

TERMS OF REFERENCE

Individual Contractor

1. Assignment Information

| | |
|----------------------|---|
| Assignment Title: | International environmental expert for drafting the State of the Environment Report for Cambodia (with residence in Cambodia or South East Asia) |
| UNDP Practice Area: | Environment and Energy |
| Cluster/Project: | Policy and Innovations Hub |
| Assignment Location: | Home base and Phnom Penh, Cambodia |
| Assignment Duration | 70 days from 1 November 2019 to April 30, 2020 |

2. Background and Project Description

The Royal Government of Cambodia has adopted a National Strategic Development Plan 2019-2023. A cornerstone of this strategy is to improve the environment and protect Cambodia's nature, in line with the global Sustainable Development Goals (SDGs). In order to have a clear baseline for the environmental agenda, the Ministry of Environment (MoE) is seeking technical support from development partners including UNDP to produce a *State of the Environment* (SoE) report.

The purpose of the SoE report is to present a stocktaking on the environment covering air, water and land. Drawing on international examples, the SoE in Cambodia is envisaged to include the following chapters (see Annex 1 for more information about the proposed content of the SoE report for Cambodia):

1. Introduction
2. Air Quality
3. Climate Change
4. Water
5. Land
6. Biodiversity
7. Waste

The production of the State of Environment report will be led by the General Department of Environmental Knowledge and Information (GDEKI) of the MoE and in close cooperation with relevant departments of the MoE and the National Council for Sustainable Development (NCSD), holding key information and data to be used in the report.

2. Objective of the Assignment

The main objectives of this assignment are to prepare initial drafts of the following chapters, and to identify areas requiring further data collection and expert support.

Chapter 2: Air Quality

Chapter 3: Climate Change

Chapter 6: Biodiversity

Chapter 7: Waste

3. Scope of work

Throughout the assignment, the consultant is to work under the guidance of the GDEKI of the MoE as well as the UNDP Country Office and to work closely with relevant departments of the MoE and the NCSD and UNDP projects, holding key information and data to be used in the report. A list of UNDP related projects is as follows.

| Chapter | Theme | UNDP projects |
|-----------|----------------|---|
| Chapter 2 | Air quality | <ul style="list-style-type: none">• Sustainable Mobility for All Initiative (SUMAI)• Building an enabling environment for sustainable development (BESD) |
| Chapter 3 | Climate change | <ul style="list-style-type: none">• Cambodia Climate Change Alliance (CCCA)• Early Warning System |
| Chapter 6 | Biodiversity | <ul style="list-style-type: none">• the Forest Carbon Partnership Facility (FCPF) |
| Chapter 7 | Waste | <ul style="list-style-type: none">• Building an enabling environment for sustainable development (BESD) |

For each chapter, the consultant is to carry out the following set of tasks.

- Based on the agreed contents for the chapter, compile available reports, data and references to be used as resources in drafting the report. This entails consolidation and analyses of available data and reports from relevant departments of the MoE and the NCSD as well as UNDP ongoing projects and other sources (e.g. other ministries, development partners, academia, NGOs)
- (If any) identify data gaps and needs for additional expert support and prepare Terms of References (TORs) for expert (s)
- Prepare the first draft chapter (not more than 15 pages) for comments. This draft document should reflect policy recommendations in consultation with relevant departments. It should also include an annex with a list of references, and information of data gaps and needs for additional expert support
- Make a power point presentation to present main contents, analyses and policy recommendations to receive further comments.
- Prepare the second draft (not more than 20 pages) incorporating comments

4. Expected Outputs and Deliverables

The contract will be on a fixed output-based price, and the Contractor must cover all costs for the three major deliverables. The payment schedule will be based on deliverables and outputs as below:

| N | Deliverables/Outputs | Estimated Duration to Complete | Target due Dates | Review and Approvals Required |
|---|---|--------------------------------|-------------------|-------------------------------|
| 1 | A draft chapter on climate change (chapter 3) | 15 days | November 20, 2019 | |

| | | | | |
|---|--|---------|-------------------|---------------------------------|
| | <ul style="list-style-type: none"> • Compilation of available reports, data and references to be used as resources in drafting the report. • Identification of data gaps and needs for additional expert support and prepare TORs for expert (s) • The first draft chapter (not more than 15 pages) for comments with policy recommendations and an annex with a list of references, and information of data gaps and needs for additional expert support • A power point presentation to present main contents, analyses and policy recommendations to receive further comments. • The second draft with full incorporation of comments | | | Environmental Policy Specialist |
| 2 | A draft chapter on air quality (chapter 2) <ul style="list-style-type: none"> • Compilation of available reports, data and references to be used as resources in drafting the report. • Identification of data gaps and needs for additional expert support and prepare TORs for expert (s) • The first draft chapter (not more than 15 pages) for comments with policy recommendations and an annex with a list of references, and information of data gaps and needs for additional expert support | 15 days | December 15, 2019 | |
| 3 | A draft chapter on air quality (chapter 2) <ul style="list-style-type: none"> • A power point presentation to present main contents, analyses and policy recommendations to receive further comments. • The second draft with full incorporation of comments | 5 days | January 25, 2020 | |
| 4 | A draft chapter on biodiversity (chapter 6) <ul style="list-style-type: none"> • Compilation of available reports, data and references to be used as resources in drafting the report. • Identification of data gaps and needs for additional expert support and prepare TORs for expert (s) • The first draft chapter (not more than 15 pages) for comments with policy recommendations and an annex with a list of references, and information of data gaps and needs for additional expert support • A power point presentation to present main contents, analyses and policy recommendations to receive further comments. • The second draft with full incorporation of comments | 15 days | February 28, 2020 | |

| | | | | |
|----------------------|---|----------------|-------------------|--|
| 5 | A draft chapter on waste (chapter 7) <ul style="list-style-type: none"> • Compilation of available reports, data and references to be used as resources in drafting the report. • Identification of data gaps and needs for additional expert support and prepare TORs for expert (s) • The first draft chapter (not more than 15 pages) for comments with policy recommendations and an annex with a list of references, and information of data gaps and needs for additional expert support • A power point presentation to present main contents, analyses and policy recommendations to receive further comments. • The second draft with full incorporation of comments | 15 days | March 31 2020 | |
| 6 | Development of the third draft of all the above chapters incorporating additional comments | 5 days | April 25, 2020 | |
| Total service | | 70 Days | | |

The consultant should submit all the deliverables of satisfactory quality by the target due dates. The failure to meet the set due dates or to meet the quality requirements may result in the immediate revoke of the contract.

5. Institutional Arrangement

A substantive part of the assignment will be conducted at the Ministry of Environment and in close cooperation with the GDEKI. Given the need for close cooperation with the MoE, the consultant may be based in the office of the GDEKI.

The selected consultant will work closely with the Environment Team under the UNDP Policy & Innovations unit. The consultancy will be performed under the overall supervision of the Environmental Policy Specialist, UNDP Cambodia Country Office.

The consultant may be requested to work with international and national consultants assigned by UNDP. The selected consultant is expected to respect confidentiality and follow necessary data and information assessment.

6. Duration of the Work

The total duration of assignment is 70 days from November 1, 2019 to April 30, 2020.

7. Duty Station

The duty stations for this assignment are home country and Phnom Penh with at least 3 trips to Cambodia with a minimum number of stays in Phnom Penh for 40 days in total. Travelling costs in Phnom Penh will be covered by the consultant.

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 the Basic Security in the Field (BSIF) training

(<https://dss.un.org/dssweb/WelcometoUNDSS/tabid/105/Default.aspx?returnurl=%2fdssweb%2f>

) prior to travelling. CD ROMs must be made available for use in environments where access to technology poses a challenge.

8. Minimum Qualifications of the Individual Contractor

| | |
|------------------------------|---|
| Education: | <ul style="list-style-type: none"> ▪ A master's degree in environment management and policy, international development policy, law or related, relevant field(s) |
| Experience: | <ul style="list-style-type: none"> ▪ At least 7 years of prior relevant work experience including environmental policy and research, technical report-writing at the nexus of environmental science and policy. ▪ Experience drafting and editing policy documents |
| Competencies: | <ul style="list-style-type: none"> ▪ Strong analytical skills, proven ability to synthesize diverse data combining quantitative and qualitative methods, technical report-writing in English as well as ability to develop policy recommendations based on scientific data (to be evaluated based on a list of publication record) |
| Language Requirement: | <ul style="list-style-type: none"> ▪ Fluency in English mandatory. Knowledge of Khmer language is a plus |

9. Criteria for Evaluation of Level of Technical Compliance of Individual Contractors

| Technical Evaluation Criteria | Obtainable Score |
|--|-------------------------|
| A master's degree in environment management and policy, international development policy, law or related, relevant field(s) | 20 |
| At least 7 years of prior relevant work experience including environmental policy and research, technical report-writing at the nexus of environmental science and policy. Experience drafting and editing policy documents is a plus | 25 |
| Experience drafting and editing policy documents | 25 |
| Strong analytical skills, proven ability to synthesize diverse data combining quantitative and qualitative methods, technical report-writing in English as well as ability to develop policy recommendations based on scientific data. This will be evaluated based on a list of publication record. | 30 |
| Total Obtainable Score: | 100 |

10. Scope of Bid Price and Schedule of Payments

The contract will be on a fixed output-based price, and the Contractor must cover all costs and the payment schedule will be based upon satisfactory completion of the following:

| No. | Deliverables/Outputs | Target Due Dates | Payment |
|-----|--|------------------|---------|
| 1 | Submission of work plan | 2, Nov 2019 | 10% |
| 2 | Satisfactory delivery of the second draft chapter 3: Climate Change Satisfactory delivery of the first draft chapter 2: Air Quality | 15, Dec 2019 | 30% |
| 3 | Satisfactory delivery of the second draft chapter 2: Air Quality Satisfactory delivery of the second draft chapter 6: Biodiversity | 28, Jan, 2020 | 30% |
| 4 | Satisfactory delivery of the second draft chapter 7: Waste Satisfactory delivery of the third drafts of chapter 2,3, and 6, 7 | 30 April, 2020 | 30% |

11. Recommended Presentation of Proposal

- Financial proposal

12. Approval

Signature: _____

Name: Ms. Nimnuon IvEk_____

Title/Unit/Cluster: ARR/ Head of Policy and Innovation Hub

Date: _____

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| ACRONYM AND ABBREVIATION | |
| EXECUTIVE SUMMARY | |

CHAPTER 1:

INTRODUCTION

Introduction
Objectives
Value
Background
Report Framework
Methodology

CHAPTER 2: AIR QUALITY MANAGENT

KEY POINT (UN and NSDG)

PRESSURE

Emission quantities from pollution sources within respective city and province [**transport sources** (registered vehicles), **factories run by coal and diesel** (cements, handicrafts, energy), **burning sites** (field and dumping)]
Acid rain in gas and ion form (wet and dry acidifying deposition in Phnom Penh, Siem Reap, Battambang and Sihanoukville)
Location of such variety of factories (run by coal and diesel) and burning sites, in provinces and cities

STATE & TREND

Pollutant composition levels (NO₂, SO₂, CO, PM₁₀, TSP) in ambient air in Phnom Penh, Siem Reap, Battambang and Sihanoukville
Number and size of parks and green areas in in Phnom Penh, Siem Reap, Battambang and Sihanoukville
Location of ambient air quality control stations by province and city

RESPONSE

Air pollution control (sub decree No. 42)
Management of air pollution emission by vehicles and factories
Policy and strategy for management and city development
Action plan on air pollution emission control and city development

REFERENCES

CHAPTER 3: CLIMATE CHANGE

KEY POINT (UN and NSDG)

PRESSURE

- GHG emission by energy, industry, agriculture, waste, land use land cover change and forestry sectors
- GHG removal by land use land cover change and forestry sector
- Net GHG emission
- Statistic of forest cover
- Map of forest cover

STATE & TREND

- Annual rainfall and temperature
- Annual flood, drought and storm
- Annual agricultural land, crops and animal damaged (or lost) by flood, drought and storm
- Households, victims and people die caused by flood and storm
- Households and victims caused by drought
- House, school, referral, clinic, temple, public building, road, bridge, water gate and dam damaged by flood
- House, school, referral, clinic, temple and public building damaged by storm
- Economic lost caused by flood, drought and storm
- Area damaged by flood, drought and storm

RESPONSE

- GHG Inventories
- GHG emission reduction by energy, industry, agriculture, waste, land use land cover change and forestry sectors
- Cambodia National Communication
- Policies and strategic plans in response to climate change (adaptation and mitigation)
- Programs and projects for climate change adaptation and mitigation (plan and on-going)

REFERENCES

CHAPTER 4: WATER

KEY POINT (UN and NSDG)

SECTION 1: INLAND WATER

PRESSURE

- Water demand by sector
- Water demand by province and in nation-wide
- Reservoir capacity storage (shallow, removal, climate change)
- Land use change
- Access to water

STATE & TREND

- Water generation by province and by nation-wide (surface and ground, annual precipitations)
- Water storage capacity by province and by nation-wide
- Shortage quantity per annum
- Map of water bodies distribution

RESPONSE

- Renewable policy and existing application
- Strategy and mechanism collecting rain water
- Saving utilized inland water plan
- Integrated water resources management
- Sharing management and usage (farmer water user communities/
groups, take turns)

REFERENCES**SECTION 2: MARINE WATER****KEY POINT****PRESSURE**

- Increase of discharge quantity per annum
- Capacity treatment plants/stations
- Grow of coastal areas population and marine tourists
- Booming of infrastructure development

STATE & TREND

- Marine water quality compliance
- Sampling taking points
- Status of lab analysis

RESPONSE

- Marine water quality monitoring and treatment
- Marine pollution control measure
- Policies, strategies and action plans
- Existing law and regulation and relevancies

REFERENCES**CHAPTER 5: LAND USE AND SOIL QUALITY****KEY POINT****PRESSURE**

- Socio-economic change
- Land use, land cover change
- Land/soil degradation

STATE & TREND

- Growth of agriculture land and decline of forest land
- Land use by main sectors
- Land use classification
- Growth of chemical fertilizers and pesticides

RESPONSE

- Sustainable land use planning
- Guidelines/instruction of chemical fertilizers and pesticides use
- List of banned and restricted pesticides use in Cambodia
- Legal instrument (laws, policies and strategies, action plans..)

REFERENCES

CHAPTER 6: BIODIVERSITY

KEY POINT

SECTION 1: FOREST

PRESSURE

- % of agriculture land expansions
 - Industrial crops areas
 - Food crops areas
 - Rice field areas
 - Land concession areas (social and economic)

STATE & TREND

- % of forest cover vs total land area
- Forest cover changes
- Forest classification by year

RESPONSE

- Protected areas management
- Forest management
- National legal instruments (policies, strategies and action plans)
- Education and dissemination

REFERENCES

Section 2: WILDLIFE

PRESSURE

- Loss/decline of habitat
 - Terrestrial (forest, pasture, wood shrub)
 - Wetland (flooded forest cleared, esp. around Tonle Sap)
 - Underground (soil layer plowing, land contamination,)
- Ecosystem fragmentation

STATE & TREND

- Status species (recorded, new discovery)
- IUCN Red list (EX, CR, EN, VU, NT, DD, LC)
- Invasive alien species

RESPONSE

- Protected areas management
- Fauna species protection
- Species introduction restriction

REFERENCES

CHAPTER 7: WASTE

KEY POINT

Section 1: SOLID WASTE

PRESSURE

- Population growth
- Economic growth
- Ineffective management
- Insufficient law enforcement

STATE & TREND

Waste generation

- Population in respective province and city
- Total amount in each province and city (ton/year)
- Amount per capita (kg/day)
- Collection and transportation amount to landfill (% and ton)
- Treatment amount (% and ton)
- Industrial waste
- Medical waste
- Hazardous waste
- Electronic waste
- Construction waste

Waste composition and flow

- Plastic
- Paper
- Broken glass
- Wood
- Iron
- Rubber
- Leather
- Textile
- Ceramic
- Construction waste and debris

Waste sources

- Municipal waste
- Market waste
- Hotel and guesthouse
- Restaurant
- Slaughter
- Public building
- Other public sources
- Repair services
- Tourism services
- Commercial services
- Hospital and treatment services
- Factory, handicraft and processing places

Management status

- Storage and illegal disposal
- Collection and transportation
- Disposal
- Processing
- Other management activities

RESPONSE

Legal instrument

- Law and regulation
- Policy and strategy
- Role and responsibility reform
- Detail data at all level enforcement
- 3R application
- Landfill management
- Appropriate technic implementation
- Existing standard implementation encouragement

Management mechanism and government, private sector partnership
Action plan and strategy
Financial mechanism
M&E implementation mechanism over policy, law, strategy and plan

REFERENCES

Section 2: LIQUID WASTE - WASTEWATER

PRESSURE

Population Growth
Development Growth
Wastewater Treatment System
Increase of discharge quantities

STATE & TREND

Public water quality
Quality of public water sources parameter
Result of water quality analysis
Mekong River
Tonle Sap and Tonle Bassac
Tonle Sap Lake
Streams
Wastewater quality
Phnom Penh wastewater quantity calculation
Parameters of wastewater quality
Phnom Penh Municipality and Kandal wastewater quality
Preh Sihanouk, Siem Reap and Battambang wastewater quality
Preh Sihanouk wastewater treatment station
Battambang wastewater treatment station
Siem Reap wastewater treatment station

RESPONSE

Policies, strategies, action plans, mechanisms
Legal instruments and relevances
Treatment plants/stations increase (capacity, number..)

REFERENCES

CONCLUSION

RECOMENDATION

ANNEXES

