Knowledge Base, and a valuation of 7.0 US cents/kwh.

**Table 4: Revenue Sharing for all potential hydropower projects on Cambodia’s Mekong Tributaries**

<table>
<thead>
<tr>
<th>9020.4</th>
<th>Gross Generation GWh/ per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,020,400,000</td>
<td>kWh equivalent</td>
</tr>
<tr>
<td>0.07</td>
<td>Valuation Tariff ($/kWh)</td>
</tr>
<tr>
<td>$631,428,000</td>
<td>USD Equivalent</td>
</tr>
<tr>
<td>$631.4</td>
<td>USD Million equivalent</td>
</tr>
<tr>
<td>2.0%</td>
<td>Revenue Sharing %</td>
</tr>
<tr>
<td>$12.6</td>
<td>USD Million equivalent</td>
</tr>
</tbody>
</table>

The table above shows all 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.

If a higher percentage were used (above 2%) to ensure the Provinces in the basin received a revenue share, then the amount would be higher. The rate of 2%, or higher, is a political decision as to whether the impact on end-user electricity tariffs (the user pay principle applies) would be reasonable and
acceptable, recognizing this measure pays for sustainability and a long-term secure supply, and recognizing also a large portion of the power output may be for export.

Table 5: Revenue sharing on the Lower Sesan basin in Cambodia – with the assumptions noted

<table>
<thead>
<tr>
<th>4151.9</th>
<th>Average Gross Annual Generation GWh (of proposed projects in the Lower Sesan tributary) – data from Annex 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4151900000</td>
<td>kWh equivalent/year</td>
</tr>
<tr>
<td>0.07</td>
<td>Average Bulk Tariff Value ($/kWh equivalent) assumed which may typically be between 6-8 US cents (2012)</td>
</tr>
<tr>
<td>$290,633,000</td>
<td>USD Equivalent of average annual generation (unit value x number of units)</td>
</tr>
<tr>
<td>$290.6</td>
<td>USD Million equivalent</td>
</tr>
<tr>
<td>2.0%</td>
<td>Assumed % of gross annual generation for revenue sharing</td>
</tr>
<tr>
<td>$5.8</td>
<td>USD Million equivalent/year potentially for revenue sharing</td>
</tr>
</tbody>
</table>

Table 5 offers a similar illustration for the Srepok portion in Cambodia where three hydropower sites of 747 MW installed capacity (total) with an average energy generation of 3,834 GWh/yr total, as identified in the MRC’s Hydropower database. With the assumptions noted about $US 5.4 million/yr would be available to fund local area development activities in the lower Srepok through such BSM Fund arrangements.

Table 6: Revenue Sharing estimation for potential hydropower on the Lower Srepok basin in Cambodia – with the assumptions as noted

<table>
<thead>
<tr>
<th>3834</th>
<th>Average Gross Annual Generation GWh (of proposed projects in the Lower Srepok tributary) – data from Annex 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3834000000</td>
<td>kWh equivalent/year</td>
</tr>
<tr>
<td>0.07</td>
<td>Average Bulk Tariff Value ($/kWh equivalent) assumed which may typically be between 6-8 US cents (2012)</td>
</tr>
<tr>
<td>$268,380,000</td>
<td>USD Equivalent (unit value x number of units)</td>
</tr>
<tr>
<td>$268.4</td>
<td>USD Million equivalent</td>
</tr>
<tr>
<td>2.0%</td>
<td>Assumed % of gross annual generation for revenue sharing</td>
</tr>
<tr>
<td>$5.4</td>
<td>USD Million equivalent/year potentially for revenue sharing</td>
</tr>
</tbody>
</table>

11 Alternatively 6.7 US cents/kWh may be used as a proxy for valuation of bulk generation from hydropower as noted in recent technical studies of Lower Se San 2, Cambodia.
Section 5: Preliminary Conclusions and Recommendations

5.1 General Observations on the Preliminary Scoring and Ranking of Options

The ISH13 evaluation shows that benefit sharing for Mekong tributary hydropower on the Cambodia situation is not a single option, but rather a group or a family of measures that may complement and reinforce each other – or a “package” of measures that come into play in hydropower planning and management to help place hydropower in a sustainable, river basin perspective.

It is recognized that government may consider the BSM options the Cambodia Working Group decided to evaluate in this ISH13 process together with other options when government looks more closely at a possible policy for hydropower benefit sharing.

Again Cambodia, like other Mekong Countries already has a number of policies that promote the general forms of benefit sharing discussed in this Paper - but only to varying degrees. This is apart from the benefits that Cambodian society would derive from hydropower development when it brings (i) affordable electricity supply, (ii) accelerated indigenous, renewable energy development to offset expensive fossil fuel imports for power generation, and (iii) national economic benefits from possible hydropower export sales.

It is important to have a systematic and comprehensive approach to benefit sharing around proposed tributary hydropower in Cambodia to take advantage of all opportunities for sustainable forms of hydropower development and management, and in the present context, to maximize the spread of resource utilization benefits across the Cambodian economy, help to catalyse broader-based growth and support the Government’s social equity policies.

The ISH13 results show on top of national-to-local forms of benefit sharing, transboundary forms of benefit sharing are equally important to assess and exploit to the maximum potential. This is especially in the 3-S tributary system where Cambodia, as the lower riparian, shares sub-basins with other Member Countries who have developed hydropower upstream. The MRC’s Basin Development Strategy is one vehicle for discussion of the various options for mutually beneficial sustainable development through the BSM noted in this Paper.

5.2 Other summary conclusions

In relation to the questions in the ISH13 Guidance, this evaluation of BSM options for existing hydropower on Cambodia’s tributaries of the Mekong suggests:
1. **What does the evaluation say about strength and weaknesses of the current national policy and legal framework concerning BSM?**
   - At present Cambodia has no explicit policy on benefit sharing related to potential or proposed hydropower on Mekong tributaries;
   - The ISH13 evaluation suggests there is scope for all types of NTL benefit sharing including:
     - NTL Type- 1: Sharing monetary benefits
     - NTL Type- 2: Facilitating non-monetary benefits (mainly access to natural resources)
     - NTL Type- 3: Equitable access to electricity services and improvements
     - NTL Type- 4: Optimizing indirect and additional benefits
   - There is scope to reinforce and align benefit sharing to other national policies such as Rural Electrification Policies and National policy and strategic plan (2013-2030) on Green Growth which was officially launched by the Prime Minister in early March 2013 where green development zones may be designated.
   - Cambodia supports the MRC Basin Development Strategy and the approach to benefit sharing related to hydropower on Mekong tributaries, as well as proposed LMB mainstream hydropower developments.

2. **Is the preliminary evaluation of BSM options more or less aligned with the current policy, or emerging policy directions of MRC?**
   - This ISH13 evaluation for Cambodia aligns well with international trends and MRC guidance on good practice.
   - There is a need to raise potential impact caused by both existing and potential hydropower development on tributary upstream on Tonle Sap basin and more explicitly into hydropower benefit sharing discussions.

3. **What does the preliminary evaluation of BSM options for tributary hydropower reveal about the gaps between policy and implementation, and the opportunities to pursue?**
   - As noted Cambodia has no explicit policy on benefit sharing related to potential or proposed hydropower on Mekong tributaries.
   - Benefit sharing is consistent with other policies in the Cambodian national policy and legal framework for sustainable development.
   - Cambodia’s Rural Electrification Fund provides a strong basis for implementing Type 3 BSM measures for improving access to electricity, which is particularly important given low levels of electrification in the country and the barrier this creates for raising local and tributary socio-economic development and living standards.
   - One of the priority options or next steps is to undertake a full policy review to identify strengths, weaknesses and gap in Cambodia’s current policy regime as regard to BSM considerations.

4. **What does it say about MRC Programme work and how it can be adjusted or fine tuned?**
   - There are opportunities for MRC Programmes to cooperate and support CNMC with a BSM case study and other activities under ISH 4.1c and BDP process.
   - For example, participants suggest MRCS may provide additional training to Line Agencies on related BSM laws, not only in the water and energy sector but also other sectors.
   - It was suggested that MRC may use the options/mechanisms outline in the TB Type- 1 category in a wider process to prepare:
i. Guidelines for sustainable development and management of hydropower on the Mekong mainstream and tributaries, and

ii. Guidelines to establish a MRC mechanism for monitoring and evaluation of operation on mainstream and tributary in upstream areas.

5. What does it suggest about MRC support to Member Countries going forward, either in regard to national processes, or ensuring the sharing of experience in the Mekong and drawing from international experience?

- Consideration of both existing Mekong region and international experience is important to draw lessons to implement NTL and TB dimension BSM measures.
- The case study approach would offer other MRC Member Countries with experience implementing revenue sharing measures.

6. What does it say about priorities going forward in national processes?

- National-to-local BSM are an important starting point for benefit sharing in the Cambodia situation and also timely.
- The policy review is important as a next step.
- CNMC may recommend to Government a process that may be considered and the required studies to take the next steps.
- Cambodia can otherwise prepare for on-going discussions of this topic under the MRC Framework.

5.3 Next steps

An underlying consideration in next steps is support for on-going information sharing among CNMC stakeholders in the government, private and civil sectors on the BSM theme.

Key steps for Cambodia to complete ISH13-related work and reporting include:

• Presenting the Cambodia National Discussion Paper at the ISH13 Regional BSM workshop to advance knowledge sharing, feed into MRC reporting processes, and advance national dialogue on BSM and policies.

• Have a final meeting of the Cambodia ISH13 Working Group to adjust the National Paper for any feedback, ideas and lessons from the Regional BSM Workshop for ISH13.

This includes information sharing with other Member Countries who present their National Papers at the Regional Workshop, as well as MRC Stakeholders and Development Partners, and in particular international practitioners of BSM who will share comments based on their lessons and experience.

For regular ISH Support (2013-2015) under Output 4.1c:

• Development plan for information workshop/studies e.g., policy review to support for key Cambodian agencies on NTL BSM awareness raising.
• Explore BSM pilot project in RSAT process and include BSM topic in the MRC RSAT assessment (RSAT work in mid 2013)
• Development and seek pilot project finance-if pilot if decided by CNMC and government
• Other ISH Support in ISH 5 year work plan (e.g. Mekong and International BSM study visits and site visits, Knowledge Based update and others).

For MRC Support (2013-2015) under the BDP-led BDS Process:
• There is need to evaluate benefit sharing under the Basin Development Strategy (BDS) which includes transboundary benefits sharing on Mekong mainstream dams as well as dams significant tributaries of the Mekong and sharing in multiple sectors not only hydropower (e.g., navigation, fisheries, irrigations) as in the full BDP.
• TOR has been circulated to NMCS by the BDP to scope out MRC support for multi-sector regional benefit sharing as a strategic priority under the BDS.
• MRC Support for Guidelines
  iii. Guidelines for sustainable development and management of hydropower on the Mekong mainstream and tributaries, and
  iv. Guidelines to establish a MRC mechanism for monitoring and evaluation of operation on mainstream and tributary in upstream areas.
• Cambodia stakeholders are interested in information on innovative finance by Public-Private Partnership (PPP) models in the context of Cambodia. These expand benefit sharing opportunities via multi-purpose projects.
Cambodia Annex Volume

Annex 1: Cambodia Tributary System Description and Basin Profiles
   Annex 1a: Sesan Tributary Profile
   Annex 1b: Sre Pok Tributary Profile

Annex 2: Summary Matrix Descriptions of BSM Options for Mekong Tributary Hydropower
Annex 3: Plots and Scoring Sheets for the 1SH13 Working Group Evaluation
Annex 4: Applicable Laws-Draft Decrees and Policies
Annex 5: Key Messages on BSM from Volume 1 of the ISH Output 4.1c Knowledge Base
Annex 6: Summary outcome of the first national BSM workshop in Cambodia in 2011
ANNEX VOLUME
Activity ISH13

Annex to the: National Discussion Paper
“Benefit sharing options for hydropower on Mekong Tributaries evaluated by 2013”
ANNEX VOLUME

Note: This is the Annex Volume to the main CNMC National Discussion Paper: “Benefit sharing options for hydropower on Mekong Tributaries evaluated by 2013”. It needs to be read in conjunction with the main paper.

For an overview of all MRC Member Countries, please read the main Regional Synthesis Paper including an Executive Summary.

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<th>Description</th>
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</thead>
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<td>Annex 1-A: Se San River Tributary profile, Cambodia Section</td>
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<tr>
<td>Annex 2</td>
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<td>28</td>
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<td>Plots And Scoring Sheets for the Working Group Evaluation</td>
<td>70</td>
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<tr>
<td>Annex 4</td>
<td>Applicable Laws-Draft Decree and Policies</td>
<td>112</td>
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<td>Annex 5</td>
<td>Key Messages On BSM From Volume1 Of The ISH Outputs 4.1c Knowledge Base</td>
<td>154</td>
</tr>
<tr>
<td>Annex 6</td>
<td>Summary Outcomes of the First National Multi-Stakeholder BSM Workshop</td>
<td>179</td>
</tr>
</tbody>
</table>
Annex 1: Cambodia Tributary System Description And Basin Profiles

Annex 1 A: Se San River Tributary profile, Cambodia Section

1. Introduction to Se San Basin profile

The Sesan River is a Transboundary river originating in Vietnam and running through Northeastern Cambodia where it ends up in the Mekong River in Stung Treng province. The head waters of the Sesan River are situated at the elevation exceeding 2,500 m, on the southwestern slopes of the Ngoc Linh massive in Central Vietnam.

The length of the river is about 460km, of which 210 km in Viet Nam while the rest in Cambodia. It joins with SrePok River in Cambodia, 20 km upstream of the confluence with Mekong River near the city of Stung Treng.

The total catchment areas of Se San river basin is 18,570 Km² with nearly 40% (6,960 km²) located in Cambodia and some 60%, or 11,450 km², located in Viet Nam.

Table 1.1: comparison of 3Ss Basin profile

<table>
<thead>
<tr>
<th>Sub-Area per country and per basin</th>
<th>Cambodia</th>
<th>Laos</th>
<th>Viet Nam</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Se Kong</td>
<td>5,565</td>
<td>22,565</td>
<td>690</td>
<td>28,820</td>
</tr>
<tr>
<td>Se San</td>
<td>7,630</td>
<td>0</td>
<td>11,260</td>
<td>18,890</td>
</tr>
<tr>
<td>SrePok</td>
<td>12,780</td>
<td>0</td>
<td>18,160</td>
<td>30,940</td>
</tr>
<tr>
<td>Total</td>
<td>25,975</td>
<td>22,565</td>
<td>30110</td>
<td>78,650</td>
</tr>
<tr>
<td>Total %</td>
<td>33%</td>
<td>28.7%</td>
<td>38.3%</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: ADB (2010) Key topic 6: Catchments/watershed and land use changes, ADB-RETA 40082

The Se San River has three main tributaries, the Krong Poko, DakBla and Sa Thay Rivers, while there are a total of 83 tributaries (more than 10 km long). As the surface of the catchments areas is rather homogenous, the density of rivers and streams is low, about 0.38 km/km² in average. The average slope of the basin is about 14%. In the river, there are numerous steep sections that create many waterfalls and rapids.

---

The annual discharge

Source from ADB on Water flow, topic three shows the following summary:

- Less predictable seasonal flow is reported with major concern about the occurrence of stronger flood and more severe periods of drought. Flood and drought are also reported occurring now in period which it was unusual to observe in the past.
- ADB (2010)\(^2\) shows total annual flow in Mekong Delta is 14,150 m\(^3\)/sec. This means 3S Rivers contribute 20.5% of this – 2,900 m\(^3\)/sec.
- Significant and sudden water level fluctuations, sometimes within 24 hour time periods that are not related to the climate, that never occurred in the past are now observed; causing casualties, loss of river bank crops, dangerous navigation conditions and “confused” fishes.
- Serious reduction of dry season flow in the upper basins. Stakeholders have referred to ‘dead rivers’ to describe the current situation indicating the severity of the current situation.

SWECO et al (2007) record the natural flow conditions as presented in the table below:

### Table 1.2: Annual flow condition, discharge in m\(^3\)/s

<table>
<thead>
<tr>
<th>Year</th>
<th>Tailwater Sesan4 Max</th>
<th>Tailwater Sesan4 Min</th>
<th>Tailwater Sesan4 Mean</th>
<th>Andong Meas stations Max</th>
<th>Andong Meas stations Min</th>
<th>Andong Meas stations Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2866</td>
<td>64</td>
<td>493</td>
<td>4297</td>
<td>86</td>
<td>709</td>
</tr>
<tr>
<td>2001</td>
<td>2160</td>
<td>58</td>
<td>404</td>
<td>3332</td>
<td>68</td>
<td>618</td>
</tr>
<tr>
<td>2002</td>
<td>2157</td>
<td>33</td>
<td>402</td>
<td>3326</td>
<td>44</td>
<td>617</td>
</tr>
<tr>
<td>2003</td>
<td>2619</td>
<td>35</td>
<td>382</td>
<td>3502</td>
<td>48</td>
<td>574</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Taveng Max</th>
<th>Taveng Min</th>
<th>Taveng Mean</th>
<th>VeunSai Max</th>
<th>VeunSai Min</th>
<th>VeunSai Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>5952</td>
<td>112</td>
<td>938</td>
<td>6243</td>
<td>119</td>
<td>1049</td>
</tr>
<tr>
<td>2001</td>
<td>4648</td>
<td>80</td>
<td>844</td>
<td>5532</td>
<td>86</td>
<td>1000</td>
</tr>
<tr>
<td>2002</td>
<td>4607</td>
<td>55</td>
<td>844</td>
<td>5316</td>
<td>61</td>
<td>1008</td>
</tr>
<tr>
<td>2003</td>
<td>4498</td>
<td>61</td>
<td>766</td>
<td>5015</td>
<td>75</td>
<td>891</td>
</tr>
</tbody>
</table>

### Table 1.3: Mean monthly low flows, natural simulation

<table>
<thead>
<tr>
<th>Natural conditions</th>
<th>Tailerwater Sesan4 Mean</th>
<th>Andong Meas Mean</th>
<th>Taveng Mean</th>
<th>VeunSai Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>2000-2004 (m3/s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr-00</td>
<td>74</td>
<td>100</td>
<td>132</td>
<td>143</td>
</tr>
<tr>
<td>Apr-01</td>
<td>76</td>
<td>91</td>
<td>107</td>
<td>116</td>
</tr>
<tr>
<td>Apr-02</td>
<td>48</td>
<td>65</td>
<td>83</td>
<td>91</td>
</tr>
<tr>
<td>Apr-03</td>
<td>45</td>
<td>61</td>
<td>76</td>
<td>92</td>
</tr>
</tbody>
</table>

\(^2\) See ADB (2010) 3Ss Basins Sekong, SesanSrePok - Downstream Mekong – page 1 of 3
Water level peaks in the beginning of the monsoon are being reduced by 1.0-1.5 m while in the dry season water levels increase by 0.5 – 1.0 m. The reduction of daily peak discharge in the monsoon is of the order 500-1000 m$^3$/s, while the dry season flow increase is about 100-300 m$^3$/s (SWECO 2007).

**Extend of land use**

Source from ADB’s 3Ss technical topic 6 on catchment/watershed and land use changes (2009) shows:

- 60 % of the forest in the sub-area has been lost during the period 1997 to 2002. (Evergreen and semi-evergreen forests has passed from 86 % in 1997 to 36 % in 2002). In 1997 forest cover in Rattanakiri covered 80% of the province, now reduced to only 41% in 2005 (evergreen 21.6%, semi-evergreen forest 19.4%).
- 257,000 ha of forest lost in the period 1997 to 2002 due to anarchic logging, unsustainable harvest and poor management by the concessionaires.
- Illegal logging has destroyed 440,000 ha of dense forest in Ratanakiri converting to scrub forest covering 37.2% of province.
- Timber concession in Rattanakiri in 1998, 60,000 ha area inhabited by 10,000 people.
- In Stung Treng Province, 23,000 ha rainfed rice cultivation out of 27,938 ha of cultivated land. Industrial crop such as Cassava and rubber covers 5,339 ha (19.1%) while cash crops (vegetables, maize, sesame soybean, sweet potato) 2,056 ha (7.3%).

**2. Riparian situation**

There are two countries: Vietnam from upstream and Cambodia from downstream.

**3. Sub-national situation**

The Sesan River in Cambodia territory runs from the Vietnamese border through areas belongs to the two Northeast Provinces of Ratanakiri and Stung Treng.

Prior to merging into the Mekong River, the Se San River first confluences with the SrePokriver, which also runs from Viet Nam through First Mondulkiri and then Ratanakiri into Stung Treng provinces where it meets with Sekong River from Lao PDR before entering the Mekong River at the sections of Stung Treng Provincial town.

**The population**

The upstream areas closest to the national border in O Yadao and Andoung Meas are more sparsely populated then stretch further down stream in Taveng and VeunSai districts in Ratnakiri province and in Sesan district of Stung Treng province.

There are 66 villages in the 16 commune are located by the Se San river, from the national border down to its confluence with the SrePok River, from the National border down to its confluence with the Sre Pok. Of the total number of villages in the districts, in Andoung Meas 11 out of total 21 villages...
are located by the river (see annex). Of the total 20 villages in Ta Vaeng 19 lie by the river, in Vuen Sai 27 villages out of 34.

In the Stung Treng Province district of Se San, all the two, respectively four villages in the commune of SreKor and Ta Lat lie by the river. In the upstream O YaDav district only one commune, Se San, with its entire three villages is located by the Sesan River.

Table 3.1: Overall population trend of the two provinces (Ratanakiri and Stung Treng)

<table>
<thead>
<tr>
<th>Province</th>
<th>2007 Families</th>
<th>2008 Families</th>
<th>2009 Families</th>
<th>2010 Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratanakiri</td>
<td>139,349</td>
<td>146,186</td>
<td>153,422</td>
<td>156,705</td>
</tr>
<tr>
<td>Stung Treng</td>
<td>20,042</td>
<td>99,322</td>
<td>106,378</td>
<td>112,237</td>
</tr>
<tr>
<td>Total</td>
<td>238,671</td>
<td>252,564</td>
<td>262,012</td>
<td>268,942</td>
</tr>
</tbody>
</table>

Sources: NCDD 2010 data base online

Socio-economic situation

- The landscapes along the Se San River from the Vietnamese border through Ratanakiri Province varies from hilly scenery with relatively steep riverbank slopes in the upper part of the river close to the Viet Nam border through gradually less sloped land into a relatively flat lowland areas in the upper part of the basin in Veun Sai district.
- Virachey National Park located on the North of the riverside
- Village settings: People mostly are ethnic minority and live along the river side where home gardening close to the riverbank.
- Sub-sistence economy based on rain-fed paddy cultivation and fishing and NTFP collection.
- Table below summary health, education, housing, and electricity of the two provinces.
- The water quality in the Se San River is reported to have seriously deteriorated since the construction of the Yali Falls hydropower dam. The river has become more turbid than before, and the water smells bad (SWECO, 2006).
- The poverty rate: The poverty rate of the 3Ss remains high with 41.2% in Ratanakiri, 41.1% in Stung Treng and 37.1% in Mondulkiri (MOP 2010).

Table 3.2: Percentage of households having access to electricity & TV (Ratanakiri and Stung Treng)

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratanakiri</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># house with electricity</td>
<td>20.55</td>
<td>14.58</td>
<td>21.79</td>
<td>5,746</td>
</tr>
<tr>
<td>House with battery light</td>
<td>24.21</td>
<td>25.34</td>
<td>21.04</td>
<td>5,557</td>
</tr>
<tr>
<td>House with TV</td>
<td>29.80</td>
<td>24.72</td>
<td>30.28</td>
<td>7,999</td>
</tr>
<tr>
<td>Stung Treng</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 By 2011, poverty rate at national is around 25% and government commits to reduce down to 19.5% by 2015.
### Table 3.3: Access to clean water and sanitation including % of family using water source from rivers, lakes and stream.

<table>
<thead>
<tr>
<th>Source</th>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratanakiri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of families use filter water for drinking</td>
<td>10.74</td>
<td>14.86</td>
<td>14.54</td>
<td>4,789</td>
<td></td>
</tr>
<tr>
<td>% of families who boil water for drinking</td>
<td>36.62</td>
<td>40.29</td>
<td>40.96</td>
<td>13,495</td>
<td></td>
</tr>
<tr>
<td>% of families use water sources from river, lakes, streams</td>
<td>28.77</td>
<td>28.71</td>
<td>29.22</td>
<td>9,672</td>
<td></td>
</tr>
<tr>
<td>Stung Treng</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of families use filter water for drinking</td>
<td>12.25</td>
<td>14.76</td>
<td>15.15</td>
<td>3,693</td>
<td></td>
</tr>
<tr>
<td>% of families who boil water for drinking</td>
<td>59.47</td>
<td>60.86</td>
<td>56.02</td>
<td>12,812</td>
<td></td>
</tr>
<tr>
<td>% of families use water sources from river, lakes, streams</td>
<td>42.72</td>
<td>43.06</td>
<td>39.36</td>
<td>9,001</td>
<td></td>
</tr>
</tbody>
</table>

Source: NCDD data base 2010

NCDD data base (2010) also shows percentage of families do not own latrine were high of which 86% household in Ratanakiri (28,456 families) and 71.55% (16,364 families) in Stung Treng by 2010.

**The River Basin Committee/River Basin Organization**

- There is no formal river basin organization along the Se San River. There is some form of communication among local authorities among the two countries: Cambodia and Vietnam on information exchange.

### 4. Hydropower Situation

There are three hydropower projects on the main flow of the Se San river with high feasibility, including: Se San 1, Lower Se San 3, and Lower Se San 2. The Lower Se San 2 HPP is the final project in the cascade master plan behind the confluence between Sesan and Srepok rivers in Cambodia territory (PECC1 2008).
SWECO et al (2007) show on the Vietnam part of the Sesan, there are several Hydropower Projects either in operation or, under construction, or project that are committed as shown below:

- Under operation: Yali fall dams (420 MW)
- Under construction: Pleikrong, Se San 3, Se San 3A, SE San 4
- Committed: Upper Contum

Base on feasibility study report (2008) on Lower Se San 2 Hydropower Project in Stung Treng Province, Cambodia shows the following hydropower being proposed in the Cambodia territory.
Figure 2: Hydropower dams in Lower Sesan River Catchments
Table 3.1: Name of hydropower power projects on Se San, Cambodia territory section

<table>
<thead>
<tr>
<th>Project</th>
<th>Lower Sesan1</th>
<th>Lower Se San 2</th>
<th>Lower Se San 3</th>
<th>Prekliang 1</th>
<th>Prek Liang 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservoir areas, Km²</td>
<td>10.6</td>
<td>394</td>
<td>413.97</td>
<td>10.7</td>
<td>5.56</td>
</tr>
<tr>
<td>Qo, m³/sc</td>
<td>377.8</td>
<td>1315.7</td>
<td>520.74</td>
<td>23.9</td>
<td>35.41</td>
</tr>
<tr>
<td>FSL, m</td>
<td>141</td>
<td>75</td>
<td>120</td>
<td>510</td>
<td>330</td>
</tr>
<tr>
<td>MOL, m</td>
<td>140</td>
<td>74</td>
<td>119</td>
<td>490</td>
<td>320</td>
</tr>
<tr>
<td>Active Storage, 10⁶ m³</td>
<td>10.1</td>
<td>279.8</td>
<td>323.1</td>
<td>36.2</td>
<td>54.7</td>
</tr>
<tr>
<td>Dead storage, 10⁶ m³</td>
<td>34.3</td>
<td>2135.6</td>
<td>4219.3</td>
<td>36.2</td>
<td>46.8</td>
</tr>
<tr>
<td>Maximum turbine discharge, m³/s</td>
<td>600.8</td>
<td>2009.7</td>
<td>813.6</td>
<td>50.9</td>
<td>73.8</td>
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<td>Rated head, m</td>
<td>17.6</td>
<td>24.6</td>
<td>26</td>
<td>146.2</td>
<td>100.8</td>
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<tr>
<td>Installed capacity, MW</td>
<td>90</td>
<td>420</td>
<td>180</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Mean annual energy, million kWh</td>
<td>479.7</td>
<td>2219.6</td>
<td>953.14</td>
<td>258.5</td>
<td>258.97</td>
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<td>Economic Indicator</td>
<td></td>
<td></td>
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<tr>
<td>NPV, 10⁶ USD</td>
<td>20.24</td>
<td>93.78</td>
<td>-26.7</td>
<td>-9.66</td>
<td>-13.03</td>
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<tr>
<td>EIRR, %</td>
<td>14.16</td>
<td>14.04</td>
<td>8.11</td>
<td>7.59</td>
<td>6.92</td>
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<tr>
<td>B/C</td>
<td>1.15</td>
<td>1.19</td>
<td>0.92</td>
<td>0.9</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Source: Lower Sesan 2 HPP, Feasibility Study 2008

Total installed capacity will be 818 MW, total mean annual energy 4,171.4 million⁴; total investment capital required for proposed projects will be 1,388.4 million USD:
- Lower Sesan 1 HPP on main river course
- Lower Se San 2 HPP on main river course
- Prek Liang 1
- Prek Liang 2 HPP on tributary HPP on tributary
- Lower Se San 3 HPP on main river course

5. Tributary Significance Indicators

Fisheries
Se San River flows through Vietnam’s central highlands, passing Ratanakiri and Stung Treng provinces then to the Mekong River. In Ratanakiri, Se San River is a large lowland river with deep pools. The Se San River has a drainage area (catchments) of 7,960 sq. km whereas the Sre Pok river has catchments areas of 13,171 sq. km (BDP, 2006). Catchments of Se san and Sre Pok within Ratanakiri is estimated at 3,300 and 5,070 sq. km, respectively. Deep pools and channels within both rivers are home for fish to refuge in the dry season, and thus considered a very crucial habitat.

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⁴ Assuming price per kWh with 6.8 cent, then total money return will be US$2,836,552/year.
The EIA report of Lower Sesan 2 (2008) provides various estimation based on 1530 fishers interviewed and the result shows 244.14 tonnes of fish captured (with 135.68t in wet season and 108.46 tonne in dry season). The report also cited the study by Baird and Meach (2005) with estimated 177.5 tonne of fish caught by fishers in Sre Pok and 477.55 tonnes of fish caught by fishers in Se San river, Cambodia section. The study also highlighted 117.01 tonnes of fish caught by 1361 fishers in Ratanakiri. The study also estimated fish price with US$3/kg in Rantanakiri which means 177.01 tonne x US$3 = US$531,030 or average income per families would be US$390.17 in Ratanakiri (see PCC1 and KCC 2008).

As for Stung Treng, the province endowed with much better fishing ground of the 3Ss as well as the Mekong River. Commercial fish catch in the province are estimated around 2,000 t/year (in 2007 with 2,000 while in 2009 with 1,800t) (see FiA 2009). Grimsditch (2012)\(^5\) from International River Network (IRN) suggested that Lower Se San 2 dam will reduce fish bio-mass with 9.3% basin wide and would threaten to endanger around 56 fish species. It is suggested that change in water quality and sedimentation flow will also negatively impact on both migratory and non-migratory species.

Overall, the 3S Rivers recognized as:

- An important part of Lower Mekong fish migration system, with most migratory species from the Mekong mainstream and Tonle Sap migrating up 3S rivers to spawn and grow.
- Key migration route is probably as important as Khone Falls migrations in terms of volume of fish migrating, and number of species.
- Fish migrations route both through upstream and downstream for different species and sizes of fish at different times of year and at different flow conditions.

**Sediment/Erosion issues:**

- Little figures on sediment transport in the 3Ss are available. The current estimates are that the 3Ss Basins contribute to 10 % of the sediment of the Mekong Delta\(^6\). Likely, in the future, a substantial part of the sediment will be trapped in the reservoirs and dams (ADB 2010\(^7\)).
- The future trends shows factors impacting the transport of sediment in the 3Ss Rivers which include sand mining\(^8\) in the bed of the stream, deforestation and change of land use, infrastructure needing earthwork (dams, roads, urban areas), inappropriate practices of cultivations or inappropriate crops on steep slopes (eg. cassava cultivation on steep soils and dams and resources (ADB 2010)\(^9\)).

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6 ADB (2010) shows on average annual sediment load in Mekong is about 160 Mt/yr, of which about 17 Mt/yr of sediment comes from the 3S basin (over 10%).
8 Sandmining and trapping of sediment in the 3S rivers will reduce the sediment transport to the Mekong and to the Mekong Delta. Some hydropower dams expected to trap 90% of sediment. With definite future dams construction, the sediment load from 3S rivers may be reduced by about 30% to 11 Mt/yr (See ADB 2010).
9 see ADB (2010) 3Ss Basins Sekong, SesanSrePok - Downstream Mekong – page 3 of 3
Navigation:
Boat and motorboat transportation are commonly practiced for most of the villagers living along the Se San River.

Under Triangle Development Plan of Cambodia, Lao PDR and Vietnam show there are plan to blast the e rapid along the 3S River which include Se San to facilitate heaving load transportation through waterway across the whole year round.

Irrigation:
There is little irrigation schemes are functioning and most of them built during Pol Pot regime and have been broken down and left unfucntioning of the two provinces. ADB (2010) records 82 irrigations schemes are listed in the lower 3Ss Basins in Cambodia
8. 8 schemes are located in the Sekong basin, 39 in Sesan and 35 in SrePok. Of these, only 8 systems are functional and operational. Of 56,418 ha of wet season rice land, only 10 % could receive irrigation water from the existing operational systems in the wet season and approximately 1 % in the dry season.

The 82 schemes, if running, have a potential to irrigate 2,803 ha in the dry season and 14,878 ha in the wet season. Actually, only 520 ha are irrigated in the dry season. Most irrigation schemes are small scale schemes able to irrigate 180 ha on average. Only 3 schemes have a potential to irrigate more than 1,000 ha. Most schemes were built and used for providing supplementary irrigation water to the wet season crop production. All schemes use water from small reservoirs filled with rainfall during the rainy season. Thosereservoirs have very limited capacity for providing water during the dry season.

Ecosystem services:
Key ecosystem services will include deep pools, key hotspot of bird areas, Ramsar site down at Mekong and associated Virachey National Park.

Moreover, the zone of the river immediately below the confluence of Mekong with 3S rivers at Stung Treng is a wide, braided river (up to 10 km across) with numerous islands, deep pools, sand bars and flooded forests. One of the most biodiverse and productive areas of the Mekong, for fish (204 species) birds and other wildlife and serves as habitat for the Irrawaddy Dolphin between Kratie and the Laos border.

Other signification significant factors:
• Developers of Lower Se San &Srepop 2 are reportedly committed to contribute to the socio-economic development in the region. Information suggests there is a growing appreciation of the need for benefit sharing thinking among government, private sector and non-government interests.
• This suggests benefit sharing may consider how to maximize the local benefits of expected higher dry season flows, such as to take advantage of opportunities for enhancing domestic, irrigation and industry water oFF-takes in the future, and opportunities in improving local river navigation, aquaculture cultivation, fishing inside reservoir areas and ecotourism.

10 PDOWRAM, 2009
11 See ADB (2010) 3Ss Basins Sekong, SesanSrePok - TS 8 - Irrigation – page 5 of 6
Flood Management and Mitigation:
SWECO et al (2007) suggested that mitigation measures related to impacts form Yali Hydropower Project should be implemented as counteract impacts. Main measures to mitigate impact from hydropower along Sesan include:

- The flow out of Se San 4A re-regulation reservoir should be stable and as equal to natural flow as possible.
- Until Se San 4A regulation reservoir is in operation August 2007, Yaly HPP should be operated in a way to minimize daily flow fluctuations.
- Establish an efficient warning system that can inform people living along the river in time about floods and impacts on water quality.
- Implement environmental monitoring programs among others for early detection of water quality changes.
- Prolong the wet season filling of the reservoirs: the start of the high flow season is important both for fish migration and for irrigation of rice paddies, and fish spawning wetland. To allow the initial flow and water level rise close to a normal manner will increase the time used to fill the reservoirs. This is also important to allow for necessary time for fish egg and larvae development as well as ripening of the rice crops.
- Land use and biodiversity: erosion, reduce river bank use and sand banks for agriculture. It also will affect amphibians, reptiles, birds, wild and domestic animals depending on river for water.
- Socio economic: water and health, sanitary discharge water from construction and water quality.

6. Information from other MRC work in the Tributary relevant to consideration of BSM options for the tributary system

MRC program studies
- A preliminary RSAT assessment was done on BSM issues (Topic 6) as part of the 3S River assessment supported by MRCS. This RSAT topics and other trainings module are also being carried out in 2012 and expect to keep continuing for the following year.

National or INGOs studies
- Several NGO organizations are active in 3S river basin such as 3S protection Network, NGO forum and The Worldwide Fund for Nature (WWF).
- IUCN have been active with Ramsar Site in Mekong where the 3Ss river meets in Stung Treng. There are various publication from this INGOs which include biodiversity assessment, and integrated assessment of people, conservation, economic, livelihood and biodiversity 2008.
- 3SPNs and IRN (2012) in recently has published a report on transboundary
- Many international NGOs have campaigns on hydropower in the 3-5, and at the same time many are supporting rural development programmers.
- CEPA, DPA and My Village Organization (ENGOs) are also active in the provinces.
- ICEM (2010) MRC SEAS on mainstream dams which include Stung Treng Dams.
- And there are many on-going studies funded by CPWF which include water modeling of the 3Ss through ICEM, Helsinki University and other local partners.
• Livelihood study on multipurpose dams commissioned by IWMI funded by ICEM.

**Hydropower or developers**

There are various documents and publication related to Se San tributary which include:

- EIA of Lower Sesan 2 in Khmer version 2008
- Feasibility study: summary report of Lower Sesan 2 Hydropower Project, Stung Treng Province 2008 (English)
- Feasibility study report of the Se San 4 Hydropower Project (translation for notification in MRC), 2005
- The Master Plan of Hydropower Development in Cambodia (Inception Report), Jica 2007
- Pre-feasibility study stage (Set 1, Main report): Stung Treng Hydropower Project, Kingdom of Cambodia 2010

**Summary Comment**

Cambodia has no formal legislation on national-to-local forms of BSM to apply to the 3 proposed hydropower projects in the lower Sesan2. Traditional forms of project-specific benefit sharing would be expected to occur (i.e., direct and indirect benefits). Poverty in the Se San (and 3Ss area generally) are higher than national averages in all three riparian countries owing to many isolated communities in remote mountainous areas and constant high migration of poor people to the lowlands.

Given the low population density, poverty levels and resource based livelihood dependence more comprehensive forms of BSM in the Cambodian portion may focus on issues relating to boosting and diversifying the local economy (e.g. helping local communities position to gain with ecotourism), and enhancing traditional livelihood strategies with programmes initially linked to poverty reduction strategies and a young population. Household electrification levels are low and well below Asian standards, limiting the scope for development and thus may play a role in BSM strategies.

Otherwise benefit sharing mechanisms related to hydropower need to be integrated with the local development strategies and locally driven planning especially for indigenous groups that make up and estimated 80% of the sub basin residents.

As regard to transboundary dimensions, the Cambodia portion of the Se San is situated between upstream and downstream tributary hydropower schemes, or will be in future. The existing projects in Vietnam sell all their output to the Vietnamese power system (EVN). Vietnam and Cambodia have set up committees to exchange information and coordinate studies in the Seasan part of the 3-S basins. Similar committees could play a role in the discussion of transboundary benefit sharing dimensions in the Srepok (balance development opportunity and risk in the basin). There are multi stakeholder forums in Cambodia to obtain stakeholder views on options and also active dialogue on transboundary impacts.

**7. References and additional data**

Consulted documents for 3Ss tributary profiles
• Key topic 1: Water Quality. 3S Technical sheet on key topics No.1. Sesan, Sre Pok, and Sekong (3Ss) River Basin Study in the Kingdom of Cambodia, Lao PDR and Socialist of Viet Nam. Asian Development Bank: Manila.
• Key topic 2: Water quality. 3S Technical sheet on Key topic No.2.
• Key topic 3: Water Flows. 3S Technical sheet on Key topic No.3.
• Key topic 4: Transport of Sediments. 3S Technical sheet on Key topic No.4.
• Key topic 5: Biodiversity and Natural Resources. 3S Technical sheet on Key topic No.5.
• Key topic 6: Catchment/Watershed and Land Use Change. 3S Technical sheet on Key topic No.6.
• Key topic 7: People and Livelihoods. 3S Technical sheet on Key topic No.7.
• Key topic 8: Large scale infrastructure development in 3Ss. (8a-Hydropower Development). 3S Technical sheet on Key topic No.8.
• Key topic 8: Large scale infrastructure development in 3Ss. (8b-Irrigation Development). 3S Technical sheet on Key topic No.8.
• Key topic 8: Large scale infrastructure development in 3Ss. (8c-Mining Development). 3S Technical sheet on Key topic No.8.
• Key topic 9: 3S Rivers and the Mekong downstream. 3S Technical sheet on Key Topics No.9.

Other references
8. Additional data:

**Table 7.1: List of people are indirectly affected by the Lower Sesan 2**

<table>
<thead>
<tr>
<th>District</th>
<th>Commune</th>
<th>Village</th>
<th>#family</th>
<th>Population</th>
<th>Women</th>
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</thead>
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<td><strong>A. Downstream project</strong></td>
<td></td>
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<td>Ba Chong</td>
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<tr>
<td>SreAngrong</td>
<td>Phnom Mouy</td>
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<td></td>
<td>Phnom Bey</td>
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<td>DeyLour</td>
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<td>723</td>
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<td>160</td>
<td>800</td>
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<td>Lum Hat</td>
<td>186</td>
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<td>O Yadav</td>
<td>Se San</td>
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<td>KaTaing</td>
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<td>Chann</td>
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<td>99</td>
<td>450</td>
<td>222</td>
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<td></td>
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<td>63</td>
<td>300</td>
<td>155</td>
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<td>42</td>
<td>174</td>
<td>88</td>
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<td></td>
<td>Sanh</td>
<td>53</td>
<td>203</td>
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<td>KohPorng</td>
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<td>48</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Village</td>
<td>Population by 2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>------------------</td>
<td>--------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ta Lat</td>
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<td></td>
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</tr>
<tr>
<td>2</td>
<td>Rum Poirt</td>
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<td></td>
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<tr>
<td>3</td>
<td>SvayRieng</td>
<td>1233</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>KhsachThmey</td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>SrekorMouy</td>
<td>777</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Pluk</td>
<td>933</td>
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<td></td>
<td></td>
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<tr>
<td>7</td>
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</tr>
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<td>8</td>
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</tr>
<tr>
<td>9</td>
<td>SreSronok</td>
<td>570</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>SreSronok</td>
<td>570</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Srepoa</td>
<td>1853</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sub-total</strong></td>
<td><strong>9,321</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7.2: List of people are directed affected by the Proposed Lower Se San 2

Villages/population directly affectec by LWS2

Sources: EIA stud of Lower Sesan 2 (2010), Ministry of Environment & Commune Data Base (2010), NCDD.
Table 7.3: Table below summary losses by the LWS2 reservoir construction and resettlement.

<table>
<thead>
<tr>
<th>Item of loss and resettled</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td># of households suffered from submergence till 2011</td>
<td>1579</td>
</tr>
<tr>
<td># households till 2011</td>
<td>6507</td>
</tr>
<tr>
<td>Area of living, garden land</td>
<td>163.7 ha</td>
</tr>
<tr>
<td>Area of agricultural land</td>
<td>909.7 ha</td>
</tr>
<tr>
<td>Area of mountain field</td>
<td>307.1</td>
</tr>
<tr>
<td>Area of forest under ownership of foreign companies</td>
<td>10343.4 ha</td>
</tr>
<tr>
<td>Area of natural forest</td>
<td>17459.8 ha</td>
</tr>
<tr>
<td>Area of river, stream</td>
<td>4616.3 ha</td>
</tr>
<tr>
<td>Land areas of other kinds</td>
<td>1141.7 ha</td>
</tr>
<tr>
<td>Trees of all kinds</td>
<td>132800 trees</td>
</tr>
<tr>
<td>Internal transportation roads</td>
<td>42.2 km</td>
</tr>
<tr>
<td>National road No.78</td>
<td>9.4 km</td>
</tr>
<tr>
<td>House and other public works</td>
<td>113818.2 m²</td>
</tr>
</tbody>
</table>

Sources: EIA study of Lower Sesan 2 (2008), Ministry of Environment.
### Annex 1b: The Srepok Tributary in Cambodia Section

(This preliminary version is offered to illustrate the detail National Consultants may aim for)

<table>
<thead>
<tr>
<th>Tributary System Profile - Relevant to BSM Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mekong Tributary:</strong> <strong>Srepok</strong> (Cambodia portion)</td>
</tr>
<tr>
<td>This profile focuses on the lower portion of the Srepok river basin in Cambodian territory. This represents a little less than half the total catchment area.</td>
</tr>
<tr>
<td>Srepok is the largest of the 3S river basins (Sekong, Sesan and Srepok). It rises in mountainous central Vietnam, flows 250 km through Cambodia territory and joins the Se San 30 km upstream of the Se San confluence with the Se Kong, which all enter the Mekong mainstream about 50 km below the Khon Phapheng Falls area.</td>
</tr>
<tr>
<td>See Map Figures 1 and 2 to the right of this text. Also see Map Figure 3 for the full 3-S in the Endnotes that provide supplemental data.</td>
</tr>
<tr>
<td>- <strong>River Length:</strong> 407 km from Dak Lak Province in the Central Highlands of Vietnam to Stung Treng Province in Cambodia</td>
</tr>
<tr>
<td>- <strong>Catchment area:</strong> 30,942 km² of total catchment, of which 12,780 km² (or 41.3%) is in Cambodian territory.</td>
</tr>
<tr>
<td>- <strong>Annual discharge:</strong> 26.7 bcm</td>
</tr>
<tr>
<td>- <strong>Mean annual flow:</strong> 258 m³/s</td>
</tr>
</tbody>
</table>
| - **Seasonal Flow Range:**
| - 72 m³/s - low flow season |
| - 595 m³/s - high flow season |

<table>
<thead>
<tr>
<th>Country and Riparian situation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia – the lower portion of the Srepok basin (Viet Nam the upper portion)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Riparian Counties upstream of the tributary Mekong Confluence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Srepok’s confluence with the Mekong mainstream (joining the other 3-S rivers) is:</td>
</tr>
<tr>
<td>- ~ 281 km from Viet Nam border (Dak Lak Province in Viet Nam – moving up the Srepok river);</td>
</tr>
<tr>
<td>- ~ 57 km from Lao PDR’s border, moving up the Mekong mainstream to Champassak Province in Lao PDR;</td>
</tr>
<tr>
<td>- ~ 210 km from Thailand border, moving up to Ubon Ratchathani Province</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Riparian Counties downstream of the tributary Mekong Confluence</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Srepok confluence with the Mekong mainstream is:</td>
</tr>
<tr>
<td>- ~ 310 km from Viet Nam’s border (reaching An Giang Province), moving down the Mekong mainstream.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Riparian considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Viet Nam and Cambodia established committees to formally exchange information and coordinate studies in 3-S basins (on the Sesan).</td>
</tr>
<tr>
<td>- The 3-S system, of which Srepok is a major part, contributes significantly to the Mekong flow (25% at Stung Treng and 17% of total Mekong flow).</td>
</tr>
<tr>
<td>- The MRC’s BDP documents indicate the Srepok river system needs to be managed and</td>
</tr>
</tbody>
</table>

12 Khon Falls and the surrounding area is significant as a major barrier to navigation and a key factor in long-range fish migration behaviour in the Mekong system. |
13 see map of Sre Pok at additional data |
14 See Srepok flow variability at additional data |
15 see graph on monthly inflow of water in Srepok from Vietnam
### Tributary System Profile - Relevant to BSM Options

<table>
<thead>
<tr>
<th>Sub-national situation</th>
<th>Population and Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Srepok flows through 3 Provinces in Cambodia that together have over 320,000 residents (2006 data) The population in communities bordering the Srepok in Cambodia is estimated at around 11,000.</td>
<td>Population density in the Ratanakiriy and Mondulkiriy Provinces is low (9 to 2 persons / km²). Even lower along the upstream reaches of the river in Cambodia. The population is young. For example, in 2008, 51.8% of Ratanakiriy residents were aged 19 or younger. Population densities in Viet Nam’s portion of Srepok are much higher.</td>
</tr>
<tr>
<td>Mondulkiri Province, has a total population of 60,000, despite being the largest Province in Cambodia by land area, with ~ 2,483 people in the immediate catchment; Ratanakiri Province, has 150,000 residents in total, with ~ 6,988 people in the catchment; Stung Treng Province, 111,734 residents in total, with ~ 1,554 people in the catchment.</td>
<td></td>
</tr>
<tr>
<td>There are several districts and communes in each of the three provinces the Srepok flows through in Cambodia. Ratanakiri Province, for example, has 9 districts. Data suggest 4 districts, 7 communes, and 21 villages border the Srepok in Cambodia.</td>
<td>Population of these river based districts (check if it is same as below)</td>
</tr>
<tr>
<td>The total population of riverine communities along the Srepok in Cambodia is estimated to be over 11,000 people (11,025 in 2008)</td>
<td></td>
</tr>
<tr>
<td>There is no River Basin entity for the Cambodian portion of the Srepok basin; As yet, there is no national law that requires the establishment of RBCs/RBOs, which otherwise may play a role in developing and implementing BSM. A RBO for upper Srepok basin in Viet Nam was established around 2005 with Development Partner support. Its formation and mandate is consistent with the VN Water Law which requires River Basin Organizations.</td>
<td></td>
</tr>
<tr>
<td>Most people in the catchment in Cambodia live rural lives. While development trends are improving, poverty levels remain among the highest in Cambodia and economic infrastructure for non-agriculture development is limited. The population density is low (especially in comparison to Viet Nam¹⁹) and high proportion different ethnic groups (80% ethnic). Livelihoods are mainly based on a mix of subsistence agriculture, animal raising, forest product collection and fishing. Agriculture consisted of rice farming, fruit and vegetable growing. Cash crops increasingly grown include coffee, rubber, tobacco and cashew nuts - depending on soil conditions. Recent history has been characterized by development and attendant challenges to</td>
<td></td>
</tr>
</tbody>
</table>

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¹⁶ BDP Basin Profile for 3S sub-area 7c (2009)
¹⁷ ADB 3S TA 2006, para 55 on conclusions
¹⁸ Reportedly in response to severe impacts on the flow regime of the Sesan from the La Ly dam and reservoir in Viet Nam, (reference ADB Report on the 3S TA 40082). According to that study the initiatives provide the foundation for further development of local and cross-border arrangements for planning, development, and management in the 3Ss area.
¹⁹ BDP basin profile for 3S sub-areas 7c (2009)
²⁰ By late 2009, 52% of total population is ethnic Phnong in Mondulkiri Province of Cambodia.
Lam Dong, Dak Nong, and Gia Lai in Vietnam supported the establishment of a river basin planning and management agency (RBPMA) for the Srepok River Basin in the provinces of Dak Lak, Lam Dong, Dak Nong, and Gia Lai in Vietnam.

The Srepok sub basin RBO (in VN) was the first established a river basin organization (RBO) in the 3S. It evolved in a bottom-up process building on earlier Danida support; namely, the Integrated Water Resources Management Project for the Srepok River Basin (2002–2006) that supported the establishment of a river basin planning and management agency (RBPMA) for the Srepok River Basin in the provinces of Dak Lak, Lam Dong, Dak Nong, and Gia Lai in Vietnam.

---

### Tributary System Profile - Relevant to BSM Options

<table>
<thead>
<tr>
<th>Hydropower Situation (dams in the Tributary system)</th>
<th>No of Large Dams</th>
<th>Total Installed Capacity (MW)</th>
<th>Total Av Annual Energy (GWh)</th>
<th>Total Live Storage million m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Dams</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Under Construction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Licensed</td>
<td>1</td>
<td>400</td>
<td>1,954</td>
<td>333</td>
</tr>
<tr>
<td>Planned</td>
<td>2</td>
<td>347</td>
<td>1,874</td>
<td>8,010</td>
</tr>
<tr>
<td><strong>Total of above</strong></td>
<td><strong>3</strong></td>
<td><strong>747 MW</strong></td>
<td><strong>3,834 GWh</strong></td>
<td><strong>8,343</strong></td>
</tr>
</tbody>
</table>

**Other Relevant factors**
- See the endnotes for a listing of all projects in the Srepok.
- There are no existing large hydropower schemes on the Srepok in Cambodia. Three potential schemes are identified in the MRC Hydropower database (747 MW).
- Cambodia has licensed EVN (of Viet Nam) to construct Lower Sesan and Lower Srepok 2, a 400 MW scheme just below the confluence of the Sesan and Srepok rivers.
- Two other large HPPs are at pre-feasibility stage on the Cambodian portion of the Srepok, namely Lower Srepok 4, (143 MW) and Lower Srepok 3 (204 MW). The MOUs for these pre-feasibility studies are with a Chinese company.
- The Lower Se San 2 (400 MW) is designed for 1954 GWh annual production, provisionally at an equivalent price of 6.1 us cents/kwh.
- The potential $ value of revenue sharing from licensed and planned hydropower projects (3,834 GWh) at 6.1 us cents/kwh in the Cambodian portion of the Srepok assuming 2% of gross revenue would be about $USM 4.7 per year.
- As an illustration only, for all hydropower potential in the Srepok basin including hydropower schemes in Viet Nam and Cambodia potential revenue sharing would amount to $7.0 USM per year (for the above assumptions).

**Viet Nam portion of Srepok**
- Hydropower potential on the upper portion of the Srepok in Viet Nam is almost fully

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21 Deforestation and clearing of land for permanent cultivation and increased cultivation of annual crops have reportedly led to a measurable increase in the frequency of flash floods in the upper catchments and indications of declining low flows in during the dry season (offset by increased low flows due to Viet Nam hydropower operation).

22 This is an extract from the BDP Basin Profile for 3S sub-area 7c (which includes parts or entire parts of three provinces namely; Mondulkiri (48.88%), Ratanakiri (100%) and Stung Treng (61.75%)) shows this area in north-east Cambodia is characterized by a very low population density (7 per./km²) and a large proportion of ethnic minorities (82%) engaged in subsistence farming, animal raising, hunting, and collecting of forest products. Surplus of agricultural produce and secondary forest products are traded at the nearest local markets to make incomes for families. There is no significant development in the water sector within this sub-area. Other features of SA-7C are that includes only the 3 provinces in Cambodia are summarized in Table 1.1 at additional data.

23 The Srepok sub basin RBO (in VN) was the first established a river basin organization (RBO) in the 3S. It evolved in a bottom-up process building on earlier Danida support; namely, the Integrated Water Resources Management Project for the Srepok River Basin (2002–2006) that supported the establishment of a river basin planning and management agency (RBPMA) for the Srepok River Basin in the provinces of Dak Lak, Lam Dong, Dak Nong, and Gia Lai in Viet Nam.
**Tributary System Profile - Relevant to BSM Options**

- developed, with 7 large scale HPPs already constructed and operational and one in the planning (total 818 MW).
  - Small-scale hydropower plants are also planned on tributaries of the Srepok in Viet Nam.
  - The lowest dam on the Srepok in Viet Nam is Srepok 4A, that to some extent helps regulate diurnal river flows into Cambodia (the extent of reregulation is seasonal and limited by the reservoir size).

<table>
<thead>
<tr>
<th>Tributary Significance Indicators</th>
<th>Focusing on factors / information that inform the evaluation of BSM options for proposed hydropower on the Srepok system in Cambodia.</th>
</tr>
</thead>
</table>
| Fisheries                        | Srepok reportedly has 204 species of fish supported by a rich diversity of aquatic habitats – i.e., deep pools (over 29), sand bars, rapids etc. The Srepok river is a major fish migration route from the Mekong mainstream linking important spawning areas in the river to the Mekong-Tonle Sap fisheries system. At present there is no overall management plan for Srepok and its fishery contribution to the Mekong system, though national policies call for planning. Hydropower schemes are likely to result in a significant reduction in fish in the Srepok, especially migratory fish.
  - One view is that information on fish stocks, biodiversity, capture fisheries and aquaculture is still inadequate for detailed basin planning. Further research is critically important to making qualified assessments;
  - More encouragement is expected of policies, laws and regulation for the management of fisheries in the sub basin, including the reservoir fisheries and fish passage at hydropower schemes.
  - Many experts argue the 3-S rivers have more or less same species of fish, and the same species as the mainstream Mekong - though the situation is dynamic and changing with 3-S development especially the hydropower aspect.
  - The Srepok river is generally deeper than the other two 3S rivers. It has more deep pools and fewer migration barriers.
  - At present, fish from Mekong migrate to Viet Nam via the Srepok river, a distance of more 300 km. According to Vietnamese studies, more than 50 species of fish migrate from the Mekong into Vietnam.
  - Fish and rice is staple food for people residing along Srepok River. Most households on the river fish. A normal daily catch for a household is 2-5 kg, but sometime up to 10 kg fish can be caught in a day.
  - Among the implication for BSM planning is measures to support alternative food production strategies (to supplement or replace dietary protein from river fish) would be important to consider, as well as maximizing fish passage performance in hydropower project designs and operating strategies. |
| Sediment / Erosion issues        | Sediment deposition in the slower flowing river stretches with deep pools that then become more shallow (changing habitat).
  - Potential for river erosion in downstream river reaches due to emergency / accidental water release from upstream hydropower and greater daily fluctuation.
  - There are issues related to river sand extraction for construction in Cambodia (for domestic and export uses) including the Srepok. |
| Navigation                       | The river is a major transportation route for many communities living on the Srepok. Many families own one or more boats to move across and along river. Dry season water levels are important for local navigation. Flow regulation from Vietnamese hydropower is expected to result in higher flows in Cambodian reaches in the dry season, which can facilitate boating (but the extent would need to be assessed).
  - Among the implications for benefit sharing is measures to support local river transport may feature in the design of BSM and the range of activities BSM may support. Also hydropower project design and operation needs to take into account implications and the potential to support local river transport as much as possible. |
| Agriculture / Irrigation         | Many households practice slash and burn shifting cultivation.
  - There are no significant irrigation systems in Cambodia's portion of the river at present. Crops are rain fed. Cultivation takes place during the rainy season. (The Vietnamese portion of the Srepok has an irrigated area about 150 times more than in Cambodia (i.e. 77,000 ha as compared to 520 ha in Cambodia)). |

24 In some stretches this is a risky proposition due to rapids with submerse rocks. Turbidity in the river causes people to stop boating during certain periods in the year.
### Tributary System Profile - Relevant to BSM Options

<table>
<thead>
<tr>
<th><strong>Most villages grow one paddy crop per year. The size of rice field per household varies from about 0.5 to 2.0 ha.</strong>&lt;sup&gt;25&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Riverbank gardening is common during the low flow period when drawing water from the river is easy.</strong></td>
</tr>
<tr>
<td><strong>Among the implications for consideration of BSM is measures to reinforce and promote sustainable agriculture practices are important.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Flood mitigation / management</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>While hydrological records are kept, literature indicates there is no comprehensive plan for flood mitigation / management in Srepok section in Cambodia.</strong></td>
</tr>
<tr>
<td><strong>Upstream reservoirs in Vietnam could be operated in a manner sensitive to reducing the flood peaks and potential flood damage in Cambodia.</strong></td>
</tr>
<tr>
<td><strong>And the population can be made aware of current practices that are beneficial. That would constitute sharing benefits of flow regulation, which may help to offset some of the adverse downstream impacts of flow regulation practices in the upper Srepok catchment.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ecosystem services</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>An EIA of potential impacts in Cambodia of planned hydropower on the Vietnamese portion of the Srepok indicate the main adverse downstream impacts are likely to fall on river users and affect the diversity of aquatic and terrestrial species, particularly if appropriate mitigation measures are not taken.</strong></td>
</tr>
<tr>
<td><strong>The Lomphat Wildlife Sanctuary is a heavily forested area of 250,000 ha straddling Ratanakiri, Mondulkiri, and Kratie provinces. NGO groups argue that hydropower schemes may inundate a third of the sanctuary and flood the surrounding villages.</strong></td>
</tr>
<tr>
<td><strong>The region's tourism development strategy encourages ecotourism. One problem typically cited with ecotourism is local communities receive very little income from tourism (i.e., a lack of a benefit sharing in the tourism sector) Together with the fact most livelihoods are rural based, these factors suggests that consideration of payment for ecological services (PES) and other measures to protect or enhance the remaining ecosystem services would be important elements in an comprehensive approach to benefit sharing.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Other significant factors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developers of Lower Se San &amp; Srepok 2 are reportedly committed to contribute to the socio-economic development in the region. Information suggests there is a growing appreciation of the need for benefit sharing thinking among government, private sector and non-government interests.</strong></td>
</tr>
<tr>
<td><strong>This suggests benefit sharing may consider how to maximize the local benefits of expected higher dry season flows, such as to take advantage of opportunities for enhancing domestic, irrigation and industry water off-takes in the future, and opportunities in improving local river navigation, aquaculture cultivation, fishing inside reservoir areas and ecotourism.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Other MRC work in the Tributary relevant to BSM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focusing on studies / information, which inform discussion and evaluation of BSM options for hydropower in the Srepok system.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MRC Programme studies</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A preliminary RSAT assessment was done on BSM issues (Topic 6) as part of the Srepok River assessment supported by MRCS.</strong></td>
</tr>
<tr>
<td><strong>Insert the general conclusions on Topic 6 from the Srepok case study:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>National or INGO Studies</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Several NGO organizations are active in 3S river basin such as 3S protection Network, NGO forum and The Worldwide Fund for Nature (WWF).</strong></td>
</tr>
<tr>
<td><strong>WWF is proposing to support Integrated River Basin Management in the Srepok Watershed in the lower section of the basin in Cambodia.</strong></td>
</tr>
<tr>
<td><strong>Many international NGOs have campaigns on hydropower in the 3-S, and at the same time many are supporting rural development programmes.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Hydropower Developer or Operator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developer of Lower Se San &amp; Srepok 2 hydropower project has submitted the resettlement plan to Royal Government of Cambodia in order to get permission for starting the construction.</strong></td>
</tr>
<tr>
<td><strong>Feasibility study report prepare in 2009.</strong></td>
</tr>
<tr>
<td><strong>EIA report not available.</strong></td>
</tr>
<tr>
<td><strong>Resettlement plan not available.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Summary</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cambodia has no formal legislation on national-to-local forms of BSM to apply to the 3</strong></td>
</tr>
</tbody>
</table>

---

<sup>25</sup> Reported rice productivity varies in different area along Srepok (e.g. 0.7 ton/ha in Nang Khi Loek Commune in Modulkiry province, 0.47 ton/ha in Chey Odom commune in Ratanakiry province and 1.6 ton/ha in Kbal Romeas commune in Stung Treng).
### Comment on BSM and sustainable development in the tributary:

proposed hydropower projects in the lower Srepok. Traditional forms of project-specific benefit sharing would be expected to occur (i.e., direct and indirect benefits). Poverty in the Srepok (and 3Ss area generally) are higher than national averages in all three riparian countries owing to many isolated communities in remote mountainous areas and constant high migration of poor people to the lowlands.

Given the low population density, poverty levels and resource based livelihood dependence more comprehensive forms of BSM in the Cambodian portion may focus on issues relating to boosting and diversifying the local economy (e.g. helping local communities position to gain with ecotourism), and enhancing traditional livelihood strategies with programmes initially linked to poverty reduction strategies and a young population. Household electrification levels are low and well below Asian standards, limiting the scope for development and thus may play a role in BSM strategies.

Otherwise benefit sharing mechanisms related to hydropower need to be integrated with the local development strategies and locally driven planning especially for indigenous groups that make up and estimated 80% of the sub basin residents.

As regard to transboundary dimensions, the Cambodia portion of the Srepok is situated between upstream and downstream tributary hydropower schemes, or will be in future. The existing projects in Vietnam sell all their output to the Vietnamese power system (EVN). Vietnam and Cambodia have set up committees to exchange information and coordinate studies in the Seasan part of the 3-S basins. Similar committees could play a role in the discussion of transboundary benefit sharing dimensions in the Srepok (balance development opportunity and risk in the basin). There are multi stakeholder forums in Cambodia to obtain stakeholder views on options and also active dialogue on transboundary impacts.

For other data and information resources see the Endnotes of this profile.}

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26 [http://www.3sbasin.org/iucn/](http://www.3sbasin.org/iucn/) The 3S Knowledge Hub – a website developed in 2008 with the support of the Asian Development Bank under its Regional Technical Assistance Project #40082 in cooperation with the MRCS 3-S Basins Development Study. The website is now maintained by IUCN with support from the BRIDGE project funded by the Swiss Agency for Development and Cooperation.
Additional data

Figure 1. Map of Sre Pok
Figure 2. Srepok water flow variability

Table 1.1: BDP profile of 3S sub-areas 7C Study on Hydropower (2010), from annex B.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Se Keng</th>
<th>Se Siy</th>
<th>Se Pol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Population</td>
<td></td>
<td>290,113</td>
<td>94,918</td>
<td>77,999</td>
</tr>
<tr>
<td>2. Poverty incidence¹</td>
<td>%</td>
<td>16.6</td>
<td>11.3</td>
<td>19.6</td>
</tr>
<tr>
<td>3. Electricity coverage</td>
<td>%</td>
<td>99.9</td>
<td>103.8</td>
<td>110.0</td>
</tr>
<tr>
<td>4. Water Supply Coverage</td>
<td>%</td>
<td>99.9</td>
<td>44.7</td>
<td>36.2</td>
</tr>
<tr>
<td>5. Irrigated area</td>
<td>Ha</td>
<td>435</td>
<td>1,509</td>
<td>2,093</td>
</tr>
</tbody>
</table>

Present Value of Production

Table 1.2: MRC Tributary Significance

<table>
<thead>
<tr>
<th>Study on Hydropower</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Population</td>
</tr>
<tr>
<td>2. Poverty incidence¹</td>
</tr>
<tr>
<td>3. Electricity coverage</td>
</tr>
<tr>
<td>4. Water Supply Coverage</td>
</tr>
<tr>
<td>5. Irrigated area</td>
</tr>
</tbody>
</table>

Table 8: Hydropower development on Srepok River basin

<table>
<thead>
<tr>
<th>Dam name</th>
<th>Height (m)</th>
<th>Length (km)</th>
<th>Construction</th>
<th>Type</th>
<th>Head (m)</th>
<th>Design flow (m³/s)</th>
<th>Installed capacity (MW)</th>
<th>Mean Annual Energy (GWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Srepok 1</td>
<td>80</td>
<td>8.0</td>
<td>E</td>
<td>B</td>
<td>37</td>
<td>20,208</td>
<td>30,960</td>
<td>290,128</td>
</tr>
<tr>
<td>Srepok 2</td>
<td>78</td>
<td>4.8</td>
<td>E</td>
<td>B</td>
<td>37</td>
<td>20,208</td>
<td>30,960</td>
<td>290,128</td>
</tr>
<tr>
<td>Srepok 3</td>
<td>52.5</td>
<td>4.8</td>
<td>E</td>
<td>B</td>
<td>37</td>
<td>20,208</td>
<td>30,960</td>
<td>290,128</td>
</tr>
<tr>
<td>Srepok 4</td>
<td>25.0</td>
<td>4.8</td>
<td>E</td>
<td>B</td>
<td>37</td>
<td>20,208</td>
<td>30,960</td>
<td>290,128</td>
</tr>
<tr>
<td>Srepok 5</td>
<td>70.0</td>
<td>4.8</td>
<td>E</td>
<td>B</td>
<td>37</td>
<td>20,208</td>
<td>30,960</td>
<td>290,128</td>
</tr>
<tr>
<td>Srepok 6</td>
<td>70.0</td>
<td>4.8</td>
<td>E</td>
<td>B</td>
<td>37</td>
<td>20,208</td>
<td>30,960</td>
<td>290,128</td>
</tr>
</tbody>
</table>

TOTAL: 1,188,808 GWh
Annex 2: Summary Matrix Description Of BSM Options

Template 3a - Summary Matrix - Illustration and Examples - National-to-Local BSM Options selected for evaluation in ISH13

<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
<th>Institutional Arrangements Benefit Delivery Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NTL Type 1: Sharing monetary benefits of hydropower</strong></td>
<td><strong>Main Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>Provincial economies of tributaries with hydropower.</td>
<td>Various financial sources that share or spread the monetary benefits of hydropower. E.g.:</td>
<td><strong>A Development Fund: which serves to administer the delivery of benefits in various ways (grant programmes, increments to existing provincial-national programmes, micro-loan funds, allocations to PES, etc) and handle monitoring and supervision) with appropriate multi-stakeholder governance;</strong></td>
</tr>
<tr>
<td>Residents of tributary basins.</td>
<td><strong>Project revenue streams:</strong></td>
<td><strong>Regular Developments budgets: of the Provincial and /or local governments in the tributary where the project is located. The revenue sharing funds essentially “top up” money for local development expenditure administered by existing governance mechanisms , or</strong></td>
</tr>
<tr>
<td>Communities in the vicinity of tributary hydropower projects.</td>
<td>- Tapping a portion of revenue tributary projects generate.</td>
<td><strong>A mix of these two approaches (e.g. increments to Provincial budgets and a local Development Fund).</strong></td>
</tr>
<tr>
<td><strong>Sub-national levels:</strong> 27</td>
<td>- Ultimately imbedded in electricity tariffs (i.e., the cost are paid by the electricity users).28</td>
<td>Issues such as funding levels and sources, eligible parties, eligible expenditures and delivery mechanisms, beneficiary choice, etc., are prescribed by government in appropriate legislation / regulation.</td>
</tr>
<tr>
<td>Provinces, districts, municipalities, villages, etc. which either host, or may be affected by tributary hydropower projects in +ve / -ve ways. Aiming to:</td>
<td><strong>Non-tariff Sources, including:</strong></td>
<td><strong>Money from various sources is channelled to a revenue account, with a formula set in regulations. Then it is allocated to either:</strong></td>
</tr>
<tr>
<td>Equitably spread resource utilization benefits;</td>
<td>- Municipal taxes.</td>
<td><strong>A Development Fund: which serves to administer the delivery of benefits in various ways (grant programmes, increments to existing provincial-national programmes, micro-loan funds, allocations to PES, etc) and handle monitoring and supervision) with appropriate multi-stakeholder governance;</strong></td>
</tr>
<tr>
<td>Provide ongoing (sustainable) financial support to take advantage of local development opportunities that resource transformation of hydropower</td>
<td>- Government budget allocations.</td>
<td><strong>Regular Developments budgets: of the Provincial and /or local governments in the tributary where the project is located. The revenue sharing funds essentially “top up” money for local development expenditure administered by existing governance mechanisms , or</strong></td>
</tr>
<tr>
<td><strong>Innovative financing:</strong> e.g.,</td>
<td>- Various fees (see Volume 1-5 of BSM KB for illustrations).</td>
<td><strong>A mix of these two approaches (e.g. increments to Provincial budgets and a local Development Fund).</strong></td>
</tr>
<tr>
<td>- Payment for Ecological Services (PES),</td>
<td><strong>Summary Matrix 1</strong></td>
<td><strong>Benefit Delivery Mechanisms</strong></td>
</tr>
<tr>
<td>- Provincial to local equity</td>
<td></td>
<td><strong>NTL Options selected to evaluate in the ISH13 Process</strong></td>
</tr>
</tbody>
</table>

---

27 National-level benefit may be broadly defined as economic growth. Many people in the country may benefit directly and indirectly in terms of (i) national income from hydropower (e.g., direct / indirect taxes, fees, other contributions to national accounts including export revenue, and (ii) electricity consumers in all sectors in urban and rural settings.
### Summary Matrix 1

<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Main Beneficiary Groups</td>
</tr>
<tr>
<td></td>
<td>may present.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Options Selected to Evaluate under this Type:

The following are examples of options of this generic type (NTL Type 1). This is not a comprehensive list of all possible options.

<table>
<thead>
<tr>
<th>1-1</th>
<th>No revenue sharing mechanism is needed to spread monetary benefits of existing or proposed hydropower in Mekong tributaries.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assumes revenue sharing is not needed.</td>
</tr>
<tr>
<td></td>
<td>Assumes existing practices are adequate to spread benefits within society.</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>i.e., the do nothing additional or status quo</td>
</tr>
</tbody>
</table>

---

A Development Fund has more flexibility to tailored delivery of benefits through:
- Community-led initiatives,
- CSO/NGO initiatives,
- Private sector initiatives.

Otherwise, benefits may be delivered by normal government development expenditure mechanisms, or “ring fencing” development budget increases from revenue sharing (e.g., to use revenue sharing funds for development expenditures only and not for recurrent expenditures).

In future depending on how carbon markets evolve this may be through the UN Clean Development Mechanisms (CDM) or other regional / private sector carbon financing Funds. There is considerable information available on both approaches.

The assumption otherwise is existing practices are enough, meaning practices that may (i) provide money from the capital budget of the project (in Concession Agreements) to fund investment that spread benefits, in additional and indirect benefits (e.g., local roads and job creation, and/or (ii) EMMP measures that are funded indirectly by project revenue (e.g., as part of operations).
### Summary Matrix 1

**Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries**

<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Main Beneficiary Groups</th>
<th>Financing Sources</th>
<th>Institutional Arrangements Benefit Delivery Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Introduce local revenue sharing using local Development Fund mechanisms. In the vicinity of tributary hydropower projects.</td>
<td>Local communities and people living in the vicinity of projects. Otherwise, target beneficiaries are people that are legally defined in applicable law, based on documents such as:</td>
<td>A portion of project revenue stream that is derived from electricity (sales) channelled to a Local Development Fund. Amount linked to level of project generation (i.e. revenue stream) in formula set in national regulation Ultimately imbedded in electricity tariffs.</td>
<td>Local Development Fund (fund as an institutional mechanism) with a community defined Charter reflecting BSM legislation / regulation; Multi-stakeholder governance of the Fund, typically with representatives of local government, the NGO/CSO communities, local business, the hydropower project, key provincial development agencies and the RBC/RBO. A Fund Management Board may be established, if required by applicable government regulation. May be in combination with a district / provincial level and RBO/RBC funding mechanism (sharing monetary benefits). See also Matrix 4c on cross-cutting considerations.</td>
</tr>
<tr>
<td>1-3 Introduce local revenue sharing by increasing existing local development budgets.</td>
<td>Local communities and people living in the vicinity of projects Including households /settlements immediately upstream and</td>
<td>Project revenue (ultimately imbedded in electricity tariffs) Some portion of project revenue channelled into existing Local</td>
<td>Utilization of existing institutional arrangements and mechanisms Some conditionality on eligible expenditures (e.g. no recurrent budget expenditures, only development). Some targeting of support (e.g., to a group of people or area).</td>
</tr>
</tbody>
</table>

32 Development expenditures at local levels may be beneficiary defined and follow the community driven development model. Activities supported may include grant contributions (i) to extend local development assistance programs delivered through provincial or national target programs (ii) to support community-based activities funded in part by a contribution in kind from local communities (iii) to operate small loan and micro-credit facilities including those of a revolving nature (iv) to investment in expanding connection to electrical services (v) to advance the use of isolated on-spot electrical generation in areas where it is uneconomical for grid-connected supply, and (vi) to support other investments for local socio-economic and cultural advancement of common interest to beneficiaries, such as activities to establish and operate a community newsletter to keep beneficiaries informed and enable the exchange views on effective use and monitoring of benefit sharing funds.

33 One alternative is to define eligible people as those living a specified distance from the project. For hydropower, another alternative is the geographic extent of the project impact area defined in the EIA for analysis and prediction of potential adverse environment and social impacts, or in an ex-post EIA undertaken on an existing project. This encompasses (i) settlements that border upstream stretches of the main river above the reservoir (ii) settlements that border of the reservoir and live in the immediate watershed of the reservoir (iii) settlements where the main project facilities are located, including the dam powerhouse, switchyard and staff housing and office facilities (iv) the resettlement community and resettlement host community (v) settlements bordering the river downstream of the dam in the dewatered section between the dam and powerhouse, and (vi) settlements immediately downstream of the powerhouse.

34 Flexibility for a mix of delivery mechanisms suited to local needs and preference: e.g.,
- Grant programmes;
- Funding increments to expand existing government programmes or extension services ( beyond what is available normally; preference),
- NGO/CSO delivered initiatives supporting intended beneficiaries;
- Micro-credit schemes, etc.;

35 For example, as required by law in Viet Nam for all Public Funds – introduced during the existing BSM Pilot in 2010.
<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Main Beneficiary Groups</th>
<th>Financing Sources</th>
<th>Institutional Arrangements Benefit Delivery Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the vicinity of tributary hydropower</td>
<td>downstream.</td>
<td>Development Budgets</td>
<td>Needs provisions to make sure this top up is additional funding and not subtracted from the allocation the area would normally receive – otherwise there would be no net gain locally.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Can be in combination with a district / provincial level and RBO/RBC funding mechanism (sharing monetary benefits)</td>
</tr>
<tr>
<td>1-4 Introduce revenue sharing at district / Provincial levels through Development Fund mechanisms.</td>
<td>Provinces that tributary systems flow through</td>
<td>Project revenue (tariff derived) Allocated to Provincial-level funds Amount linked to level of project generation (i.e. revenue stream) in formula set in national regulation</td>
<td>Mechanism as appropriate for Provincial-level development funds according to administrative procedures and laws in the country Representation of development interest in the basin (multi-stakeholder) in the Fund governance Provincial decisions on how BSM funds are administered and spent within the scope of national regulation – which typically sets levels of payment. May be in combination with a local area and RBO/RBC funding mechanism (sharing monetary benefits).</td>
</tr>
<tr>
<td>Provinces with tributaries where hydropower is located.</td>
<td>River basin residents (tributary basin / sub basin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 Introduce revenue sharing at district / Province levels by increasing existing Provincial Development Budgets.</td>
<td>Economies of provinces tributary flows through</td>
<td>From project revenue (ultimately imbedded in electricity tariffs). Can be royalties or other form of revenue sharing. Amount linked to level of project generation (i.e. revenue stream) in formula set in normal regulation. Formula to allocate between provinces when the tributary flows through one or more Provinces.</td>
<td>Benefits delivered through normal provincial development funding institutional arrangements Guided by facilitating national regulation (see examples in the BSM Knowledge base – Step 1 in the 12 Steps to implement ISH13). See also Matrix 4c on cross-cutting considerations May be in combination with a local area and RBO/RBC funding mechanism (sharing monetary benefits)</td>
</tr>
<tr>
<td>Provinces with tributaries where hydropower is located.</td>
<td>River basin residents (in the tributary basin / sub basin).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-6 Introduce revenue sharing at the tributary scale using the River Basin entity (RB/RBO)</td>
<td>River basin residents (tributary basin / sub basin). Local communities and people living in the vicinity of projects. Including households /settlements immediately upstream and downstream.</td>
<td>From project revenue (ultimately imbedded in electricity tariffs). Allocated increments to RBO/RBC accounts, with conditions on management and use of funds in regulation Amount linked to level of project generation (i.e. revenue stream) in formula set in national regulation</td>
<td>RBO/RBC governance used to administer / manage the BSM Funds via their programme framework RBC/RBOs may set up a special financing window for Benefit sharing Flexibility for the RBO/RBC to make appropriate institutional arrangements (e.g., a BSM Committee or Department) Needs measures at basin and project area levels. May be in combination with a local area and provincial level funding mechanism (sharing monetary benefits)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries + NTL Options selected to evaluate in the ISH13 Process

### Summary Matrix 1

<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>Introduce payments for ecological services (PES) (also referred to as environmental services). Payments to individuals, groups or legal entities, who take actions that serve to protect, maintain or improve ecosystem functions and services for the benefit of others parties in the tributary or nature.</td>
<td>Various sources of money for PES: e.g. hydropower companies directly who wish to invest in reduction of reservoir sedimentation; BSM Development fund allocations for PES actions; Fees prescribed by legislation / regulation collected by Provinces.</td>
</tr>
<tr>
<td>Collect provincial / municipal taxes, fees, etc., for land or water used by hydropower projects in tributaries. Measures may be widely spread. Some also place emphasis on specific beneficiary groups, e.g.: Local communities and people living in the vicinity of tributary projects;</td>
<td>Various finance sources may be considered: e.g. Local / Provincial taxes (if permitted by the country legal / administrative framework); Fees (e.g., for land used by reservoirs and facilities, which</td>
</tr>
</tbody>
</table>

### Summary Features

- Ecosystems services broadly fall into five categories (i) provisioning, such as the production of food, fish, fibre and water (ii) regulating, such as the control of disease vectors, waste decomposition and detoxification and maintaining hydrological functions of ecosystems (iii) supporting, such as nutrient dispersal and cycling for recession agriculture, (iv) cultural, such as spiritual and recreational benefits including ecotourism; and (v) preserving, which includes guarding against uncertainty through the maintenance of biological diversity.
  - Local benefits from activities funded by money raised by PES, e.g. income for community forest groups paid to plant & sustainably manage headwater forests; related non-power benefits, e.g., wildlife / habitat protection, bio-diversity value. food-security

---

36 Ecosystems services broadly fall into five categories (i) provisioning, such as the production of food, fish, fibre and water (ii) regulating, such as the control of disease vectors, waste decomposition and detoxification and maintaining hydrological functions of ecosystems (iii) supporting, such as nutrient dispersal and cycling for recession agriculture, (iv) cultural, such as spiritual and recreational benefits including ecotourism; and (v) preserving, which includes guarding against uncertainty through the maintenance of biological diversity.

- Local benefits from activities funded by money raised by PES, e.g. income for community forest groups paid to plant & sustainably manage headwater forests; related non-power benefits, e.g., wildlife / habitat protection, bio-diversity value. food-security

38 Depends on financing source, e.g.
- Municipal taxes typically go directly to the municipal budgets
- Fees may be collected by Provinces then allocated to:
  - local Development Funds,
  - targeted Provincial Programmes (e.g., ethnic minority programmes, poverty reduction programmes), or
  - local development budgets at sub-provincial levels

37 Depends on financing source, e.g.
<table>
<thead>
<tr>
<th>Summary Matrix 1</th>
<th>Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries + NTL Options selected to evaluate in the ISH13 Process</th>
</tr>
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<tbody>
<tr>
<td><strong>Generic Option Type + options evaluated in ISH13</strong></td>
<td><strong>Summary Features / Alternative Mechanisms</strong></td>
</tr>
<tr>
<td>Non-consumptive use.</td>
<td><strong>Main Beneficiary Groups</strong></td>
</tr>
</tbody>
</table>
| ▪ District and other levels where the project is located, and  
 ▪ Provincial Economies (of provinces tributary flows through). | 1-9 | ▪ Local communities and people living in the vicinity of tributary projects  
 Aiming to lift the local area community out of poverty in a specified time frame (e.g. 5-10 years).  
 Linked to provincial targets for poverty alleviation, or beyond. | ▪ A Local Development Fund financed by revenue sharing, or  
 ▪ Provincial or national government budget commitments (from development budgets or loans).  
 ▪ Hydropower developer /operators may agree also to pay for local income generation measures for a period of time to complement other long-term measures. | ▪ Normal local development / income raising programmes.  
 ▪ Various CCD (community driven development) and rural development models are present in Mekong Countries. The issue is financing measures until agreed income targets are met (may take several years). |
| 1-9 | ▪ Local communities and people living in the vicinity of tributary projects  
 Aiming to lift the local area community out of poverty in a specified time frame (e.g. 5-10 years).  
 Linked to provincial targets for poverty alleviation, or beyond. | ▪ A Local Development Fund financed by revenue sharing, or  
 ▪ Provincial or national government budget commitments (from development budgets or loans).  
 ▪ Hydropower developer /operators may agree also to pay for local income generation measures for a period of time to complement other long-term measures. | ▪ Normal local development / income raising programmes.  
 ▪ Various CCD (community driven development) and rural development models are present in Mekong Countries. The issue is financing measures until agreed income targets are met (may take several years). |
| 1-10 | ▪ Local communities and people living in the vicinity of tributary projects;  
 ▪ River basin residents, and  
 ▪ Provincial economies (of provinces tributary flows through).  
 ▪ Nature and the environment.  
 Coordination is important to ensure hydropower revenue can carry all funding obligations (i.e., tariff impacts).  
 Implementation coordination is essential to reduce or eliminate unneeded duplication of effort, overlap, and potential for confusion and to address institutional capacity constraints. | ▪ Mechanisms where national or provincial authorities tap into the revenue collections from hydropower sales (domestic or export sales).  
 ▪ Mechanisms where hydropower Companies pay fees, which are then reflected in PPAs and ultimately in the cost of electricity supply and consumer tariffs | ▪ The investments made by the various funds can be designed to maximize local / basin / provincial benefits.  
 ▪ One example is to contract local communities / enterprises to undertake local measures for environment or water protection that may be obligations of the project entity (e.g. optimizing local employment, training and skills  
 ▪ Requires coordination across sectors to ensure benefit sharing opportunities with project are communities and basin residents are optimized. |
**Summary Matrix 1**

<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
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<tbody>
<tr>
<td><strong>Main Beneficiary Groups</strong></td>
<td><strong>Institutional Arrangements</strong></td>
</tr>
<tr>
<td>NC Teams and national Working Groups list other options of interest</td>
<td><strong>Benefit Delivery Mechanisms</strong></td>
</tr>
</tbody>
</table>

**NTL Type 2:** Non-monetary benefits such as enhancing local access to natural resources or cultural resources.

Covers a range of local resource access entitlements to enable local and riverine communities in the vicinity of hydropower projects to enhance resource-based livelihoods and social welfare through local actions (e.g., forest, land, water, biophysical, and cultural resources).

**Dual aims are:**

- To offset significant resources lost due to resource transformations from hydropower.  
- To enable people to take advantage of new livelihood opportunities resource transformations create.

- People living in the vicinity of hydropower projects who rely on:
  - Natural resource access for lives and livelihoods and culture resources.
  - River communities / settlements in the tributary upstream or downstream of the project:
    - Who rely on aquatic ecosystem services significantly transformed by the project, or
    - Who may participate in PES funded by hydropower revenue designated for benefits sharing or PES directly.

How far upstream and downstream people would be eligible is both project and tributary specific.

Regulation is needed to guide on these matters.

- These are non-monetary measures. Financing is not the main issue in non-monetary benefits.
- Rather the emphasis is on clarifying:
  - Access rights of local communities,
  - Responsibilities of government from local to provincial-levels to cooperate, and
  - In order to optimise local access to natural / cultural resources and the development benefits that result.

May be combined with long-term financing (e.g., from revenue sharing) so communities are in a better position to:

- Restore previous livelihoods, and/or
- Pursue new livelihood opportunities hydropower projects, the services, or resource transformations unlock for them.  

- Governments (e.g., provincial, municipal and local or resource management agencies) ensure local access to natural resources.
- To be systematic, often needs an institution designated as “responsible” to coordinate measures, supervise and monitor and to ensure that:
  - Local people have a “voice” in about decisions on local resource access that affect them at all stages of hydropower planning, implementation, and operation, and
  - Mechanisms exist to indicate the preferences of beneficiaries and to provide feedback on the type of permissions / approvals people prefer to reinforce or introduce.
  - Processes are bottom up rather than top down and follow community driven development models in rural areas

Once opportunities are identified by local communities on the preferred way to enhance local resource access, authorities then need to:

- issue permits / instructions to facilitate local access, and
- lower and/or remove any unnecessary legal impediments to local access to natural resources (e.g., old regulations that arbitrarily denying local access to reservoirs that often may have multi-purpose uses such as fishing or river transport).

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39 Non-monetary benefits are particularly important for people living in subsistence and low-income situations, who rely heavily on natural resources for their day-to-day livelihoods, health, and culture. Under BSM arrangements they are long-term (essentially permanent in nature);

40 After resource access is confirmed, for example, where it is decided local people will have access to reservoirs for fisheries or river transport plus culture / recreation activities, local people may apply to BSM grant programme to help finance their activities. This may be to acquire boats, nets and other equipment for reservoir fisheries, or to help pay for fish stocking and patrolling, or to enable them to participate in activities related to ecotourism that will diversify the local economy and created new sources of local income.
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<tr>
<td><strong>Main Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>2-1</td>
<td>No steps beyond existing practices are needed concerning local resource access for project area communities / river communities on tributary hydropower projects E.g. related to forest, land, water, bio-physical and cultural resource access.</td>
</tr>
<tr>
<td>2-2</td>
<td>Introduce procedures to evaluate opportunities to optimize local resource access and non-monetary benefits around existing tributary hydropower projects, engaging with local communities.</td>
</tr>
<tr>
<td>2-3</td>
<td>Systematically assess scope to optimize local</td>
</tr>
</tbody>
</table>

41 Communities are empowered to take local actions that enhance their livelihoods, welfare and culture, e.g.: - To intensify or extend agro-forestry and animal husbandry; - To improve forest access for gathering forest products and community managed forestry; - To facilitate arrangement between local communities and State Forest Enterprises for sustainable harvesting of timber products; - To establish reservoir fisheries programs and activities for patrolling and stocking - To establish aquaculture activities when suitable - To ensure resource access will not be an impediment start-up local enterprises and businesses based on ecotourism and other opportunities created by formation of reservoir and new wetland areas (e.g. in ecotourism). Similarly, measures for enhancing livelihood opportunities may include extending entitlements, permissions, or rights as necessary to: extend vocational training for new livelihood, new job skills and income diversification; start-up local enterprises and businesses based on ecotourism and other opportunities created with the formation of reservoir and new wetland areas; enable ecosystem services that benefit sustainable hydropower and livelihoods (e.g.; planting trees and maintaining headwater forests that have multiple benefits including protecting reservoirs from sedimentation – thus protecting long-term hydropower revenue); help with market access to sell locally produced goods and services; and otherwise facilitate and support community-defined local actions that enable communities to improve their quality of life through local action.
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<tr>
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<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>resource access in project studies for proposed tributary hydropower projects, engaging with local communities to identify and prioritize opportunities.</td>
<td>tributary hydropower projects.</td>
</tr>
<tr>
<td>- People living upstream and downstream of the proposed project that currently rely on river-based ecosystem services / culture resources.</td>
<td>- Non-monetary</td>
</tr>
<tr>
<td>2-4 Identify unnecessary legal hurdles to enhance local resource access (forestry, land or water) at national, provincial or local levels, and address them.</td>
<td>- Local communities and people living in the vicinity of tributary hydropower projects.</td>
</tr>
<tr>
<td>- River communities in tributaries (in varying degrees)</td>
<td>- Non-monetary</td>
</tr>
<tr>
<td>2-5 Involve river basin entities in assessing opportunities to enhance local resource access in the tributaries in relation to the development opportunities and risks of hydropower in the tributary.</td>
<td>- Local communities and people living in the vicinity of tributary hydropower projects.</td>
</tr>
<tr>
<td>- River communities in tributaries (in varying degrees)</td>
<td>- Non-monetary</td>
</tr>
<tr>
<td>2-6 Assess ways to combine long-term financial support from hydropower revenue sharing with measures to improve local resource access.</td>
<td>- Local communities and people living in the vicinity of tributary hydropower projects.</td>
</tr>
<tr>
<td>- River communities in tributaries (in varying degrees)</td>
<td>- Non-monetary</td>
</tr>
<tr>
<td>2-7 Extend vocational training for new livelihoods, job skills, and income diversification based on natural resource access changes due to hydropower.</td>
<td>- Local communities and people living in the vicinity of tributary hydropower projects.</td>
</tr>
<tr>
<td>- River communities in tributaries (in varying degrees)</td>
<td>- Non-monetary</td>
</tr>
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<tr>
<td><strong>Generic Option Type + options evaluated in ISH13</strong></td>
<td><strong>Main Beneficiary Groups</strong></td>
</tr>
<tr>
<td>2-8</td>
<td>Ensure women, youth, vulnerable groups and ethnic groups can actively participate in training activities and decisions regarding local resource access.</td>
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<tr>
<td><strong>NTL Type 3:</strong> Equitable access to project services locally (e.g., electricity and/or water access)</td>
<td>▪ Local communities and people in the vicinity of hydropower projects.</td>
</tr>
<tr>
<td></td>
<td>▪ Not only resettled households, but also households / settlements:</td>
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<tr>
<td></td>
<td>- In the resettlement host communities;</td>
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<tr>
<td></td>
<td>- living near major project facilities and access roads;</td>
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<td></td>
<td>- living along the perimeter of the reservoir;</td>
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<tr>
<td></td>
<td>- living along the river and minor tributaries upstream &amp; downstream.</td>
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<tr>
<td></td>
<td>Philosophy is local communities may be among the first to receive benefits of electricity services from the project, not the last: e.g.</td>
</tr>
<tr>
<td></td>
<td>▪ if they have no electricity, they get</td>
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</tbody>
</table>
### Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries

+ NTL Options selected to evaluate in the ISH13 Process

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<th>Summary Features / Alternative Mechanisms</th>
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<td><strong>Generic Option Type + options evaluated in ISH13</strong></td>
<td>Otherwise, measures subject to local preference and electrical safety code limitations.</td>
<td><strong>Main Beneficiary Groups</strong></td>
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<tr>
<td><strong>Otherwise, measures subject to local preference and electrical safety code limitations.</strong></td>
<td>- a first-time connection, or</td>
<td>- Current practices are adequate</td>
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<td></td>
<td>- If people already have connection, they can get improved electrical services, e.g. 42</td>
<td></td>
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<tr>
<td></td>
<td>- local area power system improvements and replacements required to improve reliability, capacity, reducing outages and incidence of low voltage, etc,</td>
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<td></td>
<td>- demand side management and energy conservation programs, - potentially off-grid renewable energy systems where conventional line extension is too expensive.</td>
<td></td>
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<tr>
<td></td>
<td><strong>Assumes</strong></td>
<td></td>
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<tr>
<td></td>
<td>- Current practices and programme for project-related investment and rural electrification are adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Communities in the project area have no special entitlement to improved services or access.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>3-1</strong></td>
<td>No additional measures beyond current practice are needed to improve or spread electricity access in the tributary related to existing or proposed hydropower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assumes</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Existing national / provincial rural electrification budgets on existing projects (e.g. by assigning priority in rural electrification programmes if such steps were not taken in past)</td>
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<td></td>
<td></td>
<td>Responsibility project developer (new projects)</td>
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<tr>
<td></td>
<td></td>
<td>The benefits to communities in the project area come from various socio-economic benefits from access to reliable and affordable electricity in rural areas.</td>
</tr>
<tr>
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<td></td>
<td>It recognizes that electrification ratios (% of households with electricity access) in remote areas where tributary hydropower is located are often far lower than provincial averages, and any existing services may be low reliability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Otherwise using institutional arrangements for rural electrification.</td>
</tr>
<tr>
<td></td>
<td><strong>3-2</strong></td>
<td>Introduce a requirement to electrify all resettled households in areas officially designated for project resettlement in new tributary hydropower.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resettled households</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resettlement host community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The objective is to ensure consistent requirements on public and private sector (IPP) projects.</td>
</tr>
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<td>Otherwise using institutional arrangements for rural electrification.</td>
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<tr>
<td></td>
<td><strong>3-3</strong></td>
<td>Introduce a requirement for connection,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Officially designated resettlement host communities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capital budgets of new projects – i.e. developer funded.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility of project developer (new projects)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Otherwise using institutional arrangements for rural electrification.</td>
</tr>
</tbody>
</table>

42 Including for example local area power system improvements and replacement required to furnish and improve electric service in rural areas (improving capacity, reducing outages, low voltage, etc), as well as demand side management, energy conservation programs, and on-grid and off-grid renewable energy systems.
### Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries + NTL Options selected to evaluate in the ISH13 Process

#### Summary Features / Alternative Mechanisms

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<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
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<th>Financing Sources</th>
<th>Institutional Arrangements Benefit Delivery Mechanisms</th>
</tr>
</thead>
</table>
| 3-4 Give priority to extend electricity supply or improve reliability of electrical service to communities in the vicinity of tributary hydropower projects within existing provincial / national rural electrification programmes. | ■ Local communities and people living in the vicinity of projects (apart from resettled and hosts)  
■ May be first-time connection and/or improved electrical services for households:  
  - in the vicinity of project facilities,  
  - along the reservoir perimeter,  
  - along the minor tributaries upstream & downstream, or  
  - Other people identified in EIA /SIA or environment & social mitigation programmes. | ■ Existing national / provincial rural electrification budgets  
■ Supplemental funding may be from:  
  - Revenue sharing mechanisms  
  - Also potentially, a negotiated contribution from the project entity, which is reflected in the Concession Agreement | ■ Benefits come from the various socio-economic benefits from access to reliable and affordable electricity in rural areas (literacy, education, health, diversification of livelihoods etc.);  
■ Again it recognizes that electrification ratios (% of households with electricity access) in remote areas where tributary hydropower is located are often far lower than provincial averages, and any existing services may be low reliability. |
| 3-5 Provide targeted assistance for the poorest households living in the project vicinity. | ■ Vulnerable groups in the project vicinity as defined in national laws, e.g. (poor, elderly, handicapped, war widow and single parent households, etc.).  
■ Ethnic or minority communities with special status in national laws (special status for development assistance). | ■ Revenue sharing fund / mechanisms  
■ Also potentially, a negotiated contribution from the project entity, which is reflected in the Concession Agreement | ■ Local Development Fund (revenue sharing)  
Various types based on beneficiary preference and value, e.g.;  
■ One-time support for wiring connection and related costs;  
■ Power safety awareness training and efficient use of electricity;  
■ One-time support for energy efficient lighting devices to reduce electricity bills.  
■ Cost-sharing of electricity use for a transitional period |
| 3-6 Establish a requirement to assess off-grid supply in areas uneconomical to connect to the grid as part of project preparation studies. | ■ Local communities and people living in the vicinity of proposed new projects | ■ Assessment cost as part of project preparation studies (developer funded) | ■ Project developers or a rural electrification entity provide a preliminary assessment of feasibility and cost of small-scale renewable energy sources and on-spot sources for low-density, remote or scattered village areas not economical to connect to the power grid  
■ Regulatory agency overview |
### Summary Matrix 1

#### Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries + NTL Options selected to evaluate in the ISH13 Process

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</tr>
<tr>
<td>3-7 Provided tariff subsidy for local areas in the vicinity of hydropower projects for a given period of time.</td>
<td>▪ Revenue sharing funds, or&lt;br&gt;▪ Existing national / provincial rural electrification budgets</td>
</tr>
<tr>
<td>3-8 Provided 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.</td>
<td>▪ Revenue sharing funds, or&lt;br&gt;▪ Existing national / provincial rural electrification budgets</td>
</tr>
<tr>
<td><strong>NTL Type 4: Optimizing additional and indirect benefits arising from project-related investments and expenditures during construction and operation phases.</strong></td>
<td></td>
</tr>
<tr>
<td>Mekong hydropower projects already provide a range of these additional benefits in varying degrees.</td>
<td></td>
</tr>
<tr>
<td>For example, investments in public infrastructure like roads and local jobs which boost and help to diversify the local economy in remote and underdeveloped areas of tributaries where hydropower projects are often</td>
<td></td>
</tr>
<tr>
<td>▪ Provincial, sub-provincial and local economies.&lt;br▪ Relates to:&lt;br- New hydropower projects with the scope to optimize additional and indirect benefits from construction phase:&lt;br(i) Project-related capital investment, and&lt;br(ii) Project-related demand for local goods, services and procurement.&lt;br- Existing hydropower projects with scope to optimize additional benefits from project-related procurement expenditures in operation phases.</td>
<td>▪ Two main sources of direct additional benefits are:&lt;br(i) capital budgets during construction&lt;br- which may span several years&lt;br- financed by project developers&lt;br(ii) Operating budgets for services and procurement over the long-term:&lt;br- Including rehabilitation and refurbishment cycles,&lt;br- is financed by the project owner / operator</td>
</tr>
</tbody>
</table>

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43 Loans to provinces / states, subdivisions and agencies such as municipalities, people's utility districts, and cooperative, non-profit, limited-dividend, or mutual associations that provide retail electric service needs to rural areas or supply the power needs of distribution borrowers in rural areas.
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<td>located.</td>
<td><strong>Main Beneficiary Groups</strong></td>
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</table>
| Includes enhancing indirect benefits (i.e., leveraging investments in the Province or tributary made possible by the project, and seek ways to enhance wider economic multipliers from project procurement). | - Direct investments in public infrastructure beyond project related investments (possible because of the project) 44  
- The value of hydropower in the power system (i.e., ancillary services unique to hydropower such as load following and reactive power) 45  
- Production linkages with the different sectors of the economy (economic multipliers)  
- Contribution to policies (e.g., local to regional energy security, long-term stability in tariffs, etc.)  
  ▪ In a comprehensive approach to BSM, attention is given to systematically enhance and target additional benefits in ways that stakeholders and the public accept. | government investment, e.g. from:  
  ▪ National development budgets providing allocations to provinces or municipalities.  
  ▪ To share financial gains accruing at national levels  
  ▪ Central Government borrowing to provide infrastructure in the Province or locally (at concessionary or commercial rates)  
  ▪ Additional expenditures by the Developer operator beyond the project negotiated between government and developers in Concession Agreements | phase, and  
- Project and workforce demand for locally produced goods and services, which can boost local economy and incomes.  
Examples of non-project investment made possible by the fact the hydropower is there include financial transfers from national to Provincial > local levels for:  
- capacity building, training and local employment;  
- additional local infrastructure such as bridges and all weather river crossings;  
- improved government services such as for health and education;  
- support for other water usages such as irrigation, navigation, flood / drought control, aquaculture, and leisure;  and  
- Investment in other benefits through integrated water resource management services.  
Procurement policies that may look at local / provincial capacities first |
| 4-1 No measures beyond current practice are needed to optimise or spread additional benefits deriving from existing or proposed tributary hydropower. | • Assumes that current practices are adequate or optimal. | • Current practices. | • Current practices. |
| 4-2 Introduce guidance to | • Local communities living in the | • Project capital budgets | • Use of existing institutional arrangements and regulation that define |

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44 Requiring hydropower projects to incorporate local development and rural electrification in their plans can further boost local and regional development and have a positive impact on the lives of the poor, especially when the project is located in remote and underdeveloped areas.

45 Ancillary services include those services necessary to support the transmission of electric power from seller to purchaser given the obligations of control areas and transmitting utilities within those control areas to maintain reliable operations of the interconnected transmission system. Broadly six different kinds of ancillary services are: (i) scheduling and dispatch (ii) reactive power and voltage control (iii) loss compensation (iv) load following (v) system protection and (vi) energy imbalance.
<table>
<thead>
<tr>
<th>Summary Matrix 1</th>
<th>Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries + NTL Options selected to evaluate in the ISH13 Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Option Type + options evaluated in ISH13</strong></td>
<td><strong>Summary Features / Alternative Mechanisms</strong></td>
</tr>
<tr>
<td>optimize local use and socio-economic benefit from project access roads (e.g. in selecting road alignments and road surfacing, road construction standards).</td>
<td><strong>Main Beneficiary Groups</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Vicity of projects</td>
</tr>
<tr>
<td></td>
<td>▪ Local communities and municipalities along the access road</td>
</tr>
<tr>
<td></td>
<td>▪ Multiple development benefits of road access and alignments designed to meet local development expectations.</td>
</tr>
<tr>
<td></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Project capital budgets</td>
</tr>
<tr>
<td></td>
<td>▪ Project operating budgets</td>
</tr>
<tr>
<td></td>
<td>▪ Local revenue sharing funds</td>
</tr>
<tr>
<td></td>
<td><strong>Institutional Arrangements Benefit Delivery Mechanisms</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Government and developer roles and road alignment criteria.</td>
</tr>
<tr>
<td></td>
<td>▪ Road alignments consistent with sub/provincial road plans</td>
</tr>
<tr>
<td></td>
<td>▪ Optimizing alignment to service settlements / towns with limited road access</td>
</tr>
<tr>
<td>4-3</td>
<td>Introduce guidance to maximize local / sub-regional employment opportunities during construction of tributary hydropower projects.</td>
</tr>
<tr>
<td></td>
<td>▪ Local communities living in the vicinity of projects</td>
</tr>
<tr>
<td></td>
<td>▪ Provincial / national labour force</td>
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<td></td>
<td>Income related benefit for locally employed individuals and families</td>
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<td></td>
<td><strong>Institutional Arrangements Benefit Delivery Mechanisms</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Use of existing institutional arrangements and regulation that define government and developer roles</td>
</tr>
<tr>
<td></td>
<td>▪ Mechanism to prioritise local jobs for selected skills categories</td>
</tr>
<tr>
<td></td>
<td>▪ Local recruitment policies (e.g. Local first) for specified job categories (adjusted for Public and IPP models)</td>
</tr>
<tr>
<td>4-4</td>
<td>Introduce guidance to maximize local / sub-regional employment benefits during the operation of tributary hydropower projects.</td>
</tr>
<tr>
<td></td>
<td>▪ Local communities living in the vicinity of projects</td>
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<td></td>
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<tr>
<td></td>
<td>▪ Use of existing institutional arrangements and regulation that define government and developer roles</td>
</tr>
<tr>
<td></td>
<td>▪ Mechanism to engage local communities for selected jobs (e.g. vegetation clearing and maintenance of transmission rights-of-way clearing)</td>
</tr>
<tr>
<td></td>
<td>▪ Training and skills development (see 4-5)</td>
</tr>
<tr>
<td>4-5</td>
<td>Introduce guidance for local training and job skills enhancement to optimize local /provincial employment impacts in construction and operation.</td>
</tr>
<tr>
<td></td>
<td>▪ Local communities living in the vicinity of projects</td>
</tr>
<tr>
<td></td>
<td><strong>Main Beneficiary Groups</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Local communities living in the vicinity of projects</td>
</tr>
<tr>
<td></td>
<td>▪ Provincial economy, sub-provincial and local levels.</td>
</tr>
<tr>
<td></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Government (budgets or borrowing)</td>
</tr>
<tr>
<td></td>
<td>▪ Contributions from the from developer (negotiated)</td>
</tr>
<tr>
<td></td>
<td>▪ May be linked to provincial-level revenue sharing and royalties (NTL generic type 1 sharing monetary benefits of hydropower)</td>
</tr>
<tr>
<td></td>
<td><strong>Institutional Arrangements Benefit Delivery Mechanisms</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Existing training mechanisms with community involvement in the training needs assessment including training for:</td>
</tr>
<tr>
<td></td>
<td>▪ Construction jobs (various construction skills compatible with the project work-force approach of the developer;</td>
</tr>
<tr>
<td></td>
<td>▪ Operating phase jobs (from security to higher skilled jobs, local engagement in project mitigation and monitoring programmes.</td>
</tr>
<tr>
<td></td>
<td>▪ Trades training and certification in line with national trade certification programmes (so skills are portable and recognized beyond the project)</td>
</tr>
<tr>
<td></td>
<td>▪ Local Scholarships for (intermediate and community college education)</td>
</tr>
<tr>
<td>4-6</td>
<td>Provide additional national development budget for public infrastructure investment in Provinces that have tributary hydropower.</td>
</tr>
<tr>
<td></td>
<td>▪ Provincial economy, sub-provincial and local levels.</td>
</tr>
<tr>
<td></td>
<td><strong>Main Beneficiary Groups</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Provincial economy, sub-provincial and local levels.</td>
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<tr>
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<td><strong>Financing Sources</strong></td>
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<td></td>
<td>▪ Government (budgets or borrowing)</td>
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<td>▪ May be linked to provincial-level revenue sharing and royalties (NTL generic type 1 sharing monetary benefits of hydropower)</td>
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<tr>
<td></td>
<td><strong>Institutional Arrangements Benefit Delivery Mechanisms</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Negotiation between government and developer</td>
</tr>
<tr>
<td></td>
<td>▪ Reflected in project agreements</td>
</tr>
<tr>
<td>Summary Matrix 1</td>
<td>Generic options for National-to-Local (NTL) forms of BSM for hydropower on Mekong tributaries  + NTL Options selected to evaluate in the ISH13 Process</td>
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<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Generic Option Type + options evaluated in ISH13</td>
<td>Summary Features / Alternative Mechanisms</td>
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<tr>
<td></td>
<td>Main Beneficiary Groups</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>4-7</td>
<td>Provide additional budget allocations for public infrastructure operation and maintenance in the Province / tributary with hydropower</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4-8</td>
<td>Provide programmes to deal with boom-bust cycles after hydropower construction on tributaries.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Template 3b- Summary Matrix Illustration - Other cross-cutting considerations for BSM options selected by NMCS for evaluation in ISH13**

<table>
<thead>
<tr>
<th>Summary Matrix 3</th>
<th>Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Considerations</td>
<td>Summary Features / Alternative Mechanisms</td>
</tr>
<tr>
<td></td>
<td>Target Beneficiary Groups</td>
</tr>
<tr>
<td>CC-1: What legal instruments may be considered to introduce benefit sharing mechanisms?</td>
<td>All stakeholders interested in sustainable development and management of hydropower on tributary systems.</td>
</tr>
<tr>
<td></td>
<td>Directly applies to national to local forms of benefit sharing;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Summary Matrix 3

#### Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries

<table>
<thead>
<tr>
<th>Generic Considerations</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td></td>
<td>consultation processes funded by national line agencies</td>
</tr>
<tr>
<td></td>
<td>Potential for financial support from Development Partners (e.g., via existing projects and Technical assistance)</td>
</tr>
<tr>
<td></td>
<td>Potential support from MRC Programmes, especially concerning legal provisions on shared tributaries</td>
</tr>
</tbody>
</table>

#### CC 1-1

<table>
<thead>
<tr>
<th>Incorporate requirements for benefit sharing on tributary hydropower projects in appropriate national legislation and the country legal framework. (e.g., within existing Water or Electricity Laws)</th>
<th>The decision will affect:</th>
<th>indirect costs for studies, and consultations for decision-making potential pilot projects to trial and evaluate draft provisions for laws and regulations, funded by a combination of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tributary river basin residents and economic sectors.</td>
<td>- Line agency, or electricity utility budgets;</td>
<td>- Directive (e.g. Cabinet Directives) and Policy direction to utilities</td>
</tr>
<tr>
<td>Other target beneficiaries, depending on aims and focus of BSM legislation / regulation.</td>
<td>- Development Partner support to RBC/ RBOs or hydropower project</td>
<td>- Concerns which Ministry or Department leads, and which co sponsors legal instruments</td>
</tr>
<tr>
<td>Benefits flow after the legal instrument to use is decided and implemented.</td>
<td></td>
<td>- Transboundary dimensions related to Agreement (e.g. bilateral or MRC based)</td>
</tr>
</tbody>
</table>

Various mechanisms may be used to deliver benefits: e.g.

- Programmes delivered by local NGOs or CSOs; 47
- Programmes organized by the project developer / operator and integrated will livelihood restoration;
- National or provincial support programmes for ethnic communities;
- RBO/RBC coordinated activities;
- Combinations of the above.

- normal government policy-making processes / procedures to prepare draft legislation / regulation
- Approaches that are used in different countries and regions include the incorporation of national-to Local forms of BSM in:
  - Water Laws / Acts
  - Electricity or Energy Laws / Acts
  - New Decree Laws specific to BSM, that may be sponsored by Water, Environment or Energy Ministry and co-sponsored by other key Ministries

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46 In the sense benefits shared among countries at the national levels would be shared with or spread to sub-national levels (e.g. Provinces of tributaries and river communities in the tributary through national-to-local options.

47 For example, (i) Grant contributions as incremental funding for local development assistance programs delivered through provincial or national target programs, (ii) Grant contributions to community-based activities funded in part by a contribution in kind from local communities (iii) grant contributions to operate small loan and micro-credit facilities including those of a revolving nature (iv) Grant contributions to investment in expanding connection to electrical services (v) support to advance the use of isolated on-spot electrical generation in areas where it is uneconomical for grid-connected supply (VI) Gant contributions to other investments for local socio-economic and cultural advancement of common interest to beneficiaries, such as activities to establish and operate a community newsletter to keep beneficiaries informed and enable the exchange views on effective use and monitoring of benefit sharing funds.

48 This refers to BSM steps that go beyond the current benefit sharing practices in Mekong countries as describe in Volume 1 of the KB.
### Summary Matrix 3

**Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries**

### Generic Considerations

| CC 1-2 | Involve River Basin organizations in delivery of benefit sharing mechanisms. | The decision will affect:  
- residents and economic sectors of tributary river basins.  
- Applies equally to existing and proposed tributary hydropower |  
- indirect costs for studies, and consultations to support decision-making  
- RBO normal financing  
- Potentially Type 1 Revenue sharing to fund role in BSM management and coordination in the tributary. |  
- Depends on nation policy for RBO/RBCs  
- Depends on status of RBC/RBOs  
- BSM coordination at tributary basin level can be an important role or task to help establish functionality of RBO/RBC in either a transboundary (shared) tributary or in a national only tributary  
- Can be influenced by the number and scale of hydropower in the tributary basin e.g. there may be thresholds for RBC/RBO involvement. |
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CC 1-3</td>
<td>Incorporate official poverty reduction targets in BSM planning and implementation arrangements in the vicinity of tributary hydropower.</td>
<td>Relevant in situations where communities in the project vicinity live well below national / provincial income averages.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- poor and vulnerable communities and households in the project vicinity  
- all households in the vicinity of projects.  
Approaches like ensuring investments supported by revenue-sharing funds raise income levels to at least average provincial levels, and thereafter meet evolving local development, cultural and welfare needs. |  
- Revenue sharing mechanisms (i.e., targeting or prioritizing some portion of the local revenue sharing to poverty reduction in the short term or until targets are met.  
- Potential contribution from the developers (if negotiated and incorporated in Project Agreements) |  
- Arrangement typically needs a body such as a local fund, local government or the project to:  
- Select and target support activities appropriate to poor and vulnerable in the Project vicinity  
- Ensure participatory decision making by empowerment of the intended beneficiaries as needed.  
- Close monitoring and evaluation of support to ensure it is effective  
- Potentially linked to existing or proposed livelihood restoration plans (new projects)  
- Potentially integrated into local government development plan or RBC / RBO Plans.⁵⁰ |

⁴⁹ For example, incorporating a BSM pilot in an existing donor supported hydropower project, or support for establishment / strengthening of a tributary RBC/RBO.
⁵⁰ Various benefit mechanisms may be employed by RBC/RBOs:
- Programmes delivered by local NGOs or CSOs; ⁵⁰
- Programmes organized by the project developer / operator and integrated with livelihood restoration;
- National or provincial support programmes for ethnic communities;
- RBO/RBC coordinated activities;
- Combinations of the above.
### Generic Considerations

#### CC 1-4
Include Provinces that have hydropower in their tributary in revenue sharing, where Provinces feel development impacts (+ve or -ve) of hydropower.

The decision will affect:
- Residents and economic sectors of tributary river basins
- Applies equally to existing and proposed tributary hydropower
- Benefits flow after the legal instrument to use is decided and implemented.

- indirect costs for studies, and consultations to support decision-making

Various factors may be considered to decided the proportional share if there are two or more Provinces in the Tributary e.g.:
- Provinces where the main project facility (head) is located;
- Provinces affected by the impoundment;
- Provinces on either side of the river bank;
- Provinces affected by access roads (may be +ve or -ve);
- Provinces with residents in the tributary catchment.
- Number of people in each province directly or indirectly affected (as indicated in project studies like EIAs or SEAs)

#### CC 1-5
Incorporate benefit sharing provisions related to transboundary dimensions of significant Mekong tributaries in MRC Procedures, conditional on agreement under the BDS and MRC Framework.

The decision will affect:
- Residents and economic sectors of tributary river basins
- The economy of Provinces in the Tributary basin
- Applies equally to existing and proposed tributary hydropower

- Costs for studies, and MRC consultations to support decision-making
- MRC programme budgets

- Mechanism exists (MRC BDP processes and MRC Programmes)
- Actual benefits delivered via NTL BSM options
- Plus any arrangements related to transboundary dimensions that may be agreed.

#### CC 1-6
Lead Ministry - Have Ministry of Industry, Mine and Energy (MIME) sponsor or be responsible for BSM regulation or Law

The decision will affect:
- Residents and economic sectors of tributary river basins
- Applies equally to existing and proposed tributary hydropower

- indirect costs for studies, and consultations to support decision-making

- Normal government procedures
- Lead agency would draft / sponsor BSM Laws and regulations that go through normal government approval processes.
- Energy Ministries may have an advantage in the sense they already preside over financing mechanisms and requirements relating to:
  - Power Purchase Agreements
  - Concession Agreements
  - Power export arrangements
- Or government direction to electricity utilities

#### CC 1-7
Lead Ministry - Have MOWRAM (Cambodia) sponsor or be responsible for BSM regulation or Law

The decision will affect:
- Residents and economic sectors of tributary river basins
- Applies equally to existing and proposed tributary hydropower

- indirect costs for studies, and consultations to support decision-making

- Normal government procedures
- Lead agency would draft / sponsor BSM Laws and regulations that go through normal government approval processes.
- Environment and Natural Resource Ministries may have an advantage in the sense they already preside over local development and natural resource development issues related to BSM Implementation
- Have connection to RBC/RBO functions.
### Summary Matrix 3

#### Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries

<table>
<thead>
<tr>
<th>Generic Considerations</th>
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<th>Financing Sources</th>
<th>Institutional Mechanisms</th>
</tr>
</thead>
</table>
| **CC 1-8** Lead Ministry - Have Joint Ministry sponsorship of BSM Law or Regulation (e.g. Government Decree or MEF, MOE, MIME, MoWRAM) | The decision will affect:  
- Residents and economic sectors of tributary river basins  
- Applies equally to existing and proposed tributary hydropower | indirect costs for studies, and consultations to support decision-making | Brings together 1-7 and 1-7 above. |
| **CC 1-9** Articulate BSM policy at the national level, and direct the national electricity utility and /or concerned line Ministry to introduce BSM in tributary hydropower Project Agreements. | The decision will affect:  
- residents and economic sectors of tributary river basins  
- Applies equally to existing and proposed tributary hydropower  
This means no formal Act or Law. | indirect costs for studies, and consultations to support decision-making | In processes for government approval of project agreements (new projects) e.g.  
- Project Development Agreements  
- Power Purchase Agreements  
- Concession Agreements  
Or government direction to electricity utilities |
| **CC 2: What measures may be considered relating to the size and scale of hydropower projects in tributaries?** Alternative strategies to introduce benefit sharing on tributary hydropower projects of different scales, types and sizes. | Provincial economies of tributaries with hydropower  
- Residents of tributary basins  
- Communities in the vicinity of tributary hydropower Projects  
All stakeholders with an interest in sustainable development of tributaries and hydropower on tributaries.  
Recognizes that all 132 LMB tributary projects currently listed in the MRC Hydropower Data base are above 20 MW. | All sources apply (NTL Types 1-5)  
- The main source is revenue sharing (which is reflected in the tariff)  
- The practicality and ability of small to micro hydropower projects to support revenue sharing is the main concern.  
Therefore, the question is really how large does the project need to be before benefit sharing provisions are practical. | Refers to:  
- all institutional mechanisms for NTL options in Matrix 1  
- all institutional mechanisms for transboundary dimensions of tributary hydropower in Matrix 2  
A considerable larger number of small, mini and micro hydropower projects exist and may be anticipated in future.  
Projects may either be connected to the national grid, for isolated system supply or for single users (e.g., |

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51 It is usually limited to countries with a few hydropower projects, or situations where the utility is wholly state owned and controlled, or essentially an arm of government.
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<td>Financing Sources</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CC 2-1</td>
<td>Apply BSM policy equally to all grid-connected hydropower projects with a legal requirement for an environment impact assessment (EIA).</td>
</tr>
<tr>
<td>CC 2-2</td>
<td>Projects over 1 MW: BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 1.0 MW)</td>
</tr>
<tr>
<td>CC 2-3</td>
<td>Projects Over 10 MW: BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 10 MW)</td>
</tr>
<tr>
<td>CC 2-4</td>
<td>Have a different percent and regulations for revenue sharing for hydropower projects of different size categories (e.g. based on MW installed capacity or energy production (GWh))</td>
</tr>
</tbody>
</table>
### Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries

#### Generic Considerations

<table>
<thead>
<tr>
<th>CC 2-5</th>
<th>Have the same percent and regulations for revenue sharing for all hydropower projects of different size categories.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC 2-6</td>
<td>Apply BSM policy equally to all multi-purpose dams with a hydropower component.</td>
</tr>
</tbody>
</table>

#### Summary Features / Alternative Mechanisms

<table>
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<tr>
<th>Target Beneficiary Groups</th>
<th>Financing Sources</th>
<th>Institutional Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>All stakeholders with an interest in sustainable development of tributaries and hydropower on tributaries.</td>
<td>All sources apply (NTL Types 1-S)</td>
<td>Mechanisms as reflected in regulations</td>
</tr>
<tr>
<td>All stakeholders with an interest in sustainable development of tributaries and hydropower on tributaries. Includes for example irrigation projects with a hydropower component</td>
<td>All sources apply (NTL Types 1-S)</td>
<td>For NTL - as appropriate to national regulation</td>
</tr>
<tr>
<td>All stakeholders interested in sustainable development and management of hydropower on tributary systems; Provincial economies of tributaries with hydropower; Residents of tributary basins; Communities in the vicinity of tributary hydropower Projects.</td>
<td>Cost of evaluations and assessments are Internalized in the normal project preparation studies and in studies supporting mitigation and management</td>
<td>Utilizing existing tools and procedures and adding elements to take account of benefit sharing Principles include:</td>
</tr>
<tr>
<td>Sub-national levels:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Includes sub-national groups (provinces, districts, municipalities, villages, etc., that host, or may be affected by tributary hydropower in +ve / –ve ways.</td>
<td></td>
<td>Pursuing a least cost-approach to BSM over the project economic life;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building-in flexibly optimize operating strategies for different criteria over the project life</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engaging affected communities in identifying potential benefit sharing measures when EIA / SAP, RAPs and EMPs are prepared;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Targetting existing rural electrification funds to adversely affected people;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Boosting local development opportunities through enhancing resource access.</td>
</tr>
</tbody>
</table>

---

52 National-level benefit may be broadly defined as economic growth. Many people in the country may benefit directly and indirectly in terms of (i) national income from hydropower (e.g., direct /indirect taxes, fees, other contributions to national accounts including export revenue, and (ii) electricity consumers in all sectors in urban and rural settings.  

53 with particular regard to water releases for downstream environmental flow provision linked to livelihoods.
<table>
<thead>
<tr>
<th>Summary Matrix 3</th>
<th>Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Considerations</td>
<td>Summary Features / Alternative Mechanisms</td>
</tr>
<tr>
<td></td>
<td>Target Beneficiary Groups</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CC 3-1 Planning Study Stage - Consider benefit sharing in basin planning studies, SEAs and hydropower ranking for identification of new tributary hydropower projects.</td>
<td>All stakeholders interested in sustainable development and management of hydropower on tributary systems: During project construction During project operation</td>
</tr>
<tr>
<td>CC 3-2 Project Preparation Stage - Consider benefit sharing in project preparation studies (feasibility and EIA/SIA studies, resettlement plans etc.) for new tributary hydropower projects</td>
<td>All stakeholders in tributary benefit sharing</td>
</tr>
<tr>
<td>CC 3-3 Detailed Design Stage - Consider scope to improve physical design of hydropower projects for greater flexibility for adaptive management and optimize how</td>
<td>All stakeholders in tributary benefit sharing</td>
</tr>
</tbody>
</table>

54 Similar to the preliminary design guidance for proposed Mekong mainstream dams approved by the MRC Joint Committee in 2010
### Summary Matrix 3

#### Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries

<table>
<thead>
<tr>
<th>Generic Considerations</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>Benefits and costs (direct and indirect) are distributed in the tributary to different stakeholder / development interests.</td>
<td>Transformations of hydropower may bring (such as the reservoir and new wetland areas).</td>
</tr>
<tr>
<td><strong>Construction Stage</strong> - Assess opportunities to optimize benefit sharing during the construction phases of tributary hydropower projects.</td>
<td>Households in the project vicinity</td>
</tr>
<tr>
<td></td>
<td>Tributary river basin communities</td>
</tr>
<tr>
<td></td>
<td>Economies of the county and provinces of tributaries</td>
</tr>
<tr>
<td></td>
<td>Delivery of benefits linked to the procurement of goods and services for the project</td>
</tr>
<tr>
<td><strong>Operation Stage</strong> - Assess opportunities to optimize benefit sharing in the operation phase of tributary hydropower projects.</td>
<td>Households in the project vicinity</td>
</tr>
<tr>
<td></td>
<td>Tributary river basin communities</td>
</tr>
<tr>
<td></td>
<td>Economies of the county and provinces of tributaries</td>
</tr>
<tr>
<td><strong>Explicitly identify and report on local preferences for resource access entitlements, permissions or rights in discussions with local communities during Project Preparation studies.</strong></td>
<td>Households in the project vicinity</td>
</tr>
<tr>
<td></td>
<td>River basin communities</td>
</tr>
<tr>
<td></td>
<td>This refers to proposed projects.</td>
</tr>
<tr>
<td><strong>Assess the scope to</strong></td>
<td>Households in the project vicinity</td>
</tr>
</tbody>
</table>

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55 Including activities such as clearing and maintenance of transmission rights-of-way, slope stabilization works and field monitoring of project impacts.
### Generic Considerations

**3-7**
- Enhance the physical design of hydropower projects to provide greater flexibility for adaptive management and optimize how benefits and costs are distributed in the tributary to different stakeholder / development interests.
- Alternatives include selecting equipment for the project and designing structures (including retrofit) to enhance sustainable performance, e.g., intakes, outlets, gate arrangements, downstream re-regulation structures and turbine designs.\(^{56}\)

### CC-4: What measures may be considered for hydropower projects for power export or national supply

**Alternative strategies / procedures for**
- Enhance the physical design of hydropower projects to provide greater flexibility for adaptive management and optimize how benefits and costs are distributed in the tributary to different stakeholder / development interests.
- Alternatives include selecting equipment for the project and designing structures (including retrofit) to enhance sustainable performance, e.g., intakes, outlets, gate arrangements, downstream re-regulation structures and turbine designs.\(^{56}\)

### Target Beneficiary Groups

- Tributary river basin communities
- Economies or provinces in the tributary
- All stakeholders in sustainable tributary hydropower Projects

### Financing Sources

- Detailed design studies by the Project Proponent
- Refers to:
  - all NTL options in Matrix 1
  - all transboundary dimension options in Matrix 2

### Institutional Mechanisms

- Line agencies may issue guidance consistent with BSM regulations
- MRC may incorporate a BSM section in the first Design Guidance for Significant Tributaries, e.g., how to assess the scope to:
  - build-in operational flexibility;
  - Include equipment that reduces adverse impacts on ecosystem functions and services (e.g., fish passage structures, fish-friendly turbines and techniques to control the chemical quality of water releases);
  - Minimize adverse impacts on downstream river flow change for alternative operating strategies.\(^{57}\)
- Identify the status of electricity access in the project impact area.\(^{58}\)
- Highlight increments in capital or operating costs of such alternatives, and indicate the value / benefit-cost.

- Refers to:
  - all institutional mechanisms for NTL options in Matrix 1
  - all institutional mechanisms for transboundary dimensions of tributary hydropower in Matrix 2

Projects that export power to neighbouring countries intrinsically.

The main difference between domestic supply only projects and projects with export component is the latter are based on negotiation between buyers.

---

\(^{56}\) For example:
- Intakes: providing variable level intakes to improve water quality of downstream releases
- Outlets: sizing and location of outlets (e.g. bottom flow outlets) to allow a greater range of release patterns,
- Gates and other arrangements for sediment bypass, sluicing and flushing,
- Re-regulation: inclusion of re-regulation structures to deal with peaking and provide additional flexibility for power generation and downstream releases to optimize other benefits, and
- Design of upstream and downstream fish passage structures, flows in fish passages and “fish friendly” turbines, etc.,

\(^{57}\) This will include considerations like the amount of reservoir draw down, maintaining minimum downstream water releases in diversion projects and downstream re-regulation weirs;

\(^{58}\) For example (i) assess the current level of rural electrification and quality of electrical service (ii) provide specifications and indicative costs to electrify the resettlement households and the resettlement host community if it is not connected (iii) for communities living the project impact area with no electricity service, provide an indicative cost of electrification via grid extension or via alternative small-scale isolated generation where grid connection is not considered to be economically feasible (iv) for communities with existing electrical service, assess provide an indicative cost for refurbishment of electrical supply equipment to improve levels of service and reliability of supply, and (v) where feasible, provide a breakdown of household electricity access with income levels. The Line agency would make the determination if these assessments are better done by the rural electrification body.
**Summary Matrix 3**

### Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries

<table>
<thead>
<tr>
<th><strong>Generic Considerations</strong></th>
<th><strong>Summary Features / Alternative Mechanisms</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Target Beneficiary Groups</strong></td>
</tr>
<tr>
<td></td>
<td>development of tributaries.</td>
</tr>
<tr>
<td></td>
<td>Recognizes most of the 132 tributary projects now listed in the MRC Hydropower Database are for national and export markets.</td>
</tr>
<tr>
<td></td>
<td>Benefit sharing on tributary hydropower projects that supply domestic power markets and export power markets in neighbouring countries.</td>
</tr>
<tr>
<td>CC 4-1</td>
<td>New tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
</tr>
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</tr>
<tr>
<td>CC 4-2</td>
<td>Existing tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
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</tr>
</tbody>
</table>
### Generic Considerations

<table>
<thead>
<tr>
<th>CC 4-3</th>
<th>Treat tributary projects supplying domestic and export power markets in National-to-local BSM regulation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>§ All stakeholders in sustainable development of tributaries. Provides a consistent approach.</td>
</tr>
<tr>
<td></td>
<td>§ Does not distort negotiation on proportion of power output from the tributary project allocated for domestic / export power markets.</td>
</tr>
</tbody>
</table>

### CC-5: What measures may be considered for transparency, dispute avoidance and settlement?

Alternative measures to strengthen transparency, dispute avoidance and settling disputes that may arise on implementation of national benefit sharing law and policies related to Tributary hydropower.

(clarified in law when feasible and practical)

|        | § All stakeholders in tributary benefit sharing |
|        | Transparency and social accountability is important in all transactions including the selection, evaluation, award and effective use of funds from revenue sharing. |
|        | This avoids abuse of power or perception of misuse of funds. |
|        | § Enhances beneficiary confidence funds are allocated in a fair and transparent manner. |
|        | § Helps to avoid risk of unplanned interruption or suspension of |

<table>
<thead>
<tr>
<th>Target Beneficiary Groups</th>
<th>Financing Sources</th>
<th>Institutional Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>§ All potential financing sources apply (as for NTL Types 1-5 in Matrix 1 and transboundary dimensions in Matrix 2)</td>
<td>§ Budgets of project preparation studies (developers)</td>
<td></td>
</tr>
<tr>
<td>§ Revenue sharing funds (for operating projects)</td>
<td>§ Mechanisms as appropriate in national regulation for tributary hydropower or agreements between two or more riparian countries.</td>
<td></td>
</tr>
<tr>
<td>§ Potentially support from Development Partners for demonstration projects</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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59 Models available from international organizations such as Transparency International and multilateral development agencies (World Bank and ADB) supporting governance improvement plans and related M&E programs in development projects. Ti for example provides tools like citizens report cards (CRC) to addresses critical themes in the delivery of public services such as access to services, quality and reliability of services, problems encountered by users of services and responsiveness of service providers in addressing these problems, transparency in service provisions like disclosure of service quality standards and norms, and costs incurred in using a service including hidden costs such as bribes. The CRC also provides a summative satisfaction score that captures the totality of critical service-related parameters. [http://www.transparency.org/content/search?cx=0113013958552522461523%3Adso1vyx3hck&cof=FORID%3A11&ie=UTF-8&q=Governance+improvement+plans&sa=x&sa=y=8](http://www.transparency.org/content/search?cx=0113013958552522461523%3Adso1vyx3hck&cof=FORID%3A11&ie=UTF-8&q=Governance+improvement+plans&sa=x&sa=y=8) World Bank provides guidance materials such as World Bank Paper 121 Setting standards for communication and governance. [http://www.wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/08/10/0000118233_20070810125218/Rendered/PDF/405620Setting018082137169501PUBLIC1.pdf](http://www.wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/08/10/0000118233_20070810125218/Rendered/PDF/405620Setting018082137169501PUBLIC1.pdf)
### Summary Matrix 3

#### Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries

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</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>Benefit sharing.</td>
<td>Normal policy development / consultation budgets</td>
</tr>
<tr>
<td>CC 5-1 Include steps to strengthen transparency and dispute settlement mechanisms in BSM Laws or Agreements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CC Prepare transparency and accountability measures for all fund mechanisms used to collect or distribute money for revenue sharing on tributary hydropower.</td>
<td>Benefit groups</td>
</tr>
<tr>
<td></td>
<td>All stakeholders interested in sustainable development and management of hydropower on tributary systems.</td>
</tr>
<tr>
<td></td>
<td>Transparency Plans also knows as Governance Improvement Plans (GIPs).&lt;sup&gt;62&lt;/sup&gt;</td>
</tr>
<tr>
<td>CC Prepare social accountability plans for Local Development Funds established for benefit sharing on tributary hydropower.</td>
<td>Local communities in the vicinity of projects</td>
</tr>
<tr>
<td></td>
<td>All stakeholders interested in sustainable development and management of hydropower on tributary systems. Social accountability Plans,&lt;sup&gt;63&lt;/sup&gt; Social accountability Plans;&lt;sup&gt;64&lt;/sup&gt;</td>
</tr>
<tr>
<td>CC Make clear how disputes and appeals will be settled.</td>
<td>All stakeholders in tributary benefit sharing</td>
</tr>
<tr>
<td></td>
<td>E.g. from the portion for</td>
</tr>
</tbody>
</table>

<sup>60</sup> [http://issuu.com/world_bank.publications/docs/9780821382165](http://issuu.com/world_bank.publications/docs/9780821382165)

<sup>61</sup> Overall it is important to limit the proportion of revenue that Funds use for administration and management (e.g. no more than 10 or 15 percent).

<sup>62</sup> See Transparency International for tools (e.g. The Community Development Fund (CDF) Social Audit Guide: A Handbook for Communities[http://gateway.transparency.org/tools/detail/378](http://gateway.transparency.org/tools/detail/378) and Opportunities in Dam Planning and Management: A Communication Practitioner’s Handbook for Large Water Infrastructure noted above.

<sup>63</sup> As above.
### Other cross-cutting considerations for BSM related to hydropower on Mekong tributaries

<table>
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<tr>
<td>handled in the administration of money related to revenue sharing on tributary hydropower at different levels.</td>
<td></td>
</tr>
</tbody>
</table>

### Template 3c- Summary Matrix Illustration BSM Options for the transboundary dimensions of tributary hydropower selected by NMCS for evaluation in ISH13

<table>
<thead>
<tr>
<th>Summary Matrix 2</th>
<th><strong>Generic BSM Options for transboundary dimensions of hydropower on Mekong tributaries + the TB dimension options selected to evaluate in the ISH13 process</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Option Type + options evaluated in ISH13</strong></td>
<td><strong>Summary Features / Alternative Mechanisms</strong></td>
</tr>
<tr>
<td><strong>Generic TB Type 1: increasing benefits “to the river”</strong>. Covers a range of mutually beneficial investments and management strategies to protect water and related resources in Mekong tributaries including:</td>
<td><strong>Target Beneficiary Groups</strong></td>
</tr>
<tr>
<td></td>
<td>In varying degrees:</td>
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</table>

Transboundary dimensions (TB) of tributary hydropower are addressed in the MRC Basin Development Plan and Strategy. Benefits “to the river” delivered through ongoing implementation, continuous improvement and coordination of:
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Generic Option Type + options evaluated in ISH13</strong></td>
<td><strong>Summary Features / Alternative Mechanisms</strong></td>
</tr>
<tr>
<td>- water quantity and quality; - sediment mechanisms for river morphology; - functioning of aquatic ecosystems; - wetlands; - biodiversity and cultural values, and - other IWRM factors related to overall bio-physical sustainability</td>
<td>- National regulatory frameworks (including energy, power and environment laws and Sector Programmes); - Tributary RBC/RBO Programmes - Provincial / sub-provincial programmes; - MRC Procedures and Programmes (coordinated with the above);</td>
</tr>
<tr>
<td>Cooperative measures are subject to Agreement and negotiated outcomes.</td>
<td><strong>MRC and National Programmes</strong> in the water sector as well as fisheries, flood and drought management, tourism, watershed management and environment, etc.</td>
</tr>
<tr>
<td><strong>1-1</strong> No addition measures beyond current practice are needed to share benefits related to transboundary dimensions of tributary hydropower.</td>
<td><strong>MRC Procedures</strong> - implementation of all five MRC Procedures is especially relevant to TB BSM Types 1 to 3.64</td>
</tr>
<tr>
<td>- Provincial economies / residents of tributary basins - Mainstream river basin residents upstream / downstream of the tributary confluence. Assumes that mutually beneficial development of Mekong tributary systems (water and related resources) is adequately addressed by ongoing and evolving National programmes and cooperation mechanisms.</td>
<td>Assumes this aspect is adequately addressed by ongoing and evolving implementation of: - relevant National line-agency programmes - tributary RBC / RBO activities (potentially) - existing cooperation arrangements under the MRC as the regional river basin entity</td>
</tr>
<tr>
<td>- Assumes current practice is adequate - Accepts there is always room to expand financing support for existing / evolving strategies and modes of cooperation, e.g. via - National line agency or RBO/RBC programmes and budgets - Development Partner support for national initiatives - MRC Development Partner support cooperation in MRC Programmes</td>
<td></td>
</tr>
<tr>
<td><strong>1-2</strong> Provide guidelines to evaluate BSM options for transboundary dimensions of tributary</td>
<td>- Existing MRC Programmes and dialogue processes: - BDP analysis and BDS negotiation process - MRC Programme support to NMCS (sector based) - Relevant national agencies and potentially RBC/RBOs playing a key role</td>
</tr>
<tr>
<td>- Provincial economies / residents of tributary basins - Mainstream river basin residents upstream / downstream of the</td>
<td></td>
</tr>
</tbody>
</table>
| **Note:**

### Summary Matrix 2

#### Generic Option Type + options evaluated in ISH13

<table>
<thead>
<tr>
<th>Hydropower in MRC Programmes and MRC Procedures.</th>
<th>Tributary confluence.</th>
</tr>
</thead>
</table>

#### 1-3 Provide guidelines to evaluate BSM options for transboundary dimensions of tributary hydropower in strategic plans and strategies developed by tributary RBC / RBOs.

- Residents of tributary basins shared between two or more riparian countries;
- Economies of provinces in riparian countries associated with the tributary;
- Normal government financing of RBC / RBOs of Mekong tributaries
- Otherwise:
  - Development Partner contributions to RBC/RBOs;
  - MRC Programme support to facilitate preparation of guidelines or models
  - Innovative financing of RBOs/RBCs authorized by government, e.g.;
    - revenue sharing contribution to tributary basin entities
    - See NTL Type 1 BSM options for revenue sharing (in Matrix 1)

- Strengthening / reinforcing RBO/RBC mechanisms in national laws.
- MRC guidance / technical support to RBO/RBCs on shared tributaries after these entities are functional;
- MRC facilitated cooperation (meetings / information sharing / planning interactions. Etc.) between RBO/RBCs on tributaries shared between two or more Mekong countries;
- MRC Programme support as appropriate to help pilot / implement guidelines and translation of measures to tributary RBC/RBO plans.

#### 1-4 Coordinate / align BSM-related provisions for watershed management in tributary basins with hydropower shared by two or more countries.

- Residents of tributary basins with hydropower shared between two or more riparian countries;
- Economies of provinces in riparian countries associated with tributaries that generate hydropower revenue;
- Normal national government financial support to RBO/RBCs
- Otherwise:
  - Development Partner contributions
  - MRC Programme support on start up
  - Innovative financing of RBOs/RBCs authorized by governments, e.g.;
    - revenue sharing contribution to tributary basin entities
    - Sees NTL Type 1 BSM options for revenue sharing (see Matrix 1)

- Strengthen / reinforce RBO/RBC mechanisms provided in national laws
- MRC guidance / technical support for cooperation between RBO/RBCs on shared tributaries, once they are functional
- RBP/RBC Programmes to define mechanisms and MRC Programme support as appropriate;
- Actual implementation measures to be agreed in national processes

#### 1-5 Expand available financing for measures to protect / enhance water resource quality using hydropower revenue in

- Provincial economies / residents of tributary basins with hydropower
- Mainstream river basin residents upstream / downstream of the tributary confluence.
- Revenue from tributary hydropower (see NTL Revenue sharing options in Matrix 1)

- Revenue sharing mechanisms, in cases when funds are shared between counties in an agreed proportion;
- Serves as additional finance to address specific concerns resolved by benefit sharing in a targeted manner.
- Existing National Programmes would utilize more funding to deliver benefits
- MRC Programmes may play a facilitating role.
<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
</table>
| tributary basins shared by two or more countries. | **Target Beneficiary Groups**  
| 1-6 Enhance riparian cooperation in preparing environment flow assessment and provision in reservoir operation / management strategies in tributaries shared by two or more Countries. |  
| 1-7 Highlight / incorporate the explicit evaluation of establishing a "Mekong Fund" to facilitate benefit sharing on the transboundary dimensions of tributary hydropower and potentially LBM and upper Mekong Basin (UMB) mainstream hydropower. |  
| | ▪ Residents of tributary basins with hydropower shared between two or more riparian countries;  
| | ▪ Economies of provinces in riparian countries associated with the tributary;  
| | Complements Type 2 Options  
| | Benefits arising from improved environmental flows and related ecosystem services | ▪ Normal national government financial support to national line agencies and/or RBO/RBCs  
| | ▪ Potentially MRC Programme support to help cooperation / coordination either to develop models or help build capacity | ▪ Existing EFA / IBFN undertaking according to accepted good practice.  
| | ▪ Existing EFA / IBFN undertaking according to accepted good practice.  
| | ▪ Cooperation between riparian sharing tributary basins, possibly via strengthening cooperation between RBC/RBOs in the respective countries on the same tributary |  
| | ▪ Provincial economies / residents of LMB tributary basins with hydropower;  
| | ▪ Mainstream river basin residents upstream / downstream of the tributary confluence;  
| | ▪ National Economies of MRC Member countries.  
| | Multiple benefits arising from a permanent, self-financing Mekong Fund to implement the 1995 Agreement. | ▪ Financial contribution from hydropower revenue on significant tributaries;  
| | | Plus potentially expanded to:  
| | | ▪ Financial contributions from hydropower revenue from proposed LMB mainstream hydropower schemes;  
| | | ▪ Financial contribution from hydropower revenue from potential UMB mainstream hydropower;  
| | | ▪ Contributions from developers of hydropower projects;  
| | | ▪ Potential for contributions from other resource sectors impacting on water resource status.  
| | | ▪ Contributions of Development Partners (such as for specific aspects or “financing windows” of a Mekong Fund); and  
| | | ▪ Innovative financing such as carbon financing revenue deriving | ▪ Regional Mekong Fund integrated with the MRC framework.  
| | | ▪ The regional Fund may have multiple financing windows extending across the collective interests of MRC Member Countries, as embodied in the 1995 Mekong Agreement, especially including:  
| | | - Transboundary dimensions of benefit sharing  
| | | - Operation of the MRCs  
| | | - MRC Programmes  
| | | ▪ Countries may apply to the Fund bases on agreed criteria.  
| | | For details see Initial Considerations On A Possible Regional Funding Mechanism Established Under The Framework Of Mekong Cooperation To Advance Sustainability Dimensions of Hydropower.  
| | | (Preparatory Meeting of the MRC Joint Committee, Agenda B.4, 16th Sixteenth Meeting of the MRC Council, 25 November 2009, Hua Hin, Thailand |
### Summary Matrix 2

<table>
<thead>
<tr>
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<th>Generic BSM Options for transboundary dimensions of hydropower on Mekong tributaries + the TB dimension options selected to evaluate in the ISH13 process</th>
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</tr>
<tr>
<td><strong>Generic TB Type 2: increasing benefits “from the river”</strong></td>
<td><strong>In varying degrees:</strong></td>
</tr>
<tr>
<td><strong>Infrastructure investment / management strategies optimizing consumptive &amp; in-stream water use, balanced with water resource protection and maintaining ecosystem services.</strong> 66</td>
<td>§ Residents of tributary basins shared between two or more riparian countries;</td>
</tr>
<tr>
<td>Generally means identifying hydropower and related infrastructure (hard and soft) 67 consistent with (i) IWRM-based tributary development strategies, and (ii) recognizing significant transboundary dimensions, and (iii) adaptive management. E.g.</td>
<td>§ Economies of provinces in riparian countries associated with the tributary;</td>
</tr>
<tr>
<td>Balancing among sector development opportunities and aims, e.g., for irrigation, power, fisheries, navigation, flood-drought management,</td>
<td>§ National / sub-national economies of riparian countries;</td>
</tr>
<tr>
<td><strong>Generic BSM Options for transboundary dimensions of hydropower on Mekong tributaries + the TB dimension options selected to evaluate in the ISH13 process</strong></td>
<td>§ Potentially, river basin residents upstream / downstream of the tributary confluence with the Mekong mainstream.</td>
</tr>
<tr>
<td></td>
<td>§ Infrastructure and mainstream (region) hydrological functions of ecosystems (ii) supporting, such as nutrient dispersal and cycling for recession agriculture, (iv) cultural, such as spiritual and recreational benefits including ecotourism; and (v) preserving, which includes guarding against uncertainty through the maintenance of biological diversity. 67</td>
</tr>
<tr>
<td></td>
<td>§ Existing institutional mechanisms utilized for delivery of benefits i.e. 68</td>
</tr>
<tr>
<td></td>
<td>§ One new source of financing that hydropower can attract is carbon financing. Hydropower schemes already supported by the Clean Development Mechanism (CDM) under the Kyoto Protocol (and UNFCCC) typically account for an increase in project revenues of 5-10%. Opinions on the future of carbon financing nevertheless vary. Some key questions going forward are (i) to what extent will both the rules of access to carbon financing, and the size of the pipeline or pool of global funds for carbon financing change in future, and (ii) what comparative advantage can the Mekong establish to successfully compete for such funds, for eligible hydropower projects that are compliant with MRC Procedures. 69</td>
</tr>
<tr>
<td></td>
<td>§ Ecosystems services broadly fall into five categories (i) provisioning, such as the production of food, fish, fibre and water (ii) regulating, such as the control of disease vectors, waste decomposition and detoxification and maintaining hydrological functions of ecosystems (iii) supporting, such as nutrient dispersal and cycling for recession agriculture, (iv) cultural, such as spiritual and recreational benefits including ecotourism; and (v) preserving, which includes guarding against uncertainty through the maintenance of biological diversity. 67</td>
</tr>
<tr>
<td></td>
<td>§ Hard infrastructure is typically defined to include physical infrastructure such as roads and bridges, ports, canals, railway, power, irrigation, telecommunication facilities, etc., while the soft infrastructure includes institutional capacity, education, training health, tourism, etc., 67</td>
</tr>
<tr>
<td></td>
<td>§ Mutual benefit arising from sustainable resource management and utilization practices delivered national or sector programmes: e.g. public investment delivered by line ministries / agencies / utilities; private investment delivered in regulated procedures; community initiative coordinated with or jointly with the above. 66</td>
</tr>
</tbody>
</table>

60 One new source of financing that hydropower can attract is carbon financing. Hydropower schemes already supported by the Clean Development Mechanism (CDM) under the Kyoto Protocol (and UNFCCC) typically account for an increase in project revenues of 5-10%. Opinions on the future of carbon financing nevertheless vary. Some key questions going forward are (i) to what extent will both the rules of access to carbon financing, and the size of the pipeline or pool of global funds for carbon financing change in future, and (ii) what comparative advantage can the Mekong establish to successfully compete for such funds, for eligible hydropower projects that are compliant with MRC Procedures.

61 Ecosystem services broadly fall into five categories (i) provisioning, such as the production of food, fish, fibre and water (ii) regulating, such as the control of disease vectors, waste decomposition and detoxification and maintaining hydrological functions of ecosystems (iii) supporting, such as nutrient dispersal and cycling for recession agriculture, (iv) cultural, such as spiritual and recreational benefits including ecotourism; and (v) preserving, which includes guarding against uncertainty through the maintenance of biological diversity.

62 Hard infrastructure is typically defined to include physical infrastructure such as roads and bridges, ports, canals, railway, power, irrigation, telecommunication facilities, etc., while the soft infrastructure includes institutional capacity, education, training health, tourism, etc.,

63 Mutual benefit arising from sustainable resource management and utilization practices delivered national or sector programmes: e.g. public investment delivered by line ministries / agencies / utilities; private investment delivered in regulated procedures; community initiative coordinated with or jointly with the above.
<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balancing development opportunities and risks;</td>
<td>e.g. the power sector, climate change mitigation / adaptation strategy.</td>
</tr>
<tr>
<td>Recognizing sector synergies and tradeoffs within sectors and across sectors;</td>
<td></td>
</tr>
<tr>
<td>Spreading resource utilization benefits (equitably);</td>
<td></td>
</tr>
<tr>
<td>Applying IWRM / sustainability principles to selection, design and operation of infrastructure.</td>
<td></td>
</tr>
<tr>
<td>Target Beneficiary Groups</td>
<td>Financing Sources</td>
</tr>
<tr>
<td>ecosystem services, tourism and recreation.</td>
<td>hydropower (as above)</td>
</tr>
<tr>
<td>Other innovative financing sources (envisaged in future) e.g.</td>
<td></td>
</tr>
<tr>
<td>§ Payment for Ecological Services (PES)</td>
<td></td>
</tr>
<tr>
<td>§ Carbon financing (CDM and Other)</td>
<td></td>
</tr>
</tbody>
</table>

| 2-1 | Current practice is OK – No additional measures to increase sharing of benefits from the river are needed for transboundary dimensions of tributary hydropower. |
| | Assumes current practices for "mutually beneficial" development are adequate, notwithstanding the Basin Development Strategy. |
| | Assumes current practices are adequate at this time. |
| | Assumes current practices are adequate at this time and countries act independently. |

| 2-2 | Ensure strategies for infrastructure provision and operation on Mekong tributaries conform to the MRC Basin Development Strategy and IWRM/sustainability principles. |
| | Residents of tributary basins shared between two or more riparian countries receiving services; |
| | Economies of provinces / riparian countries receiving services; |
| | Additional benefits arise from implementing agreed measures, |
| | Normal financing sources for investments in sustainable development of tributaries; |
| | MRC Programme Funds for analysis and guidance, |
| | Existing MRC Programmes and Procedures |
| | MRC BDP assessment |

| 2-3 | Assess the scope to optimize operation of existing/planned reservoirs for multi-purpose functionality, with consideration of transboundary dimensions. |
| | Residents of tributary basins shared between two or more riparian countries receiving services; |
| | Economies of provinces / riparian countries receiving services; |
| | Additional benefits arise from implementing agreed measures, |
| | Normal financing as part of hydropower operations |
| | Assessment part of hydropower mitigation and monitoring costs |
| | MRC Programmes to provide assessments, guidance and support |
| | Done with normal procedures and mechanisms for the planning, design, development and approval of hydropower operations |
| | Links to the MRC BDP process |
| | Eventual links to preparation of RBO / RBC management plans for tributary systems shared by two or more countries. |

| 2-4 | Assess the scope to | | |
| | residents of tributary basins | | Normal responsibility of national agency for within country situations |
| | Normal financing for project | | |

### Notes
- **Summary Matrix 2**
- **Generic BSM Options for transboundary dimensions of hydropower on Mekong tributaries + the TB dimension options selected to evaluate in the ISH13 process**
### Summary Matrix 2

**Generic BSM Options for transboundary dimensions of hydropower on Mekong tributaries + the TB dimension options selected to evaluate in the ISH13 process**

<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optimize reservoir operation for hydropower on tributaries shared by two or more countries.</strong></td>
<td><strong>Target Beneficiary Groups</strong>&lt;br&gt;shared between two or more riparian countries receiving services;&lt;br&gt;Economies of provinces / riparian countries receiving services;&lt;br&gt;Additional benefits arise from implementing agreed measures to balance downstream development opportunities / risk concerning transboundary dimensions of tributary.</td>
</tr>
<tr>
<td>2-5 <strong>Introduce regulatory provisions to routinely build-in the flexibility to modify operations over the life of hydropower assets. Important as hydropower is long-life infrastructure of 100 years or more. Conditions / values in the basin will change.</strong></td>
<td><strong>Resident of tributary basins shared between two or more riparian countries receiving services;</strong>&lt;br&gt;Concerning physical flexibility to rebalance benefits and benefit distribution as development needs and values change over decades e.g.&lt;br&gt;- flexibility to operate reservoirs / releases (after concession periods) to place more future emphasis on recreation, tourism, environmental values or flood operation for flood mitigation.</td>
</tr>
<tr>
<td>2-6 <strong>Assess ways to improve coordination of reservoir operations on aspects such as flood management, sediment management / fish passage in multi-reservoir cascades on tributaries shared by two or more.</strong></td>
<td><strong>Residents of tributary basins shared between two or more riparian countries receiving services;</strong>&lt;br&gt;Economies of provinces / riparian countries receiving services;&lt;br&gt;To optimize the range of benefits (from consumptive and non-consumptive uses) and mitigate benefits is completed the results would feed into any negotiation mutually agreed.</td>
</tr>
<tr>
<td>Generic Option Type + options evaluated in ISH13</td>
<td>Target Beneficiary Groups</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Global, transboundary development risks and hydrological risks in shared tributaries (i.e., for normal operation as well as flood and drought conditions)</td>
<td>Residents of tributary basins shared between two or more riparian countries receiving services; Economies of provinces / riparian countries receiving services; Benefits deriving from and distributed by the ecosystem service concerned</td>
</tr>
<tr>
<td>Prepare guidance to routinely assess opportunities to optimize other grid-connected renewable energy (RE) and power system benefits presented by tributary hydropower and factor these into discussions of power systems of two or more countries sharing tributaries with hydropower</td>
<td>Power systems of two or more countries sharing tributaries with hydropower Economies of Member counties (power sector expenditures and policies). Hydropower complements helps the introduction of intermittent RE power sources like solar, wind and biomass</td>
</tr>
</tbody>
</table>

69 And there is potential to release water in the cascade according to different rule curves – and not parameters that may be set for the river such as for environment flow conditions in the tributary (potentially affecting a variety of water quality and ecosystem services that riverine communities in countries that share the tributary may rely on, or for coordinated flushing and sluicing or reservoirs to maintain reservoir capacities, etc.).
70 Recognizing tributary hydropower often supplies power markets in two Mekong countries (exporter and importer).
<table>
<thead>
<tr>
<th>Summary Matrix 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Option Type + options evaluated in ISH13</strong></td>
</tr>
<tr>
<td><strong>Generic TB Type 3: reducing costs “because of the river”.</strong></td>
</tr>
<tr>
<td>Sharing benefits of tributary hydropower as part of the regional strategy to cooperate on sustainable development of the Mekong River basin and specifically to enhance the bilateral and regional conditions to:</td>
</tr>
<tr>
<td>1. Avoid serious conflicts over allocation &amp; management of water in tributary systems, especially shared tributaries;</td>
</tr>
<tr>
<td>2. Avoid non-development costs in each Country due to tensions or conflict, such as additional security / military expenditures.</td>
</tr>
<tr>
<td>3. Exploit potential development synergies to reduce overall the costs in each country has by pursuing mutually beneficial</td>
</tr>
<tr>
<td><strong>Summary Features / Alternative Mechanisms</strong></td>
</tr>
<tr>
<td><strong>Target Beneficiary Groups</strong></td>
</tr>
<tr>
<td>▪ National / sub-national economies of riparian countries;</td>
</tr>
<tr>
<td>▪ Residence of tributary basins that have higher development spending as a result of saving elsewhere in the national economy.</td>
</tr>
<tr>
<td>▪ Links to reducing costs of extreme hydrological events on</td>
</tr>
<tr>
<td>i. Mekong tributaries shared by two or more countries, and</td>
</tr>
<tr>
<td>ii. Potentially the Mekong mainstream in situations when hydropower in the tributary under consideration measurably or significantly influences the mainstream situations, e.g.</td>
</tr>
<tr>
<td>o In cases of prolonged or deep dry season drought</td>
</tr>
<tr>
<td>o Extreme flood events</td>
</tr>
<tr>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>Normal financing sources for investments in the sustainable development of tributaries such as:</td>
</tr>
<tr>
<td>▪ Development budgets of riparian countries concerned</td>
</tr>
<tr>
<td>▪ Contributions of MRC and Member Country Development Partners</td>
</tr>
<tr>
<td>▪ Various government resource use fees, taxes, etc. on hydropower entities</td>
</tr>
<tr>
<td>▪ Private sector financing leveraged by government regulation</td>
</tr>
<tr>
<td>▪ Innovative financing sources as they become available.</td>
</tr>
<tr>
<td><strong>Institutional Mechanisms</strong></td>
</tr>
<tr>
<td>Normal institutional mechanisms to address transboundary dimensions of tributary hydropower e.g.:</td>
</tr>
<tr>
<td>▪ National Programmes and regulatory frameworks (public and private sector investment)</td>
</tr>
<tr>
<td>▪ MRC Programme Framework and Procedures</td>
</tr>
<tr>
<td>▪ Government mechanisms for bilateral agreement (e.g. Foreign Ministries and other bilateral and multi-state Agreements))</td>
</tr>
<tr>
<td>Pays more attention to transboundary dimensions of BSM related to tributary hydropower. Underpins a policy shift to cooperation and development, away from dispute over impact assessments due to uncertainty and elevating to other strategic approaches, e.g.</td>
</tr>
<tr>
<td>- Shifts from food (and energy) self-sufficiency to food (and energy) security.</td>
</tr>
<tr>
<td>- Explicit consideration of tradeoffs in the development opportunity and risks between upper and lower riparian to empower negotiation.</td>
</tr>
<tr>
<td>- Embodiment of principles such as PES, not only at the national-to local level but also at the regional level.</td>
</tr>
<tr>
<td>Governments may choose to undertake such negotiations in Inter-governmental meetings not open to media.</td>
</tr>
</tbody>
</table>

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71 The economic value of ancillary services unique to hydropower that serve to lower the required national investments in power generation and power grids and ultimately help to reduce upward pressure on consumer electricity tariffs (e.g., reactive power, load following, quick start, improved system reliability). Also the economic benefits of externalities like the avoided GHG emissions that would happen if conventional thermal generation was needed (as is the case for most bulk generation supply in the Mekong) as well as the avoided air pollution from thermal power with impacts on human health, buildings (via sulphur dioxide (SO2), effects on crop yield and environment quality.

72 For example, where riparian government have more money to investment in mutually beneficial forms of sustainable development of Mekong Tributaries using money freed up from (i) reducing non-development spending, such as for military operations that governments otherwise feel are needed if tensions remained high.
<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>development and management of tributary systems. 73 Principles underpinning reducing costs because of the river are embodied in the Basin Development Strategy.</td>
<td>Mutual benefit of sustainable resource utilization delivered national or sector programmes:</td>
</tr>
</tbody>
</table>

- Assesses Governments already takes these complex factors into account on a tributary specific basis;
- Assumes limited scope for additional measures.

<table>
<thead>
<tr>
<th>3-1 BSM measures to avoid or reduce cost because of the river are not essential for transboundary dimensions of tributary hydropower.</th>
<th>Existing practices are adequate at this time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-2 Explicitly assess opportunities to reduce development costs by increasing cooperation on shared tributaries in the MRC Basin Development Strategy Process.</td>
<td>Existing mechanisms with the BDP and MRC Programmes</td>
</tr>
<tr>
<td>3-3 Consider linking and having planning / technical exchanges between RBC/RBOs in shared tributaries</td>
<td>Need to strengthen / reinforce the tributary RBO/RBC capacities</td>
</tr>
<tr>
<td></td>
<td>Existing mechanisms with the BDP and MRC Programmes can help to facilitate exchanges and analysis supporting exchanges.</td>
</tr>
<tr>
<td></td>
<td>Applies to coordination of national-to-local BSM measures in shared tributaries as well as consideration of transboundary dimensions of hydropower on the tributary.</td>
</tr>
</tbody>
</table>

---

73 See previous endnote.
74 This includes hydrological events or risks that are a consequence of upstream reservoir development and reservoir management practices.
75 Upper riparian may take actions that improve development opportunities and services downstream and there are examples in international area. This needs to be balanced with the water resource protection aims and no harm philosophy in the 1995 Mekong Agreement as part of the negotiated outcome philosophy.
76 In general, where inter-dependencies exist, pooling the resource potential of an entire river system offers a wider range of technically feasible alternatives, and by avoiding duplication, it offers an opportunity to select the most economical combination of sites for cooperation for attaining mutually desired objectives. Overall reductions in the total development spending by riparian countries may result where a shift to a cooperative approach leads to the same development outcome but at lower total cost (e.g. due to various development synergies that arises from systematic considerations of mutually beneficial sustainable development in the selection, design and operation of infrastructure such as tributary hydropower). Some observers also argue that economic efficiency alone is not a sufficient condition for cooperation, especially when it is related to the transfer of a scarce resource, such as water, among potential cooperating entities.
### Summary Matrix 2

#### Generic BSM Options for transboundary dimensions of hydropower on Mekong tributaries

**+ the TB dimension options selected to evaluate in the ISH13 process**

<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
<th>Summary Features / Alternative Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>facilitated by the MRC as the main regional RBO.</td>
<td>implementation of cooperation measures.</td>
</tr>
<tr>
<td><strong>3-4</strong></td>
<td></td>
</tr>
<tr>
<td>Enhance cooperation between upper and lower</td>
<td>National / sub-national economies of riparian countries;</td>
</tr>
<tr>
<td>Riparian on shared tributaries for drought</td>
<td>Residents of the shared tributaries</td>
</tr>
<tr>
<td>and flood management.</td>
<td>Potentially residents of the Mekong mainstream in close</td>
</tr>
<tr>
<td></td>
<td>proximity to the tributary confluence with the mainstream</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3-5</strong></td>
<td></td>
</tr>
<tr>
<td>Systematically identify the measures and costs</td>
<td>National / sub-national economies of riparian countries.</td>
</tr>
<tr>
<td>to take advantage of</td>
<td>Benefits delivered through investments that take advantage of river flow and related</td>
</tr>
<tr>
<td>development opportunities on shared tributaries</td>
<td></td>
</tr>
<tr>
<td>in the MRC Basin Development Strategy Process.</td>
<td>in the MRC Programmes for the assessments;</td>
</tr>
<tr>
<td></td>
<td>Normal financing sources for investments in the sustainable development of tributaries.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Generic TB Type 4: increasing benefits “beyond the river”</strong></td>
<td></td>
</tr>
<tr>
<td>The approach is to move beyond sharing water and services deriving from water resources to bring cooperation in trade and other sectors into discussions.</td>
<td></td>
</tr>
<tr>
<td>It is part of the notion of DOS (development opportunity space) in the MRC Basin Development strategy. The notion is the DOS can also be used as a “cooperation space” or “negotiation space” to explore</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>In varying degrees:</td>
<td></td>
</tr>
<tr>
<td>National / sub-national economies of riparian countries;</td>
<td></td>
</tr>
<tr>
<td>Economies of provinces in riparian countries associated with the tributary;</td>
<td></td>
</tr>
<tr>
<td>Sectors of the economies involved and the companies and employees.</td>
<td></td>
</tr>
<tr>
<td>Provincial to local levels to the extent the next national economic gains are spread and shared in the Tributary.</td>
<td></td>
</tr>
<tr>
<td>Mutually beneficial trade arrangements and / or development cooperation between riparian countries going beyond the water and electricity sector:</td>
<td></td>
</tr>
<tr>
<td>For example:</td>
<td></td>
</tr>
<tr>
<td>Normal trade in goods and services between countries (facilitating or enhancing provisions such as reducing duties or taxes);</td>
<td></td>
</tr>
<tr>
<td>Strategic infrastructure agreements, e.g., agreements on transport integration (for road, rail, air or water</td>
<td></td>
</tr>
<tr>
<td>How net benefits are shared depend on the type of Agreement reached and the</td>
<td></td>
</tr>
<tr>
<td>Generic Option Type + options evaluated in ISH13</td>
<td>Summary Features / Alternative Mechanisms</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
</tbody>
</table>
| mutually beneficial options, including benefit and impact sharing agreements that go beyond the specific project level, and to consider other opportunities (possibly unrelated to water - e.g. trade or transport) for facilitating equitable outcomes. Such options seek to expand the range of benefits to share through the integration of regional infrastructure, markets and trade. The underlying premise is cooperation on water matters is facilitated by wider agreements. | **Target Beneficiary Groups**
- National / sub-national economies of riparian countries;
- Related to the project generation and services
- Related to the improved trade situation
- Net benefits flowing from increased trade into public

**Financing Sources**
- Transport facilities.
- Direct or indirect industrial offsets and counter trade
- Concession rates on power exchange or specific arrangements at the national level (e.g., share of cost in transmission interconnection)

**Institutional Mechanisms**
- Current mechanisms are adequate.

4-1 No explicit provision for this form of benefit sharing on transboundary dimensions of tributary hydropower is needed in the current situation. | See NTL Options in Matrix 1.

4-2 Riparian governments explore the scope to enhance cooperation in trade of goods and services to help overcome negotiation hurdles on valuing and sharing. | **Target Beneficiary Groups**
- National / sub-national economies of riparian countries;

**Financing Sources**
- Trade related
- Supporting studies of trade statistics
- May be some element of indirect subsidy of trade paid for out of government revenue from tributary hydropower.

**Institutional Mechanisms**
- Using existing bilateral / regional mechanisms for:
  - dialogue, negotiation and agreement on trade matters;
  - includes measures such as reducing import / export duties or taxes on goods and services.
  - How benefits are distributed sub-nationally depends on national-to-local mechanisms.

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77 An offset agreement is an agreement between two parties (countries) whereby one agrees to buy products from the other in order to complete and agreement. Often, the aim of this process is to even-up a country's balance of trade. Direct offsets may include investments related to the project such as sub-contracts for supply of equipment, labour or services. Indirect offsets are when one party agrees to buy goods which are unrelated to the hydropower product, which may be raw materials, agricultural commodities or other products as well as other investments like training, Foreign Direct Investment, Credit Assistance and Financing. Counter-trade can also be considered one of the many forms of offset. In counter-trade goods are paid through barter or other mechanisms without the exchange of money.
<table>
<thead>
<tr>
<th>Generic Option Type + options evaluated in ISH13</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Beneficiary Groups</strong></td>
<td><strong>Financing Sources</strong></td>
</tr>
<tr>
<td>benefits and costs of hydropower on shared tributaries.</td>
<td>Normal financing sources for investments in the sustainable development of tributaries;</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>4-3 Riparian governments consider the scope for direct or indirect industrial offsets and counter trade to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National / sub-national economies of riparian countries;</td>
</tr>
<tr>
<td></td>
<td>Hydropower industry, contractors and their employees;</td>
</tr>
<tr>
<td></td>
<td>Benefits from increased trade to public accounts, consumers and the economy depending on the nature of such agreements.</td>
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</tr>
<tr>
<td>4-4 Riparian governments consider the scope for cooperation on strategic infrastructure agreements, (e.g., agreements on transport integration such as for road, rail, air or water transport facilities).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National / sub-national economies of riparian countries;</td>
</tr>
<tr>
<td></td>
<td>Economic sectors involved (institutions, companies, employees)</td>
</tr>
<tr>
<td></td>
<td>Public benefits that flow from strategic infrastructure investments</td>
</tr>
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<td></td>
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</tr>
<tr>
<td>4-5 Riparian governments consider the scope for concession rates on export power trade, or arrangements at the utility level (power trade agreements) to help overcome negotiation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National / sub-national economies of riparian countries;</td>
</tr>
<tr>
<td></td>
<td>The public and communities in areas that receive power (where no alternative with the same reliability, cost or timing is available)</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Generic Option Type + options evaluated in ISH13</td>
<td>Summary Features / Alternative Mechanisms</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>4-6 Close the knowledge gap to overcome hurdles in Riparian counties agreeing on the value of benefits and costs of hydropower on shared tributaries.</td>
<td>▪ National / sub-national economies of riparian countries; ▪ MRC Programmes and budgets; ▪ Government national line agency budgets and related work ▪ As part of MRC supported efforts to enhance the DOS moving toward sustainable development through a transparent process:</td>
</tr>
<tr>
<td>4-7 Explore joint and mutually beneficial development opportunities beyond national plans, within and outside the water sector in bilateral processes or the MRC Basin Development Strategy.</td>
<td>▪ National / sub-national economies of riparian countries; ▪ MRC Programmes and budgets; ▪ Government national line agency budgets and related work ▪ As part of MRC supported efforts to enhance the DOS moving toward sustainable development through a transparent process: ▪ Referred to in the BDS (2011)</td>
</tr>
</tbody>
</table>
Annex 3: Plots And Scoring Sheets for the Working Group Evaluation

Annex 3.1: Qualitative Evaluation of the BSM Options by the Working Group

NTL Generic Type 1: Sharing Monetary Benefits of Hydropower

<table>
<thead>
<tr>
<th>Value Dimension</th>
<th>Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributaries of the Mekong River</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualitative Sub-Criteria For Value &gt;</strong></td>
<td><strong>Social Advancement:</strong> contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</td>
</tr>
<tr>
<td>Criteria Weight</td>
<td>20%</td>
</tr>
<tr>
<td>Column &gt;</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NTL Options</th>
<th>Weighted Total Score For each Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>No revenue sharing mechanism is needed to spread monetary benefits of existing or proposed hydropower in Mekong tributaries.</td>
</tr>
<tr>
<td>1-2</td>
<td>Introduce local revenue sharing using <strong>new local (social and enviornmental fund)</strong></td>
</tr>
<tr>
<td></td>
<td>Preference Dimension</td>
</tr>
<tr>
<td>---</td>
<td>----------------------</td>
</tr>
<tr>
<td>1-3</td>
<td>Introduce local revenue sharing by increasing existing commune investment program (local development budgets).</td>
</tr>
<tr>
<td>1-4</td>
<td>Introduce revenue sharing at district / provincial levels through a Development Fund mechanisms.</td>
</tr>
<tr>
<td>1-5</td>
<td>Introduce revenue sharing at district / Province levels by increasing existing Provincial Development budgets.</td>
</tr>
<tr>
<td>1-6</td>
<td>Introduce revenue sharing at the tributary scale using the River Basin entity (RBC/RBO)</td>
</tr>
<tr>
<td>1-7</td>
<td>Provincial / municipal authorities collect taxes, fees, etc., for land or water used by hydropower projects in tributaries.</td>
</tr>
<tr>
<td>1-8</td>
<td>Introduce payments for ecological services (PES) also referred to as environmental services.</td>
</tr>
<tr>
<td>1-9</td>
<td>Set targets for local income improvement for people living in the vicinity of projects linked to poverty alleviation targets for the tributary / Province.</td>
</tr>
<tr>
<td>1-10</td>
<td>Coordinate among sector funds that hydropower sales contribute revenue to (by Law) to ensure synergies for benefit sharing are identified and optimised.</td>
</tr>
</tbody>
</table>

**Preference Dimension**
Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

**Scoring Scale**
- None: Does not add value / is not needed
- Lower: Potentially adds value
- Medium: Does add some value
- Higher: Adds a lot of value
### Qualitative Sub-Criteria For Stakeholder Preference

<table>
<thead>
<tr>
<th>Options</th>
<th>National Level Government Agencies (non representative sample)</th>
<th>Provincial Level Government (non representative sample)</th>
<th>River Basin Organization</th>
<th>Civil Society (non representative sample)</th>
<th>Hydropower Developers / Operators (non representative sample)</th>
<th>Criteria Weight Sum Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- No revenue sharing mechanism is needed to spread monetary benefits of existing or proposed hydropower in Mekong tributaries.</td>
<td>1.0</td>
<td>1.0</td>
<td>0.5</td>
<td>0.0</td>
<td>1.0</td>
<td>0.7</td>
</tr>
<tr>
<td>2- Introduce local revenue sharing using new local (social and environmental fund)</td>
<td>2.0</td>
<td>2.5</td>
<td>2.0</td>
<td>3.0</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
<td>3- Introduce local revenue sharing by increasing existing commune investment program (local development budgets).</td>
<td>2.5</td>
<td>2.5</td>
<td>2.0</td>
<td>1.0</td>
<td>2.5</td>
<td>2.1</td>
</tr>
<tr>
<td>4- Introduce revenue sharing at district / provincial levels through a Development Fund mechanisms.</td>
<td>1.0</td>
<td>3.0</td>
<td>0.5</td>
<td>1.0</td>
<td>2.0</td>
<td>1.5</td>
</tr>
<tr>
<td>5- Introduce revenue sharing at district / Province levels by increasing existing Provincial Development budgets.</td>
<td>0.5</td>
<td>2.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
<td>1.1</td>
</tr>
<tr>
<td>6- Introduce revenue sharing at the tributary scale using the River Basin entity (RBC/RBO)</td>
<td>2.0</td>
<td>1.5</td>
<td>2.0</td>
<td>0.5</td>
<td>3.0</td>
<td>1.8</td>
</tr>
<tr>
<td>7- Provincial / municipal authorities collect taxes, fees, etc., for land or water used by hydropower projects in tributaries.</td>
<td>0.0</td>
<td>3.0</td>
<td>1.0</td>
<td>2.5</td>
<td>0.5</td>
<td>1.4</td>
</tr>
<tr>
<td>8- Introduce payments for ecological services (PES) also referred to as environmental services.</td>
<td>3.0</td>
<td>2.0</td>
<td>1.0</td>
<td>3.0</td>
<td>2.5</td>
<td>2.3</td>
</tr>
<tr>
<td>9- Set targets for local income improvement for people living in the vicinity of projects linked to poverty alleviation targets for the tributary / Province.</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.5</td>
<td>2.3</td>
</tr>
<tr>
<td>10- Coordinate among sector funds that hydropower sales contribute revenue to (by Law) to ensure synergies for benefit sharing are identified.</td>
<td>2.0</td>
<td>1.0</td>
<td>2.0</td>
<td>1.0</td>
<td>3.0</td>
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</table>
and optimised.

<table>
<thead>
<tr>
<th>Scoring Scale</th>
<th>None</th>
<th>Lower</th>
<th>Medium</th>
<th>Higher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

| Max possible score | 3 | 3 | 3 | 3 | 3 |

Not relevant and not preferred
Likely Relevant
Moderately Relevant
Definitely Relevant and preferred
**NTL Generic Type 2: Optimizing Non-Monetary Benefits (including facilitating local resource access)**

### Value Dimension

Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributaries of the Mekong River.

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value</th>
<th>Social Advancement</th>
<th>Environmental Protection</th>
<th>Economic Stimulus</th>
<th>Intergenerational equity</th>
<th>Practicality &amp; Capacity to implement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</td>
<td>contribution to environment protection aims in the sub-basin (consistency govt policies)</td>
<td>help to economic stimulus of sub-basin and local areas (consistency govt policies)</td>
<td>flexibility to adapt / modify the measure over time</td>
<td>Criteria Weight Sum Check</td>
</tr>
<tr>
<td><strong>Criteria Weight</strong></td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Column &gt;</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Options</th>
<th>2-1</th>
<th>2-2</th>
<th>2-3</th>
<th>2-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No steps beyond existing practices 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).</td>
<td>1.0</td>
<td>1.5</td>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Introduce procedures to evaluate opportunities to optimize local resource access and non-monetary benefits around existing tributary hydropower projects, engaging with local communities.</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Systematically assess scope to optimize local resource access in project studies for proposed (new) tributary hydropower engaging with local communities to identify and prioritize opportunities.</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Identify and remove legal constraints to enhance local resource access (forestry, land or water) at national, provincial or local levels, and address them.</td>
<td>0.5</td>
<td>2.0</td>
<td>2.0</td>
<td>2.5</td>
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</table>

Options Weighted Total Score For each Option

<table>
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<tr>
<th><strong>Weighted Total Score</strong></th>
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<tr>
<td>1.4</td>
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<td>2-8</td>
</tr>
<tr>
<td>2-9</td>
</tr>
<tr>
<td>2-10</td>
</tr>
</tbody>
</table>

| Max possible score | 3 | 3 | 3 | 3 | 3 | 3 |

<table>
<thead>
<tr>
<th>Scoring Scale</th>
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<th>Does not add value / is not needed</th>
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<td></td>
<td>Lower</td>
<td>1</td>
<td>Potentially adds value</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>2</td>
<td>Does add some value</td>
</tr>
<tr>
<td></td>
<td>Higher</td>
<td>3</td>
<td>Adds a lot of value</td>
</tr>
</tbody>
</table>
Preference Dimension
Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

### Qualitative Sub-Criteria For Stakeholder Preference

<table>
<thead>
<tr>
<th>Options</th>
<th>National Level Government Line Agencies (non representative sample)</th>
<th>Provincial Level Government (non representative sample)</th>
<th>River Basin Organization</th>
<th>Civil Society (non representative sample)</th>
<th>Hydropower Developers / Operators (non representative sample)</th>
<th>Criteria Weight Sum Check</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2-1</strong> No steps beyond existing practices 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).</td>
<td>1.0</td>
<td>1.0</td>
<td>1.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>2-2</strong> Introduce procedures to evaluate opportunities to optimize local resource access and non-monetary benefits around existing tributary hydropower projects, engaging with local communities.</td>
<td>3.0</td>
<td>2.5</td>
<td>2.5</td>
<td>3.0</td>
<td>3.0</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>2-3</strong> Systematically assess scope to optimize local resource access in project studies for proposed (new) tributary hydropower engaging with local communities to identify and prioritize opportunities.</td>
<td>2.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>2-4</strong> Identify and remove legal constraints to enhance local resource access (forestry, land or water) at national, provincial or local levels, and address them.</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>2-5</strong> Involve river basin entities in assessing opportunities to enhance local resource access in the tributary in relation to the development opportunities and risks of hydropower in the tributary.</td>
<td>1.0</td>
<td>1.0</td>
<td>3.0</td>
<td>1.0</td>
<td>3.0</td>
<td>1.8</td>
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<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>2-6</td>
<td>Assess ways to combine long-term financial support from hydropower revenue sharing with measures to improve local resource access.</td>
<td>2.0</td>
<td>2.0</td>
<td>2.5</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>2-7</td>
<td>Extend vocational training for new livelihoods, job skills, and income diversification based on natural resource access changes due to hydropower.</td>
<td>3.0</td>
<td>3.0</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>2-8</td>
<td>Ensure women, youth, vulnerable groups and ethnic groups can actively participate in training activities and decisions regarding local resource access.</td>
<td>3.0</td>
<td>1.5</td>
<td>2.5</td>
<td>3.0</td>
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<tr>
<td>2-9</td>
<td>Option 9</td>
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<td>Option 10</td>
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### Scoring Scale

<table>
<thead>
<tr>
<th>Score Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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<td>None</td>
<td>Not relevant and not preferred or needed</td>
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<tr>
<td>Lower</td>
<td>Likely Relevant</td>
</tr>
<tr>
<td>Medium</td>
<td>Moderately Relevant</td>
</tr>
<tr>
<td>Higher</td>
<td>Definitely Relevant and preferred</td>
</tr>
</tbody>
</table>
Cross Cutting (CC) considerations in Benefit Sharing on Tributary Hydropower

Generic CC Type 1: What legal instruments may be considered to introduce benefit sharing mechanism?

### Value Dimension
Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributaries of the Mekong River

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value</th>
<th>Social Advancement: contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</th>
<th>Environmental Protection: contribution to environmental protection aims in the sub-basin (consistency govt policies)</th>
<th>Economic stimulus: help to economic stimulus of sub-basin and local area (consistency govt policies)</th>
<th>Intergenerational equity: flexibility to adapt / modify the measure over time</th>
<th>Practicability &amp; Capacity to implement</th>
<th>Criteria Weight Sum Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria Weight</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
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</tr>
<tr>
<td>Column &gt;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td><strong>CC Options</strong></td>
<td><strong>Incorporate benefit sharing in national legislation and country legal framework. (e.g., within existing Water or Electricity Laws an Acts, or in new Decree Laws specific to BSM)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-1</td>
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</table>

Weighted Total Score For each Option

78
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<th></th>
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<th>2.0</th>
<th>2.5</th>
<th>3.0</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Incorporate official poverty reduction targets in BSM planning and implementation arrangements in the vicinity of tributary hydropower. Relevant in situations where communities in the project vicinity live well below national / provincial income averages.</td>
<td>2.7</td>
<td>2.0</td>
<td>2.5</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>1-4</td>
<td>Give some revenue sharing to Provinces that have hydropower in their tributary (e.g. for river community or help watershed management)</td>
<td>2.3</td>
<td>2.8</td>
<td>2.5</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>1-5</td>
<td>Incorporate benefit sharing provisions related to transboundary dimensions of significant Mekong tributaries in MRC Procedures conditional on successful negotiation under the Basin Development Strategy and MRC Framework.</td>
<td>1.0</td>
<td>2.5</td>
<td>1.0</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>1-6</td>
<td>Lead Ministry - Have Ministry of Energy and Mines sponsor or be responsible for BSM regulation or Law</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>1.0</td>
<td>3.0</td>
</tr>
<tr>
<td>1-7</td>
<td>Lead Ministry - Have MOWRAM (Cambodia) / MONRE (Lao PDR) sponsor or be responsible for BSM regulation or Law</td>
<td>3.0</td>
<td>3.0</td>
<td>2.0</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>1-8</td>
<td>Lead Ministry - Have Joint Ministry sponsorship of BSM Law or Regulation (e.g. Government Decree or MPI, MOF, MonRE, MEM)</td>
<td>2.0</td>
<td>2.0</td>
<td>3.0</td>
<td>1.0</td>
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<td>Option 9</td>
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Max possible score: 3

<table>
<thead>
<tr>
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<th>Lower</th>
<th>1</th>
<th>Medium</th>
<th>2</th>
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<th>3</th>
<th>Does not add value / is not needed</th>
<th>Potentially adds value</th>
<th>Does add some value</th>
<th>Adds a lot of value</th>
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</thead>
</table>

79
### Generic CC Type 1: What legal instruments may be considered to introduce benefit sharing mechanism?

**Preference Dimension**

Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Stakeholder Preference</th>
<th>National Level Government (non representative sample)</th>
<th>Provincial Level Government (non representative sample)</th>
<th>River Basin Organization (non representative sample)</th>
<th>Civil Society (non representative sample)</th>
<th>Hydropower Developers / Operators (non representative sample)</th>
<th>Criteria Weight Sum Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria Weight</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
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<tr>
<td>Column</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>1-1</td>
<td>Incorporate benefit sharing in national legislation and country legal framework. (e.g., within existing Water or Electricity Laws an Acts, or in new Decree Laws specific to BSM)</td>
<td>3.0</td>
<td>3.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>1-2</td>
<td>Involve River Basin organizations in delivery of benefit sharing mechanisms</td>
<td>2.5</td>
<td>1.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>1-3</td>
<td>Incorporate official poverty reduction targets in BSM planning and implementation arrangements in the vicinity of tributary hydropower. Relevant in situations where communities in the project vicinity live well below national / provincial income averages.</td>
<td>3.0</td>
<td>2.5</td>
<td>2.0</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>1-4</td>
<td>Give some revenue sharing to Provinces that have hydropower in their tributary (e.g. for river community or help watershed management)</td>
<td>1.5</td>
<td>3.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Incorporate benefit sharing provisions related to transboundary dimensions of significant Mekong tributaries in MRC Procedures conditional on successful negotiation under the Basin Development Strategy and MRC Framework.</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
<td>1.0</td>
<td>0.0</td>
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<td>1-5</td>
<td>Lead Ministry - Have Ministry of Energy and Mines (Cambodia and Lao PDR) sponsor or be responsible for BSM regulation or Law</td>
<td>2.0</td>
<td>1.5</td>
<td>2.0</td>
<td>1.0</td>
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<tr>
<td>1-6</td>
<td>Lead Ministry - Have MOWRAM (Cambodia) / MONRE (Lao PDR) sponsor or be responsible for BSM regulation or Law</td>
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<td>2.0</td>
<td>2.5</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>1-7</td>
<td>Lead Ministry - Have Joint Ministry sponsorship of BSM Law or Regulation (e.g. Government Decree or MPI, MOF, MonRE, MEM)</td>
<td>2.0</td>
<td>2.5</td>
<td>1.5</td>
<td>1.0</td>
<td>2.2</td>
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<td>1-8</td>
<td>Option 9</td>
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**Scoring Scale**

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<tbody>
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<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

*Not relevant and not preferred or needed*

*Likely Relevant*

*Moderately Relevant*

*Definitely Relevant and preferred*
Generic CC Type 2: What measures may be considered relating to the size and scale of hydropower projects in tributary?

<table>
<thead>
<tr>
<th>Value Dimension</th>
<th>Qualitative Sub-Criteria For Value &gt;</th>
<th>Social Advancement: (contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies))</th>
<th>Environmental Protection: (contribution to environment protection aims in the sub-basin (consistency govt policies))</th>
<th>Economic stimulus: (help to economic stimulus of sub-basin and local areas (consistency govt policies))</th>
<th>Intergenerational equity: (flexibility to adapt / modify the measure over time)</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Criteria Weight Sum Check</th>
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<tbody>
<tr>
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<tr>
<td>2-1</td>
<td>BSM policy applies equally to all grid-connected hydropower projects with a legal requirement for an environment impact assessment (EIA).</td>
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<tr>
<td>2-2</td>
<td>BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 1.0 MW)</td>
<td>2-2</td>
<td>2.0</td>
<td>2.0</td>
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<tr>
<td>2-3</td>
<td>BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 10 MW).</td>
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<td>2-4</td>
<td>Different percent and regulations for revenue sharing for hydropower projects of different size categories (e.g. MW installed)</td>
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Same percent and regulations for revenue sharing for hydropower projects of different size categories (e.g. MW installed)

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<td>Medium</td>
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<td>Extra Large</td>
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<td>Very Large</td>
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<tr>
<td>Largest</td>
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<table>
<thead>
<tr>
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<tr>
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<td>Potentially adds value</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>Does add some value</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Adds a lot of value</td>
</tr>
</tbody>
</table>
Generic CC Type 2: What measures may be considered relating to the size and scale of hydropower projects in tributary?

**Preference Dimension**
Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Stakeholder Preference &gt;</th>
<th>National Level Government Line Agencies (non representative sample)</th>
<th>Provincial Level Government (non representative sample)</th>
<th>River Basin Organization</th>
<th>Civil Society (non representative sample)</th>
<th>Hydropower Developers / Operators (non representative sample)</th>
<th>Criteria Weight Sum Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria Weight</td>
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<td>20%</td>
<td>20%</td>
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<td>100%</td>
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<td>Column &gt;</td>
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<table>
<thead>
<tr>
<th>Options</th>
<th>Weighted Total Score For each Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1 BSM policy applies equally to all grid-connected hydropower projects with a legal requirement for an environment impact assessment (EIA).</td>
<td>2.0 2.5 2.0 3.0 1.5 2.2</td>
</tr>
<tr>
<td>2-2 BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 1.0 MW)</td>
<td>1.0 1.0 2.0 2.5 1.0 1.5</td>
</tr>
<tr>
<td>2-3 BSM policy applies equally to all grid-connected hydropower projects above a specified installed capacity as defined in regulation (e.g. 10 MW)</td>
<td>2.0 2.0 2.0 3.0 2.5 2.3</td>
</tr>
<tr>
<td>2-4 Different percent and regulations for revenue sharing for hydropower projects of different size categories (e.g. MW installed)</td>
<td>1.0 2.0 2.0 2.0 2.5 1.9</td>
</tr>
<tr>
<td>2-5 Same percent and regulations for revenue sharing for hydropower projects of different size categories (e.g. MW installed)</td>
<td>1.0 2.0 2.0 3.0 2.5 2.1</td>
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<td>2-6 Option 6</td>
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<tr>
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<tr>
<td>Medium</td>
<td>2</td>
</tr>
<tr>
<td>Higher</td>
<td>3</td>
</tr>
</tbody>
</table>

- Not relevant and not preferred or needed
- Likely Relevant
- Moderately Relevant
- Definitely Relevant and preferred
Generic CC Type 3: What measures may be considered have benefit-sharing for each stage of the Project Cycle?

## Value Dimension

Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributarie of the Mekong River

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value</th>
<th>Social Advancement</th>
<th>Environmental Protection</th>
<th>Economic stimulus</th>
<th>Intergenerational equity</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Criteria Weight Sum Check</th>
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</thead>
<tbody>
<tr>
<td>Criteria Weight</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

### Options

| CC3-1 Planning - Consider benefit sharing in basin planning studies, SEAs and hydropower ranking for identification of new tributary hydropower projects. | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| CC3-2 Project Preparation - Consider benefit sharing in project preparation studies (feasibility and EIA/SIA studies, resettlement plans etc.) for new tributary hydropower projects | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| CC3-3 Design - Consider scope to improve physical design of hydropower projects for greater flexibility for adaptive management and optimize how benefits and costs (direct and indirect) are distributed in the tributary to different stakeholder / development interests. | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| CC3-4 | Construction - Assess opportunities to optimize benefit sharing during the construction phases of tributary hydropower projects. | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| CC3-5 | Operation - Assess opportunities to optimize benefit sharing in the operation phase of tributary hydropower projects. | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| Max possible score | | 3 | 3 | 3 | 3 | 3 | 3 |

| Scoring Scale | None | 0 | Does not add value / is not needed |
| | Lower | 1 | Potentially adds value |
| | Medium | 2 | Does add some value |
| | Higher | 3 | Adds a lot of value |
Generic CC Type 3: What measures may be considered have benefit-sharing for each stage of the Project Cycle?

## Preference Dimension
Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

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<tbody>
<tr>
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### CC3 Options

<table>
<thead>
<tr>
<th>CC3-1 Planning - Consider benefit sharing in basin planning studies, SEAs and hydropower ranking for identification of new tributary hydropower projects.</th>
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<th>2.0</th>
<th>1.0</th>
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<tbody>
<tr>
<td>CC3-2 Project Preparation - Consider benefit sharing in project preparation studies (feasibility and EIA/SIA studies, resettlement plans etc.) for new tributary hydropower projects</td>
<td>2.5</td>
<td>2.0</td>
<td>2.5</td>
<td>2.5</td>
<td>2.0</td>
<td>2.3</td>
</tr>
<tr>
<td>CC3-3 Design - Consider scope to improve physical design of hydropower projects for greater flexibility for adaptive management and optimize how benefits and costs (direct and indirect) are distributed in the tributary to different stakeholder / development interests.</td>
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<td>2.5</td>
<td>2.0</td>
<td>2.5</td>
<td>1.0</td>
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<td>CC3-4 Construction - Assess opportunities to optimize benefit sharing during the construction phases of tributary hydropower projects.</td>
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<td>2.5</td>
<td>2.5</td>
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**Operation - Assess opportunities to optimize benefit sharing in the operation phase of tributary hydropower projects.**

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<tr>
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<td>CC3-9</td>
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| Max possible score | 3 | 3 | 3 | 3 | 3 | 3 |

**Scoring Scale**

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</table>

*Not relevant and not preferred or needed*

*Likely Relevant*

*Moderately Relevant*

*Definitely Relevant and preferred*
Generic CC Type 4: What BSM measures may be considered for hydropower projects for power export or national supply?

### Value Dimension

Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributaries of the Mekong River

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value</th>
<th>Social Advancement: contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</th>
<th>Environmental Protection: contribution to environment protection aims in the sub-basin (consistency govt policies)</th>
<th>Economic stimulus: help to economic stimulus of sub-basin and local areas (consistency govt policies)</th>
<th>Intergenerational equity: Flexibility to adapt / modify the measure over time</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Criteria Weight Sum Check</th>
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<tr>
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### Options

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<th>Economic stimulus</th>
<th>Intergenerational equity</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Weighted Total Score For each Option</th>
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<tbody>
<tr>
<td>4-1 New tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
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<td>2.5</td>
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Max possible score

|                          | 3 | 3 | 3 | 3 | 3 | 3 |

### Scoring Scale

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</table>

**Does not add value / is not needed**

**Potentially adds value**

**Does add some value**

**Adds a lot of value**
Generic CC Type 4: What BSM measures may be considered for hydropower projects for power export or national supply?

### Preference Dimension
Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

#### Qualitative Sub-Criteria For Stakeholder Preference >

<table>
<thead>
<tr>
<th></th>
<th>National Level Government Agencies (non representative sample)</th>
<th>Provincial Level Government (non representative sample)</th>
<th>River Basin Organization</th>
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#### Options

<table>
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<th>Options</th>
<th>Weighted Total Score For each Option</th>
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<tr>
<td>New tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
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</tr>
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<td>Existing tributary hydropower projects supplying domestic and export markets are treated equally in BSM regulation for revenue sharing.</td>
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Max possible score

|               | 3 | 3 | 3 | 3 | 3 |

#### Scoring Scale

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### Generic CC Type 5: What measures may be considered for transparency, dispute avoidance and settlement?

#### Value Dimension

Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributaries of the Mekong River

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value &gt;</th>
<th>Social Advancement: contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</th>
<th>Environmental Protection: contribution to environment protection aims in the sub-basin (consistency govt policies)</th>
<th>Economic stimulus: help to economic stimulus of sub-basin and local areas (consistency govt policies)</th>
<th>Intergenerational equity: Flexibility to adapt / modify the measure over time</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Criteria Weight Sum Check</th>
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<th>Weighted Total Score For each Option</th>
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<tr>
<td>CC5-1 Include steps to strengthen transparency and dispute settlement mechanisms in BSM Laws or Agreements.</td>
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</tr>
<tr>
<td>CC5-2 Prepare transparency and accountability measures for all Fund Mechanisms (or Community Projects) used to collect or distribute money for revenue sharing on tributary hydropower.</td>
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<tr>
<td>CC5-3 Prepare social accountability plans for all Local Area / Local Development Funds established for benefit sharing on tributary hydropower.</td>
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<tr>
<td>CC5-4 Make clear how disputes and appeals will be handled in the administration of money related to revenue sharing on tributary hydropower at different levels.</td>
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- Does not add value / is not needed
- Potentially adds value
- Does add some value
- Adds a lot of value
**Generic CC Type 5: What measures may be considered for transparency, dispute avoidance and settlement?**

### Preference Dimension

Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

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<thead>
<tr>
<th>Qualitative Sub-Criteria For Stakeholder Preference &gt;</th>
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<tr>
<td>5-1</td>
<td>Include steps to strengthen transparency and dispute settlement mechanisms in BSM Laws or Agreements.</td>
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<td>1.5</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>5-2</td>
<td>Prepare transparency and accountability measures for all Fund Mechanisms (or Community Projects) used to collect or distribute money for revenue sharing on tributary hydropower.</td>
<td>2.0</td>
<td>2.0</td>
<td>1.5</td>
<td>3.0</td>
<td>2.0</td>
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<tr>
<td>5-3</td>
<td>Prepare social accountability plans for all Local Area / Local Development Funds established for benefit sharing on tributary hydropower.</td>
<td>2.0</td>
<td>1.5</td>
<td>1.5</td>
<td>3.0</td>
<td>1.5</td>
</tr>
<tr>
<td>5-4</td>
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<td>1.5</td>
<td>2.5</td>
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<td>Medium</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Higher</td>
<td>3</td>
</tr>
</tbody>
</table>

Not relevant and not preferred or needed
Likely Relevant
Moderately Relevant
Definitely Relevant and preferred
BSM-Transboundary Tributary Options

This spreadsheet illustrates some options for this Generic Type to keep, modify or drop based on discussions in the ISH13 WG seminar. The scores shown here are only place markers to show the Plots at the bottom of the spreadsheet work. Refer to Template 3b for summary descriptions of each.

Generic TB Type 1: Increase benefits "to the river"

<table>
<thead>
<tr>
<th>Value Dimension</th>
<th>Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributaries of the Mekong River</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Social Advancement: contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</td>
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<tr>
<td>Criteria Weight</td>
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<td>Column &gt;</td>
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<tr>
<td>TB</td>
<td>Options</td>
</tr>
<tr>
<td>1-1</td>
<td>Assume that addition measures beyond current practice are not essential for benefit sharing on transboundary dimensions of tributary hydropower. (i.e. do nothing more option)</td>
</tr>
<tr>
<td>1-2</td>
<td>Provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in MRC Programmes and MRC Procedures.</td>
</tr>
<tr>
<td>1-3</td>
<td>Require and provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in strategic plans and strategies developed</td>
</tr>
<tr>
<td>Preference</td>
<td>Scoring Scale</td>
</tr>
<tr>
<td>------------</td>
<td>---------------</td>
</tr>
<tr>
<td>by tributary RBC / RBOs.</td>
<td></td>
</tr>
<tr>
<td>Coordinate / align BSM-related provisions for catchment management in tributary basins with hydropower shared by two or more countries</td>
<td>2.0</td>
</tr>
<tr>
<td>Expand available financing for measures to protect / enhance water resource quality using hydropower revenue in tributary basins shared by two or more countries</td>
<td>2.5</td>
</tr>
<tr>
<td>Enhance riparian cooperation in preparing environment flow assessment and provision in reservoir operation / management strategies in tributaries shared by two or more Countries.</td>
<td>2.0</td>
</tr>
<tr>
<td>Highlight / incorporate the explicit evaluation of establishing a “Mekong Fund” to facilitate benefit sharing on the transboundary dimensions of tributary hydropower and potentially LBM UMB mainstream hydropower</td>
<td>2.5</td>
</tr>
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<td>1-8</td>
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</tr>
</tbody>
</table>

**Scoring Scale**

- None: 0 (Does not add value / is not needed)
- Lower: 1 (Potentially adds value)
- Medium: 2 (Does add some value)
- Higher: 3 (Adds a lot of value)

**Preference Dimension**

Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Assume that addition measures beyond current practice are not essential for benefit sharing on transboundary dimensions of tributary hydropower. (i.e. do nothing more option)</td>
<td>0.5</td>
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<tr>
<td>Provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in MRC Programmes and MRC Procedures.</td>
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<td>Require and provide guidelines for explicit evaluation of BSM options on transboundary dimensions of tributary hydropower in strategic plans and strategies developed by tributary RBC / RBOs.</td>
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<td>2.5</td>
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<tr>
<td>Coordinate / align BSM-related provisions for catchment management in tributary basins with hydropower shared by two or more countries</td>
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<tr>
<td>Expand available financing for measures to protect / enhance water resource quality using hydropower revenue in tributary basins shared by two or more countries</td>
<td>2.5</td>
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<td>1.5</td>
<td>3.0</td>
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<td>2.3</td>
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<tr>
<td>Enhance riparian cooperation in preparing environment flow assessment and provision in reservoir operation / management strategies in tributaries shared by two or more Countries.</td>
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<td>3.0</td>
<td>1.5</td>
<td>3.0</td>
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<td>2.3</td>
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</table>
Highlight / incorporate the explicit evaluation of establishing a “Mekong Fund” to facilitate benefit sharing on the transboundary dimensions of tributary hydropower and potentially LBM UMB mainstream hydropower

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Max possible score | 3 | 3 | 3 | 3 | 3 | 3 |

|   |   |   |   |   |
|---|---|---|---|
| Scoring Scale | None | Lower | Medium | Higher |
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<tbody>
<tr>
<td>Not relevant and not preferred or needed</td>
<td>Likely Relevant</td>
<td>Moderately Relevant</td>
<td>Definitely Relevant and preferred</td>
</tr>
</tbody>
</table>
Generic TB Type 2: Increasing benefits ‘from the river’

Value Dimension
Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributarie of the Mekong River

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value</th>
<th>Social Advancement: contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</th>
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Options

<table>
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<tr>
<th>Options</th>
<th>Social Advancement</th>
<th>Environmental Protection</th>
<th>Economic stimulus</th>
<th>Intergenerational equity</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Weighted Total Score For each Option</th>
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<tr>
<td>Current practice is ok - Additional measures to increase benefits from the river are not essential for benefit sharing around the transboundary dimensions of tributary hydropower.</td>
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<tr>
<td>Ensure strategies for infrastructure provision (proposed projects) and operation (existing projects) on Mekong tributaries conform to the MRC Basin Development Strategy and IWRM/ sustainability principles.</td>
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<td>2.5</td>
<td>2.5</td>
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<tr>
<td>Assess the scope to optimize operation of existing and planned tributary reservoirs for multi-purpose functionality, giving due consideration to the transboundary dimensions.</td>
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<td>3.0</td>
<td>3.0</td>
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<td>Assess the scope to optimizing reservoir operations for downstream benefit / risk balance concerning transboundary dimensions of tributary hydropower on tributaries shared by two or more countries.</td>
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<tr>
<td><strong>2-5</strong> Introduce national regulatory provisions for new or retrofit hydropower design to routinely build-in the flexibility to modify operations and bringing new technology over the life of hydropower assets.</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
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<tr>
<td><strong>2-6</strong> Assess scope to improve coordination of reservoir operations on aspects such as flood management, sediment management / fish passage in multi-reservoir cascades (existing and new) on tributaries shared by two or more countries.</td>
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<tr>
<td><strong>2-7</strong> Prepare guidance to factor the explicit valuation of ecosystem services into project preparation studies and decisions about hydropower and related infrastructure development and management on shared Mekong tributaries.</td>
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<tr>
<td><strong>2-8</strong> Prepare guidance to routinely assess opportunities to optimize other grid-connected renewable energy (RE) and power system benefits presented by tributary hydropower and factor these into discussions of transboundary dimensions (eg. To include rural electricity plan).</td>
<td>2.0</td>
<td>2.0</td>
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</table>
Generic TB Type 2: Increasing benefits ‘from the river’

### Preference Dimension

Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

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<table>
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<th>TB</th>
<th>Options</th>
<th>Weighted Total Score For each Option</th>
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<td>2-1</td>
<td>Current practice is ok - Additional measures to increase benefits from the river are not essential for benefit sharing around the transboundary dimensions of tributary hydropower.</td>
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<tr>
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<tr>
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<td>2-5</td>
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<td>1-9</td>
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Generic TB Type 3: Reduce cost 'because of the river'

Value Dimension
Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributarie of the Mekong River

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value &gt;</th>
<th>Social Advancement: contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</th>
<th>Environmental Protection: contribution to environment protection aims in the sub-basin (consistency govt policies)</th>
<th>Economic stimulus: help to economic stimulus of sub-basin and local areas (consistency govt policies)</th>
<th>Intergenerational equity: Flexibility to adapt / modify the measure over time</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Criteria Weight Sum Check</th>
</tr>
</thead>
<tbody>
<tr>
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<td>20%</td>
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<td>Column &gt;</td>
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<td>Options</td>
<td>Options</td>
<td>Options</td>
<td>Options</td>
<td>Options</td>
<td>Weighted Total Score For each Option</td>
</tr>
<tr>
<td>3-1 Measures to avoid or reduce cost because of the river are not essential for benefit sharing around the transboundary dimensions of tributary hydropower</td>
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<tr>
<td>3-2 Explicitly assess opportunities to reduce costs of sustainable development on shared tributaries as part of the MRC Basin Development Strategy Process</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>1.0</td>
<td>1.0</td>
<td>1.9</td>
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<tr>
<td>3-3 Consider linking and having planning / technical exchanges between RBC/RBOs in shared tributaries facilitated by the MRC as the main regional RBO</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>1.0</td>
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<td>2.2</td>
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<td>3-4 Enhance cooperation between upper and lower Riparian on shared tributaries for drought and flood management</td>
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<td>2.0</td>
<td>2.0</td>
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<tbody>
<tr>
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Max possible score

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<td>Does add some value</td>
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<td>Adds a lot of value</td>
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### Preference Dimension

Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Stakeholder Preference</th>
<th>National Level Government Agencies (non representative sample)</th>
<th>Provincial Level Government (non representative sample)</th>
<th>River Basin Organization</th>
<th>Civil Society (non representative sample)</th>
<th>Hydropower Developers / Operators (non representative sample)</th>
<th>Criteria Weight Sum Check</th>
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<tbody>
<tr>
<td>Options</td>
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<td>20%</td>
<td>20%</td>
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<td>100%</td>
</tr>
<tr>
<td>3-1 Measures to avoid or reduce cost because of the river are not essential for benefit sharing around the transboundary dimensions of tributary hydropower</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>3.0</td>
<td>1.0</td>
</tr>
<tr>
<td>3-2 Explicitly assess opportunities to reduce costs of sustainable development on shared tributaries as part of the MRC Basin Development Strategy Process</td>
<td>2.5</td>
<td>2.0</td>
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<td>2.5</td>
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<tr>
<td>3-3 Consider linking and having planning / technical exchanges between RBC/RBOs in shared tributaries facilitated by the MRC as the main regional RBO</td>
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<tr>
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<tr>
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<td>Higher</td>
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### Generic TB Type 4: Increase benefits 'beyond the rivers'

#### Value Dimension

Qualitative indication of the Potential Value Added contribution of options to sustainable development of National Tributaries of the Mekong River

<table>
<thead>
<tr>
<th>TB Options</th>
<th>Criteria Weight</th>
<th>Column &gt;</th>
<th>Weighted Total Score For each Option</th>
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</thead>
<tbody>
<tr>
<td><strong>4-1</strong> No explicit provision for this form of benefit sharing on transboundary dimensions of tributary hydropower is needed in the current situation.</td>
<td>20%</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>4-2</strong> Riparian governments explore the scope to enhance cooperation in trade of goods and services to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>20%</td>
<td>2</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>4-3</strong> Riparian governments consider the scope for direct or indirect industrial offsets and counter trade to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
<td>20%</td>
<td>3</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>4-4</strong> Riparian governments consider the scope for cooperation on strategic infrastructure agreements, e.g., agreements on transport integration such as for road, rail, air or water transport facilities.</td>
<td>20%</td>
<td>4</td>
<td>2.4</td>
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<tr>
<td><strong>4-5</strong></td>
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<td><strong>4-6</strong></td>
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**Value Dimension**

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Value &gt;</th>
<th>Social Advancement: contribution to poverty reduction &amp; social advancement in the sub-basin (consistency govt policies)</th>
<th>Environmental Protection: contribution to environmental aims in the sub-basin (consistency govt policies)</th>
<th>Economic stimulus: help to economic stimulus of sub-basin and local areas (consistency govt policies)</th>
<th>Intergenerational equity: Flexibility to adapt / modify the measure over time</th>
<th>Practicality &amp; Capacity to implement</th>
<th>Criteria Weight Sum Check</th>
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<tbody>
<tr>
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<td><strong>Column &gt;</strong></td>
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<td>4</td>
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<td>6</td>
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</tbody>
</table>

**Options**

- No explicit provision for this form of benefit sharing on transboundary dimensions of tributary hydropower is needed in the current situation.
- Riparian governments explore the scope to enhance cooperation in trade of goods and services to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.
- Riparian governments consider the scope for direct or indirect industrial offsets and counter trade to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.
- Riparian governments consider the scope for cooperation on strategic infrastructure agreements, e.g., agreements on transport integration such as for road, rail, air or water transport facilities.
Riparian governments consider the scope for concessional rates on export power trade, or arrangements at the utility level (power trade agreements) to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.

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<th>Scoring Scale</th>
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</tr>
<tr>
<td>Potentially adds value</td>
<td>Does add some value</td>
<td>Adds a lot of value</td>
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Max possible score

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## Generic TB Type 4: Increase benefits 'beyond the rivers'

### Preference Dimension

Qualitative indication of the relative preference to include particular options in the BSM Policy mix - among selected stakeholder interests.

<table>
<thead>
<tr>
<th>Qualitative Sub-Criteria For Stakeholder Preference</th>
<th>National Level Government Line Agencies (non representative sample)</th>
<th>Provincial Level Government (non representative sample)</th>
<th>River Basin Organization</th>
<th>Civil Society (non representative sample)</th>
<th>Hydropower Developers / Operators (non representative sample)</th>
<th>Criteria Weight Sum Check</th>
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<tbody>
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<tr>
<td>Column &gt;</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>4-1 No explicit provision for this form of benefit sharing on transboundary dimensions of tributary hydropower is needed in the current situation.</td>
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<td>0.5</td>
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<td>4-2 Riparian governments explore the scope to enhance cooperation in trade of goods and services to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
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<td>2.5</td>
<td>2.0</td>
<td>3.0</td>
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<td>2.5</td>
</tr>
<tr>
<td>4-3 Riparian governments consider the scope for direct or indirect industrial offsets and counter trade to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.</td>
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<td>4-4 Riparian governments consider the scope for cooperation on strategic infrastructure agreements, (e.g., agreements on transport integration such as for road, rail, air or water transport facilities).</td>
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<td>3.0</td>
<td>0.5</td>
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Riparian governments consider the scope for concessional rates on export power trade, or arrangements at the utility level (power trade agreements) to help overcome negotiation hurdles on valuing and sharing benefits and costs of hydropower on shared tributaries.

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Max possible score: 3 3 3 3 3 3

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<td>3</td>
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</tbody>
</table>

Not relevant and not preferred or needed
Likely Relevant
Moderately Relevant
Definitely Relevant and preferred
Annex 4: Applicable Laws-Draft Decree and Policies

Annex 4.1: Sub-Decree On The Determination Of Maximum License Fee For Electric Power Service Providers In The Kingdom Of Cambodia

- See the Constitution of the Kingdom of Cambodia;
- See the Royal KRET No. NS/RKT/1198/72 of November 30, 1998 on the Appointment of the Royal Government;
- See the Royal KRAM No. 02/NS/94 of July 20, 1994 promulgating the law for establishment of the Council of Minister;
- See the Royal KRAM No.NS/RKM/0201/03 dated February 02, 2001 promulgating the Electricity Law of the Kingdom of Cambodia;
- Approval from Council of Ministers at the plenary session on December 07, 2001

Hereby Decided

Article 1:
This Sub-Decree determines the maximum license fee. Pursuant to this maximum rate, Electricity Authority of Cambodia shall determine license fee for each financial year to ensure the balance of revenue and expenditure on its operation. The applicants and licensees shall pay the license fees to EAC pursuant to the Authority’s determination.

Article 2:
An individual or legal person, who provides electric power service in the Kingdom of Cambodia, shall pay application fee at the time of applying for license to the Authority. License application fee is the amount which the applicant pays to the Authority to meet expenses on its operation including review, analysis, publicizing, consultation and licensing. The maximum license application fee is determined as follows:

1. For the application for favorable electric power services (Rural Electrification), application fee shall not exceed fifty thousands (50,000) riels per license
2. For the application for small size electric power services (less than 500 kW), application fee shall not exceed one hundred thousand (100,000) riels per license
3. For the application for medium size electric power services (from 500 kW to 3000 kW), application fee shall not exceed six hundred thousands (600,000) riels per license.
4. For the application for large size electric power services (over 3000 kW), application fee shall not exceed one million (1,000,000) riels per license.

This application fee shall be paid once, when the applicant applies for license. The Authority shall refund this fee to the applicant in case the Authority decides not to issue license to the applicant.
An individual or legal person, who is operating electric power service and has permission from the Ministry of Industry, Mines and Energy or any government agency, prior to the commencement of operation by EAC, can apply for license from the Authority without payment of license application fee.

**Article 3:**

An individual or legal person, who is given the license by the Electricity Authority of Cambodia to provide electric power service in the Kingdom of Cambodia, shall pay a fee to the Authority at the rate determined by the Authority for each financial year. This fee is called License Fee. License Fee is the amount which licensee shall pay monthly to the Authority for meeting its expenses of its operation. Maximum license fee for each type of service is as follows:

1. Generation or power purchasing from other countries: license fee shall not exceed 1.70 riels per kWh of generated or purchased power.
2. Transmission: license fee shall not exceed 0.70 riels per kWh of transmitted power.
3. Distribution and Sale: license fee shall not exceed 1.20 riels per kWh of sold power.
4. Retailing: license fee shall not exceed 0.50 riels per kWh of sold power.
5. Other services set forth in Article 29 of Electricity Law of the Kingdom Cambodia: License fees shall not exceed 0.1% of the service fee.

The Electricity Authority of Cambodia shall determine the license fees for each financial year and their method of calculation in the Annual Budget which shall be submitted to the Royal Government for review and approval.

**Article 4:**

Minister in charge of Office of Council of Ministers, Minister of Economy and Finance,

Minister of Industry, Mines and Energy, Chairman of Electricity Authority of Cambodia,

Minister, Secretary of State, all Ministries and Government Institutions and all provincial city governors have duty to enforce this Sub-Decree from the date of signing.
Annex 4. 2: Example 1: Rural Electrification Fund Of The Kingdom Of Cambodia – As An Example Of A Comprehensive Approach To Ntl Type 3 Measures

Extract of the report on the Fund for 2010 compiled by Rural Electrification Fund and adopted by Board of Rural Electrification Fund in Meeting No. 23 dated June 13, 2011. The important point is measures in the RE Fund correspond to BSM Type 3 measures noted in the main Paper and can be targeted to hydropower project areas or implemented in part using Type 1 revenue sharing money.

http://www.ref.gov.kh/

Preface

Report on Rural Electrification Fund (REF) issued in 2011 is the report compiled from the data and information related to the activities of REF up to the end of 2010. This report is aimed for dissemination to the Royal Government of Cambodia, donors, investors and public desirous to know about the activities of REF in the Kingdom of Cambodia. This report is complied, in Khmer and English, base on implementation activities of REF during 2010. REF plans to publish the Report annually on the achievements of Rural Electrification Fund of the Kingdom of Cambodia so that the data and relevant information on Activities of REF is updated regularly to reflect the actual situation. Any comments or suggestions from Royal Government of Cambodia, donors, investors or public are welcome and will be considered by REF to publish more useful reports in future. REF expects that this report will be a valuable document for the information on activities of REF in the Kingdom of Cambodia.

Minister of the Ministry of Industry, Mines and Energy and Chairman of the Rural Electrification Fund Board
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Information on the Royal Government of Cambodia’s Rural Electrification Policies and Strategies</th>
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<td>1.1</td>
<td>Rural Electrification Policies and Strategies</td>
<td>4</td>
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<tr>
<td>1.2</td>
<td>Policy on Renewable Energy</td>
<td>4</td>
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<td>Chapter</td>
<td>Information on Rural Electrification Fund of the Kingdom of Cambodia</td>
<td>6</td>
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<td>Framework of Rural Electrification Fund</td>
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<td>2.2</td>
<td>Organisation of Rural Electrification Fund</td>
<td>6</td>
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<td>2.3</td>
<td>The Budget of RERF</td>
<td>8</td>
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<td>2.3.1</td>
<td>The Sources of Fund</td>
<td>8</td>
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<td>2.3.2</td>
<td>Financial Statement of RERF</td>
<td>8</td>
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<td>2.4</td>
<td>RERF Board Activities</td>
<td>8</td>
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<td>Chapter</td>
<td>Information on Mission of Rural Electrification Fund and Objectives of Project Implementation</td>
<td>10</td>
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<td>Mission of the Rural Electrification Fund</td>
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<td>Objectives of the Project Implementation and Grant Program of RERF</td>
<td>10</td>
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<td>3.3</td>
<td>Eligibility for Grant from RERF</td>
<td>11</td>
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<td>Eligibility for Implementation of Power to the Poor Program</td>
<td>12</td>
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Annex 1: Information on subprojects for providing new connection during 2010

Annex 2: Project results and outputs

Table 1 Information on new connections to HH project during 2010

Table 2 Information on new connections to HH project from April 2007 to December 31, 2010

Table 3 Province wise Information on subprojects for providing New Connections during 2010

Table 4 Locations and number of SHS to be installed is as per the registration already done
1.1 Rural Electrification Policies and Strategies

The Royal Government of Cambodia (RGC) in its pursuit to reduce poverty, improve the standard of living and foster economic development of the rural areas takes cognizance of the need to meet the basic infrastructure requirements of its marginalized rural people. Creating access to reliable electricity services in rural areas, at an affordable cost to the national communities, is thus an integral part of the governmental agenda of economic development and social uplift.

As a reflection of this commitment and in the framework to accelerate development of rural electrification in the Kingdom of Cambodia, the RGC, through the Ministry of Industry, mines and Energy (MIME), which is the expertise ministry, has set a two-step target in rural electrification:

(i) by the year 2020, all the villages of the Kingdom of Cambodia will have electricity of some type; and
(ii) by the year 2030, at least 70% of households will have access to grid quality electricity.

The strategy relies on Electricity du Cambodge (EdC) to undertake the expansion of the national grid into rural areas, while private entrepreneurs invest in rural distribution and electricity supply.

2.1 Formation of Rural Electrification Fund

In order to achieve these targets and to accelerate development of electric power in rural areas of the Kingdom of Cambodia, on December 4, 2004, the RGC issued the Royal Decree on the establishment of the Rural Electrification Fund of the Kingdom of Cambodia. Its objectives being to promote equitable rural electrification coverage by facilitating the population’s access to electricity at affordable price for economic, social and households uses, thus contributing to poverty reduction; and to promote and encourage the private sector to participate in providing sustainable rural electrification services, in particular for the exploitation of the economic application of well proven, technically and commercially, new and renewable energy technologies (RET). Finally, the Royal Decree stated that the mandate of REF shall last until REF achieves the set goals under the government policy on rural electrification. This is a big step of the RGC to attract and encourage the private sector to invest in providing electric power in rural areas for assistance to accelerate the development of electricity in rural areas so that more poor people in the rural areas can access electricity for lighting, commercial, handicraft and other purposes for improving their standard of living and for the general interest of the society.

In preparation of the REF management framework, the Royal Decree has established an institution namely “Rural Electrification Fund” and defined this institution as a public institution with an administrative, managerial, technical and financial autonomy under the laws of the Kingdom of Cambodia. The Royal Decree stated that REF is managed by the REF Board consisting of 12 REF Board members from ministries, institutions and stakeholders.

3.1 Mission of the Rural Electrification Fund

The Government has established the REF as a public institution with administrative, managerial, technical and financial autonomy under the laws of the Kingdom of Cambodia. The objectives for which the REF is established are to promote equitable rural electrification coverage by facilitating the population’s access to electricity at affordable price for economic, social and household uses. In its
support of investment projects, the REF will in particular promote the exploitation of the economic potential for the application of well proven, technically and commercially, of new and renewable energy technologies in rural areas. According to the Royal Decree establishing the REF, its mandate will last until it achieves the goals set on government’s policy on rural electrification.

The REF will use its resources to finance or to provide grant for the implementation of projects consistent with its objectives such as:

a. Providing general support activities for the preparation and implementation of rural electrification projects in Cambodia such as promotion campaigns, gathering of information on rural investment opportunities and costs, and promotion of productive uses of electricity;
b. Providing private sector and local community output-based investments in rural electrification projects; and,
c. Promoting the commercialization of well proven, technically and commercially, of new and renewable energy technologies.

3.2 Eligibility for Grant for New Connection from REF

The eligibility for grant for new connection from REF is as follows:

1. New HH connection supplying electricity from (a) - Own Diesel Generation, (b) - Own renewable energy source, (c) - Purchase electricity from EDC or another distribution licensee or generation licensee and (d) – Purchase electricity from neighboring country;
2. New HH connection by an existing licensee, existing REE issued with a new license or a new REE with a new license;
3. New HH connection from the existing network or from the extension made from existing network;
4. In case of an REE installing renewable energy generation and giving new HH connection, the REF recommends that the REE can receive grant for both actions i.e. Renewable Energy Generation and New HH Connection and required REFS to consult WB in advance. In case WB does not agree to the proposal, the REE can receive grant for only any one action i.e. Renewable Energy Generation or New HH Connection as requested by REE, and not for both;
5. The REE must have a valid license issued by EAC for a term at least 5 years;
6. Renewable generation consisting of mini hydropower plant with the installed capacity within the range of 0.75 – 1 MW and micro hydropower plant with the average installed capacity of 50kW can receive grant based on installed capacity.

3.3 Objectives of the Project Implementation and Grant Program of REF

To accelerate the provision of new HH connections to more HH in rural areas, development of micro hydro & mini hydropower and other renewable energy power plant, and to facilitate use of solar energy REF, on November 15, 2004, both the World Bank and Royal Government of Cambodia (RGC) signed two agreements: Developmental Credit Agreement (DCA) and Global Environmental Facility Trust Fund (GEF). The purposes of the Agreements are as follows:
1. Provide grant assistance of US$45 per new household connection to Rural Electricity Enterprises (REE) for 50,000 new HH connections in rural areas;
2. Provide grant assistance of US$100 per Solar Home System (SHS) with minimum capacity of 40Wp) for 12,000 new rural households;
3. Provide grant assistance of US$400 per kW for development of micro hydro & mini hydro, and grant assistance of US$300 per kW for other renewable energy power plant.

The above program has been restructured to the program as follows:

1. Provide grant assistance of US$45 per new household connection to Rural Electricity Enterprises (REEs) for 50,000 new HH connections in rural areas;
2. Installation of Solar Home Systems (SHS) for 12,000 new rural households;
3. Completion of detailed feasibility study of 5 mini/micro hydro projects with total installed capacity of 6,850 kW to facilitate project financing by REEs and construction of one mini/micro hydro project with installed capacity of 1,200kW.

Considering the progress and difficulties in the implementation of the above program, RGC and the World Bank agreed in principle to cancel construction of one mini/micro hydro project by REF and requested to allocate the budget for this construction to implement “Power to the Poor” program. This program is to provide interest free loan to rural households to meet expenses for connection, deposit, wires from meter to house, and in-house wiring fees. Meanwhile, this program will assist REEs to increase the customers and improve revenue as well as to increase electricity access to the rural poor HHs.

### 3.4 Eligibility for Implementation of Power to the Poor Program

Based on the inputs from the seminar on December 5, 2010, eligibility criteria for REEs and rural HH decided by REFB in its meeting No. 21 dated December 20, 2010 are as follows:

#### 3.4.1 Eligibility Criteria for REEs

Eligibility criteria for REEs are as follows:

- Having license for providing electric power from EAC and license term is at least 5 years;
- Areas electrified and covered by MV networks;
- Maintaining correct accounting statement to show the viability of their operation;
- Having complaints handling and resolution mechanism from rural HH consumers;
- Priority of implementation will depend on the lower level of tariff charged to rural households
- Having business plan;
- Responsible to collect the P2P payment back to REF on time;
- Transfer fees for transferring the P2P payment back to REF is born by REF;
- Responsible to any losses caused by non-payment by rural HH except if accepted by REF to eliminate the debt;
- Make P2P payment back to REF every quarter;
- Having agreement with REF.
3.4.2 Eligibility criteria for rural HHs

Eligibility Criteria for rural HHs are as follows:

- Living in the existing electrified areas;
- Household not connected to the grid in these location;
- Have a stable house for safety of electrification;
- All female -headed households;
- Households with disabled members;
- Ability to pay every month;
- The maximum installment period can be 3 years and shall be implemented in general meaning those if 3 years; it shall be 3 years all.

Further information on implementation aspects of the Rural Electification Fund are available from the reports from the fund at.


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This is the key document developed by ERAV under ADB TAs (2007-2010) with an Inter-Ministerial Steering Committee and endorsed in national stakeholder workshops. The provisions were pilot tested by ERAV in cooperation with Quang Nam Province in 2010 on the 210 MW A’Vuong Project. The draft is provisional and is not under active approval at present for reasons discussed in the Knowledge Base on BSM Chapter 2. However, the draft offers a good model for discussion.

On establishing long-term benefit sharing arrangements with local communities adversely affected by hydropower projects

Chapter 1: General Provisions

Article 1: Scope of the regulation

1. This Decree provides for equitable sharing of benefits arising from sustainable development of the nation’s renewable energy hydropower resources.
2. The Decree establishes a long-term revenue sharing arrangement between the main consumers of electricity services in towns, cities and industry and the local communities hosting hydropower projects who are adversely affected by the project in their locality.
3. The Decree regulates:
   (i) Financing mechanisms for revenue sharing on hydropower projects;
   (ii) Policies to target people adversely affected by hydropower projects within existing rural electrification budgets and programs;
   (iii) Policies to grant entitlements to enhance local access natural resources to offset the permanent transformation, loss or reduction of resource access in project impact areas of hydropower projects, and
   (iv) Procedures to introduce benefit-sharing mechanisms systematically in the project cycle of hydropower projects, starting with the up-front strategic and project planning stages.
4. For hydropower projects supported by official development assistance (ODA), if the benefit sharing requests of donors are different from provisions of this Decree, agencies managing the investment projects must report to the Prime Minister for consideration and decision before concluding the international agreement.

Article 2: Subject of application

1. All existing and new hydropower projects including large multi-purpose dams with a hydropower component and any grid-connected hydropower project with a legal requirement for an environment impact assessment (EIA).
2. ERAV shall promulgate separate regulations for hydropower projects above 30 MW installed capacity that are not grid-connected.

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78 Multipurpose dams may include all dams that conform to the definition of a large dam provided by the International Commission on Large Dams (ICOLD). This essentially means dams over 15 m in height.
Article 3: Definition of key terms

1. For purposes of this Decree, terms cited below shall have the following meanings.

i. **Sustainable hydropower** means development and management of hydropower to meet needs of the present generation of people without compromising the ability of future generations to meet their own needs, on the basis of a close and harmonized combination of economic growth, assurance of social advancement and environmental protection.\(^{79}\)

ii. **Adversely affected communities (or people)** mean local communities and people adversely impacted by hydropower projects to varying degrees.

iii. **Project impact area** means the geographic extent of the impact area of a hydropower project defined in the EIA for analysis and prediction of potential adverse environment and social impacts, or in an ex-post EIA undertaken on an existing project.\(^{80}\) The geographic extent of the project impact area encompasses:

1. Communes that border upstream stretches of the main river above the reservoir;
2. Communes that border of the reservoir and live in the immediate watershed of the reservoir;
3. Communes where the main project facilities are located, including the dam powerhouse, switchyard and staff housing and office facilities;
4. The resettlement community including the host community;
5. Communes bordering the river downstream of the dam in the dewatered section between the dam and powerhouse;
6. Communes immediately downstream of the powerhouse.

iv. **Adverse impacts** means the permanent loss, reduction or transformation of resource access, ecosystem services, cultural or recreational values, or other means of livelihood and health, as well as permanent loss of land or property.

v. **Eligible parties** means people, households, community-based organizations, mass organizations and local family-scale enterprises and other such legal entities deemed eligible to apply for revenue sharing grants.\(^{81}\)

vi. **Adverse downstream impacts** means impacts on downstream ecosystem services due to river flow change and regulation, which adversely affect the welfare or livelihoods of traditional water users and people living downstream of the dam and powerhouse.\(^{82}\)

vii. **Adverse upstream impacts** means adverse impacts on ecosystem services such as fisheries that people living on the main river stem, or tributaries upstream of the reservoir relied upon for livelihood needs before the project;

viii. **Ecosystem services** means services derived from healthy natural systems like forests, wetlands and river ecosystems systems that benefit human welfare, infrastructure, culture, health, livelihood support particularly in rural areas of the country and biodiversity.\(^{83}\)

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\(^{79}\) Definition from Article 3 of the Law on Environmental Protection 52/2005/QH11, 2005

\(^{80}\) Like EIA standards recommended by Viet Nam’s National Environment Agency where the identification of a project impact area is specified as part of the prediction and mitigation of adverse impacts. An ex-post EIA is one conducted after the project commences operation.

\(^{81}\) People living or working in the project impact areas who “host” the hydropower project.

\(^{82}\) In pre-project conditions, people may have engaged in activities like fishing, recession agriculture, floodplain grazing and foraging.

\(^{83}\) Ecosystem services broadly fall into five categories (i) provisioning, such as the production of food, fish, fiber and water (ii) regulating, such as the control of disease vectors, waste decomposition and detoxification and maintaining hydrological functions of ecosystems (iii) supporting, such as nutrient dispersal and cycling for
ix. **Payments for ecosystem services** means payments to people or groups to take actions to protect, maintain or improve ecosystem functions and services. In the context of hydropower, this includes payments or incentives for tree planting and land management in the immediate catchment to reduce soil erosion and reservoir sedimentation rates.

x. **Immediate catchment** means the draw down zone of the reservoir and area around the reservoir perimeter where control of soil erosion can prevent long-term degradation of the generation capacity of hydropower projects.

xi. **Environmental degradation** means degradation in the quality and quantity of environmental components that cause adverse impacts on human beings and living organisms.

xii. **Social accountability** means the duty to provide an account or reckoning of actions one is held responsible for, and in this context, an open and transparent process that directly involves beneficiaries in verifying the fairness and effective use of.

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**Chapter 2:**

**Objectives and Principles of Benefit Sharing**

**Article 4:** **Objectives of benefit sharing**

General objectives are:

i. To advance sustainable forms of hydropower development and management.

ii. To provide stable, long-term mechanisms to maximize the socio-economic contribution of hydropower for the benefit of all citizens in-line with State electricity development policy.

iii. To reinforce national efforts to close the income gap between urban and rural populations in a period of accelerated growth and modernization and boost local development in minority areas and areas of difficult or extremely difficult socio-economic conditions where many hydropower projects are located; 84

iv. To support implementation of relevant domestic law and international commitments to advance sustainable land and water resource management practices where the management of hydropower projects is an important consideration;

v. To ensure the protection of State interests and the rights and benefits of relevant organizations and individuals and the ecological environment in rural areas.

vi. To promote equitable electricity access to people living in remote and remote areas affected by hydropower development, including a large portion of ethnic peoples.

vii. To enhance entitlements for natural resource access and ensure local communities have financial support to take advantage of local development and entrepreneurial opportunities that hydropower projects offer.

**Article 5:** **General principles of benefit sharing**

1. Benefit sharing mechanisms on hydropower projects shall be based on the following principles:

i. Ensuring that people who permanently give up land or natural resource access for investments in hydropower are first among the beneficiaries of hydropower projects;

ii. Ensuring that communities which host hydropower projects in their locality become long-term partners in sustainable management of hydropower assets;

iii. Ensuring that communities receive financial incentive for helping to maintain revenue flows from hydropower assets over the long-term;

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84 Areas where many existing hydropower projects are located and potential new sites are located.
iv. Ensuring that financing mechanisms for payment of ecological services of benefit to affected communities are available, including local actions which contribute to sustainable management of catchments and headwater forests;

v. Ensuring that investments supported by revenue-sharing funds raise income levels of adversely affected communities to at least average provincial levels, and thereafter meet evolving local development, cultural and welfare needs of communities hosting the project;\(^85\)

vi. Ensuring that investments made with revenue sharing funds reflect beneficiary preferences and are awarded on a grant-application basis using a bottom-up process;

vii. Ensuring that preparations for long-term benefit sharing start in early stages of planning and project design to help ensure (i) least-cost approaches to benefit sharing, and (ii) identify opportunities to build-in physical flexibility to re-balance operating for future priorities;\(^86\)

viii. Ensuring that clear policies are considered to enhance local community access to natural resources that has been lost, reduced or transformed by hydropower projects;

ix. Ensuring that any revenue sharing funds are additional to normal government development allocations for commune development and not replacement funds.

x. Ensuring that mechanisms for revenue sharing are consistent with competitive power markets and electricity tariff reforms embodied in the Electricity laws.

xi. Ensuring benefit sharing on hydropower projects is placed in a river basin planning and management context, especially in basins that have multiple hydropower projects and appropriately involving river basin organizations.

2. Benefit sharing mechanisms and the local development activities they support shall be complement local socio-economic development plans for the project impact area.

3. Poverty reduction targets shall be reflected in benefit sharing arrangements including the evaluation of their development effectiveness.

**Article 6: Complementary forms of benefit sharing encouraged on hydropower projects**

1. To provide a comprehensive approach to sustainable hydropower development, three complementary forms of benefit sharing shall be pursued; namely: \(^87\)

   i. **Equitably sharing of electricity services:** where communities adversely affected by hydropower projects can be counted among the first to receive the benefits of electricity services from the time of first commercial operation of the project, or otherwise benefit from improved reliability of electricity services, subject to local preference and safety limitations.

   ii. **Entitlements to enhance resource access:** where communities adversely affected by hydropower projects can receive entitlements to enhance their access to natural resources (i) to offset the permanent loss or reduction of resource access or livelihood income from before the project, and (ii) to pursue new local development and income opportunities that are created by the project and associated investments.

\(^85\) Or a poverty reduction target established by Provincial People's Committees in conjunction with national bodies like the Ethnic Minorities Committee and the affected communities.

\(^86\) This refers to, for example, incorporating bottom flow outlets in dams to provide flexibility to operate with a wider range of downstream release patterns. This will enable regulators to accommodate findings of scientific environmental flow assessments and establish consensus on re-balancing economic, environment and social factors. International experience shows that flexibility the in operating strategy for the reservoir is important as conditions and development priorities within the basin evolve –given the long economic life of hydropower assets. As discussed in the policy review, this can also include consideration of other steps like installing fish-friendly turbines to reduce fish mortality. This cost additional money up-front, but can have returns in terms of the increased value of fish catch and biodiversity conservation.

\(^87\) Potentially include reference to the state Constitution that provides the use of market-based mechanisms to develop and manage natural resources, where revenue sharing is a market mechanism.
iii. **Revenue sharing:** where communities living in the project impact area that permanently host the project are entitled to a share of the direct monetary benefits of hydropower generation, according to a formula and approach defined in regulations.

2. These three mutually reinforcing forms of benefit sharing shall be a basis for optimizing the contribution of hydropower investment to poverty reduction and the long-term local development aspirations of communities that host hydropower projects for the benefit of the country.

**Article 7: Benefit Sharing Councils**

1. Provincial Peoples’ Committees shall appoint benefit sharing Councils to provide oversight and direction for the implementation of benefit sharing mechanisms and delivery of benefits.

2. Provincial Peoples’ Committees have flexibility to establish benefit sharing Councils at the provincial, basin or project level. Such decisions will be made on a practical basis considering the number and scale of hydropower projects in the Province, or river basin. In cases where Councils are established at the Provincial or river basin levels (i) arrangements will be made for local representation to discuss matters concerning specific projects consistent with provisions in item 4, and (ii) separate accounts shall be maintained for revenue sharing Funds for each project.

3. Primary duties of the Benefit sharing Council shall include but not be limited to:

   /1. Directing the preparation and periodic update the project-specific fund Charters covering all three forms of benefit sharing.

   /2. Advising People's Committees and Ministries on introduction of benefit sharing mechanisms and delivery of benefits as set out in this Decree.

   /3. Directing Fund Management Boards, coordinating provincial Departments and other entities involved in implementing benefit sharing mechanisms and measures;

   /4. Creating conditions for transparency and social accountability in all aspects of fund operation and for target beneficiaries to have full confidence in the process.

4. Benefit sharing Councils shall have a People’s Committee leader as its chairman and representative members of local communities, provincial departments, the Project Management Board of the hydropower entity, and the concerned river basin organization as well as other members noted in the Circular supporting implementation of this Decree.

5. ERAV and MoNRE representatives will be appointed to benefit sharing Councils of hydropower projects on inter-provincial rivers and other projects as they deem appropriate.

**Article 8: Project-specific Fund Charters**

Basing themselves on local realities, benefit sharing Councils shall direct and supervise preparation of a fund Charter for each hydropower project. Each fund Charter shall be:

i. Prepared using a consultation process involving beneficiary communities.

ii. Concisely set out the principles and operation practices of the fund for revenue sharing (with reference to Chapter 5)

iii. Concisely set out the principles electricity and resources access for communities living in the project impact area (with reference to Chapters 3 and 4 of this Decree).

a. Identify the budget allocations for different categories of support for eligible parties in beneficiary communes (or parts of communes) on an annual basis;
iv. Set out criteria for identification of eligible parties within communes, the use of benefit sharing funds and process for delivery of benefits.

v. Specify terms and conditions including length of service for individual positions on the benefit sharing Council, and

vi. Other provisions identified in the Circular supporting implementation of this Decree, or decided in consultation with beneficiary communities.

Chapter 3:

Equitable sharing of electricity access and services

Article 9: Costs of electrification of resettlement communities

Capital budgets for all public and private sector hydropower projects shall include: 88, 89

/1. Electrification of all resettled households in areas officially designated for project resettlement, and

/2. Connection, refurbishment and strengthening of existing electrical supply in the resettlement host community, based on threshold guidelines issued by ERAV. 90

Article 10: Priority in electricity service and access for communities living in the project impact area

1. Due priority will be given to extend electricity supply lines or improve the reliability of existing supply to communities in the project impact area, within the existing provincial and national programs for rural electrification, provided that:

   /1. The average poverty rate in the project impact area is below the average provincial poverty rate;

   /2. Communities indicate a preference for electrification support.

2. The following order of priority will be used to extend electricity supply or improve electricity services in the project impact area:

   /1. Households in the resettlement host community;

   /2. Communities living along the perimeter of the newly created reservoir;

   /3. Communities living along the main stem of the river and tributaries in the upstream and downstream project impact areas;

   /4. The remaining areas of the project impact area.

Article 11: Off-grid supply in areas uneconomical to connect to the grid

1. Assessments shall be made of the potential and indicative cost of providing households with electricity supply from small-scale renewable energy sources and on-spot sources for low-density, remote or scattered village areas that are not economical to connect to the power grid.

88 Consistent with Article 60 of the Electricity Law to facilitate people living in rural, ethnic minority areas, and areas with quite difficult socio-economic conditions to use electricity for their daily activities and production

89 At present EVN has a policy to electrify resettled households, as shown in the rapid appraisals. This stipulation is provided to ensure IPPs adopt the same practices in the competitive generation market.

90 The intention is to electrify also the resettlement host community. This may be practical when the host community is small. In situations where the host community is larger, provision needs to be made to cover these costs not from the project budget but by targeting rural electrification program budgets. ERAV needs to specify thresholds.
2. Additional measures to boost investment in off-grid supply consistent with the Electricity Law will be considered for these areas, including:

/1. Targeting within provincial or national rural electrification programs for off-grid supply;
/2. Promotion of investment in off-grid supply in discussions with donors about cooperation and support for new and renewable energy off-grid supply;
/3. Investment capital, loan interest and preferential tax support for individuals and organizations seeking to invest in alternative electrical supply in these locales;

**Article 12: Additional measures to enhance electricity access for the poorest households**

1. Revenue-sharing grants as identified in Chapter 5 of this Decree to consider for the poorest households living in the project impact area include:

   /1. One-time support for wiring connection and other accessories costs;
   /2. Support for power safety awareness training and in the efficient use of electricity;
   /3. One-time support for purchase of energy efficient lighting devices to help reduce electricity bills.
   /4. Cost-sharing of electricity use for a transitional period of up to five years.

2. Such support shall be subject to local preferences. Criteria and cut-off levels for support to the poorest households will be provided in the Fund Charter.

**Chapter 4:**

Entitlements to restore and enhance natural resource access and livelihood opportunity

**Article 13: Types of measures for enhancing natural resource access**

Measures for enhancing natural resource access in the project impact area shall include but not be limited to extending entitlements, permissions or rights as necessary to:

/1. intensify or extend agro-forestry and animal husbandry;
/2. improve forest access for gathering forest products and community managed forestry;
/3. facilitate arrangement between local communities and State Forest Enterprises for sustainable harvesting of timber products, as embodied in forest laws; 91
/4. establish reservoir fisheries programs and activities such as for patrolling, stocking, subject to approval of hydropower enterprises with land rights, and market access
/5. Establish aquaculture activities in areas where fish catch in the river is permanently lost or reduce, subject to approval of hydropower enterprises with land rights in the reservoir perimeter.

**Article 14: Types of measures for enhancing resource based livelihood opportunity**

Measures for enhancing livelihood opportunity in the project impact area shall include but not be limited to extending entitlements, permissions or rights as necessary to:

/1. extend vocational training for job changes for income generation and income diversification;

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91 For example PMO Decision 187 (1999), On Renovation of the Organization and Management System of State Forest Enterprises, Article 3 calling for entitlements and measures to “…ensure a harmonious benefit-sharing relationship between labourers, the State and the State Forest Enterprises (SFEs) on one hand, and on the other, between SFEs and localities”
/2. start-up of local enterprises and businesses based on ecotourism and other opportunities created with the formation of reservoir and new wetland areas;
/3. enable ecosystem services that benefit sustainable hydropower and livelihoods; and
/4. Encourage, facilitate and support other local activities that materially assist affected communities to improve their health, culture, and quality of life and restore and enhance livelihoods.
/5. Link with resource access provisions noted in Article 13.

**Article 15: Local preferences for additional entitlements**

1. Local preference for extending additional entitlements, permissions or rights shall be explored in discussions with local communities:
   1./ During the project Environment Impact Assessment (EIA) and resettlement and compensation processes for new projects
   2./ During the preparation of the fund Charter for existing projects.

2. Special attention shall be given to ensure women and youth actively participate in training activities and decisions regarding local resource access and livelihoods.

**Chapter 5:**

**Revenue sharing**

**Section 1: Project-specific revenue sharing Funds**

**Article 16: Expenditure categories of revenue sharing funds**

1. Local development measures supported by revenue sharing funds for hydropower projects shall include, but not be limited to:

   /1. Grant contributions as incremental funding for local development assistance programs delivered through provincial or national target programs. 92

   /2. Grant contributions to community-based activities funded in part by a contribution in kind from local communities. 93

   /3. Grant contributions to operate small loan and micro-credit facilities including those of a revolving nature. 94

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92 Such as:
   a. Construction of infrastructure at village and commune levels (e.g. local roads, clinics, schools, irrigation systems, water supply and sanitation systems and market areas);
   b. Construction of infrastructure at commune levels;
   c. Provision of agricultural / forestry / fisheries extension services;
   d. Support for headwater forest management with community forestry methods; and
   e. Training of commune cadres in local development activities or service provision.

93 Such as:
   a. Other national or provincial programs that require local contribution of labor;
   b. Youth and women’s programs;
   c. Local community and local cultural centers;
   d. Local development initiatives of mass organizations;
   e. Cultural activities at the community level.
/4. Grant contributions to investment in expanding connection to electrical services as noted in Article 12. Support to advance the use of isolated on-spot electrical generation in areas where it is uneconomical for grid-connected supply.

/5. Grant contributions to other investments for local socio-economic and cultural advancement of common interest to beneficiaries, such as activities to establish and operate a community newsletter to keep beneficiaries informed and enable the exchange views on effective use and monitoring of benefit sharing funds.

2. All investments supported by revenue sharing shall complement local socio-economic development plans, cultural development plans, and land use plans already approved by competent authorities.

Article 17: Amount of remittance into revenue sharing funds

1. A fixed percentage of gross annual revenue generated by hydropower projects shall be remitted to a central reserve account administered by ERAV. Remittances from the central reserve account will be paid directly into the Provincially-based project revenue sharing Funds on an annual basis, or a schedule specified in supplemental regulation.

2. The amount of remittances related to specific projects shall be based on the previous years equivalent gross generation (kWh) from the project, according to the following formula:

<table>
<thead>
<tr>
<th>Hydropower plant annual output</th>
<th>X</th>
<th>Unit price</th>
<th>X</th>
<th>Fixed Percentage Rate</th>
<th>= Annual contribution to the revenue-sharing fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross (KWh)</td>
<td></td>
<td>(VND/KWh)</td>
<td></td>
<td>(%)</td>
<td></td>
</tr>
<tr>
<td>In the previous year metered at the point of connection to the grid</td>
<td>Reflecting tariff structures recommended by ERAV</td>
<td>(2 percent is recommended based on developing country practice)</td>
<td>Transferred to the fund as part of market settlement process in the competitive market</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where:

94 This included for example micro-credit schemes, loan programs, entrepreneur schemes to diversify local income generation. The grant to support credit facilities can be provided to a community-based organization of mass organization such as the local farmers Union or women's Union to run the credit program. The revolving funds are typically more complex to manage than simple grant awards, but are common in many developing countries. They can be managed with appropriate transparency and social accountability provisions.

95 Further discussions will be held with ERAV on remittance best suited to the competitive power market rules that come into the effect in 2010-2011. Two main options are:

Option 1: the Market Operator authorizes/instruct the single buyer to make payment directly into the project specific revenue sharing fund or central reserve account when market transactions are settled.

Option 2: Payments are imbedded in the power purchase agreements (PPA) and the single buyer advances the funds to hydropower entity, which then remits the money to the revenue-sharing fund.

There a variations. Mostly the transaction needs to ensure revenue sharing is captured in the bulk tariff.
i. KWh metered at the point of connection of the project to the main power grid shall be verified by the market operator in the competitive generation market;

ii. The unit price shall be established by the Prime Minister or MOITT based on the calculation of ERAW; 

iii. The fixed percentage rate shall be 2%.

Article 18: Establishment of the central reserve account (CRA) in ERAW

1. The Electricity Regulatory Authority (ERAV) shall establish a central reserve account to assist the smooth startup and operation of revenue-sharing funds on new and existing hydropower projects. The account shall be established with a Charter that specifies the CRA functions, operations and transparency measures.

2. The functions of the CRA shall include, but not be limited to:

   /1. For new hydropower projects - providing startup funds to enable Provinces to put revenue sharing arrangements in place in the first year the new hydropower projects operates, before remittances from the project are regularized according to Article 17;
   /2. For existing hydropower projects - providing startup funds to enable the Province to put revenue sharing arrangements in place on existing hydropower projects, before remittances from the project are regularized according to Article 17;
   /3. Thereafter, facilitating transfer of revenue into the project-specific revenue sharing funds maintained by Provinces in accordance with this Decree;

3. Management and administration costs for the CRA shall be according to regulations of MOF.

4. Startup funds under items /1. and /2. above will be recovered from future remittances from the project. MOIT and ERAW shall have joint responsibility to ensure the means of payment into the CRA by power sector entities and payment from the CRA to the provincially-based revenue sharing funds are consistent with power market rules and applicable law.

Article 19: Establishment of revenue sharing funds (RSF)

Provincial-level Peoples’ Committees shall have the responsibility to establish project-specific revenue-sharing funds (i) on new hydropower projects by the time of official commissioning of the project, and (ii) on existing hydropower projects that are already commissioned within three months of the effectiveness of this Decree.

Section 2: Management of project-specific Revenue Sharing Funds

96 The combined effects of the financial obligations of hydropower projects for benefit sharing, environment protection, and water resource protection on electricity tariffs is a consideration. Based on experience the combined impact should perhaps be no more than 10 percent of the bulk generation rate.

97 The central reserve fund can be managed by the electricity regulator, and used for purposes consistent with the smooth introduction of revenue sharing initially when the competitive power market is introduced. Thereafter it may be maintained to deal with new projects only in a much scaled-down version.
Article 20: Administration of grants from the revenue sharing fund

1. Administration of grants from revenue sharing funds will be handled by the benefit sharing Council under the procedures set out in the fund Charter and relevant guidelines that may be issued by Provinces or the Ministry of Industry and Trade from time to time.

2. The fund administration and management approach shall reflect the following:
   /1. Grant awards will be made on the basis of applications submitted by eligible parties, up to the ceiling set for each grant category on an annual basis;
   /2. Sufficient notice will be given to eligible parties for preparation of grant applications.
   /3. Technical support will be extended to applicants requesting assistance in completing a grant application forms;
   /4. Evaluation of grants and the selection of the successful grant applications will be made on the basis of criteria set out in the Fund Charter;
   /5. Costs of audit and evaluation of individual grants will be built into each grant, where ever practical;
   /6. Transparency and social accountability will be a center feature of all transactions including the selection, evaluation and award of grants to avoid abuse of power or perception of misuse of funds.

3. All eligible parties shall have the right to submit proposals for grants using application forms and in the manner prescribed in the Fund Charter.

4. All disbursements from the fund to beneficiaries shall be grant based to ensure (i) a fair and efficient bottom-up process revenue-sharing (ii) activities supported by revenue sharing reflect beneficiary needs (iii) to help ensure community ownership of the fund and (iv) avoid creating a large institutional capacity for management of the fund. 98

5. Any disputes or appeals in the administration of funds will be handled in the manner prescribed by law and within the normal authority of the Provincial Peoples’ Committee.

Section 3: Principles for delivery of revenue sharing grants

Article 21: Delivery mechanisms

1. Grant recipients will directly implement grants. Other cases entities who may be involved in delivering benefits through grants include local civil society organizations (CSOs), mass organizations, government departments, agencies and funds and local enterprises, or other entities as deemed appropriate by the benefit sharing Council;

2. Mechanisms for delivery of benefits will be in accordance to preferences of the grant recipient, wherever possible.

Article 22: Projects on inter-provincial rivers or affecting more than one Province

98 This would mean, for example, if people want credit facilities then an appropriate mass organization like the farmers’ union or womens’ union would apply for the grant and administer the credit program. The same applies to payments for ecosystem services.
1. Where the project impact area falls entirely within the area of one Province, all the benefit sharing revenue generated by the project will be allocated for use in the impact area in that province.

2. If the geographic extent of the project impact area covers more than one province, the revenue sharing the project generates shall be allocated for use in the project impact areas of each province in proportion to the total number of people in the affected communes, and observing the calculations set out in the Circular guiding implementation of this Decree.

3. The Ministry of Industry and Trade shall advise the Prime Minister on behalf of government on any dispute arising between two or more provinces on the allocation of the revenue sharing funds, based on the recommendations of the Electricity Regulatory Authority of Viet Nam.

Chapter 6:

Procedures to introduce benefit-sharing at different stages of hydropower planning and management

Benefit sharing shall be systematically introduced into all stages of the project cycle for hydropower development and management.

Article 23: General Principles

1. Procedures shall be introduced by all agencies responsible for planning, design, and implementation of hydropower projects to ensure:

/1. The scope to offer a least cost-approach to benefit sharing over the economic life of the hydropower assets is explicitly considered in the project preparation;
/2. Adequate consideration is given to build-in physical measures that offer flexibility to optimize or rebalance operating strategies of the reservoir for different socio-economic criteria over the economic life of the project, with particular regard to water releases regimes for downstream environmental flow provision linked to livelihoods; 99
/3. Ensure that adversely affected communities are meaningfully engaged in identifying potential benefit sharing measures when the long-term plans for environmental and social mitigation measures for the project are submitted for approval by competent authorities;
/4. Ensure that timely budget allocations are made to target existing rural electrification funds to adversely affected people;
/5. Ensure opportunities to boost local development through enhancing resource access are adequately explored during project preparation and implementation stages.

Article 24: Procedures to adopt during strategic planning stages

1. Benefit sharing assessments shall be an integral part of strategic studies that form the basis for identification of hydropower projects by competent State authorities, including: 100

/1. hydropower sub-sector development strategies
/2. hydropower ranking studies for river basins
/3. Strategic Environmental Assessments (SEAs), and
/4. integrated river basin planning and management studies (IWRM)

99 These flow regimes impact on ecosystem services and dependent rural livelihoods.
100 SEAs are provided in the Law on Environment Protection
2. Strategic level studies that involve identification of new hydropower sites or improvements in the operation of existing hydropower projects shall include an assessment of the scope for benefit sharing, as relevant.\textsuperscript{101} Such assessments shall provide an indication of the potential contribution of benefit sharing toward:

\begin{enumerate}
  \item Socio-economic development and poverty reduction objectives in the river basin;
  \item Long-term mitigation of the adverse impacts and adapting to the residual environment and social impacts of the project
  \item Mitigation of cumulative impacts where more than one hydropower project is located in the river basin.
\end{enumerate}

2. Strategic Environment Assessments (SEAs) that consider specific hydropower development or management opportunities shall indicate the geographic extent of the impact area of projects considered, and provide a preliminary indication of the number of communes and people that are potentially adversely affected by the project.

3. Hydropower ranking studies that provide economic and financial comparisons of hydropower sites shall incorporate revenue-sharing requirements in financial assessments of projects.

**Article 25: Procedures to adopt during project feasibility stages**

1. Arrangements for long-term benefit sharing shall be considered concurrently with the project feasibility and EIA studies that form the basis for approval of hydropower projects by competent State authorities.

2. EIAs for hydropower projects shall incorporate a concise assessment of potential benefit sharing provisions. These assessments shall be linked to existing EIA requirements for the identification and mitigation of adverse social and environmental impacts of the project during construction and operation phase.\textsuperscript{102}

3. EIAs for all hydropower projects provides a clear indication of:\textsuperscript{103}

\begin{enumerate}
  \item The geographic extent of the project impact area
  \item The communes, or parts of communes which reside in the project impact area
  \item The numbers of households in each commune in the project impact area
  \item The nature of the potentially adverse impacts on communities in each area.
\end{enumerate}

4. Feasibility studies of hydropower projects shall incorporate benefit-sharing assessments linked to existing study topics in the feasibility study. In relation to the design and operation hydropower facilities, hydropower feasibility studies shall:

\begin{enumerate}
  \item Incorporate the revenue sharing formula set out in Article 14 in the economic and financial appraisal of the project;
  \item Assess the scope for physical modifications in facilities to build-in operational flexibility over the economic life of the project;\textsuperscript{104}
\end{enumerate}

\textsuperscript{101} The study topics for strategic EAs, for example, are given in the Environment Protection Law

\textsuperscript{102} Article 18 of the Law of Environment Protection establishes the contents of EIAs that are form one basis for approval of the project by the competent State agencies. This requires the identification of adverse impacts in the project impacts zone and long-term mitigation plans for both construction and operation phases. Also there are guidelines for EIAs issued by the National Environmental Protection that are relevant, as noted in the policy review.

\textsuperscript{103} Such assessments will be sufficient to serve as a starting point for benefit sharing Councils to confirm the eligible parties for a revenue sharing, as outlined in Article 29.

\textsuperscript{104} Such as the size of valves and bottom flow outlets on dams
/3. Assess the scope for inclusion of other equipment to reduce adverse impacts on ecosystem functions and services such as fish passage structures, fish-friendly turbines and techniques to control the chemical quality of water releases from dams and power stations; 105

/4. Consider ways to minimize adverse impacts on downstream river flow change when evaluating alternative operating strategies for the reservoir. This will include considerations like the amount of reservoir draw down, maintaining minimum downstream water releases in diversion projects and downstream re-regulation weirs;

/5. Highlight any increment in the project capital budget or operating costs of such alternatives and provide an indication of the value or benefit-cost of such alternatives. 106

5. In relation to assessment of the status of electricity access of households living in the project impact area, hydropower feasibility studies shall:

/1. Assess the current level of rural electrification and quality of electrical service;

/2. Provide specifications and indicative costs to electrify the resettlement households and the resettlement host community if it is not connected;

/3. For communities living the project impact area with no electricity service, provide an indicative cost of electrification via grid extension or via alternative small-scale isolated generation where grid connection is not considered to be economically feasible;

/4. For communities with existing electrical service, assess provide an indicative cost for refurbishment of electrical supply equipment to improve levels of service and reliability of supply;

/5. Where feasible, provide a breakdown of household electricity access with income levels.

**Article 26: Procedures to adopt during project implementation stages**

1. The final design of the project shall incorporate the measures contained in the project feasibility studies approved by competent authorities that enhance flexibility for operation of the reservoir and minimize adverse impacts on ecosystem services of the project.

2. For committed hydropower projects already at the detailed design stage when this Decree is promulgated, provisions shall be made to:

Prepare the assessments stipulated in Article 25 as part of the detailed design work and submit these to competent authorities for decision for inclusion in the final design and capital cost;

Discuss potential benefit sharing measures for operation phase of the hydropower project as part of the processes guided by Provincial People's Committees to:

prepare resettlement plans and compensation plans; 107
prepare environment management plans (EMPs) to mitigate adverse environment impacts during the operation stage of projects.

Prepare other such action plans as required by legislation to meet the environment and water resource protection obligations of hydropower production enterprises.

105 Technical measures like auto-venting power turbines to oxygenate water passing through turbines.
106 The considerations will include lowering the total cost of the measures over the project economic life and providing flexibility for future changes in operation for future generations to balance economic, social and environment priorities as they see fit.
107 Benefit sharing measures that fall outside compensation and resettlement provisions in Decree 197
3. During the planning of construction works related to development of hydropower projects, benefit sharing principles shall be taken into account to maximize opportunities:

/1. for local employment in project or related construction works;
/2. for source goods and services locally in ways that contribute to the local economy;
/3. in training local people for labor and semi-skilled jobs available once the project is operational, including activities such as clearing and maintenance of transmission rights-of-way, slope stabilization works and field monitoring of project impacts.

4. Due consideration shall be given by People's Committees at all levels to create employment opportunities for adversely affected people that avoid or minimize adverse boom and bust cycles when project construction is completed.

Article 27: Procedures to adopt to introduce benefit sharing on existing hydropower projects

1. Benefit sharing Councils shall be responsible to:
   /1. Review or direct the review the existing EIA, or complete a supplemental rapid environmental assessment, if needed on older hydropower projects to establish.
      a. The geographic extent of the project impact area
      b. The communes, or parts of communes which reside in the project impact area
      c. The numbers of households in each commune in the project impact area
      d. The nature of the potentially adverse impacts on communities in each area.
   /2. Review or direct the review of the status of electricity supply and electricity access to households in the project impact area.
   /3. Direct the preparation of a Fund Charter as prescribed in Chapter 2.

2. The cost of these reviews and any supplemental studies, plus legitimate startup costs to put in place benefit sharing arrangements shall be financed by an initial contribution to the project revenue-sharing fund from one or more sources:

   /1. An initial allocation from the central reserve fund (CRA) in a manner prescribed by ERAV.
   /2. A reimbursable loan from the Province, reimbursable within a six-month time frame with revenue sharing funds generated by the project.
   /3. A reimbursable loan from project entity, reimbursable within a six-month time frame with revenue sharing funds generated by the project.

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Chapter 7:

108 Start-up financing is needed because the hydropower project must start generating revenue before funds can be remitted back to revenue-sharing funds. The procedures may take months and for efficiency reasons remittances to the fund may be semi-annual or annual. Otherwise ERAV can explore the mechanics of more frequent remittances such as on a monthly or bi-monthly basis.
**General Implementation Provisions**

Ministries, ministerial-level agencies, agencies attached to the Government, Provincial Peoples’ Committees, River basin organizations and power entities shall have the following responsibilities within their respective functions and tasks.

**Article 28: Obligations of the Ministry of Industry and Trade**

/1. Coordinating with Provincial People’s Committees, the Ministry of Planning and Investment, the Ministry of Finance and concerned ministries and branches on the priorities and measures to target communities adversely affected by hydropower projects within existing state and provincial rural electrification budgets.

/2. Ensuring adequate evaluation of needs for rural electrification investment in the impact area of the hydropower projects are incorporated in the feasibility and detailed design studies, in a manner consistent with this Decree.

/3. Evaluation by ERAV of the scope for preferential consumer tariff structures for adversely affected communities and the time period they should apply and consistency of these provisions with the Electricity Law and other applicable law.

/4. Ensuring the costs and impacts of such investments in improving electricity access in the project impact area are advanced to competent authorities for decision in a timely manner.

/5. Ensuring that revenue sharing arrangements for hydropower projects are compatible with power market reforms being introduced and reflect the principles, rules and regulations for operation of the competitive power market in applicable regulation.

/6. Establishing and operating a central reserve account to facilitate the smooth startup and operation of project-specific revenue-sharing funds, in accordance with provisions in this Decree.

/7. Supporting the establishment and operation of the project-specific revenue sharing funds and advising Provincial-level People’s Committees on these matters through DOIs or ERAV;

/8. Handling and resolving problem arising with financing mechanisms for revenue sharing;

/9. Evaluating the scope for preferential consumer tariff structures for communities adversely affected by hydropower projects, either on the permanent or temporary basis;

/10. Working closely with the Ministry of Natural Resources and Environment on the harmonization of funds for revenue sharing, environment protection and water resource protection in conjunction with the concerned agencies and Provincial-level Peoples’ Committees.

/11. Enlisting the support from international donors to continuously assess and improve policies and implementation procedures for benefit sharing, based on evolving regional and international experience;

/12. Undertaking an annual review of progress in implementing benefit-sharing mechanisms on new and existing hydropower projects on a country-wide basis, including assessment of the impact of benefit sharing measures on key monitoring indicators.

/13. Exploring how benefit-sharing principles can be extended to other types of power sector infrastructure including other generation types and major transmission facilities that have adverse effects on local communities hosting such projects.

**Article 29: Obligations of the Ministry of Natural Resources and Environment**

/1. Offer guidance on linking provisions in strategic environment assessments, river basin plans and EIAs to benefit sharing assessments as provided in this Decree;

/2. Work with other State Environment Agencies as necessary to ensure that EIAs for all hydropower projects provides a clear indication of (i) the geographic extent of the project impact area (ii) the communes, or parts of communes which reside in the project impact area (iii) the numbers of households in each commune in the project impact area, and (iv) the nature of the potentially adverse social and environment impacts on communities in each area.
/3. Offer advice on linking benefit sharing to environment and water resource protection obligations of hydropower projects including the financing mechanisms, the harmonization and simplification of project-specific funds and the implementation of complementary measures;

/4. Seek additional opportunities to integrate benefit sharing principles in policies and activities for involving local communities in collective and joint local action on environment and water resource protection obligations of hydropower projects;

/5. Facilitate and encourage the involvement of river basin organizations in the design and implementation of benefit sharing mechanisms and providing advice on more complex situations including river basins with multiple hydro projects;

/6. Support improvement of institutional and professional capability for integrating benefit sharing assessments in strategic and project level environment assessments and river basin planning work.

**Article 30: Obligations of the Ministry of Agriculture and Rural Development (MARD)**

The Ministry of Agriculture and Rural Development (MARD) shall have responsibility to:

/1. Advise on the linking benefit sharing to rural development and agriculture strategies;

/2. Advise on improvements in the implementation of benefit sharing measures and consistency with laws concerning agriculture and rural development and water utilization.

**Article 31: Obligations of the Ministry of Planning and Investment (MPI)**

The Ministry of Planning and Investment (MPI) shall have responsibility to:

/1. Advise on improvements in the implementation of benefit sharing measures and consistency with laws concerning construction and investment.

/2. Work with other Ministries and departments to establish priorities to target existing rural electrification funds to communities adversely affected by hydropower projects.

/3. Advise on ways to reflect benefit-sharing principles in the construction phase of hydropower projects such as maximizing local employment and local economic returns consistent with applicable law.

**Article 32: Obligations of the Ministry of Finance (MOF)**

The Ministry of Finance (MOF) shall have responsibility for offering guidance and instruction on the audit of all financial transactions related to project-specific revenue sharing funds and award, monitoring and audit of grants from revenue sharing funds. The MOF Finance shall also:

/1. Support discussions on the targeting of existing rural electrification budgets as determined in consultation with the concerned state agencies and Provincial Peoples Committee's.

/2. Guide DOFs advise the Provincial level Peoples’ Committees on procedures for budget transfers for the effective operation of revenue-sharing funds and payments to entities involved in the delivery of measures;

/3. Guide DOFs on ensuring accounting procedures are followed in all aspects of the establishment and operation of revenue-sharing funds;

/4. Support or take other steps as necessary to ensure the success of revenue sharing according to the objectives and principles set out in this Decree including transparency and anti-corruption provisions.

**Article 33: Obligations of Provincial People’s Committees**

1. Provincial-level People’s Committees shall have the responsibilities to:

/1. Direct, organize, propagate and mobilize all organizations concerning the successful introduction of benefit sharing mechanisms for hydropower projects in their jurisdiction;

/2. Appoint and guide the benefit sharing Councils for hydropower projects and oversee the award and
use of revenue sharing funds in their respective jurisdictions;
/3. Direct the provincial services, departments, branches and district-level and commune People's Committees on extending timely support to the benefit sharing Council on all aspects of the Council's mandate;
/4. Organize and direct the basic surveys, inventory and assessment of electrification and electricity access the impact areas of hydropower projects in their respective localities under the guidance of the Ministry of Industry and Trade and the concerned ministries and branches;
/5. Instruct provincial organizations in setting targets for poverty alleviation in the project impact area that will form an integral part of the criteria for (i) deciding the level of funds to allocate to different grant categories (ii) evaluating grant applications and (iii) monitoring the development effectiveness of benefit sharing mechanisms, and (iv) fine tuning and adjusting benefit sharing activities;
/6. Take steps as necessary to set priorities to fund improvements in electricity access and levels of service within existing provincial budget allocations for rural electrification;
/7. Ensure that entitlements to enhance access to resources for adversely affected communities are given due consideration on the recommendation of the benefit sharing council and the advice of provincial-level services, departments and branches;
/8. Establish a policy on support for entitlements to improve resource access for people adversely affected by hydropower projects and ensure that district and commune-level People's Committees and relevant departments are informed of these policies;
/9. Ensuring that district and commune-level People's Committees (i) expedite the award of entitlements, permits or approvals for activities funded by revenue sharing grants, and; apply these policies on hydropower projects in their jurisdiction more generally.
/10. Provide the timely and necessary support for the establishment of revenue-sharing funds and for implementation of measures financed by revenue sharing grants;
/11. Take final decision and arbitrate in the dispute over the eligibility of different groups to participate in benefit sharing;
/12. Review the annual reports submitted by the benefit sharing Councils to identify additional direction or need for correction of deficiencies in the efficient and affected delivery of benefit sharing in their jurisdiction;
/13. Advise the Provincial Assembly on any implication of revenue-sharing grants investments on the state budget or a future commitments of the state budget and seek their approval where necessary for such grants;
/14. Ensure impartiality and equity in revenue-sharing arrangements prescribed in this Decree, according to their competence and with regard to ensuring adequate provisions for social accountability involving the active participation of beneficiaries and monitoring procedures are introduced;
/15. Direct the concerned agencies to settle citizens' complaints or denunciations related to revenue sharing in a timely manner to maintain confidence in benefit sharing and according to prescribed laws;
/16. Direct the examination and handling of violations in the revenue sharing domain as it impacts on the objectives and effectiveness policy set forth in this Decree;
/17. Ensure a consistent approach to benefit sharing on hydropower projects operating in their jurisdiction; and
/18. Ensure that good practice lessons from other provinces are reflected in ongoing efforts to improve the effectiveness of benefit sharing measures in their jurisdiction.

**Article 34: Obligations of river basin committees or organizations**

The river basin entity where the hydropower project is located may offer expertise and advice to benefit sharing Councils on issues that include:

/1. Resolving questions of the geographic overlap of project impact areas for cascade hydropower projects in the same basin;
/2. Reflecting benefit sharing, related ecosystem management concerns and payments for ecological services in river basin development and management plans;
/3. Evaluating how other benefits associated with hydropower projects not cited in this Decree, like downstream flood protection and management aspects are considered;
/4. Dealing with special issues that may arise concerning multipurpose projects; and
/5. Dealing with special benefit sharing arrangements for hydropower projects on inter-provincial rivers, or projects involving inter-basin water transfers.

**Article 35: Obligations of hydropower generation entities**

Independent power producers (IPPs) and well as government-owned power companies and newly equitized power companies of EVN shall:
/1. Undertake any and all measures as required under this Decree that impact on their hydropower development and operation activities;
/2. Organize training for their staff to meet requirements under this Decree.
/3. Adopt a corporate philosophy where local communities hosting their project are seen as long-term local partners in sustainable management of the hydropower asset and reflect this philosophy in dealings, public interactions and public relations with the host community.

**Article 36: Obligations of Hydropower Project Management Boards**

Project Management Boards for the implementation phase of hydropower projects shall:
/1. Ensure the preparations for benefit sharing for the implementation phase of hydropower projects are undertaken;
/2. Take account of the results of surveys of electricity access and levels of services during project preparation activities and reflect provisions for electrification of resettlement areas in project capital budgets.

**Article 37: Obligations of Electricity of Vietnam (EVN)**

Electricity of Vietnam (EVN) shall establish internal rules and practices to incorporate benefit-sharing assessments in project preparation and detailed design work and submit these to Ministry of Industry and Trade for approval.
EVN shall also:
/1. Conform to any requirements for facilitating transfer of funds in accordance with this Decree and rules of market operation established by Ministry of Industry and Trade and competent authorities;
/2. Organize training to improve staff capability in newly established companies under EVN to reflect benefit sharing arrangements in hydropower project planning and operation activities as set out in this Decree;
/3. Support the effective operation of the revenue sharing funds and the local development initiatives supported by the fund;
/4. Offering expertise, ideas, insight and other constructive suggestions on benefit sharing measures that not only contribute to boosting local development, but also contribute to:
/1. Linking benefit sharing mechanisms to the long-term sustainable operation of the reservoir;
/2. Extending live storage capacity of reservoirs and maintaining revenue flow from hydropower projects;
/3. Linking the management of ecosystem services to the operation of the reservoir and release patterns from the powerhouse;
/4. Linking the operation of the reservoir to ecosystem services management and beneficial aspects of downstream flood protection.
/5. Exploring other technical modifications of dams and hydropower facilities will enable and support the objectives of benefit sharing with local communities.
/5. Gather experience of other utilities in Asia and elsewhere in normal technical exchanges between utilities to stay current with international experience on benefit sharing mechanisms to advance
sustainable management of hydropower assets and increase attractiveness to potential donors and investors in hydropower projects.

Article 38: Implementation effect
This Decision shall come into effect 15 days after the public announcement.

Article 39: Implementation responsibilities
The Minister of Ministry of Industry and Trade, other Ministers, Directors of the Ministerial offices, Directors of the Government bodies, Chairman of the provinces People Committees under the Central, Electricity of Vietnam and the related agencies are responsible to implement this Decision.

By virtue of Section 24, Section 95, Section 96 and Section 97 of the Energy Industry Act, B.E. 2550 (2007) which contains certain provisions restricting the rights and liberty of an individual which is endorsed by Section 29, conjoined with Section 33, Section 41, Section 42 and Section 43, of the Constitution of the Kingdom of Thailand through the enactment of law, the Energy Regulatory Commission hereby lays down the Regulation as follows:

Article 1: This Regulation is called the “Regulation of the Energy Regulatory Commission on the Power Development Fund for Development or Rehabilitation of the Localities Affected by the Operation of a Power Plant, B.E. 2553 (2010)."

Article 2: This Regulation shall come into force on the day after the date of its publication in the Government Gazette.

Article 3: In this Regulation,

“Money of the Power Development Fund in the area under the notice” means the proceeds obtained under the Regulation of the Energy Regulatory Commission on the Power Development Fund, B.E. 2553 (2010) for payment to develop or rehabilitate the localities affected by the operation of a power plant in accordance with Section 97 (3). The proceeds shall be kept separately for each power plant and shall incorporate the name of the power plant, or the name of the sub-district, or the name of the district, or the name of the province in which the power plant is located;

“Rehabilitate” means make localities affected by the operation of a power plant grow and sustain growth;

“Locality” means an area and a community that are affected by the operation of a power plant and that are entitled to support from the Power Development Fund;

“Area under the notice” means an area that the OERC identifies as an area that is entitled to support from the Power Development Fund under Section 97 (3);

“Power plant” means a building and/or a premise that is used for generating electricity that has obtained an electricity generation license in accordance with regulations issued by the ERC;

“ERC” means the Energy Regulatory Commission;

“OERC” means the Office of the Energy Regulatory Commission;

“CDC-PP” means a Community Development Committee in the Surrounding Area of a Power Plant;

“CDC-SPP” means a Community Development Committee in the Surrounding Area of a Sub-district Power Plant;

“Village” means a village under the law on local administration or a community established in accordance with the law;

“Sub-district” means a sub-district under the law on local administration or a ‘kwang’ under the law on Bangkok Metropolitan administration or an administrative area named otherwise according to the law governing the administration of such area, and includes a group communities in adjacent areas as prescribed by the OERC;

“Community project” means a project which applies for funding from the Power Development Fund for activities under Section 97 (3);

“Expense budget” means the maximum amount of money that is allowed to be paid or indebted for the prescribed objective and time limit; and

“Fiscal year” means the fiscal year of the OERC.

Article 4: The Chairman of the ERC shall have the care and charge of the execution of this Regulation and shall construe any problem relating to the implementation of this Regulation.
Article 5: The area under the notice shall be considered from the power generating plan of each power plant to include surrounding sub-districts which are within the following distances of the center of the power plant:

(1) five kilometers for a power plant generating more than five billion kWh of electricity per year;
(2) three kilometers for a power plant generating more than 100 million kWh of electricity per year but not exceeding five billion kWh per year; and
(3) one kilometer for a power plant generating no more than 100 million kWh of electricity per year.

In case where the community development fund in the surrounding area of an existing power plant generates more than 100 million kWh of electricity per year, the existing surrounding area within five kilometers of the power plant shall be considered as the area under the notice.

In case there is an overlap of areas under the notice due to the proximity of the power plants, the areas under the notice may be combined. In such case, priority consideration shall be given for the benefits of the development of the area under the notice.

The area under the notice may include sub-districts on the different criteria provided above if there is academic research on the impact of the power plant which has had a hearing from the people in the area, or is a residential area or a workplace developed by a government agency or the power plant operator to support the people who have to relocate their residence or workplaces due to the construction or the operation of the power plant. They shall be treated as if they were villages in the sub-district of the area from which the people relocate, once the relocation is consented by the ERC.

The OERC, with the consent of the ERC, shall issue a notification indicating the area under the notice.

Article 6: The management of the fund in the area under the notice consists of three types:

(1) Type-A Fund, for an area which has been allocated development fund for a full scale management, and generates more than five billion kWh of electricity per year or has an income of 50 million baht or more per year;
(2) Type-B Fund, for an area which has been allocated development fund for a medium-scale management, and generates no more than five billion kWh of electricity per year, and has an income of more than one million baht but no more than 50 million baht per year; and
(3) Type-C Fund, for an area which has been allocated a small amount of development fund and should be managed within a limit, and generates no more than 100 million kWh of electricity per year, and has an income of no more than one million baht per year.

The OERC, with the consent of the ERC, shall issue a notification.

Article 7: The management of the fund in the area under the notice for Type-A and Type-B Funds shall consist of:

(1) money or assets obtained from the allocation of the Power Development Fund;
(2) CDC-PP;
(3) fund allocation and project approval;
(4) inventory management;
(5) finance and accounting;
(6) monitoring, follow-up and evaluation; and
(7) public relations.

For Type-A Fund, a CDC-SPP shall be established to allow the people in the area under the notice to participate in the management of the Power Development Fund.

For Type-C Fund, the OERC shall select no more than three representatives from the municipality or the sub-district administrative organization of the area under the notice as the authority who considers and approves community projects for the development and rehabilitation of the locality as prescribed by the ERC.

Article 8: Guidelines for the management of the Power Development Fund in the area under the notice are as follows:

(1) decentralize management power to the community in order to achieve effective management, good governance, transparency and accountability;
promote and support community projects by the community for the community, with an emphasis on the community participation in order to improve the quality of life and to develop the community's potentials in accordance with the Principle of Sufficiency Economy, and to build a good welfare system for the people and the community for their better livings;

(3) promote and support cooperation and knowledge sharing among communities within the area under the notice in order to create networks and integration of works with various sectors such as local administrative organizations, government agencies, community organizations, schools and religious places, etc.;

(4) promote and support networks of information, education, management, monitoring, public relations, development of information system among the Power Development Funds in all levels of the area under the notice to achieve sustainable development;

(5) provide compensation to remedy those who are directly affected by the operation of a power plant in terms of health, occupation and environment; and

(6) promote and support rehabilitation of nature and environment, social surveillance and environmental wellbeing.

Division 2
Office of the Energy Regulatory Commission,
Community Development Committee in the Surrounding Area of a Power Plant,
and Community Development Committee in the Surrounding Area
of a Sub-district Power Plant

Part 1
Office of the Energy Regulatory Commission

Article 9: In managing the Power Development Fund in the area under the notice, the OERC shall have the following authority and duties:

(1) issue a notification to indicate an area under the notice and the type of management of the Power Development Fund in the area under the notice;

(2) set objectives and formulate action plans, both in short and long terms, of the Power Development Fund for undertakings under Section 97 (3);

(3) estimate annual income of the Power Development Fund in each area and inform the Power Development Fund in each area under the notice of the estimates;

(4) support the formulation of an annual work plan, a strategic plan and a budget plan of the CDC-PP in each area under the notice in order to submit them to the ERC for approval and public announcement;

(5) support the setting up of a financial and accounting system, monitoring, follow-up, evaluation and public relations in each area under the notice;

(6) promote and support training and capacity building of the CDC-PP and the CDC-SPP and those involved in the management of the Power Development Fund;

(7) promote activities of the Power Development Fund in each area among all the stakeholders and the public;

(8) support the drafting of regulations, orders, criteria, guidelines and practices of the CDC-PP in each area under the notice and propose to the ERC for approval;

(9) receive complaints concerning the management of the Power Management Fund in each area under the notice and gather facts for the ERC's consideration; and

(10) assign the CDC-PP to undertake any other action to achieve the objectives of the Power Development Fund.
Article 10: For the management of Type-A and Type-B Power Development Funds in the area under the notice, the OERC shall set up a CDC-PP with no less than 15 members but no more than 35 members as prescribed by the ERC. The CDC-PP shall comprise representatives from the general public, representatives from the government sector and experts, with the representatives from the general public constituting at least two-thirds of the total number of the members and no more than three experts.

Article 11: The CDC-PP shall have the following authority and duties:

1. prescribe a beneficiary area of the Power Development Fund that is different from the area under the notice with the ERC’s consent;
2. formulate and propose a strategic plan, an annual work plan and a budget plan for the development and rehabilitation of the locality to the ERC for approval, and notify the public of such plans;
3. promote and support an empirical survey on the impact of the operation of a power plant, and receive opinions of the people in the locality in order to propose modifications to the area affected by the operation of a power plant to the ERC for approval;
4. promote a survey on people’s needs and carry out annual surveys on the impact of the operation of the power plant for the purpose of formulating community projects;
5. consider and approve community projects for the development and rehabilitation of the locality;
6. provide contracts or agreed community projects and use the fund to support the undertakings of the community projects according to the work plan or the budget period;
7. supervise, keep account of and report the financial status of the Power Development Fund in the area under the notice to the OERC quarterly and annually in accordance with the regulations, methods and forms prescribed by the ERC;
8. follow up, monitor and evaluate the undertakings of the community projects and report the results of the community projects to the OERC;
9. hire and appoint an auditor;
10. convene a CDC-PP meeting at least once every three months in order to manage the Power Development Fund in the area under the notice, to follow up on the community projects, and keep minutes of the meeting for records;
11. hire assistants to assist the Power Development Fund’s management in the area under the notice as required and appropriate, and hire a third party to monitor, follow up and evaluate the projects as appropriate according to the ERC’s prescribed rules;
12. publicize or disseminate the information relating to the Power Development Fund in the area under the notice and the results of its undertakings to the public;
13. promote and support the participation of various sectors in the area under the notice, as well as the networks of cooperation among the CDC-PPs of other areas under the notice;
14. appoint a sub-committee to consider or undertake any activity as assigned by the CDC-PP;
15. supervise and perform its work in accordance with the regulations, orders, criteria, guidelines and methods prescribed by the ERC;
16. in case where the regulations prescribed by the ERC do not cover the undertakings of the CDC-PP in the area under the notice due to special characteristics of such area, the CDC-PP shall propose additional relevant regulations for the ERC’s consideration as necessary within the criteria and guidelines prescribed by the ERC; and
17. undertake any other task as assigned by the ERC or the OERC to achieve the objectives of the management of the Power Development Fund in the area under the notice within the prescribed laws, regulations, notifications, orders and methods.

Article 12: The representatives from the general public on the CDC-PP shall be selected by the following methods:

1. selection of village representatives by convening a village assembly in all villages within each sub-district to select village representatives. There shall be the equal number of representatives from each village; and
selection of sub-district representatives to serve as CDC-PP members by allowing the village representatives under (1) to present their visions in the selection process of the sub-district representatives;
The selection shall be in accordance with the ERC’s prescribed rules.

Article 13: Committee members selected from the representatives from the general public shall have the qualifications and shall not hold any disqualifications as follows:

(1) have Thai nationality;
(2) must be between 25 and 70 years old;
(3) have at least completed compulsory education or its equivalent as certified by the Ministry of Education;
(4) have their names in the house registration in the area under the notice for at least one year consecutively up to the date of the appointment;
(5) must not be a Member of the Parliament or an assistant to a Member of the Parliament, a Member of the Senate, a government official with a fixed position or salary, a political officer or a person who holds a political post, a member of a local assembly, a local administrator or an advisor to a political party;
(6) must not be insane or mentally disordered;
(7) must not be addicted to narcotic drugs;
(8) must not be and have never been bankrupt;
(9) must not be adjudged incompetent or quasi-incompetent;
(10) must not be sentenced to imprisonment by a final court judgment and in custody by a court warrant;
(11) have never been sentenced to imprisonment for two years or more and have been released for less than five years on the date of being nominated, except that it is an offense committed through negligence or contravention;
(12) have never been dismissed, discharged or removed from service of a government agency, a state enterprise or a private entity on the grounds of dishonesty, serious malfeasance, or quasi-corruption and quasi-disciplinary misconduct; and
(13) must not be a stakeholder in a contract party of the Power Development Fund.

Article 14: The provincial governor shall select representatives from the central authorities which perform their function in the province, regional or local authorities in the area under the notice, members of the local councils, local administrators or chiefs of sub-districts or villages in the area under the notice who have experiences in community, social, economic, environmental, agricultural, health or industrial developments as committee members representing the government sector by the required number as prescribed by the ERC.

Article 15: The following persons shall be committee members representing the government sector, ex officio:

(1) no more than two representatives from the Ministry of Energy as designated by the Ministry of Energy; and
(2) one representative from the OERC of the area in which the power plant is located, or a person assigned by the OERC.

Article 16: The selected committee members representing the general public and the committee members representing the government sector shall convene a meeting to propose and appoint the required number of experts as prescribed by the ERC.

Article 17: The experts shall have the qualifications and shall not hold any disqualifications as follows:

(1) have Thai nationality;
(2) must be between 35 and 70 years old;
(3) possess knowledge, expertise, and experiences in areas of society, health, energy, environment, community economy, education, finance, or communication;
(4) have their names in the house registration in the province in which the power plant is located;
(5) must not be a Member of the Parliament or an assistant to a Member of the Parliament, a Member of the Senate, a political officer or a person who holds a political post, a member of a local assembly, a local administrator or an advisor to a political party;
(6) must not be insane or mentally disordered;
(7) must not be addicted to narcotic drugs;
(8) must not be and have never been bankrupt;
(9) must not be adjudged incompetent or quasi-incompetent;
must not be sentenced to imprisonment by a final court judgment and in custody by a court warrant; 
(11) have never been sentenced to imprisonment for two years or more and have been released for less than five years on the date of being nominated, except that it is an offense committed through negligence or contravention; 
(12) have never been dismissed, discharged or removed from service of a government agency, a state enterprise or a private entity on the grounds of dishonesty, serious malfeasance, or quasi-corruption and quasi-disciplinary misconduct; and 
(13) must not be a stakeholder in a contract party of the Power Development Fund.

Article 18: Upon the completion of the screening of the CDC-PP from all sectors, the Secretary-General of the OERC shall submit a full list of the nominated CDC-PP to the ERC for consideration in appointing chairman, no more than two vice-chairmen, and other positions in the committee.

The representative of the OERC in the area in which the power plant is located or a person assigned by the OERC shall be a member and the secretariat of the CDC-PP.

The representative of the power plant in the area under the notice shall be the assistant secretariat of the CDC-PP.

Article 19: CDC-PP members shall hold office for a term of four years from the date of the appointment and shall not hold office for more than two consecutive terms. This Article does not apply to committee members representing the government sector.

At the initial term, after two years, half of the committee members who represent the general public shall be discharged from office by drawing lots. Such a discharge shall be regarded as the completion of the office term. The drawing of the lots shall be held in advance as appropriate.

The CDC-PP members who leave office after the completion of theirs terms shall continue performing their duties until the new CDC-PP members are appointed.

In order to allow the CDC-PP to work continuously, the screening of the new set of the committee members shall be made from the same sectors in advance as appropriate, before the outgoing CDC-PP members complete their terms.

In case where a CDC-PP member leaves office before the completion of his term, there shall be the screening and appointment of a replacement from the same sector within forty-five days of the date of the vacancy. The appointed committee member who replaces the outgoing committee member shall be in office for the remaining term of the one he replaces.

In case where the remaining term of a CDC-PP member is less than ninety days, there may not be the screening and appointment of a new committee member to fill the vacancy. In such case, the CDC-PP shall comprise the remaining committee members.

When a CDC-PP member leaves office, he shall transfer his work to the newly appointed committee member by the methods prescribed by the ERC.

Article 20: In addition to leaving office upon completion of the term, a CDC-PP member shall retire from office upon:
(1) death;  
(2) resignation;  
(3) a committee member who represents the general public transfers his name out of the house registration in the area under the notice for more than 90 days;  
(4) lack of qualifications or having any disqualification for being a CDC-PP member;  
(5) missing three consecutive meetings without reasonable grounds;  
(6) dismissal by the order of the Chairman of the ERC in accordance with the resolution of the ERC or of the two third-majority resolution of the OERC, which proposes to the ERC to consider the dismissal on the grounds of serious malfeasance, dishonesty, or of being a stakeholder in a contract concluded with the Power Development Fund, or incapacity; and  
(7) proposals by the authorities empowered under Article 14 or Article 15 to change the committee members representing the government sector.

Article 21: The Chairman of the CDC-PP shall be empowered to carry out any activity of the Power Development Fund in the area under the notice which involves outsiders.

The Chairman of the CDC-PP may delegate the activity under the first paragraph as prescribed by the ERC.
Article 22: The convening of a meeting shall be done by the Chairman of the CDC-PP or at least one-third of the CDC-PP members.

The quorum of the CDC-PP meeting is half of the total existing committee members. The committee members representing the general public must constitute at least half of the attending committee members.

If the Chairman cannot perform his function, the Vice-Chairman shall act as the chairman of the meeting. If the Chairman and the Vice-Chairman cannot perform their functions, the meeting shall appoint a committee member as the chairman of the meeting.

The decision of the meeting shall be made by a simple majority with each committee member entitled to one vote. If the votes are equal, the chairman of the meeting shall cast the presiding vote.

The decision of the meeting shall be done openly unless the majority of the meeting endorses a secret vote.

The committee members and the secretariat or the assistant secretariat shall issue a meeting invitation to the CDC-PP at least five days in advance and shall take minutes of the meeting and submit the minutes to the CDC-PP.

Part 3

Community Development Committee in the Surrounding Area
of a Sub-district Power Plant

Article 23: For managing Type-A Power Development Fund in the area under the notice, the CDC-PP shall be empowered to establish a CDC-SPP for each area.

The Chairman of the CDC-PP shall make an order establishing the CDC-SPP and announce it to the public and report to the OERC.

Article 24: Each CDC-SPP shall have the required number of committee members, but no less than seven members, as prescribed by the CDC-PP comprising of:

1. a number of CDC-SPP members representing the general public, equal to the number of the villages in the sub-district, which constitute no less than two-thirds of the total number of the CDC-SPP; and
2. other CDC-SPP members such as sub-district or village chiefs, representatives of schools, community organizations, communities, youth councils, religious places, and members of the press, which constitute no more than one-third of the total number of the CDC-SPP;

For the initial term, in order to allow an expeditious appointment of the CDC-SPP, the ERC shall set the required number of the CDC-SPP members by no less than seven.

Article 25: The CDC-SPP shall have the following authority and duties:

1. survey the needs of the people in the area and the impact of the operation of the power plant for the making of a community project;
2. set up a master plan for sustainable development for the community or the sub-district;
3. promote and support a community project and make a proposal to use the Power Development Fund by convening a sub-district or village assembly;
4. screen community projects before submitting proposals to the CDC-PP;
5. convene CDC-SPP meetings at least once every three months in order to follow up and evaluate the community projects that are sponsored by the Power Development Fund and make a progress report every three months or when the community project is completed;
6. promote the dissemination of knowledge about the Power Development Fund to the people in the area under the notice and publicize information relating to the Fund and its activities to the press, people and organizations in the area under the notice;
7. receive complaints, find a basic solution and report to the CDC-PP; and
8. carry out any other task as assigned by the CDC-PP in order to achieve the objectives of the Power Development Fund in the area under the notice.

Article 26: The CDC-SPP members representing the general public shall be screened by the OERC or an authority requested by the OERC by convening a village assembly in every village in the sub-district of the area under the notice in order to screen one village representative.
Article 27: Other CDC-SPP members shall be screened by the OERC or an authority requested by the OERC by convening a sub-district assembly.

Article 28: The CDC-SPP members representing the general public shall have the qualifications as follows:

(1) have Thai nationality;
(2) must be between 25 and 70 years old;
(3) have at least completed compulsory education or its equivalent as certified by the Ministry of Education;
(4) have their names in the house registration in the area under the notice for at least one year consecutively up to the date of the appointment;
(5) must not be a Member of the Parliament or an assistant to a Member of the Parliament, a Member of the Senate, a government official with a fixed position or salary, a political officer or a person who holds a political post, a member of a local assembly, a local administrator or an advisor to a political party;
(6) must not be insane or mentally disordered;
(7) must not be addicted to narcotic drugs;
(8) must not be and have never been bankrupt;
(9) must not be adjudged incompetent or quasi-incompetent;
(10) must not be sentenced to imprisonment by a final court judgment and in custody by a court warrant;
(11) have never been sentenced to imprisonment for two years or more and have been released for less than five years on the date of being nominated, except that it is an offense committed through negligence or contravention;
(12) have never been dismissed, discharged or removed from service of a government agency, a state enterprise or a private entity on the grounds of dishonesty, serious malfeasance, or quasi-corruption and quasi-disciplinary misconduct; and
(13) must not be a stakeholder in a contract party of the Power Development Fund.

Article 29: Other CDC-SPP members shall have the qualifications as follows:

(1) have Thai nationality;
(2) must be at least 25 years old, except representatives of youth groups or youth councils who must be at least 18 years old, and not more than 70 years old;
(3) possess knowledge and capacity to develop the community in the area surrounding the power plant;
(4) have their names in the house registration in the area under the notice for at least one year consecutively up to the date of the appointment;
(5) must not be a Member of the Parliament, a Member of the Senate or a political officer;
(6) must not hold any position in a political party;
(7) must not be insane or mentally disordered;
(8) must not be addicted to narcotic drugs;
(9) must not be and have never been bankrupt;
(10) must not be adjudged incompetent or quasi-incompetent;
(11) must not be sentenced to imprisonment by a final court judgment and in custody by a court warrant;
(12) have never been sentenced to imprisonment for two years or more and have been released for less than five years on the date of being nominated, except that it is an offense committed through negligence or contravention;
(13) have never been dismissed, discharged or removed from service of a government agency, a state enterprise or a private entity on the grounds of dishonesty, serious malfeasance, or quasi-corruption and quasi-disciplinary misconduct; and
(14) must not be a stakeholder in a contract party of the Power Development Fund.

Article 30: Upon the completion of the appointment of the CDC-SPP members from all sectors, a meeting shall be convened to elect the chairman, the vice-chairman and the secretariat from the CDC-SPP members.

Article 31: CDC-SPP members shall hold office for a term of two years from the date of the appointment and shall not hold office for more than two consecutive terms.
The CDC-SPP members who leave office after the completion of their terms shall continue performing their duties until the new CDC-SPP members are appointed.

In order to allow the CDC-SPP committee to work continuously, the screening of the new set of the committee members shall be made from the same sectors in advance as appropriate, before the outgoing CDC-SPP members complete their terms.

In case where a CDC-SPP member leaves office before the completion of his term, there shall be the selection and appointment of a replacement from the same sector within forty-five days of the date of the vacancy. The appointed committee member who replaces the outgoing CDC-SPP member shall be in office for the remaining term of the one he replaces.

In case where the remaining term of the CDC-SPP is less than ninety days, there may not be the appointment of a committee member to fill the vacancy. In such case, the CDC-SPP shall comprise the remaining committee members.

Article 32: In addition to leaving office upon completion of the term, a CDC-SPP member shall retire from office upon:

(1) death;
(2) resignation;
(3) transfer of his name out of the house registration in the area under the notice for more than 90 days;
(4) lack of qualifications or having any disqualification for being a CDC-SPP member;
(5) missing three consecutive meetings without reasonable grounds; and
(6) dismissal by the order of the Chairman of the CDC-PP in accordance with a two third-majority resolution of the CDC-SPP proposing on the grounds of serious malfeasance, dishonesty, or incapacity;

Article 33: The convening of a meeting shall be done by the Chairman of the CDC-SPP or at least one-third of the CDC-SPP members.

The quorum of the CDC-SPP meeting is half of the total existing committee members.

If the Chairman of the CDC-SPP cannot perform his functions, the Vice-Chairman of the CDC-SPP shall act as the chairman of the meeting. If the Chairman and the Vice-Chairman cannot perform their functions, the meeting shall appoint a committee member as the chairman of the meeting.

The decision of the meeting shall be made by a simple majority with each committee member entitled to one vote. If the votes are equal, the chairman of the meeting shall cast the presiding vote.

The decision of the meeting shall be done openly unless the majority of the meeting endorses a secret vote.

At the request of the Chairman of the CDC-SPP or at least one-third of the committee members, the secretariat shall issue a meeting invitation to the CDC-PP at least five days in advance and take minutes of the meeting and submit the minutes to the CDC-SPP.

A CDC-SPP member may not appoint a representative to attend a meeting on his behalf.

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Division 3
Management of the Power Development Fund in the area under the notice

Part 1
Management of the Power Development Fund in the Area under the Notice

Article 34: The ERC shall allocate no less than 95 per cent of a licensee’ contributions to the Power Development Fund to be used in the activities of the Fund in each of the area in which the power plant of the licensee is located.

For the money in excess of the allocation in the first paragraph, the OERC shall:

(1) reserve for usage in an emergency to provide initial remedy or alleviation for damage caused by the operation of a power plant as the ERC finds appropriate;
(2) subsidize development or rehabilitation of a locality that is affected by the operation of a power plant which has been allocated insufficient fund for the development or rehabilitation of the locality. The amount of the subsidy allocated to each locality shall be determined by the ERC; and
(3) use for the management of the Power Development Fund.

Article 35: The CDC-PP shall submit an annual work plan to the governor of the province in which the power plant is located to give his opinion within 15 working days. If the said period is lapsed, the CDC-PP shall submit the annual work plan to the ERC for approval. The annual work plan shall comprise:
(1) a strategic plan and a framework of fund allocation of the Power Development Fund in the area under the notice;
(2) findings of a survey on the needs of the people in the area under the notice;
(3) findings of a study, an evaluation or a research on the impact of the operation of a power plant;
(4) an annual operation plan; and
(5) an estimate of the administrative expenses;
The CDC-PP shall follow the manual issued by the OERC.

Article 36: Annual administrative expenses of the Power Development Fund in an area under the notice shall be proportionate to the amount of the fund allocated in the fiscal year for each area under the notice as follows:

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<th>Money allocated (baht)</th>
<th>Net money in each step (baht)</th>
<th>Rate (percent)</th>
<th>Administrative expenses in each step</th>
<th>Maximum cumulative administrative expenses</th>
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<td>amount exceeding 150,000,000</td>
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</tbody>
</table>

Article 37: Administrative expenses of the Power Development Fund in an area under the notice shall be in accordance with the guidelines and criteria prescribed by the ERC and shall not exceed the amount prescribed under Article 36.

Article 38: The determination of the allocation of the Power Development Fund in an area under the notice by the CDC-PP shall aim to develop or rehabilitate the locality affected by the operation of a power plant in various aspects in accordance with the criteria prescribed by the ERC.

Part 2
Management of Type-A and Type-B Funds

Article 39: For Type-A Fund, consideration to support a community project shall follow the procedure and methods as follows:
(1) the CDC-SPP shall convene a sub-district assembly or a village assembly to survey the needs of the people, and integrate village-level and sub-district-level community development plans;
(2) the proposer of a community project shall submit a project paperwork, in the format indicated by the OERC, to the CDC-SPP in the area under the notice;
(3) the CDC-SPP shall screen the community projects in accordance with the screening criteria prescribed by the ERC; and
(4) the CDC-PP shall consider and approve the community projects in accordance with the criteria prescribed by the ERC.

Article 40: For Type-B Fund, consideration to support a community project shall follow the procedure and methods as follows:
(1) the CDC-PP shall convene a sub-district assembly or a village assembly to survey the needs of the people, and integrate village-level and sub-district-level community development plans;

(2) the proposer of a community project shall submit a project paperwork, in the format indicated by the OERC, to the CDC-PP in the area under the notice; and

(3) the CDC-PP shall consider and approve the community projects in accordance with the criteria prescribed by the ERC;

Article 41: A community project shall not be a project which proposes to use the fund in a way which is likely to cause corruption or seeks political benefits. It shall not take up the budget of the local administration or the government authorities which have already supported such kind of project. It shall not use the fund in a way that will not achieve the development under this Regulation.

Article 42: The CDC-PP shall notify the project proposer of the decision on the community project in writing with its justifications within 30 days of the consideration of the community project.

Article 43: In case of an emergency, in which a delay may cause damage to the area under the notice or the area of the beneficiary in Article 11 (1), the CDC-PP may approve assistance within the approved annual budget and shall report to the OERC immediately.

Article 44: Modification, addition, or amendment of the annual work plan shall be considered in the CDC-PP meetings and shall be submitted to the governor of the province in which the power plant is located to give his opinion within 15 working days. If the said period is lapsed, the CDC-PP shall propose the annual work plan to the ERC for approval.

Article 45: The expenses of a project that has a budgetary implication in the Power Development Fund in the area under the notice for more than one year shall not exceed twenty per cent of the next fiscal year.

Article 46: In proposing and considering a community project, the cost estimate shall be done according to the criteria prescribed by the ERC. If the ERC has not set out the criteria for the cost estimate, the criteria shall be in accordance with the Government’s criteria of the cost estimate mutatis mutandis. If there are no Government’s criteria of the cost estimate, the CDC-PP shall determine the cost estimate for each area as appropriate and report to the OERC.

Article 47: Upon approval of a community project, the Chairman of the CDC-PP shall conclude a contract or an agreement with the beneficiary of the Power Development Fund in the area under the notice or with the contractor or the seller as the case may be.

The Chairman of the CDC-PP may delegate the power in the first paragraph in accordance with rules prescribed by the ERC.

Article 48: The conclusion of the contract or the agreement shall at least consist of the documents as follows:

(1) the resolution of the CDC-PP approving the project along with details;
(2) models or pictures or details of the items;
(3) details of the beneficiary of the Power Development Fund in the area under the notice, the contractor and the seller;
(4) a budget plan or a work plan; and
(5) other documents required by the CDC-PP.

Article 49: The beneficiary of the Power Development Fund in the area under the notice shall submit a letter requesting installments for the community project along with the following documents:

(1) a copy of the contract or the agreement of the community project;
(2) a copy of a bank account book;
(3) a report on the examination of work installments (in case of requesting more than one installment, except in cases of advance payment); and
(4) photographs of work or activities (in case of requesting more than one installment, except in cases of advance payment);

Article 50: For payment from the Power Development Fund in the area under the notice, the Chairman of the CDC-PP or a person designated by the Chairman of the CDC-PP, shall be the authority who approves the payment, and signs the receipts of payment or the fund requesting forms, and shall use the fund within the annual budget approved by the ERC through the methods as follows:

(1) for payment through a bank, transfer money to the creditor or the beneficiary;
(2) for payment by check, issue a check in the name of the creditor or the beneficiary and cross out the words “or the bearer”; and
for an order of cash payment, issue a check in the name of the responsible officer and cross out the words “or the bearer.”

There shall be evidence of payment for every payment for subsequent auditing.

Article 51: The receiver of the Power Development Fund in the area under the notice shall submit a note notifying the receiving of the fund.

Article 52: The receiver of the Power Development Fund in the area under the notice shall make a sign or any symbol, with the shape, size and form prescribed by the ERC, to demonstrate that the community project receives financial support from the Power Development Fund in the area under the notice.

Part 3
Management of Type-C Funds

Article 53: For the management of Type-C Power Development Fund in the area under the notice, the receiver of the fund shall be a government agency and shall perform the following undertakings:

1. A representative from the municipality or the sub-district administrative organization shall announce the making of a community project through a sub-district assembly and make a budget plan of each project within the framework of the annual work plan approved by the ERC;

2. The OERC shall approve payment from the Power Development Fund in the area under the notice to the receiver in accordance with the payment plan so that the project be carried out to achieve its objectives; and

3. The receiver of fund in the area under the notice shall gather information and report on the progress of the community project to the OERC at least twice a year or when the project is completed.

Division 4
Finance, Accounting, Inventory and Audit

Article 54: The OERC shall transfer the money of the Power Development Fund in the area under the notice quarterly based on the annual work plan, the budget plan and the needs of the management of the Power Development Fund in the area under the notice.

Article 55: There shall be a separate account of the Power Development Fund in each area under the notice. Financial and accounting documents shall be made in accordance with the forms prescribed by the OERC. The OERC may appoint a person to audit and evaluate the management of the Power Development Fund in the area under the notice and the undertakings of the CDC-PP as appropriate. In such case, the CDC-PP has a duty to facilitate the work of the auditor at all times.

Article 56: In the management of the money of the Power Development Fund in the area under the notice, which has been allocated for activities of the Fund in the area, a report shall be made to the ERC on the progress, financial status, quarterly and annual results of the work, with the financial accounts and balance of the Power Development Fund in the area under the notice within 60 days of the end of the fiscal year. If a report cannot be made, the OERC shall temporarily suspend the transfer of the Power Development Fund in the area under the notice.

Article 57: In the management of Type-A and Type-B Funds, there shall be an internal audit on the finance, accounting and inventory, and report the results of the audit to the ERC at least once a year. There shall also be an account audit and budget certification by a qualified auditor.

Article 58: The CDC-PP shall open a savings account and a current deposit account with a bank or a financial institution with the account name “Power Development Fund in the area under the notice and specify, at the end, the name of the power plant or the sub-district or the district or the province in which the power plant is located.”
Article 59: In opening a bank account, there shall be four authorized persons for payment i.e. the Chairman of the CDC-PP or the Vice-Chairman of the CDC-PP, and two additional CDC-PP members. The order of payment shall require two out of the four signatories i.e. either the Chairman or the Vice-Chairman of the CDC-PP co-signing with one of the two CDC-PP members.

Article 60: A person shall be responsible for the finance, keeping account of the Power Development Fund in the area under the notice and shall keep an amount of cash, not exceeding 50,000 baht, for administrative expenses.

Article 61: For advance payment, the borrowing shall not be made more than seven days prior to the undertaking and shall be cleared within 30 days after the completion of the undertaking.

Article 62: The inventory management of the Power Development Fund in the area under the notice shall be in accordance with the regulations prescribed by the ERC.

Division 5
Follow-up and Evaluation

Article 63: The CDC-SPP or the CDC-PP shall convene an assembly at the village or community levels, and at the sub-district or group communities levels every three months in order to monitor and evaluate community projects.

Article 64: The receiver of the community project shall have a duty to report the progress according to the work plan to the CDC-SPP or CDC-PP meeting, and inform the CDC-SPP or the CDC-PP of the summary of the project upon completion of the project.

Article 65: The CDC-PP shall make a progress report and evaluate the undertaking and the approved community project quarterly for the OERC’s consideration in the transfer of the money to the area under the notice.

Article 66: The OERC and the CDC-PP shall jointly make a database of community projects for the follow-up and evaluation of the success of the community projects and shall coordinate to update the database for common usage.

Article 67: In case where there is a dispute or conflict during the undertaking of the project, the CDC-PP shall convene a meeting to resolve the issue and assign one or more members of the CDC-PP to carry out the resolution of the CDC-PP and find a solution to the dispute or the conflict soonest.

Article 68: When there shall be grounds to acknowledge that a project will not yield benefit or that a project will not succeed, the OERC may request the CDC-PP to clarify the facts or rectify or suspend the damaging act.

Article 69: In case where there is a complaint of the corrupt usage of the Power Development Fund in the area under the notice, the OERC shall request the CDC-PP to present facts to the ERC for consideration.

Division 6
Publicizing the Power Development Fund

Article 70: In the management of the fund in the area under the notice, the Power Development Fund shall be publicized to the public throughout the area under the notice in order to promote understanding and access to the Power Development Fund in the area under the notice in accordance with the guidelines on publicizing community projects as prescribed by the OERC.

Article 71: The CDC-PP shall publicize the results of the community projects through the media or various activities such as newsletters, community radios, personal media, local newspapers, electronic media, announcement trucks, project signs, and press conferences on the success of community projects.
Division 7
Transition Provisions

Article 72: The OERC shall appoint the first CDC-PP within 150 days of the date on which this Regulation comes into force, except in case of a power plant that commences its construction after this Regulation comes into force, the appointment shall be made within 150 days of the date on which the power plant commences its contributions to the Power Development Fund.

Article 73: In absence of regulations, rules, criteria referred to in this Regulation, similar regulations, rules, criteria applied to government agencies or local government agencies shall be applied upon the prior consent of the ERC.

Given on the 28th of December B.E. 2553 (2010)
Direk Lavansiri
Chairman of the Energy Regulatory Commission
Annex 5: Key Messages On BSM From Volume1 Of The ISH Outputs 4.1c Knowledge Base

KEY MESSAGES AND FREQUENTLY ASKED QUESTIONS
ON HYDROPOWER BENEFIT SHARING MECHANISMS (BSM)

1 July 2012
This Note contains Key Messages and Frequently Asked Questions (FAQ) on benefit sharing relevant to Mekong hydropower. These were originally provided in Volume 1 of the Benefit Sharing Knowledge Base (KB) compiled by the Initiative on Sustainable Hydropower in May 2011. This is the July 2012 update, specifically to inform national working groups formed to help NMCS implement ISH13, “Benefits sharing options elaborated for Mekong tributary hydropower”, by 2013. The Key Messages may be read in conjunction with the FAQ, which go into detail on questions NMCS have already raised about BSM concepts and practice. This update will also be available on the MRC Website for all MRC stakeholders to access.

KEY MESSAGES

1. Benefit sharing is a practical way to spread benefits of water resource utilization across the economy, catalyse broader-based economic growth and support social equity policies.
   - Experience with Benefit Sharing Mechanisms (BSM) is growing world-wide, not only applied in the water resource sector on hydropower, but also in other natural resource sectors like forestry, mining, agriculture and eco-tourism.
   - The 1995 Mekong Agreement aims to provide for mutually beneficial utilization of the Mekong River and related resources. Benefit sharing is one of the seven strategic priorities for basin development set out in the MRC Basin Development Strategy, endorsed by Member Countries in 2011. It is imbedded in approved MRC Programme work, including the Initiative on Sustainable Hydropower (ISH) and the Basin Development Plan (BDP).
   - Benefit sharing is key to improving the sustainability of hydropower, also a MRC strategic priority for basin development. It underpins Member Country efforts to place decisions about hydropower development and management in an IWRM river basin perspective.
   - Benefit sharing is consistent with all Mekong governments’ national development policies of reducing poverty and closing the gap between rich and poor.

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109 The material supports MRC Member Country efforts to implement ISH Output 4.1c., “Benefit sharing mechanisms (BSM) elaborated at regional, national and local levels”.
110 Strategic Priority 5, “Seek options for sharing the potential benefits and risks of development opportunities”, also connected to Strategic Priority 3, “Improve the sustainability of hydropower development.”
111 The MRC’s Rapid Basin-wide Hydropower Sustainability Assessment Tool (RSAT) uses benefit sharing as a criterion to evaluate progress toward hydropower sustainability and placing decisions about hydropower in a river basin perspective.
2. **Benefit sharing may be pursued at different scales (e.g., at regional, national, tributary or sub-basin, and local scales).**

   - Two main categories of benefit sharing found in international practice are national-to-local (NTL-BSM), sometimes called project-level BSM, and transboundary benefit sharing mechanisms (TB-BSM).
   - National-to-local BSM types aim to share benefits that normally accrue at national levels with river basin residents at provincial, district/municipal or local levels where hydropower projects are located. Appropriate measures are typically set out in enabling legislation with supporting regulations.
   - Transboundary benefit sharing mechanisms are based on principles embodied in IWRM practice, which are negotiated outcomes and Agreements among countries who share an international river.
   - MRC Basin Development Strategy (2011) calls for Mekong Counties to cooperate in … “exploring mutually beneficial options, including benefit and impact sharing agreements that go beyond the project level” … to balance development opportunities and risks of hydropower across sectors, and at the regional scale.

3. **Governments may choose a range of mechanisms to share the benefits of hydropower with provinces, local communities, and river basin residents.**

   - Common types of national-to-local benefit sharing around the world include: \(^{112}\)
     1. **Sharing monetary benefits** from national to local levels according to an approach stipulated in law, recognizing that the financial benefits of hydropower mainly accrue at national economy level (or flow to national electricity consumers, many of which may live outside the river basin);
     2. **Facilitating non-monetary benefits**, recognizing that most rural, riverine communities need help to remove barriers that impede their access to natural resources (forest, water, or land) to help offset access loss due to hydropower, plus to take advantage of the local development opportunities created. \(^{113}\)
     3. **Equitably sharing project services**, ensuring communities in project areas receive first-time electricity connection, or more reliable electricity supply – making them among the first, not the last to benefit from electrical services generated by hydropower in their area;
     4. **Optimizing additional benefits**, systematically maximizing the development benefits of project-related investments and procurement, such as roads, public infrastructure and jobs which serve as local/sub-regional development stimulus.

   - Modern approaches incorporate all types of benefit sharing in a systematic and coherent way. It views benefit sharing as a package of measures, not a single mechanism.

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\(^{112}\) In previous Reports, 5 types of NTL type were discussed. Indirect and additional benefits are considered in the same category, as “additional benefits” to streamline things. Indirect and additional benefits are actually distinguished by the fact indirect benefits arise from project-related investments (access roads, jobs, public infrastructure) and additional benefits are investments additional to project-related investments (commitments for public infrastructure including roads beyond what is required for the project), but otherwise only possible because of the project. Because the actual impacts are similar these categories are merged.

\(^{113}\) Encompassing the steps governments (at all levels) may take to give local communities better access to natural resources (e.g. such as issuing permissions and removing unnecessary barriers that impede access to land or forest resources locally), and also the permissions to unlock the development opportunities resource transformations of hydropower may provide.
It is also important to make benefit sharing mechanisms flexible so they can adapt to changing development priorities of people, as these priorities evolve over time. For example, certain forms of benefit sharing can be targeted to help achieve poverty reduction targets in the first years.

4. All MRC Member Countries have some experience with sharing the benefits of hydropower, which they can build on, and share experience with each other.

- Benefit sharing is not actually new in the Mekong. All MRC Member Countries have experience with one or more types of benefit, especially with optimizing additional benefits of hydropower. In the past, people may not have labeled measures as “benefit sharing”.
- Among the steps MRC Member Countries have recently taken to advance benefit sharing thinking and practices related to hydropower include:
  - NMCS and national line agencies in Cambodia and Lao PDR have sought to draw lessons from international experience to help them formulate national policies for benefit sharing.
  - Lao PDR has experience with revenue management, where a portion of hydropower revenue is allocated to poverty alleviation programmes at national and sub-national (e.g., from NT2, which has a major power export component). Lao PDR has experience with innovative measures to raise local incomes of people living in the vicinity of hydropower projects. Government and EDL take equity stakes in projects, which generate dividends. Lao PDR also has policy provisions for hydropower revenue to help finance river basin, forest, and environmental protection funds, not yet fully defined or made operational. In a highly positive step, Lao PDR recently formed an inter-ministry committee to consider ways to introduce BSM more systematically in national policy.
  - Thailand passed laws in 2007 to establish revenue sharing on existing and new power projects, through the mechanisms of Community Development Funds (CDFs) and Power Development Funds (PDFs). These apply to all power generation projects, not just hydropower. As yet no Funds have been established on hydropower projects (though processes are reportedly underway). EGAT said 102 thermal power plants in 40 provinces, including 26 power plants of EGAT established local “Funds” in 2009. The PDFs which may take over from CDFs as the primary institutional arrangement for local revenue sharing, aim to finance improvements in … “the environment, socio-economic conditions and quality of life of people living in the vicinity of power projects”. As stipulated in the Energy Industry Act (2007), “… contributions sent to the Fund … shall be deducted from the (electricity) tariffs”.
  - In Viet Nam, from 2007 the Electricity Regulatory Authority of Viet Nam (ERAV) developed a draft decree Law for benefit sharing with local communities affected by hydropower. The draft contains provisions for revenue sharing, facilitation of non-monetary benefits, equitable access to electricity and optimizing additional benefits. The provisions were pilot tested by ERAV in cooperation with Quang Nam Province in 2010 on the 210 MW A’Vuong Project. Viet Nam also collects water use fees from...
hydropower revenues allocated to Provinces where the projects are located. Viet Nam laws also have provisions for environmental protection funds and payment for Forest Ecological Services (PES) that hydropower revenue must be allocated to, which have yet to be fully defined, or made operational.

- **China** allocates a portion of revenue from hydropower to local development reconstruction funds in reservoir areas and to pay for longer-term (20-year) compensation. These are also applied to hydropower projects in the Lancang-Mekong River cascade.

5. **Revenue sharing is a well recognized and common approach many governments use to share the monetary benefits of hydropower within society.**

   - Mechanisms for sharing monetary benefits of hydropower take many forms (e.g. revenue sharing, equity sharing, taxes, royalties, preferential electricity tariffs for local communities, and new innovative financing sources such as payment for ecological services (PES) and carbon financing).
   - Revenue sharing is perhaps the most common and visible mechanism. Countries typically choose a mix of mechanisms to spread monetary benefits from national to local levels and river basin entities where hydropower is located, not just a single measure.
   - Governments need to balance several factors in deciding the amount of revenue sharing (as a percentage of gross revenue). Among these considerations include:
     i. ensuring revenue sharing is a meaningful amount, otherwise it is meaningless;
     ii. ensuring the impact on consumer electricity tariffs is acceptable;
     iii. taking account of other uses for hydropower revenue (e.g. environment protection funds)
     iv. the presence of alternative means of sharing monetary benefits, such as royalties, and
     v. political and public perceptions of what is fair, which evolves over time.
   - In developing economies, an allocation to benefit sharing of 1-3% equivalent of gross revenue is common. Overall the percentage of hydropower revenue shared in total (i.e., for other water and environment protection funds as well as benefit sharing) may be higher. The total ultimately depends on government policy on hydropower revenue management and what is fair and sustainable in the tariff.

6. **Benefit sharing is positive from all view points, when introduced in a systematic way with genuine participation of beneficiaries and stakeholders.**

   - Benefit sharing, properly conceived and implemented:
     - Allows **project-affected people** and traditional river users, as well as river basin residents involved in catchment management to become partners in projects. It provides them with a stronger voice in decisions that affect them, and an opportunity to be first among project beneficiaries, not last.
     - From the **government perspective**, benefit sharing is a practical policy tool to achieve greater social inclusiveness and balance social, economic and environmental factors in planning, design, implementation and operation of hydropower projects.
     - From the **hydropower developer** and **hydropower operator** perspective, benefit sharing increases capacity to work effectively with local communities. Good community

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implementation of the PES Decree Law of 2010, there is no active consideration of the draft BSM Decree Law in ERAV at present. It remains a good starting point to pick up discussion.
relations are important for many reasons, ranging from the reduced risk of project delays on new projects, to improved prospects for local cooperation in catchment management and implementing environment mitigation measures. Reducing reputational risk is also a major factor.

- From the perspective of investors and financial institutions, the presence of an explicit policy framework with realistic provisions for local benefit sharing is an indicator that locally affected communities and general public are more likely to support a project – all things considered. As a result, the investor’s risk exposure is reduced and investors are more inclined to become financing partners. This can reduce the cost of money the society pays for hydropower investments (regardless of whether public or private sector borrowing is used, e.g. reductions in interest rates on debt financing).

- From the electricity consumer perspective (i.e. households, consumers in the services sector, and industry users) it means the government can reach decisions to optimally develop water resources and provide what are potentially more stable tariffs, a reliable power supply and ultimately less expensive water and energy services.

- Overall benefit sharing is a tool to manage development risks and enhance development opportunities for all, not only for some.

7. It is important for government authorities leading dialogue processes on BSM to have a clear understanding of different mechanisms (BSM) and how they work in practice.

- Despite the prominence of benefit sharing, the concept is not always clearly defined. In part, this is due to many different objectives and ways to share benefits in different sectors. It is also because people have different points of emphasis and expectations about benefit sharing.

- Even for countries that have practiced some forms of monetary benefit sharing, experience shows that people still have many different pre-conceptions, views and ideas when the topic is discussed in multi-stakeholder venues – especially around water and energy infrastructure like hydropower and large dams.

- It is important for government official leading internal and public dialogue processes on BSM to have a clear understanding of the different types of benefit sharing mechanisms (BSM) and how to respond to the different arguments of stakeholders. 

8. Misconceptions about benefit sharing that slow or frustrate consensus need to be addressed early, both in inter-ministry discussions and in public dialogue with stakeholders, including the media.

- A clear strategy to raise awareness on how benefit sharing helps to overcome real and perceived shortcomings of hydropower is helpful;

- It is important that people understand what benefit sharing is and is not, especially those participating in multi-stakeholder dialogue processes, as well as the media. For instance, it is helpful to have clarity on:
  - The distinction between short-term resettlement compensation and longer-term benefit sharing;
  - That benefit sharing is not only for resettlement communities, but for all communities in the project area and basin residents more generally.

Because Mekong countries are at different stages in introducing and implementing benefit sharing for hydropower, different emphasis and support may be necessary in each country. However, the mechanisms are essentially the same.
- Revenue sharing is not part of the project capital budget or the same as profit sharing. It derives from the revenue stream the project generates and thus is ultimately reflected in the consumer electricity tariff.
- Similarly, revenue sharing is not something to be negotiated between local communities and hydropower companies. In the Mekong context, it is set out in government regulation.
- Revenue sharing is not something only for rich developed countries, or too complex for developing countries; and
- Benefit sharing applies to both existing and new projects, not just new projects.

9. **Benefit sharing is not a new ground to fight ideological battles on hydropower.**
   - Some voices argue that benefit sharing is only something proponents of new hydropower want. They say it is a way to “green up” hydropower, or “white wash” concerns about the impacts of hydropower. Experience from around the world suggest otherwise.
   - As set out in the Basin Development strategy (2011), MRC’s view is broadly:
     - Decisions about hydropower need to take place in a basin-wide perspective, accounting fully for all three dimensions of sustainable development (economic, social and environmental) and have flexibility for inter-generational equity.
     - Benefit sharing is a crucial component of sustainability, but not a deciding factor whether governments should pursue new hydropower, or not
     - Benefit sharing is a way to improve the sustainable management of existing hydropower.
   - International non-government organizations from the social and environment fields pro-actively support benefit sharing around natural resource use and extraction, including hydropower.
   - Benefit sharing mechanisms also underpin the sort of partnerships needed to genuinely involve people in development decisions that affect them.

10. **Benefit sharing is not to be confused with hydropower-related resettlement compensation measures, which are one-time or short term, whereas benefit sharing is long term.**
    - Resettlement compensation is a short-term measure governed by national regulations. It is part of the project cost financed by the hydropower developer (public or private).
    - Benefit sharing goes beyond resettlement compensation. It recognizes that hydropower development and operation affects many other people in the project vicinity and riverine communities, not only people who may be resettled.
    - By definition and in fairness, benefit sharing means the communities, municipalities and provinces who “host” hydropower projects (subject to national agreement) are entitled to a portion of the benefits arising from development of water resources in their locale and river basin, which they depend on.
    - Hydropower projects are long-life structures that provide a stream of benefits over the economic life of the project, which is often 50-100 years or more. Thus sharing these benefits is a long term endeavor.

11. **Benefit sharing stems from government policy and regulation; it is not something for hydropower developers and operators to negotiate.**
Benefit sharing is a long-term relationship, on the one hand, between the main consumers of electricity services in towns, cities and industry, and, on the other hand, the local communities and residents of the river basin who host the project in their locale or basin.

Benefit sharing is not a negotiation between hydropower companies and local communities and provinces. Hydropower developer/operators are not the drivers of benefit sharing arrangements or entities to set “rules” for BSM, or negotiate profit sharing deals project-by-project.

The government role is to set out a regulatory framework. This is especially important if there is a mix of IPP and public sector hydropower projects, as in the Mekong. This includes the rules and provisions for revenue management, which includes measures like royalties and revenue sharing.

Revenue sharing is a tariff-based measure. Experiences show that the public will support an increase in electricity tariffs of a reasonable amount if (i) the money is used to fairly distribute benefits, especially to poor rural areas where projects are built, and (ii) the information is conveyed in a consistent and transparent way, bringing in supportive voices from civil society.

12. **A systematic, collaborative approach is best to introduce comprehensive forms of benefit sharing, to reflect good practice and meet stakeholder expectations.**

Steps that countries take to systematically introduce comprehensive arrangements for benefit sharing include:

i. starting with awareness raising, engaging with all stakeholders;

ii. undertaking pilot projects to build confidence and seek stakeholder consensus on approaches and mechanisms most suited for the delivery of benefits;

iii. introducing appropriate enabling policies and legislation based on accepted good practice;

iv. adequately considering actions needed at all stages of the infrastructure project cycle;

v. carefully choosing the sources of finance (or mix) to share monetary benefits;

vi. selecting appropriate mechanisms for delivery of benefits, regardless of financing sources;

vii. introducing appropriate institutional arrangements, minimizing need for new structures;

and

viii. ensuring effective 2-way communication, and encouraging partnership approaches.

Among the main challenges in introducing benefit sharing are the complexity of some mechanisms and investments in capacity building. More specific challenges relate to addressing:

- Misconceptions about benefit sharing that may hinder, slow or frustrate progress;
- Ensuring bottom-up processes to decide local mechanisms for delivery of benefits and beneficiary choice of benefits (within the framework of regulations set by government);
- Ensuring that benefit delivery mechanisms are properly integrated with existing local, governance and development systems so they complement efforts and add value, and
- Ensuring open and transparent implementation arrangements for BSM.

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117 This does not preclude hydropower developers and owners from playing a role, either to help fund or implement agreed benefit sharing mechanisms. However, any such agreements need to be reflected in Project Concession Agreements.
13. **Benefit sharing applies to other resource sectors in the Mekong, not only hydropower.**

- World-wide experience with benefit sharing in all sectors is growing such as the mining, forestry, petroleum, eco-tourism and genetic resources harvesting (i.e. harvesting plants for medicines funded by the pharmaceutical industry).
- At the same time, experiences are mixed (i.e. some remarkable successes as well as some clear failures). The pool of experience nevertheless creates opportunities for cross-fertilization of ideas and sharing lessons among sectors to help identify best practice, and critically, to minimize mis-steps;
- Opportunities exist to link sector-based strategies for BSM to challenges that many emergent river basin organizations face in coordinating sustainable management of land-water resources at basin and sub-basin scales (e.g., in the mining, forestry, agriculture, ecotourism and hydropower sectors).

14. **It is important for governments to coordination all Funds for water resource and environment protection that hydropower is require by law to support, including revenue sharing.**

- Acts and Decree Laws in Member Countries increasing call for hydropower revenue to help finance Funds for water use and water resource protection, environment protection, payment for ecological services (PES), funding for river basin organizations, and benefit sharing.
- While these Funds have been introduced in enabling legislation recently in the Mekong, most Funds have yet to be fully coordinated, defined or established. One reason is limited institutional capacity. Another complexity is different Ministries or bodies may be responsible for the Funds for their sector, where the common element is they all look to receive revenue from hydropower sales.
- While many opportunities exist to exploit development synergies among these different Fund mechanisms, it is also essential to avoid confusion about what the various Funds do and how they link, which could lead to implementation delay, or duplication of effort.\(^\text{118}\)
- Opportunities to integrate the delivery of benefits from such funds are often available. These opportunities can be explored to make the Funds more effective, have less stakeholder confusion and respond to situations where there is limited implementation capacity. Sometimes a rationalization of Funds is advisable.

**FREQUENTLY ASKED QUESTIONS**

The following FAQ are from Volume 1 of the Knowledge base. As noted, NMCS are encouraged to propose additional FAQ for the ISH Team to share with all NMCS in the ISH13 process.\(^\text{119}\) These 10 FAQ

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\(^{118}\) Hydropower in many Mekong countries increasingly makes revenue contributions to these development funds. While payment or fees may depend on project size or generated output, payments are ultimately reflected in electricity tariffs (i.e. the electricity consumer pays).

\(^{119}\) Section 3 of Volume 1 offered 10 FAQ as a starting point for dialogue. It noted:

- An updated FAQ list can be prepared by ISH to record ongoing discussions with NMCS, MRCS and national line agencies. This may be useful to keep everyone up-to-date with access to the same information, and also allow everyone to see the sort of questions their colleagues in other countries are asking;
- Other FAQ can be identified, for example (i) in dialogue under this Output (ii) from the regional workshops, which will bring in a wider range of MRC stakeholders and practitioners, and (iii) from the BSM study tour(s) to see how things work on the ground;
- In addition, if NMCS wish, more detailed categories of FAQ can be introduced later in dialogue processes.
below reflect questions that NMCS directed to the ISH in 2010-11, such as noted in previous TRG Minutes and ISH AC Meeting Minutes.
Both short and longer answers are offered for each FAQ.

**Q1. WHAT IS THE DIFFERENCE BETWEEN COMPENSATION, LIVELIHOOD RESTORATION AND BENEFIT SHARING?**

This question is frequently asked by hydropower developers and power companies and the media. It is linked to the underlying question – is benefit sharing really needed if resettlement compensation policies are present, and investments in indirect benefits are already made such as for local roads and job creation?

- **A short answer is:**
  - Benefit sharing applies to existing hydropower developments as well as new projects. Some stakeholders, including the media, start off thinking that benefit sharing is relevant to resettlement and new projects only, which is one reason this often is a first question.
  - For new hydropower projects compensation is a short-term measure. It is part of the project cost financed by the hydropower developer. On the other hand, benefit sharing is a set of long-term measures that aim to equitably spread resource utilization benefits across the society of all projects - existing, under construction, or proposed. And the sharing of monetary benefits is directly (or indirectly) based on the project revenue stream – i.e. it ultimately derives from the electricity user tariff.
  - Resettlement compensation typically involves a one-time payment for people who have their land or property recovered by the State to allow construction of hydropower facilities and land-take for reservoirs. Livelihood restoration programmes are a relatively new and highly welcome trend. They may extend for a period of time after relocation, generally not more than 2-5 years. Nonetheless, livelihood restoration programmes like compensation, are mainly focused on resettled communities and tend to be case-by-case.
  - Benefit sharing goes beyond one-time resettlement compensation and livelihood restoration in both timeframe and scope. Benefit sharing recognizes:
    - Firstly, hydropower construction and hydropower operations affect many other riverine communities in positive and negative ways depending on the situation, not only people resettled.
    - Secondly, people living in river basins where hydropower is located feel it is only fair they share some of the benefits they see as mainly flowing to the national economy and national electricity consumers, many of which live outside their river basin or even in another country.
    - Thirdly, hydropower facilities are life-long, if not permanent water infrastructure. They provide a stream of benefits over the economic life of the facilities - often 50-100 years, or more. Sharing these benefits is a long term endeavor as long as the project operates.

- **A longer response is:**
Benefit sharing is related to discussions about evolving good practice in sustainable hydropower development and management. And it is fundamentally, about the steps governments may take to respond to community and public expectations about how to address the development opportunities and risks created by hydropower in their locality and river basin.

- There is no doubt that practices have been improving around all dimensions of hydropower that are used to measure sustainability (e.g. improving the social, environment and economic performance of hydropower). And it is fair to say that environment and social management practices around hydropower are not the same as practices 20 years ago, in most counties.

- All Mekong countries today have laws that require the project capital budgets to pay for compensation for land or property recovered by the State from the local communities, often as one time payment, or by short-term payment schedules. And indeed this compensation applies to all forms of public infrastructure. Compensation principles and rates (for land take, livestock loss, property, trees, etc.) are generally established in detailed government regulations.

- In the case of hydropower, compensation typically includes some form of resettlement assistance, though practices vary considerably in the Mekong. Some Mekong hydropower projects have gone further to introduced livelihood restoration programmes that extend for a period of time after people are relocated, though generally not more than 2-5 years. Livelihood restorations programmes like compensation measures are mostly focused on resettled communities. They tend to be case-by-case depending on the financing source and Concession Agreement negotiations.

- Mekong Governments are gradually increasing the attention paid to additional and indirect benefits of hydropower that serve to boost local and regional development. Experience from around the world shows these indirect or additional benefits can be significant, if and when they are systematically exploited.

- Nonetheless, there is a mixed picture on the ground in the Mekong regarding measurable improvement of income and welfare for rural-based households who have been affected by hydropower projects, including people who depend on natural resources affected by hydropower construction and operation. The picture varies from project-to-project and among river basins (Mekong tributaries).

- Apart from adverse impacts there are also many unrealized opportunities to take advantage of the resource transformations created by hydropower that provide local development opportunities. Benefit sharing mechanisms can help local communities and riverine communities realise these development opportunities.

In all these ways, benefit sharing looks beyond resettlement and compensation issues alone. It recognizes that measures for compensation and livelihood restoration generally apply to a small percentage of people, while a far greater number of people may be impacted in varying degrees by hydropower construction and operations. Moreover, there are frequently disputes over what degree of impact is actually felt in different locations outside
the resettlement areas and resettlement host communities, such as upstream and downstream.

- An explicit and systematic approach to local benefit sharing can represent a large step toward a number of important shared development aims. To illustrate, the following is a list of the objectives of local benefit sharing from the draft Decree law on Benefit Sharing in Vietnam, mentioned in Section 2.1.1 of this Summary:
  - Ensuring that people who permanently give up land or natural resource access for investments in hydropower are first among the beneficiaries of hydropower projects;
  - Ensuring that communities that host hydropower projects in their locality become long-term partners in sustainable management of hydropower assets;
  - Ensuring that communities receive financial incentive for helping to maintain revenue flows from hydropower assets over the long-term by taking local actions in land-water management that help to manage the physical sustainability of project outputs over time;
  - Ensuring that financing mechanisms for payment of ecological services of benefit to affected communities are available, including local actions which contribute to sustainable management of catchments, local biodiversity and headwater forests;
  - Ensuring that investments supported by revenue-sharing funds raise income levels of adversely affected communities to at least average provincial levels, and meet evolving local development, cultural and welfare needs of communities hosting the project;
  - Ensuring that investments made with revenue sharing funds reflect beneficiary preferences and are awarded on a grant-application basis or equivalent methods using a bottom-up process offering choice;
  - Ensuring that preparations for long-term benefit sharing start in early stages of planning and project design to help ensure (i) least-cost approaches to benefit sharing are identified, and (ii) opportunities to built-in physical flexibility to re-balance hydropower operation over time to meet future priorities are provided;

- Benefit sharing thus provides a systematic framework to ensure that large national investments in water infrastructure bring maximum long-term returns to local and regional development.

- At the local level, mechanism allow beneficiaries to define priority needs to take actions that balance their own development opportunities and risks, much like MRC Member Countries seek to do at the regional level through transboundary benefit sharing.

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120 This refers to, for example, incorporating bottom flow outlets in dams to provide flexibility to operate with a wider range of downstream release patterns. This will enable regulators to accommodate findings of scientific environmental flow assessments and establish consensus on re-balancing economic, environment and social factors. International experience shows that flexibility the in operating strategy for the reservoir is important as conditions and development priorities within the basin evolve —given the long economic life of hydropower assets. As discussed in the policy review, this can also include consideration of other steps like installing fish-friendly turbines to reduce fish mortality. This cost additional money up-front, but can have returns in terms of the increased value of fish catch and biodiversity conservation.
Q2. CAN DEVELOPING COUNTRIES REALLY AFFORD TO INTRODUCE BENEFIT SHARING MECHANISMS?

This question relates to concerns that benefit sharing mechanisms may be costly, complex, difficult to implement and require institutional capacity. Moreover, in developing countries government development budgets are limited and always under pressure.

**A short answer is:**

- Benefit sharing is equally important in both developed and developing country situations. Moreover, it is especially important in river basins where hydropower brings about significant resource transformations for the rural and riverine populations who live at subsistence levels, and depend on rivers for livelihoods, nutrition, health and welfare.
- There is no evidence to suggest the presence of benefit sharing in the national policy framework reduces or impinges the development and operation of hydropower. In fact, the evidence is quite the opposite.
- Benefit sharing mechanisms can help to reduce the development risks for all stakeholders, help to reduce controversy about hydropower, and contribute to more constructive dialogue on both proposed new projects and the operation of existing projects.
- All things considered, government is more likely to gain public support for hydropower projects, and investors are more likely to commit financing, if a fair approach to benefit sharing is in place.
- But at the same time, it is important to be clear that decisions about hydropower development (construction of new hydropower projects) and management (operation of existing hydropower facilities) must be balanced in a sustainability context.
- This is both in terms of sustainable development and management of the power sector and sustainable development and management of river basin – which are both embodied in Laws in all MRC Member Counties. The presence of benefit sharing alone is not the determining factor in whether to build more hydropower projects, or not.

**A longer response is:**

- Examples in Section 2 of Volume 1 show that many positive development outcomes are achieved with benefit sharing in developing countries that have high levels of absolute and relative poverty. Mekong governments, including China acknowledge that closing the growing income gap between rural and urban areas is a development priority and social equity concern – and that benefit sharing is a uniquely important management tool to help address this concern, not only in the power sector but also in other sectors where benefit sharing is increasingly practiced (see FAQ 10).
- In the hydropower sector, benefit sharing is founded on universal principles of fair and equitably sharing of benefits between local communities (mainly rural) river basin residents and the main beneficiaries of hydropower, the majority of which may be located far away from, or even outside the river basin where the main project impacts are felt (i.e., national electricity consumers).
- Benefit sharing can materially underpin government efforts to diversify, boost and modernize the economies of rural areas where hydropower projects are now located or planned. Benefit sharing may also have a short-to medium-term focus on helping to achieve poverty alleviation
targets, especially where poverty rates in the vicinity of the projects are below provincial or national averages.

- The presence of long-term local benefit sharing mechanisms provides local communities time and material support to restore livelihoods, plus the means to take advantage of new development opportunities that hydropower developments (and associated facilities such as roads and the reservoir itself) may unlocked for them (e.g., via long-term financial support from grant programmes funded by revenue sharing mechanisms).

- Given the scale of national investments in hydropower and regardless of whether public investment or IPP financing models are used, steps to maximize the contribution that large hydropower make to local and regional development are uniquely important. They are consistent with Mekong Governments’ goals and policies, and widely supported by MRC stakeholders.

- The evidence of this MRC Stakeholder and wider public support is the inclusion of benefit sharing in the MRC Basin Development priorities in 2011 and the multi-stakeholder national and regional consultations on the Initiative on Sustainable Hydropower in 2008-2009 that led to benefit sharing being an integral part of the ISH.

Q3. WHAT IMPACT DOES REVENUE SHARING HAVE ON ELECTRICITY TARIFFS?

Many people ask this question to help them assess the likely degree of public support for revenue sharing measures for existing and new hydropower projects. While policy-makers may wholeheartedly support the principle of benefit sharing, they need to know how measures will impact on electricity tariffs, and what amount, or percentage of revenues sharing may be considered.

- A short answer is:
  - The impact of benefit sharing on electricity tariffs is typically quite modest compared to other factors that influence tariffs (e.g., sharing of 1-3% of gross revenue).
  - The actual tariff impact, of course, depends on factors such as the proportion that hydropower represents of the total electricity generation in the power supply mix, and how the cost of revenue sharing is distributed among the different tariff blocks and categories.
  - Experience from around the world shows the general public and electricity consumers will support an increase in electricity tariffs of a reasonable amount to accommodate benefit sharing - if certain conditions are met. Most important of these are:
    1. The money derived from revenue sharing is used to fairly distribute benefits of hydropower within society, especially a share to poor rural areas where hydropower projects are located and bottom-up procedures to spend this money wisely are present.
    2. The reason for benefit sharing is conveyed in a clear, consistent way to the public and especially electricity consumers.
    3. Meaningful steps are taken to ensure transparency in how money is spent and to minimize abuse, or the perception of abuse of the money;
    4. It is also important for the public to hear supportive voices from civil society and the power utility as well as the investor community.
  - As noted in Section 2 of this Volume, countries such as Nepal and China allocate a fixed percentage to revenue sharing equivalent to about 1.0 to 3.0 percent of the gross revenue generated from projects, on an annual basis. In other developing countries (e.g. Latin America
and in India), the total percentage of revenue allocated to revenue sharing is in the order of 10 to 14%.

- In countries where revenue sharing has been adopted, revenue sharing has not made hydropower projects unattractive financially to investors and developers as compared to other power generation alternatives such as nuclear, coal or gas-fired generation.
- It is important to consider any formula for benefit sharing in light of other tariff-related measures that may apply to hydropower such as payment for ecological services (PES), water use fees, and payments to environment protection or river basin development Funds (See also FAQ 10).

**A longer response is:**

- In addressing this question it is important to have a clear understanding of what sharing monetary benefits actually means and who is involved, so that discussions are informed and constructive.
- As noted in the draft Decree Law for Viet Nam (discussed in section 2 of Volume 1), benefit sharing is a long-term relationship, on one hand, between the main consumers of electricity services in towns, cities and industry, and on the other hand, the local communities and residents of the river basin who host the project in their locale or basin.
- Revenue sharing is not a “profit sharing” arrangement between hydropower entities and local communities, where for example, the local community is left on their own to negotiate with hydropower developers.
  - For reasons noted in Sections 1 and 2 of this Volume, that leads to potential conflict; which is counterproductive when the aim is cooperation.
  - It means revenue sharing arrangements on each project would be different, a recipe for controversy.
  - Moreover, actual profits to share may be limited, especially in the early years when debt is serviced. This potentially would reduce negotiations about sharing of “profit” with a local community to an accounting exercise - in many respects.
  - Profit sharing is perhaps more relevant connected to equity sharing, where a local community or local government gets some agreed share of the project equity and then receives a revenue stream from the return on equity, like any other shareholder.
  - Examples of equity sharing (as forms of benefit sharing) are referred to in Section 2 of Volume 1 and in Case Studies in Volume 3 of the Knowledge Base from Latin America, China and Canada. In those cases, the equity shares of local communities were either significant, or are combined with revenue sharing.
- The most common approach to share monetary benefits is from the project revenue stream. This has implications for tariffs; but at the same time, it places the beneficiary relationship in a proper context – a sharing relationship between the consumers of electricity services and communities and residents of the river basin where the project is located.
- As noted in Section 2, revenue-sharing arrangements as low as 1% of the gross revenue are significant when allocated to local development in poor, remote rural areas, and even considering some revenue may be split between municipal, distinct and provincial levels. The arrangements vary. To illustrate:
On the 210 MW A’Vuong project in Viet Nam, 2% revenue sharing will generate near $US 1.0 million per year for local development.

In India and Latin America, revenue sharing amounts are higher, in the order of 10 to 14% of gross revenue though they are also shared with provincial, municipal and local levels. (Local area benefit sharing is about 2% of gross revenue the remaining amounts are shared among municipal, district and provincial/state levels – again making a significant contribution to the local economies).

In Canada, long term arrangements for multi-billion dollar revenue transfers to indigenous people in northern areas are negotiated on projects that supply Canadian and United States power markets. These arrangements fundamentally transform the development future of the people involved, as noted in the examples in the Benefit Sharing Knowledge Base.

- In the end, it is a question of ensuring the real cost of sustainable hydropower is covered by tariffs in a manner appropriate to the development situation of the country. Revenue sharing also brings the “user pay” principle in IWRM into the picture (water as an economic good).
- Ultimately, the percentage of revenue to be shared is political choice, within the practical scope of what is economical for hydropower relative to other electricity supply options open to the country and what is publically accepted in terms of fairness and impact on electricity consumer tariffs.
- If there are public concerns about tariff implications of even a small and reasonable amount of revenue sharing, additional safeguards on the tariff implications can be introduced, such as to ensure there are no major adverse impacts on “life-line” tariff rates, or the lowest consumption category in tariff blocks, typically for the lowest income consumers in developing countries.  

Q4. **IS ENABLING LEGISLATION AND SUPPORTING REGULATION REQUIRED TO INTRODUCE BENEFIT SHARING?**

This responds to questions about how Mekong governments may best proceed, if consensus is achieved to take benefit sharing mechanisms forward. It is also about how to consider benefit sharing mechanisms when there is a mix of public and private investment in hydropower.

- **A short answer is:**
  - Based on international experience, good practice is to provide clear national legislation (enabling legislation) with supporting regulations on benefit sharing.
  - In this manner all stakeholders know the rules of the game, including existing hydropower operators, potential investors, local communities, municipal and provincial authorities and river basin organizations. All have an interest in supporting the equitable sharing of benefits.
  - Clarity is particularly important when countries have a number existing hydropower projects, plan to develop more, or have a mix of public and private investment.
  - Legislation ensures a consistent approach is followed and creates a “level playing field”, not only for investors, but also for communities and regions - so they know where they stand.

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121 Tariffs must take into account the cost of the service, the level of the service, the extent to which the service is being used and the ability to pay for the service. For example, in South Africa, life line tariffs are for domestic customers in poor areas can afford to have electricity in their households. In the “lifeline” tariff there is no basic levy, customers are offered 50 kWh of electricity free every month and any electricity used above that amount is charged at 29.4 cents per kWh (unit).  
http://www.joburgnews.co.za/july_2002/power.htm
A longer response is:

- There are many examples of national policy, legislation and regulations that Mekong countries can refer to when they consider expanding benefit sharing arrangements beyond current practice to something more comprehensive, clear and explicit.\textsuperscript{122} Also a number of Mekong countries already have draft legislation, or active legislation for BSM of one kind or another (See Section 2).

- Legislation and regulation helps avoid unnecessary controversy from arising due to differences in benefit sharing practices and levels of entitlement in different locations even in the same sub-basin or country. Experience shows that communities near hydropower projects that receive less benefit than communities elsewhere often feel they are treated unfairly. This has led to demonstrations in some countries. It otherwise increases the chance of political unrest and undermines public support for hydropower.

- It is also important to ensure that a consistent approach is followed on new and existing projects, on public sector and private sector projects, and for different groups, especially ethnic communities that often form a large proportion of project-affected people and river basin communities.

- Where differences in levels of entitlement are appropriate, they must be explained clearly and beneficiaries given a genuine chance to raise concerns.

- Experience elsewhere suggests good practice is where governments lead or facilitate a step-wise collaborative approach that offers:
  - A clear advocacy strategy to raise awareness on how benefit sharing mechanism can help to overcome real and perceived shortcomings in hydropower planning and management, and clear up common misconceptions that confuse, slow or frustrate the adoption of BSM;
  - A critical mass of multi-stakeholder partners and a dialogue platform for them to identify the sort of leadership, coalitions to form and practical next steps needed;
  - A suitable project and river basin to field trial implementation of local benefit sharing mechanisms, and to refine and amplify good practice;
  - Political will to link the outcome of field trials to government-led processes to prepare legislation and regulations, drawing on relevant models and lessons from the growing pool of regional and international experience; and
  - A coalition of partners to help achieve the critical threshold of consensus as early as possible, after which the national efforts will become self-sustaining.

- In the Mekong context, this requires linking existing network activities and initiatives in locating hydropower in the IWRM management context, as reflected in the principles in national legislation and the 1995 Mekong Agreement.

- To move forward it is important to convincingly demonstrate (win the argument) that benefit sharing is overwhelmingly positive from all view points. It is in everyone’s interest. For example as noted in Section 1 of this Volume:
  - It allows project-affected people and traditional river users as well as river basin residents involved in catchment management to become partners in projects. Otherwise, it provides them with a stronger voice in decisions that affect them, and an opportunity to be first among project beneficiaries, not last.

\textsuperscript{122} As discussed in Section 2, though a full set of examples from all regions is difficult as legislation has not been translated to English – a task ISH may consider on future.
(ii) From the government perspective, benefit sharing is a practical policy tool to achieve greater social inclusiveness and balance social, economic and environmental factors in planning, design, implementation and operation of hydropower projects.  

(iii) From the hydropower developer and operator perspective, benefit sharing increases capacity to work effectively with local communities and river basin communities. Good community relations are important for many reasons, ranging from the reduced risk of project delays on new projects, to improved prospects for local cooperation in catchment management and implementing environment mitigation measures the operator is responsible for, as prescribed by law. Reducing reputational risk is also a factor.

(iv) From the perspective of potential investors, the presence of an explicit policy framework with realistic provisions for local benefit sharing is an indicator that locally affected communities and general public are more likely to support a project – all things considered. As a result, the investor’s risk exposure is reduced. Investors are more inclined to become financing partners. This can reduce the cost of money the society pays for hydropower investments (regardless of whether it is public or private sector borrowing, e.g., reductions in interest rates on debt financing).

(v) From the electricity consumer perspective (i.e. households, consumers in the service sector, and industry users) it means the government can reach decisions to optimally develop water resources and provide what are potentially more stable tariffs, and reliable power supply and ultimately less expensive water and energy services.

Q5. WHAT ARE THE MAIN CHALLENGES IN INTRODUCING BENEFIT SHARING?

Decision-makers need to know the practicalities of benefit sharing; and what can go wrong. Also they want to understand the sort of investments involved (time, people, and money) in order to make informed decisions on the approach, modes of implementation and assignment of responsibility.

- **A short answer is:**
  - Benefit sharing is positive from all stakeholder perspectives (as noted in FAQ 4), when introduced in a consistent and systematic way with appropriate participation of beneficiaries and stakeholders.
  - The main challenges with benefit sharing are the potential complexity of some measures, and the required investments in time and capacity building.
  - As discussed in Section 1.4 of Volume 1, several specific challenges relate to ensuring adequate information sharing to address misconceptions, identifying institutional arrangements (while minimizing new structures), integrating benefit sharing with existing local development mechanisms, and ensuring open and transparent implementation arrangements.
  - Transboundary benefit sharing depends on negotiated outcomes. International experience shows that this can be a lengthy process, spanning many years, if not decades.

- **A longer response is:**
  - The positives that come from benefit sharing are numerous. These positives are not in dispute. Nonetheless, time and investments are required. As the World Bank 2009 global strategy for hydropower, “Directions in Hydropower” noted, the policy priority is shifting towards development “done right” through comprehensive environmental management and benefits sharing.
  - Section 1.4 offers steps that all countries may consider to overcome the inevitable challenges introducing benefit sharing in the hydropower sector. These include:
    - starting with awareness raising - engaging all stakeholders
- undertaking pilot projects – to build confidence and seek consensus on approaches
- introducing appropriate enabling policies and legislation based on reviews of good practice
- adequately considering actions needed at all stages of the infrastructure project cycle
- carefully choosing the sources of finance, or mix of finance for sharing monetary benefits
- selecting appropriate mechanisms for delivery of benefits, regardless of the financing source
- introducing appropriate institutional arrangements, minimizing where possible new structures
- ensuring effective 2-way communication, and encouraging partnership approaches

A further challenge is to ensure that mechanisms are transparent and beneficiaries are well represented in the BSM governance structures, especially community development Funds or local area development funds supported by revenue sharing mechanisms.

Otherwise, examples of common failures in implementation of BSM are traced to factors such as:
- lack of clarity in the regulations that support enabling legislation;
- failure to provide capacity building support to local levels of government who are key partners in the delivery of benefits;
- failure to integrate benefit sharing mechanisms with local or district / regional development planning systems, so they reinforce, rather than undermined normal development structures;
- failure to fully test the community driven development (CDD) approaches utilized to deliver benefits, and offer choices to beneficiaries;
- Lack of beneficiary involvement in producing the various guidance materials and operating manuals (OMs) needed to run benefit sharing delivery mechanisms and funds,
- Failure to monitor the impacts of the delivery of benefits on changes in poverty levels in the project impact area, including failure to set targets, and
- Failure to build-in community awareness programmes and information sharing among beneficiaries about how to access and get the most from the benefit sharing arrangements, and to have open forums to discuss positive results as well as those less successful, or failing.

Q6. WHAT ARE THE MAIN SOURCES OF FUNDING BENEFIT SHARING?

There are several approaches to share the monetary benefits of hydropower. One or more sources can be drawn upon. What is most appropriate in a particular country depends on factors such as the legal framework, precedents in other sectors and what is practical.

**A short answer is:**

- Different sources of finance may be tapped to redistribute monetary benefits hydropower generates, to share among local communities, river basin residents and potentially various levels of government where the project is located (e.g. municipal, distinct or provincial/state levels);
Among the sources and mechanisms to distribute monetary benefits include revenue sharing, equity sharing, general taxes, royalties, preferential tariffs, and various innovative financing sources such as PES and carbon financing.

Revenue sharing mechanisms that tap the revenue stream of hydropower projects are perhaps the most common, understandable, practical and straightforward.

- However, it is important to be clear that the actual money for revenue sharing comes from collection of tariff payments by electricity consumers.
- It is not something the hydropower operator is responsible for. The money flow is from the consumers to the power company.
- Whether the mechanism to share monetary benefits is royalty, tax-based or revenue sharing it is ultimately reflected in the electric tariff.

This positively reinforces the notion that benefit sharing is fundamentally a sharing relationship between electricity consumers on the one hand, and local communities and residents of river basins who host projects, on the other hand (see also FAQ -3 – What is the impact of revenue sharing on electricity tariffs).

A longer response is:

Mekong governments may choose from a mix of different financing sources and mechanisms to redistribute a portion of monetary benefits that hydropower generates (or the economic rent as described in Section 1 of this Volume).

Often governments choose a mix of measures. As noted in Section 1.4.5 of Volume 1, among the options include:

- A portion of the project revenue stream, or royalty payments, or water resource utilization fees generated by dam projects, distributed in a formula defined in regulations, typically linked to the project capacity (MW) or annual outputs (e.g. GWh);
- Part or full equity ownership of the project by a representative local community entity, or the municipality / province (equity sharing), for which the annual return on equity is used to finance the delivery of benefits;
- Annual revenue transfers from general taxes to affected municipalities, watershed management agencies and conservation authorities in the basin of the dam, which stem from the public benefits of hydropower;
- Local authorities levying property taxes on land used for dam facilities and reservoirs, the measure can reduce taxes paid by local communities and/or raise funds;
- Direct long-term contracts between the dam owner and affected communities; and
- More recently, use of carbon financing to capitalize or add to local area or provincial-level development Funds (the institutional arrangement).

Revenue sharing is often the most practical and straightforward to implement, as noted before. In accordance with economic principles in IWRM, the cost is incorporated in bulk tariffs for water and energy services.

It is worth mentioning that revenue sharing is more complex on multi-purpose dam projects that have no hydropower component. Though revenue streams from bulk water tariffs, navigation fees or irrigation supply can be tapped to share benefits, there is less international experience with these approaches.
Q7. WHAT DO HYDROPOWER INVESTORS, DEVELOPERS AND OPERATORS THINK ABOUT BENEFIT SHARING?

This question is important because hydropower developers, operators, utilities and investors are part of the benefit sharing equation. The key advantage of BSM for hydropower developers and operators is risk reduction. Good practice is for government to take the lead setting the overall legal framework and also to negotiate with developers to maximize the indirect benefits of hydropower. 123

☐ A short answer is:

- Experience shows that the initial reaction of some developers and investors can be very negative - if they misinterpret benefit sharing as mainly a responsibility of project companies; both to pay for and to organize complex local development mechanisms.
- This view generally changes to highly positive - after it is understood that government is responsible to provide clear regulation and create a level playing field for investors and developers. Hydropower entities would be partners, but not lead implementation.
- Developers and hydropower owners (public and private projects) value the improved community relations that benefit sharing mechanisms helps to foster and maintain.
- Most investors and hydropower project companies feel their risks are reduced if they can work in partnership with local communities on common concerns such as protecting long-term, sustainable hydropower operation while materially helping to realize local development aspirations.
- Hydropower industry associations pro-actively actively support benefit sharing. They advocate their use and acceptance by industry and utilities.

☐ A longer response is:

- As elaborated in Section 1.3.2 benefit sharing is in the interests of all MRC stakeholders, from governments to hydropower developers and operators, to local communities and provinces. BSM helps reduce risks for all, and helps to turn controversy into cooperation and partnerships.
- A common misconception is that benefit sharing is an agreement to be negotiated between project developers (or owners in the case of existing projects and local communities). That is only the case in countries where the Project Company is 100 percent owned by government, and the government instructs the public company to act on its behalf (e.g. Hydro Quebec and BC Hydro in Canada).
- While developer / operators may be partners in benefit sharing arrangements, the rules must come from government regulatory authorities framed under enabling laws.
- Moreover, the developer must not be in a dominant position in any governance arrangements for long-term benefit sharing mechanisms that operate over the economic life of the projects. Concession periods may last for 20-30 years, but the project and its benefit stream will be much longer, if not permanent.
- As noted in Section 2.3 virtually all international bodies and organizations that advocate hydropower and in particular sustainable hydropower actively support benefit sharing. The International Hydropower Association (IHA) actively supports the introduction of benefit

123 To reflect any agreements reached formally in Concession Agreements in a transparent way.
sharing mechanisms on existing and new hydropower projects with the Hydropower Sustainability Assessment Protocol (see Section 2 of Volume 1).

Q8. **HOW DOES BENEFIT SHARING CONTRIBUTE TO SUSTAINABLE HYDROPOWER?**

The answer is contained in the definition of sustainable development provided in legal frameworks of MRC Member Countries, namely: “development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs, on the basis of a close and harmonized combination of economic growth, assurance of social advancement and environmental protection”.

☐ **A short answer is:**
- Benefit sharing is consistent with the accepted definition of sustainable development, applied to water and energy infrastructure.
- Benefit sharing is widely seen as a practical tool to improve social, environmental, and economic performance of hydropower projects.
- Benefit sharing is an important element of hydropower sustainability assessment tools developed at international and regional levels, including the Hydropower Sustainability Protocol (project-specific) recently developed by the International Hydropower Association and the MRCs own Rapid Sustainability Assessment Tool (RSAT) that looks a hydropower in a river basin context.
- Benefit sharing is otherwise consistent with IWRM principles, which aim to place decisions on hydropower development and management in the river basin management perspective.

☐ **A longer response is:**
- Sections 1 and 2 of this Volume discuss the principles and practices of benefit sharing. Country examples provided in the KB-CD from developed and developing Countries indicate the widespread and extensive endorsement of benefit sharing to achieve sustainable outcomes.
- Policymakers and practitioners have long advocated that benefit sharing is an important element of sustainable hydropower, and as noted, it is prominent in the new generation of hydropower sustainability assessment tools being developed in the Mekong as well as by International Bodies.
- When the ISH was formulated in national and regional multi-stakeholder processes in 2008-2009, the consensus view of MRC Stakeholders, overwhelmingly, was benefit sharing was an integral part of sustainable hydropower in the Mekong situation at all scales. As a consequence, benefit sharing was a theme in the formulation of the first ISH work plan for 2008-2011.
- When discussing sustainable hydropower, the recent MRC Basin Development Strategy (approved in January 2011) notes:
  - the range of indirect and additional benefits from hydropower.
  - the need for “detailed identification of impacts and of mitigation, and benefit-sharing measures, and to coordination between LMB countries on tributary dam operation and with China on Lancang dam operation.”
- To move toward sustainable development of hydropower on tributaries, “evaluating benefit-sharing options, such as watershed development and management benefiting hydropower generation and funded from hydropower revenues”.

**Q9. WHO OR WHAT GROUPS ARE TYPICALLY ELIGIBLE TO ACCESS FUNDS FOR BENEFIT SHARING?**

This question is asked by policy-makers when legislation and regulations are under consideration. It is a question that local communities ask when benefit sharing is first introduced in site discussions. It is a question representatives of Provinces ask when invited to discuss a national policy framework.

**A short answer is:**

- National-to-local to project-level benefit sharing may encompass provincial levels to locally affected communities and river basin residents.
- For local benefit sharing, beneficiaries are normally communities living in the project area and along the river. Good practice is to use the project impact zone as identified an EIA/SIA and EMMP to inform decisions on what people are eligible to participate in benefit sharing.
- This would typically include people, households, entrepreneurs, society organizations, and local business based in the project area and riverine communities closer to the project. The difficult question is always how far upstream and how far downstream.
- The essential point is to move beyond the resettlement community to recognize communities in the reservoir area, as well as upstream and downstream who may be impacted by resource transformations of the project.
- In the case of a Local Community Development Fund, Thailand uses the criteria of people living within 5 kilometres of the project, whether it is a thermal project or hydropower project.
- Beyond this consideration of directly and indirectly affected people, benefit sharing principles apply to the river communities more generally as well as the districts and provinces through which the river flows, and where hydropower projects are located or transform resources.

**A longer response is:**

- Who is eligible is a key question at times of implementation. To a large extent, the mechanisms selected need to reflect the objective of equitably sharing benefits among all people in the project area and residents of the river basin.
- Within certain rules, there may be a targeting of some portion of the financial resources for a period of time to achieve poverty reduction targets.
- Using the example of the draft Decree Law for Viet Nam, “Parties” deemed eligible to participate in local area benefit sharing programmes for hydropower projects were “… people, households, community-based organizations, mass organizations and local family-scale enterprises and other such legal entities in the project area.”
- This referred to people living or working in the project impact area of the project. For new hydropower projects (Article 25) it was stipulated that procedures during project feasibility stages, i.e., in the conduct of EIA/SIAs were:
  - “EIAs for hydropower projects shall incorporate a concise assessment of potential benefit sharing provisions. These assessments shall be linked to existing EIA
requirements for identification and mitigation of adverse social and environmental impacts of the project during construction and operation phase.

- **EIAs for all hydropower projects shall provide a clear indication of:**
  - The geographic extent of the project impact area
  - The communes, or parts of communes which reside in the project impact area
  - The numbers of households in each commune in the project impact area
  - The nature of the potentially adverse impacts on communities in each area.

- **Feasibility studies of hydropower projects shall incorporate benefit-sharing assessments linked to existing study topics in the feasibility study. In relation to assessment of the status of electricity access of households, hydropower feasibility studies shall:**
  - Assess the current level of rural electrification and quality of electrical service in the project impact zone defined by the EIA/SIA;
  - Provide specifications and indicative costs to electrify the resettlement households and the resettlement host community if not connected;
  - For communities living the project impact area with no electricity service, provide an indicative cost of electrification via grid extension or via alternative small-scale isolated generation where grid connection is not considered to be economically feasible;
  - For communities with existing electrical service, assess provide an indicative cost for refurbishment of electrical supply equipment to improve levels of service and reliability of supply;
  - Where feasible, provide a breakdown of household electricity access with income levels.

- **Similarly, for existing hydropower projects (Article 27) the requirement was to review existing EIAs (if they existed), where they did not exist, or were very old, the authorities would “complete (or cause to be completed) a rapid environmental impact assessment to establish:**
  - The geographic extent of the project impact area,
  - The communes, or parts of communes which reside in the project impact area,
  - The numbers of households in each commune in the project impact area,
  - The nature of the potentially adverse impacts on communities in each area,
  - And also, review or direct the review of the status of electricity supply and electricity access to households in the project impact area.”

- **Moving up to the district and provincial levels where the project is situated, the mechanisms to deliver benefits and consequently the question of who is eligible is broader. As discussed in Section 1.1, beneficiaries can be all residents in the river basin who derive benefit from an increment to municipal, district or provincial level development budgets.**

- **The examples are provided of international practices in which the provinces, districts and municipalities where the projects are located participate in benefit sharing.**
At the river basin and provincial levels there are opportunities to capture cross-sector synergies in land management, local income generation and sustainable management of dams as physical assets.

Benefit sharing which brings the means to cooperate reflects the notion that stewardship, and management of local resources is a responsibility of all communities and river basin citizens and enterprises.

For example, extending operating lives of reservoirs for hydropower by planting trees in headwater areas or shifting to agriculture and livestock grazing practices that combat desertification, soil erosion and sediment processes in river catchments – providing multiple benefits to all people living in catchments – and national electricity consumers.

Q10. ARE BENEFIT SHARING APPROACHES AND MECHANISMS TRANSFERABLE BETWEEN DIFFERENT SECTORS?

This question is often asked due to the many common aspects and synergies for benefit sharing in different sectors such as the hydropower, mining and forestry and the environment. Moreover, they all connect to rural development and sharing of monetary benefits between different levels of government.

□ **A short answer is:**
  - It is practical and useful for national regulators to examine experience with the introduction of benefit sharing mechanisms in other sectors, and precedents in other sectors.
  - The general principles are common. The arguments to make the case to decision-makers and the general public about the value of benefit sharing are similar.
  - Beyond the practice of sharing lessons, there are often synergies to explore in terms of implementation of measures that relate to local development.

□ **A longer response is:**
  - There are many examples in the international literature of benefit sharing in different resource extraction sectors, which as a body, provide a useful basis to consider good practice in benefit sharing applicable to hydropower in the Mekong setting.
  - There are also precedents in the Mekong for benefit sharing in the form of payments for ecological services, which have moved forward in legislation and into pilot projects. These have a direct linkage to benefit sharing on hydropower projects.
  - It is practical and useful to include BSM practitioners in other sectors in discussions about benefit sharing on hydropower in the Mekong situation. However, there are of course features of the mechanisms that are unique to each sector.
  - There is an opportunity to explore potential synergies between benefit sharing in different sectors, in particular revenue sharing in Mekong tributary basins that have all three forms of resource development (hydropower, mining and mineral development and forest resource development).
  - It is important to consider the linkage and coordination of Funds (as institutional mechanism) that hydropower must make payment to, or potentially may. For example, there are laws or policy proposals already in the Mekong for PES, water use, environment protection, catchment
management and operation of river basin authorities, and benefit sharing that need to be coordinated and rationalized.

- Ministries or institutions may often compete to access hydropower revenue streams. This is the same situation in many countries. Thus clear policies and good coordination is needed. And there are opportunities to improve coordination among benefit sharing initiatives in different sectors such as through river basin organizations, which may be appropriate to consider.
Annex 6: Summary Outcomes of the First National Multi-Stakeholder BSM Workshop

Exploring Benefit Sharing Mechanisms for Mekong Hydropower
Supported by the MRC Initiative on Sustainable Hydropower

National Multi-Stakeholder Workshop
Cambodia
10-11 Oct, 2011
Siem Reap Province, Cambodia

Workshop Report

Apart from discussion of BSM concepts and practices, a number of issues were raised by participants specific to the Cambodia situation.

Among these were:

1. **On Cambodia drawing Lessons from BSM experience in other Mekong Countries:**  The value of drawing lessons on BSM implementation from other Mekong Countries and international experience was issue discussed. This also had some bearing on proposed activities under Output 4.1c for 2012 and beyond, notably the study tours and proposed regional workshop.
   - Cambodia could draw lessons from regional and international practice in regard to both transboundary and national-to-local forms of benefit sharing in order to instil confidence that any proposed steps would meet with success.
   - The value of drawing lessons on BSM implementation from all resource sectors, not only the power sector, and to consider this in light of the (future) multi-sector role of river basin organizations was raised in discussions.\(^{125}\)
   - There potential role that river basin organizations (RBOs) in Mekong Tributaries as well as the MRC may play in future in coordinating and supporting BSM activities in a watershed context or sub-basin area level was mentioned.

2. **On stakeholders distinguishing between short-term compensation, resettlement support, livelihood restoration and longer term benefit sharing** – The fundamental conceptual aspect of

\(^{125}\) The ISH Team noted and described how BSM practice was evolving in a number of resource development and management sectors including the forestry, mining, petroleum, plant genetic resource and commercial agriculture sectors
BSM that some participants felt needed more explanation was the difference between compensation and resettlement support, livelihood restoration and long-term benefit sharing.

- Some participants indicated that they still had some difficulty understanding the difference. Some participants, though a small number of participants also argued that benefit sharing was already common practice in the Mekong and was already good enough.
  - These people referred to that under existing legislation developers already takes care of many concerns related to benefit sharing.
  - Generally, the workshop participants from the Provinces and municipal levels were strongly in support of more comprehensive forms of benefit sharing from national to local levels.
  - Most participants agreed on the need to pursue transboundary forms of benefit sharing and accepted that there was a link between different levels (regional to national and national to sub-national).

- The ISH Team noted this question about the difference between short-term measures (i.e. compensation, resettlement support, and livelihood restoration) and long-term benefit sharing arrangements for the economic life of the project was perhaps one of the most common questions heard at the start of multi-stakeholder dialogue processes about BSM for hydropower in other countries.

- In discussion the point was made it important to ensure that people do have clear understanding of both the conceptual and practical differences and there is sufficient consensus, and official must be prepared to give a clear and convincing response.
  - It was noted by the ISH Team that clear arguments can be presented to Cambodian stakeholders basing this on the details in Volume 1 of the BSM Knowledge base.
  - While this particular question was addressed in the FAQ in Volume 1 (as FAQ 1) the general discussion among the workshop participants was that:
    - The response on this question needs to be constantly reinforced in future BSM workshops and meetings especially as new people come into the BSM discussions. Policy-makers will also ask that question, and government officers need to have a clear response.
    - This issue can be highlighted in the Regional BSM Workshop where practitioners from other developing and developed countries can be asked share their experience on how they dealt with such questions in their national processes.
    - Otherwise, practitioners from other countries can be asked to explain the type of arguments they had used, and which were the most successful to secure political and public support to introduce BSM regulations for hydropower more generally in their countries.
There was related discussion on the importance of recognizing the many forms of benefit sharing (e.g. the 5 forms of national to local BSM that the ISH presented to the participants).

- Many felt it was important was to be clear on which forms of BSM to reinforce in the Cambodia situation
- This needed to be done taking account of the range of views of stakeholders not only in the central government, but also officials at other levels of government, and decision-makers in the private sector and civil society sectors.

3. **On institutional Arrangements and lead Ministry responsibility for any BSM regulation** – There was some internal discussion about what central Ministry may be best to lead a national dialogue process on BSM, and what Ministry may ultimately sponsor legislation and regulation.

- This discussion was partly in response to ISH comment that good practice base on international experience was for countries to introduce legislation or regulation on national to local forms of BSM.
  - The legislation or regulation ideally would set out the principles clearly, but also clearly set out the institutional roles, the nature of cooperation among concerned organizations and specific mechanisms.
  - Reasons for a having a clear policy and supporting regulation were discussed; which included the need for a consistent approach to all hydropower projects (e.g. EdC and IPP projects) and to thus create a “level playing field” not only for hydropower investors and developers, but also for the local communities and the Provinces involved.

- Discussions emphasized that to importance of collecting all stakeholder views on the type of institutional arrangements. Divergent views always come up when the discussion is on the different roles and responsibilities that the government sector and regulators, the private sector and civil society have to play in BSM.

- There was some internal discussion on the most appropriate Ministry to lead national dialogue on national-to-local BSM regulation in the Cambodia, recognizing the roles of both the Ministries responsible for regulation of power matters (project licenses and various project agreements, the conduct of project-level feasibility and EIA, studies, etc.) and water resource development and management functions.
  - The participant from the Ministry of Finance elaborated on the key role that the Finance Ministry had to play, especially in terms of the monetary forms of benefit sharing between national and sub-national levels and cross-sector consistency, and integration with government budget processes.
  - The participant for the Ministry of rural development expressed similar views on the importance of rural development in the whole BSM effort and the necessary involvement of his Ministry.

- It was noted the institutional arrangements and roles for implementation of national-to-local forms of benefit sharing were matters for detailed discussion in future workshops.
In the meantime the MRC / CNMC mechanism was most appropriate for taking discussion on transboundary forms of benefit sharing forward, as agreed by the Member Countries in the BDS process.

However, it was observed there was as yet no mention of benefit sharing in the Cambodia process to prepare indicative national plans as part of the BDS, where a national working group had been meeting. MRCS participants note it was still early days in that process. It was suggested the ISH would also take up this matter with the Basin Development Programme at MRCS as a matter of priority, linked to discussion of ISH13 implementation.

4. **On consideration of a BSM Pilot Project and criteria for selecting a pilot.**

- The representative of Electricity de Cambodia (EdC) noted that a pilot project for BSM trials was a potentially a good idea as a way to understand details and to arrive at a consensus approach that fit the Cambodian situation.

- The ISH Team mentioned similar proposals to have a pilot project were made by other NMCS. The review of Mekong and international experience showed that was a common approach in many countries.

- In subsequent discussions with the National BSM consultant, it was noted that four initial criteria for selecting a pilot project may include:
  
  i. Relevance and suitability to serve as a model for BSM on existing hydropower projects in Cambodia (MRC ISH Work Plan and MRC BDS Strategy ISH13 Activity).
  
  ii. Ability to leverage existing national funds or Development Partner Funds to implement a pilot.
  
  iii. Local capacity to implement the pilot; and
  
  iv. Reflection of the scoring criteria in RSAT on the BSM Topic.

5. **On views of the BSM activities for 2011 and a Road Map for 2013-15 for ISH support to Cambodia on BSM matters.** There was discussion on these various aspects. It was also noted the BSM questionnaire has asked for feedback on the value of different ISH-supported activities as explained in Chapter 4 of Volume 1 of the BSM KB. In general.

- The regional BSM workshop was considered to be very important and the 2-day version as set out in Chapter 4 of Volume 1 was seen as most appropriate. This would bring practitioners from other regions and countries to explain their activities.

- The international study tour should be after the Regional BSM workshop.

- As part of the update of Volume 1 of the Knowledge Base it would be helpful to provide a glossary of terms.

- More information may be offered on navigation benefit sharing aspects which is important to Cambodia and how this factors into discussions.
How to share from the perspective of fisheries was important to Cambodia, and especially how adverse fisheries impacts of hydropower can be compensated by hydropower, or how this fits into the long-term equation of sharing benefits and costs.

More information in future on investment flows would be helpful. What benefits flow to the public sector and what benefits flow to the private sector from hydropower in the development stage and in the operation stage? Also can tariff impacts be clearly defined?

6. **On additional FAQ proposed by Cambodian workshop participants.** There were a number of suggestions on additional FAQ to include in the next KB update. Among these were:

- What sector specific aspects come into play such as for irrigation, navigation and fisheries? For example, from the perspective of fisheries, how can adverse fisheries impacts of hydropower can be compensated by hydropower, or how can this question be factored into the long-term equation for sharing benefits and costs in the national-to-local and transboundary cases?

- What type of benefits count and how can benefits be measured?

- What is the legal basis for benefit sharing in the 1995 Agreement?

- What is the main role of government, private sector and non-government CSO organizations in benefit sharing and to what extent are they complementary.

- How do you get the private sector to share when they are profit motivated?

- What is the difference between sharing benefits and sharing risks?

- What is the link between benefit sharing in the hydropower sector and national investment planning? More specifically, what is the link to the national indicative plan process now underway with the BDP?

- Under what circumstances can community shares by issued in hydropower projects as equity sharing forms of sharing monetary benefits?

Separate discussions were also held with the Cambodia National BSM consultant on the completion of tasks according to the TOR provided in Volume 1 of the KB.
Endnotes for annex 1.2:

i Or a poverty reduction target established by Provincial People's Committees in conjunction with national bodies like the Ethnic Minorities Committee and the affected communities.

ii If dam are best development option it also means less vulnerability to international oil price shocks in power generation and related unsustainable debt burdens for fuel imports in countries such as Sierra Leone.

iii Article 18 of the Law of Environment Protection establishes the contents of EIAs that are form one basis for approval of the project by the competent State agencies. This requires the identification of adverse impacts in the project impacts zone and long-term mitigation plans for both construction and operation phases. Also there are guidelines for EIAs issued by the National Environmental Protection that are relevant, as noted in the policy review.