



GREEN  
CLIMATE  
FUND

**GCF  
FUNDED ACTIVITY AGREEMENT  
(GRANTS)**

**between**

**UNITED NATIONS ENVIRONMENT PROGRAMME**

**and**

**GREEN CLIMATE FUND**

**FUNDED ACTIVITY: SAP009  
“Building resilience of urban populations with  
ecosystem-based solutions in Lao PDR”**

Dated 12<sup>th</sup> December 2019

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### Funded Activity Agreement (Grants)

This FUNDED ACTIVITY AGREEMENT (the “**FAA**” or this “**Agreement**”) dated \_\_\_\_ December 2019 between:

**UNITED NATIONS ENVIRONMENT PROGRAMME**, an international organization, established by the General Assembly of the United Nations (UNGA resolution 2997(XXVII) of 15 December 1972) and having its Headquarters at United Nations Avenue, Gigiri, P.O. Box 30552, 00100 Nairobi, Kenya (the “**Accredited Entity**” or “**UNEP**”); and

The **GREEN CLIMATE FUND**, designated as an operating entity of the financial mechanism under Article 11 of the United Nations Framework Convention on Climate Change and established pursuant to the Governing Instrument for the Green Climate Fund, approved by the COP at its seventeenth session, on 11 December 2011, and is annexed to Decision 3/CP.17, possessing juridical personality in order to operate effectively internationally, having such legal capacity as is necessary for the exercise of its functions and the protection of its interests and having its headquarters at Songdo, Incheon, Republic of Korea (“**GCF**” or the “**Fund**”),

each a “**Party**” and together the “**Parties**”.

WHEREAS

- (A) The Accredited Entity and the GCF entered into an accreditation master agreement on 15 December 2016, which became effective on 20 February 2017 (the “**AMA**”), which sets forth, amongst others, the general terms and conditions applicable between the Parties in connection with a funded activity;
- (B) In accordance with clause 4.11 of the AMA, the Accredited Entity has submitted to the Fund a funding proposal, which is attached to this Agreement as Annex 1 (the “**Funding Proposal**”) requesting funding for the activity described therein (the “**Funded Activity**” or “**Project**”);
- (C) The NDA of the Host Country has issued the No-Objection Letter with respect to the Project, as described in the Funding Proposal;
- (D) The Board of the Fund, by its Decision B.24/09 (“**Approval Decision**”), approved the Funding Proposal in the amount of ten million US Dollars (USD10,000,000) (the “**GCF Proceeds**”) subject to the conditions referred to in annex XIV “List of conditions and recommendations” of the Approval Decision and in the respective term sheet; and
- (E) In accordance with clause 6.02 of the AMA, the Parties now wish to enter into this Agreement in order to set out the agreed terms for the implementation of the Funded Activity.

THE PARTIES HEREBY AGREE AS FOLLOWS:

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## Clause 1. Definitions; AMA

- 1.01 The terms of the AMA are incorporated in, and form part of, this Agreement and pursuant to clauses 1.02 and 1.03 of the AMA, any derogations from, deviations or modifications to the AMA in relation to the Funded Activity are set forth in this Agreement. In case of termination of the AMA, its terms as incorporated in this Agreement shall continue to apply.
- 1.02 In the event of a conflict between:
- (a) The terms and conditions in the Clauses of this Agreement and the terms and conditions of any of its Schedules or Annex, the terms and conditions in the Clauses of the Agreement shall prevail; and
  - (b) The terms and conditions in the Schedules to this Agreement and the terms and conditions in the Annex to this Agreement, the terms and conditions in the Schedules shall prevail.
- 1.03 Wherever used in this Agreement, terms defined in the AMA shall have the respective meanings therein set forth unless modified herein or the context otherwise requires. Additional terms used in this Agreement shall have the following meanings:
- (a) **“Accredited Entity Account”** means the bank account to be notified by the Accredited Entity to the Fund in writing in the Request for Disbursement;
  - (b) **“Accredited Entity Fee”** shall have the meaning ascribed to it in Clause 4 of this Agreement;
  - (c) **“Activity(ies)”** shall have the meaning ascribed to it in Schedule 1;
  - (d) **“AML/CFT Policy”** means the Fund’s Anti-Money Laundering and Countering the Financing of Terrorism Policy adopted in Decision B.18/10;
  - (e) **“Authorized Representative”** means the UNEP staff member(s) authorized to sign the Request for Disbursement and notified in writing to the Fund;
  - (f) **“Budget”** means the costs of the Funded Activity and the breakdown thereof, as set out in Part A of Schedule 2 to this Agreement;
  - (g) **“Closing Date”** means the date which is four (4) years and six (6) months after the Effective Date (or such later date as the Fund shall establish by notice to the Accredited Entity), on which the Accredited Entity’s right to receive GCF Proceeds to the Accredited Entity Account in respect of the Funded Activity will have terminated;
  - (h) **“Co-financier”** means the following co-financier of the Project:
    - (i) Lao PDR for an amount of one million five hundred thousand US Dollars (USD1,500,000) in the form of in-kind contributions;
  - (i) **“Co-financing”** means the amounts of funding to be provided by the Co-financier directly for the implementation of the Project;
  - (j) **“Co-financing Agreement(s)”** means the legal agreement and/or arrangement under which the Co-financier will provide its Co-financing to assist in the Project implementation. For the avoidance of doubt, the PCA under which the Co-financier will commit the Co-financing shall serve as the Co-financing Agreement;
  - (k) **“Completion Date”** means the date which is no later than six (6) months after the Closing Date (except if otherwise agreed with the Fund);

- (l) **“Component(s)”** shall have the meaning ascribed to it in Schedule 1;
- (m) **“Disbursement(s)”** means a disbursement of all or part of the Grant made, or to be made, available by the Fund to the Accredited Entity, upon receipt of a Request for Disbursement and pursuant to the terms and conditions set out in this Agreement;
- (n) **“Disbursement Plan”** means the disbursement plan included in Part B of Schedule 2;
- (o) **“Disbursement Schedule”** means the disbursement schedule provided in accordance with Clause 7.01(c);
- (p) **“Effective Date”** shall have the meaning ascribed to it in Clause 7.01 of this Agreement;
- (q) **“Eligible Expenditures”** means any reasonable costs of Goods, Services or Works required for the implementation of the Funded Activity to be financed with the GCF Proceeds, in accordance with this Agreement, the AMA and the Funding Proposal;
- (r) **“Event of Default”** means, in addition to those set forth in clause 19.01 of the AMA, any event or circumstance set forth in Clause 11.01 of this Agreement;
- (s) **“Executing Entity”** means the entity specified in Clause 2.02 of this Agreement;
- (t) **“Funded Activity”** or **“Project”** shall have the meaning ascribed thereto in Recital (B) of this Agreement;
- (u) **“Funding Proposal”** shall have the meaning ascribed thereto in Recital (B) of this Agreement;
- (v) **“Grant”** means the GCF Proceeds in the amount specified in Clause 3.01 of this Agreement, as approved by the Board, which the Fund has decided to make available for the implementation of the Funded Activity, which shall be exclusive of the Accredited Entity Fee;
- (w) **“Host Country”** means the Lao People’s Democratic Republic or Lao PDR;
- (x) **“Implementation Arrangements”** mean the contractual arrangement(s) to be entered into and/or the administrative arrangement(s) to be established by the different parties involved in the implementation of the Funded Activity as set out in Schedule 3;
- (y) **“Implementation Plan”** means the calendar for the implementation of the Funded Activity set forth in Schedule 5;
- (z) **“Logic Framework”** means the logic framework for the Funded Activity as set out in Schedule 8 of this Agreement against which the Accredited Entity will report in the APRs;
- (aa) **“MoF”** means the Ministry of Finance of Lao PDR;
- (bb) **“MONRE”** means the Ministry of Natural Resources and Environment of Lao PDR;
- (cc) **“Notice of Payment”** means a written notice to be provided by the Accredited Entity to the GCF, in the form set forth in Schedule 7, for the transfer of any Unused Funds or Investment Income, from the Accredited Entity Account to the Fund;
- (dd) **“Output(s)”** shall have the meaning ascribed to it in Schedule 1;

- (ee) **“Project Cooperation Agreement”** or **“PCA”** means the Subsidiary Agreement that the Accredited Entity will enter into with the Executing Entity to make available the GCF Proceeds to the Executing Entity in form of a non-reimbursable grant;
- (ff) **“Request for Disbursement”** means a request for Disbursement substantially in the form set forth in Schedule 6 to this Agreement;
- (gg) **“Tax(es)”** means any tax, levy, impost, fee, duty or other charge or withholding of a similar nature (including any penalty or interest payable in connection with a failure to pay or any delay in the payment of any such amounts), whether in effect at the date of execution of this Agreement or imposed thereafter); and
- (hh) **“Unused Funds”** means any undisbursed or unused funds from the GCF Proceeds, for which no further disbursements, liabilities or costs are due to be made or paid by the Accredited Entity for the Funded Activity.
- 1.04 Any references in this Agreement to “Clause”, “Schedule” or “Annex” shall refer to a clause of, a schedule to or an annex to, this Agreement, unless otherwise specified or context requires otherwise.
- 1.05 For the purposes of this Agreement, the following provisions of the AMA are modified as follows:
- (a) The definition of **“Policy on Prohibited Practices”** shall mean the Policy on Prohibited Practices of the Fund adopted in Decision B.22/19;
- (b) The definition of **“Prohibited Practices”** shall mean the prohibited practices set forth in the Policy on Prohibited Practices; and
- (c) Exhibit A of the AMA shall be considered null and void.
- 1.06 For the avoidance of doubt the Policy on Prohibited Practices as defined in this Agreement shall apply from the date of execution of this Agreement.

## Clause 2. The Funded Activity

- 2.01 The Accredited Entity shall carry out the Funded Activity and, when applicable, monitor and supervise the implementation of the Funded Activity by the Executing Entity and ensure that the Executing Entity will carry out the Funded Activity, with due diligence and efficiency and in conformity with appropriate technical, financial, economic, social, environmental and administrative practices, and shall provide, promptly as needed, the funds, facilities, services and other resources required for the Funded Activity.
- 2.02 For the implementation of the Funded Activity: (a) the Accredited Entity shall act as the Executing Entity with respect to Activity 1.2.1 of the Funded Activity; and (b) Lao PDR, acting through MONRE and MoF shall act as the Executing Entity for all other Activities with respect to the Funded Activity, except for Activity 1.2.1, as further described in Schedule 3.
- 2.03 The Accredited Entity shall (a) carry out its obligations pursuant to the AMA and this Agreement for the implementation of the Funded Activity; and (b) ensure that the obligations set out in this Agreement are observed and carried out by the Executing Entity pursuant to the PCA, in accordance with the relevant provisions of the AMA.
- 2.04 Without prejudice to the provisions of Clause 2.01 above and except as the Accredited Entity and the Fund may otherwise agree, the Funded Activity shall be carried out in accordance with the Implementation Arrangements and within the timeframe set out in the Implementation Plan set forth in Schedule 5.

- 2.05 The implementation of all the Activities of the Funded Activity shall be completed no later than the Completion Date and shall be subject to confirmation by the Fund based on the completion report (final APR) to be provided in accordance with Schedule 4.
- 2.06 The Accredited Entity may request in writing an extension of the Closing Date and/or the Completion Date setting forth its justification for such an extension request, which shall not be unreasonably denied by the Fund following due consideration of such justification. The Fund shall approve or deny such request within thirty (30) calendar days following the Accredited Entity's request, except in case such extension needs the GCF Board approval, which may require a longer period to respond to the Accredited Entity's request. In such a case, the Fund will inform the Accredited Entity of the need for GCF Board approval, within thirty (30) calendar days following the Accredited Entity's request.

### **Clause 3. The Grant; Disbursements**

- 3.01 Subject to the terms and conditions of this Agreement, the Fund agrees to make available to the Accredited Entity by or before the Closing Date, as set forth in the Disbursement Plan attached hereto as Part B of Schedule 2, an amount equal to ten million US Dollars (USD10,000,000), in the form of a grant, which shall be made available by the Accredited Entity to the Executing Entities for the purposes of, and to assist, in financing the Funded Activity.
- 3.02 The Grant shall be transferred, in accordance with the Disbursement Plan provided in Part B of Schedule 2, to the Accredited Entity upon the fulfillment by the Accredited Entity, to the satisfaction of the Fund, of the relevant conditions precedent to Disbursement set forth in Clause 9 below. In accordance with this Clause 3.02, the Grant shall be transferred to the Accredited Entity Account. For the avoidance of doubt, the GCF Account for the Funded Activity will be a ledger account.
- 3.03 The GCF Holding Currency for Disbursements shall be USD.
- 3.04 For the implementation of Activity 1.2.1 of the Funded Activity, the Accredited Entity shall make the proceeds of the Grant available for the implementation of the Funded Activity under the terms and conditions consistent with this Agreement and the AMA.
- 3.05 For the implementation of the Funded Activity, except for Activity 1.2.1, the Accredited Entity shall make the proceeds of the Grant available to the Executing Entity in accordance with the PCA to be entered into between the Accredited Entity and the Executing Entity under the terms and conditions consistent with this Agreement and the AMA.
- 3.06 For the implementation of Activity 1.2.1 of the Funded Activity, the Accredited Entity shall ensure that (a) the Grant will be used exclusively to finance the Eligible Expenditures, in accordance with the AMA and this Agreement, as set out in the Funding Proposal, and as further specified in the Budget; and (b) all the Eligible Expenditures shall be accrued by UNEP in its role as the Executing Entity before the Completion Date.
- 3.07 For the implementation of the Funded Activity, except for Activity 1.2.1, the Accredited Entity shall contractually require, monitor and enforce the obligations of the relevant Executing Entity in accordance with Schedule 3, to ensure that (a) the Grant will be used by such Executing Entity exclusively to finance the Eligible Expenditures, in accordance with the AMA, this Agreement, and as set out in the Funding Proposal, and as further specified in the Budget; and (b) all the Eligible Expenditures shall be accrued by such Executing Entity before the Completion Date.



- 3.08 ***Retroactive Financing.*** The Grant shall not be used to finance any costs incurred prior to the Effective Date.
- 3.09 The financial reporting and accounting currency for the Funded Activity shall be USD.
- 3.10 ***Transfer of Investment Income and Unused Funds.***
- (a) Any Investment Income as well as any other income or gains earned on other balances held in the Accredited Entity Account shall be transferred, on an annual basis to the GCF to the account notified to the Accredited Entity following the Effective Date. The Accredited Entity shall deliver a Notice of Payment in respect of such Investment Income within ninety (90) calendar days after 31 December each year, and shall transfer the relevant Investment Income to the GCF within thirty (30) calendar days of such Notice of Payment.
- (b) All Unused Funds held in the Accredited Entity Account in respect of the Funded Activity shall be transferred to the GCF after the Completion Date to the account notified by the GCF to the Accredited Entity in writing following the Effective Date. The Accredited Entity shall deliver a Notice of Payment in respect of such Unused Funds no later than thirty (30) calendar days after the submission of the Project completion report (final APR) (as defined in Schedule 4), and shall transfer the relevant Unused Funds to the GCF within thirty (30) calendar days of such Notice of Payment.
- 3.11 The GCF will notify the Accredited Entity of the account to which the Unused Funds and Investment Income shall be paid within fifteen (15) days of the Effective Date. The GCF may, upon written notice to the Accredited Entity, change the instructions for the transfer of Investment Income.

#### **Clause 4. Accredited Entity Fee**

- 4.01 The Accredited Entity's fee is an amount equal to eight and a half per cent (8.5%) of the total Grant used to finance the Funded Activity (the "**Accredited Entity Fee**").
- 4.02 Ninety per cent (90%) of the Accredited Entity Fee shall be disbursed by the GCF to the Accredited Entity in instalments at the time of each Disbursement. The amount of each instalment of the Accredited Entity Fee shall be proportionate to the amount of the Disbursement to the total Grant, and such instalments shall be transferred to the Accredited Entity Account.
- 4.03 If, as at the Completion Date:
- (a) The aggregate amount of the Grant used to finance the Funded Activity was less than ninety per cent (90%) of the Grant, then the Accredited Entity shall, within thirty (30) calendar days written notice from the Fund, refund to the GCF the portion of the disbursed Accredited Entity Fee in relation to the unutilized portion of the GCF Proceeds; or
- (b) The aggregate amount of the Grant used to finance the Funded Activity was ninety per cent (90%) of the Grant, then the GCF shall pay no further amount in respect of the Accredited Entity Fee to the Accredited Entity; or
- (c) The aggregate amount of the Grant used to finance the Funded Activity was greater than ninety per cent (90%) of the Grant, then, within thirty (30) calendar days after the Accredited Entity submits to the GCF the Project completion report (final APR) to the satisfaction of the GCF, the GCF shall disburse to the Accredited Entity an amount, up to and including ten per cent (10%) of the Accredited Entity Fee,



The aggregate Accredited Entity Fee received and retained by the Accredited Entity shall not exceed eight and a half per cent (8.5%) of the total Grant used to finance the Funded Activity, unless otherwise agreed by the Fund.

- 4.04 The Accredited Entity Fee will be disbursed to the Accredited Entity in addition to the GCF Proceeds.
- 4.05 If the Fund decides to suspend Disbursements, in accordance with clause 15.03 of the AMA or Clause 5.03 of this Agreement, the Fund may also, at its own discretion, suspend the payment of Accredited Entity Fee. Such suspension will affect only Disbursements and payments of Accredited Entity Fee not disbursed by the Fund to the Accredited Entity prior to the time the suspension is decided by the Fund.
- 4.06 **Reporting on the Accredited Entity Fee.** The Accredited Entity shall report on the usage of the Accredited Entity Fee in each APR to be submitted in accordance with the AMA.

### **Clause 5. Funded Activity Implementation**

- 5.01 **Modifications to the Funded Activity.** For the purposes of clause 11.03 of the AMA, the Accredited Entity shall inform the Fund as soon as possible of any proposed modification to the Funded Activity which could reasonably constitute a Major Change, and seek the Fund's instructions on the necessary steps to be taken to address such event or to implement such proposed modification, which may involve seeking a new No-Objection Letter and/or new Board approval.
- 5.02 For purposes of Clause 5.01 above, a Major Change may include:
- (a) A change in the scope of the Funded Activity or use of the GCF Proceeds which would result in a substantial deviation from the intended outcomes that the Accredited Entity seeks to achieve from the implementation of the Funded Activity, including its climate and/or environmental impacts;
  - (b) An adverse impact on the ability of the Executing Entity to operate the Funded Activity;
  - (c) The requirement for an additional financial commitment from the Fund;
  - (d) A change in the Executing Entity or an adverse change in the legal status of the Executing Entity or any third party involved in the implementation of the Funded Activity that materially and adversely impacts implementation of the Funded Activity; and
  - (e) A material shortfall resulting from the suspension, cancellation, termination or not coming into effect, in whole or in part, of any Co-financing or a Co-financing Agreement, unless adequate funds for the Project are available from other sources on terms and conditions consistent with the affected Co-financing or Co-financing Agreement.
- 5.03 The Accredited Entity shall, promptly, inform the Fund of any credible risks of money laundering and/or financing of terrorism in relation to a Funded Activity and promptly take steps recommended by the Fund in consultation with the Accredited Entity to address such identified risks. In those cases, the Fund may suspend the Disbursements to the Accredited Entity under this Agreement until such risks have ceased or are reduced to the level satisfactory to the Fund.

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## Clause 6. Administration of Grant by the Accredited Entity

- 6.01 **Permitted Reallocation.** Any reallocation of the GCF Proceeds among the Outputs for the Funded Activity described in Part A of Schedule 2 resulting in a variation of more than ten per cent (10%) of the previously agreed Budget for the Output from which and to which the funds are to be reallocated shall be approved in writing by the Fund in advance. Notwithstanding the above, any increase in the amount allocated to project management costs in Part A of Schedule 2, must be communicated by the Accredited Entity to the Fund and approved in writing by the Fund in advance.
- 6.02 **Taxation.** As a United Nations entity, the Accredited Entity does not withhold any Taxes. Any refunds or reflows to be transferred by the Accredited Entity to the GCF under this Agreement are not subject to any withholding Taxes. The Fund shall not be requested to disburse any funds in addition to the amount specified in Clause 3.01 above, including for the payment of Taxes, for and during the implementation of the Project.
- 6.03 Any funds reimbursed to or retained by the Accredited Entity as a result of tax exemption in respect of the Funded Activity shall be used by the Accredited Entity solely for the Funded Activity pursuant to this Agreement.

## Clause 7. Effectiveness

- 7.01 This Agreement shall enter into effect on the date upon which the Fund dispatches to the Accredited Entity a notice of its acceptance of the evidence specified below ("**Effective Date**"):
- (a) Delivery to the Fund by the Accredited Entity of a duly authorized and executed copy of this Agreement by the Accredited Entity;
  - (b) Delivery to the Fund by the Accredited Entity of a legal opinion or certificate, in form and substance satisfactory to the Fund, issued by the Accredited Entity's duly authorized, senior corporate legal officer, confirming that this Agreement entered into by the Accredited Entity has been duly authorized or ratified by all necessary corporate actions, duly executed and delivered on behalf of the Accredited Entity, and is binding on and enforceable upon the Accredited Entity in accordance with its terms;
  - (c) Delivery to the Fund by the Accredited Entity of an indicative Disbursement Schedule by the Accredited Entity, indicating month and year for the Disbursement of the GCF Proceeds by the Fund to the Accredited Entity Account for the implementation of the Funded Activity;
  - (d) Delivery to the Fund by the Accredited Entity of a written confirmation to the Fund confirming that it has completed fiduciary risk assessment including an evaluation of the financial management capacity of MONRE and MoF, in line with the United Nations regulations, rules and processes and that MONRE and MoF, have the relevant fiduciary and financial management capacity to act as an Executing Entity; and
  - (e) Delivery to the Fund by the Accredited Entity of a legal opinion or certificate, in form and substance satisfactory to the Fund, which has been issued by an authorized representative of the Accredited Entity, confirming that the Accredited Entity has verified that the Co-financing to be provided by Lao PDR has been duly authorized by all necessary governmental actions.

- 7.02 If, before the Effective Date, any event has occurred, which would entitle the Fund to suspend the right of the Accredited Entity to request Disbursements under this Agreement if this Agreement had been effective, the Fund may postpone the dispatch of the notice referred to in this Clause 7 until such event (or events) has (or have) ceased to exist.
- 7.03 ***Termination for Failure to Become Effective.*** This Agreement and all obligations of the Parties under it shall terminate if it has not entered into effect by the date which falls one hundred and eighty (180) calendar days after the date of execution of this Agreement, unless the Fund, after consideration of the reasons for the delay and following consultations with the Accredited Entity, establishes a later date for the purpose of this Clause 7. The Fund shall promptly notify the Accredited Entity of such later date.

### **Clause 8. Reporting, Monitoring and Evaluation Schedule**

- 8.01 The reporting, monitoring and evaluation of the Funded Activity shall be done in accordance with Schedule 4.
- 8.02 The Logic Framework set out in Schedule 8 shall be used by the Accredited Entity for the implementation of and reporting on the Funded Activity.

### **Clause 9. Conditions Precedent to Disbursement**

- 9.01 The obligation of the Fund to make any Disbursement under this Agreement shall be subject to the following conditions having been fulfilled to the satisfaction, in form and substance, of the Fund:
- (a) *General conditions for all Disbursements:*
- (i) Other than in relation to the first Disbursement, submission to the Fund by the Accredited Entity of evidence that at least seventy per cent (70%) of the funds previously disbursed by the Fund have been cumulatively committed on Eligible Expenditures;
  - (ii) Other than in relation to the first Disbursement, submission to the Fund by the Accredited Entity of APRs and Financial Information in accordance with the AMA;
  - (iii) Delivery to the Fund by the Accredited Entity of a Request for Disbursement, signed by the person or persons authorized to do so, within thirty (30) calendar days prior to the date on which the Disbursement is requested to be made, which shall not be later than the Closing Date;
  - (iv) Delivery to the Fund by the Accredited Entity of a confirmation that the Accredited Entity has verified that the Co-financing committed by Lao PDR has been applied to the implementation of the Funded activity up to the date of the request for funds made by the Accredited Entity; and
  - (v) Confirmation to the Fund by the Accredited Entity that there is no Event of Default occurring with respect to the FAA and/or the Subsidiary Agreement.
- (b) *Conditions precedent to first Disbursement:*
- (i) Effectiveness of this Agreement;
  - (ii) Delivery to the Fund by the Accredited Entity of an executed copy of the Subsidiary Agreement between the Accredited Entity and Lao PDR;

- (iii) Delivery to the Fund by the Accredited Entity of a legal opinion or certificate, received from Lao PDR, which has been issued by a qualified lawyer, and addressed to the Accredited Entity and the Fund, establishing with citations of the pertinent constitutional, legal and regulatory provisions, confirming that the Subsidiary Agreement has been duly authorized or ratified by all necessary governmental actions, duly executed and delivered on behalf of, and is legally binding on and enforceable upon Lao PDR in accordance with its terms; and
  - (iv) Delivery to the Fund by the Accredited Entity of evidence of the authority of the person or persons authorized to sign each Request for Disbursement (with respect to the GCF Proceeds and the Accredited Entity Fees) under this Agreement, and the authenticated specimen signature of each such person.
- 9.02 If within ninety (90) calendar days from the Effective Date, or such longer period established by the Fund in writing, the Accredited Entity has not requested the first Disbursement or the conditions precedent for the first Disbursement established in Clause 9.01 have not been fulfilled, the Fund may terminate this Agreement by giving notice to the Accredited Entity.
- 9.03 If at the Closing Date, the Accredited Entity has not requested the Disbursement of the full amount of the GCF Proceeds with at least thirty (30) calendar days prior to such date, or the Fund has not otherwise disbursed the full amount of the GCF Proceeds, the undisbursed portion of the GCF Proceeds shall automatically be cancelled and no longer available for Disbursement.

#### **Clause 10. Additional Representations, Warranties and Covenants of the Accredited Entity**

- 10.01 In addition to clause 18.01 of the AMA, the Accredited Entity represents and warrants that:
- (a) On the date of the execution and Effective Date of this Agreement and the date of each Disbursement made by the Fund under this Agreement, there are no circumstances of which the Accredited Entity is aware, including through its oversight of the Funded Activity as per the obligations of this Agreement, the AMA and UNEP's own policies and practices, that may substantially interfere with the performance of its obligations under this Agreement, the AMA or with the implementation of the Funded Activity, or otherwise jeopardize the achievements of any objectives, outcomes or outputs of the Funded Activity;
  - (b) On the date of the first Disbursement by the Fund under this Agreement and throughout the term of this Agreement, the Subsidiary Agreement remains in effect;
  - (c) On the date of each Disbursement by the Fund under this Agreement, no Event of Default has occurred and is continuing under this Agreement and no event of default or equivalent event has occurred and is continuing under the Subsidiary Agreement;
  - (d) On the date of execution and the Effective Date of this Agreement and the date of each Disbursement made by the Fund under this Agreement, the policies of the Accredited Entity addressing AML/CFT are substantially consistent with the principles of the AML/CFT Policy; and
  - (e) On the date of the execution and Effective Date of this Agreement and the date of each Request for Disbursement and the date of each Disbursement made by the

Fund under this Agreement, in the preparation of the Funding Proposal for this Funded Activity and throughout the term of this Agreement, the Accredited Entity has carried out, or will carry out, all due diligence as necessary to ensure that the Funded Activity is at all times in compliance with the applicable requirements under the GCF's Indigenous Peoples Policy adopted in Decision B.19/11.

10.02 In addition to clause 18.02 of the AMA, the Accredited Entity covenants that as from the Effective Date of this Agreement it shall:

- (a) Ensure that no GCF Proceeds are transferred to the Executing Entity if a default has occurred, until such time as the default has been remedied to the satisfaction of the Accredited Entity, in accordance with the Subsidiary Agreement;
- (b) Inform the Fund on the status of the Co-financing funds that have been disbursed and applied to the implementation of the Project's Activities in the APRs;
- (c) Ensure that the Subsidiary Agreement contains the relevant commitments from Lao PDR for the commitment of the Co-financing to be provided for the implementation of the Project;
- (d) Contractually cause the Co-financier to provide the Co-financing for the implementation for the Funded Activity in a timely manner;
- (e) For the implementation of Outputs 2.1 and 2.2, ensure that the restoration sites in the targeted wetlands will be selected in accordance with the eligibility criteria set out in Schedule 1 of this Agreement;
- (f) For the implementation of Output 2.3, ensure that the specific sites in each target city where permeable paving will be installed are selected based on the eligibility criteria set out in Schedule 1 of this Agreement;
- (g) In case the eligibility criteria set out in Schedule 1 of this Agreement is supplemented with additional criteria developed by the Project Management Unit in consultation with the Accredited Entity, the Accredited Entity will inform the Fund through the APRs and will concurrently provide a copy of such additional eligibility criteria;
- (h) Continuously screen and monitor potential environmental and social risks and impacts arising from the Funded Activity using the screening procedures and processes described in the Accredited Entity's environmental and social management framework and policies, and implement the Environmental and Social Action Plan which was provided by the Accredited Entity to the Fund before the Approval Decision;
- (i) Obtain, or contractually oblige the Lao PDR to obtain, all land and rights in respect of land that are required to carry out the Funded Activity and shall promptly furnish to the Fund, upon its request, evidence satisfactory to the Fund that such land and rights in respect of the land are available for the purposes of the Funded Activity;
- (j) Contractually oblige Lao PDR to ensure that the (i) construction works to be implemented as part of the Funded Activity are designed, constructed, operated and decommissioned in accordance with good international industry practices and any other applicable standards, taking into consideration health and safety risks to third parties or affected communities; and (ii) the quality of such construction works is in accordance with international best practices;

- (k) (i) Not amend or alter any of the Co-financing Agreements in such way that the Co-financing is reduced or delayed, unless it is previously consulted with, and consented by, the Fund; and (ii) promptly inform the Fund of any cancellation, reduction or prepayment (whether in whole or in part) of the Co-financing;
  - (l) Ensure that the GCF Proceeds will not support or finance, directly or indirectly, any activities with potential environmental and social risks that are equivalent to category A and category B pursuant to the Environmental and Social Risks Categories to be conducted as part of the Project;
  - (m) Prior to commencing any activities that have potential application of the Accredited Entity's safeguards standard on indigenous peoples and cultural heritage, the Accredited Entity shall submit to the Fund the relevant indigenous peoples plan relevant for such activities and shall also furnish to the Fund evidence, in form and substance satisfactory to the GCF, that free, prior and informed consent from the indigenous communities has been obtained for the purposes of the relevant Funded Activity;
  - (n) In case any amendment or modification is entered to or otherwise agreed by the Accredited Entity with respect to the Subsidiary Agreement, inform of such event and furnish to the Fund the executed copies of the such amendment or modification within five (5) calendar days from its execution. For the avoidance of doubt, the Accredited Entity shall ensure that such amendment or modification does not contravene the terms and conditions provided in this Agreement and the AMA;
  - (o) Report in the APRs, to be submitted in accordance with the AMA, against the Logic Framework contained in Schedule 8;
  - (p) Apply its own fiduciary principles and standards relating to any 'know your customer' checks, AML/CFT, financial sanctions and embargoes which should enable it to comply with the AML/CFT Policy;
  - (q) In case of a change of the Authorized Representative to sign the Request for Disbursement, provide, together with the Request for Disbursement, evidence, satisfactory to the Fund, of the authority of such person to sign the Request for Disbursement and the relevant authenticated specimen signature of such person; and
  - (r) In case of a change in the Accredited Entity Account, (i) notify the Fund in writing prior to requesting any subsequent Disbursements under this Agreement and provide the details of the substitute account in form and substance satisfactory to the Fund; and (ii) transfer all funds in respect of the Funded Activity from the old account to the substitute account. The substitute account shall be treated in all respects by the Accredited Entity as the Accredited Entity Account for the purposes of this Agreement.
- 10.03 Pursuant to clause 23.04 of the AMA, the Accredited Entity shall inform the Fund, in the final APR, which steps it intends to take in relation to the durable assets and/or equipment purchased with the GCF Proceeds to implement the Funded Activity.

### **Clause 11. Additional Remedies to the Fund**

- 11.01 **Events of Default.** In addition to clause 19 of the AMA, the following events shall constitute an event of default of this Agreement (each, an "**Event of Default**"):



- (a) The Accredited Entity has failed to comply, in any material respect with, or shall have failed to perform in any material respects, any of its obligations under this Agreement, including, but not limited to, misrepresentation and breach of warranties, and non-performance of any covenants;
- (b) If an event of default has occurred under: (i) the AMA; or (ii) any other funded activity agreements entered between the Parties, pursuant to the terms of the relevant agreement; or
- (c) The Accredited Entity has failed to take in a timely manner the necessary steps instructed by the Fund, in accordance with Clause 5.03 of this Agreement and clause 11.03 of the AMA.

11.02 **Remedies/Consequences of Default.** In addition to clause 20 of the AMA, and notwithstanding any other right or remedy available to the Fund, upon an Event of Default described under Clause 11.01 above, the Fund may:

- (a) Require the Accredited Entity to remedy such Event of Default within a reasonable period of time set by the Fund at its sole discretion; or
- (b) If such Event of Default is not remedied pursuant to paragraph (a) of this Clause 11.02, or if the Fund did not opt to require the Accredited Entity to remedy such Event of Default, the Fund may, by notice to the Accredited Entity exercise one or more of the rights specified in paragraphs (b) and (c) of clause 20.01 of the AMA.

#### **Clause 12. Step-in Rights**

12.01 In the event the Fund exercises its rights under clauses 20.01(c), 22.01 and 22.03 of the AMA, the Accredited Entity shall execute such documents and take such steps as are reasonably necessary to enable the Fund to give effect to such provisions.

#### **Clause 13. Applicable Law; Dispute Resolution**

- 13.01 This Agreement and any non-contractual obligations arising out of or in connection with it shall be governed by public international law in accordance with clause 28 of the AMA.
- 13.02 All disputes arising out of or in connection with this Agreement, and disputes regarding non-contractual obligations arising out of or relating to it, shall be settled in accordance with clause 29 of the AMA.

#### **Clause 14. Designated Authority; Notices**

14.01 Any notice, request, document, report, or other communication submitted by either the Accredited Entity or the Fund, shall unless expressly specified in this Agreement, be in English and delivered by hand or by facsimile or email to the Party to which it is required or permitted to be given or made to the following addresses:

For the Accredited Entity:

Attn: Director, Corporate Services Division  
Address: UN Gigiri Complex, Nairobi, Kenya  
Tel: +254 207624017  
E-mail: [unenvironment-corporateservices-director@un.org](mailto:unenvironment-corporateservices-director@un.org)

Attn: Green Climate Fund Coordinator, Corporate Services Division  
Address: UN Gigiri Complex, Nairobi, Kenya



Tel: +254 207623113  
E-mail: [unenvironment-gcf@un.org](mailto:unenvironment-gcf@un.org)

For the Fund:

Attn: Division of Mitigation and Adaptation  
Address: G-Tower, 175, Art Center-daero  
Yeonsu-gu, Incheon 22004  
Republic of Korea  
Fax: +82 32 458 6098  
Email: [dma.postapproval@gcfund.org](mailto:dma.postapproval@gcfund.org)

Attn: Office of Portfolio Management  
Fax: +82 32 458 6092  
Email: [OPM@gcfund.org](mailto:OPM@gcfund.org)

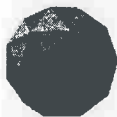
- 14.02 A Party may change its information set forth in Clause 14.01 by delivery to the other Party of a written notice signed by an Authorized Representative, provided that such changes will become effective only after five (5) calendar days from the receipt of such notice by the other Party.

### Clause 15. Miscellaneous

- 15.01 **Assignment; Novation.** The Accredited Entity will not be entitled to assign or otherwise transfer its rights and obligations under this Agreement, in full or in part, without the prior written consent of the Fund, which consent may be granted or not granted at the Fund's absolute discretion.
- 15.02 **Failure to Exercise Rights.** No delay in exercising, or omission to exercise, any right, power or remedy accruing to any Party under this Agreement upon any default shall impair any such right, power or remedy or be construed to be a waiver thereof or an acquiescence in such default. No action of such Party in respect of any default, or any acquiescence by it in any default, shall affect or impair any right, power or remedy of such Party in respect of any other or subsequent default.
- 15.03 **Execution in Counterparts.** This Agreement may be executed in two counterparts, each of which shall be an original.
- 15.04 **Rights of Third Parties.** This Agreement is intended solely for the benefit of the Parties and is not intended to be for the benefit of, nor may any provision be enforced by, any person or entity that is not a Party to this Agreement. Any other statute or law to the contrary is hereby excluded or disappplied.
- 15.05 **Entire Agreement.** This Agreement constitutes the entire agreement and understanding of the Parties with respect to its subject matter and supersedes all oral communication and prior writings with respect thereto, other than those writings expressly referred to or incorporated into this Agreement entered into hereunder, including the AMA.
- 15.06 **Modification or Amendment.** No modification or amendment of this Agreement shall be valid unless in writing and signed by an Authorized Representative of the Fund and an Authorized Representative of the Accredited Entity.
- 15.07 **Relationship of the Parties.** Nothing contained in this Agreement shall be deemed or construed as creating a principal-agent relationship between the Parties hereto or be construed to evidence the intention of the Parties to constitute such. Neither Party shall have any express or implied right or authority to assume or create any obligations on

behalf of or in the name of the other Party or to bind the other Party to any contract, agreement or undertaking with any third party.

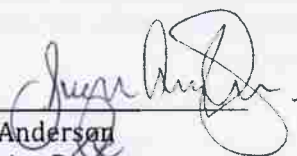
- 15.08 **Severability.** If any term of this Agreement is to any extent invalid, illegal, or incapable of being enforced, such term shall be excluded to the extent of such invalidity, illegality, or unenforceability; all other terms hereof shall remain in full force and effect.
- 15.09 **Duration and Survival.** This Agreement shall remain in full force and effect until all obligations of the Accredited Entity have been fulfilled. Notwithstanding the foregoing, Clause 13.01 of this Agreement shall, unless explicitly provided otherwise, survive for a period of five (5) years after the termination of this Agreement.



GREEN  
CLIMATE  
FUND

IN WITNESS WHEREOF the parties hereto, acting through their representatives thereunto duly authorized, have caused this Agreement to be signed in their respective names as of the day and year first above written and to be delivered at the principal office of the Fund.

**UNITED NATIONS ENVIRONMENT PROGRAMME**

By   
Inger Andersen  
Executive Director

Date 12 Dec. 2019.

**GREEN CLIMATE FUND**

By   
Yannick Glomarec  
Executive Director

Date 12/12/2019

## Schedule 1. Description of Funded Activity

**Project:** Building resilience of urban populations with ecosystem-based solutions in Lao PDR.

The description of the Funded Activity, as further elaborated in the Funding Proposal, is:

The objective of the Project is to increase the resilience of the urban population and ecosystems in Lao PDR to more frequent and intense floods as a result of climate change, by implementing an integrated, climate-resilient approach to urban and peri-urban flood management in Lao PDR, including the use of ecosystem-based adaptation interventions. This will be accomplished through a combination of (a) technical and institutional capacity building, including development of national guidelines on ecosystem-based adaptation and city-level flood management strategies; and (b) small scale ecosystem restoration and management, and permeable pavement installation in target cities.

The Project's Activities, except for Activities 1.1.1, 1.1.2, and 1.2.4, which shall be implemented at the national level, shall be implemented in the following four cities: Vientiane, Paksan, Savannakhet and Pakse.

The objective will be achieved through the following Components, Outputs and Activities listed below:

**Component 1** Technical and institutional capacity building to plan, design, implement and maintain integrated urban Ecosystem-based Adaptation (EbA) interventions for the reduction of climate change-induced flooding

Output 1.1 Strengthening of institutional capacity for integrated flood risk management and implementation of urban ecosystems-based adaptation and males and females with increased awareness of climate threats

Activity 1.1.1 Build the capacity of national and local representatives for coordination and using urban EbA to manage climate change-induced flooding

Activity 1.1.2 Establish a national knowledge hub that produces and disseminates information on urban EbA interventions locally, regionally and internationally

Activity 1.1.3 Conduct awareness-raising campaigns in each of the four target cities for communities and the private sector on urban EbA and flood management

Output 1.2 Integrated climate-resilient flood management strategies (ICFMS) and urban EbA guidelines developed for Vientiane, Paksan, Savannakhet and Pakse, and effective Flood Risk Management Committees as coordination mechanisms

Activity 1.2.1 Conduct economic valuation of urban ecosystem services

Activity 1.2.2 Conduct hydrological assessments and climate risk assessments to inform climate change adaptation solutions for flood management in Vientiane, Paksan, Savannakhet and Pakse

Activity 1.2.3 Develop the ICFMS and mainstream climate change and urban EbA into relevant policies, guidelines and plans

Activity 1.2.4 Develop national urban EbA guidelines for Lao PDR and recommendations for policies on urban flood management

**Component 2** Rehabilitation and protection of ecosystems in response to climate variability and change

Output 2.1 Area of wetland restored contributing to flood reduction and sustainable management of the Nong Peung wetland in Paksan

Activity 2.1.1 Develop a wetland management plan for Nong Peung wetland in Paksan

Activity 2.1.2 Rehabilitate the Nong Peung wetland

Output 2.2 Area of urban streams restored contributing to flood reduction and sustainable management of urban streams in Savannakhet and Pakse

Activity 2.2.1 Restore natural urban streams in Savannakhet and Pakse

Activity 2.2.2 Develop management plans for restored urban streams in Savannakhet and Pakse

Output 2.3 Area of permeable paving solutions installed in public areas contributing to flood reduction in Vientiane, Paksan, Savannakhet and Pakse

Activity 2.3.1 Design permeable paving solutions for public areas in Vientiane, Paksan, Savannakhet and Pakse

Activity 2.3.2 Install permeable paving in public areas in Vientiane, Paksan, Savannakhet and Pakse

For the implementation of Outputs 2.1 and 2.2, the restoration sites will be at Nong Peung wetland in Paksan, along Houay Khi La Meng stream and its tributaries in Savannakhet, and along Houay Nhang stream and its tributaries in Pakse and which restoration sites shall be selected based on the following criteria, as may be supplemented with additional criteria by the Project Management Unit in consultation with the Accredited Entity during the implementation of the Project:

- (i) Most degraded areas;
- (ii) Potential for generating ecosystem goods and services that the selected EbA interventions can provide (flood protection, but also environmental and socioeconomic co-benefits);
- (iii) Results of technical assessments and field observations;
- (iv) Consultation with community members and stakeholders;
- (v) Expected complexity of implementation;
- (vi) The estimated cost of implementation; and
- (vii) Consideration of other nearby streams that would yield similar benefits to flood reduction and ecosystem services.

For the implementation of Output 2.3, the specific sites in each target city where permeable paving will be installed will be selected based on the following criteria, as may be supplemented with additional criteria by the Project Management Unit in consultation with the Accredited Entity during the implementation of the Project:

- (i) Located on public land at public institution;
- (ii) In an area already earmarked for development of conventional paving;
- (iii) Suited for comparison with nearby area of conventional paving and unpaved area;
- (iv) Suitable soil and groundwater level for permeable paving;
- (v) Local drainage problems; and
- (vi) Visibility of areas and extent of use by the public.

Site selection will be done by the Project Management Unit, as defined in Schedule 3 below, of the Executing Entity under the supervision of UNEP, in accordance with the eligibility criteria set above and in consultation with relevant experts and consultants to be procured for the implementation of the Funded Activity.

## Schedule 2. Budget and Disbursement Plan

### A. Budget: Costs per Component/Breakdown

Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes	
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)
Component 1. Technical and institutional capacity building to plan, design, implement and maintain integrated urban Ecosystems-based Adaptation (EbA) interventions for the reduction of climate change-induced flooding	Output 1.1 Strengthening of institutional capacity for integrated flood risk management and implementation of urban ecosystems-based adaptation and males and females with increased awareness of climate threats	Activity 1.1.1 Build the capacity of national and local representatives for coordination and using urban EbA to manage climate change-induced flooding.	GCF	Consultant - Individual - International	Days	60	700	42,000	14,000	7,000	7,000	7,000	7,000	42,000	A1
			GCF	Consultant - Individual - International	Days	60	700	42,000	14,000	7,000	7,000	7,000	7,000	42,000	A1
			GCF	Consultant - Individual - International	Salary	1	18,000	18,000	3,600	3,600	3,600	3,600	3,600	18,000	A1
			GCF	Consultant - Individual - Local	Salary	1	10,000	10,000	2,000	2,000	2,000	2,000	2,000	10,000	A2
			GCF	Professional Services - Companies/Firm	Contract	1	50,000	50,000	50,000					50,000	A4
			GCF	Consultant - Individual - Local	Salary	5	3,000	15,000	3,000	3,000	3,000	3,000	3,000	15,000	A2
			MONRE	Consultant - Individual - Local	Salary	5	3,000	15,000	3,000	3,000	3,000	3,000	3,000	15,000	A2
			MONRE	Materials & Goods	Training materials	4	1,000	4,000	2,000		2,000			4,000	A3
			MONRE	Materials & Goods	Training material	4	1,000	4,000	2,000		2,000			4,000	A3
			GCF	Travel	Flights	5	1,500	7,500	4,500	-	3,000			7,500	A5
			GCF	Travel	Flights	5	1,500	7,500	4,500	-	3,000			7,500	A5
			GCF	Workshop/Training	Workshops	16	3,750	60,000	15,000	15,000	15,000	15,000	-	60,000	A6
			GCF	Workshop/Training	Workshops	16	3,750	60,000	15,000	15,000	15,000	15,000	-	60,000	A6
			GCF	Workshop/Training	Exchange trip	1	52,800	52,800		52,800				52,800	A6
MONRE	MONRE staff time contribution to activity					32,968	6,594	6,594	6,594	6,594	6,594	32,968	A8		



Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes	
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)
		Activity 1.1.2 Establish a national knowledge hub that produces and disseminates information on urban EbA interventions locally, regionally and internationally.	GCF	Consultant - Individual - International	Days	60	700	42,000	14,000	7,000	7,000	7,000	7,000	42,000	A1
			GCF	Consultant - Individual - International	Days	40	700	28,000	7,000	7,000	7,000	7,000		28,000	A1
			GCF	Consultant - Individual - International	Salary	5	45,000	225,000	45,000	45,000	45,000	45,000	45,000	225,000	A1
			GCF	Consultant - Individual - Local	Days	300	200	60,000	12,000	12,000	12,000	12,000	12,000	60,000	A2
			GCF	Consultant - Individual - Local	Days	90	200	18,000	18,000					18,000	A2
			GCF	Consultant - Individual - Local	Days	60	300	18,000	18,000					18,000	A2
			GCF	Materials & Goods	Equipment	1	50,000	50,000	50,000					50,000	A3
			MONRE	Materials & Goods	Equipment	1	5,000	5,000	5,000					5,000	A3
			GCF	Professional Services - Companies/Firm	Knowledge fund	1	500,000	500,000	100,000	100,000	100,000	100,000	100,000	500,000	A4
			GCF	Professional Services - Companies/Firm	Days	400	300	120,000	24,000	24,000	24,000	24,000	24,000	120,000	A4
			GCF	Travel	DSA	40	194	7,760	1,940	1,940	1,940	1,940		7,760	A5
			GCF	Travel	DSA	60	194	11,640	3,880	1,940	1,940	1,940	1,940	11,640	A5
			GCF	Travel	Flights	2	1,500	3,000	1,500				1,500	3,000	A5
			GCF	Travel	DSA	300	30	9,000	1,800	1,800	1,800	1,800	1,800	9,000	A5
			GCF	Travel	DSA	90	30	2,700	540	540	540	540	540	2,700	A5
			GCF	Travel	DSA	60	30	1,800	1,800					1,800	A5
			MONRE	Workshop/Training	Meeting	1	1,000	1,000	1,000					1,000	A6
			MONRE	MONRE staff time contribution to activity				110,835	22,167.06	22,167.06	22,167.06	22,167.06	22,167.06	110,835	A8
		Activity 1.1.3 Conduct awareness-	GCF	Consultant - Individual - Local	Days	80	300	24,000	24,000					24,000	A2

Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes	
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)
		raising campaigns in each of the four target cities for communities and the private sector on urban EbA and flood management.	GCF	Consultant - Individual - Local	Days	300	300	90,000	18,000	18,000	18,000	18,000	18,000	90,000	A2
			GCF	Consultant - Individual - Local	Months	30	2,500	75,000	15,000	15,000	15,000	15,000	15,000	75,000	A2
			GCF	Consultant - Individual - International	Salary	1	18,000	18,000	3,600	3,600	3,600	3,600	3,600	18,000	A1
			MONRE	Materials & Goods	Campaign materials	4	50,000	200,000	200,000					200,000	A3
			GCF	Travel	DSA	80	30	2,400	2,400					2,400	A5
			GCF	Travel	DSA	300	30	9,000	1,800	1,800	1,800	1,800	1,800	9,000	A5
			GCF	Workshop/Training	Meetings	40	3,750	150,000	30,000	30,000	30,000	30,000	30,000	150,000	A6
			MONRE	MONRE staff time contribution to activity				57,121	11,424.21	11,424.21	11,424.21	11,424.21	11,424.21	57,121	A8
	<b>Subtotal for Output 1.1.</b>							<b>2,260,025</b>	<b>773,045</b>	<b>418,205</b>	<b>375,405</b>	<b>365,405</b>	<b>327,965</b>	<b>2,260,025</b>	
	<b>Output 1.2 Integrated climate-resilient flood management strategies (ICFMS) and urban EbA guidelines developed for Vientiane, Paksan, Savannakhet and Pakse, and effective Flood Risk Management Committees as coordination mechanisms</b>	Activity 1.2.1 Conduct economic valuation of urban ecosystem services.	GCF	Professional Services - Companies/Firm	Contract	1	1,000,000	1,000,000		600,000	400,000			1,000,000	A4
			MONRE	Materials & Goods	Equipment	1	7,500	7,500		7,500				7,500	A3
			GCF	Workshop/Training	Workshops	1	20,000	20,000			20,000			20,000	A6
			GCF	Workshop/Training	Workshops	1	30,000	30,000			30,000			30,000	A6
			MONRE	MONRE staff time contribution to activity				113,460	22,692.05	22,692.05	22,692.05	22,692.05	22,692.05	113,460	A8
		Activity 1.2.2 Conduct hydrological assessments and climate risk assessments to inform climate change adaptation solutions for flood management in Vientiane, Paksan, Savannakhet and Pakse.	GCF	Consultant - Individual - Local	Days	80	300	24,000	21,000	3,000				24,000	A2
			GCF	Consultant - Individual - Local	Days	320	300	96,000	90,000	6,000				96,000	A2
			GCF	Professional Services - Companies/Firm	Contract	4	350,000	1,400,000	280,000	280,000	280,000	280,000	280,000	1,400,000	A4
			GCF	Professional Services - Companies/Firm	Contract	4	100,000	400,000	80,000	80,000	80,000	80,000	80,000	400,000	A4
			GCF	Materials & Goods	Software licenses	5	12,000	60,000	60,000					60,000	A3

Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes		
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)	
			GCF	Professional Services - Companies/Firm	Contract	1	67,580	67,580	67,580					67,580	A4	
			GCF	Travel	DSA	80	30	2,400	2,100	300				2,400	A5	
			GCF	Travel	DSA	320	30	9,600	9,000	600				9,600	A5	
			MONRE	MONRE staff time contribution to activity				27,133	5,426.70	5,426.70	5,426.70	5,426.70	5,426.70	27,133	A8	
		Activity 1.2.3 Develop the ICFMS and mainstream climate change and urban EbA into relevant policies, guidelines and plans.	GCF	Consultant - Individual - International	Salary	1	18,000	18,000	3,600	3,600	3,600	3,600	3,600	18,000	A1	
			GCF	Consultant - Individual - International	Days	320	700	224,000	105,000	105,000			14,000	224,000	A1	
			GCF	Consultant - Individual - Local	Days	480	300	144,000	60,000	60,000			24,000	144,000	A2	
			GCF	Travel	DSA	320	194	62,080	62,080					62,080	A5	
			GCF	Consultant - Individual - Local	Salary	1	10,000	10,000	2,000	2,000	2,000	2,000	2,000	10,000	A2	
			GCF	Consultant - Individual - Local	Salary	5	1,500	7,500	1,500	1,500	1,500	1,500	1,500	7,500	A2	
			MONRE	Consultant - Individual - Local	Salary	5	1,500	7,500	1,500	1,500	1,500	1,500	1,500	7,500	A2	
			MONRE	Workshop/Training	Workshops	8	3,750	30,000	30,000					30,000	A6	
			MONRE	Workshop/Training	Meetings	4	3,750	15,000	15,000					15,000	A6	
			MONRE	Workshop/Training	Meetings	1	3,750	3,750	3,750					3,750	A6	
			MONRE	Workshop/Training	Meetings	4	3,750	15,000	7,500	7,500				15,000	A6	
				MONRE	MONRE staff time contribution to activity				191,618	38,323.55	38,323.55	38,323.55	38,323.55	38,323.55	191,618	A8
			Activity 1.2.4 Develop national urban EbA guidelines for Lao PDR and recommendations for policies on	GCF	Consultant - Individual - International	Days	60	700	42,000	14,000	14,000			14,000	42,000	A1
		GCF		Consultant - Individual - International	Days	80	700	56,000	56,000					56,000	A1	

Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes	
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)
		urban flood management.	GCF	Consultant - Individual - International	Days	60	700	42,000	14,000	14,000			14,000	42,000	A1
			GCF	Consultant - Individual - Local	Days	120	300	36,000	15,000	15,000			6,000	36,000	A2
			MONRE	Workshop/Training	Annual Project Steering Committee (PSC) meetings	5	5,000	25,000	5,000	5,000	5,000	5,000	5,000	25,000	A6
			GCF	Travel	DSA	60	194	11,640	11,640					11,640	A5
			GCF	Travel	DSA	60	194	11,640	3,880	3,880			3,880	11,640	A5
			GCF	Travel	DSA	480	30	14,400	4,800	4,800			4,800	14,400	A5
			GCF	Travel	DSA	80	194	15,520	15,520					15,520	A5
			GCF	Travel	DSA	120	30	3,600	1,500	1,500			600	3,600	A5
			MONRE	MONRE staff time contribution to activity				61,941	12,388.15	12,388.15	12,388.15	12,388.15	12,388.15	61,941	A8
<b>Subtotal for Output 1.2.</b>							<b>4,305,862</b>	<b>1,121,780</b>	<b>1,325,510</b>	<b>872,430</b>	<b>452,430</b>	<b>533,710</b>	<b>4,305,862</b>		
<b>GCF Subtotal for Component 1</b>			GCF				<b>5,638,060</b>	<b>1,500,060</b>	<b>1,600,200</b>	<b>1,115,320</b>	<b>689,320</b>	<b>733,160</b>			
<b>MONRE Subtotal for Component 1</b>			MONRE				<b>927,827</b>								
<b>Subtotal for Component 1</b>							<b>6,565,887</b>	<b>1,894,825</b>	<b>1,743,715</b>	<b>1,247,835</b>	<b>817,835</b>	<b>861,675</b>	<b>6,565,887</b>		
<b>Component 2. Rehabilitation and protection of ecosystems in response to climate variability and change</b>	<b>Output 2.1 Area of wetland restored contributing to flood reduction and sustainable management of the Nong Peung wetland in Paksan</b>	Activity 2.1.1 Develop a wetland management plan for Nong Peung wetland in Paksan.	GCF	Materials & Goods	Monitoring equipment	1	30,000	30,000	30,000				30,000	A3	
			GCF	Consultant - Individual - International	Days	35	700	24,500		24,500				24,500	A1
			GCF	Consultant - Individual - International	Salary	1	42,000	42,000	8,400	8,400	8,400	8,400	8,400	42,000	A1
			GCF	Consultant - Individual - Local	Days	80	300	24,000		24,000				24,000	A2
			GCF	Consultant - Individual - Local	Salary	1	10,000	10,000	2,000	2,000	2,000	2,000	2,000	10,000	A2

Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes		
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)	
		Activity 2.1.2 Rehabilitate the Nong Peung wetland.	GCF	Professional Services - Companies/Firm	Contract	1	65,000	65,000	13,000	13,000	13,000	13,000	13,000	65,000	A4	
			MONRE	Workshop/Training	Workshops	16	3,750	60,000	60,000						60,000	A6
			MONRE	Workshop/Training	Meeting	2	3,750	7,500	7,500						7,500	A6
			MONRE	Workshop/Training	Workshops	4	3,750	15,000	15,000						15,000	A6
			MONRE	MONRE staff time contribution to activity				33,346	6,669	6,669	6,669	6,669	6,669	6,669	33,346	A8
			GCF	Professional Services - Companies/Firm	Contract	1	50,000	50,000	50,000						50,000	A4
			GCF	Professional Services - Companies/Firm	Contract	1	800,000	800,000		200,000	200,000	200,000	200,000	200,000	800,000	A4
			GCF	Professional Services - Companies/Firm	Contract	1	170,000	170,000	34,000	34,000	34,000	34,000	34,000	34,000	170,000	A4
			GCF	Workshop/Training	Workshops	20	3,750	75,000	15,000	15,000	15,000	15,000	15,000	15,000	75,000	A6
		GCF	Travel	DSA	35	194	6,790		6,790					6,790	A5	
		GCF	Travel	DSA	80	30	2,400		2,400					2,400	A5	
		GCF	Operation and Maintenance (O&M)	O&M	3	8,000	24,000	-	-	8,000	8,000	8,000	8,000	24,000	A7	
		MONRE	MONRE staff time contribution to activity				96,142	19,228.40	19,228.40	19,228.40	19,228.40	19,228.40	19,228.40	96,142	A8	
		GCF	Consultant - Individual - International	Mid-term evaluation (MTE) contract	1	95,450	95,450	19,090	19,090	19,090	19,090	19,090	19,090	95,450	A1	
		<b>Subtotal Output 2.1.</b>							<b>1,631,128</b>	<b>279,888</b>	<b>375,078</b>	<b>325,388</b>	<b>325,388</b>	<b>325,388</b>	<b>1,631,128</b>	
		Output 2.2 Area of urban streams restored contributing to flood reduction and sustainable management of urban streams	Activity 2.2.1 Restore natural urban streams in Savannakhet and Pakse.	GCF	Consultant - Individual - International	Salary	1	42,000	42,000	8,400	8,400	8,400	8,400	8,400	42,000	A1
				GCF	Materials & Goods	Vehicle	1	60,000	60,000	60,000					60,000	A3
				MONRE	Materials & Goods	Vehicle maintenance	5	2,000	10,000	2,000	2,000	2,000	2,000	2,000	10,000	A3
				GCF	Professional Services - Companies/Firm	Contract	1	860,000	860,000	172,000	172,000	172,000	172,000	172,000	860,000	A4

Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes	
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)
	in Savannakhet and Pakse		GCF	Travel	DSA	60	194	11,640	3,880	1,940	1,940	1,940	1,940	11,640	A5
			GCF	Travel	DSA	60	30	1,800	600	300	300	300	300	1,800	A5
			GCF	Workshop/Training	Workshops	20	3,750	75,000	15,000	15,000	15,000	15,000	15,000	75,000	A6
			GCF	O&M	O&M	3	8,600	25,800	-	-	8,600	8,600	8,600	25,800	A7
			MONRE	MONRE staff time contribution to activity				132,275	26,454.96	26,454.96	26,454.96	26,454.96	26,454.96	132,275	A8
			GCF	Consultant - Individual - International	Terminal Evaluation (TE) contract	1	120,750	120,750	24,150	24,150	24,150	24,150	24,150	120,750	A1
			GCF	Workshop/Training	Meetings	5	3,750	18,750	18,750					18,750	A6
			GCF	Workshop/Training	Workshops	10	3,750	37,500	7,500	7,500	7,500	7,500	7,500	37,500	A6
			GCF	Consultant - Individual - International	Days	60	700	42,000	14,000	7,000	7,000	7,000	7,000	42,000	A1
			GCF	Consultant - Individual - International	Salary	1	42,000	42,000	8,400	8,400	8,400	8,400	8,400	42,000	A1
	GCF	Consultant - Individual - Local	Days	60	300	18,000	6,000	3,000	3,000	3,000	3,000	18,000	A2		
	GCF	Consultant - Individual - Local	Salary	1	10,000	10,000	2,000	2,000	2,000	2,000	2,000	10,000	A2		
	GCF	Materials & Goods	Monitoring equipment	2	30,000	60,000	60,000					60,000	A3		
	MONRE	MONRE staff time contribution to activity				12,386	2,477.19	2,477.19	2,477.19	2,477.19	2,477.19	12,386	A8		
	<b>Subtotal Output 2.2.</b>							<b>1,579,901</b>	<b>431,612</b>	<b>280,622</b>	<b>289,222</b>	<b>289,222</b>	<b>289,222</b>	<b>1,579,901</b>	
	Output 2.3 Area of permeable paving solutions installed in public areas contributing to flood reduction	Activity 2.3.1 Design permeable paving solutions for public areas in Vientiane, Paksan, Savannakhet and Pakse.	GCF	Consultant - Individual - International	Days	40	700	28,000	14,000	10,500	3,500			28,000	A1
			GCF	Consultant - Individual - Local	Days	60	300	18,000	6,000	6,000	6,000			18,000	A2
GCF			Professional Services - Companies/Firm	Contract	1	20,000	20,000	20,000					20,000	A4	

Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes			
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)		
	in Vientiane, Paksan, Savannakhet and Pakse		GCF	Travel	DSA	40	194	7,760	3,880	2,910	970			7,760	A5		
			GCF	Travel	DSA	60	30	1,800	600	600	600			1,800	A5		
			GCF	Workshop/Training	Workshops	24	3,750	90,000	30,000	30,000	30,000			90,000	A6		
			MONRE	Workshop/Training	Workshops	4	3,750	15,000	-	-	15,000	-	-	15,000	A6		
			MONRE	MONRE staff time contribution to activity				18,145	3,629.06	3,629.06	3,629.06	3,629.06	3,629.06	18,145	A8		
			Activity 2.3.2 Install permeable paving in public areas in Vientiane, Paksan, Savannakhet and Pakse.	GCF	Professional Services - Companies/Firm	Contract	1	900,000	900,000	180,000	180,000	180,000	180,000	180,000	900,000	A4	
		GCF		O&M	O&M	3	9,000	27,000	-	-	9,000	9,000	9,000	27,000	A7		
		MONRE		MONRE staff time contribution to activity				97,379	19,475.82	19,475.82	19,475.82	19,475.82	19,475.82	97,379	A8		
		<b>Subtotal Output 2.3.</b>								<b>1,223,084</b>	<b>277,585</b>	<b>253,115</b>	<b>268,175</b>	<b>212,105</b>	<b>212,105</b>	<b>1,223,084</b>	
		<b>GCF Subtotal for Component 2</b>			GCF				<b>3,936,940</b>	<b>826,650</b>	<b>828,880</b>	<b>787,850</b>	<b>746,780</b>	<b>746,780</b>			
<b>MONRE Subtotal for Component 2</b>			MONRE				<b>497,173</b>										
<b>Subtotal for Component 2</b>								<b>4,434,113</b>	<b>989,085</b>	<b>908,815</b>	<b>882,785</b>	<b>826,715</b>	<b>826,715</b>	<b>4,434,113</b>			
<b>Project Management Cost</b>	<b>Project Management Cost (PMC)</b>	Procurement and Financial Officer	GCF	PMC staff and personnel	Annual salary	5	25,000	125,000	25,000	25,000	25,000	25,000	25,000	125,000	PMU1		
	<b>PMC</b>	Administrative Officer	GCF	PMC staff and personnel	Annual salary	5	20,000	100,000	20,000	20,000	20,000	20,000	20,000	100,000	PMU2		
	<b>PMC</b>	Project Manager	GCF	PMC staff and personnel	Project Manager	5	40,000	200,000	40,000	40,000	40,000	40,000	40,000	200,000	PMU3		
	<b>PMC</b>	The Project Director (PD) will be a senior MONRE staff member who will dedicate a proportion (20%) of their time to Project Director responsibilities. The cost to the project for the PD's time will be USD50,000 across 5 years.	MONRE		20% of Project Director's salary	5	10,000	50,000	10,000	10,000	10,000	10,000	10,000	50,000	PMU4		



Component	Output	Activity	Funding Source	Budget Categories	Detailed Budget				Annual Budget					Budget Notes	
					Unit	# of Unit	Unit Cost	Total Cost (USD)	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Year 4 (USD)	Year 5 (USD)		Total Budget (USD)
		MONRE will cover this amount of the Project Director's time as part of MONRE's Co-financing.													
	<b>PMC</b>	Office space for five years in the Provincial Office of Natural Resources and Environment (PoNRE) departments for use by focal points. This cost includes computers, photocopying, overheads etc.	MONRE	PMC staff and personnel	Office space	5	5,000	25,000	5,000	5,000	5,000	5,000	5,000	25,000	PMU5
<b>Subtotal PMC</b>								<b>500,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>500,000</b>	
<b>Project Management Cost allocation</b>															
Subtotal			GCF					425,000	85,000	85,000	85,000	85,000	85,000		
Subtotal			MONRE					75,000	15,000	15,000	15,000	15,000	15,000		
<b>Total PMC</b>								<b>500,000</b>							
<b>Subtotal GCF</b>								<b>10,000,000</b>	<b>2,411,710</b>	<b>2,514,080</b>	<b>1,988,170</b>	<b>1,521,100</b>	<b>1,564,940</b>		
<b>Subtotal MONRE</b>								<b>1,500,000</b>							
<b>Sum of GCF and MONRE contributions</b>								<b>11,500,000</b>							
<b>Project total</b>								<b>11,500,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>		

## Detailed Budget Notes:

### A1 International consultants to support the implementation of the Project

Activity number and item description	Unit	Quantity	Unit cost (USD)	Total (USD)
1.1.1. International consultant to prepare and conduct trainings for national- and local-level decision-makers from MONRE, Ministry of Planning and Investment (MPI), Ministry of Public Works and Transport, Ministry of Agriculture and Forestry, provincial governments, and other relevant agencies on how to incorporate integrated climate-resilient flood management into development planning for the cities of Vientiane, Paksan, Savannakhet and Pakse.	Days	60	700	42,000
1.1.1. International consultant to prepare and conduct trainings for relevant national- and local-level technical staff on how to use urban EbA to reduce climate-induced flooding.	Days	60	700	42,000
1.1.1. Chief Technical Adviser (CTA) to provide technical oversight of capacity building activities to be implemented under this Component. The salary for the CTA has been weighted according to the expected time spent per Component. It is expected that 30% of the CTA's time will be spent providing oversight for activities to be implemented under Component 1. 30% of the total CTA salary (USD180,000) has therefore been allocated accordingly to relevant activities under Component 1. It should be noted that the CTA's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the CTA's work will span across all activities to be implemented under the proposed Project.	Salary	1	18,000	18,000

1.1.2. International consultant to provide technical support to national and local government on the use of Geographic Information System (GIS) for spatial analyses. This consultant will work in collaboration with the firm contracted to conduct the spatial surveys.	Days	60	700	42,000
1.1.2. International expert to assist with EbA curricula development.	Days	40	700	28,000
1.1.2. Full-time Gender and Monitoring and Evaluation (M&E) Officer contracted for the duration of the Project.	Salary	5	45,000	225,000
1.1.3. CTA to provide technical oversight of capacity building activities to be implemented under this Component. The salary for the CTA has been weighted according to the expected time spent per Component. It is expected that 30% of the CTA's time will be spent providing oversight for activities to be implemented under Component 1. 30% of the total CTA salary (USD180,000) has therefore been allocated accordingly to relevant activities under Component 1. It should be noted that the CTA's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the CTA's work will span across all activities to be implemented under the proposed Project.	Salary	1	18,000	18,000
1.2.4. International expert to conduct a capacity needs assessment of major stakeholders on implementing sustainable land use planning.	Days	80	700	56,000
1.2.3. CTA to provide technical oversight of capacity building activities to be implemented under this Component. The salary for the CTA has been weighted according to the expected time spent per Component. It is expected that 30% of the CTA's time will be spent providing oversight for activities to be implemented under Component 1. 30% of the total CTA salary (USD180,000) has therefore been allocated accordingly to relevant activities under	Salary	1	18,000	18,000

Component 1. It should be noted that the CTA's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the CTA's work will span across all activities to be implemented under the proposed Project.				
1.2.3. International expert to assist local consultant with developing ICFMS for the four target cities at 8 days per city. ICFMS will be informed by the results from the hydrological models.	Days	320	700	224,000
1.2.4. International expert to assist the local consultant with developing national urban EbA guidelines.	Days	60	700	42,000
1.2.4. International consultant to provide recommendations on national and local-level policy reform.	Days	60	700	42,000
2.1.1. CTA to provide technical oversight during the implementation of EbA interventions and permeable paving solutions that will be implemented under Component 2. The salary for the CTA has been weighted according to the expected time spent per component. It is expected that 70% of the CTA's time will be spent providing oversight for activities to be implemented under Component 2. 70% of the total CTA salary (USD180,000) has therefore been allocated accordingly to relevant activities under Component 2. It should be noted that the CTA's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the CTA's work will span across all activities to be implemented under the proposed Project.	Salary	1	42,000	42,000
2.1.1. International consultant to assist the local consultant to develop a wetland management plan for the Nong Peung wetland in Paksan, including proposing measures to reduce encroachment of the wetland; establishing measures to curb the	Days	35	700	24,500

introduction and spread of invasive species; and promote sustainable soil extraction to the North of the wetland.				
2.1.2. International consultant to conduct Mid-Term Evaluation. This evaluation is for the entire Project and is budgeted under this activity as it is one of the major physical interventions of the Project.	MTE contract	1	95,450	95,450
2.2.1. International consultant to conduct Terminal Evaluation. This evaluation is for the entire Project but is budgeted under this activity as it is one of the major physical interventions of the Project.	TE contract	1	120,750	120,750
2.2.2. International expert to assist the local consultant to develop a plan for the sustainable management of urban streams in Savannakhet and Pakse.	Days	60	700	42,000
2.2.1. CTA to provide technical oversight during the implementation of EbA interventions and permeable paving solutions that will be implemented under Component 2. The salary for the CTA has been weighted according to the expected time spent per component. It is expected that 70% of the CTA's time will be spent providing oversight for activities to be implemented under Component 2. 70% of the total CTA salary (USD180,000) has therefore been allocated accordingly to relevant activities under Component 2. It should be noted that the CTA's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the CTA's work will span across all activities to be implemented under the proposed Project.	Salary	1	42,000	42,000

<p>2.2.2. CTA to provide technical oversight during the implementation of EbA interventions and permeable paving solutions that will be implemented under Component 2. The salary for the CTA has been weighted according to the expected time spent per component. It is expected that 70% of the CTA's time will be spent providing oversight for activities to be implemented under Component 2. 70% of the total CTA salary (USD180,000) has therefore been allocated accordingly to relevant activities under Component 2. It should be noted that the CTA's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the CTA's work will span across all activities to be implemented under the proposed Project.</p>	Salary	1	42,000	42,000
<p>2.3.1. International expert to assist with the design of permeable paving solutions, as well as site-specific O&amp;M plans, for public areas in Vientiane, Paksan, Savannakhet and Pakse.</p>	Days	40	700	28,000
<b>Subtotal</b>				<b>1,233,700</b>

**A2 Local consultants to support the implementation of the Project**

Activity number and item description	Unit	Quantity	Unit cost (USD)	Total (USD)
<p>1.1.1. Safeguards expert charged to Component 1 to ensure that all capacity building activities are gender-inclusive and undertaken in a socially appropriate manner. It is estimated that 50% of the expert's time will be spent overseeing activities that will be implemented under Component 1. It should be noted that the safeguards expert's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the safeguards expert's work will span across all activities to be implemented under the proposed Project.</p>	Salary	1	10,000	10,000

1.1.1. Contract two project focal points at USD3,000 annually. (GCF)	Salary	5	3,000	15,000
1.1.1. Contract two project focal points at USD3,000 annually. (MONRE)	Salary	5	3,000	15,000
1.1.2. Three national researchers for data collection from primary and secondary sources.	Days	300	200	60,000
1.1.2. Three national researchers for ground-truthing spatial wetland and stream data.	Days	90	200	18,000
1.1.2 Local consultant to conduct land-use survey from secondary government sources.	Days	60	300	18,000
1.1.3. Local consultant to design four awareness-raising campaigns for Vientiane, Paksan, Savannakhet and Pakse.	Days	80	300	24,000
1.1.3. Local consultant to implement four awareness-raising campaigns for Vientiane, Paksan, Savannakhet and Pakse.	Days	300	300	90,000
1.1.3. Contract local Communications Officer on a part-time basis for the implementation of the awareness raising campaigns in the four cities at USD2,500 per month for 30 months.	Months	30	2,500	75,000
1.2.2. Local consultant to conduct stakeholder consultations in each of the four cities at USD300 per day for 20 days per city.	Days	80	300	24,000
1.2.2. Local consultant to develop national urban EbA guidelines for the four target cities at 80 days per city.	Days	320	300	96,000
1.2.3. Full-time local consultant to deliver and coordinate ICFMS, including leading associated workshops and coordinating the development process through workshops etc. 50% of the total cost of this position will be funded by MONRE while the GCF will fund the remainder.	Salary	5	1,500	7,500

1.2.3. Full-time local consultant to deliver and coordinate ICFMS, including leading associated workshops and coordinating the development process through workshops etc. 50% of the total cost of this position will be funded by MONRE while the GCF will fund the remainder.	Salary	5	1,500	7,500
1.2.3. Safeguards expert charged to Component 1 to ensure that all capacity building activities are gender-inclusive and undertaken in a socially appropriate manner. It is estimated that 50% of the expert's time will be spent overseeing activities that will be implemented under Component 1. It should be noted that the safeguards expert's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the safeguards expert's work will span across all activities to be implemented under the proposed Project.	Salary	1	10,000	10,000
1.2.3. Local consultant to develop ICFMS for the four target cities at 120 days per city. ICFMS will be informed by the results from the hydrological models.	Days	480	300	144,000
1.2.4. Local consultant to develop national urban EbA guidelines and provide recommendations on national and local-level policy reform.	Days	120	300	36,000
2.1.1. Safeguards expert charged to Component 2 to ensure that the implementation of interventions, development of management plans and establishment of monitoring committees is conducted in a gender-sensitive manner. Additionally, this expert will ensure that labor work is conducted appropriately and that all workers are treated fairly. It is estimated that 50% of the expert's time will be spent overseeing activities that will be implemented under Component 2. It should be noted that the safeguards expert's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the safeguards expert's work will span	Salary	1	10,000	10,000



across all activities to be implemented under the proposed Project.				
2.1.1. Local consultant to develop a wetland management plan for the Nong Peung wetland in Paksan.	Days	80	300	24,000
2.2.2. Local consultant to develop a plan for the sustainable management of urban streams in Savannakhet and Pakse.	Days	60	300	18,000
2.2.2. Safeguards expert charged to Component 2 to ensure that the implementation of interventions, development of management plans and establishment of monitoring committees is conducted in a gender-sensitive manner. Additionally, this expert will ensure that labor work is conducted appropriately and that all workers are treated fairly. It is estimated that 50% of the expert's time will be spent overseeing activities that will be implemented under Component 2. It should be noted that the safeguards expert's work is not limited to this activity and, although budget has only been allocated to some activities under this component, the safeguards expert's work will span across all activities to be implemented under the proposed Project.	Salary	1	10,000	10,000
2.3.1. Local consultant to assist with the design of permeable paving solutions, including site-specific O&M plans, for public areas in Vientiane, Paksan, Savannakhet and Pakse.	Days	60	300	18,000
<b>Subtotal</b>				<b>730,000</b>

**A3 Equipment purchased for Project execution**

Activity number and item description	Unit	Quantity	Unit cost (USD)	Unit costs in Year 1 (USD)	Unit costs in Year 2 (USD)	Unit costs in Year 3 (USD)	Unit costs in Year 4 (USD)	Unit costs in Year 5 (USD)	Total (USD)
1.1.1. Training material for four workshops (one per city) at USD1,000 per workshop.	Training material	4	1,000	2,000		2,000			4,000

1.1.1. Training material at USD1,000 per workshop.	Training material	4	1,000	2,000		2,000			4,000
1.1.2. Research and monitoring equipment for use by knowledge hub and PMU at USD50,000 lump sum. This cost includes GPS, land surveying equipment, office equipment (incl. furniture, laptops), water quality testing kits and river gauges, as well as biodiversity monitoring equipment, i.e. camera traps, binoculars and field guide books.	Equipment	1	50,000	50,000					50,000
1.1.2. Office equipment for knowledge hub manager at USD5,000.	Equipment	1	5,000	5,000					5,000
1.1.3. Developing campaign materials (including signs, leaflets, posters, radio broadcasts and workshops) at USDD50,000 per city for the four cities.	Campaign materials	4	50,000	200,000					200,000
1.2.1. Laptop, printing costs and phone costs associated with the economic valuation development at USD7,500.	Equipment	1	7,500	7,500					7,500
1.2.2. Five software licenses for hydrological modelling software at USD12,000 per license to be housed in appropriate institutions in each of the target cities as well as in the knowledge hub.	Software licenses	5	12,000	60,000					60,000
2.1.1. Purchase monitoring equipment at USD30,000. The Bolikhamxay PoNRE will take ownership of this equipment, which will be used by the Community Wetland Management Committee in Paksan. This cost includes GPS, office equipment (laptop), water quality testing kits, river gauges, invasive plant management equipment; biodiversity monitoring equipment (fish monitoring equipment, binoculars, camera traps, field guides etc.).	Monitoring equipment	1	30,000		30,000				30,000
2.2.2. Purchase monitoring equipment at USD30,000. Savannakhet and Champasak PoNREs will take ownership of this equipment, which will be used by the Community Stream and Drainage Management Committees that will be established in	Monitoring equipment	2	30,000		60,000				60,000

both Savannakhet and Pakse. This cost includes GPS, office equipment (laptop), water quality testing kits, river gauges, invasive plant management equipment; biodiversity monitoring equipment (fish monitoring equipment, binoculars, camera traps, field guides etc.).									
2.2.1. Purchase one 4x4 vehicle for use during the rehabilitation of streams in Savannakhet and Pakse, wetland rehabilitation and for travel for the PMU staff to target cities. The vehicle will be formally transferred over to MONRE at the end of the Project through a transfer letter.	Vehicle	1	60,000	60,000					60,000
2.2.1. Maintenance costs for the vehicle purchased at USD2,000 per year.	Vehicle maintenance	5	2,000	2,000	2,000	2,000	2,000	2,000	10,000
									-
<b>Subtotal</b>				388,500	92,000	6,000	2,000	2,000	490,500

**A4 Professional/Contractual Services, technical assistance in the field**

Activity number and item description	Unit	Quantity	Unit cost (USD)	Total
1.1.1. Contractual services to design and undertake baseline studies and output-level Project tracking tools such as capacity scorecards and metrics for tracking the progress of Project outputs. This contractor will work in close coordination with the independent consultants contracted to conduct the MTE and TE for the Project. Such coordination will ensure that monitoring results at the output-level are included in the overall Project review conducted by these consultants. The cost for this contractual service has been distributed evenly (50% each) across relevant activities under Components 1 and 2. The total cost of these services will be USD100,000.	Contract	1	50,000	50,000

1.1.2. Funding for assessments and monitoring in knowledge hub, including a full-time contract for a researcher to coordinate the knowledge hub at USD100,000 annually.	Knowledge fund	1	500,000	500,000
1.1.2. Interpreter to be contracted for 1/3 of a year for the duration of Project implementation at USD300 per day.	Days	400	300	120,000
1.2.1. Contractual services for economic valuation of ecosystems. This cost includes integrating valuations into policy, ascertaining ecosystem services flow, promoting non-marketable ecosystem services as an income generator, enumerators and the collection of socio-economic data.	Contract	1	1,000,000	1,000,000
1.2.2. Contractual services to conduct wetland assessment.	Contract	1	67,580	67,580
1.2.2. Contractual services for detailed spatial surveys in each of the four target cities at USD350,000 per survey. The cost of this contract includes cost of remote sensing data, GIS software licensing, etc.	Contract	4	350,000	1,400,000
1.2.3. Contractual services for hydrological models in each of the four target cities at USD100,000 per model.	Contract	4	100,000	400,000
2.1.1. Contractual services to conduct hydrological assessment for Paksan wetland, incorporating findings from the hydrological models.	Contract	1	65,000	65,000
2.1.2. Contractual services to design baseline studies and output-level Project tracking tools such as capacity scorecards and metrics for tracking the progress of Project outputs. These services will work in close coordination with the consultants contracted to conduct the MTE and TE for the Project. Such coordination will ensure that monitoring results at the output-level are included in the overall Project review conducted by these consultants. The cost for this contractual service has been distributed evenly (50% each) across the	Contract	1	50,000	50,000

relevant activities Under Components 1 and 2. The total cost of these services will be USD100,000.				
2.1.2. Contractual services to restore/rehabilitate the Nong Peung wetland in Paksan at USD1,000 per ha for 800 ha. The cost includes growing of indigenous seedlings and planting activities.	Contract	1	800,000	800,000
2.1.2. Contractual services to remove invasive plants and small man-made barriers in Nong Peung wetland. 250 ha at 10 person days per ha at USD8 per day (minimum wage = USD6.3 per day) plus overheads, plus follow up clearing for 3 years.	Contract	1	170,000	170,000
2.2.1. Contractual services to restore natural urban streams in Savannakhet and Pakse at USD1,200 per ha, including removing invasive plants, restoring natural aquatic vegetation, removing solid waste impeding flow, delineating stream buffer zones and installing appropriate signage.	Contract	1	860,000	860,000
2.3.1. Contractual services to conduct site surveys to identify appropriate sites for the implementation of permeable paving solutions in public areas in Vientiane, Paksan, Savannakhet and Pakse.	Contract	1	20,000	20,000
2.3.2. Contractual services to install permeable paving solutions in Years 2 and 3 in public areas, such as universities, schools and government offices, in Vientiane, Paksan, Savannakhet and Pakse at USD50 per square meter for a total of 18,000 m <sup>2</sup> across the four cities.	Contract	1	900,000	900,000
				-
<b>Subtotal</b>				<b>6,402,580</b>

**A5 Travel to Project implementation and in field supervision**

<b>Activity number and item description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit cost (USD)</b>	<b>Unit costs in Year 1 (USD)</b>	<b>Unit costs in Year 2 (USD)</b>	<b>Unit costs in Year 3 (USD)</b>	<b>Unit costs in Year 4 (USD)</b>	<b>Unit costs in Year 5 (USD)</b>	<b>Total (USD)</b>
1.1.1. Five flights for international consultant to prepare and conduct trainings for national- and local-level decision-makers in Vientiane, Paksan, Savannakhet and Pakse at USD1,500 per flight.	Flights	5	1,500	4,500		3,000			7,500
1.1.1. Five flights for international consultant to prepare and conduct trainings for relevant national- and local-level technical staff at USD1,500 per flight.	Flights	5	1,500	4,500		3,000			7,500
1.1.2. DSA for international expert to assist with EbA curricula development (inclusive of venue costs, transport, food and accommodation).	DSA	40	194	7,760					7,760
1.1.2. International consultant to provide technical support to national and local government on the use of GIS for spatial analyses. This consultant will work in collaboration with the firm contracted to conduct the spatial surveys.	DSA	60	194	11,640					11,640
1.1.2. Return flight for international consultant to provide technical support to national and local government.	Flights	2	1,500	3,000					3,000
1.2.4. DSA for international consultant conducting capacity needs assessment.	DSA	80	194	15,520					15,520
1.2.3. DSA for international expert to assist local consultant with developing ICFMS for the four target cities (inclusive of venue costs, transport, food and accommodation).	DSA	320	194	62,080					62,080
1.2.4. DSA for international expert to assist the local consultant with developing national urban EbA guidelines for the four target cities (inclusive of venue costs, transport, food and accommodation).	DSA	60	194	11,640					11,640
1.2.4. DSA for international consultant providing recommendations.	DSA	60	194	5,820	5,820				11,640

2.1.2. DSA for international consultant to assist the local consultant to develop a wetland management plan for the Nong Peung wetland in Paksan, including proposing measures to reduce encroachment of the wetland; establishing measures to curb the introduction and spread of invasive species.	DSA	35	194	6,790					6,790
2.2.1. DSA for international expert to assist the local consultant to develop a plan for the sustainable management of urban streams in Savannakhet and Pakse.	DSA	60	194	11,640					11,640
2.3.1. DSA for international expert to assist with the design of permeable paving solutions, including site-specific O&M plans, for public areas in Vientiane, Paksan, Savannakhet and Pakse.	DSA	40	194	7,760					7,760
1.1.2. DSA for three national researchers at USD30 per person per day for data collection from primary and secondary sources.	DSA	300	30	9,000					9,000
1.1.2. DSA for three national researchers for ground-truthing spatial wetland and stream data at USD30 per person per day.	DSA	90	30	2,700					2,700
1.1.2 Local consultant to conduct land-use survey from secondary government sources.	DSA	60	30	1,800					1,800
1.1.3. DSA for local consultant to design four awareness-raising campaigns for Vientiane, Paksan, Savannakhet and Pakse at USD30 per day.	DSA	80	30	2,400					2,400
1.1.3. DSA for local consultant to implement four awareness-raising campaigns for Vientiane, Paksan, Savannakhet and Pakse at USD30 per day.	DSA	300	30	9,000					9,000
1.2.2. DSA for local consultant to conduct stakeholder consultations in each of the four cities at USD30 per day for 20 days per city.	DSA	80	30	2,400					2,400
1.2.2. DSA for local consultant to develop national urban EbA guidelines for the four target cities at USD30 per day for 80 days per city.	DSA	320	30		9,600				9,600

1.2.4. DSA for local consultant to develop ICFMS for the four target cities at 120 days per city. ICFMS will be informed by the results from the hydrological models at USD30 per day.	DSA	480	30		14,400				14,400	
1.2.4. DSA for local consultant to provide recommendations on national and local-level policy reform at USD30 per day.	DSA	120	30			3,600			3,600	
2.1.2. DSA for local consultant to develop a wetland management plan for the Nong Peung wetland in Paksan at USD30 per day.	DSA	80	30	2,400					2,400	
2.2.1. DSA for local consultant to develop a plan for the sustainable management of urban streams in Savannakhet and Pakse at USD30 per day.	DSA	60	30	1,800					1,800	
2.3.1. DSA for local consultant to assist with the design of permeable paving solutions for public areas in Vientiane, Paksan, Savannakhet and Pakse at USD30 per day.	DSA	60	30	1,800					1,800	
<b>Subtotal</b>					<b>185,950</b>	<b>29,820</b>	<b>9,600</b>	<b>-</b>	<b>-</b>	<b>225,370</b>

**A6 Workshops, trainings and meetings**

Activity number and item description	Unit	Quantity	Unit cost (USD)	Unit costs in Year 1 (USD)	Unit costs in Year 2 (USD)	Unit costs in Year 3 (USD)	Unit costs in Year 4 (USD)	Unit costs in Year 5 (USD)	Total (USD)
1.1.1. Training workshops for decision-makers on how to incorporate integrated climate-resilient flood management into urban planning for the cities of Vientiane, Paksan, Savannakhet and Pakse.	Workshops	16	3,750	15,000	15,000	15,000	15,000		60,000
1.1.1. Training workshops for national- and city-level technical staff on best practices for using urban EbA as a flood management measure for the cities of Vientiane, Paksan, Savannakhet and Pakse.	Workshops	16	3,750	15,000	15,000	15,000	15,000		60,000
1.1.1. Conduct a knowledge exchange trip for senior government representatives, technical experts and academics to a city with similar topographical, climatic and socio-economic contexts to the four target cities. This cost includes flights for 22 people	Exchange trip	1	52,800		52,800				52,800



at USD1,000 per flight as well as USD200 per person per day for 7 days.									
1.1.2. One meeting between National University of Laos (NUoL) and MONRE to sign a MoU.	Meeting	1	1,000	1,000					1,000
1.1.3. Two meetings per city for each year of implementation to engage with relevant private sector stakeholders at USD3,750 per meeting.	Meetings	40	3,750	30,000	30,000	30,000	30,000	30,000	150,000
1.2.1. Workshop for national-level decision-makers on ecosystem valuations.	Workshops	1	20,000			20,000			20,000
1.2.1. Workshop for technical backstopping (one national at USD30,000).	Workshops	1	30,000		30,000				30,000
1.2.3. Two workshops per city to develop ICFMS at USD3,750 per workshop.	Workshops	8	3,750	30,000					30,000
1.2.3. Four meetings (one per city) to review ICFMS at USD3,750 per meeting	Meetings	4	3,750	15,000					15,000
1.2.3. Sign MoU for the development and delivery of the ICFMS.	Meetings	1	3,750	3,750					3,750
1.2.3. Meetings to provide recommendations and policy briefs to decision-makers in four cities at USD3,750 per meeting.	Meetings	4	3,750	7,500	7,500				15,000
1.2.4. Hold annual PSC committee meetings for the duration of the Project.	Annual PSC meetings	5	5,000	5,000	5,000	5,000	5,000	5,000	25,000
2.1.1. Conduct four land-use planning workshops in the four cities at USD3,750 per workshop.	Workshops	16	3,750	60,000					60,000
2.1.1. Hold meetings with local government, relevant Project stakeholders and community representatives and to establish a local-level Community Wetland Management Committee in Paksan.	Meeting	2	3,750	7,500					7,500
2.1.1. Conduct gender workshops in each of the four target cities at USD3,750 per workshop.	Workshops	4	3,750	15,000					15,000
2.1.2. Quarterly community engagement workshops in Paksan.	Workshops	20	3,750	15,000	15,000	15,000	15,000	15,000	75,000
2.2.1. Two community engagement workshops for Pakse and Savannkhet for each year of Project implementation.	Workshops	20	3,750	15,000	15,000	15,000	15,000	15,000	75,000

2.2.2. Hold meetings with local government, relevant Project stakeholders and community representatives and to establish a local-level Community Stream and Drainage Management Committees in both Savannakhet and Pakse.	Meetings	5	3,750	3,750	3,750	3,750	3,750	3,750	18,750
2.2.2. Hold two workshops per year at USD3,750 per workshop in Savannakhet and Pakse for the duration of the Project (five years) to facilitate communication and knowledge sharing between the UDAA and Community Stream and Drainage Management Committees on best practices for implementing effective waste management.	Workshops	10	3,750	7,500	7,500	7,500	7,500	7,500	37,500
2.3.1. Two community engagement workshops in each of the four cities for three years.	Workshops	24	3,750	30,000	30,000	30,000			90,000
2.3.1. Conduct validation workshops at USD3,750 in Vientiane, Paksan, Savannakhet and Pakse to validate the design of permeable paving solutions in each of the cities.	Workshops	4	3,750			15,000			15,000
									-
<b>Subtotal</b>				<b>276,000</b>	<b>226,550</b>	<b>171,250</b>	<b>106,250</b>	<b>76,250</b>	<b>856,300</b>

**A7 Operation and maintenance costs**

O&M costs	Unit	Quantity	Unit cost (USD)	Total (USD)	Costs in Year 1 (USD)	Costs in Year 2 (USD)	Costs in Year 3 (USD)	Costs in Year 4 (USD)	Costs in Year 5 (USD)
2.1.2. O&M for restored wetland areas at 1% of total intervention cost per year	O&M	3	8,000	24,000			8,000	8,000	8,000
2.2.1. O&M for restored urban streams at 1% of total intervention cost per year	O&M	3	8,600	25,800			8,600	8,600	8,600
2.3.2. O&M for permeable pavements at 1% of total intervention cost per year	O&M	3	9,000	27,000			9,000	9,000	9,000
				-					
<b>Subtotal</b>				<b>76,800</b>	<b>-</b>	<b>-</b>	<b>25,600</b>	<b>25,600</b>	<b>25,600</b>

**A8 MONRE staff time contribution to Project implementation**

**MONRE staff time**

MONRE will provide in-kind Co-financing for the implementation of the proposed Project. To this end, MONRE will contribute to the organization and coordination of workshops, meetings, awareness raising campaigns and other Project activities, as well as assist with the logistics surrounding the implementation of Project interventions (e.g. assisting with venue hire, office rentals and transport logistics for international consultants).

**PMU Project management costs**

	<b>PMU positions</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit cost (USD)</b>	<b>Total (USD)</b>	<b>Costs in Year 1 (USD)</b>	<b>Costs in Year 2 (USD)</b>	<b>Costs in Year 3 (USD)</b>	<b>Costs in Year 4 (USD)</b>	<b>Costs in Year 5 (USD)</b>
<b>PMU1</b>	Procurement and Financial Officer	Annual salary	5	25,000	125,000	25,000	25,000	25,000	25,000	25,000
<b>PMU2</b>	Administrative Officer	Annual salary	5	20,000	100,000	20,000	20,000	20,000	20,000	20,000
<b>PMU3</b>	Project Manager	Project Manager	5	40,000	200,000	40,000	40,000	40,000	40,000	40,000
<b>PMU4</b>	The Project Director (PD) will be a senior MONRE staff member who will dedicate a proportion (20%) of their time to Project Director responsibilities. The cost to the Project for the PD's time will be USD50,000 across 5 years. MONRE will cover this amount of the Project Director's time as part of MONRE's Co-financing.	20% of Project Director's salary	5	10,000	50,000	10,000	10,000	10,000	10,000	10,000
<b>PMU5</b>	Office space for five years in the PoNRE departments for use by focal points. This cost includes computers, photocopying, overheads etc.	Office space	5	5,000	25,000	5,000	5,000	5,000	5,000	5,000
<b>Subtotal</b>					<b>500,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>

**B. Disbursement Plan**

<b>GCF Disbursement No.</b>	<b>Amount GCF Proceeds (US Dollars)</b>
1	\$2,411,710
2	\$2,514,080
3	\$1,988,170
4	\$1,521,100
5	\$1,564,940
<b>TOTAL</b>	<b>\$10,000,000</b>

### Schedule 3. Implementation Arrangement

The Implementation Arrangement for the Funded Activity, as further elaborated in the Funding Proposal is:

The Accredited Entity shall cause the Project to be implemented by the Executing Entity, except for Activity 1.2.1 which the Accredited Entity shall implement.

Lao PDR, acting through its MONRE and MoF, will serve as the Executing Entity, except in relation to Activity 1.2.1 for which the Accredited Entity shall act as the Executing Entity.

For the implementation of Activity 1.2.1, an Internal Cooperation Agreement (“ICA”) will be signed between the implementing unit (Climate Change Adaptation Unit, Ecosystems Division) of the Accredited Entity, which is responsible for carrying out task management and supervision and the executing unit (Biodiversity and Ecosystems Services Branch, Ecosystems Division) of the Accredited Entity, which is responsible for execution of Activity 1.2.1. The ICA will outline clear lines of responsibilities and accountabilities for the two UNEP units in the implementation and execution of Activity 1.2.1, and a ‘firewall’ will be maintained between the two (2) units of the Accredited Entity.

For the implementation of the rest of the Funded Activity, Lao PDR acting through its MONRE will act as the lead Executing Entity. Pursuant to national laws of Lao PDR, the MoF is mandated to centrally manage grants disbursed to Lao PDR. Accordingly, the MoF will open a dedicated account at the Bank of the Lao PDR, and will disburse funds to MONRE in line with standard government procedures. The PCA will set out the roles and responsibilities of MoF and MONRE, including the establishment of a Project Management Unit (“PMU”), which will be responsible for the day to day operation of the Project.

The Project shall also have the following bodies for the day-to-day implementation and management of the Project: National Project Steering Committee, National Project Management Unit, and City-level Project Steering Committees. The representatives, roles and responsibilities of these committees are further set out in the Funding Proposal.

## Schedule 4. Reporting

### A. Reporting Period

The Reporting Period shall be from the Effective Date to the Project’s Completion Date, which covers the duration of Project implementation of five (5) years as specified in the Funding Proposal.

The reports indicated in the Project Calendar below are due to be submitted as per the indicated timing.

### B. Project Calendar/Milestones

Milestones	Expected Dates
Start of Project Implementation	FAA Effective Date
Inception Report and Baseline Assessments	Within nine (9) months after FAA effective date
Independent Interim Evaluation Report	Within nine (9) months of Year three (3) after FAA effective date
End of Project Implementation	No later than five (5) years after the FAA effective date (“ <b>Completion Date</b> ”)
Project Completion Report / Final APR	Within six (6) months after Project Completion Date
Independent Terminal Evaluation Report	Within twelve (12) months after Project Completion Date

**Schedule 5. Implementation Plan**

COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>Component 1.</b>	<b>Technical and institutional capacity building to plan, design, implement and maintain integrated urban Ecosystems-based Adaptation (EbA) interventions for the reduction of climate change-induced flooding</b>																									
<b>Output 1.1</b>	<b>Strengthening of institutional capacity for integrated flood risk management and implementation of urban ecosystems-based adaptation and males and females with increased awareness of climate threats</b>																									
Activity 1.1.1 Build the capacity of national and local representatives for coordination and using urban EbA to manage climate change-induced flooding.			Draft training plan and participant targeting		Train national and city-level decision makers on integrated climate resilient flood management		Train technical staff at national and city-level on EbA best practices																			16 training workshops conducted for decision makers and technical staff; 1 knowledge exchange trip held

COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Activity 1.1.2 Establish a national knowledge hub that produces and disseminates information on urban EbA interventions locally, regionally and internationally.		Conduct discussions and consultations with stakeholders (academic departments, government research centers, international research partners, etc.) on the proposed set-up of the knowledge hub and contract knowledge hub manager	Set up operational mechanism for the monitoring and assessment of the knowledge hub	Sign MOU between MONRE and NUOL to establish the national knowledge hub	Contract an expert to assist with the integration of EbA content into existing curricula Conduct workshop to set the research and monitoring agenda of the National Knowledge hub				National knowledge hub is operational and producing knowledge products					Relevant university curricula updated to include EbA practices											1 national knowledge hub established and operational and relevant university curricula updated to include EbA



COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Activity 1.1.3 Conduct awareness-raising campaigns in each of the four target cities for communities and the private sector on urban EbA and flood management.			Design city-level awareness campaigns in cooperation with city-level stakeholders		Implement awareness raising campaigns including engagement with private sector										Water user associations and village level groups have roles assigned and SOPs in place for urban EbA and flood management													Awareness raising campaigns and private sector engagement in 4 cities completed and community groups have mechanisms in place for urban EbA management
<b>Output 1.2</b>	<b>Integrated climate-resilient flood management strategies (ICFMS) and urban EbA guidelines developed for Vientiane, Paksan, Savannakhet and Pakse, and effective Flood Risk Management Committees as coordination mechanisms</b>																											
Activity 1.2.1 Conduct economic valuation of urban ecosystem services		Develop workplan for economic valuation exercise	Begin to undertake economic valuation of target sites	Develop briefing notes on the Economics of EbA	Coordinate GIS/spatial needs with Activity 1.2.2	Economic valuation methods designed	Begin to undertake economic valuation of target sites					Valuation exercise completed and knowledge products developed																Ecosystems services valued for 1 wetland and 2 streams

COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Activity 1.2.2 Conduct hydrological assessments and climate risk assessments to inform climate change adaptation solutions for flood management in Vientiane, Paksan, Savannakhet and Pakse		Contract experts to conduct hydrological and wetland assessments	Conduct stakeholder consultations in the Project areas and potential users of models in planning departments	Conduct drone mapping to collect detailed spatial data	Develop 4 hydrological models, 1 for each of the 4 cities and wetland assessment				Model outputs developed and disseminated																	4 hydrological and climate risk assessments and 1 wetland assessment completed

<p>Activity 1.2.3 Develop the ICFMS and mainstream climate change and urban EbA into relevant policies, guidelines and plans</p>				<p>Convene ICFMS stakeholders at the city level and organize Flood Risk Management Committees</p>	<p>Start developing ICFMSs for four cities integrating hydrological / flood risk mapping from Activity 1.2.2</p>	<p>Set up coordination mechanisms for ICFMS Sign MOU with PWT on ICFMS planning and implementation</p>	<p>EbA options scoped</p>		<p>Review ICFMS and identify required local level regulatory framework changes</p>	<p>4 ICFMS reports finalised</p>	<p>Mainstreaming strategy and ICFMS developed Provide recommendations and policy briefs to local decision makers for implementation of proposed regulatory and policy changes</p>														<p>4 ICFMSs developed and recommendations and policy briefs completed; Flood Risk Management Committees are operational</p>
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COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Activity 1.2.4 Develop national urban EbA guidelines for Lao PDR and recommendations for policies on urban flood management							Contract experts to develop guidelines and conduct stakeholder consultations		Assessments from Activity 1.2.2 and draft ICFMSs are factored into the guidelines development			National guidelines produced													1 national guidelines developed
<b>Component 2</b>	<b>Rehabilitation and protection of ecosystems in response to climate variability and change</b>																								
<b>Output 2.1</b>	<b>Area of wetland restored contributing to flood reduction and sustainable management of the Nong Peung wetland in Paksan</b>																								
Activity 2.1.1 Develop a wetland management plan for Nong Peung wetland in Paksan					Conduct land use planning workshops with stakeholders linking with outputs of the wetland assessment in Activity 1.2.2	Establish a community wetland management committee		Wetland management plan developed	Update of management plan as required				Update of management plan as required												1 wetland management plan developed and updated and community wetland management committee operational



COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables										
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4											
Activity 2.1.2 Rehabilitate the Nong Peung wetland					Develop protocols for removal of invasive species, removal of man-made barriers, and planting of indigenous species					Contract service provider to source planting material and conduct wetland management activities and Train contracted labor and community members on protocols					Implement appropriate control / management measures					Conduct follow up / maintenance activities					Conduct follow up / maintenance activities					Nong Peung wetland restored					800 ha of Nong Peung wetland restored and maintenance plans in place

COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
<b>Output 2.2</b>	<b>Area of urban streams restored contributing to flood reduction and sustainable management in urban streams in Savannakhet and Pakse</b>																													
Activity 2.2.1 Restore natural urban streams in Savannakhet and Pakse						Develop protocols for removal of solid waste, restoration of vegetation and stream banks, and removal of invasive species	Contract service providers to implement management activities	Site selection for restoration	Train contracted labor and community members on protocols	Implement appropriate control / management measures		Legislated buffer zones delineated and communicated to surrounding communities		Conduct follow up / maintenance activities					Conduct follow up / maintenance activities						Streams restored					700 ha of streams restored and maintenance activities conducted
Activity 2.2.2 Develop management plans for restored urban streams in Savannakhet and Pakse					Establish community stream management committees	Conduct discussions with community management committees and UDAA on waste management		Stream management plans developed	Update of management plan as required				Update of management plan as required						Update of management plan as required											4 management plans for drainage and stream maintenance developed and updated as required; stream management committees operational

COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>Output 2.3</b>	<b>Area of permeable paving solutions installed in public areas contributing to flood reduction in Vientiane, Paksan, Savannakhet and Pakse</b>																									
Activity 2.3.1 Design permeable paving solutions for public areas in Vientiane, Paksan, Savannakhet and Pakse					Contract civil engineering experts to design permeable paving solutions and oversee implementation	Conduct site specific social and environmental surveys on permeable paving locations		Technical designs validated																	Permeable paving solutions designed	
Activity 2.3.2 Install permeable paving in public areas in Vientiane, Paksan, Savannakhet and Pakse								Contract service provider to install permeable paving solutions				Use survey results to develop site-specific operations and maintenance, management, and M&E plans					Permeable paving solutions installed									18,000 sq m of permeable pavement installed and operations and maintenance plans in place

COMPONENTS/ OUTPUTS	Y1				Y2				Y3				Y4				Y5				Y6				Deliverables
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
<b>Project Monitoring*</b>	PCA signature	Baseline Survey	Inception Report		APR				APR		Interim Evaluation		APR				APR					Final APR / Completion Report		Terminal Evaluation	

APR = Annual Performance Report

\* In addition to this monitoring requirements, the Funded Activity is also subject to financial reporting per the AMA/FAA, such as Unaudited/Audited Financial Statements, Financial information reports, and other reports as defined in the FAA.

	Project implementation milestones
	Activities
	Execution milestones
	Final Output of each activity



## Schedule 6. Request for Disbursement

[UNEP'S LETTERHEAD]

Green Climate Fund  
175, Art Center-daero  
Yeonsu-gu, Incheon 22004  
Republic of Korea  
Attn: [CFO]

[DATE]

Ref: Request for Disbursement – Funded Activity Agreement – Funded Activity: SAP \_\_\_\_\_ – Request for Disbursement [No. [\_\_\_\_]]

Ladies and Gentlemen:

1. Reference is made to the Funded Activity Agreement dated as of [DATE] (the “Agreement”) between the United Nations Environment Programme (the “Recipient”) and the Green Climate Fund (“GCF”). Capitalized terms used but not defined in this request have the meanings assigned to them in the Agreement. The rules of interpretation set forth in Clause 1 of the Agreement shall apply to this request.
2. The Recipient irrevocably requests disbursement on [DATE] (or as soon as practicable thereafter) of:
  - (a) The amount of [\_\_\_\_\_] USD under the Agreement (the “Disbursement”), in accordance with Clause 3 of the Agreement, to be transferred to the Accredited Entity Account – Account No. \_\_\_\_\_, [SWIFT/ABA] at [name and address of bank] in [city/country]; and
  - (b) The amount of [\_\_\_\_\_] USD as payment of the Accredited Entity Fee, in accordance with Clause 4 of the Agreement, to be transferred to the Accredited Entity Account No. \_\_\_\_\_, [SWIFT/ABA] at [name and address of bank] in [city/country].
3. The Recipient certifies that all applicable conditions precedent set forth in Clause 9 of the Agreement have been satisfied.
4. The Recipient further certifies that the proceeds of all Disbursements shall be applied only for the purpose described in Clause 3 of the Agreement.
5. The above certifications are effective as of the date hereof and shall continue to be effective as of the date of disbursement for this Disbursement. If any certification is no longer valid as of or prior to such Disbursement, the Recipient will notify GCF immediately and, on demand, repay the Disbursement (or any portion thereof) if the Disbursement is made prior to GCF's receipt of such notice.
6. The Recipient confirms that there is no event of default occurring with respect to the Agreement and/or the Subsidiary Agreement signed between UN Environment Programme and the Executing Entity dated [DATE].
7. The Recipient acknowledges hereby that the total amount of funds disbursed:
  - (a) As Grant under the Agreement up to the current date, without considering the funds to be disbursed under this request, is [\_\_\_\_\_] USD; and
  - (b) As Accredited Entity Fee under the Agreement up to the current date, without considering the funds to be disbursed under this request, is [\_\_\_\_\_] USD.

Yours truly,  
United Nations Environment Programme

By: \_\_\_\_\_  
Authorized Representative

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## Schedule 7. Notice of Payment

[UNEP'S LETTERHEAD]

Green Climate Fund  
175, Art Center-daero  
Yeonsu-gu, Incheon 22004  
Republic of Korea  
Attn: [CFO]

[DATE]

Ref: Notice of Payment – Funded Activity Agreement – Funded Activity: SAP \_\_\_\_\_ – Notice of Payment  
[No. [\_\_\_\_\_]]

Ladies and Gentlemen:

1. Reference is made to the Funded Activity Agreement dated [**DATE**] (the “**Agreement**”) between the United Nations Environment Programme (the “**Accredited Entity**”) and the Green Climate Fund (“**GCF**”). Capitalized terms used but not defined in this notice have the meanings assigned to them in the Agreement. The rules of interpretation set forth in Clause 1 of the Agreement shall apply to this notice.
2. The Accredited Entity notifies payment on [**DATE**] (or as soon as practicable thereafter) of the following amounts:  
  
*[Insert details on the amounts of the Investment Income and/or Unused Funds being transferred to the GCF.]*
3. The Accredited Entity shall transfer such amounts to the bank account communicated by the Fund in writing.
4. The Accredited Entity acknowledges the right of the GCF to object to the amounts described in paragraph 2 above and/or to request further information on their calculation.

Yours truly,  
United Nations Environment Programme

By: \_\_\_\_\_  
Authorized Representative

By: \_\_\_\_\_  
Authorized Representative

### Schedule 8. Logic Framework

	Description	Indicators	Baseline	Targets (mid-term)	Targets (final)	Sources and means of verification	Assumptions
<b>GCF Core Indicators</b>	GCF Core Indicator for adaptation	Number of direct and indirect beneficiaries	<u>Direct</u> : 0 <u>Indirect</u> : 0	<p>Direct: At least 14,920 people (~2% of the total population of the four target cities) benefitting from reduced flooding from clean drainage lines, implementation of wetland and stream management plans, and restoration Approximately 50% of direct beneficiaries will be female.</p> <p>Indirect: No people benefitting yet from flood reduction and enhanced ecosystem services through the ICFMS, as ICFMS for each city will only be completed after mid-term.</p>	<p>Direct: Approximately 74,600 people (~9% of the total population of the four target cities) benefitting from reduced flooding from clean drainage lines, implementation of wetland and stream management plans, and restoration Approximately 50% of direct beneficiaries will be female.</p> <p>Indirect: Approximately 825,000 people (100% of the population of the four target cities) benefitting from flood reduction and enhanced ecosystem services through the ICFMS.</p>	Baseline and Completion Surveys <sup>1</sup>	<p>Community members' cleaning of drainage lines lead to flood reduction</p> <p>The target beneficiaries benefit from reduced flood losses from EbA interventions</p>

<sup>1</sup> Means of Verification for Fund-level Impact and Outcome indicators will be triangulated with the baseline surveys that will be undertaken by project consultants, and at project mid-term and project end with the latest available national census data (2015), as well as with the extensive data from assessments after the last major flood in Lao PDR (i.e. Post-Disaster Needs Assessment: 2018 Floods, Lao PDR. Available at: <https://www.gfdrr.org/en/publication/post-disaster-needs-assessment-2018-floods-lao-pdr>). When data is available from the next national census, scheduled to take place in 2020, this will be used, and in the event of another major flood during the project period the relevant post-disaster needs assessment will also be used as reference point.

					Approximately 50% of indirect beneficiaries will be female.		
		Number of direct beneficiaries relative to total population	<u>Direct:</u> 0% <u>Indirect:</u> 0%	Direct: At least 14,920 people (~2% of the total population of the four target cities)  Indirect: 0 people (0% of the total population of the four target cities)	Direct: Approximately 74,600 people (~9% of the total population of the four target cities)  Indirect: Approximately 825,000 people (100% of the total population of the four target cities) <sup>2</sup>	Baseline and Completion Surveys <sup>3</sup>	Community members' cleaning of drainage lines lead to flood reduction  The target beneficiaries benefit from reduced flood losses from EbA interventions
<b>Objective related to GCF Result Management Framework (RMF) Impact</b>	A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions	A1.1 Change in expected losses of lives <sup>4</sup> and economic assets (USD) due to the impact of extreme climate-related disasters in the geographic area of the GCF intervention	Baseline to be determined at inception phase	USD amount can only be determined based on the magnitude of the flood that may or may not occur in Year 3	USD amount can only be determined based on the magnitude of the flood that may or may not occur in Year 5	Baseline survey and Year 5 monitoring if there is a flood event	If there is a flood event in Year 5, tracking of the final target will be done  EbA measures will provide flood reduction

<sup>2</sup> The beneficiary targets are percentages of the combined total populations of the four cities.

<sup>3</sup> Means of Verification for Fund-level Impact and Outcome indicators will be triangulated with the baseline surveys that will be undertaken by project consultants, and at project mid-term and project end with the latest available national census data (2015), as well as with the extensive data from assessments after the last major flood in Lao PDR (i.e. Post-Disaster Needs Assessment: 2018 Floods, Lao PDR. Available at: <https://www.gfdrr.org/en/publication/post-disaster-needs-assessment-2018-floods-lao-pdr>). When data is available from the next national census, scheduled to take place in 2020, this will be used, and in the event of another major flood during the project period the relevant post-disaster needs assessment will also be used as reference point.

<sup>4</sup> Methodologically it is challenging to anticipate the change in losses of lives and set targets, so the indicator to be reported would focus on change in losses of economic assets USD, noting that this can only be measured at project end point if there is a flood event at that time.

	A4.0 Improved resilience of ecosystems and ecosystem services	A4.2 Value (USD) of ecosystem services generated or protected in response to climate change	No new protection or restoration efforts with climate change risks produce ecosystem services	USD34,464/year in flood protection and other ecosystem services from Nong Peung wetland  USD20,104/year in flood protection and other ecosystem services from urban streams in Pakse and Savannakhet	USD344,640/year in flood protection and other ecosystem services from Nong Peung wetland  USD201,040/year in flood protection and other ecosystem services from urban streams in Pakse and Savannakhet	Ecosystem valuation methodology and calculation under Activity 1.2.1 <sup>5</sup>	EbA measures will provide flood reduction, wastewater treatment, support to fishing and livelihoods and other ecosystem services
<b>Fund-level Outcome(s)</b>	A7.0 Strengthened adaptive capacity and reduced exposure to climate risks	A7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools, instruments, strategies and activities to respond to climate change and variability	No incorporation of ICFMS in government policies and plans.	Level 0	Government departments have incorporated ICFMS into their policies and plans at Level 2 of policy uptake scorecard <sup>6</sup>	Key informant interviews  Policy uptake scorecard  Project reports Interviews with PMU	

<sup>5</sup> The methodology used will be from international best practice, including from peer-reviewed sources. The values generated will be compared with similar studies in the country identified in Table 1. Examples Studies Valuing Ecosystem Services in Lao PDR of the Funding Proposal.

<sup>6</sup> This policy uptake scorecard will have four levels and will measure the extent of use of the ICFMS in relevant government policies and plans. Level 0: ICFMS not integrated meaningfully into urban development plans and policy; Level 1: ICFMS narrative woven through the draft urban development plan; Level 2: Action plan and toolkit for implementation of the ICFMS with EbA fully mainstreamed have been developed; Level 3: Budgets allocated to implement the ICFMS.

<b>Outputs</b>	<p><b>Component 1: Technical and institutional capacity building to plan, design, implement and maintain integrated urban Ecosystems-based Adaptation (EbA) interventions for the reduction of climate change-induced flooding</b></p> <p>Output 1.1 Strengthening of institutional capacity for integrated flood risk management and implementation of urban ecosystems-based adaptation and males and females with increased awareness of climate threats</p>	<p>1.1.1 Number of institutions with strengthened institutional capacity for integrated flood risk management and implementation of urban ecosystems-based adaptation as measured by the capacity scorecard</p>	<p>Baseline institutional capacity to be measured in Year 1</p>	<p>4 institutions with strengthened capacity with minimum score of 4 out of 10 each</p> <p>Mid-term targets will be determined based on the baseline study that will be conducted in Year 1 of Project implementation</p>	<p>10 institutions with strengthened capacity with minimum score of 8 out of 10 each</p> <p>Final targets will be determined based on the baseline study that will be conducted in Year 1 of Project implementation</p>	<p>Capacity scorecard<sup>8</sup></p> <p>Project progress report Media/outreach survey</p>	<p>Trainings, awareness-raising and enhanced curricula are sufficient to build knowledge and technical capacity amongst relevant stakeholders.</p>
		<p>1.1.2 Number of males and females with increased awareness of climate threats and participating in implementation wetland and stream management plans and cleaning of drainage lines.</p>	<p>Males = 0 Females = 0 Total = 0</p>	<p>14,920 people with increased awareness (50% male and 50% female)<sup>7</sup></p>	<p>37,300 people with increased awareness (50% male and 50% female)</p>		

<sup>7</sup> During inception, a survey instrument / scorecard approach will be designed to have a robust measurement of awareness of climate threats.

<sup>8</sup> The indicator scale is based on five-step criteria of capacity assessment for each stakeholders group: (i) Are the stakeholders aware of the current and expected impacts of climate change-induced floods on cities?; (ii) Do the stakeholders have the capacity to plan for and implement integrated flood management and urban EbA approaches at city, provincial, and national levels, including coordination among institutions?; (iii) Do the stakeholders have access to the city-level urban EbA manuals within the ICFMS and to national urban EbA guidelines?; (iv) Do the stakeholders have the capacity to access funding for integrated flood management and urban EbA interventions?; and (v) Is there evidence of adequate institutional capacities for the continuous monitoring and reviewing of ICFMS and learning from urban EbA interventions that have been implemented through the Project and the ICFMS?. Each question is answered with an assessment and score for the extent to which the associated criterion has been met: not at all (= 0), partially (= 1) or to a large extent/completely (= 2). An overall score is calculated, with a maximum score of 10 given five criteria. These five criteria will be elaborated, reviewed and validated at inception phase of the Project. Sub-questions under each criterion will correspond to deliverables of capacity building activities in the Project. For example, training activities will have tests to measure learning of participants, linkage of the knowledge hub to the research centres of relevant ministries will be assessed, and local governments' use of financial tools or programming of funds for operation and maintenance based on economic valuation work will be assessed.

	Output 1.2 Integrated climate-resilient flood management strategies (ICFMS) and urban EbA guidelines developed for Vientiane, Paksan, Savannakhet and Pakse, and effective Flood Risk Management Committees as coordination mechanisms	<p>1.2.1 Level of effectiveness of Flood Risk Management Committees established as coordination mechanisms</p> <p>1.2.2 Level of uptake of ecosystem valuation</p>	<p>Level 0<sup>9</sup></p> <p>Level 0<sup>10</sup></p>	<p>Level 1 for 4 cities</p> <p>Level 1 for 4 cities</p>	<p>Level 3 for 4 cities</p> <p>Level 3 for 4 cities</p>	<p>Monitoring and Evaluation reports, cities' annual reports</p> <p>Interviews with provincial and district officials</p> <p>Monitoring and Evaluation reports, cities' annual reports</p> <p>Interviews with provincial and district officials</p>	
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<sup>9</sup> Level 0 = no coordination mechanism; Level 1= coordination mechanism in place; Level 1 = coordination mechanism in place, meeting regularly with appropriate representation (gender and decision-making authorities); Level 3 = coordination mechanism in place, meeting regularly, with appropriate representation, with appropriate information flows and monitoring of action items/issues raised.

<sup>10</sup> Level 0 = provincial governments have no awareness of ecosystem valuation generated by the project; Level 1 = provincial governments have awareness of ecosystem valuation generated by the project; Level 2 = provincial governments implement one of the following activities: identify sustainable financial mechanisms based on the economic valuation; include operations and maintenance of restoration interventions in annual budgets; identify new investments to scale up project interventions; cite the ecosystem values in Socio-Economic Development Plan; and devise a natural capital accounting system for the province; Level 3 = provincial governments implement at least two of the following activities: identify sustainable financial mechanisms based on the economic valuation; include operations and maintenance of restoration interventions in annual budgets; identify new investments to scale up project interventions; cite the ecosystem values in Socio-Economic Development Plan; and devise a natural capital accounting system for the province.

<p><b>Component 2: Rehabilitation and protection of ecosystems in response to climate variability and change</b></p> <p>Output 2.1 Area of wetland restored contributing to flood reduction and sustainable management of the Nong Peung wetland in Paksan</p>	<p>2.1.1 Area (ha) of wetland restored contributing to flood reduction</p>	<p>No new protection or restoration efforts with climate change risks incorporated for ecosystems in the target sites</p>	<p>80 ha of the Nong Peung wetland restored (10% of target area)</p>	<p>800 ha of the Nong Peung wetland restored</p>	<p>Project -level Field surveys comprising interviews with local communities</p> <p>GIS mapping of sites</p> <p>Project reports</p> <p>Interviews with PMU, local communities</p>	<p>Wetland restoration activities are sufficient in reducing flood impacts.</p>
	<p>2.1.2 Level of uptake of wetland management plan</p>	<p>Level 0<sup>11</sup> for the community management committee and Level 0 for government agencies specified in the management plan</p>	<p>Level 1 for the community management committee and Level 1 for all government agencies specified in the management plan</p>	<p>Level 2 for the community management committee and Level 2 for at least 40% of government agencies specified in the management plan</p>	<p>Monitoring and Evaluation reports, cities' annual reports</p> <p>Interviews with provincial and district officials</p>	<p>Resources are available to implement the management plans</p> <p>The wetland management plan assigns specific actions or practices to government agencies</p>
<p>Output 2.2 Area of urban streams restored contributing to flood reduction and sustainable management of urban streams in Savannakhet and Pakse</p>	<p>2.2.1 Area (ha) of urban streams restored contributing to flood reduction</p>	<p>No new protection or restoration efforts with climate change risks incorporated for ecosystems in the target sites</p>	<p>70 ha (10% of total target) of urban stream ecosystems rehabilitated and sustainably managed</p>	<p>700 ha (100% of target) of urban stream ecosystems rehabilitated and sustainably managed</p>	<p>Field surveys</p> <p>GIS mapping</p> <p>Project reports</p> <p>Interviews with PMU</p>	<p>Urban stream restoration activities are sufficient in reducing flood impacts.</p>
	<p>2.2.2 Level of uptake of stream management plans</p>	<p>Level 0<sup>12</sup> for 3 community management</p>	<p>Level 1 for 3 community management</p>	<p>Level 2 for 3 management committees and</p>	<p>Monitoring and Evaluation reports, cities' annual reports</p>	<p>Resources are available to</p>

<sup>11</sup> Level 0 = the relevant bodies and agencies are not aware of the management plan; Level 1 = the relevant bodies and agencies are aware of and have access to the management plan; Level 2 = the relevant bodies and agencies are implementing at least 50% of the management practices proposed in the plan; Level 3 = the relevant bodies are implementing 80% of the management practices proposed in the plan.

<sup>12</sup> Level 0 = the relevant bodies and agencies are not aware of the management plan; Level 1 = the relevant bodies and agencies are aware of and have access to the management plan; Level 2 = the relevant bodies and agencies are implementing at least 50% of the management practices proposed in the plan; Level 3 = the relevant bodies and agencies are implementing 80% of the management practices proposed in the plan.



			committees and Level 0 for government agencies specified in the management plan	committees and Level 1 for all government agencies specified in the management plan	Level 2 for at least 40% of government agencies specified in the management plan	Interviews with provincial and district officials	implement the management plans  The stream management plan assigns specific actions or practices to government agencies
	Output 2.3 Area of permeable paving solutions installed in public areas contributing to flood reduction in Vientiane, Paksan, Savannakhet and Pakse	Square meters of permeable paving solutions installed in public areas contributing to flood reduction	Baseline study to be conducted in Year 1 of Project implementation.	9,000 square meters of permeable paving solutions	18,000 square meters of permeable paving solutions	Field surveys  Project reports  Interviews with PMU	Permeable paving solutions will be sufficient in improving drainage of identified public areas.
	<b>Activity title</b>	<b>Activity description</b>			<b>Sub-activities</b>		<b>Deliverables</b>
<b>Activities</b>	Activity 1.1.1 Build the capacity of national and local representatives for coordination and using urban EbA to manage climate change-induced flooding.	Under Activity 1.1.1, decision-makers from MONRE, Ministry of Planning and Investment (MPI), Ministry of Public Works and Transport (MPWT), Ministry of Agriculture and Forestry, provincial governments, and other relevant agencies will be trained on how to incorporate integrated climate-resilient flood management into urban planning for the cities of Vientiane, Paksan, Savannakhet and Pakse. Additionally, technical staff from the relevant national and local departments will be trained on how to use urban EbA to reduce climate-induced flooding. This training will include: (i) hands-on spatial planning exercises using GIS; (ii) drone mapping; (iii) best practices on the design, implementation and maintenance of urban EbA; and (iv) submitting applications for financing. A knowledge-exchange trip for senior government representatives, technical experts and academics to a city with similar topographical, climatic and socio-economic contexts to the four target cities.			Train national- and city-level decision-makers on how to include integrated climate-resilient flood management into development planning.  Train technical staff at national and city-level on best practices for using urban EbA to reduce flooding.  Conduct an exchange trip to the selected city with urban EbA examples as case study.		16 training workshops conducted for decision-makers on how to incorporate integrated climate-resilient flood management into urban planning  16 training workshops conducted for national- and city-level technical staff on best practices for using urban EbA  1 knowledge exchange trip held for senior government representatives, technical experts and academics to a city with similar topographical, climatic and socio-economic contexts to the four target cities

<p>Activity 1.1.2 Establish a national knowledge hub that produces and disseminates information on urban EbA interventions locally, regionally and internationally.</p>	<p>A multi-disciplinary knowledge hub will be established in the Civil Engineering Department of the National University of Lao PDR in Vientiane, covering the fields of engineering, urban planning, water resource management, agriculture, ecology, and governance. The purpose of this hub will be to: (i) integrate urban EbA content into relevant existing curricula at the university; and (ii) provide technical support to government and Community Management Committees established under Outcome 2. In addition to the establishment of the knowledge hub, targeted action research projects linked to the Project's activities will be funded and conferences will be held on urban EbA to support knowledge exchange with other EbA initiatives in the region. An operational mechanism will be put in place to manage the research fund supporting the research activities.</p>	<p>Develop and sign MoU between NUoL and MONRE</p> <p>Contract knowledge hub manager to oversee the hub</p> <p>Set up operational mechanism for the monitoring and assessment fund</p> <p>Contract an international expert to assist with the integration of EbA content into existing curricula</p>	<p>National knowledge hub is operational and producing knowledge products.</p>
<p>Activity 1.1.3 Conduct awareness-raising campaigns in each of the four target cities for communities and the private sector on urban EbA and flood management.</p>	<p>Awareness raising campaigns will be conducted to: (i) raise awareness among the public about the value of wetlands and urban streams, solid waste disposal, protection of waterways, and regulations on waterway buffer zones (by means of village governance structures, water user associations, and National Women's Union); and (ii) raise awareness and promote the sustainable management of the Nong Peung wetland in Paksan based on the wetland management plan developed under Outcome 2. Private sector stakeholders (e.g. shopping malls and Special Economic Zones) will also be engaged under this activity to identify how they can contribute to and benefit from Project activities.</p>	<p>Design an appropriate city-level awareness-raising campaign in each of the four cities, in co-operation with city-level stakeholders</p> <p>Implement the four awareness-raising campaigns.</p> <p>Engage with relevant private sector stakeholders.</p>	<p>Awareness raising campaigns including communities and private sector implemented in target cities</p>

	<p>Activity 1.2.1 Conduct economic valuation of urban ecosystem services.</p>	<p>An economic valuation will be conducted on the range of ecosystem services provided by the Nong Peung wetland in Paksan and urban streams in Savannakhet and Pakse. The findings from this valuation will be: (i) inform long-term management plans; and (ii) integrated into the adaptation assessments in Activity 1.2.4 to help mainstreaming EbA into the planning, policy and legal frameworks.</p>	<p>Undertake an economic valuation of the Paksan wetland and urban streams in Savannakhet and Pakse.</p> <p>Conduct a capacity needs assessment of major stakeholders on implementing sustainable land use planning</p> <p>Provide technical backstopping support for the development of the ecosystem services valuation framework</p>	<p>Ecosystem services for 1 wetland and 2 streams valued</p>
	<p>Activity 1.2.2 Conduct hydrological assessments and climate risk assessments to inform climate change adaptation solutions for flood management in Vientiane, Paksan, Savannakhet and Pakse.</p>	<p>Fine-scale hydrological mapping will be conducted in each of the target cities and the results from this mapping will be used to develop detailed hydrological models at catchment scale that account for increasing rainfall intensity under climate change. Hydrological maps and models produced, along with the relevant staff conducting the mapping and developing the models, will be hosted within an identified appropriate national institution. The maps and models generated will be used to inform the flood management strategies that will be implemented under Activity 1.2.4. In addition, an international and a national expert will be contracted under this activity to conduct an extended wetland assessment on <i>inter alia</i>: extent of wetland, different functional zones, water quality, biodiversity, invasive alien plants and community use of the wetland. This assessment will be used to inform the development of the wetland management plan under Activity 2.1.1.</p>	<p>Conduct stakeholder consultations with affected communities, the private sector and civil society</p> <p>Conduct drone mapping of the four cities to collect detailed spatial data on elevation, land use and infrastructure</p> <p>Develop hydrological models for each of the four cities</p> <p>Contract an international and a national expert to conduct a wetland assessment</p>	<p>4 hydrological assessments and 4 climate risk assessments completed</p>

<p>Activity 1.2.3 Develop the ICFMS and mainstream climate change and urban EbA into relevant policies, guidelines and plans.</p>	<p>Integrated flood management strategies (ICFMS) will be developed for each of the target cities based on outputs from Activities 1.2.1, 1.2.2, and 1.2.3. The ICFMS will contain proposed EbA interventions, management and enforcement arrangements, options for specific regulations and policy at the provincial level. Following their development, these strategies will be mainstreamed into existing flood master plans, provincial and district development plans, land use plans and guidelines, urban plans for Special Economic Zones, and provincial level policies and regulations through proposed revisions and updating of relevant plans. Outcomes of the ICFMS will also be linked with National Adaptation Planning (NAP) process (UNEP proposal to Global Environmental Facility (GEF) under development).</p>	<p>Develop an ICFMS for each of the four cities</p> <p>Review ICFMSs and identify required local-level regulatory framework changes</p> <p>Provide recommendations and policy briefs to local-level decision makers for the implementation of changes identified</p>	<p>4 ICFMS developed</p>
<p>Activity 1.2.4 Develop national urban EbA guidelines for Lao PDR and recommendations for policies on urban flood management.</p>	<p>National urban EbA guidelines will be developed for Lao PDR to inform urban development planning under future conditions of climate change. These guidelines will include, <i>inter alia</i>: options for urban EbA and Sustainable Urban Drainage Systems in different contexts, institutional responsibilities for enforcement, monitoring, and implementation, options for incentives and instruments to promote EbA in the private sector, and options for regulatory reforms.</p>	<p>Contract international civil engineering experts/consultants with urban EbA expertise to assist in the development of the guidelines, in close co-operation with local contractors, academics and other stakeholders</p>	<p>1 national urban EbA guidelines developed</p>
<p>Activity 2.1.1 Develop a wetland management plan for Nong Peung wetland in Paksan.</p>	<p>A wetland management plan will be developed for the Nong Peung wetland for the sustainable use and management of the wetland. This plan will be used by the Community Wetland Management Committee, which will be established at the village level to assist with <i>inter alia</i> water quality monitoring, fishery management and monitoring of invasive plants, with technical support from the knowledge hub established under Activity 1.1.2. Participatory land-use planning workshops will be also be conducted under this activity.</p>	<p>Conduct land-use planning workshops with relevant national and local government representatives and Project stakeholders</p> <p>Establish a Community Wetland Management Committee in Paksan</p>	<p>1 wetland management developed</p>

	<p>Activity 2.1.2 Rehabilitate the Nong Peung wetland.</p>	<p>A local service provider will be contracted to rehabilitate the Nong Peung wetland in Paksan. Rehabilitation activities to be conducted under this activity will include: (i) removing invasive plants such as <i>Mimosa pigra</i> and water hyacinth; (ii) removing small man-made barriers that impede natural flow and wetland functioning; and (iii) planting appropriate indigenous plants in areas where natural vegetation has been lost or degraded.</p>	<p>Implement appropriate control measures (e.g. bio-control or mechanical control for invasive alien plants</p> <p>Identify areas for the planting of indigenous plants</p> <p>Contract a local service provider to remove the identified invasive species and man-made barriers</p> <p>Contract a local service provider to plant indigenous plants in identified areas</p>	<p>800 ha of Nong Peung wetland restored</p>
	<p>Activity 2.2.1 Restore natural urban streams in Savannakhet and Pakse.</p>	<p>A local service provider will be contracted to restore natural urban streams in Savannakhet and Pakse. Restoration activities to be implemented under this activity will include: (i) removing invasive plants such as <i>Mimosa pigra</i>; (ii) restoring natural aquatic vegetation and vegetation on banks; (iii) removing solid waste that impedes flow; and (iv) delineating stream buffer zones and install signage.</p>	<p>Contract a local service provider to restore aquatic vegetation and stream banks</p> <p>Contract a local service provider to remove solid waste</p> <p>Contract a local service provider to delineate stream buffer zones and install signage</p>	<p>700 ha of streams restored</p>

<p>Activity 2.2.2 Develop management plans for restored urban streams in Savannakhet and Pakse.</p>	<p>Community Stream and Drainage Management Committees will be established at the village level. Protocols will also be developed under this activity detailing the roles and responsibilities of these committees in the management of urban streams. A critical consideration in the management of urban streams is establishing effective processes for waste management. In this light, workshops will be conducted to enable the Community Stream and Drainage Management Committees to engage with Urban Development Administration Authorities (UDAA) on improving the effectiveness of existing regular solid waste collection and drainage maintenance regulations and operations. Furthermore, to support the sustainable management of these streams, a local service provider will be contracted to identify and implement appropriate measures to curb the introduction and spread of invasive plants in wetlands and streams.</p>	<p>Establish Community Stream and Drainage Management Committees</p> <p>Contract a local service provider to identify and implement measures to reduce the spread of invasive species</p> <p>Facilitate communication and knowledge sharing between the UDAA and Community Stream and Drainage Management Committees on best practices for implementing effective waste management</p>	<p>4 management plans for drainage and stream maintenance developed</p>
<p>Activity 2.3.1 Design permeable paving solutions for public areas in Vientiane, Paksan, Savannakhet and Pakse.</p>	<p>An international civil engineering experts/consultancy with urban EbA expertise to assist with selecting appropriate sites and designing permeable paving solutions for each site according to international best practices. This will include consideration of potential surface pollutants, groundwater level and risk of permeable paving pores clogging because of sediment deposition.</p>	<p>Conduct site-specific surveys (social surveys and environmental surveys)</p> <p>Contract an international civil engineering experts/consultancy with urban EbA expertise to assist with the design of permeable pavement solutions</p> <p>Validate technical designs of the permeable paving solutions</p>	<p>At least 3 types of permeable paving solutions designed</p>
<p>Activity 2.3.2 Install permeable paving in public areas in Vientiane, Paksan, Savannakhet and Pakse.</p>	<p>A service provider will be contracted to install the permeable paving solutions in the public areas (such as universities, schools and government offices) identified in Activity 2.3.1. Site-specific O&amp;M plans, management plans and M&amp;E plans will also be developed in collaboration with host institutions under this activity using findings from the site surveys conducted under Activity 2.3.1.</p>	<p>Contract a service provider to install permeable paving solutions at identified sites</p> <p>Using results from the surveys conducted under this activity, develop site-specific O&amp;M plans, management plans and M&amp;E plans</p>	<p>18,000 sq. m of permeable pavements installed</p>

**Annex 1. Funding Proposal**

# Simplified Approval Process Funding Proposal

Project/Programme title: Building resilience of urban populations with ecosystem-based solutions in Lao PDR

Country(ies): Lao PDR

National Designated Authority(ies): Mr. Syamphone Sengchandala, Director of Management and Coordination Division, Department of Climate Change, Ministry of Environment and Natural Resources

Accredited Entity: United Nations Environment Programme (UNEP)

Date of first submission: [YYYY/MM/DD]

Date of current submission/  
version number: [YYYY/MM/DD] [V.000]

If available, indicate GCF code: *This code is assigned to each project upon first submission of a Concept Note or Funding Proposal and remains the same throughout the proposal review process. If you have submitted this project/programme previously please indicate the GCF code here.*



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## Contents

### Section A **PROJECT / PROGRAMME SUMMARY**

This section highlights some of the project's or programme's information for ease of access and concise explanation of the funding proposal.

### Section B **PROJECT / PROGRAMME DETAILS**

This section focuses on describing the context of the project/programme, providing details of the project/programme including components, outputs and activities, and implementation arrangements.

### Section C **FINANCING INFORMATION**

This section explains the financial instrument(s) and amount of funding requested from the GCF as well as co-financing leveraged for the project/programme. It also includes justification for requesting GCF funding and exit strategy.

### Section D **LOGIC FRAMEWORK, AND MONITORING, REPORTING AND EVALUATION**

This section includes the logic framework for the project/programme in accordance with the GCF Results Management Framework and Performance Measurement Framework, and gives an overview of the monitoring, reporting and evaluation arrangements for the proposed project/programme.

### Section E **EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA**

This section provides an overview of the expected alignment of the projects/programme with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

### Section F **ANNEXES**

This section provides a list of mandatory documents that should be submitted with the funding proposal as well as optional documents and references as deemed necessary to supplement the information provided in the funding proposal.



**Note to accredited entities on the use of the SAP funding proposal template**

- The Simplified Approval Process Pilot Scheme (SAP) supports projects and programmes with a GCF contribution of up to USD 10 million with minimal to no environmental and social risks. Projects and programmes are eligible for SAP if they are ready for scaling up and have the potential for transformation, promoting a paradigm shift to low-emission and climate-resilient development.
- This template is for the SAP funding proposals and is different from the funding proposal template under the standard project and programme cycle. Distinctive features of the SAP funding proposal template are:
  - *Simpler documents*: key documents have been simplified, and presented in a single, up-front list;
  - *Fewer pages*: A shorter form with significantly fewer pages. The total length of funding proposals should **not exceed 20 pages**, annexes can be used to provide details as necessary;
  - *Easier form-filling*: fewer questions and clearer guidance allows more concise and succinct responses for each sub-section, avoiding duplication of information.
- Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other funding proposal documents such as project appraisal document, pre-feasibility studies, term sheet, legal due diligence report, etc.
- Submitted SAP Pilot Scheme funding proposals will be disclosed simultaneously with submission to the Board, subject to the redaction of any information which may not be disclosed pursuant to the [GCF Information Disclosure Policy](#).

**Please submit the completed form to:**

[fundingproposal@gcfund.org](mailto:fundingproposal@gcfund.org)

**Please use the following name convention for the file name:**

“SAP-FP-[Accredited Entity Short Name]-[yyymmdd]”

A. PROJECT/PROGRAMME SUMMARY					
<b>A.1. Has this FP been submitted as a SAP CN before?</b>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
<b>A.2. Is the Environmental and Social Safeguards Category C or I-3?</b>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
<b>A.3. Project or programme</b>	<i>Indicate whether this FP refers to a combination of several projects (programme) or one project.</i> <input checked="" type="checkbox"/> Project <input type="checkbox"/> Programme	<b>A.4. Public or private sector</b>	<input checked="" type="checkbox"/> Public sector <input type="checkbox"/> Private sector	<b>A.5. RFP</b>	Not applicable
<b>A.6. Result area(s)</b>	<i>Check the applicable <a href="#">GCF result area(s)</a> that the proposed project/programme targets. Indicate for each checked result area(s) the estimated percentage of GCF budget devoted to it. The summed up percentage should be equal to 100%.</i>  <b>Mitigation:</b> Reduced emissions from: <input type="checkbox"/> Energy access and power generation: <u>Enter number</u> % <input type="checkbox"/> Low emission transport: <u>Enter number</u> % <input type="checkbox"/> Buildings, cities and industries and appliances: <u>Enter number</u> % <input type="checkbox"/> Forestry and land use: <u>Enter number</u> %  <b>Adaptation:</b> Increased resilience of: <input checked="" type="checkbox"/> Most vulnerable people and communities: <u>60</u> % <input type="checkbox"/> Health and well-being, and food and water security: <u>Enter number</u> % <input type="checkbox"/> Infrastructure and built environment: <u>Enter number</u> % <input checked="" type="checkbox"/> Ecosystem and ecosystem services: <u>40</u> %				
<b>A.a. Total investment (GCF + co-finance)</b>	Amount: 11.5 million USD	<b>A.a.1 Total GCF funding requested</b>	Amount: 10 million USD		
<b>A.b. Type of financial instrument requested for the GCF funding</b>	<i>Mark all that apply.</i> <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Loan <input type="checkbox"/> Equity <input type="checkbox"/> Guarantees <input type="checkbox"/> Others:				
<b>A.7. Implementation period</b>	5 years (60 months)				
<b>A.8. Total project/ programme lifespan</b>	20 years (240 months)	<b>A.9. Expected date of internal approval</b>	11/30/2015		
<b>A.10. Executing Entity information</b>	State of Lao PDR, through its Ministry of Natural Resources and Environment and Ministry of Finance (as "Recipient Entity" in UNEP terminology); and UNEP				
<b>A.11. Scalability and potential for transformation (Eligibility for SAP, max. 100 words)</b>					
<p>The proposed project aims to shift the paradigm of urban flood management in Laos from a limited, hard infrastructure approach towards an integrated approach that enhances climate resilience. This will be achieved by mainstreaming integrated flood management strategies into planning frameworks and implementing urban ecosystem-based adaptation (EbA) to decrease climate-induced flooding. The project will be implemented in four cities that have been shown to be the most vulnerable to climate change through climate risk modelling and consultations with relevant planning institutions in Laos. Project interventions will directly benefit 74,600 people and restore 1,500 ha of urban wetland and stream ecosystems. The project will build on and scale up proven interventions, namely the ecosystem rehabilitation from the FAO supported initiative "Climate Adaptation in Wetland Areas in Lao PDR" in rural Laos, leverage on the established global practice on urban EbA and integrated flood management and test how these interventions can achieve impacts in four Lao cities considering local rainfall regimes, hydrology, and governance systems<sup>1</sup>. Lessons learned from the project and its innovations on integrated flood management will feed back into policy recommendations and guidelines at the national level. Project results also have the potential to be further upscaled to 13 other cities and urban centers in Laos, paving the way for further EbA investments by demonstrating benefits. The lessons learned can also more broadly contribute to the knowledge on urban EbA in developing country settings.</p>					

**A.12. Project/Programme rationale, objectives and approach (max. 300 words)**

Climate change is increasing the frequency and intensity of extreme rainfall events in Laos, leading to more frequent and severe flooding in vulnerable cities along the Mekong River. However, these rapidly growing cities lack adequate flood management. The barriers preventing climate-resilient flood management include: i) limited technical and institutional capacity in government; ii) lack of integrated, climate-resilient approaches to flood management; and iii) limited knowledge about EbA and the valuation of ecosystem services. To address these barriers, the proposed project will facilitate integrated, climate-resilient flood management — including ecosystem-based adaptation (EbA) — in the cities of Vientiane, Paksan, Savannakhet and Pakse. This will be done by: i) strengthening technical capacity and knowledge base and management to reduce flood impacts; ii) developing city-level integrated flood management strategies; iii) identifying sustainable financing options for integrated flood management and; and iv) implementing urban EbA solutions. The project will create and/or strengthen drivers to sustain and up-scale urban EbA planning for flood management in the following areas: developing champions in Government for EbA through improved knowledge, awareness and peer-learning mechanisms; mainstreaming EbA into planning and budgeting instruments — inputs into and reinforcement from the NAP process will be an added driver; and empowering communities to engage with city-level planning and management processes. The project will generate several environmental and social-economic benefits, aside from flood control and use local knowledge<sup>2</sup>.

Overall, the project interventions aim to shift the paradigm of urban flood management in Laos away from the use of mostly hard infrastructure towards innovative use of EbA measures and integrated flood management. GCF support is critical for addressing this financing gap and achieving this paradigm shift, because EbA for flood risk management is chronically underfunded. As a Least Developed Country, Laos lacks domestic resources to invest in longer-term climate change adaptation as it continues to require support for reconstruction after major flood events. To illustrate, damages from floods in 2018 were equivalent to 10% of the country's budget for the same year. International sources of funding continue to focus on hard infrastructure for flood management and provide limited technical assistance for non-structural flood risk management and EbA. Given that the interventions will not generate a revenue stream that can be used to repay a loan, and the country's debt burden limits further international borrowing, the Government of Laos is seeking grant financing from the GCF for this project. Such financing will enable the government to take the urgently needed steps to reduce the flood vulnerability of urban citizens in Laos.

## B. PROJECT/PROGRAMME DETAILS

### B.1. Context and baseline (max. 500 words)

Cities in Laos<sup>3</sup> are among the most vulnerable areas to flooding in South East Asia and experience extreme flooding on an annual basis. The magnitude of this flooding problem is expected to increase because of climate change. Major monetary losses from the floods typically include damage to infrastructure and loss of livestock and crops. Non-monetary losses include outbreaks of water-borne diseases<sup>4</sup>, absenteeism of children from school and disruption of transport systems. Overall economic losses from floods amount to 2.8–3.6% of GDP every year<sup>5</sup>. In 2018, floods caused damages of ~US\$372 million<sup>6</sup>. Consultations<sup>7</sup> with flood-affected people indicate that per-household costs can reach ~US\$1,000 after a heavy rainfall event, which is ~40% of the annual GDP per capita.

Within the next few decades climate change is expected to greatly increase the frequency, severity and extent of flooding in Laos. This will in turn result in a considerably greater prevalence of water-borne diseases, greater damage to infrastructure, greater loss of livestock, and greater loss of agricultural crops. Indeed, the total economic damages from flooding can be expected to increase several-fold — by as much as five times. Considering that Laos has historically experienced average damages of US\$50 million per annum from flooding<sup>8</sup>, it is plausible based on the results of climate change models (presented below<sup>9</sup>) that these damages will exceed US\$250 million for some years in the decades ahead<sup>10</sup>.

The Mekong River does on occasion break its banks and cause flooding in many Laotian cities. However, most urban and peri-urban flooding events in Laos are caused by extreme rainfall events in which rainwater does not drain fast enough into soils and then aquifers<sup>11</sup>. This is known as pluvial flooding<sup>12</sup>. Climate change models show that the frequency of extreme rainfall events — which lead to pluvial flooding — (Annex 2: Feasibility Study, Section 2.4.1, Figure 10). Of even greater concern is that the intensity of the extreme rainfall events is also expected to increase several fold, with some events being five times greater than in the past<sup>13,14</sup>. Climate models also predict that 400-600 mm/day rainfall events will occur more frequently in the future, possibly becoming as frequent as the current 100–200 mm/day extreme rainfall events that cause flooding. In addition, rainfall events of up to 1000 mm in a single day could become as frequent in the future as 200-400 mm/day rainfall events are currently (Annex 2: Feasibility Study, Section 2.4.1, Figures 11 and 12).

The impacts of these increasingly extreme rainfall events will be exacerbated by Laos' rapid rate of urbanisation<sup>15</sup>. Cities in Laos are expanding without comprehensive urban planning<sup>16</sup> that addresses increasing flood impacts under climate change. The combination of unplanned development and rapid urban growth has resulted in poorly designed urban areas, frequently characterised by inadequate infrastructure and high levels of exposure to climate risks. As Laotian cities grow and become more dense, urban wetlands, natural streams and other green areas that are critical for flood management are being lost<sup>17</sup>. With the total area of impermeable surfaces increasing, the infiltration of rainwater into soils and drainage into groundwater is greatly reduced. Green areas are also needed for the retention of stormwater, with many wetlands acting as detention areas for river flooding. Moreover, urban wetlands and streams provide other valuable ecosystem goods and services in addition to flood reduction.

To address these impacts of climate change, integrated flood management that incorporates urban ecosystem-based adaptation (EbA)<sup>18</sup> and makes provision for climate change is needed. Such integrated flood management is not, however, being practised currently and the technical skills and knowledge to implement urban EbA are not readily available in Laos. The typical approaches to flood management are site-specific, downstream-focused, 'hard' engineering solutions, rather than an integrated catchment approach which considers the role of ecosystem services in flood control. Current policies on flood management and urban planning in Laos<sup>19</sup> do not provide for an integrated approach to flood management that accounts fully for climate change, and certain policies are not implemented fully.

#### **Problem statement**

The problem that the proposed project will address is that cities in Laos are vulnerable to increases in flooding caused by increases in the frequency and intensity of extreme rainfall events. Current urban planning and approaches to flood risk management are not responding to these climate threats. Traditional drainage systems<sup>20</sup> alone have been inadequate to date in reducing flood impacts under climate change conditions. Approximately 40% of the population is located within urban areas and the annual urban growth rate is ~4%. Urban development in Laos consequently requires a paradigm shift towards integrated development that: i) benefits from improved planning and developed knowledge base; ii) includes the use of ecosystems to manage floods; and iii) reduces, retains and attenuates runoff at the source as opposed to increasing the discharge capacity of drainage systems.

### **Preferred solution<sup>21</sup>**

The preferred solution is to implement an integrated, climate-resilient approach to urban flood management in Laos, including the use of urban EbA interventions<sup>22</sup>. This will ensure that city development takes place in a flood-resilient manner. Specifically, urban EbA interventions reduce the impacts of pluvial flooding by improving infiltration and detention. Infiltration is promoted through increasing green spaces and permeable surfaces within a city, which results in less runoff being generated at the source and runoff being attenuated during rainfall events. The rehabilitation and protection of urban streams and wetlands are an important part of urban EbA. Wetlands reduce flood impacts by acting as natural detention areas for both pluvial and river floods<sup>23</sup>, while rehabilitated natural streams with intact vegetation reduce the velocity of waterflow and have increased infiltration<sup>24</sup>. EbA interventions such as maintaining green spaces and restoring wetlands and natural streams will therefore reduce flood impacts on affected communities. Moreover, the restoration of wetland and urban stream ecosystems using climate-resilient indigenous plant species will enhance the resilience of the ecosystems themselves to climate change. While these practices have thus far not been widely applied in urban settings in Laos, the project will test how successful approaches in rural settings in Laos and urban settings in comparable countries can be employed for the selected cities. In addition to the analysis on flood risks under climate change conditions in the feasibility study, the project takes into account local rainfall regimes, hydrology, and habitats through assessments at the start of the project to ensure the measures will work in the context of the selected cities. Environmental and hydrological monitoring systems will be put in place to quantify the magnitude of flood reduction and attenuation impacts that the EbA interventions will have to support further upscaling in the future.

To maximise their functionality, urban EbA interventions should be implemented as part of an integrated flood management approach that takes climate change impacts into account. Such an approach would align development practices with the upstream causes and downstream impacts of current and predicted flooding. For example, this would entail avoiding construction in flood-prone zones and reducing the amount of runoff from upstream developments by: i) implementing urban EbA interventions; ii) advocating policies that promote the use of permeable surfaces; and iii) undertaking construction that facilitates infiltration and increases detention storage. Such interventions should be integrated into the design of new urban developments, as retrofitting urban EbA into existing developments is costly and technically challenging.

### **Barriers**

The main barriers to the implementation of integrated climate-resilient flood management in Laos are outlined below<sup>25</sup>.

#### *Lack of data for modelling climate impacts to inform climate change adaptation solutions for flood management*

While investments are being made to improve technology and performance in generating base climatological information from the monitoring of hydrological and meteorological trends in priority areas in the country, these are not adequate to support the development and implementation of activities to adapt to climate change. For the development of this proposal, independent work has been carried out to downscale climate change parameters in the target areas to assess flood risks. Even then, the scale of modelling is at a coarse scale. Further hydrological assessments based on quality spatial data and model calibration are needed in order to support the planning and design of coordinated distributed flood management solutions.

#### *Limited technical and institutional capacity of provincial and national government for climate-resilient flood management*

The Government of Laos (GoL) has limited technical and institutional capacity for the integrated management of climate change-induced floods. Traditionally, the GoL has focused on disaster response rather than a systematic and proactive approach to flood management. Insufficient strategic planning and limited consideration of existing and future land use exacerbates flooding in Laos' cities. The relevant sectors and institutions responsible for flood management lack technical and institutional capacity to address this gap. A comprehensive strategic approach to flood management requires collaboration between different ministries, but coordination among the ministries involved in urban planning, flood management and city development is often limited. In addition, there is limited capacity at the provincial and city-level for spatial planning that reduces flood risks and impacts. Besides lack of capacity for proactive flood management, the existing planning measures to reduce flood risks are not always implemented due to lack of financing, uncoordinated investments, and development pressures.

#### *Lack of integrated, climate resilient flood management approaches*

Few, if any, integrated flood management interventions — i.e. interventions that consider climate change and include EbA — have been implemented in Laos. The government often depends on international donor projects for the funding of urban flood management infrastructure. These projects frequently focus on constructing traditional hard infrastructure to manage flooding. While some policies and plans related to urban flood management include climate change adaptation measures, few address this challenge comprehensively and in an integrated manner. For example, building

regulations and zoning do not always make adequate provision for flooding, especially not for increasingly frequent and severe flooding predicted under climate change.

*Limited knowledge about EbA and the valuation of ecosystems*

To effectively use EbA for flood management, decision makers, planners and contractors require the technical capacity and knowledge to identify, design, implement and maintain urban EbA interventions. However, the GoL has had little exposure to the adaptation benefits of urban EbA and therefore has limited knowledge about urban EbA. This limited knowledge of EbA means that decision-makers still perceive hard infrastructure and end-of-pipe solutions<sup>26</sup> as the only way to effectively manage flooding. In addition to having limited knowledge about the implementation of EbA, government decision-makers do not have sufficient access to resources and technical expertise to value ecosystem services. Consequently, the GoL is more likely to finance traditional hard engineering solutions, where costs and benefits are well understood.

**B.2. Project/Programme description (max. 1,000 words)**

The proposed project will address the increasing impacts of climate change-induced floods on urban areas in Laos. The project objective is to establish integrated flood management that includes the use of urban ecosystem-based adaptation (EbA) in four major cities: Vientiane, Paksan, Savannakhet and Pakse. This objective will be achieved through two project components: i) Component 1. Technical and institutional capacity building to plan, design, implement and maintain integrated urban Ecosystems-based Adaptation (EbA) interventions for the reduction of climate change-induced flooding; and ii) Component 2. Rehabilitation and protection of ecosystems in response to climate variability and change. The four target cities were selected based on *inter alia* their climate-induced flood exposure and economic importance. Further information on climate change impacts and site selection<sup>27</sup> are provided in Annex 2: Feasibility Study.

**Component 1. Technical and institutional capacity building to plan, design, implement and maintain integrated urban Ecosystems-based Adaptation (EbA) interventions for the reduction of climate change-induced flooding**

Urban development in Laos is taking place without sufficient consideration of the increasing risks of climate change-induced floods. To enhance the flood resilience of cities in Laos requires a comprehensive, integrated approach to flood management that includes good planning and the use of EbA. Cities are not currently adopting such an approach because of the barriers described in Section B.1 above. The project interventions under this project component will work at multiple levels and through different entry points to overcome these barriers. This will be achieved through two project outputs. The first output will focus on increasing awareness and knowledge of urban EbA, as well as building technical and institutional capacity for the implementation of urban EbA interventions. The second output will focus on developing city-level strategies for integrated, climate-resilient flood management, which will be informed by hydrological and ecosystem assessments, and supported by creating an enabling policy environment. The total investment of Component 1 is US\$6,565,887, of which US\$927,827 will be provided as co-financing for staff time, workshops and office space to support the project activities.

Output 1.1 Strengthening of institutional capacity for integrated flood risk management and implementation of urban ecosystems-based adaptation and males and females with increased awareness of climate threats

The uptake of urban EbA for flood management in Laos is constrained by the limited knowledge and awareness of urban EbA among government, the private sector and communities. The activities under this output will address this barrier by building the capacity of the relevant government departments, by creating and sharing knowledge of urban EbA in Laos, and by engaging with communities and the private sector. Improving knowledge of the benefits and successful examples of urban EbA in the public and private sectors and at the community level strengthens adoption and sustainability of incorporating urban EbA in planning frameworks as well as supports the sustainability of the investments themselves.

*Activity 1.1.1 Build the capacity of national and local representatives for using urban EbA to manage climate change-induced flooding.*

Successfully implementing urban EbA requires effective coordination across institutions and sectors, as well as effective urban planning that maintains the necessary space for urban EbA interventions. This activity will train decision-makers from MONRE, Ministry of Planning and Investment (MPI), Ministry of Public Works and Transport (MPWT),



Ministry of Agriculture and Forestry, provincial governments and other relevant agencies on how to incorporate integrated climate-resilient flood management into urban planning for the cities of Vientiane, Paksan, Savannakhet and Pakse. This training will include training sessions and learning-by-doing and will cover *inter alia* the following topics: i) EbA concepts and roles of different institutions and sectors; ii) how to link spatial planning<sup>28</sup> with the planning of investments in socio-economic development<sup>29</sup>; iii) master planning processes, iterative planning and their applications at local level; iv) how to strengthen district-level planning systems and their links to provincial planning systems; v) how to use City-level Project Steering Committees as the multi-sectoral coordination mechanism for the Integrated Climate-resilient Flood Management Strategies (see Activity 1.2.3.) and linking this mechanism to the provincial administration; vi) existing legal frameworks and their enforcement. Furthermore, implementing urban EbA interventions such as wetland rehabilitation and detention ponds demands technical skills. Technical staff from the relevant national and city-level departments will receive training on how to use urban EbA to reduce climate-induced flooding. This training will include: i) hands-on spatial planning exercises using GIS; ii) drone mapping; iii) best practices on the design, implementation and maintenance of urban EbA; iv) enforcement of land use regulations and buffer zones around wetlands, rivers and streams; and v) submitting applications for the financing of urban EbA interventions, including to the Environmental Protection Fund (EPF). Lastly, the proposed project will arrange a knowledge-exchange trip for senior government representatives, technical experts and academics to a city with considerable experience with urban EbA for flood management<sup>30</sup> and that is geographically and culturally close to Laos, which will promote long-term knowledge exchange<sup>31</sup>. This city will be selected within the first year of the project by the Project Steering Committee (co-chaired by MONRE and UNEP) based on an analysis of options by the Project Management Unit. The experiences from this knowledge exchange trip in the second year of the project will equip the participants further to engage in the development of the Integrated Climate-resilient Flood Management Strategies (Activity 1.2.3) and the lessons learned from the partner city will also feed into recommendations for policy revisions in Laos (under Activities 1.2.1, 1.2.3 and 1.2.4).

*Activity 1.1.2 Establish a national knowledge hub that produces and disseminates information on urban EbA interventions locally, regionally and internationally.*

A national knowledge hub will be established to produce, collate, analyse and disseminate information on local, regional and international urban EbA interventions. This knowledge hub will be hosted by the National University of Laos (NUoL) in Vientiane. Since urban EbA incorporates different disciplines, the knowledge hub will be multi-disciplinary, covering the fields of civil engineering, urban planning, water resource management, economics, agriculture, ecology and governance. The knowledge hub will contribute to economic valuation of ecosystem services (Activity 1.2.1), hydrological modelling and wetland assessments (Activity 1.2.2), guidelines development (Activity 1.2.4) and other relevant activities. Funding will be made available to the NUoL and relevant institutions to conduct joint assessments and monitoring as well as increase knowledge of topics related to urban EbA. An MoU will be signed between the university and MONRE which will require the knowledge hub to deliver annual presentations and reports to the relevant line ministries and the research institutes affiliated with them and/or the Project Steering Committee. The knowledge hub will also create linkages between NUoL and international institutions specialising in urban EbA. The Knowledge Hub will support the hosting and attendance of conferences and regional forums<sup>32</sup> on EbA for relevant staff and students, as well as for knowledge exchange and joint research with other EbA initiatives in the region. By linking NUoL and international institutions, the national knowledge hub will ensure that international best practices are applied in Laos.

The knowledge hub will play an important role in providing technical support to government departments for the implementation of EbA interventions, as well as to the community management committees that will be established by the project under Component 2.

Urban EbA content will also be integrated into existing civil engineering curricula at the university. By expanding existing curricula to include modules on EbA, the project will ensure that the long-term capacity to design, implement and maintain urban EbA interventions in Laos remains after project completion. An international urban EbA expert will be contracted to assist with the integration of new content into the existing curricula.

*Activity 1.1.3 Conduct awareness-raising campaigns in each of the four target cities for communities and the private sector on urban EbA and flood management.*

The active support of various stakeholders is needed for urban EbA interventions to work well and for planning future urban EbA interventions. To achieve this the proposed project will raise awareness among the public about: i) the value of wetlands and urban streams; ii) the importance of proper solid waste disposal; iii) the need to protect natural streams and rivers; and v) regulations on waterway buffer zones; and v) household-level adaptation measures such as keeping

drainage lines on private property open. The awareness-raising campaign will not only communicate the impacts of climate-induced floods and the benefits of urban EbA, but also recommend household-level adaptation measures. These awareness raising campaigns will be conducted via community management committees, village governance structures, water-user associations, and the National Women's Union. Water-user associations and village-level groups consulted during the project preparation have nuanced understandings of flood-related issues in their communities and can be important channels for awareness campaigns and promoting behaviour change in resource use and maintenance of small-scale community infrastructure. Awareness-raising campaigns will be focused on, but not limited to, villages around the wetland and stream rehabilitation sites (see Component 2). This will include information on the appropriate management of these ecosystems and sustainable natural resource use. In Paksan, it will be linked to the sustainable management plan that will be developed under the project for the Nong Peung wetland (see Component 2).

In addition to interactions with communities, the project will also engage selected private sector stakeholders to identify how they can contribute to and benefit from project activities. This will include especially stakeholders that manage large areas of urban land and can therefore contribute to effective management of stormwater runoff, for example special economic zones and shopping malls such as the Savann-Itecc mall in Savannakhet.

Output 1.2 Integrated Climate-resilient Flood Management Strategies and urban EbA guidelines developed for Vientiane, Paksan, Savannakhet and Pakse, and effective Flood Risk Management Committees as coordination mechanisms

Responding adequately to increasing flood risk in Laotian cities because of climate change requires an integrated approach to flood management. Such an approach must include the use of ecosystems (green infrastructure) for flood reduction along with traditional grey infrastructure. To develop this approach in a given city demands cross-sectoral cooperation and comprehensive planning informed by hydrological assessments and understanding of the value of ecosystem services. The activities under this output will address these needs by determining the economic value of ecosystem services provided by urban wetlands and streams, conducting hydrological assessments and mainstreaming urban EbA into relevant policies and plans for each of the four target cities.

*Activity 1.2.1 Conduct economic valuation of urban ecosystem services.*

In order to prioritise urban EbA, decision-makers need to understand the value of the services, including flood reduction, provided by urban ecosystems. MPI, PWT and the National University of Laos and other key stakeholders will be engaged throughout the activity from inception, to refining methodologies, and presentation of results through meetings and workshops. Briefing notes will be developed and working sessions will be held with key decision makers (i.e. provincial governors, members of working committees for developing certain policies, investment committees under the MPI, staff of planning departments in key ministries) with the objective of communicating evidence of benefits of urban EbA, providing specific policy recommendations, and looking at opportunities for further engagement and investment. Under this activity the ecosystem services provided by the Nong Peung wetland in Paksan and urban streams in the four target cities will be measured and valued. Physical maps developed under Activity 1.2.2 will form the basis of a GIS analysis of the ecosystems. Subsequently, ecosystem services provided by the urban wetlands and streams under different climate change projections will be identified and valued, and a sensitivity analysis will be carried out. The valuation will be undertaken through a variety of market and non-market methods, such as direct damage assessment, spatial analyses of changes in the landscape and studies on people's willingness to accept compensation for losses. The valuation process will entail survey designs, training of enumerators, collection of socio-economic data, model calibration, and computation. Furthermore, based on the valuation, policy recommendations will be developed such as assessing how the valuation of climate change impacts on ecosystem services and EbA measures can contribute to natural capital accounting processes in the country<sup>33</sup>, incorporation of operations and maintenance costs of EbA in the government's asset management system, and assessment of options for payments for ecosystem services and water allocation schemes. The policy recommendations will be integrated into the adaptation assessments in Activity 1.2.4 to help mainstream EbA into the planning, policy and legal frameworks.

*Activity 1.2.2 Conduct hydrological assessments and climate risk assessments to inform climate change adaptation solutions for flood management in Vientiane, Paksan, Savannakhet and Pakse.*



Effective urban flood management strategies cannot be developed without detailed hydrological models at a city-scale. Presently, such models are either not available for Laotian cities, or if they do exist, they are at coarse spatial resolutions that do not assist with planning interventions. To address this gap, detailed spatial and hydrological assessments will be conducted for the four target cities. Data on elevation, land use and existing infrastructure will be collected for the assessments. Drone mapping will be used to obtain high-resolution spatial information.

Using these data, one hydrological model for each of the four cities will be developed to inform the integrated climate-resilient flood management strategies (ICFMS) that will be developed under Activity 1.2.4. The software that will be used to develop these hydrological models will be selected in consultation with local stakeholders to prevent vendor lock-in of costly and inappropriate software. There are also currently no demarcated floodplains<sup>34</sup> in Laotian cities. The hydrological models will be used to establish 20-, 50- and 100-year floodlines<sup>35</sup> in the four target cities, taking climate change scenarios into account. These floodlines will further inform the ICFMS and future development planning of the cities. To ensure sustainability and effective technology transfer, the modelling and mapping infrastructure and trained staff will be hosted within an appropriate institution to be selected at the start of the project<sup>36</sup>.

In Paksan, the hydrological assessment will specifically include the Nong Peung wetland. In addition, other aspects of the wetland will be assessed, including the different functional zones, water quality, biodiversity, invasive alien species and community use of the wetland. This general wetland assessment will inform the management plan for the wetland that will be developed under Activity 2.1.1.

*Activity 1.2.3 Develop the ICFMS and mainstream climate change and urban EbA into relevant policies, guidelines and plans.*

Without a shift in the way cities in Laos are planned and developed, future urban development is likely to further contribute to flooding – particularly as rainfall intensity and frequency increases. Existing spatial development plans in Laos do not take into account the interaction between increasing rainfall and increases in catchment imperviousness. Moreover, many of the existing drainage systems in the four cities have been not been adequately designed to effectively drain runoff from large rainfall events. These poorly performing drainage systems increase the frequency and severity of floods and result in more frequent on-site flooding. To address these challenges, this project activity will develop one ICFMS for each of the four target cities. The development of the ICFMS will take place through broad consultation with stakeholders and continual engagement with existing policy-making processes and planning processes, as well as by holding various workshops focused on the ICFMS. This development will be driven by a dedicated full-time ICFMS Officer that will be established in the provincial office of MPWT, in coordination with the city-level project focal point sitting in PONRE in each city. These strategies will draw on the findings of the assessments done under Activities 1.2.1 and 1.2.2, as well as on the knowledge exchange trip under Activity 1.1.1. and the ICFMS will be aligned with the national urban EbA guidelines developed under Activity 1.2.4. The cross-sectoral ICFMS will be owned by the Provincial Office of Public Works and Transport. A coordination mechanism for the ICFMS with representation from the relevant government departments will be set up, the Flood Risk Management Committee (FRMC), to ensure effective cross-sectoral collaboration. Adopting a cross-sectoral approach will ensure that flood management is considered in all sectoral planning processes. Stakeholder consultations with affected communities, the private sector and civil society will also be conducted during the ICFMS development and implementation. The ICFMS will contain proposed EbA interventions, management recommendations and enforcement arrangements appropriate to each city, as well as options for specific improvements to city regulations and provincial policies.

The ICFMS will be mainstreamed into existing flood master plans, provincial and district development plans, land use plans and guidelines, building codes, plans for Special Economic Zones, as well as provincial level policies and regulations. This will be achieved by proposing policy revisions and updates of the relevant plans, in close consultation with government decision-makers and technical staff. The process to achieve this mainstreaming will be driven in each target province by the above-mentioned ICFMS Officers established in each city in collaboration with the city-level project focal points and via the Flood Risk Management Committee coordination mechanism. This process will include various focused workshops, meetings with stakeholders and engagement with planners and policymakers. Outcomes of the ICFMS will also be linked with the national adaptation planning (NAP) process, for which a UNEP proposal to the GEF is currently under development. This linkage will include joint workshops with the NAP process.

Specific steps in the process include:

1. Sign MOU with PWT to carry out Activities 1.2.3 and 1.2.4 as an implementing partner and embed implementation within its urban planning unit, including looking at options for updating the ICFMS at regular intervals
2. Organise Flood Risk Management Committees at the city level, including representatives from MONRE, MPWT and MPI as well as representatives from relevant provincial departments, to be convened by the provincial governor<sup>37</sup>. The committee would agree on the terms of reference, as well as decide on indicators and targets for Activity 1.2.3.

The ICFMS includes:

- a. Based on hydrological assessments, develop flood risk maps including 50 and 100-year flood lines and how flood lines would shift under climate change scenarios
- b. Analysis of mix of investment options: infrastructure, urban EbA, early warning, land use and urban planning
- c. Priority urban EbA investments for each city
- d. Operationalization of priority investments
  - i. Identification of financing sources
  - ii. Scoping availability of potential service providers
  - iii. Assessment of technical and operational capacity to execute
  - iv. Operations and maintenance requirements
  - v. Assessment of risks and mitigation measures, including vector-borne disease risk
- e. Proposed zonation in the context of flood risk
- f. Institutional mapping and analysis of mandates on flood risk management
- g. Policy gap analysis and recommendations on urban planning, building codes, permitting processes, investment requirements for concessions including Special Economic Zones, environmental impact assessments, and other relevant areas
- h. Procedures for regular updating of ICFMS, including at project closure to incorporate the lessons learned during the implementation of various project activities.

Options for the mainstreaming work plan are:

- a. Linking ICFMS into district and provincial Socio-Economic Development Plan for the next 5-year cycle
  - b. Examine policies considered in the Provincial Assembly for points of entry
  - c. Link with existing processes for updating building codes and construction approval processes
  - d. Propose revisions to the EIA guidelines in MONRE as appropriate to account for stream and wetland buffers and consistency with developed management plans
  - e. Work with MPI in looking at investment requirements and any opportunities to promote permeable paving and sustainable urban drainage solutions
  - f. Work with partners on the ground at the city-level to link with urban planning, master planning and other projects as appropriate (ADB, JICA, etc.)
3. Along with the mainstreaming work in Activity 1.2.1, policy briefs on the ICFMS will be developed and working sessions will take place with key decision makers and stakeholders to bring forward specific policy recommendations and evidence to be considered in policy working groups.
  4. During project implementation, conduct an annual participatory review of the ICFMS developed, as well as the performance of stakeholders, against the indicators and targets agreed on in the first step.
  5. Incorporate lessons learned during project implementation into the ICFMS, including the findings from the monitoring of the project's physical interventions under Component 2, as well as relevant recommendations from the mid-term evaluation and terminal evaluation of the project.

*Activity 1.2.4 Develop national urban EbA guidelines for Laos and recommendations for policies on urban flood management.*

National EbA guidelines will be developed to assist the achievement of ICFMS-set flood reduction targets and to promote the uptake of such approaches in other cities not targeted by the project. These guidelines will be designed to inform decision-makers, planners and contractors on how to plan, design, implement and maintain EbA investments.

International civil engineering experts with urban EbA expertise will be contracted to assist in the development of the guidelines. These experts will have in-depth experience in developing urban EbA guidelines in a flood management context to ensure that international best practices are transferred to Laos. The national urban EbA guidelines will include: i) options for urban EbA and Sustainable Urban Drainage Systems in different contexts; ii) institutional responsibilities for enforcement, monitoring and implementation; iii) options for incentives and instruments to promote EbA in the private sector; and iv) options for regulatory reforms. In addition, the guidelines will offer detailed guidance on the processes of:

1. defining the flooding problem, including impacts on women, men and vulnerable social groups;
2. selecting EbA intervention sites;
3. assessing flooding scenarios without EbA interventions;
4. identifying how the flood reduction target can be met using EbA interventions;
5. assessing flooding scenarios with EbA interventions;
6. estimating costs and benefits of EbA interventions;
7. identifying and communicating the desired EbA interventions;
8. following due diligence procedures for procurement, environmental and social safeguards and risk assessment, including for assessment and mitigation of vector-borne disease risk;
9. implementing and maintaining the desired EbA interventions;
10. monitoring and evaluating the EbA interventions; and
11. identifying appropriate sustainable financing strategies to fund the implementation and maintenance of EbA.

In addition to the national urban EbA guidelines, national and provincial policies on flood management and urban planning will be reviewed and recommendations for appropriate policy reforms will be developed<sup>38</sup>. These will include incorporating climate change, integrated flood management and urban EbA into policies. This review will be conducted by an international expert working with a national policy expert embedded in the MPWT Department of Urban Planning. Similar to Activities 1.2.1 and 1.2.3, policy briefs will be developed and working sessions with key decision makers will be organized to highlight benefits of integrated flood management and urban EbA into various policies. A national workshop will also be organized. The national urban EbA guidelines will be developed by the second year of the project, used during the latter half of the project in the four cities, and it will finally be updated in the final year of the project to incorporate all the lessons learned during project implementation.

## **Component 2. Rehabilitation and protection of ecosystem in response to climate variability and change**

Wetlands and natural streams in Laotian cities play a vital role in flood reduction and provide various other ecosystem services. However, these ecosystems are frequently lost to urban development or degraded. The project interventions under this component will therefore rehabilitate an important urban wetland and urban streams in the target cities. The specific wetland and urban streams were chosen based on their importance to local communities and their role in flood management<sup>39</sup>. The areas to be rehabilitated are: i) the Nong Peung Wetland in Paksan; ii) the Houay Khi La Meng stream in Savannakhet; and iii) the Houay Nhang stream in Pakse<sup>40</sup>. At the same time, frameworks for the sustainable management of these urban ecosystems will be established. The restoration and establishment of management frameworks for these sites will comprise the first and second outputs under this component. The third output will focus on the problem of the increasing impervious surface area in the built-up parts of cities which contributes to stormwater flooding during extreme rainfall events. To address this problem, the project will introduce and demonstrate the technology of permeable paving in each of the four target cities. The total investment for Component 2 is US\$4,434,113, of which US\$497,173 will be provided as co-financing for staff time, workshops and office space to support the project activities.

### Output 2.1 Area of wetland restored contributing to flood reduction and sustainable management of the Nong Peung wetland in Paksan

The Nong Peung Wetland in Paksan plays an important role in reducing flood impacts in the city by absorbing stormwater from intense rainfall events and by buffering river flooding from the Nam San River. This wetland provides a range of ecosystem services to the city and the surrounding farming communities as well as being an important habitat for many fish and bird species. Despite its importance, there is currently no management plan for the wetland and it has been negatively impacted by human activities. The activities under this output will therefore develop a full

management plan for the wetland to ensure that it provides climate change adaptation benefits to the citizens of Paksan, as well as rehabilitating 800 ha of the wetland area to enhance its functioning.

*Activity 2.1.1 Develop a wetland management plan for Nong Peung Wetland in Paksan.*

The Nong Peung Wetland provides many ecosystem goods and services to the surrounding communities including fishing, irrigation water and flood reduction. However, the wetland is threatened by *inter alia*: i) encroaching rice farming; ii) excessive withdrawal of water to irrigate rice; and iii) invasive alien species. In addition, the wetland has no legal protection and lacks a management plan. To address these threats and gaps, a comprehensive, sustainable management plan for the wetland will be developed under this activity. This will be done through participatory land-use planning with local communities and other stakeholders. The management plan will also be informed by the findings of the wetland assessment that will be conducted under Activity 1.2.2. Community involvement in the management of the wetland will be facilitated by establishing a Community Wetland Management Committee, drawing on representatives from the Pak Peung water user association, local fishing organization, village-level National Women's Union, and other groups in the surrounding villages. A local government representative should be part of each committee and a representative from PONRE and the city-level project coordinator will be *ex-officio* members<sup>41</sup>. The committee will work closely with the CPSC and city-level focal points in the ICFMS process, in developing the management plan and monitoring its implementation. This committee, consistent with citizen science approaches, will assist the government with water quality monitoring, fishery management and the monitoring and management of invasive species. The government and the Community Wetland Management Committee will receive technical support from experts from the knowledge hub established under Activity 1.1.2.

*Activity 2.1.2 Rehabilitate the Nong Peung Wetland.*

Since the Nong Peung Wetland is used extensively by the surrounding communities and people from further afield it has been degraded in certain respects. Specifically, natural vegetation has been lost in parts of the wetland, invasive alien plants are encroaching, and the natural water flow has been disrupted in places. This activity will improve the ecological functioning of the wetland by: i) removing invasive alien plants, especially *Mimosa pigra* and *Eichhornia crassipes* (water hyacinth); ii) removing small human-made barriers that impede natural flow and wetland functioning; and iii) restoring natural vegetation by planting appropriate indigenous plant species including terrestrial and aquatic plants across 800 ha. While the overall target area of the wetland has been identified (see Figure 10.2 in Section 10.2 of Annex 2: Feasibility Study), fine-scale selection of restoration sites will be done in the second year of the project, based on the wetland assessment and wetland management plan. The project will train and employ community members to do the restoration work under the technical supervision of the recruited firm and the CTA and following restoration protocols developed in the project. PONRE staff will be engaged in the execution of restoration work in a "learning by doing" approach to build capacity. Subsequent restoration work can be financed through local government, EPF, and other sources.

Output 2.2 Area of urban streams restored contributing to flood reduction and sustainable management of urban streams in Savannakhet and Pakse

Natural urban streams provide ecosystem goods and services in otherwise built-up areas, including helping to reduce flooding. Intact natural vegetation reduces the velocity of flash floods, protects riverbanks from erosion and reduces sedimentation. Urban development frequently leads to streams being degraded, through loss of vegetation, building within stream buffer zones and deposition of solid waste in streams. The activities under this output will rehabilitate 700 ha along two important urban streams in the cities of Savannakhet and Pakse which provide the above-mentioned services but are subject to degradation.

*Activity 2.2.1 Restore natural urban streams in Savannakhet and Pakse.*

Under this activity, the Houay Khi La Meng stream in Savannakhet and the Houay Nhang stream in Pakse will be rehabilitated. Firstly, social and environmental surveys of the streams will be undertaken to: i) gain a detailed understanding of how communities use the streams; ii) prioritise specific areas for rehabilitation; and iii) select appropriate indigenous plant species<sup>42</sup> to be used for restoration. Secondly, solid waste in and around the streams will be removed to increase the drainage capacity of the stream channels, in collaboration with UDAA through Activity 2.2.2. and combined with enhanced community awareness of good solid waste management practices through Activity 1.1.3. Thirdly, invasive alien plants such as *Mimosa pigra* that impede stream flow will be removed. Fourthly, locally

indigenous, climate-resilient plant species will be planted along degraded stream banks to stabilise the banks and improve water quality. Where necessary, plantings will be combined with small-scale installation of geotextile sandbags to combat erosion. Lastly, the legislated buffer zones along the streams will be delineated, with signage installed to indicate the extent of the buffer zones and provide information about the need to protect the streams. These rehabilitation interventions will be implemented across 700 hectares along the two target streams. While the overall target sections of the streams have been identified (see Figures 10.3 and 10.4 in Section 10.2 of Annex 2: Feasibility Study) fine-scale selection of restoration sites along the streams will be done in the project's second year, based on further assessments and stakeholder consultations. The project will train and employ community members to do the restoration work under the technical supervision of the recruited firm and the CTA and following restoration protocols developed in the project. PONRE staff will be engaged in the execution of restoration work in a "learning by doing" approach to build capacity. Subsequent restoration work can be financed through local government, EPF, and other sources.

*Activity 2.2.2 Develop management plans for restored urban streams in Savannakhet and Pakse.*

To ensure that the streams restored under Activity 2.2.1 are maintained and used sustainably, management plans will be developed in collaboration with communities along the streams. These management plans will include engagement with the Urban Development Administration Authorities (UDAA) on improving the effectiveness of existing regular solid waste collection and drainage maintenance regulations and operations. This engagement will include workshops with UDAA to co-develop the urban stream management plans, which will form part of the ICFMS process. Overall comprehensively addressing solid waste management challenges is beyond the scope of this project and is dealt with by other ongoing projects focused on improving solid waste management<sup>43</sup>. To assist with the implementation of the stream management plans, Community Stream and Drainage Management Committees will be established within the existing village governance structures. One such committee will be established in Savannakhet and one in Pakse. A local government representative should be part of each committee and a representative from PONRE and the city-level project coordinator will be *ex-officio* members. These committees will work with the relevant government authorities (PONRE and UDAA) to monitor and maintain the rehabilitated streams, with technical support provided by experts from the knowledge hub established under Activity 1.1.2, and in coordination with the city-level project steering committees (CPSCs). The stream management plans will include measures to: i) curb the introduction and spread of invasive plants; ii) raise awareness among streamside communities about improving household-level solid waste management and maintaining small drainage lines; and iii) promote the sustainable use of natural resources such as fish and wood from streambank ecosystems.

Output 2.3 Area of permeable paving solutions installed in public areas contributing to flood reduction in Vientiane, Paksan, Savannakhet and Pakse

As cities in Laos are expanding and densifying, the total impervious surface area in urban catchments is expanding. Green areas that are vital for rainwater infiltration are being converted into hard surfaces. For example, as new buildings are constructed impervious paving is installed around existing buildings and the remaining dirt streets are converted to asphalt roads. This exacerbates flooding caused by stormwater, especially following extreme rainfall events. To address this problem, the activities under this component will introduce permeable paving technology at demonstration sites at public institutions in the target cities. The design, implementation and monitoring of the permeable paving will be conducted in collaboration with the knowledge hub to ensure effective technology transfer.

*Activity 2.3.1 Design permeable paving solutions for public areas in Vientiane, Paksan, Savannakhet and Pakse.*

Permeable paving technology is not well known in Laos. Public institutions such as hospitals, educational institutions and government offices will therefore be used to demonstrate the benefits of permeable paving. The specific sites in each target city where permeable paving will be installed will be selected at the project outset in consultation with local government and the host institutions (for selection criteria see Annex 2: Feasibility Study: Section 12.1). Thereafter, specific permeable paving solutions will be designed for each site, considering *inter alia*: i) pedestrian and vehicle traffic volumes; ii) groundwater level; iii) potential surface pollutants; and iv) the risk of permeable paving pores becoming clogged by sediment deposition. The selection of specific permeable paving options and the design of the paving that will be installed will be based on international best practice. The design process will include consultation with staff at the knowledge hub to facilitate the transfer of knowledge about permeable paving from the knowledge hub to NUoL, civil engineering firms and the relevant government departments such as MPWT.



*Activity 2.3.2 Install permeable paving in public areas in Vientiane, Paksan, Savannakhet and Pakse.*

Based on the site assessments and paving designs completed under Activity 2.3.1, permeable paving will be installed at the selected public institutions such as hospitals, educational institutions and government offices. Signs will be installed at the sites to provide information about the advantages of permeable paving to the public. The permeable paving demonstration sites will be monitored by the knowledge hub and government staff to build the local evidence base for this technology. In addition, operations and maintenance arrangements will be set up with the host institutions. The knowledge hub will assess the reduction in stormwater run-off achieved through the permeable paving. The findings of this assessment and general lessons learned from these permeable paving activities will be incorporated into the national urban EbA guidelines and the ICFMS when they are updated in the final year of the project.

**B.3. Implementation / institutional arrangements (max. 750 words)**

UNEP will be the Accredited Entity (AE) for this project, as designated by Lao PDR. The AE will be responsible for overseeing the implementation, financial management, evaluation, reporting and closure of the project.

The lead Executing Entity (Lead EE), will be the State of Lao PDR, acting through its MONRE. The national-level execution will be undertaken by MONRE, which will coordinate the execution of the project through the Department of Climate Change (DCC) and will be accountable to the AE — for project execution and the effective and efficient use of resources. MONRE will execute all the project activities except for Activity 1.2.1. All operating policies and procedures will follow the UNEP Programme Manual, which includes provisions for financial management and procurement<sup>44</sup>. Project funds will pass through the Ministry of Finance (MOF), which will be the “Recipient Entity” (RE) (in UNEP terminology). MOF will not have a role in the execution of activities apart from disbursement to MONRE, which will be the lead Executing Entity.

The Ecosystems Services Economics Unit in the Biodiversity and Ecosystems Branch of UNEP will be responsible for execution of Activity 1.2.1. (EE role).

*Accredited Entity*

UNEP through its Climate Change Adaptation Unit in the Freshwater, Land, and Climate Branch in the Ecosystem Division will be responsible for overseeing the implementation of the proposed project in coordination with the national-level Project Steering Committee (NPSC) and a national-level Project Management Unit (PMU). In addition, as the AE, UNEP will: i) sign a Project Cooperation Agreement (PCA) with Lao PDR to establish clear roles and responsibilities for the execution of project activities<sup>45</sup>; ii) ensure that the project is executed in line with GCF and UNEP rules, policies and requirements; iii) supervise, oversee and manage project implementation, as well as report on project progress; iv) participate in the NPSC; and v) ensure that project activities are well coordinated and aligned with national priorities. A Task Manager (TM) will be responsible for project supervision to ensure consistency with GCF and UNEP policies and procedures, and participate in: i) biannual NPSC meetings; ii) the facilitation of the Mid-Term and Final Evaluations; iii) the preparation of Annual Performance Reports and relevant documentation; and iv) technical reviews of project outputs.

*National Project Steering Committee*

The NPSC will comprise representatives of UNEP and MONRE, as well as potentially representatives of *inter alia* the: i) Ministry of Agriculture and Forestry (MAF); ii) Ministry of Planning and Investment (MPI); iii) Ministry of Public Works and Transport (MPWT); iv) National Women’s Union; and v) National Front<sup>46</sup>. This will include representation from all the relevant ministries and departments overseeing urban land, specifically land classification, management of SEZ land and spatial planning in cities, namely the Department of Land Administration within MONRE, Special Economic Zone Promotion and Management Office in MPI and Department of Housing and Urban Planning in MPWT, respectively. The co-chairs of the PSC will be MONRE and UNEP. Primarily, the NPSC will provide project oversight and advisory support such as: i) overseeing project implementation; ii) reviewing annual workplans and project reports; and iii) approving any changes to the project’s targets, activities or timelines. Biannual NPSC meetings will be held<sup>47</sup> to take management-related and technical decisions, discuss the project’s main performance indicators and provide strategic guidance. Any changes made by the NPSC to the project’s Results Framework or timeline will be communicated to the PMU by the Project Director (PD). A high-level official from MONRE will fulfil this role of PD<sup>48</sup> and be responsible for: i) leading and directing the PMU; ii) overseeing the daily responsibilities of the PM; iii) providing administrative and technical expertise; and iv) serving as the focal point for interactions between project stakeholders and partner organisations<sup>49</sup>.

*National Project Management Unit*

The PMU will consist of: a national Project Director (PD); international Chief Technical Advisor (CTA); a national Project Manager (PM); a Financial and Procurement Officer (FPO); Environmental and Social Safeguards Officer (ESO); Communications Officer (CO); Monitoring and Gender Officer (MGO) and an Administrative Officer (AO).<sup>50</sup> Both the FPO and AO will report directly to the PM. Their responsibilities will include: i) providing administrative, logistical and financial support and expertise to the PMU; ii) providing reports to summarise the disbursement and projected demands for project funding; and iii) ensuring that all tasks are carried out according to UNEP policies and best practices. In particular, the FPO will manage the financial transactions for the project outputs and activities, which will be implemented in line with the established workplan and national priorities. Project activities will be coordinated by the PMU between the project's AE, EE and various stakeholders. UNEP's Biodiversity Unit will report to the PMU and TM on the progress of Activity 1.2.1.

The PM will be a full-time project staff member, recruited competitively and responsible for the day-to-day implementation and management of the project. This role will include: i) reporting to the PD; ii) managing the project in line with the budget and workplans, and in accordance with GCF and UNEP guidelines; iii) being responsible for in-country financial management and disbursements<sup>51</sup>; iv) working closely with national and local authorities, as well as NGOs, to manage the project effectively at a local level; and v) ensuring exchange of information and knowledge across the target cities, including managing communications across city-level Project Steering Committees. To achieve the targets of the proposed project, the PM will *inter alia*: i) acquire on-the-ground information to inform UNEP progress reports; ii) engage with project stakeholders; iii) arrange NPSC, PMU and other meetings; iv) provide technical support, including measures to address challenges to project implementation; v) participate in training activities; vi) write technical reports; and vii) facilitate relevant expert activities. Additionally, the PM will liaise with members of the NPSC and PMU, technical experts, government staff and stakeholders involved to coordinate the implementation of the proposed project's activities.

At the request of the GoL, an International Chief Technical Advisor (CTA) will be employed on a full-time basis to provide technical guidance on urban EbA and ensure that project activities result in building the climate-resilience of Laotian communities from national through to city level. Additionally, the CTA will be responsible for providing technical support to the PMU in each city that will participate in the development of urban EbA guidelines. The responsibilities of the CTA include: i) providing overall technical support for the project; ii) supporting the annual planning process and budgets; iii) providing monitoring and operational support to the project; iv) coordinating and supervising the work of specialist technical consultants who will contribute to specific deliverables within each component; and v) providing biannual reports to the PD and NPSC on project progress, performance towards objectives and recommendations. The CTA position will, if feasible, be based in the PMU in Vientiane.

#### *City-level Project Steering Committees*

At a provincial and city level, the proposed project will be represented in Vientiane, Paksan, Savannakhet and Pakse by four city-level Project Steering Committees (CPSCs). The responsibilities of the CPSCs include: i) acting as focal points to facilitate interactions between the NPSC, PMU and stakeholders at local level; and ii) coordinating the implementation of the proposed project's EbA interventions in each of the four target cities. Similar to the NPSC, CPSCs will have a target of 30 percent female representation. The Lao National Women's Union representatives at the provincial level will be included in all four CPSCs. City-level structures are important to build capacity and structures in support of EbA for urban adaptation, and also to directly manage the city-level interventions in the project. Representatives of the CPSCs include relevant agencies that influence policy and execute land use, urban planning, investment planning, and other functions related to integrated flood risk management. They serve as important cross-sectoral coordination bodies at the city-level, which currently do not exist.

The following diagrams summarise the organisational structure of the project (Figure 1) as well as the flow of funds for project implementation (Figure 2).

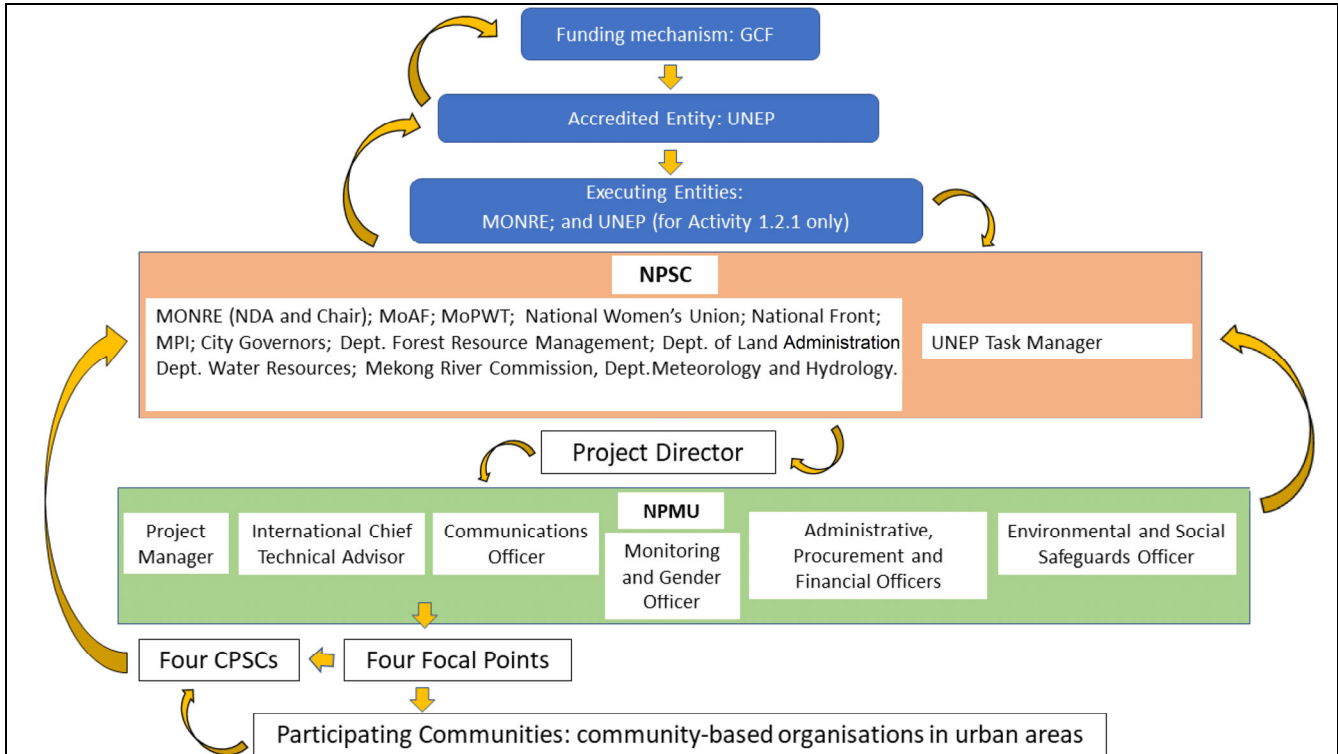


Figure 1. Project management structure.

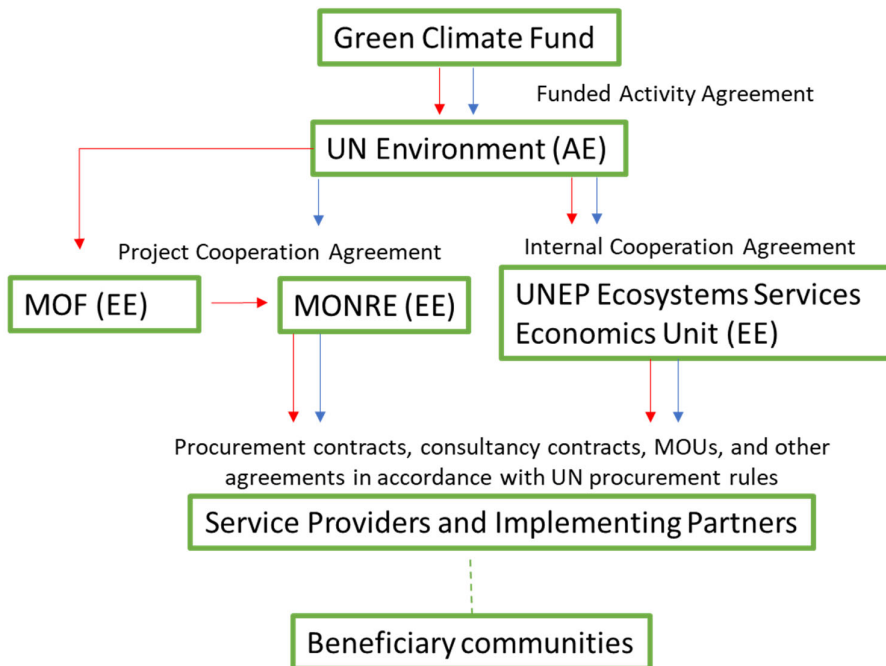


Figure 2. Flow of funds and contractual arrangements for project implementation. The red arrows indicate the flow of funds while the blue lines show the contractual arrangements, including the types of contracts, between the relevant parties.

## C. FINANCING INFORMATION

### C.1. Total financing



<b>(a) Requested GCF funding (i + ii + iii + iv + v + vi)</b>		10		million USD (\$)		
<b>GCF Financial Instrument</b>		<b>Amount</b>	<b>Currency</b>	<b>Tenor</b>	<b>Pricing</b>	
(i)	Senior loans	Enter amount	Options	Enter years	Enter %	
(ii)	Subordinated loans	Enter amount	Options	Enter years	Enter %	
(iii)	Equity	Enter amount	Options		Enter % equity return	
(iv)	Guarantees	Enter amount	Options	Enter years	Enter %	
(v)	Reimbursable grants	Enter amount	Options			
(vi)	Grants	10	million USD (\$)			
<b>(b) Co-financing information</b>		<b>Total amount</b>		<b>Currency</b>		
		1.5		million USD (\$)		
<b>Name of institution</b>		<b>Financial instrument</b>	<b>Amount</b>	<b>Currency</b>	<b>Tenor</b>	<b>Pricing</b>
MONRE		In kind	1.5	million USD (\$)	Enter years	Enter% Options
Click here to enter text.		Options	Enter amount	Options	Enter years	Enter% Options
Click here to enter text.		Options	Enter amount	Options	Enter years	Enter% Options
Click here to enter text.		Options	Enter amount	Options	Enter years	Enter% Options
<b>(c) Total investment (c) = (a)+(b)</b>		<b>Amount</b>		<b>Currency</b>		
		11.5		million USD (\$)		
<b>(d) Co-financing ratio (d) = (b)/(a)</b>		0.15				
<b>(e) Other financing arrangements for the project/programme (max ½ page)</b>		NA				

### C.2. Financing by component

An indicative cost breakdown for the proposed project interventions is presented in the table below. The detailed budget is presented in Annex 3.

Component	Output	Indicative cost (USD)	GCF financing		Co-financing			
			Amount (USD)	Financial Instrument	Type	Amount (USD)	Financial Instrument	Name of Institutions
Component 1. Technical and institutional capacity building to plan, design, implement and maintain integrated urban Ecosystems-based Adaptation (EbA) interventions	Output 1.1 Strengthening of institutional capacity for integrated flood risk management and implementation of urban ecosystems-based adaptation and males and females with increased awareness of climate threats	2,260,025	1,830,100	Grants	Public Source	429,925	Grants	MoNRE

for the reduction of climate change-induced flooding	Output 1.2 Integrated Climate-resilient Flood Management Strategies and urban EbA guidelines developed for Vientiane, Paksan, Savannakhet and Pakse, and effective Flood Risk Management Committees as coordination mechanisms	4,305,862	3,807,960	Grants	Public Source	497,902	Grants	MoNRE
Component 2. Rehabilitation and protection of ecosystems in response to climate variability and change  Click here to enter text.	Output 2.1 Area of wetland restored contributing to flood reduction and sustainable management of the Nong Peung wetland in Paksan.	1,631,128	1,419,140	Grants	Public Source	211,988	Grants	MoNRE
	Output 2.2 Area of urban streams restored contributing to flood reduction and sustainable management of urban streams in Savannakhet and Pakse	1,579,901	1,425,240	Grants	Public Source	154,661	Grants	MoNRE
	Output 2.3 Area of permeable paving solutions installed in public areas contributing to flood reduction in Vientiane, Paksan, Savannakhet and Pakse	1,223,084	1,092,560	Grants	Public Source	130,524	Grants	MoNRE
PMC		500,000	425,000	Grants	Public Source	75,000	Grants	MoNRE
<b>Indicative total cost (USD)</b>		11,500,000	10,000,000			1,500,000		

**C.2.1 Financing structure (if applicable, mandatory for private sector proposal (max.300 words))**

NA

### C.3 Capacity Building and Technology development/transfer

If the project/programme is envisaged to support capacity building and technology development/transfer, please specify the total requested GCF amount for these activities respectively in this section.

C.3.1 Capacity building	Amount: 1,830,100 USD
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C.3.2. Technology development	Amount: 1,092,560 USD
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### C.4. Justification for GCF funding request (max. 500 words)

The Government of Laos (GoL) is seeking a GCF grant of US\$10 million to address the climate-induced flooding that affects vulnerable people in Laotian urban areas. As a Least Developed Country, Laos has limited scope to invest in climate change adaptation through domestic financing. Laos also has substantial external debt — which has increased considerably in recent years — reaching 54% of the country's Gross Domestic Product (GDP) in 2018.<sup>52</sup>

In Laos, domestic budget reallocation by line agencies and donor assistance are only able to partially cover reconstruction and recovery costs after extreme climatic events such as floods. Outstanding costs are left to be absorbed by vulnerable communities in Laos, whose financial insecurity is exacerbated by these events<sup>53</sup>. Consequently, funds are not available within the government to take measures to improve flood management and reduce flood impacts, nor within communities to undertake adaptation actions.

Several alternative financing options, such as government funding and loans, have been considered during the development of the proposed project. However, these options are not feasible because: firstly, the GoL has already extended its contribution of 15% of the total project cost in the form of co-financing<sup>54</sup>; secondly, the country's debt burden limits its access to loans from international and regional development banks; and thirdly, the project outputs will be largely public goods and will thus not generate a financial return on investment that can be used to repay a loan.

At present, development financing for flood management in Laos focuses on hard infrastructure (e.g. hard riverbank protection, floodgates, weirs, spillways and concrete canals). Although financiers recognise the importance of ecological functions in flood abatement<sup>55,56,57</sup>, almost no investments in urban EbA for flood reduction have been made. At best, green infrastructure is combined with hard infrastructure, such as using plants to stabilise dyke slopes or for watershed rehabilitation. Although such interventions have been planned, they have not been implemented to date<sup>58,59</sup>, partly owing to a lack of awareness and knowhow on EbA, including the valuation of ecosystem services, and political economy drivers that keep investments tied to grey infrastructure. There is thus a gap in financing for urban EbA at scale in Laos as the discourse on urban flood management among decision-makers and practitioners is still largely focused on hard infrastructure and non-integrated approaches. As climate change is likely to result in more frequent and severe flooding, different options for flood management need to be investigated, tested and financed. While initiatives such as *Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region*, financed by GEF and implemented by UNEP, aim to address funding gaps<sup>60</sup>, greater financial resources are required to initiate the shift towards an integrated flood management approach in Laos.

The support of GCF funds is consequently required to overcome the financial, technical and institutional barriers<sup>61</sup> that currently hinder the adoption of an integrated approach to flood management in Laos. With the support of these funds, the project interventions will deliver several benefits and contribute to the achievement of the GCF's gender, environmental and social policies. Firstly, decision-makers in Laos will be supported to become champions of an integrated approach to flood management that includes EbA. The adoption of such an approach will increase the adaptive capacity of 74,600 people in the four target cities. Secondly, 1,500 ha of important urban wetland and streams will be restored under the project, which will lead to the improved provision of ecosystem goods and services under future climate change conditions. Thirdly, permeable paving solutions will be designed and implemented in public areas<sup>62</sup> in Vientiane, Paksan, Savannakhet and Pakse to improve the drainage of these areas. Lastly, all project interventions have been designed to deliver a wide variety of economic, social and environmental co-benefits to beneficiaries<sup>63</sup>. Without GCF involvement, Laotian cities will become increasingly exposed to threats from climate change-induced flooding and continue to operate under an existing paradigm of only using hard infrastructure for flood control that is increasingly limited, unfit for purpose and not easily maintained.

### C.5. Exit strategy and sustainability (max. 300 words)

The exit strategy for the proposed project requires that after project completion: i) the understanding and uptake of urban EbA continues to be advanced by the knowledge hub; ii) the coordination mechanisms strengthened, strategies and plans developed, information and knowledge base built, and enhanced capacity continue to support urban EbA

interventions; and iii) EbA interventions — i.e. the restored wetland and streams — and permeable paving implemented under Component 2 are regularly monitored and maintained.

#### **Sustainability of the knowledge hub**

The knowledge hub will build long-term technical capacity for implementing and maintaining urban EbA interventions by providing the linkages with government research institutions, promoting cross-disciplinary thinking, and through establishing potential linkages with international research groups. Accordingly, the knowledge hub will collate the lessons learned from the project and best-practice examples that can be upscaled and applied in similar Laotian urban contexts. This will link with the demand for such information driven through the NAP process and associated processes such as establishment of national adaptation targets<sup>64</sup>. The host university and its ministry counterparts will sign MoUs (Activity 1.1.2) to ensure long-term knowledge management and sharing, as well as the continued financing of the hub. The expertise on EbA gained by lecturers and researchers during the project, as well as the incorporation of urban EbA into relevant curricula will also ensure that knowledge of urban EbA continues to be available beyond the project period.

#### **Sustainability of physical project interventions**

The ecosystems rehabilitated by the project will be maintained through arrangements and practices established in the management plans and ICFMS<sup>65</sup>. This work will be led by MONRE after the project ends, in close collaboration with communities and management committees, drawing on expertise from the knowledge hub. The sustainability of the restored wetland will be ensured through the long-term wetland management plan with the support of the Community Wetland Management Committee (Activity 2.1.1). Similarly, the rehabilitated streams will be maintained by MONRE working together with UDAA and the Community Stream and Drainage Management Committees established by the project (Activity 2.2.2). The permeable pavement demonstration areas will be maintained beyond the project period by the Ministry of Public Works and Transportation along with the institutions providing the demonstration sites. Overall, the mainstreaming of the ICFMS into existing policies, planning and accountability structures during the project (Activity 1.2.3) will create the necessary framework for continued maintenance of the project's urban EbA interventions. During the project preparation, it was found that villages are organised and committed to resolving flood problems in their localities. The stakeholder engagement process throughout the project life cycle will build on this through the management committees.

#### **Financial sustainability**

As part of the capacity-building interventions, the project will provide training to city authorities and community organisations on identification of potential integrated flood management interventions and submitting applications for financing to the Environmental Protection Fund<sup>66,67</sup>. In addition, the valuation of the benefits provided by urban ecosystems (Activity 1.2.1) will encourage decision-makers to continue maintaining the ecosystems restored under the project and to invest further in such adaptation interventions. Options for sustainable financial mechanisms will be proposed. These could include: i) establishing dedicated, ring-fenced funds for ICFM for each of the target cities; ii) assessing the feasibility of increased and more strongly enforced fines for encroachment into stream and wetland buffer zones to help fund ICFM; iii) preparing loan financing applications for the Environment Protection Fund for installing urban EbA interventions; and iv) leveraging regular domestic spending by integrating ICFM provisions through guidelines, planning frameworks, and performance frameworks of key institutions.

In summary, the project benefits will be maintained after implementation because of the: i) visible benefits of EbA interventions and permeable paving; ii) increased technical capacity of national and local government; iii) built-in monitoring and evaluation of project interventions; iv) presence of a sustainable knowledge management system; and v) potential availability of national sources of financing for maintaining or scaling up of initiatives. In addition, project outcomes have been designed to be scalable and replicable at national and local level.

### **C.6. Financial management/procurement (max. 300 words)**

The financial management and procurement within the project will be guided by UN financial regulations, rules and practices, as well as UNEP's programme manual. The financial rules of UNEP, which follow International Public Sector Accounting Standards (IPSAS), are promulgated pursuant to the Financial Regulations and Rules of the UN. Within this context, funding allocation mechanisms are managed as per UN rules and procedures, including eligibility criteria, proposal evaluation processes, quality assurance and control, project monitoring and supervision. UNEP is audited annually by the UN Board of Auditors and has established dedicated trust funds for Green Climate Fund (GCF) resources.

The funding of a project will be established through a distinct grant within the Trust Fund, with the project itself being set up in the UNEP Enterprise Resource Planning (ERP) as a "Work Breakdown Structure" (WBS), which is itself further broken down into "Work Breakdown Structure Elements" (WBSEs), organised by output and outcome. The grant of the

project will be linked to the WBSEs to fund the activities contributing to the delivery of specific outputs (as per the disbursement plan detailed in the term sheet). The Accredited Entity fee will be managed through a dedicated grant independently and separately of the GCF project grant funds. In line with UNEP procedures, the project will appoint a Financial Officer within the PMU who will be responsible for monitoring, reporting on and approving requests for funds on a quarterly basis for the activities executed by MONRE. A Fund Management Officer in the Ecosystems Services Economics Unit will perform the same functions for the activity executed by UNEP. Reports to summarise the disbursement and projected demands for project funding will be prepared and submitted to a UNEP Task Manager who will conduct project supervision, in line with reporting standards and methodologies applied in past projects, such as those implemented using GEF modalities. The UN financial regulations and rules require the segregation of duties, and safeguards to ensure compliance with UN financial rules and regulations. In addition, a Fund Management Officer will be appointed to assist UNEP's Task Manager with all financial monitoring and supervision functions. All procurement will be undertaken in line with UN procurement regulations, rules and policies. UNEP's modalities for project implementation, results in funds being transferred in tranches to the Executing Entity (EE) once the EE has satisfied the conditions that are defined under the legal/cooperation instrument (Project Cooperation Agreement; PCA and Internal Cooperation Agreement; ICA) to be signed between UNEP Climate Change Adaptation Unit, Ecosystems Division and the MONRE and UNEP Biodiversity Unit, Ecosystems Division. The PCA will include specific obligations for MONRE on financial management and reporting and will require periodic reporting from MONRE to follow international financial and auditing standards. The PCA specifically requires the audit be undertaken by a recognised firm of certified public accountants or, for governments, by a government auditor. This auditor should state whether the GCF proceeds were covered by the scope of the audit.

As a GoL authority, MONRE follows the government's financial and procurement rules and standards. During the proposed project's inception phase, UNEP will conduct a thorough assessment of MONRE's capacity to undertake procurement in line with UN regulations, rules and processes. This assessment will guide the procurement monitoring plan which will be agreed upon between UNEP and MONRE. The assessment will be conducted following project approval but prior to project implementation. It will include assessments of elements of governance and public accountability such as, *inter alia*, review of the existence and quality of policies, legal and institutional framework, and systems supporting transparency, accountability and controls, especially in the use of donor funds. The outcome of the assessment will determine the threshold for procurement that can be undertaken by MONRE, which will be reflected in the procurement monitoring plan. The procurement monitoring plan is an annex to the PCA and will be shared with GCF upon signature, as required by the FAA. The procurement monitoring plan will also be reviewed periodically. The project's investments in equipment will be undertaken in accordance with UN procurement procedures. Finally, in line with the UNEP Programme Manual, MONRE will be requested to provide an annual compliance audit covering all aspects of the project execution including review of all expenditures incurred during the financial year.

## D. LOGIC FRAMEWORK AND MONITORING, REPORTING AND EVALUATION

*This section refers to the project/programme's logic framework in accordance with the GCF's [Performance Measurement Framework](#) under the [Results Management Framework](#) to which the project/programme contributes as a whole, including in respect of any co-financing. This is different from the project/programme-level log frame (as there may be other impact measures for example that go beyond those defined by the GCF).*

*A project-level logical framework, with specific indicators, baselines and targets, means of verification and assumptions should be provided as part of Annex 2.*

### D.1. Paradigm shift objectives (max.200 words)

*Increased climate-resilient sustainable development*

The project will increase climate-resilient sustainable development in Laos by reducing the impacts of climate-induced flooding in urban areas. This project will demonstrate EbA for avoided flood losses in four cities that will effect a paradigm shift in urban flood management. The project will effect this paradigm shift by: i) strengthening technical capacity of government for flood-resilient development, the use of urban EbA and embedding ICFMS in existing planning and frameworks; ii) demonstrating the multiple benefits of integrated flood management and urban EbA interventions for flood management; iii) establishing knowledge management practices and strengthening coordination mechanisms to enable the future adaptive management of urban areas to reduce flood impacts under climate change conditions; and iv) identifying sustainable

financing options for integrated flood management. The project will also improve the understanding of Laotian decision-makers on valuing ecosystem services and implementing cross-sectoral planning. National upscaling will be promoted through recommendations for revisions to the policy and regulatory environment and proposals for financing mechanisms, while international knowledge-sharing on EbA interventions will be enabled through the knowledge hub and by leveraging existing UNEP knowledge-sharing platforms.

**D.2. Impacts measured by GCF indicators**

Refer to Annex 2a Logical Framework for more detailed discussion of indicators and measurement.

Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
GCF Core Indicator for adaptation	Number of direct and indirect beneficiaries	Baseline and Completion Surveys	<u>Direct:</u> 0 <u>Indirect:</u> 0	Direct: At least 14,920 people (~2% of the total population of the four target cities) benefitting from reduced flooding from clean drainage lines, implementation of wetland and stream management plans, and restoration Approximately 50% of direct beneficiaries will be female.  Indirect: No people benefitting yet from flood reduction and enhanced ecosystem services through the ICFMS, as ICFMS will only be completed after mid-term.	Direct: Approximately 74,600 people (~9% of the total population of the four target cities) benefitting from reduced flooding from clean drainage lines, implementation of wetland and stream management plans, and restoration Approximately 50% of direct beneficiaries will be female.  Indirect: Approximately 825,000 people (100% of the population of the four target cities) benefitting from flood reduction and enhanced ecosystem services through the ICFMS. Approximately 50% of indirect beneficiaries will be female.	Community members' cleaning of drainage lines lead to flood reduction  The target beneficiaries benefit from reduced flood losses from EbA interventions
	Number of direct beneficiaries relative to total population	Baseline and Completion Surveys	<u>Direct:</u> 0% <u>Indirect:</u> 0%	Direct: At least 14,920 people (~2% of the total population of the four target cities) Indirect: 0 people (0% of the total population of the four target cities)	Direct: Approximately 74,600 people (~9% of the total population of the four target cities) Indirect: Approximately 825,000 people (100% of the total population of the four target cities)	Community members' cleaning of drainage lines lead to flood reduction  The target beneficiaries benefit from reduced flood losses from EbA interventions



<p><i>A.1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions</i></p>	<p>A1.1 Change in expected losses of lives and economic assets (US\$) due to the impact of extreme climate-related disasters in the geographic area of the GCF intervention</p>	<p>Baseline survey and Year 5 monitoring if there is a flood event</p>	<p>Baseline to be determined at inception phase</p>	<p>US\$ amount can only be determined based on the magnitude of the flood that may or may not occur in Year 3</p>	<p>US\$ amount can only be determined based on the magnitude of the flood that may or may not occur in Year 5</p>	<p>If there is a flood event in Year 5, tracking of the final target will be done</p> <p>EbA measures will provide flood reduction</p>
<p><i>A4.0 Improved resilience of ecosystems and ecosystem services</i></p>	<p>A4.2 Value (US\$) of ecosystem services generated or protected in response to climate change</p>	<p>Ecosystem valuation methodology and calculation under Activity 1.2.1</p>	<p>No new protection or restoration efforts with climate change risks produce ecosystem services</p>	<p>US\$ 34,464/year in flood protection and other ecosystem services from Nong Peung wetland</p> <p>US\$ 20,104/year in flood protection and other ecosystem services from urban streams in Pakse and Savannakhet</p>	<p>US\$ 344,640/year in flood protection and other ecosystem services from Nong Peung wetland</p> <p>US\$ 201,040/ year in flood protection and other ecosystem services from urban streams in Pakse and Savannakhet</p>	<p>EbA measures will generate provide flood reduction, wastewater treatment, support to fishing and livelihoods and other ecosystem services</p>

**D.3. Outcomes measured by GCF indicators**

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
<p>A7.0 Strengthened adaptive capacity and reduced exposure to climate risks</p>	<p>A.7.1. Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools, instruments, strategies and activities to respond to climate change and variability</p>	<p>Key informant interviews</p> <p>Policy uptake scorecard</p> <p>Project reports</p> <p>Interviews with PMU</p>	<p>No incorporation of ICFMS in government policies and plans.</p>	<p>Level 0</p>	<p>Government departments have incorporated ICFMS into their policies and plans at Level 2 of policy uptake scorecard<sup>1</sup>;</p>	

**D.4. Arrangements for Monitoring, Reporting and Evaluation (max. 300 words)**

The Project Manager, under the oversight of the UNEP Task Manager, will be responsible for monitoring progress against output and outcome indicators during project implementation.

<sup>1</sup> This policy uptake scorecard will have four levels, and will measure the extent of use of the ICFMS in relevant government policies and plans. Level 0: ICFMS not integrated meaningfully into urban development plans and policy; Level 1: ICFMS narrative woven through the draft urban development plan; Level 2: Action plan and toolkit for implementation of the ICFMS with EbA fully mainstreamed have been developed; Level 3: Budgets allocated to implement the ICFMS.

A full-time Monitoring and Gender Officer will be employed to conduct and coordinate the M&E of the project and ensure that gender targets are met. This officer will design a performance monitoring framework to track the project's progress towards achieving its targets, in collaboration with a specialist consultant that will be contracted for this purpose. This will be achieved by: i) measuring the indicators to evaluate the progress of the project; ii) reporting the project's performance to the NPSC and PMU; and iii) providing technical support to the PM. At key points (i.e. baseline, annual performance reports, mid-point and end of project) the project team will carry out evidence-gathering exercises to verify this progress. Additionally, the Monitoring and Gender Officer will be responsible for overseeing and monitoring the application of gender-disaggregated indicators<sup>68</sup>. Project targets and results will be triangulated with baseline surveys that will be completed in the project's first year. Moreover, methodologies have been identified for assessing the effectiveness of the project's physical interventions for reducing flood impacts (see Annex 2, Section 12)

In addition to project monitoring and evaluation that will be undertaken by the project team, wetland and stream restoration activities in Laos will be monitored by community management committees that will be established in each city under Component 2. These committees will be trained on data collection, analysis, and reporting and will monitor the physical performance of EbA investments. During the Terminal Evaluation at the end of the project an evaluation consultant will validate a sample of the data collected through these monitoring tools.

The Project Management Unit will prepare and submit progress reports to the AE on a quarterly basis that will highlight progress towards meeting the project's outputs. Monitoring will also be undertaken by the AE through supervision visits and field missions to track implementation progress and challenges and strategically plan the way forward. Furthermore, annual financial and performance reports will be submitted to the AE as will be outlined in the Project Cooperation Agreement (Subsidiary Agreement). Details of the annual reporting arrangements are provided in Annex 2D: Project Timetable.

UNEP will be responsible for managing the Mid-Term Review (MTR) and the Terminal Evaluation (TE). The Task Manager will oversee the process of hiring an external consultant to carry out the MTR, which will provide an assessment of project performance at the project's mid-point. This will be a formative exercise and will include analysing whether the project is on track, what problems and challenges the project is encountering, and what corrective actions are required so that the project can achieve its intended outcomes by project completion in the most efficient and sustainable way. The Project Steering Committee will participate in the MTR and develop a management response to the evaluation recommendations along with an implementation plan. It is the responsibility of the UNEP Task Manager to monitor whether the agreed recommendations are being implemented during the remainder of the project's operational life.

An independent Terminal Evaluation (TE) will take place at the end of project implementation. UNEP's Evaluation Office (EO) will be responsible for undertaking the TE at the end of project implementation, which is a summative evaluation, and will liaise with the UNEP Task Manager throughout the process. An independent assessment of project performance against standard evaluation criteria (e.g. strategic relevance, effectiveness, efficiency, likelihood of impact and sustainability) will be made based on documentary evidence, stakeholder interviews and, in most cases, a field mission. Each evaluation criterion will be rated using a six-point rating scheme, and a weighted average will be determined to provide an overall performance rating for the project as a whole. Where there are any differences in ratings between the evaluation team and the Evaluation Office a final determination will be made by the Evaluation Office when the evaluation report is finalised.

The draft TE report will be sent to project stakeholders during a commenting process managed by the Evaluation Office. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. This evaluation report will be publicly disclosed and will be followed by a recommendation compliance process.

The costs for results monitoring and performance evaluation are included in the project budget.

## E. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

### E.1. Impact potential (max. 300 words)

E.1.1. Expected tons of carbon dioxide equivalent (t CO <sub>2</sub> eq) to be reduced or avoided (Mitigation and cross-cutting)	Annual	N/A
	Lifetime	N/A
E.1.2. Expected total number of direct and indirect beneficiaries, disaggregated by gender (Adaptation and Cross-cutting)	Direct	~74,600 people ~50% women
	Indirect	825,000 people ~50% women
	<i>*For both, Specify the % of female against the total number.</i>	
E.1.3. Percentage of beneficiaries relative to total population	Direct	~9% of men and women in target cities
	Indirect	~100% of total population in target cities



E.1.4. It is estimated that the project will directly benefit ~74,600 people across Vientiane, Paksan, Savannakhet and Pakse. In particular, ~8,200 people in Paksan will directly benefit from wetland rehabilitation and sustainable wetland management, with a further 11,900 people in Pakse and 9,000 people in Savannakhet benefitting from the restoration and sustainable management of urban streams<sup>69</sup>. These people living around the wetland and streams will benefit from an increased supply of ecosystem goods and services, including a reduction in flood impacts. In addition, a further 45,500 people across the four cities will benefit from improved knowledge about the sustainable use of wetlands and urban streams, resilient livelihood strategies, and household-level flood adaptation measures. In each of the four target cities, ~1000 people will benefit from using the areas of permeable paving at public institutions, which will be subject to less local flooding than regular paved areas. Indirect beneficiaries will include all the residents of the four target cities (~825,000 people), who will benefit from improved flood management in their cities through the ICFMs and enhanced policies.

The project will contribute to the achievement of the following Fund-level impacts stated in the GCF Performance Measurement Framework (PMF):

*A1.0 — Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions.* The wetland and stream restoration are expected to reduce losses of economic assets due to flooding. The change in economic losses can be tracked in the project only if flood events occur.

*A4.0 — Improved resilience of ecosystems and ecosystem services.* The rehabilitation of 1,500 ha of wetland and urban stream ecosystems will increase the climate resilience of the services these ecosystems provide to people, as well as that of the ecosystems themselves. The value of the ecosystem services generated or protected in response to climate change will be tracked in the project.

In addition to these direct benefits, it is expected that the project will indirectly contribute to Fund-level impact A3.0 by reducing flood damages to the built environment in the target cities.

### **Project Outcomes**

The relevant GCF Fund-level outcomes — against which the contribution to climate-resilient sustainable development can be evaluated (as per the PMF) — are the following:

#### *A7.0 Strengthened adaptive capacity and reduced exposure to climate risks*

The proposed project will develop city-level integrated climate-resilient flood management strategies (ICFMS) and urban EbA guidelines to achieve flood reduction in each of four Laotian cities. Government departments and city administrations will have improved capacity to plan for, and adapt to, flooding through the ICFMS, as mainstreamed into existing policy instruments. In addition, the adaptive capacity of communities will be supported through implementing household-level flood adaptation strategies such as drainage maintenance.

### **E.2. Paradigm shift potential (max. 300 words)**

The proposed project will catalyse a paradigm shift in how the Government of Laos approaches urban flood management, shifting the paradigm from a strong focus on hard infrastructure, end-of-pipe solutions, and siloed approaches towards integrated, climate-resilient flood management. This shift will be achieved through several complementary transformative effects, including: i) strengthening technical capacity of government for flood-resilient development and the use of urban EbA in the context of the 4% average annual urban growth rate; ii) embedding the ICFMS in existing planning and frameworks, thereby leveraging domestic financial resources for the maintenance and upscaling of the urban EbA approach; iii) demonstrating the multiple benefits of integrated flood management and urban EbA interventions for flood management including through quantification of the economic benefits; iv) establishing knowledge management practices and strengthening coordination mechanisms to enable the future adaptive management of urban areas to reduce flood impacts under climate change conditions; and v) identifying sustainable financing options for integrated flood management, including leveraging domestic financial resources for the maintenance and upscaling of the urban EbA approach.

The project will create and/or strengthen drivers to sustain and up-scale integrated flood management and urban EbA in the following areas: i) developing champions in the Government of Laos for EbA through improved knowledge and awareness and peer-learning mechanisms; ii) mainstreaming EbA into planning and budgeting instruments – inputs

into and reinforcement from the NAP process will be an added driver; and iii) empowering communities to engage with city-level planning and management processes, which has been shown to be successful in other projects<sup>70</sup>.

#### **Potential for scaling up and replication**

The project will support extensive capacity development<sup>71</sup> within national- and local-level government structures on the use of EbA as an effective approach to urban flood management in four cities. After project completion, city-level planners and decision-makers will be able to use the ICFMS to identify additional sites for the implementation of urban EbA interventions, while knowledge-exchange interventions will facilitate the replication of interventions within the four cities as well as in other cities. In Vientiane, for example, there are eleven other wetlands in the areas surrounding the city that may offer flood control functions and maintain river flows during the dry season, including Na Khay marsh, Nong Ping and Nong Tha. To improve flood management in the city, the conservation of these wetlands and streams needs to be included in the integrated flood master planning. This effect will be further enhanced through the development of recommendations for national-level policy reform<sup>72</sup> based on the evaluation of ICFMS implemented through the project. Upscaling and replication of project interventions across Laos will also be achieved through the: i) development of national urban EbA guidelines; ii) creation of integrated flood management strategies; iii) engagement of national ministries through the NPSC to support the linkages between city- and national level; iv) engagement with the MPI at national level on applying integrated flood management in Special Economic Zones; and v) a national workshop for provincial governors. In addition to the policy level interventions, the project will conduct awareness-raising campaigns which will contribute to a behavioural change in Laos. By demonstrating the effectiveness of urban ecosystems to buffer against flood impacts, the project will enhance the desirability of EbA amongst local communities, thereby promoting an increased uptake of EbA solutions after project completion.

#### **Potential for knowledge and learning**

The proposed project's contribution to knowledge and learning in Laos will be achieved through three pathways. Firstly, the project will establish a national knowledge hub within the NUoL which will: i) collate and store information on EbA interventions relevant to the disciplines of civil engineering, water resource engineering, urban planning, water resource management, agriculture, ecology and governance; ii) disseminate information and provide technical assistance to relevant decision-makers in local and national government; iii) share best practices on EbA with decision-makers, planners, contractors and international academics.; iv) facilitate peer-to-peer learning through the exchange visit to a city with successful urban EbA, thereby also contributing to the development of a community of practice. Secondly, updating university curricula to include urban EbA will ensure that students at the NuOL are taught urban EbA principles and that technical capacity for EbA is developed in the long-term. Furthermore, lecturers and researchers who participate in the planning, design and implementation of EbA interventions will learn practical skills which they can subsequently teach their students. This approach is already used within the NuOL and will ensure that the EbA content in the new curricula is regularly updated with lessons learned and best practices. Finally, the economic valuation of urban ecosystem services will contribute to the knowledge base underpinning urban planning as well as raising awareness of ecosystem dynamics and services and their role in urban adaptation strategies. The proposed project will raise awareness on, provide credible evidence for and promote the benefits of urban EbA for reducing flood risks.

#### **Contribution to the creation of an enabling environment**

The project will contribute to the enabling environment through improved knowledge, capacities and development of planning tools. By presenting the economic, social and environmental benefits of EbA measures as well as the cost-effectiveness of such measures compared with hard infrastructural solutions, the proposed project will lead to a behavioural shift among urban residents, government decision-makers and the private sector as they progressively favour EbA interventions over conventional hard infrastructure for flood management<sup>73</sup>. In addition to increasing knowledge on urban EbA, the proposed project will build the technical capacity for the planning, design and implementation of such interventions in Laos. City-level ICFMS will provide the strategic framework for the four target cities to practise integrated flood management and be embedded in existing policies and planning frameworks. The process of formulating the ICFMS will build capacity, raise awareness and increase ownership of urban EbA. In addition, the Flood Risk Management Committees that will be established to coordinate this process during and beyond the project period will create an enabling environment for integrated, climate-resilient flood management and urban EbA in the four target cities. The ICFMS will be supported by urban EbA guidelines that will enable city planners, decision-makers and contractors to plan and implement EbA interventions to reduce flood impacts. These strategies will address the upstream and downstream factors contributing to flooding in a cross-sectoral manner.

#### **Contribution to regulatory framework and policies**

Recommendations will be made for policy reform at national and provincial level. This will promote the uptake of integrated climate-resilient flood management and the use of EbA in all Laotian cities. Where recommendations for

policy reforms are taken up during the project period, the project's activities will align with the revised policies to allow the efficacy of these policy revisions to be tracked during the project period.

### E.3. Sustainable development (max. 300 words)

Through the proposed interventions, the project will contribute to 6 out of 17 UN Sustainable Development Goals (SDGs), namely: SDG 3 — Good Health and Well-being; SDG 5 — Gender Equality; SDG 10 — Reduced Inequalities; SDG 11 — Sustainable Cities and Communities; SDG 13 — Climate Action; and SDG 15 — Life on Land. Furthermore, the proposed interventions will achieve numerous environmental, social and economic co-benefits. These are described below.

#### Economic co-benefits

Below are economic values for ecosystem services supported in this project. Although the studies cited below are based in Laos, they are based on different sites and ecosystems such as upper catchment areas, forests and rural areas. The values developed are site-specific. The wetland and streams covered in the project will likely generate different values due to differences in site biophysical characteristics and use of services by communities around them. The valuation of the specific ecosystem services in project sites will be done through Activity 1.2.1. with reliably collected primary data through site-specific ground surveys and spatial analysis. Further information on the economic benefits of urban EbA and integrated flood management is provided in Annex 2: Feasibility Study, Section 9 and in Annex 10: Economic analysis.

Table 1. Examples Studies Valuing Ecosystem Services in Laos

Year	Author	Ecosystem services valued	Values	Methods employed
2005	<a href="#">Rosales et al.</a>	Watershed protection benefits Downstream fisheries, irrigation and micro-hydropower, and flood control benefits	US\$0.85 million a year or US\$ 3 /ha US\$26.60 million or US\$92.3 per hectare	Market prices, participatory environmental valuation, willingness to pay, production, and other approaches
2004	<a href="#">Gerrard</a>	Flood protection and wastewater treatment services	US\$2.87 million a year or US\$1,436/ha	Market prices, examining damages avoided during floods, and replacement costs of wastewater purification services, and production
2010	<a href="#">ADB</a>	Watershed protection Water quality regulation Soil erosion control	US\$681/ha/year US\$718ha/year US\$380ha/year	
2015	USAID	Wastewater treatment Species consumed	\$1.7 million \$2.5 million / year	Replacement cost, market prices, market substitutes

#### Environmental co-benefits

The proposed project will use an ecosystem-based approach to urban flood management, focusing on the rehabilitation of the Nong Peung wetland in Paksan and urban stream ecosystems in Savannakhet and Pakse to maximise the provision of ecosystem services. This approach will catalyse several environmental co-benefits, as listed below.

- *Biodiversity and Conservation* — The rehabilitation of wetland and urban stream ecosystems will improve biodiversity in urban and peri-urban areas. This will include providing suitable habitat for a range of aquatic and terrestrial animals which are of both environmental and social importance, such as fish and migratory birds. The development of wetland and stream management plans and models (Activities 2.1.1 and 2.2.2) will ensure that biodiversity is protected and maintained over the long term. In addition, restoring habitats (Activities 2.1.2 and 2.2.1) will improve the ecosystem services provided to local communities — such as the use of streams for fishing resources — subsequently contributing to improved livelihoods,
- *Water quantity management* — The restoration of vegetation in wetland and urban stream ecosystems will reduce runoff and increase groundwater infiltration during intense rainfall events. This will not only reduce flood impacts

but will also increase groundwater availability during dry periods and reduce the amount of water discharged into urban waterways.

- *Water quality management* — Restored wetland ecosystems will act as natural filters, treating urban effluent through processes of retention, absorption and chemical re-composition. Furthermore, urban ecosystems will capture sediment, thereby improving the quality of water entering urban waterways and reducing siltation. Water quality is decreased by solid waste deposition into streams. The creation of a buffer zone (Activity 2.2.1), combined with the development of management models for drainage systems (Activity 2.2.2), will contribute to improved solid waste management in Laos' urban areas over the long term.
- *Erosion reduction* — Restoring streams will decrease the rate of riverbank erosion. This will decrease the sediment load in rivers, thereby improving water quality and reducing: i) downstream sedimentation; ii) downstream flood risks as a result of sedimentation; and iii) the maintenance costs associated with rehabilitating riverbanks.
- *Natural resource availability* — Improved aquatic biodiversity and ecosystem health will increase fish yields for urban residents supplementing their food and livelihoods with fishing. Fish is an important source of protein in the country. Communities, even in urban and peri-urban areas, are dependent on ecosystem services for medicines, herbs, and wild food such as snails from wetlands.

### Social co-benefits

Several social co-benefits will be derived from project interventions, increasing the liveability of urban areas in Laos<sup>74</sup>. These benefits are described below.

- *Health benefits* — Several health risks are connected to people's exposure to urban waterways and flood waters, including the transmission of water- and vector-borne diseases that result from contaminated water resources. EbA interventions will reduce these risks to urban residents by improving water quality as well as reducing the extent of flooding.
- *Cultural values* — Increased habitat area will strengthen traditional livelihoods dependent on natural resources<sup>75</sup>. Livelihoods that will particularly benefit from EbA interventions include traditional smallholder rice farming, fishing and livestock grazing. Reductions in flood impacts will also safeguard traditional agricultural practices in flood-prone areas<sup>76</sup>.
- *Social cohesion* — Coordinated land use within communities increases social cohesion and improves the management of land and natural resources. Participatory land-use planning with community representatives and other stakeholders will be undertaken during the development of wetland and stream management plans (Activities 2.1.1 and 2.2.2). Such planning will leverage communities' existing knowledge and practices, support village governance and encourage community involvement in monitoring and management of land use activities.
- *Recreational value* — Green spaces, such as wetlands and urban streams, are greatly valued in Laotian cities. The restoration of urban streams in particular will increase the recreational amenity value to urban residents in the surrounding area, as well as increasing the provision of ecosystem goods such as non-timber forest products (NTFPs). Increased use of recreational spaces has also been linked to positive health impacts by reducing risks of chronic conditions such as heart disease, high blood pressure, strokes, Type II diabetes, arthritis, and certain types of cancer<sup>77</sup>.
- *Job creation* — wetland and urban stream rehabilitation work and the maintenance of urban EbA interventions in general will create sustainable jobs for local residents.

In addition to the direct social benefits mentioned above, promoting the establishment of urban green spaces in future development has the potential to catalyse positive social change. Such spaces have been shown to improve psychological well-being and social cohesion.

### Gender-sensitive development impact

Women are particularly vulnerable to flood impacts, considering their role as primary caregivers. In response to this vulnerability, proposed project activities will be undertaken in a gender-sensitive manner and will directly contribute to alleviating existing gender inequalities<sup>78</sup>. This will be achieved in part through two primary pathways, described below.

- *Inequalities in employment* — Women have been identified as being less likely to secure formal employment than men. For this reason, contractors undertaking project design, construction and maintenance activities will be required to demonstrate compliance with the proposed project's Gender Action Plan.
- *Increased climate awareness* — The awareness-raising campaign will include the National Women's Union as a primary partner. In this way, GCF funds will be used to raise women's awareness of climate change impacts and flooding. The campaign will also recommend a diversification of women's livelihoods<sup>79</sup> as they are frequently dependent on rice agriculture.

### E.4. Needs of recipient (max. 300 words)

Laotians are particularly vulnerable to the impacts of climate change<sup>80</sup>. The most frequently-occurring climate-related hazards in the country are floods which — together with storms — adversely impact ~200,000 people and cause ~40 deaths each year. In 2018, floods affected 11 out of Laos' 18 provinces, caused more than US\$372 million in damages and resulted in the destruction of 1,620 houses<sup>81</sup>. Floods also have impacts other than direct damages. For example, some communities in the city of Pakse are inundated for up to two months every year with their road access cut off, which makes it difficult for children to go to school and limits access to markets and employment opportunities<sup>82</sup>. Climate change is expected to considerably increase the frequency, intensity and extent of flooding in Laos. The damages to infrastructure, property, agriculture, health and personal safety<sup>83</sup> that result from climate change-induced flooding will therefore be even greater in the future.

Because of their frequent occurrence, floods are not insurable in Laos and municipalities and property owners bear the costs of damages. In addition, floods negatively impact the health of urban residents by: i) contaminating domestic water sources with non-potable water, thereby increasing the incidence of water-borne diseases; and ii) creating stagnant water that increases the incidence of vector-borne diseases like malaria and dengue.

In response to the adverse impacts of flooding on the country's water resources, Laos' NAPA<sup>84</sup> identifies water resource management as an urgent priority for climate change adaptation. Included in the NAPA are the needs for: i) reducing the impacts of floods; ii) raising awareness on water management; and iii) strengthening institutional capacity and human resources. However, several gaps exist that prevent these adaptation needs from being addressed sufficiently. These gaps were identified during the design of the proposed project by the preparation teams and include: i) gaps in available data, modelling and assessments; and ii) limited institutional capacity to generate and update climate risk data. The proposed project will address these adaptation gaps by developing institutional capacity to generate, update and use climate information for sustainable urban development and planning. This will be done through: i) supporting integrated processes such as the NAP; and ii) building national capacity to conduct urban EbA valuations.

#### **Financial, economic, social and institutional needs**

Laos is among the poorest countries in the world in terms of GDP per capita (ranked 116th out of 192 countries<sup>85</sup>) and scores low in terms of the Human Development Index (138th out of 188 countries<sup>86</sup>). A substantial proportion of government expenditure is focused on socio-economic development activities to address widespread poverty. Furthermore, the Laotian economy is extremely vulnerable to climate change, with annual costs of US\$5.78 billion predicted by 2030<sup>87,88</sup>. These factors, combined with the country's large external public debt<sup>89</sup> and high poverty rate, constrain the GoL's ability to fund investments into climate resilience through domestic financing.

Implementing integrated, climate-resilient flood management requires specific technical competencies. At present, the GoL does not have sufficient capacity to adopt an integrated flood management approach. Moreover, there is little or no knowledge about the flood reduction benefits of EbA solutions amongst government and local level stakeholders which has led to an undervaluation of these benefits. The proposed project will strengthen technical capacity of national and local government institutions and other stakeholders for designing, planning, coordinating and implementing adaptation interventions to build the climate resilience of Laotian cities. This capacity building will focus on the importance of EbA as a cost-effective and complementary means of adapting to climate-induced flooding. GCF resources will be used to train government officials on planning for integrated, climate-resilient flood management to address climate-induced risks in the long-term.

#### **E.5. Country ownership (max. 500 words)**

##### **Alignment with national priorities.**

Country ownership has been ensured through the inclusion of national bodies and decision-making processes in all aspects of project design and implementation<sup>90</sup>. The project was also designed to be well-aligned with national mid- and long-term priorities and ongoing initiatives, including:

- priority activities and approaches promoted by relevant national strategies and action plans on climate change such as the NAPA, NAP, NCCS, Draft Law on Disaster Risk Management and Climate Change, and the Strategic Plan on Disaster Risk Management in Lao PDR until 2020<sup>91</sup>;
- the NCCS objective of increasing stakeholder buy-in through strengthening the awareness and understanding of the impacts of climate change on future development; and
- the NAP project proposed to the GEF by the country and UNEP<sup>92</sup>.

Provision has also been made for emerging national priorities to be considered throughout the project implementation period. In addition to supporting the climate change adaptation priorities of Laos, the proposed project will align with the global priorities outlined by the SDGs, as well as ongoing policy reforms towards green growth in Laos outlined in the National Socio-Economic Development Plan (NSEDP).



Through engagement with the NSCCC, the National Climate Change Office and related stakeholders<sup>93</sup>, the project will provide information and guidance to promote the integration of EbA into national adaptation plans. In so doing, project activities will contribute towards the adaptation priorities noted in the INDC.

#### **Experience and track record of UN Environment**

As the Accredited Entity (AE), UN Environment (UNEP) will provide the necessary oversight and support during the implementation of project activities. In particular, this support will focus on the effective management of the multiple socio-economic and environmental factors affecting ecosystems during project implementation. UNEP's comparative advantage as the AE lies in its ability to provide robust scientific/technical advice regarding climate change adaptation and sustainable national planning as well as development processes. It has a broad global portfolio of climate change projects funded through *inter alia* the Least Developed Countries Fund (LDCF), Special Climate Change Fund (SCCF), Adaptation Fund (AF) and bilateral arrangements with organisations such as the European Commission. Through these projects, UNEP has supported selected national governments and local communities to adapt to climate change. Such projects comply with the mandate from the UNEP Governing Council, as detailed in the Bali Strategic Plan for Technology Support and Capacity-building<sup>94</sup>. The UNEP knowledge-base is derived from completed and ongoing projects that have: i) developed methods and tools for decision-making; ii) prioritised, designed and implemented adaptation interventions; iii) enhanced climate resilience by restoring vulnerable ecosystems that underpin community livelihoods; and iv) monitored the socio-economic and environmental benefits of adaptation interventions. UNEP will draw upon these previous experiences and lessons learned during the implementation of the proposed project.

In addition to serving as accredited entity, UNEP will act as executing entity for Activity 1.2.1. on ecosystem valuation as referenced in Section B.3<sup>95</sup>. UNEP has a proven track record in environmental economics and demonstrating the technical capacity to deliver on the ecosystem evaluation.

#### **Experience and track record of the Ministry of Natural Resources and Environment (MONRE)**

The lead Executing Entity (EE) will be the State of Lao PDR, acting through its MONRE. In this capacity, MONRE will be responsible for the execution of the proposed project activities in each of the four target cities through the regional representatives of the Provincial Office of Natural Resources and Environment (PONRE). The role of the EE has been outlined and the various implementation arrangements described under Section B.3.

MONRE was created in 2011 by merging the mandates of the Water Resources and Environment Administration and the National Land Management Authority. Other competencies covering geology, mining and forest resource management were also integrated into MONRE at the same time. Within MONRE, the Department of Disaster Management and Climate Change (DDMCC)<sup>96</sup> will be involved in the execution of the project, in close coordination with the departments of Water Resources, Land Administration, Meteorology and Hydrology, as well as the Executive Office of the Environment Protection Fund (EPF). A formal financial management and procurement capacity assessment will be performed by UNEP on the DDMCC upon approval of the project by the GCF Board, but prior to project implementation.

The suitability of MONRE as an executing entity is demonstrated by its track record in executing several past or ongoing projects under the Global Environmental Facility. This experience is summarised below.

- Climate Adaptation in Wetland Areas (through FAO; US\$ 4.7 million)
- Sustainable Forest and Land Management in the Dry Dipterocarp Forest Ecosystems of Southern Lao PDR (UNDP; US\$ 10.9 million)
- Strengthening Agro-climatic Monitoring and Information Systems to Improve Adaptation to Climate Change and Food Security in Lao PDR (FAO; US\$ 5.5 million)
- Strengthening Protection and Management Effectiveness for Wildlife and Protected Areas (World Bank; US\$ 6.8 million)
- Effective Governance for small-scale rural infrastructure and disaster preparedness in a changing climate (UNDP; US\$ 4.7 million)

#### **Engagement with NDA, civil society organizations and other relevant stakeholders**

The proposed project has been developed in consultation with civil society, multiple representatives of the GoL, NGOs, academics, and international development agencies<sup>97</sup>. Importantly, the stakeholder engagement process has included close coordination with the National Designated Authority, which has endorsed this proposal.

Extensive consultations were held with various project stakeholders throughout the design process. An initial scoping mission in September 2015 identified target cities and validated the overall project objective<sup>98</sup>. Following this, four further missions to Laos were undertaken to engage with stakeholders and collect information. Hydrological experts and international adaptation consultants visited six cities<sup>99</sup> between August 2016 and December 2017 to: i) downscale climate change scenarios for each city; ii) assess flood vulnerability; and iii) identify potential sites and interventions. During these missions, meetings and workshops were held with various national and local stakeholders in all six cities. A final mission was undertaken in April 2019 to: i) conduct further community consultations; ii) assess flood damages in communities; iii) consult government stakeholders; iv) determine ways to promote sustainable drainage systems in Special Economic Zones; and v) gather data and further assess the Nong Peung wetland and streams<sup>100</sup>. As a result of these extensive consultations, the proposed project is well-aligned with the needs and priorities of the recipients and is supported by the GoL.

### E.6. Efficiency and effectiveness

E.6.1. Estimated cost per t CO <sub>2</sub> eq, defined as total investment cost / expected lifetime emission reductions (Mitigation and Cross-cutting)	(a) Total project financing	US\$ _____
	(b) Requested GCF amount	US\$ _____
	(c) Expected lifetime emission reductions	_____ tCO <sub>2</sub> eq
	<b>(d) Estimated cost per tCO<sub>2</sub>eq (d = a / c)</b>	US\$ _____ / tCO <sub>2</sub> eq
	<b>(e) Estimated GCF cost per tCO<sub>2</sub>eq removed (e = b / c)</b>	US\$ _____ / tCO <sub>2</sub> eq
E.6.2. Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (Mitigation and Cross-cutting)	(f) Total finance leveraged	US\$ _____
	(g) Public source finance leveraged	US\$ _____
	(h) Private source finance leveraged	US\$ _____
	<b>(i) Total Leverage ratio (i = f / b)</b>	_____
	(j) Public source leverage ratio (j = g / b)	_____
	(k) Private source leverage ratio (k = h / b)	_____

E.6.3. (*max. 500 words*) Describe how the financial structure is adequate and reasonable in order to achieve the proposal's objective(s), including addressing existing bottlenecks and/or barriers; providing the minimum concessionality; and without crowding out private and other public investment.

#### Financial structure

GCF financing will overcome the existing barrier of insufficient funding for flood management solutions in Laotian cities. This will be achieved in the first place by leveraging co-financing of US\$1.5 million from the GoL. Moreover, the project will catalyse further public investments in urban EbA by creating an enabling environment and demonstrating the benefits of urban EbA across Laos. GCF financing will therefore promote both public and private investments in urban EbA to meet Laos' climate change adaptation needs.

#### Economic efficiency

The project interventions are designed to be economically efficient (see Annex 2: Feasibility Study, Section 9 for a summary of cost effectiveness and Annex 10 for economic analysis).

The avoided flood losses due to the implementation of a range of flood mitigation measures<sup>101</sup> was estimated over a 20-year period in Vientiane, Paksan, Savannakhet and Pakse. The losses included in the analysis were limited to direct loss of income from business closure, agriculture, household possessions and infrastructure. The methodology applied in the analysis is adopted from a World Bank report on the Lao PDR Southeast Asia Disaster Risk Management Project. Over 20 years, the avoided flood losses have been estimated to be US\$24.45 million in Vientiane, US\$27.89 million in Paksan, US\$46.24 million in Savannakhet and US\$12.26 million in Pakse.

Economic efficiency will be achieved by: i) using proven urban EbA solutions that are cost-effective; ii) building the capacity of the GoL and other stakeholders to plan ICFMS and EbA in a context where cities are growing by 4%; and iii) increasing efficiency through ongoing learning and adaptive management. The proposed project budgets for a five-year period and will impact ~74,600 direct and ~825,000 indirect beneficiaries. In general, the type of EbA intervention

proposed for this project have been shown to have net positive economic impacts (Annex K) because of their low cost and high potential for reducing expected economic losses caused by flooding. The social and ecological co-benefits generated by EbA interventions also increase the economic efficiency of project activities compared to hard engineering measures. This will support and promote sustainable development in the face of climate change for urban areas in Laos. The project will implement Activity 1.2.1 on urban EbA valuation to assess the main adaptation and co-benefits from the project.

### **Cost-effectiveness**

Urban EbA has proven to be a cost-effective measure for reducing flood impacts internationally. The economic analysis (Annex 10) identifies a number of analogous investments in developing countries. These investments have all been shown to have net positive benefits through their flood reduction benefits alone. Likewise, the EbA interventions proposed in the project activities are amongst the most cost-effective solutions investigated by the economic analysis. This analysis shows that urban EbA interventions for flood reduction are expected to be economically feasible in Laos.

Cost-effectiveness will further be insured through sound project design. Wherever possible, cost-efficient methods for data collection will be utilised, including: i) the use of innovative data acquisition methods such as drone mapping; and ii) involving students in conducting field surveys and training community members on how to hold effective consultations. The involvement of local communities and academic institutions (such as NuOL) in monitoring the performance of project interventions will also contribute to the cost-effectiveness of the project design.

### **Coordination**

To avoid duplication of efforts and maximise resources (thereby increasing efficiency), existing provincial administrations as well as the city-level project steering committee (CPSC) will be used to coordinate project activities during implementation. (see Section B.3 on institutional arrangements for more details). In addition to those technical cooperation mechanisms, complementarity and coherence will be ensured by the DCC. For example, the DCC is the focal point of several activities such as: i) the UNEP-led project “Building climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in the Asia-Pacific region; and ii) the FAO project “Climate Adaptation in Wetland Areas (CAWA) in Lao PDR” both financed through the Global Environment Facility. The GoL further demonstrated its commitment to seeking complementarity and coherence with other financiers during the project preparation phase by submitting to the CTCN a request to prepare the necessary climate change vulnerability analysis.

### **Best practices and lessons learned**

The integration of best practices and lessons learned from past initiatives with a similar focus is expected to increase project effectiveness. In particular, lessons learned from past and ongoing projects (such as the CAWA project) that use green infrastructure as oppose to grey (conventional) infrastructure in Laos and the Greater Mekong Subregion have been integrated into the project design<sup>102</sup>. The CAWA project<sup>103</sup>, for example, uses bioengineering (revegetation and tree planting) to stabilise erosion-prone riverbanks, reduce sedimentation and improve infiltration rates<sup>104</sup>. Such approaches have been proven to be more efficient and economically beneficial than hard infrastructure solutions. The reason for this is two-fold: firstly, green infrastructure improves air and water quality, reduces flooding, decreases strain on local drainage infrastructure and filters pollutants; and secondly: these approaches promote nature-based ecotourism that subsequently leverages private sector investment<sup>105</sup>.

In addition to integrating lessons learned on the benefits of green infrastructure, best practices for knowledge sharing and coordination were used to inform the design of interventions to be implemented under Component 1. For instance, the Project Manager of the “Effective governance for small-scale rural infrastructure and disaster preparedness” project<sup>106</sup> highlighted the difficulty in finding adequate expertise to implement the identified EbA measures. As a result, the integration of a new curriculum, the strengthening of EbA capacities amongst national engineers, and the development of a knowledge hub have all been integrated into the design of the proposed project.



## F. ANNEXES

### F.1. Mandatory annexes

- Annex 1 NDA No-objection Letter(s) ([Template](#))
- Annex 2a Example project level logframe ([Example](#))
- Annex 2b Example timetable ([Example](#))
- Annex 3 Budget plan that provides breakdown by type of expense ([Template in excel sheet](#))
- Annex 4 Gender assessment and action plan ([Template](#))
- Annex 5 Co-financing commitment letter
- Annex 6a Term sheet
- Annex 6b Evidence of internal approval
- Annex 7 Risk assessment and management ([Template](#))
- Annex 8 Procurement plan model ([Template](#))
- Annex 9a Legal Due Diligence (regulation, taxation and insurance) ([Template](#))
- Annex 9b Legal Opinion/Certificate of Internal Approvals ([Template](#))

### F.2. Other annexes to be submitted when applicable/requested

- Annex 2 Feasibility Study
- Annex 10 Economic and/or financial analysis  
(mandatory for private-sector proposals)
- Annex 11 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project (NA)
- Annex 12 Environmental and Social Action Plan (ESAP) ([Template](#))
- Annex 13 Vulnerability Assessment
- Annex 14 Fee Breakdown
- Annex 15 Figures, Tables, and Endnotes

*\* Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

<sup>1</sup> For further information, see Annex 2: Feasibility Study, Section 4. The CAWA project focuses on ecosystem-based adaptation to support the capacity of wetlands to buffer livelihoods against the impacts of climate change. Although the project focus is on rural resilience, many approaches on development of hydrological and vulnerability assessments and restoration approaches are applicable to the wetland and streams for the current project.

<sup>2</sup> This includes existing management practices such as no-take areas for fishing during spawning season and local farming practices that are compatible with ecosystem protection (minimal use of pesticides, no use of weed killers, etc.). These will be relevant to the development of management plans.

<sup>3</sup> which are located predominantly on the Mekong River, on the border of Thailand.

<sup>4</sup> Flooding leads to reduced access to clean water and sanitation, which increases the risk of people being affected by waterborne diseases such as shigella, cholera, hepatitis A and typhoid fever. For example, in 2015 there were 1,096 reported cases of skin infections and 36 reported cases of diarrhoea as a result of flooding in Vientiane alone (World Health Organisation. Lao People's Democratic Republic. 2015).

<sup>5</sup> Based on modelled flood impacts. World Bank, 2018. As cited in Post-Disaster Needs Assessment: 2018 Floods, Lao PDR. Available at: <https://www.gfdr.org/en/publication/post-disaster-needs-assessment-2018-floods-lao-pdr>. Accessed on: 30 April 2019

<sup>6</sup> Equivalent to 2.1% of the country's projected 2018 GDP and 10.2% of the government's total budget for 2018. Recovery needs were estimated at US\$520 million, with the highest impacts identified in the transport, agriculture and waterways sectors. The collapse of a dam wall coupled with heavy rainfall in Attapeu province caused ~10% of the total damages countrywide (Post-Disaster Needs Assessment: 2018 Floods, Lao PDR. Available at: <https://www.gfdr.org/en/publication/post-disaster-needs-assessment-2018-floods-lao-pdr>. Accessed on: 30 April 2019).

<sup>7</sup> Village-level consultations were conducted in project areas from March 28 – April 6. The report is included in Annex 12. Environmental and Social Action Plan.

<sup>8</sup> MONRE, 2013. Lao PDR Second National Communication to the UNFCCC

<sup>9</sup> The climate change models used in the development of this Funding Proposal are discussed further in the paragraphs below and in Annex 2: Feasibility Study, Section 2.

<sup>10</sup> Extreme rainfall events that cause urban flooding are expected to become as much as five times more intense. Given the magnitude of this plausible scenario, a precautionary approach is advisable whereby major investments in adaptation are made now to avert such climate change-induced damages in the future.

<sup>11</sup> This is partly because of the impervious nature of many urban and peri-urban surfaces (e.g. roads, roofs of buildings, pavements and parking lots). But it is largely because of the intensity of the rainfall in many parts of Laos. During intense rainstorms, rainwater accumulates rapidly in streets, agricultural fields, and inundates infrastructure, often reaching up to the second storeys of houses and buildings over vast areas within a particular city. It then often takes several weeks for the water to subside so that repairs can be made to infrastructure and economic activity in a particular urban area can start up again. The hidden costs of such floods are thus considerable.

<sup>12</sup> Pluvial flooding occurs when intense rainfall events exceed the infiltration capacity of the local substrate, resulting in localised intense runoff of rainfall. Such flooding is typically highly localised and is likely to occur frequently and as a result of a single rainfall event. For further details on types of floods in Laotian cities, see Section 2 of Annex 2: Feasibility Study.

<sup>13</sup> The impacts of climate change in the target cities were determined by a UNEP-DHI study that was commissioned specifically for the proposed project and conducted through CTCN. This study is summarised in Annex 2: Feasibility Study and provided in full as Annex 13 i.e. the events that currently cause flooding in urban and peri-urban areas.

<sup>15</sup> The annual urban growth rate is ~4% and the urban population of Laos is expected to more than double between 2010 and 2030.

<sup>16</sup> Including limited coordination, strategic spatial planning or investment in infrastructure, as well as insufficient consideration by government urban planners of the effects of climate change on urban areas.

<sup>17</sup> in the absence of urban planning frameworks that recognise the value of these areas and ensure that they are protected from inappropriate development.

<sup>18</sup> Ecosystem-based Adaptation (EbA) is broadly defined as the sustainable use of biodiversity and ecosystem services to help people adapt and to strengthen societal resilience against the adverse effects of climate change. In the context of the proposed project, urban EbA refers to the use of ecosystems in urban areas in Laos to reduce climate change-induced flooding and to mitigate the impacts of flooding.

<sup>19</sup> Details of policies are provided in Section E.5 and in Annex 2: Feasibility Study, Section 3.5.

<sup>20</sup> In general, cities and towns in Laos have poor drainage networks that contributes to frequent flooding after rainstorms. Drainage systems are typically silted with soil from unpaved roads and are polluted from poor sanitation services. ADB. 2012. Urban Development Sector Assessment, Strategy, and Roadmap.

<sup>21</sup> For further details, the Theory of Change is included in Annex 2. Feasibility Study.

<sup>22</sup> Early warning systems serve an important role in integrated flood risk management systems. This is being developed in the country through institutions such as the National Disaster Management Office and the Department of Meteorology and Hydrology. Development partners support these initiatives through the World Bank Integrated Water Resources Management Project Phase I where hydrological and meteorological monitoring systems are supported and the Lao PDR Southeast Asia Disaster Risk Management Project which supports hydrometeorological services and response in Muang Xay. While critically important, direct interventions in the development of flood early warning systems is outside the project scope. The project, through the ICFMS, will coordinate with disaster risk management institutions.

<sup>23</sup> Hey, D.L. and Philippi, N.S., 1995. Flood reduction through wetland restoration: the Upper Mississippi River Basin as a case history. *Restoration Ecology*, 3(1), pp.4-17.

<sup>24</sup> Bernhardt, E.S. and Palmer, M.A., 2007. Restoring streams in an urbanizing world. *Freshwater Biology*, 52(4), pp.738-751.

<sup>25</sup> The barriers are described in further detail in Annex 2: Feasibility Study, Section 6.

<sup>26</sup> 'End-of-pipe' suggests that you solve the problem downstream in the catchment, rather than preventing it from becoming a problem by using integrated, distributed solutions.

<sup>27</sup> The extensive site selection process considered vulnerability of target communities to floods, through a vulnerability assessment process and stakeholder consultations.

<sup>28</sup> including land use planning and flood risk planning

<sup>29</sup> Through the Socio-Economic Development Plans of the Ministry of Planning and Investment, and building on lessons learned from the GIZ-funded project "Land management and decentralised planning I & II"

<sup>30</sup> Options for the knowledge exchange trip include Bangkok, Manila, and Guwahati, India. Considerations for selecting the city will include similarity of institutional contexts, relevance of their flood management strategies and urban EbA interventions to the Laotian setting, and potential for sustaining linkages across institutions.

<sup>31</sup> The project design adopts similar approaches as the Mekong Integrated Water Resources Management Project (M-IWRMP), which is a transboundary cooperation for river basin management between Laos and Thailand. That project has had successful outcomes in peer to peer learning.

<sup>32</sup> Such as the Asia Pacific Climate Change Adaptation Forum, ASEAN working group sessions, and other appropriate venues.

<sup>33</sup> Approaches in Mekong countries, including Lao PDR, are outlined in ADB. 2015. Investing in Natural Capital for a Sustainable Future in the Greater Mekong Subregion. Manila, Philippines.

<sup>34</sup> Floodplains are the areas adjacent to a river that are flooded.

<sup>35</sup> Floodlines are geographical demarcations of the floodplain for a flood with a particular return interval. For example, a 1-in-100-year floodline demarcates the floodplain of the 1-in-100-year flood.

<sup>36</sup> Options include the Civil Engineering Department of the NUoL or the Public Works and Transport Institute within MPWT.

<sup>37</sup> This structure is adapted from the Land Allocation Committees in the GIZ project Land Management and Decentralized Planning.

<sup>38</sup> for further information about the relevant policies, see Annex 2: Feasibility Study.

<sup>39</sup> Further details on site selection are provided in Annex 2: Feasibility Study, Section 10.

<sup>40</sup> Maps of the wetland and streams are provided in Annex 2: Feasibility Study, Section 10.

<sup>41</sup> Similar arrangements are expected for the Community Stream Management Committees under Activity 2.2.2.

<sup>42</sup> Indigenous plant species that occur naturally along streambanks in and around each city will be identified in consultation with local ecologists. A wide range of these species will be used, since diversity increases ecosystem resilience, as well as focusing on species that are climate-resilient e.g. heat tolerant and well-suited to withstand flooding and reduce erosion.

<sup>43</sup> such as the ADB-funded Pakse Urban Environment Improvement Project.

- <sup>44</sup> The EE will be required to comply with UNEP rules, policies and procedures on procurement.
- <sup>45</sup> The PCA will determine requirements for the disbursement and management of funds to the EE, as well as establish agreed upon supervisory roles.
- <sup>46</sup> The PMU will have a target of 30% female representation.
- <sup>47</sup> with ad hoc meetings held wherever necessary
- <sup>48</sup> This role will be part-time and financed by the GoL.
- <sup>49</sup> such as government departments, NGOs and civil society groups
- <sup>50</sup> Recruitment of all project personnel will be guided by gender equality and non-discrimination principles, with a target of 50% female representation.
- <sup>51</sup> The PM will be accountable to Government of Laos and UNEP.
- <sup>52</sup> CEIC data. Available at: <https://www.ceicdata.com/en/indicator/laos/external-debt--of-nominal-gdp>. Accessed on 2 May 2019.
- <sup>53</sup> During flood events, these communities are affected by the halting of economic and social activity as well as reduced mobility for weeks at a time in flooded neighbourhoods while reconstruction and recovery is undertaken.
- <sup>54</sup> The GoL has committed US\$1.5 million in co-financing.
- <sup>55</sup> ADB. 2016. Nature-based Solutions for Building Resilience in Towns and Cities: Case Studies from the Greater Mekong Sub-region. Accessed from: <https://www.greatermekong.org/sites/default/files/nature-based-solutions.pdf#overlay-context=nature-based-solutions-building-resilience-towns-and-cities-case-studies-greater-mekong-subregion>. Accessed on 15 May 2019.
- <sup>56</sup> JICA. 2011. The Project for Urban Development Master Plan Study in Vientiane Capital. Available at: [http://open\\_jicareport.ica.go.jp/pdf/12023693\\_01.pdf](http://open_jicareport.ica.go.jp/pdf/12023693_01.pdf). Accessed 13 May 2019.
- <sup>57</sup> ADB. 2015. *Building Resilience in Kaysone Pomvihane, Lao PDR*, Volume 7 of the Resource Kit for Building Resilience and Sustainability in Mekong Towns, Prepared by ICEM – International Centre for Environmental Management for the Asian Development Bank and Nordic Development Fund. Manila (TA 8186).
- <sup>58</sup> ADB. 2015. *Building Resilience in Kaysone Pomvihane, Lao PDR*, Volume 7 of the Resource Kit for Building Resilience and Sustainability in Mekong Towns, Prepared by ICEM – International Centre for Environmental Management for the Asian Development Bank and Nordic Development Fund. Manila (TA 8186).
- <sup>59</sup> Personal communication. 2018. ADB Project Manager and international consultants.
- <sup>60</sup> This regional project covers four Least Developed Countries, with a budget of US\$ 468,000 for EbA interventions in Laos' regions of Oudomxay and Phongsaly.
- <sup>61</sup> The barriers are stated in Section B.1 of this SAP proposal and described in detail in Annex 2: Feasibility Study, Section 6.
- <sup>62</sup> such as universities, schools, and government offices
- <sup>63</sup> The economic, social and environmental co-benefits that will result from project interventions are discussed in further detail in Section E.3 of this SAP Proposal.
- <sup>64</sup>including other relevant planning frameworks that have performance targets
- <sup>65</sup> The implementation of the ICFMS and their regular updating will be ensured through the process of mainstreaming the ICFMS into relevant policy and planning frameworks.
- <sup>66</sup> GCF resources from the project will not be provided to the EPF to enable this upscaling. The EPF is a potential source of sustainable financing, particularly for watershed protection-related activities. It is in the process of seeking accreditation with the GCF and obtains financing from the ADB and World Bank.
- <sup>67</sup> These financial resources are channelled to beneficiaries in Laos and invested in the form of an endowment fund to generate interest for financing the operation costs of the EPF. Case Study Report: Environmental Protection Fund in Lao PDR. UNDP. Available at: [http://www.asia-pacific.undp.org/content/dam/rbap/docs/Research%20&%20Publications/environment\\_energy/ncf/APRC-EE-2012-NCF-CaseStudy-Lao.pdf](http://www.asia-pacific.undp.org/content/dam/rbap/docs/Research%20&%20Publications/environment_energy/ncf/APRC-EE-2012-NCF-CaseStudy-Lao.pdf). Accessed on 12 February 2019.
- <sup>68</sup> The project's gender targets as well as the associated gender-disaggregated indicators are presented in Annex 4: Gender Assessment.
- <sup>69</sup> Direct beneficiaries have been defined as those individuals living in villages directly adjacent to project interventions that will benefit from flood reduction.
- <sup>70</sup> These projects are discussed in Annex 2: Feasibility Study.
- <sup>71</sup> the capacity building process is discussed in Section B.2.
- <sup>72</sup> The process for updating national policies is described in Section B2.
- <sup>73</sup> Among government decision-makers this will be facilitated in part through the setting of adaptation targets as part of the NAP process.
- <sup>74</sup> United States Environmental Protection Agency. 2017. Available at: <https://www.epa.gov/green-infrastructure/benefits-green-infrastructure>. Accessed on: 14 November 2017
- <sup>75</sup> Many urban residents in Laos rely on fishing urban streams to supplement their livelihoods. Wetland and stream restoration activities will increase the habitat for aquatic biodiversity.
- <sup>76</sup> Small-scale farmers in urban areas preferentially plant a high-value rice variant that is not resilient to the impacts of inundation. A reduction in flood impacts will allow small-scale farmers to continue their practices rather than growing flood-resilient varieties that are less desirable in the local market.
- <sup>77</sup> United States Environmental Protection Agency. 2017. Available at: <https://www.epa.gov/green-infrastructure/benefits-green-infrastructure>. Accessed on: 14 May 2019.
- <sup>78</sup> Further details on how project outputs will be delivered in a gender-sensitive manner are presented in Annex 4: Gender Assessment.
- <sup>79</sup> In Paksan, the National Women's Union is already promoting household vegetable gardens to supplement women's income when rice fields are flooded.
- <sup>80</sup> The impacts of climate change in Laos, as well as the associated damages, are described in detail in Section B.1.
- <sup>81</sup> World Bank. 2018. As cited in Post-Disaster Needs Assessment: 2018 Floods, Lao PDR. Available at: <https://www.gfdrr.org/en/publication/post-disaster-needs-assessment-2018-floods-lao-pdr>. Accessed on: 30 April 2019
- <sup>82</sup> For further information about flood impacts on communities, see the stakeholder consultation report in Annex 12.
- <sup>83</sup> The damages that result from climate change-induced flooding will be exacerbated by Laos' rapid rates of urbanisation; the expansion of hard infrastructure areas will increase the total area of impervious surfaces, which greatly reduces infiltration into soils and drainage into groundwater.
- <sup>84</sup> Laos NAPA, 2009.
- <sup>85</sup> United Nations Statistics Division. January 2019.
- <sup>86</sup> Human Development Index, 2017. Available at: [https://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_Human\\_Development\\_Index](https://en.wikipedia.org/wiki/List_of_countries_by_Human_Development_Index)

<sup>87</sup> including US\$15 million from floods and landslides and US\$5 million from droughts annually. WRI, 2014. Climate change in the Lower Mekong Basin: An analysis of economic values at risk. Available at:

[http://mekongarcc.net/sites/default/files/usaaid\\_marcc\\_values\\_at\\_risk\\_report\\_with\\_exesum-revised.pdf](http://mekongarcc.net/sites/default/files/usaaid_marcc_values_at_risk_report_with_exesum-revised.pdf)

<sup>88</sup> Overall, climate change impacts on agriculture are predicted to cost US\$1 billion. Reduced labour productivity, as a result of *inter alia* increased temperatures, across all sectors is expected to cost US\$4.75 billion.

<sup>89</sup> External public debt reached 54% of the country's Gross Domestic Product (GDP) in 2018. (CEIC data. Available at: <https://www.ceicdata.com/en/indicator/laos/external-debt-of-nominal-gdp>. Accessed on 2 May 2019.)

<sup>90</sup> Further details on the implementation arrangements are presented in Section B.3 of this Sap proposal.

<sup>91</sup> For example, the NCCS outlines the need for climate proofing urban development plans and infrastructure; *the project will contribute to achieving such goals through implementation of urban EbA interventions.* (NCSS).

<sup>92</sup> The NAP project is envisioned to be co-located in the Department of Climate Change in MONRE. Efficiencies in delivery, standardization of project management processes, as well as substantive input of the proposed GCF project to the NAP process are envisioned.

<sup>93</sup> Such as the INDC and NAPA development teams.

<sup>94</sup> Bali Strategic Plan for Technology Support and Capacity building-. 2004. Governing Council of the United Nations Environmental Programme. Available at: <https://aarhusclearinghouse.unepce.org/resources/bali-strategic-plan-for-technology-support-andcapacity-building> [accessed 22.11.2017].

<sup>95</sup> Specific initiatives that it has led relating to this topic are described in Section E.2.

<sup>96</sup> a division of MONRE with an advisory role to the ministry and direct responsibility for managing disasters and climate change across the country

<sup>97</sup> organisations included UNDP, UN-Habitat, IUCN, and GIZ

<sup>98</sup> During this mission, discussions were only possible with representatives from Laos' capital city, Vientiane. Input on the other target cities was provided by central government, donors and NGOs.

<sup>99</sup> Vientiane, Paksan, Savannakhet, Pakse, Luang Prabang and Thakhek

<sup>100</sup> including land use around the wetland, and opportunities for improving its flood storage capacity

<sup>101</sup> These estimates are conservative as they make no assumption of the increased frequency and severity of flood impacts due to climate change, which would result in greater flood losses in the absence of mitigation measures. The additional benefits provided by EbA interventions and the indirect avoided costs due to flood losses are also not included in the estimates. Note that the calculations for the reduced flood damages used in the economic modeling do not directly correspond to the EbA interventions proposed in this project. Measuring flood retention and abatement from restoration is challenging and site-specific. More information is indicated in the activity descriptions under Component 2.

<sup>102</sup> Further details on relevant past and ongoing projects and initiatives in Laos are presented in Annex 2: Feasibility Study.

<sup>103</sup> Further details on the CAWA project are presented in Section 4.1.2 of Annex 2: Feasibility Study.

<sup>104</sup> FAO. 2014. Project Document. Climate change Adaptation in Wetland Areas (CAWA) in Lao PDR.

<sup>105</sup> <https://www.thegef.org/project/sustainable-forest-and-land-management-dry-dipterocarp-forest-ecosystems-southern-lao-pdr>

<sup>106</sup> which concluded in 2017.