

Terms of Reference
Kathmandu Valley Ecological Urban Renewal Phase 2: Support for NBS

1. Background

In its Thematic Approach, Partners for Water 2022-2027 gives specific attention to the uptake and implementation of Nature Based Solutions (NBS) for increased water safety and security. In 2023 a strategic partnership was signed with the Asian Development Bank (ADB) in the form of a Letter of Intent (LoI), to support the ADB and its member countries with expertise and technical support on NBS during the project preparation phase. This assignment is formulated under this partnership.

The Kathmandu Valley Ecological Urban Renewal project (KEUR) is a project aimed at addressing critical challenges of flooding, water pollution and ecosystem degradation in the Kathmandu Valley. Financed by the Asian Development Bank, the Urban Resilience Trust Fund (URTF) and partners such as RVO, the project is carried out by the Nepalese Ministry of Urban Development. Please refer to page 7 for background information on the project, Kathmandu context and outputs of the project.

This phase of the Kathmandu Valley Ecological Urban Renewal project, subject of this European Public Tender aims at strengthening the feasibility studies and detailed design produced in previous phases of the project, by providing specific inputs on three aspects: (1) feasibility studies and design of the water retention ponds and reservoirs with a focus on nature-based solutions and groundwater recharge; (2) integration of a sponge-city approach and solutions in Output 3 Resilient and Inclusive Public Green Spaces Developed; and (3) in-depth analysis of KEUR components impact on Kathmandu Valley systems.

Feasibility Study and Project Readiness

The KEUR TA, approved in December 2025, financed by ADB with support from the Urban Resilience Trust Fund (URTF), is designed to bring the project to full feasibility and readiness for investment through a structured, phased approach that combines upstream diagnostics, detailed technical preparation, and targeted resilience expertise.

In the first step, individual consultants were mobilized to undertake upstream field-based work, including community consultations, surveys, land and institutional assessments, and preliminary technical investigations. This phase serves to validate priority interventions, confirm feasibility from social, environmental, and implementation perspectives, and define the scope, locations, and design parameters of the project components.

Currently, consultants are active with carrying out data surveys on a number of topics relevant for the second phase. Starting early 2027 a consulting firm will be engaged by the ADB to carry out the comprehensive feasibility study and selected elements of detailed engineering design. This firm will be responsible for preparing technical, economic, financial, environmental, and social due diligence, reviewing project detailed design, structuring implementation arrangements, and developing procurement packages in line with government readiness requirements. Part of this is also the building of a catchment model to add to the hydrological model built in the previous phase. This phase ensures the project is fully prepared for appraisal, procurement, and timely implementation.

2. Scope of this assignment

The local ADB team and the Nepalese Ministry of Urban Development are in the lead for delivering the results for phase 2, consisting of a comprehensive feasibility study and full project preparation. This Partners for Water assignment will provide specific technical inputs detailed below to the ADB Feasibility Study and will work in close coordination with the team and other consulting firms working on the project. Specifically, the firm is required to detail Nature Based and Sponge City options that can be taken up in this project and

provide an analysis of the overall impact of the KEUR project components on the Kathmandu Valley System. Specific implementation arrangements are detailed below.

The assignment is divided into 3 components:

Component 1: Support for identification, Feasibility Study, and Design of Water Retention Ponds, Reservoirs (NbS & Groundwater Recharge Focus)

Water retention ponds, reservoirs, and wetlands are core interventions under KEUR. This component supports output 1: Enhanced River Corridors and Ecosystems. This output is linked to flood resilience, groundwater recharge, and decentralized water management.

The KEUR program targets:

- ~5.6 million m³ of water retention capacity
- ~160 hectares of wetland parks

These interventions are critical to address:

- Increasing urban flood risks
- Severe groundwater depletion
- Loss of natural infiltration areas and floodplains

Objectives

The consulting firm will support the TA by:

- Identifying and validating priority sites for retention ponds, reservoirs, and wetlands, based on existing studies.
- Supporting feasibility studies in integrating technical, environmental, social, and land aspects of the identified interventions.
- Providing technical support to the local team for detailed NbS-based designs maximizing groundwater recharge and flood attenuation.
- Assess their overall impact together with other complementary existing or planned reservoirs or retention ponds within Kathmandu Valley (such as Dhap Dam, Nagmati).
- Supporting ADB project preparation requirements, including safeguards, economic and climate analysis.

Scope of Work

Task 1: Baseline Assessment and Site Identification

- Review existing studies (including pre-feasibility work under CDIA and partners)
- Map hydrology, drainage patterns, soil permeability, aquifers, and land use, based on existing studies and data provided by the ADB and the local consulting team.
- Identify priority sites based on own analysis and existing studies (river corridors, peri-urban zones, public land) and validate candidate sites identified in BAP.
- Assess constraints and risks for the identified sites (land tenure, inflow of waste, encroachment, flood-prone zones, existing infrastructures constraints).
- Conduct a stakeholder consultation to get input for the design of the interventions, in close coordination with the ADB and their client government agency:
 - Municipalities, HPCIDBC, KVDA
 - Local communities and landowners

Task 2: Hydrogeological and Hydrological Analysis

- Quantify stormwater runoff and flood volumes under current and climate scenarios.
- Assess groundwater recharge potential and aquifer characteristics, and assess their overall impact together with other complementary existing or planned reservoirs or retention ponds within Kathmandu Valley (such as Dhap Dam, Nagmati reservoirs).
- Model infiltration rates and storage-recharge relationships.
- Evaluate interaction with river systems (e.g., Bagmati and tributaries).

Task 3: Development of NbS Options

Develop site-specific solutions including:

- Multi-functional retention ponds and reservoirs
- Floodplain reconnection systems
- Infiltration basins and recharge zones
- Hybrid blue-green infrastructure systems
- Assess:
 - Flood mitigation performance
 - Groundwater recharge efficiency
 - Biodiversity and ecosystem services

Task 4: Support for Engineering Design of NbS options

Provide inputs to the technical designs based on requirements by the ADB, for example on technical feasibility (hydraulic performance, constructability), pond and wetland layouts, sediment management, vegetation and ecological restoration design

- Ensure:
 - NbS principles are fully embedded
 - Designs are climate-resilient and low-maintenance

Task 5: Implementation and O&M Framework of NBS options

Provide technical support for investment preparation for the NBS options:

- Phasing and prioritization of investments
- Cost estimates
- Operation and maintenance strategies, looking at both government agencies and local stakeholders. Include management of waste, if and where relevant to the functioning of the interventions.
- Monitoring indicators:
 - Recharge rates
 - Flood reduction
 - Ecological performance

Deliverables Component 1

1. Site validation and consultation
2. Hydrological and hydrogeological assessment
3. Technical notes with NBS options
4. Inputs in feasibility study
5. Inputs in engineering designs

Component 2: Green Corridor Development, Park Upgrading, and Sponge City Solutions

This component will contribute to the KEUR program's vision of creating a connected green-blue network across Kathmandu Valley. It directly supports Output 2: Green and Inclusive Public Spaces Developed.

The program includes:

- ~120 hectares of parks developed/upgraded
- ~18 km (or more) of green corridors
- Integration with urban forests (171 ha) and historical ponds

The approach emphasizes:

- Sponge city principles
- Nature-based solutions
- Inclusive and participatory urban design

Objectives

- Develop a green corridor strategy integrated with river systems
- Upgrade parks into multi-functional climate-resilient spaces
- Design and operationalize a sponge city framework
- Develop context-specific NbS solutions, including green roofs

Scope of Work

Task 1: Green Space and Corridor Assessment

- Support the finalization of inventory of parks, open spaces, forests, and corridors and the assessment of ecological quality and drainage performance

Task 2: Sponge City Strategy Development and design of NbS interventions

Within the framework of the public green parks, green corridors and river corridors of the program, support the development of a sponge city strategy, that could by integrating site-specific solutions to these outputs, for instance:

- Stormwater retention, detention, and reuse
- Decentralized drainage solutions
- Infiltration systems
- Reduction of surface runoff
- Urban flood mitigation through landscape design

Develop a catalogue of NbS solutions, and design context-based solutions such as:

- Rain gardens and bioswales
- Permeable pavements
- Urban wetlands and park retention areas
- Floodable parks and seasonal storage areas
- Tree pits and infiltration trenches

Ensure adaptability to:

- Dense urban areas
- Informal settlements
- Public spaces

Promote:

- Reduced runoff
- Flood buffering
- Urban cooling

Task 3: Green Roofs and Building-Level Interventions

Assess the potential for green roofs and building-level interventions:

- Support the identification of priority and suitable buildings (public, institutional, commercial, residential)
- Develop typologies:
 - Extensive green roofs
 - Intensive/park roofs
 - Blue-green roofs for water retention

Task 4: Park Upgrading and Development

- Technical support for the designs for priority parks
- Integrate:
 - Water-sensitivity
 - Inclusive public space features
 - Biodiversity and ecological restoration
- Incorporate community inputs through ADB consultations where possible and relevant

Task 5: Input for detailed Design and implementation

Provide some inputs for the detailed designs on the following:

- Drainage and sponge systems
- Cost estimates
- O&M frameworks

Deliverables Component 2

- Sponge city strategy report, including green space assessment and green corridor plan
- NbS solutions catalogue/technical notes, including park and corridor sponge system designs
- Green roof feasibility report

Component 3: Analysis of KEUR Components' Impact on the Kathmandu Valley System

Scope of work

- Development of an assessment framework to assess system-wide interactions of KEUR components, including river restoration, flood retention areas, wetlands, wastewater interception, and green urban spaces. This can include quantitative and qualitative analysis and needs to balance level of detail and validity with the time-, budget- and data constraints of this assignment. The approach must be robust enough to provide a significant boost to the overall project rationale.
- Shift from component-level assessment to a system-based approach, capturing cumulative and synergistic impacts of KEUR components across the Valley
- Focus on key outcomes: flood risk reduction, groundwater recharge, water retention, heat stress, water quality improvement, ecosystem restoration, and social and cultural aspects.
- The main emphasis of this component is on developing a system-level assessment framework. The models and modelling support of the ADB team can be utilized for creating actual outputs.

Analytical work

- Identification of parameters relevant for system-level assessment of KEUR components
- Assessment of performance under varying climate and urbanization scenarios
- Specific analysis of:
 - Upstream–downstream dynamics (e.g., impact on flood peaks)
 - Role of retention ponds and wetlands in flow regulation and aquifer recharge
 - Effectiveness of interceptor systems in improving river water quality in conjunction with existing and planned wastewater treatment infrastructure

Integration of nature-based solutions (NbS)

- Testing NBS against conventional grey infrastructure alternatives
- Maximizing co-benefits, including:
 - Biodiversity enhancement
 - Urban cooling
 - Improved public space and livability
- Identification of optimal locations, sizing, and sequencing of interventions to maximize system-level impact (see also Component 1).

Overall contribution

- Transforms KEUR from a set of discrete investments into a coherent, valley-wide resilience strategy
- Provides robust, evidence-based justification for investment
- Strengthens climate finance positioning
- Ensures delivery of measurable, scalable environmental and urban resilience outcomes

Deliverables Component 3

- Assessment framework report
- Inputs for an overall impact assessment report focused on flood risk reduction, groundwater recharge, water quality improvement, ecosystem restoration, and social and cultural benefits.

3. Implementation arrangements

Roles of Contracting Agency RVO and ADB: The Contracting Agency is RVO and is responsible for the final approval of deliverables. The Consultant must communicate with RVO on all matters pertaining to this assignment.

The ADB and the local consultancy team has an active role in this assignment as main commissioner for the overall KEUR project, and will therefore be included in the review of deliverables, stakeholder consultations and progress meetings. A point of contact within the ADB team shall be provided during the kickoff meeting. The Consultant is expected to coordinate actively with the ADB on technical matters and stakeholder consultations, keeping RVO copied in communications. A kick-off meeting shall be organized with the participation of all involving parties (the consultant, ADB and RVO) to discuss and agree on the approach and plan of implementation. During the implementation of the Project, for additional data gathering, product validation and/or feedback from the Government, the ADB will facilitate the organization of sessions.

Progress meetings: A monthly meeting will be established between RVO, the Consultant, and the ADB during the execution phase. Dates for monthly meetings will be set up at the kick-off meeting. Additional meetings may be organized upon need. The Consultant is expected to give detailed insight into the progress of the assignment during these progress meetings. For this purpose, a change log, progress report or other methodology shall be used, to be agreed upon in the kickoff meeting. The emphasis should be on planning, outputs, key project risks, possible mitigation measures that can be taken by the Consultant and/or the Client/Beneficiaries, and the principal owner to address these risks. Additionally, it is recommended to provide an online platform where all assignment output can be accessed by relevant parties.

Quality control and assurance: The Consultant must carry out quality control and quality assurance prior to submitting all draft deliverables. Upon request, the Consultant must provide insight into quality control carried out for specific deliverables. These can include but are not limited to, internal draft versions of reports, internal quality control sheets of model set-up, modelling logs, calibration and validation, and internal checklists on data sets.

Report review procedure: Drafts of the deliverables must be sent to RVO. The draft deliverables will be reviewed by RVO and the ADB local team. RVO will coordinate the delivery of a compiled and structured list of comments to the Consultant within 2 weeks after delivery of the draft reports. The Consultant must deliver the final deliverable and a separate document with a response to all comments, along with how these have been

incorporated into the final deliverable. RVO will be responsible for final sign off of the deliverables.

Deliverables requirements: All draft and final deliverables must be written in English. All report deliverables must be submitted in MS Word and Adobe PDF. All reports should have an easy-to-read layout, be well-structured, and be well-written. They must be clear and concise with minimal formatting, spelling, grammatical or arithmetic errors, and include a summary and helpful illustrations, graphics, charts, and maps. Bearing in mind that the intended recipients of the report may not necessarily be specialists, it is important that the reports are easily understood by non-experts and will contain commonly understandable communication products, such as maps and graphical representations of the current and future risk for current and future climate and land-use scenarios.

Data and materials handover:

- All data to be provided to RVO and the ADB shall be fully documented, including provenance, licensing, metadata, and cataloged on external hard drives or via a web portal;
- Models and all data files prepared for the simulation of priority actions have to be provided to RVO and the ADB fully documented to enable reviews of the proposed actions and to enable the current or any other consultant to provide follow-up studies and the possible other use of the model;
- Data formats must follow Open Geospatial Consortium standards;
- Metadata schema must follow ISO 19115 Geographic information — Metadata standard;

4. Project rationale

Kathmandu Valley, home to over 3.5 million people^{1,1} is surrounded by mid-hill ranges that form a natural “bowl-shaped” watershed. This topography forms a complex river system fed primarily by precipitation and natural springs, with all tributaries converging into the Bagmati River, which flows southward out of the valley toward the Terai plains. Including two metropolitan cities, Kathmandu and Lalitpur, the Municipality of Bhaktapur and other 16 municipalities, the valley contributes about 35 percent of the national gross domestic product (GDP) through tourism, trade, and services². It is also renowned for its rich historical and religious heritage, including the holy Bagmati River and over 130 World Heritage Sites. However, rapid urbanization, environmental degradation, and climate change threaten both the valley’s cultural legacy and ecological health. Sustainably managing the Bagmati basin, including ecological services within the valley, is therefore a critical national priority, central to preserving the valley’s heritage, its attractiveness, and ensuring its resilience.

Degradation of urban ecosystem. The Kathmandu Valley has experienced extensive loss of wetlands, water bodies, and other water infiltration areas due to rapid and unplanned urban expansion. The built-up areas in Kathmandu Valley increased by more than 200% between 1990 and 2020, leading to a drastic reduction in permeable surfaces and water infiltration zones³. Furthermore, over 80% of the valley’s natural wetlands and ponds have disappeared in recent decades. It lost about 28 percent of forest canopy from 1989 to 2019⁴, and the public spaces lack adequate green cover, resulting in poor urban biodiversity and ecosystem services including loss of rainfall interception capacity. Cumulated with the

¹ Central Bureau of Statistics (CBS). 2023. National Population and Housing Census 2021 Results.

² The Kathmandu Post. 2025. [Growth crawls to 1.4 percent in Bagmati province, Nepal's economic hub](#). 28 November

³ Government of Nepal. 2017. *National Urban Development Strategy*.

⁴ Shrestha et al. 2022. *An assessment of the impact of land use and land cover change on the degradation of ecosystem service values in Kathmandu Valley using remote sensing and GIS*. Sustainability.

reduction of green spaces and urban parks, it has intensified surface runoff significantly with reducing natural flood buffering capacity and groundwater recharge areas⁵. Kathmandu Valley groundwater extraction (59 million liters per day [MLD]) far exceeds sustainable yield (26 MLD), indicating a severe supply–demand gap (footnote 4).

The valley has about 372 hectares (ha) of public open space, which accounts for about 0.5 percent of its total area⁶ and less than 5m² per inhabitant falling far below the recommended minimum of 12 m. per inhabitant for a healthy and livable urban environment⁷. Ecological corridors that once supported diverse native vegetation and ecological connectivity have been altered by concrete structures. Large parks and green spaces such as Pashupati Park, Gongabu Bus Station, Tinkune Park, and Balaju Park are poorly maintained and fragmented. Similarly, the loss of pocket and community parks has reduced neighborhood green space, worsening heat stress, limiting groundwater recharge, and diminishing social cohesion and residents' overall well-being.

Compromised river corridor health. In Kathmandu Valley, sewer and stormwater drainage systems operate by gravity flow and are managed by multiple government entities. However, due to a lack of coordination, communities and municipalities often do not distinguish between sanitary sewers and storm drains. As a result, all sewer and stormwater drainages carry a mixture of sewage, stormwater, and industrial effluents. About 90% of Kathmandu Valley wastewater (approximately 330 MLD)⁸, is discharged daily into the Bagmati river network without treatment⁹. This problem is mainly due to inadequate treatment capacity, as well as the absence or intermittent presence of efficient interceptor.

Flood vulnerability. The Valley's drainage capacity has been compromised by encroachment, sedimentation, and river channel alteration. The Bagmati River and its 20 tributaries within the Kathmandu Valley are now largely confined within concrete embankments, while numerous poorly planned transverse structures obstruct natural water flow, leading to elevated flood risks. Flood susceptibility mapping indicates that approximately 32 percent of the valley, mostly along riverbanks, is highly vulnerable to flooding¹⁰. In late September 2024, Kathmandu Valley experienced record-breaking rainfall of up to 322 millimeter (mm) in 24 hours, causing severe floods that resulted in at least 56 deaths, displaced over 8,400 people, and caused damages estimated at 1 percent of Nepal's GDP¹¹. The flood events previously considered 50- or 100-year floods are now occurring more regularly as a result of rapidly changing climatic conditions. The climate change induced increases in extreme rainfall are projected to rise by up to 72 percent in intensity by 2050 and that will lead to more severe flooding incidents¹².

Proposed solutions

⁵ UNEP. 2023. [Kathmandu Valley Environment Outlook](#)

⁶ B. Sharma. 2025. [KTM Valley sitting on ticking bomb due to open space dearth](#). Republica. 17 January and The Rising Nepal Daily. 2025. [Blue-green spaces can reduce Kathmandu's urban temperature](#). 17 June

⁷ 10–12 square meters per person of accessible green public space per capita (ideally 50 m.), with all residents living within 300 meters of such spaces is recommended. Ministry of Urban Development, Government of India. (2015). Urban & Regional Development Plans Formulation & Implementation (URDPFI) Guidelines: Volume I & II. New Delhi: Government of India.

⁸ ADB. 2025. Consultant Report: Pre-feasibility Study for Improvement of Wastewater Network in Kathmandu.

⁹ 28% of the total wastewater is generated from on-site sanitation systems, of which 8% are never emptied and 20% are directly discharged into rivers. The remaining 72% originates from off-site sanitation systems, but only 4% of this volume receives any form of treatment. Consequently, an estimated 88% of the total wastewater produced in the Kathmandu valley ultimately ends up being discharged untreated into the river system.

¹⁰ Chaulagain et al. 2023. Flood susceptibility mapping of Kathmandu metropolitan city using GIS-based multi-criteria decision analysis. Ecological Indicators, 142, 109327. <https://doi.org/10.1016/j.ecolind.2023.109327>

¹¹ NDRRMA. 2024. [A Preliminary Loss and Damage Assessment of Flood and Landslide](#).

¹² Shrestha et al. 2023. [Rainfall extremes under future climate change with implications for urban flood risk in Kathmandu, Nepal](#). *International Journal of Disaster Risk Reduction*. Volume 97.

Annex 8 - Terms of Reference

The project applies integrated ecological urban restoration concept by combining river corridor restoration, wastewater management, green infrastructure, and institutional strengthening to address Kathmandu Valley's critical challenges of flooding, water pollution, and ecosystem degradation. By restoring wetlands and river corridors, managing wastewater, and expanding green spaces, the project will reduce flood vulnerability, improve water quality, and enhance urban livability. These outputs, supported by stronger governance and community custodianship, will lead to improved climate resilience, healthier ecosystems, and inclusive public spaces.

The proposed project will be executed by the Ministry of Urban Development (MOUD) and implemented by HPCIDBC under MOUD. The project will have 4 outputs.

Output 1 Flood Resilience and Ecosystem in Bagmati River Basin Enhanced. This output aims to adopt integrated solutions to improve Bagmati river system corridor, unlocking multiple socio-economic and environmental benefits. The project will implement a comprehensive nature-based revitalization of the Bagmati river system. The restoration of about 120 kilometers (km) of river channel and development of around 70 ha of riverfront parks using nature-based solutions, will reestablish ecological connectivity¹³, and the construction of about 5.6 million cubic meters (m³) of water retention ponds in urban and peri-urban areas will enhance flood buffering, support groundwater recharge, and enable landscape-based rainwater harvesting. These ponds, together with the restoration of an estimated 160 ha of wetlands and recovery of historical ponds, will contribute to restoring natural floodplains and increasing the valley's capacity to absorb and manage extreme rainfall events. The management and rehabilitation of 10 ha of informal settlements along river corridors into livable areas, with the possible provision of affordable housing for relocation, will serve as pilot to restore continuous green corridors and reduce flood vulnerability.

Output 2 Resilient Wastewater Management Improved. This output aims to improve wastewater management and river water quality. Activities under the output will be implemented in close coordination with the ecological restoration activities under output 1. The project will expand and rehabilitate Kathmandu Valley's wastewater infrastructure. A total of around 100 kilometers of interceptor sewer networks will be installed along river corridors to prevent untreated sewage from entering water bodies, while existing interceptors will be rehabilitated and integrated into a coordinated urban water recycle and management plan. Climate-resilient standards will be introduced to ensure continuous functioning during extreme rainfall, flooding, sedimentation, and future climate-induced hydrological changes. By reducing untreated wastewater discharged into the Bagmati river system, these interventions will directly complement ecological restoration efforts and contribute to long-term improvements in water quality and riverine ecosystem health. It will also contribute to transport wastewater load to match the treatment capacity of the future WTPs under construction.

Output 3 Resilient and Inclusive Public Green Spaces Developed. The output aims to transform degraded urban ecosystems particularly by developing public spaces and urban green canopy, to improve green corridors. Upgrading and expansion of an estimated 120 ha of inland public parks, both large and pocket parks, and 170 ha of urban forest will increase urban green cover, improve biodiversity, and restore ecosystem services such as rainfall interception and temperature regulation¹⁴. The project will develop around 18 km of green corridors and 30 km of tactical green infrastructure that will reconnect fragmented

¹³ River restoration involves restoring natural flow width, rehabilitating banks, reviving wetlands and greenery, removing barriers, and other measures to improve river health. Based on a hydraulic analysis as well as a site analysis of each section this can include removing/modifying/rebuilding artificial barriers such as sewer alignments, weirs, undersized bridge openings, and concrete linings to restore natural water flow, or unwanted sediment deposits to restore the original riverbed.

¹⁴ The parks will be gender-friendly, and includes amenities such as gentle walking paths, community recreational and exercise stations, bird watching, and Yoga platform to promote physical well-being and inclusive recreation.

habitats and enhance urban resilience. Promotion of soft mobility infrastructure such as cycle tracks, footpaths, and designer bus stops, integrated with green and blue networks will increase access to public spaces and encourage sustainable, healthy urban lifestyles. These interventions will not only improve environmental quality and public health but also restore the ecological and social functions of the valley's urban landscape.

Output 4 Institutional Capacity and Urban Governance for Resilient Urban Planning and Sustainable Asset Management Strengthened. This output aims to strengthen institutional capacity and regulatory enforcement¹⁵ to enable integrated urban water and ecological asset management. Key activities include: (i) preparing a sequenced investment roadmap to operationalize the Bagmati Action Plan; (ii) developing integrated systems for sustainable urban water and ecological asset management; (iii) establishing a hydrologic database and decision support system (DSS) for managing surface and groundwater quantity and quality; (iv) operationalizing regulatory systems for withdrawal and effluent permits with monitoring and enforcement; (v) improving land use planning and building regulations for river corridor and urban development; (vi) developing a flood risk management model for the valley; (vi) supporting institutional reforms, including strengthening HPCIDBC's structure to enhance municipal leadership and explore higher level engagement for stronger governance. The output will also advance policy dialogue on implementing updated Water Act and basin planning, promote knowledge sharing, and build capacity for integrated planning. Public-private partnerships will be introduced for sustainable O&M of revenue-generating assets, while community custodianship models will be applied to non-revenue assets. Remaining assets will be managed by municipalities supported by advanced asset management practices and technical capacity enhancement measures. The output will also include support for project implementation and supervision.

This program has been identified through feasibility studies financed by CDIA, ADB and RVO carried out in 2024 and 2025, each of them with the following objectives:

- Cities Development Initiative for Asia – CDIA (ADB): identified an integrated program with priority actions (prefeasibility study and conceptual design) to initiate an ecological transformation of the KV urban fabric, with a combined multisectoral approach and spatial approach.
- Netherlands Enterprise Agency – RVO: inputs related to flood mitigation, groundwater recharge, nature-based solutions and biodiversity.
- Sanitation Financing Partnership Trust Fund (SFPTF): Study on wastewater management system with a focus on interceptor.

The project is estimated to cost up to \$250 million, of which \$150 million will be financed through an ADB concessional OCR loan. Additional co-financing will be explored during project preparation, including potential collaboration with the World Bank and grants from relevant trust funds.

¹⁵ Nepal's Water Act (2025) envisions institutional reforms including River Basin Authorities and mandates, which will serve as a foundation to leverage the integrated river basin management goals outlined in the Bagmati Action Plan. The project supports these reforms and enforcement support through coordination with ADB's Policy Based Lending and related other initiatives.