

Annex II

Terms of Reference for Consultants

Council Study Technical Coordinator

Qualifications and experience:

- PhD in aquatic ecology or related discipline
- 15 years of experience in managing large EF assessments

Activities		Indicative time allocation (days)
1	Indicator and site selection - Guide team discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers, the Tonle Sap Great Lake and the Delta	3
2	Facilitate a preparation meeting for discipline teams for Tasks 2, 3, and 4. Present a training programme on providing specialist input for DRIFT. Ensure that all specialists are aware of the project goals, workplan and timelines. Ensure that specialists provide a preliminary list of DRIFT Indicators for their discipline.	4
	Visit each of the zones on the Mekong river and Tonle Sap System and the delta, accompanied by the relevant specialists. Facilitate on-site discussion to enhance cross-discipline understanding of the ecosystem and understanding of the DRIFT process.	16
3	Work with the DSS manager to ensure that the DSS is correctly set-up for individual EF assessments of Mekong and Tonle Sap river (Task 2) and Tonle Sap Lake (Task 3) and the delta (Task 4).	6
4	Work with the Council Study manager, and Thematic Area managers, to: <ul style="list-style-type: none"> • Select a suitable set of development scenarios for each Thematic Area for assessment • Select one or more combined development scenario(s) for the cumulative assessment. 	6
5	Facilitate the KCW and Calibration workshops for Task 2	16
6	Facilitate the KCW and Calibration workshops for Task 3	10
7	Facilitate the KCW and Calibration workshops for Task 4	10
8	Work with DSS Manager and individual specialists to calibrate and refine their Response Curves	30
9	Ensure that BRA specialists: <ul style="list-style-type: none"> • understand the process and their responsibilities/deliverables; • understand the scenarios; • provide suitable indicators • select appropriate linked indicators • provide the required data on time and in required format. Where necessary work with individual specialists to understand and calibrate their Response Curves. Continually review and comment on Response Curves Review and provide comment on every specialist report.	40
10	Work with the DSS manager to combine the calibrated DSSs from Tasks 2, 3 and 4 into a single DSS for use in analysing the developmental option.	10
11	Analyse and document the impacts on the Lower Mekong River ecosystems resulting from the Thematic Area development options.	40
12	Analyse and document the impacts on the Lower Mekong River ecosystems resulting from the Cumulative development option.	20

DRIFT data management tool manager

Qualifications and experience:

- PhD in aquatic ecology or related discipline
- Experience in parameterising and calibrating DRIFT EF software

Activities		Indicative time allocation (days)
1	Guide team discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers, the Tonle Sap Great Lake and the Delta	3
2	Attend a preparation meeting for discipline teams for Tasks 1, 2, 3, 4 and 5, and assist the EF Process manager with demonstration of DRIFT DSS training. Capture the preliminary list of DRIFT Indicators for each discipline	4
	Visit each of the river zones, Tonle Sap Lake and the delta, accompanied by the relevant specialists.	16
3	Set up the DSS in accordance with the project requirements. This will entail individual DSSs for the Mekong and Tonle Sap rivers (Task 2) and Tonle Sap Lake (Task 3) and the delta (Task 4). Thereafter update the DSS throughout the process with latest Response Curves and explanations.	40
5	Attend the KCW and the Calibration workshop to provide DSS support to the EF process manager and the specialists.	16
6	Attend the KCW and the Calibration workshop to provide DSS support to the EF process manager and the specialists.	10
7	Attend the KCW and the Calibration workshop to provide DSS support to the EF process manager and the specialists.	10
8	Work with EF Process manager and individual specialists to calibrate and refine their Response Curves	10
10	Combine the calibrated DSSs from Tasks 2, 3 and 4 into a single DSS for use in analysing the developmental option.	10
11	Run the Individual thematic scenarios through the DSS and provide results to EF Process Manager.	25
12	Run the cumulative scenarios through the DSS and provide results to EF Process Manager.	10

Fluvial geomorphologist

Qualifications and experience:

- Post graduate degree in fluvial geomorphology
- Excellent understanding of fluvial geomorphological processes in large rivers
- Experience in EF assessments
- 10 years of experience in fluvial geomorphology

	Sub-Task Activities	Indicative time allocation (days)
1	Review the data, assumptions, methodologies used and results of impact of development on aquatic habitats and floodplains in key related studies including IBFM, BDP Scenarios Assessment, Mainstream Dam SEA, and the World Bank study. Review the international literature for details of geomorphological changes in response to flow and sediment changes in other large river systems.	4
2	Contribute towards discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers	1
3	Attend the preparation meeting in Vientiane. Visit each of the river zones accompanied by the Task 2 team to familiarise yourself with the study area, and the focus sites. In discussion with team, develop a list of geomorphology indicators required to inform the DSS based on an understanding of the models available, the study area, the development options under consideration and the requirements of the biotic specialists.	9
4	Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator Work with the sedimentologist to understand sediment dynamics in the system.	10
5	Complete a discipline-specific ecoclassification assessment for the river zones in accordance with established methods, and explained in the relevant specialist reports. Provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.	2
6	Attend the KCW and deal with questions and concerns from the specialists. Complete Response Curves and explanations for geomorphological Indicators. Generate additional information if required, as possible.	7
7	Work (remotely) with the EF Process Manager to calibrate your Response Curves and provide appropriate explanations for each one.	3
8	Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS	3
9	Provide a geomorphology specialist technical report. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	4

River botanist

Qualifications and experience:

- Post graduate degree in botany, river ecology or similar
- Excellent understanding of riparian and instream vegetation in large rivers
- Experience in EF assessments
- 10 years of experience in river botany

Activities		Indicative time allocation (days)
1	Review the data, assumptions, methodologies used and results of impact of development on river botany in key related studies including IBFM, BDP Scenarios Assessment, Mainstream Dam SEA, and the World Bank study. Review the international literature for details of life histories and flow related changes for vegetation indicators for the Mekong River.	4
2	Contribute towards discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers	1
3	Attend the preparation meeting in Vientiane. Visit each of the river zones accompanied by the Task 2 team to familiarise yourself with the study area, and the focus sites. In discussion with team, develop a list of vegetation indicators required to inform the DSS based on an understanding of the models available, the study area, the development options under consideration and the requirements of other specialists.	9
4	Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator Undertake data collation and/or field surveys to fill gaps.	10
5	Synthesise and analyse the available data in a manner that will inform the development of Response Curves for vegetation.	6
6	Complete a discipline-specific ecoclassification assessment for the river zones in accordance with establish methods, and explained in the relevant specialist reports. Provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.	2
7	Attend the KCW and deal with questions and concerns from the specialists. Complete Response Curves and explanations for vegetation Indicators. Generate additional information if required, as possible.	7
9	Work (remotely) with the EF Process Manager to calibrate your Response Curves and provide appropriate explanations for each one.	3
10	Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS	3
11	Provide a vegetation specialist technical report. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	4

River invertebrate specialist

Qualifications and experience:

- Post graduate degree in river ecology or similar
- Excellent understanding of invertebrate ecology in large rivers
- Experience in EF assessments
- 10 years of experience in invertebrate ecology, particularly in the Mekong River

Activities		Indicative time allocation (days)
1	Review the data, assumptions, methodologies used and results of impact of development on invertebrates in key related studies including IBFM, BDP Scenarios Assessment, Mainstream Dam SEA, and the World Bank study. Review the international literature for details of life histories and flow related changes for on invertebrate indicators for the Mekong River. Identify any invertebrates of social importance in the Lower Mekong River.	4
2	Contribute towards discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers	1
3	Attend the preparation meeting in Vientiane. Visit each of the river zones accompanied by the Task 2 team to familiarise yourself with the study area, and the focus sites. In discussion with team, develop a list of on invertebrate indicators required to inform the DSS based on an understanding of the models available, the study area, the development options under consideration and the requirements of other specialists.	9
4	Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator Undertake data collation and/or field surveys to fill gaps.	10
5	Synthesise and analyse the available data in a manner that will inform the development of Response Curves for the invertebrate indicators.	6
6	Complete a discipline-specific ecoclassification assessment for the river zones in accordance with establish methods, and explained in the relevant specialist reports. Provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.	2
7	Attend the KCW and deal with questions and concerns from the specialists. Complete Response Curves and explanations for on invertebrate Indicators. Generate additional information if required, as possible.	7
8	Work (remotely) with the EF Process Manager to calibrate your Response Curves and provide appropriate explanations for each one.	3
9	Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS	3
10	Provide a invertebrate specialist technical report. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	4

Herpetologist

Qualifications and experience:

- Post graduate degree in river ecology or similar
- Excellent understanding of invertebrate ecology in large rivers
- Experience in EF assessments
- 10 years of experience in invertebrate ecology, particularly in the Mekong River

	Activities	Indicative time allocation (days)
1	<p>Review the data, assumptions, methodologies used and results of impact of development on herpetofauna in key related studies including IBFM, BDP Scenarios Assessment, Mainstream Dam SEA, and the World Bank study.</p> <p>Review the international literature for details of life histories and flow related changes for on invertebrate indicators for the Mekong River.</p> <p>Identify any herpetofauna of social importance in the Lower Mekong River.</p>	4
2	Contribute towards discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers	1
3	<p>Attend the preparation meeting in Vientiane.</p> <p>Visit each of the river zones accompanied by the Task 2 team to familiarise yourself with the study area, and the focus sites.</p> <p>In discussion with team, develop a list of on herpetofauna indicators required to inform the DSS based on an understanding of the models available, the study area, the development options under consideration and the requirements of other specialists.</p>	9
4	<p>Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator</p> <p>Undertake data collation and/or field surveys to fill gaps.</p>	10
5	Synthesise and analyse the available data in a manner that will inform the development of Response Curves for the herpetofauna indicators.	6
6	<p>Complete a discipline-specific ecoclassification assessment for the river zones in accordance with establish methods, and explained in the relevant specialist reports.</p> <p>Provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.</p>	2
7	<p>Attend the KCW and deal with questions and concerns from the specialists.</p> <p>Complete Response Curves and explanations for herpetofauna Indicators.</p> <p>Generate additional information if required, as possible.</p>	7
8	Work (remotely) with the EF Process Manager to calibrate your Response Curves and provide appropriate explanations for each one.	3
9	Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS	3
10	<p>Provide a herpetology technical report.</p> <p>Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions.</p> <p>Incorporate comments.</p>	4

Fish ecologist

Qualifications and experience:

- Post graduate degree in river ecology or similar
- Excellent understanding of fish ecology in large rivers
- Experience in EF assessments
- 10 years of experience in fish ecology, particularly in the Mekong River

Activities		Indicative time allocation (days)
1	Review the data, assumptions, methodologies used and results of impact of development on fish in key related studies including IBFM, BDP Scenarios Assessment, Mainstream Dam SEA, and the World Bank study. Review the international literature for details of life histories and flow related changes for fish indicators for the Mekong River. Identify the fish of social importance in the Lower Mekong River.	4
2	Contribute towards discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers	1
3	Attend the preparation meeting in Vientiane. Visit each of the river zones accompanied by the Task 2 team to familiarise yourself with the study area, and the focus sites. In discussion with team, develop a list of on fish indicators required to inform the DSS based on an understanding of the models available, the study area, the development options under consideration and the requirements of other specialists.	9
4	Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator Undertake data collation and/or field surveys to fill gaps.	10
5	Synthesise and analyse the available data in a manner that will inform the development of Response Curves for the fish indicators.	6
6	Complete a discipline-specific ecoclassification assessment for the river zones in accordance with establish methods, and explained in the relevant specialist reports. Provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.	2
7	Attend the KCW and deal with questions and concerns from the specialists. Complete Response Curves and explanations for fish Indicators. Generate additional information if required, as possible.	7
8	Work (remotely) with the EF Process Manager to calibrate your Response Curves and provide appropriate explanations for each one.	3
9	Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS	3
10	Provide a fish ecology technical report. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	4

Mammal (Dolphins) Specialist

Qualifications and experience:

- Post graduate degree in river ecology or similar
- Excellent understanding of aquatic mammal ecology in large rivers
- Experience in EF assessments
- 10 years of experience in aquatic mammal ecology, particularly in the Mekong River

Activities		Indicative time allocation (days)
1	Review the data, assumptions, methodologies used and results of impact of development on aquatic mammals in key related studies including IBFM, BDP Scenarios Assessment, Mainstream Dam SEA, and the World Bank study. Review the international literature for details of life histories and flow related changes for aquatic mammal indicators for the Mekong River. Identify the aquatic mammal of social importance in the Lower Mekong River.	4
2	Contribute towards discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers	1
3	Attend the preparation meeting in Vientiane. Visit each of the river zones accompanied by the Task 2 team to familiarise yourself with the study area, and the focus sites. In discussion with team, develop a list of on fish indicators required to inform the DSS based on an understanding of the models available, the study area, the development options under consideration and the requirements of other specialists.	9
4	Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator Undertake data collation and/or field surveys to fill gaps.	10
5	Synthesise and analyse the available data in a manner that will inform the development of Response Curves for the aquatic mammal indicators.	6
6	Complete a discipline-specific ecoclassification assessment for the river zones in accordance with establish methods, and explained in the relevant specialist reports. Provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.	2
7	Attend the KCW and deal with questions and concerns from the specialists. Complete Response Curves and explanations for aquatic mammal Indicators. Generate additional information if required, as possible.	7
8	Work (remotely) with the EF Process Manager to calibrate your Response Curves and provide appropriate explanations for each one.	3
9	Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS	3
10	Provide a aquatic mammal ecology technical report. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	4

Ornithologist

Qualifications and experience:

- Post graduate degree in river ecology or similar
- Excellent understanding of birds and their links to large rivers
- Experience in EF assessments
- 10 years of experience in water and other river associated birds, particularly in the Mekong River

Activities		Indicative time allocation (days)
1	Review the data, assumptions, methodologies used and results of impact of development on river associated birds in key related studies including IBFM, BDP Scenarios Assessment, Mainstream Dam SEA, and the World Bank study. Review the international literature for details of life histories and flow related changes for river associated bird indicators for the Mekong River. Identify the river associated birds of social importance in the Lower Mekong River.	4
2	Contribute towards discussions to arrive at a final list of biophysical indicators, and focus sites/areas for the Mekong and Tonle Sap rivers	1
3	Attend the preparation meeting in Vientiane. Visit each of the river zones accompanied by the Task 2 team to familiarise yourself with the study area, and the focus sites. In discussion with team, develop a list of on fish indicators required to inform the DSS based on an understanding of the models available, the study area, the development options under consideration and the requirements of other specialists.	9
4	Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator Undertake data collation and/or field surveys to fill gaps.	10
5	Synthesise and analyse the available data in a manner that will inform the development of Response Curves for the river associated bird indicators.	6
6	Complete a discipline-specific ecoclassification assessment for the river zones in accordance with establish methods, and explained in the relevant specialist reports. Provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.	2
7	Attend the KCW and deal with questions and concerns from the specialists. Complete Response Curves and explanations for river associated bird Indicators. Generate additional information if required, as possible.	7
8	Work (remotely) with the EF Process Manager to calibrate your Response Curves and provide appropriate explanations for each one.	3
9	Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS	3
10	Provide a river associated bird technical report. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	4

Hydrologist

Qualifications and experience:

- Degree in water resource engineering or related discipline
- Excellent understanding of the hydrology of Mekong River
- 10 years of experience in modelling basin scale water resource development scenarios

Objectives

The incumbent will be responsible:

- for overseeing the provision of hydrological information for application of the DRIFT-DSS within the BRA for the four river sites/reaches, plus input to the Tonle Sap Great Lake and Mekong Delta). The modelling will be done by MRC Programmes. This is to streamline and ensure a level of consistency with data provision;
- All the necessary liaison between the EF Process Manager, Thematic Area Leaders and MRCS Modelling Team concerning the provision of hydraulic information, including, inter alia.:
 - o liaison with the EF Process Manager and Thematic-Area Leaders,
 - o liaison (e-mail) with the MRCS Modelling Team concerning hydrological modelling of the four Mekong River sites, Tonle Sap and Mekong Delta for historic/baseline and development options.

Activities		Indicative time allocation (days)
1	Become familiar with hydrological and water-resource models that have been developed for and applied to the Mekong Basin - specifically those forming part of the MRC-DSF. This is likely to necessitate spending time with the MRCS Modelling Team In discussion with the Council Study manager and the EF process manager, and taking into account the objectives of the Council Study, select an appropriate model(s) for simulating the project hydrology and provide reasons. Provide indicative daily time-series of recent flows (2005-2014) from measured data at/near each EF site for use by other specialists/tasks.	4
2	Work with MRCS modelling team to update model calibration as/if needed	5
3	Work with MRCS modelling team to provide time series of historic and baseline daily data the EF zones for >40 years, until as recently as possible. If possible up to 2014. Discuss the length and dates of the time series with the Council Study manager and the EF process manager before finalising.	15
4	Work with MRCS modelling team to calibrate the selected water-resources model	10
5	Work with MRCS modelling team to provide time series of data for zones for all chosen developments in each thematic area and the cumulative developments over the same period of record. Work with MRCS modelling team to provide sub-daily (hourly) data for power generation scenarios where there are sub-daily fluctuations in discharge, over the same period of record. Check all outputs.	14
6	Work with the DSS manager to ensure that you are in agreement with the parameters used in the DSS to generate the Flow Indicators.	6
7	Assist the irrigation, hydropower and navigation thematic experts estimate the impact of sector developments on the flow regime & changes in the flow regime on the sector.	6
8	Provide a hydrological and water-resources modelling technical report. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	10

Hydraulics Modeller

Qualifications and experience:

- Post graduate degree in hydraulic engineering or related discipline
- Excellent understanding of the river hydraulic and hydrodynamic modelling
- 10 years of experience in modelling river hydraulics and hydrodynamics

Objectives

The incumbent will be responsible:

- for overseeing the provision of information for application of the DRIFT-DSS within the BRA for four river sites/reaches, the Tonle Sap Great Lake and Mekong Delta. The modelling will be done by MRC Programmes. This is to streamline and ensure a level of consistency with data provision;

• All the necessary liaison between the EF Process Manager, Water Resource Engineer, EF site Survey Team and MRCS Modelling Team concerning the provision of hydraulic information, including, inter alia.,

- o liaison with the EF Process Manager and Hydrologist,
- o the TOR (Terms of Reference) for the collection of survey data, including the locations of cross-sections,
- o the final selection of hydraulic indicators for use in the DRIFT-DSS, and
- o liaison (e-mail) with the MCRS Modelling Team concerning hydraulic modelling of the four Mekong River sites, Tonle Sap and Mekong Delta for historic/baseline and development options.

Activities		Indicative time allocation (days)
1	Become familiar with hydrodynamic/hydraulic models that have been developed for and applied to the Mekong Basin - specifically those forming part of the MRC-DSF. This is likely to necessitate spending time with the MRCS Modelling Team (See Section In discussion with the Council Study manager and the EF process manager, and taking into account the objectives of the Council Study, select an appropriate hydrodynamic model for the project and provide reasons. Identify data gaps.	5
2	Attend the preparation meeting in Vientiane. Visit each of the zones accompanied by the relevant team members to familiarise yourself with the study area, and the focus sites. In discussion with team, develop a list of hydraulic parameters required to inform the DSS based on an understanding of the models available, the study area and the development options under consideration.	8
3	Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator Review/check/format survey (topographical and rating) data provided for the sites. This is necessary for quality control and to ensure that the hydraulician is familiar with the data used for hydraulic modelling in the existing (or new) ISIS model(s) for the river sites.	15
4	Receive/check/reformat all hydraulic modelling results from the MRCS Modelling Team and to provide these as the selected (see above) hydraulic indicators and in formats suitable for use the DRIFT-DSS	15
5	Attend the KCW and deal with questions and concerns from the specialists. Generate additional information if required, as possible.	7
6	Receive/check/reformat all hydraulic modelling results from the MRCS Modelling Team and to provide these as the selected (see above) hydraulic indicators and in formats suitable for use the DRIFT-DSS.	10
7	Provide a report describing the provision of hydraulic information for the river sites, Tonle Sap Lake and Mekong Delta, for use in the DRIFT-DSS. Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions. Incorporate comments.	6

Sedimentologist

Qualifications and experience:

- Post graduate degree in sedimentology or related discipline
- Excellent understanding of river sediment dynamics
- 10 years of experience in modelling river sediment dynamics

Objectives

The incumbent will be responsible:

- Providing sediment time series information for application of the DRIFT-DSS within the BRA for four river sites/reaches, the Tonle Sap Great Lake and Mekong Delta.
- All the necessary liaison between the EF Process Manager, Hydraulic modeller and MRCS Modelling Team concerning the provision of sediment timeseries data.

S	Activities	Indicative time allocation (days)
1	<p>Become familiar with sediment models that have been developed for and applied to the Mekong Basin - specifically those forming part of the MRC-DSF. This is likely to necessitate spending time with the MRCS Modelling Team (See Section Error! Reference source not found.).</p> <p>In discussion with the Council Study manager and the EF process manager, the hydraulics modeller, and taking into account the objectives of the Council Study, either select an appropriate sediment model for the project and provide reasons.</p> <p>Work with MRCS modelling team to provide indicative time-series of sediment movement (2005-2014) from MRC Monitoring data for each zone for use by other specialists/tasks.</p>	
2	<p>Attend the preparation meeting in Vientiane.</p> <p>Visit each of the zones accompanied by the relevant team members to familiarise yourself with the study area, and the focus sites.</p> <p>In discussion with river, lake and delta teams, develop a list of sediment indicators required to inform the DSS based on an understanding of the models available, the study area and the development options under consideration.</p>	
3	<p>Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator.</p>	
4	<p>Work with MRCS modelling team to calibrate and refine the model and design and interpret the results from sensitivity analyses to be incorporated in the sediment model runs.</p> <p>Work with MRCS modelling team to provide time series of historic and synthesised baseline (2010) sediment data the EF zones for the same period of record as the hydrology.</p>	
5	<p>Attend all three KCWs and deal with questions and concerns from the specialists.</p> <p>Complete Response Curves for sediment Indicators, if appropriate.</p> <p>Generate additional information if required, as possible.</p>	
6	<p>Work with MRCS modelling team to provide time series of sediment data for zones for all chosen developments in each thematic area and the cumulative developments over the same period of record as the hydrology.</p> <p>Identify likely changes to sediment availability and transport associated with each of the thematic areas</p>	
7	<p>Provide a sediment modelling technical report.</p> <p>Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions.</p> <p>Incorporate comments.</p>	

River water quality specialist

Qualifications and experience:

- Post graduate degree in freshwater chemistry or related discipline
- Excellent understanding of river water quality
- 10 years of experience in modelling water quality

	Activities	Indicative time allocation (days)
1	<p>Become familiar with sediment models that have been developed for and applied to the Mekong Basin - specifically those forming part of the MRC-DSF. This is likely to necessitate spending time with the MRCS Modelling Team (See Section Error! Reference source not found.).</p> <p>In discussion with the Council Study manager and the EF process manager, and taking into account the objectives of the Council Study, either select an appropriate WQ model for the project.</p> <p>Provide indicative time-series for key WQ parameters (2005-2014) from measured data for each zone for use by other specialists/tasks.</p>	
2	<p>Attend the preparation meeting in Vientiane.</p> <p>Visit each of the zones accompanied by the relevant team to familiarise yourself with the study area, and the focus sites.</p> <p>In discussion with team, develop a list of WQ indicators required to inform the DSS based on an understanding of the models available, the study area and the development options under consideration.</p>	
3	<p>Develop a strategy for data collation and/or field surveys to fill gaps to the extent possible for completion of the tasks indicated in this TOR. Develop a budget and work plan in consultation with Council Study manager and EF Process Coordinator.</p>	
4	<p>Work with MRCS modelling team to calibrate and refine the model and design and interpret the results from sensitivity analyses to be incorporated in the WQ model runs</p>	
5	<p>Complete a discipline-specific ecoclassification assessment for the river zones in accordance with establish methods, and explained in the relevant specialist reports.</p> <p>Work with MRCS modelling team to provide outcomes to DSS manager, and a short write up for later inclusion into your specialist report.</p>	
6	<p>Attend the KCW and deal with questions and concerns from the specialists.</p> <p>Complete Response Curves and explanations for WQ Indicators, as appropriate.</p> <p>Generate additional information if required, as possible.</p>	
7	<p>Work with MRCS modelling team to provide time series of WQ data for the zones for all chosen developments in each thematic area and the cumulative developments over the same period of record as the hydrology.</p> <p>Identify likely changes to WQ associated with each of the thematic areas</p>	
8	<p>Attend the calibration workshop and provide discipline specific input on scenario outcomes, and adjust Response Curves/input data as necessary to complete calibration of DSS</p>	
9	<p>Provide a WQ modelling technical report.</p> <p>Adhere to standard formatting, font and layout specifications provided by the Council Study management for written submissions.</p> <p>Incorporate comments.</p>	