

TERMS OF REFERENCE

Individual Contractor

Assignment Information

Assignment Title:	National Consultant for Watershed Management and Monitoring Plan in Kbal Chhay Multiple Use Area (KCMUA)
Cluster/Project:	Policy and Innovation
Post Level:	Specialist
Contract Type:	Individual Contractor (IC)
Duty Station:	Home-based, Phnom Penh and Sihanouk Ville
Expected Place of Travel:	Sihanouk Ville
Contract Duration:	32 days, and from February 25 to May 24, 2021

1. Project Description

The Kbal Chhay Multiple Use Area (KCMUA) was established in 2016 by the Sub-decree no. of the Prime Minister with the total area of 5,520 hectares in Sihanouk province. The area has several ecosystem services including fresh water, carbon sequestration, non-timber forest products, and recreation. The KCMUA is the main important source of freshwater supply to Preah Sihanouk provincial town providing around 10 to 12 million cubic meter per year. Since 2018, the Department of Biodiversity of the General Secretariat of the National Council for Sustainable Development (NCSD) in collaboration with UNDP-Cambodia has so far conducted preliminary assessments of water availability and payment for ecosystem service (PES) options through the management of watershed in KCMUA. Based on this assessment, the main threats to ecosystem services come from forestland encroachment and limited resources for an effective management of the watershed. Moreover, the Sihanoukville city has grown rapidly along with developments with the Preah Sihanouk Sea Ports, Special Economic Zone, Tourism, International Airport and Coal Power Plants. However, the city has been experiencing water shortage almost every year due to the sharp increase of water demand (around 15-20% per year), mainly in the dry season. The study shows that water supply that KCMUA can provide will reach its limited capacity by 2023 (JICA 2009, UNDP 2018). Thus, there is an urgent need to properly manage the water catchment area and mobilize enough resources through innovative solutions to support the protection of its ecosystem.

The GoAL-WaterS (Governance, Accountability and Learning for Water Sustainability) program through the Fresh water and wastewater management in southern Cambodia project focus on the development of watershed management for KCMUA so the water quantity and quality can be monitored and reported on the regular basis by relevant stakeholder. In addition, the results from the monitoring will be used to establish a long-term watershed monitoring plan and inform sub-national government for a better city planning in the future.

2. Scope of Work

The objective of this assignment is to develop a watershed management and monitoring plans of KCMUA. For this an assessment of the water quantity and quality for continued water provision to

downstream areas needs to be conducted in order to generate scientific evidence and data for the management of the watershed. In addition, the results from the study will be used to establish a watershed management and monitoring plan, and to inform sub-national government for a better city planning in the future.

2.1.Assessment of the water availability in KCMUA

a) Assessment of impact of forest cover change scenarios on surface water and its relation to groundwater resources

1. Conduct a desk review on watershed and its water provision in KCMUA
2. Analyse the water availability or carry capacity that both watersheds can provide
3. Assess forest cover and field survey for underground water resources
4. Analyse association between change of forest cover to surface and ground water
5. Map out restoration areas of existing watersheds in KCMUA

b) Assessment of and modelling sediment yield due to forest cover change that impact to water quality

1. Collect data on sedimentation changes caused by forest cover change
2. Run modelling to generate results of correlation of land use change and sediment yield
3. Define and propose sedimentation monitoring plan or schedule for KCMUA

2.2.Propose a watershed management and monitoring plans for KCMUA

- 1 Define the watershed areas and their management zones (e.g. conservation area, restoration area and so on)
- 2 Draft the management and monitoring plans for each zone in KCMUA
- 3 Select and map water sample sites/stations for water quality and quantity monitoring
- 4 Define variables/parameters to be measured for water quality and quantity monitoring
- 5 Suggest the roles and responsibilities of each stakeholders in water monitoring

2.3.Develop and provide training on water monitoring for KCMUA

- 1 Develop training materials for water monitoring in KCMUA
- 2 Conduct trainings and coach the rangers and local authorities/communities to implement the monitoring plan for water quality and quantity in KCMUA

3. Expected Outputs and Deliverables

No	Deliverables/Outputs	Estimated Duration to Complete	Target Due Dates	Review and Approvals Required
1	Satisfactory submission of detailed work plan and design watershed	2 days	01 March 2021	

	management and monitoring in KCMUA			
2	Satisfactory submission of the assessment report on impact of forest cover change scenarios on surface water & groundwater and modelling sediment yield due to forest cover change that impact to water quality	9 days	25 March 2021	Environment and NRM Officer, Project manager
3	Satisfactory submission of the draft of watershed management and monitoring plans for KCMUA	12 days	16 April 2021	
4	Satisfactory submission: - Final draft of the assessment report on forest cover change and water surface & groundwater and sediment yield impact on water quality - Final draft of watershed management and monitoring plans for KCMUA	5 days	30 April 2021	Climate Change and ENV policy Specialist
5	Develop training materials for water monitoring in KCMUA and provide trainings to implement the water monitoring plan	4 days	07 May 2021	Environment and NRM Officer,
Total number of days		<u>32 days</u>		

4. Institutional Arrangements

- The Consultant shall work with the Environment and NRM officer and project manager throughout the assignments. The consultant will be under direct supervision of Environment and NRM officer.
- The Consultant shall have regular meetings with UNDP (Environment and NRM officer and project manager) and project partners.
- The Consultant needs to maintain daily communication with the GSSD/MoE, DoE and UNDP Country Office as and when problems emerge during the consultancy period, especially if they affect the scope of the task.
- In cooperation with the Environment and NRM officer, the Consultant will lead preparation of meeting agenda, training and presentation materials.

5. Duration of the Assignment

The duration of the assignment will be from 25 February 2021 to 24 May 2021 for a total of 32 working days at least 5 days in the field.

6. Duty Station

The duty station of this assignment is a combination of home-based, Phnom Penh, and field mission in Siem Reap for at least 5 days.

Selected individual contract(s) who is expected to travel to the Country Office (CO) to undertake the assignment in the country (Cambodia) is required to undertake UN security course (BSAFE) *training*. The course accessible is here: <https://training.dss.un.org/course/category/6>

7. Minimum Qualifications of the Individual Contractor

Education:	<ul style="list-style-type: none"> Master's degree or equivalent in natural resource management, forestry, ecology, biology, environment or a related field
Experience:	<ul style="list-style-type: none"> At least 5 years of experience with water assessment and management, PES, NRM, biodiversity conservation, environment and protected area management. Prior work experience with integrated water management and PES in Cambodia is an asset. Experience in liaising with stakeholders including government, CSOs and private sector. Strong writing and drafting skills
Competencies:	<ul style="list-style-type: none"> Experience with UNDP and/or UN agencies, research institute and academia will be an advantage. Strong analytical skills and exceptional ability in communication and networking, negotiations and writing. Flexibility and ability to operate in different cultural settings and with a variety of stakeholders; culturally and gender sensitive.

8. Criteria for Evaluation of the Individual Contractor

Technical Evaluation Criteria	Obtainable Score
Master's degree or equivalent in natural resource management, hydrology, forestry, ecology, biology, environment or a related field	20
Experience with water assessment and management, PES, biodiversity conservation, environment and protected area management.	30
Experience in liaising with NRM stakeholders including government, CSOs and private sector.	30
Strong analytical writing skills (A written sample is required to prove this criteria)	20
Total Obtainable Score:	100

9. Payment Milestones

The consultant will be paid on a lump sum basis as per the following milestones:

No	Outputs/Deliveries	Payment Schedule	Payment Amount %
1	Upon satisfactory completion and submission of deliverable # 1	01 March 2021	15

2	Upon satisfactory completion and submission of deliverable #2	25 March 2021	25
3	Upon satisfactory completion and submission of deliverable and #3	16 April 2021	30
4	Upon satisfactory completion and submission of deliverable # 4	30 April 2021	15
5	Upon satisfactory completion and submission of deliverable # 5	07 May 2021	15