Council Study

Formulation of Development Scenarios
Progress Updates
Flood Protection & Floodplain Infrastructure Thematic Team

5th RTWG Meeting
Siem Reap, Cambodia
13-14 August 2015

Contents

- Scope
- Activities (Stage 1 and 2)
- Data & information collection
- Progress to date
- Time schedule
- Staff mobilization
Lower Mekong Basin

Impact of flooding at *provincial* level

- upstream of Kratie:
  riverbed with adjacent area
- downstream of Kratie:
  floodplains Cambodia / Vietnam delta
INITIAL STUDIES FLOODPLAINS AND DISTRICT FLOOD DAMAGE RISK

APPROACH

Hydrological data

Flood depth - Probability

Damage

Risk

Flood / water depth (m + field level)

Damage (% of house value)

Damage ($ / ha)

www.mrcmekong.org
Overall Thematic Scope of the Council Study

**Flood Protection & Floodplain Infrastructure Team**

**Stage 1 (July 2015 – October 2015) – Formulation of Development Scenarios**
- Collect / assemble “flood protection” works and “floodplain infrastructure” associated with the RTWG-approved three main development scenarios

**Stage 2 (November 2015 – June 2016) – Scenario Assessment**
- Assess the impact on flooding behavior, flood damage and flood damage risk of future developments in the other thematic areas for 2020 and 2040
- Assess the impact on flooding behavior, flood damage and flood damage risk of future developments for 2040 in the other thematic areas for two or three sub-scenarios (still to be selected but with the largest expected impacts)
Three Main Development Scenarios and Thematic Sub-Scenarios

• Early Development Scenario (2007)
• Definite Future Scenario (2020)
• Planned Future Scenario (2040)

Note:
Sub-scenarios for assessment by the FP&FPI team will be selected from other thematic teams in Stage 2

Stage 1 Activities:
Formulation of Development Scenarios

• Data & information collection for FMMP from MCs for 2020 and 2040 (situation 2007 already in model)
• Formulation of development scenarios 2020 and 2040
• After review data & information to IKMP (IKMP runs the models; FMMP interprets the results)
• Definition of ‘impact assessment locations’ (IALs)
• Definition of flood characteristics
• Scoping study to collect flood damage data in 4 provinces in each MC
• Methodology to assess future provincial flood damages and flood risks

• Time period for Stage 1 is July – October 2015
Data collection for 2020 and 2040

"Must have":
- New levees, dikes, embankments (height > 0.5 m) --- MCs
- New (auto/rail)-roads (length > 5 km; height > 0.5 m) --- MCs
- Urban areas with year-round flood control (ring roads) --- MCs

"Nice to have":
- Agricultural (irrigation / drainage) areas with year-round flood control --- AIP
- Landfilling of low lying areas or lakes (area > 50 ha) --- MCs
  (conveyance hindering / less storage area)

Stage 2 Activities: Assessment of Development Scenarios and Formulation and Analysis of Thematic Sub-Scenarios

- FMMP will review proposed 2040 basin developments from other thematic areas to assess whether “flood risk reduction measures” are needed.
- FMMP will assess and report on the flood impacts of the 2020 and 2040 scenarios on flood behaviour at the IALs.
- FMMP will finalize the number of provinces to be included in the analysis of changes to annual flood damage and flood damage risk.
- FMMP will assess and report on the impacts of the 2020 and 2040 scenarios on future flood damage risk.
- FMMP will assess and report on the impacts of two to three sub-scenarios (still to be selected) for 2040 on future flood risk for other thematic areas.

Time period for Stage 2 is November 2015 – June 2016
Progress to date

- Consensus reached about role FMMP in the *flood protection and floodplain infrastructure* thematic area
- Draft Work Plan completed (details presented here)
- Preparation data & information collection existing flood damage data in combination with Initial Studies
- Data & information collection for “flood protection” works and “floodplain infrastructure” ongoing through:
  - Initial Studies (sector review teams) in each MC including information on planned flood protection works and any major (auto-/rail-)road infrastructure in the floodplains (for 2040)
  - direct request to flood expert in MC (for 2020)

<table>
<thead>
<tr>
<th>Task</th>
<th>Dates</th>
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</thead>
<tbody>
<tr>
<td>Draft Work Plan for the Formulation of Development Scenarios</td>
<td>Completed</td>
</tr>
<tr>
<td>Progress Update – 5th RTWG Meeting</td>
<td>13-14 August 2015</td>
</tr>
<tr>
<td>Data &amp; information collection*: Definition IALs, flood characteristics: Scoping study, methodology flood risk:</td>
<td>July – August 2015 August 2015 September 2015</td>
</tr>
<tr>
<td>National Consultations (combined with all other Thematic Teams)</td>
<td>September – October 2015 (Tentative)</td>
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<tr>
<td>Draft Final Report for the Development Scenarios, Data and Methodology</td>
<td>October – November 2015 (Tentative)</td>
</tr>
<tr>
<td>Approval of Scenarios, Data and Methodology at 6th RTWG Meeting</td>
<td>October – November 2015 (Tentative)</td>
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### Staff mobilization

**Initial Studies / Council Study**

#### International Consultants

<table>
<thead>
<tr>
<th>Position</th>
<th>Tasks IS</th>
<th>Status</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>International Project Manager</td>
<td>All</td>
<td>Recruited</td>
<td>Johan Mathijssen</td>
</tr>
<tr>
<td>International Riparian Flood Hydrologist</td>
<td>1,3,4,6 &amp; 7</td>
<td>Recruitment in process</td>
<td>Tes Sopharith</td>
</tr>
<tr>
<td>International Hydrological / Open Channel Modelling Expert</td>
<td>1 &amp; 4</td>
<td>Recruited</td>
<td>Anthony Green</td>
</tr>
<tr>
<td>Senior International Flood Damage / Risk Assessment Expert</td>
<td>2,5 &amp; 6</td>
<td>Recruitment in process</td>
<td>Don Carrol</td>
</tr>
<tr>
<td>Senior International Integrated Flood Damage Risk Management Expert</td>
<td>7</td>
<td>Recruitment planned end 2015</td>
<td>Johan Mathijssen (if capacity insufficient, consider recruitment)</td>
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</table>

#### National Consultants

<table>
<thead>
<tr>
<th>Position</th>
<th>Status</th>
<th>Name</th>
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<tbody>
<tr>
<td>Flood Modeller</td>
<td>National Modellers (NMs) from Cambodia and Thailand to be contracted</td>
<td>Chanthaphone (AM-Lao PDR), Somsay (NM-Lao PDR), An (NM-Viet Nam), Dr. Chalermchai (NM-Thailand)</td>
</tr>
<tr>
<td>Land use Planning Expert</td>
<td>Recruitment by MCs in process</td>
<td>Ek Menrith (Cambodia), Oulaphone Ongkeo (Lao PDR), Somsack Chaengphian (Thailand), Dr. Do Minh Phuong (Vietnam)</td>
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<tr>
<td>Socio-Economic Planning Expert</td>
<td>Recruitment by MCs in process</td>
<td>They Kheam (Cambodia), Dr. Phouphe Kyphilavong (Lao PDR), Somjai Amornratchatayawichan (Thailand), Dr. Nguyen Hong Tin (Vietnam)</td>
</tr>
<tr>
<td>Agricultural Planning Expert</td>
<td>Recruitment by MCs in process</td>
<td>Dr. Pheng Sophea (Cambodia), Boundeth Southavilay (Lao PDR), Sutara Yindeerod (Thailand), Dr. Bui Van Hung (Vietnam)</td>
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<tr>
<td>Transport Planning Expert</td>
<td>Recruitment by MCs in process</td>
<td>Khy An (Cambodia), Souphasay Komany (Lao PDR), Thitiwat Rommayachairot (Thailand), n.a (Vietnam)</td>
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<tr>
<td>Flood Damage Assessment Expert</td>
<td>Recruitment by MCs in process</td>
<td>To be indicated by MCs</td>
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Summary

• After period of extensive preparation, Stage 1 is on schedule
• Scenarios will be approved in 6th RTWG in October / November 2015
• Assessment of development scenarios by flood protection & floodplain infrastructure team after 6th RWTG meeting

The RTWG is kindly requested to:

• Take note of presentation on Flood Protection and Floodplain Infrastructure thematic area
• Advise on next steps
Thank You
# BUDGET ESTIMATE INT. CONSULTANTS FOR STAGE 1 AND STAGE 2

<table>
<thead>
<tr>
<th>International Consultants requirements Stage 1 Council Study</th>
<th>total (USD)</th>
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<tr>
<td>Sen. Int. Project Manager Expert (SIPME)/ Sen. Int. IFRM Expert (SIFRME)</td>
<td>98,500</td>
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<tr>
<td>International Flood Damage/Risk Assessment Expert (IFDRAE)</td>
<td>56,400</td>
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<td><strong>154,900</strong></td>
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<thead>
<tr>
<th>International Consultants requirements Stage 2 Council Study</th>
<th>total (USD)</th>
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<tr>
<td>Senior International Project Manager Expert (SIPME)</td>
<td>142,200</td>
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<tr>
<td>International Flood Damage/Risk Assessment Expert (IFDRAE)</td>
<td>111,400</td>
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<tr>
<td>International Riparian Flood Hydrologist (IRFH)</td>
<td>81,400</td>
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<tr>
<td>Senior International Hydrological/Open Channel Flow Modelling Expert (SIHME)</td>
<td>51,800</td>
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<tr>
<td>Senior International Flood Risk Management Expert (SIIFRME)</td>
<td>pm</td>
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<tr>
<td></td>
<td><strong>386,800</strong></td>
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