

Bagua Creek Rehabilitation

Green-Gray Partnership Project for Philippine Cities and Municipalities

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About the Green-Gray Partnership

Climate change can no longer be ignored. The raging waters of typhoons Ondoy in 2009 and Haiyan 2013 are seared in Philippine collective memory. In the span of three weeks in 2020, three typhoons battered the country, inflicting over a hundred fatalities and at least PHP 25 billion (USD 518 million) worth of damage. The Philippines urgently needs to harness nature to uplift communities not just because it's better for the planet, but because making the most of available resources is an economic necessity.

In the last quarter of 2021, just as the Philippines was reining in the pandemic, Conservation International and AECOM began the Green-Gray Partnership Project with eleven local cities and municipalities to kickstart the adoption of nature-based solutions.

Integrating green natural systems into gray infrastructure provides multi-function and costeffective solutions. Green-gray combines natural elements with hard infrastructure to protect and restore natural processes and create healthier urban environments. The combination allows the creation of natural habitats or system functionality (green infrastructure) in a resilient and optimized manner (gray infrastructure). Many green-gray solutions incorporate wetland and forest habitats. As with all habitat creation/restoration projects, the success of these initiatives depends on an understanding of the ecological structure and function of the target habitats.

Green-gray infrastructure approaches can apply in coastal, freshwater, and terrestrial settings and accomplish a variety of project goals. The typical infrastructure services such as flood management, costal protection, and improving water quality are delivered alongside other benefits such as safeguarding biodiversity, providing livelihoods, increasing public space, and even financial returns to local communities through carbon credits.

A key reference for this engagement is the *Practical Guide to Implementing Green-Gray Infrastructure* by the Green-Gray Community of Practice, which is led by Conservation International. The guide, published in 2020, provides green-gray case studies and walks

readers through the process of project preparation, design, and implementation. It also defines the critical elements of the green-gray approach:

- 1. Using science and engineering to produce operational efficiencies;
- 2. Using natural processes to maximize benefits (i.e. ecosystem services);
- Increasing the value provided by projects by including social, environmental, and economic benefits; and
- Using collaborative processes to organize, engage, and focus interests, stakeholders, and partners.

Conservation International selected the pioneer batch of Green-Gray partner cities and municipalities based on the following criteria:

- Commitment to a Resilient Future Good track record for pursuing a climate-resilient future for their locality;
- **Drivers of Change** Positioned as municipal leaders for a sustainable future for the Philippines;
- Rich and Diverse Natural Assets Representation of the abundant biodiversity of the Philippines; and
- Vulnerability to Impacts of Climate Change Exposure to the impacts of climate change.

The Green-Gray Partnership Project was meant to equip local governments units (LGUs) with capacities to identify opportunities for the adoption of naturebased solutions and prepare concept notes to rally support for pilots. At the beginning of the project, it was essential to transfer knowledge of green-gray infrastructure through the guide and workshops focusing on case studies. This built a base from which the local governments drew from in order to craft a Statement of Intent and a Concept Design Note (Annex 1), both of which are contained in this document.

This document, containing a high-level design and assessment, may be used by the local governments to seek support for project preparation (in which the concept should be refined with further studies), detailed design, and implementation. Support may be sought from national government, financing institutions, grant giving foundations, and private sector partners.

Cotabato City, Mindanao, Philippines **Bagua River Rehabilitation**

Rehabilitating Bagua River to address flooding issues and to boost tourism potential



Location Cotabato City, Mindanao

Bagua Creek

Key Thematic Area Riverine

60 K Benefitting Residents source: Census 2020

1.2 B Increase in Tourism Revenue

4,255 Metric tons of Improved **Biodiversity**



Proposed Site

Key Issue Silted creek and presence of Informal Settlements contributing to flooding

Green-Gray Solution Creek Embankment and Dredging

Proposed Implementation Timeframe 1-3 yrs (Phase 1); 4-5 yrs (Phase 2)

Executing Agencies

- City Environment and Natural • **Resources Office**
 - City Planning and **Development Office**
- Office of the City Engineer ٠
- **City Health Office** •
 - City Social Welfare and **Development Office**

Project Aim

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A green-gray infrastructure (GGI) solution together with cityinitiated programs are proposed to rehabilitate Bagua Creek, with the aim of revitalizing the creek for transportation and tourism. Aside from the economic benefits, it will also address the issue of flooding within the surrounding Barangays through dredging of the silt. Lastly, the relocation of the informal settlements along the creek to a safer location will also reduce the number of people negatively affected by flooding.



Cotabato Location Map



Cotabato Green-Gray Partnership Project Location Map





Overview

Cotabato City's extensive river and creek networks are the arteries of the city, providing transport routes, food, and leisure to its people. However, at present, due to the location of the city below sea level and at the tailend of the Mindanao River Basin, the biggest river basin in Mindanao, occasional inundation from tidal intrusions and sedimentation makes it highly vulnerable to flash floods. This situation is aggravated by the obstruction of household garbage and water lilies in Bagua Creek, an important exit channel not only for the big rivers surrounding the city but also for surface runoff.

The city of Cotabato wants to revitalize the Bagua Creek to its former status as a main thoroughfare for water transportation. Currently, due to very high level of silt mostly coming from the Rio Grande de Mindanao River and the presence of informal settlements along and within the creek, it is not navigable. Flooding along the creek is also a priority issue as rainwater is unable to effectively flow along the creek.

The obstruction directly affects five major downtown barangays. Rehabilitating the creek is vital to prevent further degradation of the waterway and aggravation of flooding. The proposed green-gray infrastructure solution includes resettlement of households out of the river's buffer zone, dredging, and developing idle open spaces along the waterway as floodable parks to reduce the flooding in the surrounding barangays.

Sustainable Development Goals (SDG) Targets



Rationale

The Bagua Creek serves as a reminder of a past Cotabato City where waterways were transportation routes for *bancas* (tug boats), venues for recreation like swimming and family picnics, sources of fish and shrimp, and part of daily household routines. Although it does not look bigger than a creek today, longserving barangay leaders call it the Bagua River and it is indicated in old boundary maps as such. Because of its historical value and potential for socio-economic activities, it carries the potential as an ecotourism site of the city.

At present, the river is tarnished with pollution. The influx of settlers and climate change will continue to contribute to its degradation if not rehabilitated. The presence of marine life and foliage are indicators that, given the right program and suited timeline, the river can still be revived so it can once again take center stage in community life.

Nature-induced challenges

The city is naturally below sea level, which contributes to the occasional inundation due to tidal intrusions. The city is also located at the tail-end of the Mindanao River Basin, the biggest river basin in Mindanao, making it a catch basin and, therefore, highly vulnerable to flash floods. A portion of the expansive Liguasan Marsh, which is the home to various orchids, the endangered Philippine crocodile (*Crocodylus mindorensis*), and endemic bird subspecies such as the Little Grebe (*Tachybaptus ruficollis cotabaco*) and Comb crested Jacana (*Irediparra gallinacea*).

The deforestation from upstream areas makes the eroded topsoil from mountains and hills to easily transportable to the water bodies of the city. This explains the reduced depth of Cotabato's riverbeds, reduced river widths, and accretions. The continuous siltation along creeks has prevented the flow of water lilies to the mouth of the river. The continuous growth of water lilies is a major obstruction in the flow of Bagua River.

Human-induced challenges

The creek is a convenient dumping site for informal settlers. Aside from throwing various waste to the river, they have also occupied and constructed structures along the riverway and disrupted its flow.

This obstruction directly affects 60,416 individuals living in five major barangays namely: Población 6, Bagua Mother, Bagua 1, Bagua 2, and Bagua 3, which form 19 % of the city's population. The whole city is also indirectly affected by the frequent flooding. Below is the population affected directly/indirectly by flood:

Barangay	Land Area (ha)	Population (2020)	Number of Households
Poblacion 6	22.38	3,375	675
Bagua MB	30.59	19,987	3,997
Bagua 1	185.59	10,050	2,010
Bagua 2	176.59	19,998	4,000
Bagua 3	8.73	7,006	1,401
Total	423.88	60,416	12,083

Population affected by flooding of Bagua Creek

In 2017 flood, animals and 2 persons drowned. Water levels of about 1.8 meters remained for more than one week, affecting lives and businesses, hindering investors, and inducing disease. Despite the frequent flooding and regulations against construction of illegal structures, many families opt to live along the riverbanks because they have nowhere else to go. Hence, domestic waste remains uncontrolled in the river.

Bagua Creek biodiversity

The Bagua Creek can be divided into two systems: the unbuilt and the built-up. The unbuilt environment stretches more than 10 kilometers across muddy flatland with intermittent clusters of nipa palm along the riverbank extending towards Pamang Creek. Nipa palm is known to be suited for river erosion control and as a habitat for snails, shrimps, mud crabs and mud clams. It shelters insect species which attract birds. Some riverbanks outside of the project area attract egrets. Visible as well are fishes known locally as *hito, gurami, tilapia*, and shrimps.

In the absence of biodiversity assessment in the builtup area, it could be safely presumed that the same biodiversity existed prior to settlements. The builtup environment now consists of an estimated 1,940 linear meters of informal settlers whose houses are made up of wooden to semi-concrete structures. The lack of household septic tanks destroys water quality and depletes fish species. Water lilies and wild cane or *talahib* are also found in the area, which contributed to the loss of some species and blocks water flow.

Policies in place

Efforts to manage the environment and resources have intensified nationally, as expressed in RA 9729 also known as the Climate Change Act of 2009 and RA 9003 known as the Solid Waste Management Act of 2009. Cotabato



City is a longtime advocate for the protection of its natural resources. The city has issued several issuances and ordinances to intensify climate change efforts and rehabilitate the natural resources it has, especially the rivers and creeks that are degraded and exploited.

As early as 1997, the city had already issued the City Ordinance No. 1083 series of 1997, an ordinance regulating the collection of and disposal of garbage in the city, prescribing fees and providing penalties for its violation. Ordinance No. 4203 series of 2013 prohibits the use, selling, and distribution of non-biodegradable plastic as secondary packaging material and nonbiodegradable styrofoam as food and beverage containers. Additionally, to update and expand the implementation of solid waste management, Ordinance No. 2360 series of 2003 provided the guiding principles in the implementation of the comprehensive and integrated solid waste management code of the city.



Bagua Creek in Cotabato City

Project Proposal

The project site is a 4,300-kilometer stretch that branches out from Rio Grande de Mindanao starting from the Teksing area ending up at Pamang Creek. It crosses the Tanghal Bridge, Manday Bridge, Mahad Bridge and other small crossovers. Local organizations have disclosed that there are at least 3 drainage discharge points for runoff from built-up areas. Aside from public infrastructure, a substantial part of the project site is lined by informal settlers encroaching the river line whose houses are mostly made up of wood. Most of these structures are in the urban area while the stretch of the river towards the rural area is relatively free of structures and infrastructure. The proposed project shall consist of a) the just and safe relocation of informal settler families from the waterway's no-build buffer; b) the dredging of the silted creek to increase the depth by least 2.5 meters to ensure waterflow; c) and, developing open spaces along the river into floodable basins/parks to reduce the flooding within the surrounding barangays and increase public park space. The sediments collected from the dredging can be used for the waterway embankment.

Four potential sites along Bagua Creek for the floodable basins/parks have been put forward by the city, but these are still subject to negotiations of availability and titles. Meanwhile, the upstream edges of the river may be enhanced by riparian buffers to intercept farmland runoffs.

The city through a Technical Working Group has already formulated the Local Climate Change Adaptation Plan (LCCAP) and the Disaster Risk Reduction and Management Plan (DRRMP). These plans were approved by the Sangguniang Panlungsod. The City also is presently updating its Comprehensive Land Use Plan (CLUP) for the planning period 2020-2028 so the proposed greengray project and more nature-based strategies may be prepared for.

Green-gray infrastructure impact

Rehabilitating Bagua River through green-gray infrastructure in Cotabato City may unlock multiple benefits including:

- Improve waterflow along the Bagua River and connected waterways
- Reduce the impact of flooding on the urban barangays
- Creation of areas for biodiversity to flourish
- Reduce the incidence of water and sanitationrelated diseases
- Boost tourism industry and tourism-related jobs

Ultimately, the pilot can make a case for the city wide adoption of nature-based strategies to:

- Make the city inclusive, safe, resilient and sustainable
- Conserve Cotabato's river network and riverine ecosystems

Sustainable Development Goals (SDG) Targets



By 2030, achieve universal and equitable access to safe and affordable drinking water for all

By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

Support and strengthen the participation of local communities in improving water and sanitation management



Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services



Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all



By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

Strengthen efforts to protect and safeguard the world's cultural and natural heritage

By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including waterrelated disasters, with a focus on protecting the poor and people in vulnerable situations

By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

Substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels





Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Integrate climate change measures into national policies, strategies and planning

Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities



Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection

Mobilize additional financial resources for developing countries from multiple sources

Adopt and implement investment promotion regimes for least developed countries

Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation

Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

Indicative Implementation Arrangements

Precise implementation arrangements remain to be determined at the pre-design preparation phase, but it is foreseen that the project shall be led by the City Engineering Office (CEO) and monitored by the City Environment and Natural Resources Office (CENRO), which was established on October 11, 2016, to be in the frontlines of services concerning the environment and natural resources. Also, the CENRO is mandated to implement plans, programs and ordinances pertaining to environment and natural resources management of the city.

Support may be sought from City Planning and Development Office, Office of the City Engineer, City Health Office, City Social Welfare and Development Office, and a civil society organization called Kutawato Greenland Initiatives (KGI), which has already been implementing river clean-up initiatives. Government agencies that would be relevant to the project will include the Department of Public Works and Highways (DPWH), Department of Environment and Natural Resources (DENR), Department of Agriculture (DA), Bureau of Fisheries and Aquatic Resources (BFAR), Department of Housing and Urban Development (DHSUD), National Housing Authority, Department of Transportation (DOTr).

Monitoring and Evaluation Plan

To establish the GGI as an effective solution to substitute conventional infrastructure projects, a set of metrics should be established to evaluate its results:

- Monitoring of flood level in the surrounding Barangays within the area of the creek
- Inventory of damage during flooding along the creek
- Periodic monitoring of silt accumulation within the creek
- Water quality meets the standards set by the DENR
- Vegetation growth and survival rate



Due Diligence

This document contains a green-gray infrastructure design concept and high-level assessments. More details are required in order to refine this concept into a robust and detailed proposal; thus, the project preparation phase for this project should include:

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people, if relevant
- Gender assessment and action plan
- Operations and maintenance plan, if relevant
- Loan or grant operation manual, as appropriate
- Co-financing commitment letters

If required, the preparation of this project may include the following studies:

- Diagram of the theory of change
- Economic and financial model with key assumptions and potential stressed scenarios
- Pre-feasibility study
- Evaluation report of previous project
- Results of environmental and social risk screening

Conservation International's Diversity, Equity, and Inclusion (DEI) framework

At Conservation International (CI), we are committed to promoting human rights by reducing equity gaps and facilitating the enhancement of social and environmental sustainability. All of our projects are held to strict social and environmental principles as agreed upon and laid out by internationally accepted standards such as the Community, Biodiversity, and Carbon standard, as well as the Global Environmental Fund (GEF) and Green Climate Fund (GCF) safeguards. However, CI is taking our responsibility to communities and the environment even further with a commitment to tracking and monitoring Diversity, Equity, and Inclusion (DEI) benefits through our Environmental and Social Safeguards System (CISS), a system that exceeds international standards. To achieve maximum socio-environmental and climate benefits plus long-term sustainability of any project, we believe that communities must be at the center and actively participate in the design of any conservation initiative in which we engage. Central to this, CI engages communities in:

- Developing the project components, including governance, management processes, and distribution mechanisms in a consultative, transparent and participatory manner with relevant stakeholders (Conservation Agreements ensure that all parties are heard and decisions are made jointly).
- 2. Addressing gender inequality in all of our conservation programming, monitoring, and reporting efforts.
- 3. Guaranteeing the long-term financial viability of the project through optimizing project implementation while maximizing benefits.
- 4. Prioritizing non-monetary benefits whenever possible to increase the number of beneficiaries and better guarantee long-term project success.

ANNEX Design Note

Statement of Problem and Thematic Area

The LGU of Cotabato City is proposing to rehabilitate Bagua Creek to restore the natural cycles within the waterway and wider riverine network of Cotabato. From the site investigation done by the LGU, the creek's current depth ranges from 0-0.6m due to heavy siltation that comes from the Rio Grande de Mindanao River. It is further aggravated with the presence of informal settlements within the creek where disposal of various types of wastes are done on-site. Due to the factors mentioned, flooding within the surrounding Barangays has been a growing issue as rainwater is unable to flow unobstructed from the creek to the main river.

Project Aim

A green-gray infrastructure (GGI) solution together with city-initiated programs are proposed to rehabilitate Bagua Creek, with the aim of revitalizing the creek for transportation and tourism. Aside from the economic benefits, it will also address the issue of flooding within the surrounding Barangays through dredging of the silt. Lastly, the relocation of the informal settlements along the creek to a safer location will also reduce the number of people negatively affected by flooding.



Built-up sediments and waste on Bagua Creek





Encroaching settlements on Bagua Creek easement

Green-Gray Infrastructure Strategy

Bagua Creek is proposed to be dredged to up to 2.5m deep and, consistent with CI's diversity, equity and inclusion framework, informal settlements within the creek will be re-located. A delineation of the creek's required easement shall be imposed and within this will be an embankment that will raise the creek's edge to a height above the 2-year storm plus high tide elevation. This embankment will be raised using geotubes that can be filled from the sediment materials collected from the dredging subject to evaluation if the sediments are of good quality such as sand. The embankment design will integrate a sustainable approach for anti-erosion of the banks through a vetiver grass. It will also be designed to be a linear pedestrian park along the waterway. It is important to characterize and identify the source of sediments to Bagua Creek, and design appropriate interventions to manage upstream sources. For example, to mitigate further accumulation of sediments within the creek, a proposed floodgate or silt trap could be located at the mouth of Bagua Creek along the Rio Grande de Mindanao River. This could reduce the volume of sediments entering the creek, though it would require periodic maintenance dredging at the mouth of the creek. The silt trap design should consider allowances for fish migration and transport navigation.



Cotabato GGI Concept Strategy Plan



An optional solution to reduce flood risk is to use reconnect green open spaces along the creek to the floodplain, so they can retain floods during torrential rains. These designated open spaces will become catch basins to collect rainwater to reduce flooding in the surrounding area and release the water gradually once the flooding has subsided. Another potential use for these areas is for sediment collection to reduce the amount of silt accumulation within the creek. These areas can become public green parks that can serve the community as it is also linked to the creek embankment integrated with a linear pedestrian park.



2.0 ha total land area for floodable space

0.7 ha total length of embankment

Cotabato GGI Concept Strategy Blow-up Plan



Green-Gray Infrastructure Concept Strategy

Cotabato GGI Concept Strategy Section: Creek Rehabilitation



Promenade

Creek rehabilitation via waterside promenade with footpaths, cycle tracks and landscaping next to proposed river cruise.



Embankment

River embankments, sown with vetiver grass to protect against currents and waves, can be constructed above river flood levels to protect against flooding. They can also be constructed around a flood overflow area.



Sediment Trap / Flood Gate Proposed infrastructure to prevent silt from Rio Grande De Mindanao River from getting into Bagua Creek.





Calapan GGI Concept Strategy Section: Floodable Space



Weir

Under normal conditions the weir is above river levels and the pipe and flap valve drain the flood overflow area. During flooding the use of a weir automatically allows the flood water to enter the overflow area, thus reducing the volume of river flood water entering the downstream river reaches. The water in the overflow area then flows back into the river, through the drainage pipe and flap valve, once river levels fall. Alternatively, a manual or automatic sluice gate could be used.



Embankment

River embankments, sown with vetiver grass to protect against currents and waves, can be constructed above river flood levels to protect against flooding. They can also be constructed around a flood overflow area.



Floodable space

Collection point for excess water from waterways during wet season. Same space acts as eco-tourism park for general public during dry season. Footpaths and cycle tracks line the periphery atop proposed embankments.

Benefits of a GGI Solution

The proposed GGI solution will help improve the flood management of the creek while also incorporating a nature-based solution in preventing bank erosion. This will also provide the community with more open spaces connected by a dedicated active linear park along the embankment. The open spaces will also increase biodiversity in the city.

Integrated Holistic Approach

The proposed GGI Solution is a pilot project that is envisioned to be potentially scaled-up or replicated to the other parts of the municipality. The proposed solution is addressing the key issue at hand, but it is important to note that identifying the root cause of the problem is essential to the long-term sustainability of the project.

Phase 2 of the rehabilitation program will focus on the southern part of the watershed which is locally identified as Maungin River. It will use a similar approach for flood mitigation and embankment protection.

Implementation Period

A timeline of 1-3 years is estimated to prepare, implement, and construct this GGI solution. Due to lack of data and information readily available, additional studies and scoping work shall be required to validate and collect more information regarding the key issues identified by the LGU and the assumptions that have provided during the concept design stage. The proposed project timeline shall cover the following phases:

1. Predesign Phase

3-5 months;

This will include all the necessary study, scoping and data collection needed to establish, verify, and gather information required to proceed with a detailed engineering design.

2. Design Phase

2-4 months

A detailed engineering design shall be required to fully develop the conceptual design after using the verified data to accurately design the infrastructure according to the required specifications to address the key issue.

3. Implementation Phase

12-36 months

This will include the compliance to the required regulations/standards, seeking of approval of concerned agencies, and observance of due diligence. Upon obtaining the necessary approval and permits, the construction of the infrastructure or implementation of the prescribed program shall be done.

4. Operation, Maintenance and Adaptive Management periodical

This shall include periodic monitoring of the infrastructure, maintenance and repair if required, evaluation of the impacts to surrounding communities, rehabilitation and retrofitting if required.



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AECOM

Facts and figures

1.

AECOM launched when a handful of employees from design and engineering companies shared a dream of creating an industry-leading firm dedicated to making the world a better place.

2.

AECOM became an independent company formed by the merger of five entities. While our official founding was in 1990, many of our predecessor firms had distinguished histories dating back more than 120 years.

3.

Since then, more than 50 companies have joined AECOM and, in 2007, we became a publicly traded company on the New York Stock Exchange.

4

As the world's trusted infrastructure consulting firm with an unrivaled heritage delivering design, planning, engineering, consuing and construction management solutions.

AECOM in the Philippines

Established in 1996, AECOM in the Philippines has grown into a 200+ strong team of planners, engineers, environmental scientists, geologists, landscape architects and technical management specialists driven by a common purpose to deliver a better world.

Creating Sustainable Legacies

We are leading the change towards a more sustainable and equitable future by partnering with our clients to provide solutions that help them achieve their environmental and social value ambitions and advancing sustainable business operations to help prevent the worst impacts of climate change.



47,000 people



Fortune 500 #163



Work across seven continents



2 Million Work Hours Awards



100% Rating on Corporate Equality Index / Best Places to Work for LGBT Equality 2021

Accolades

- ENR rankings No 1
- Environment Firm
- Transportation Design Firm
- Facilities Design Firm
- Mixed-Used Buildings
- Education Buildings
- Aviation
- Highways
- Chemical Remediation
- Top 10 Military Friendly company 2020
- Military Friendly[®] Top 10 Company
- Military Friendly® Top 10 Supplier

- Diversity Program
- Military Friendly[®] Top 10 Employer
- Military Friendly® Top 10 Spouse Employer
- National safety council:
 155 Perfect Record Awards
- Achieved a minimum of 12 consecutive months without a recordable injury or illness.
 For each award, achieved a minimum of one million consecutive hours without an injury or illness that resued in days away from work and zero fatalities.







Since 1987, Conservation International (CI) has worked to spotlight and secure the critical benefits that nature provides to humanity.

Combining fieldwork with innovations in science, policy and finance, we've helped protect more than 6 million square kilometers (2.3 million square miles) of land and sea across more than 70 countries. Today, with offices in more than two dozen countries and a worldwide network of thousands of partners, our reach is truly global. But we couldn't have made it this far without you. Your contributions support our work to protect nature for the benefit of us all.

Cl's work in Asia-Pacific began in 1989 with a pledge to protect some three dozen of the Earth's biodiversity hotspots, including the Philippine archipelago and the Sundaland rainforests of Southeast Asia.

Since then, our focus in Asia-Pacific has expanded across the region to include other ocean and forest areas considered critical to human well-being. We help improve food security, support innovative financing for conservation projects and establish protected area networks that encompass essential ecosystems.

Cl's unique combination of experience with ecosystem conservation and restoration, community co-design, and stakeholder leadership allows us to advise and lead <u>green-gray initiatives</u> around the world in collaboration with local, regional and national governments and engineering partners.

Priorities

- Stabilizing our climate by protecting and restoring nature
- Doubling ocean protection
- Expanding planetpositive economies

About AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a *Fortune 500* firm and its Professional Services business had revenue of \$13.2 billion in fiscal year 2020. See how we are delivering sustainable legacies for generations to come at aecom.com and @AECOM.

