

BAGUIO CITY, PHILIPPINES

ASEAN Australia Smart City Trust Fund

Smart Flood Warning, Information and Mitigation System

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About Baguio City

- The “**Summer Capital of the Philippines**”
- **Land area:** 57.49 square kilometers
- **Elevation:** 1,600 miles above sea level
- **Population:** 366,358 (2020 Census)
- **Population density:** 6,373 persons per square kilometer



ASEAN
AUSTRALIA
SMART CITIES
TRUST FUND
Asian Development Bank



Australian Government
Department of Foreign Affairs and Trade





Climate-related challenges

- High amount of rainfall every year;
- Increase in temperature and development of urban heat islands;
- Flash floods;
- Frequent rain-induced landslides;

Current Smart City Initiatives

**Smart City
Command Center**

**Digital
innovations to
speed up the
delivery of
government
service**

**Smart City
Twinning
Program with
Perth, Australia**

**National
Government Data
Center (NGDC)
and Digital
Transformation
Hub (DTC)**

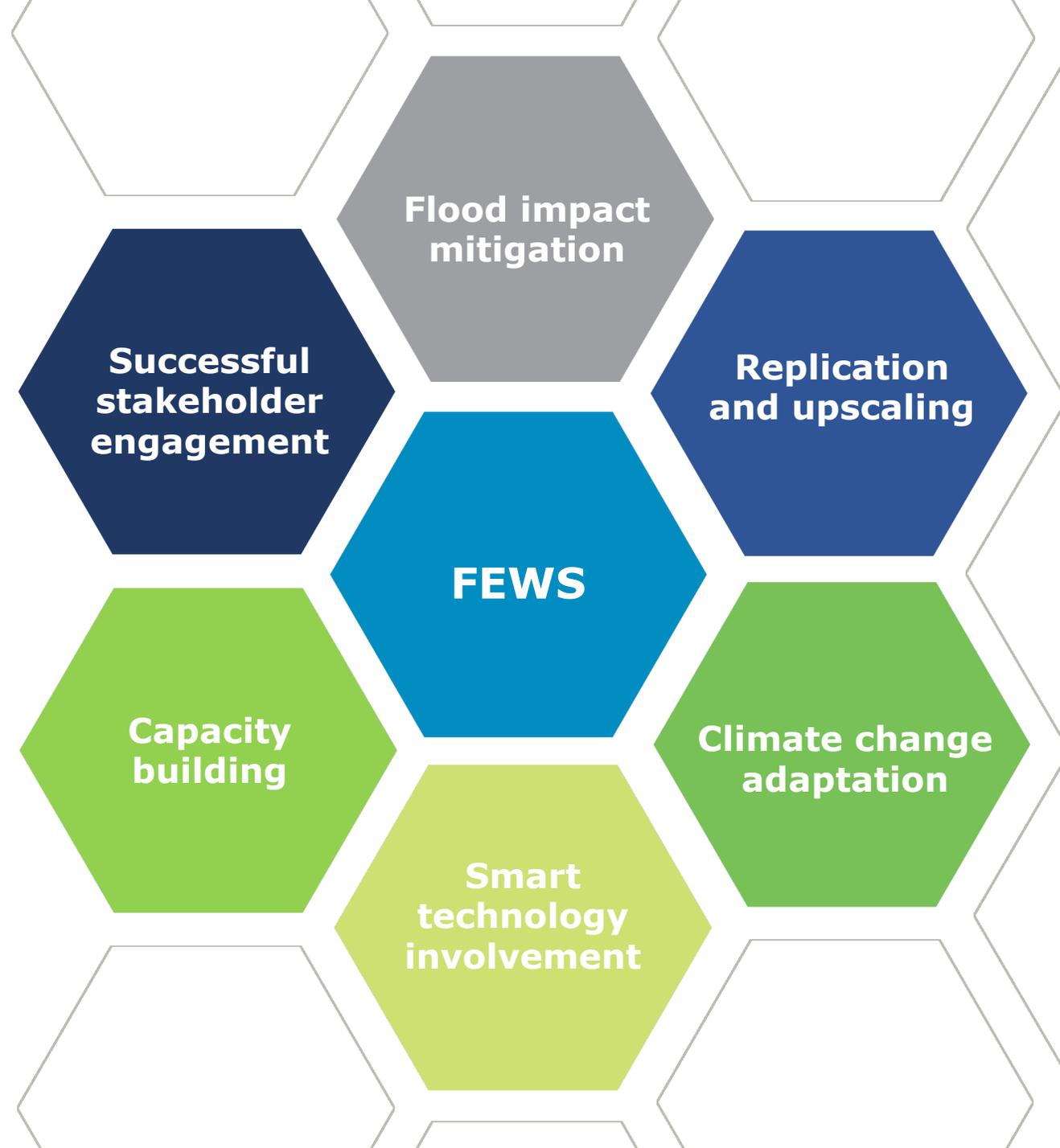
Baguio City Smart Flood Warning, Information and Mitigation System Project

Baguio City Smart Flood Early Warning, Information and Mitigation System

- Implemented under the ASEAN Australia Smart Cities Trust Fund (AASCTF), supported by the Australian Department of Foreign Affairs and Trade and managed by the Asian Development Bank.
- Project aims to improve **community disaster preparedness, awareness** and ensuring **ownership** to enhance **urban resilience**.
- Initiated in August 2020

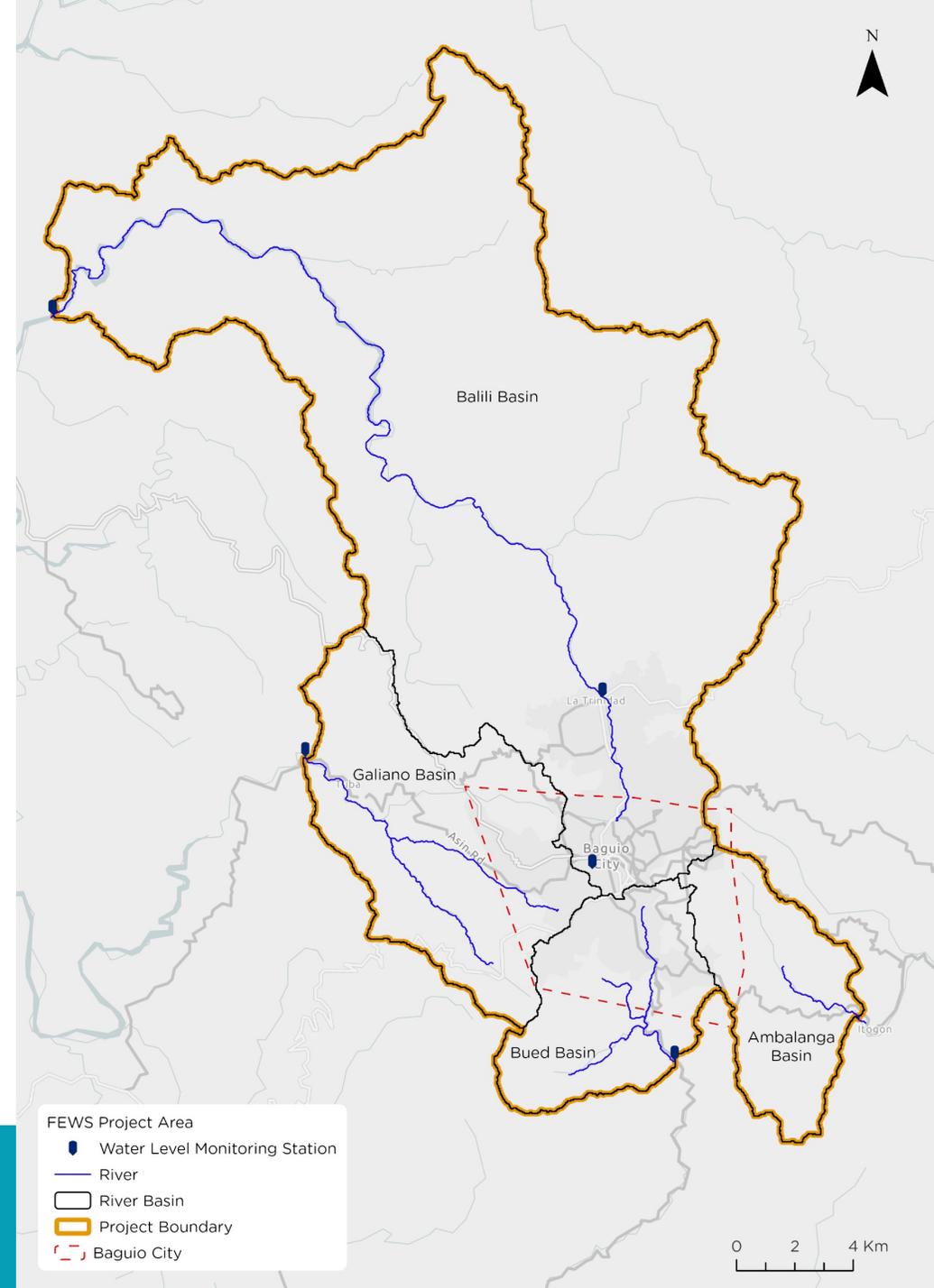
Project objectives

Improving **community disaster preparedness**, rising **awareness** and ensuring **ownership** to enhance **urban resilience**



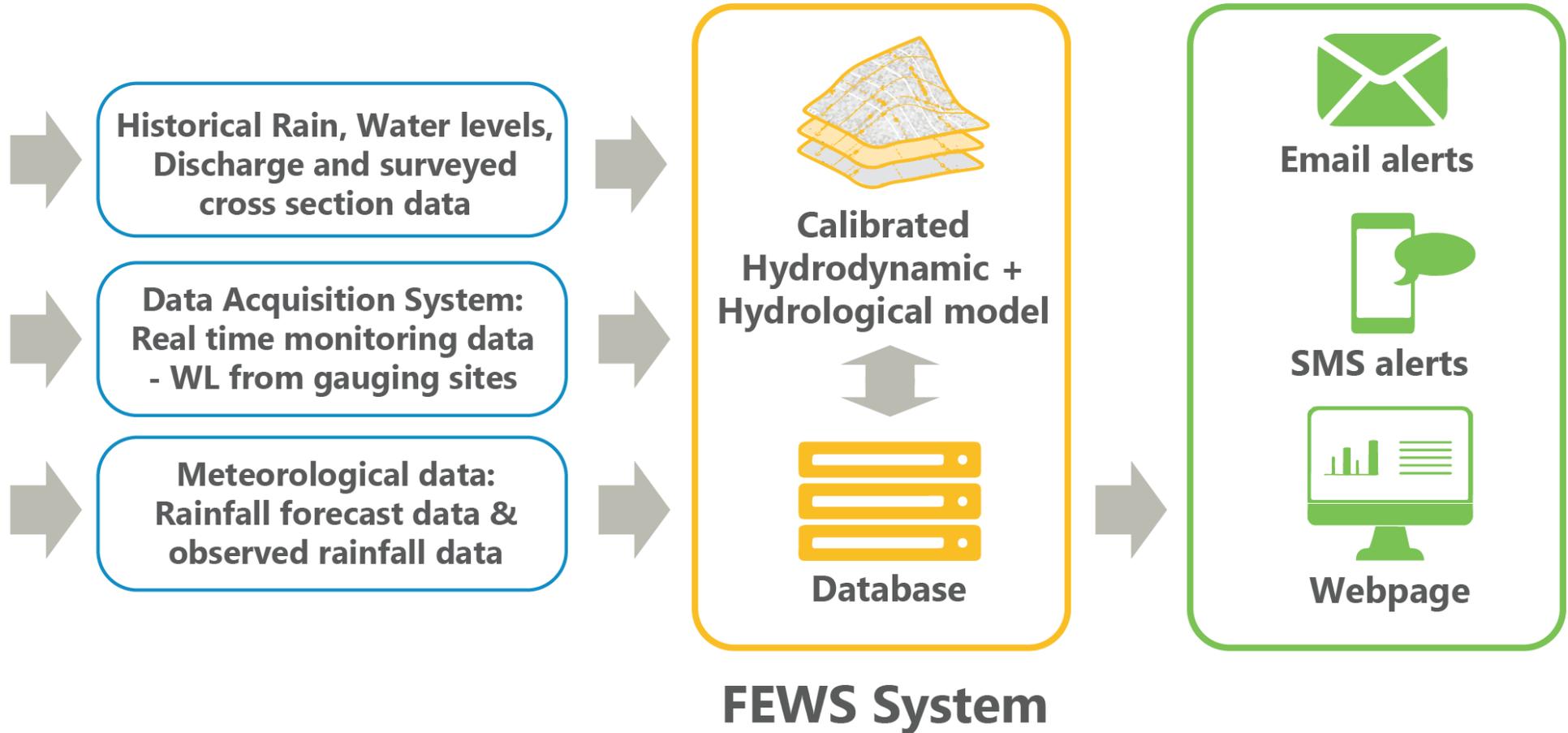
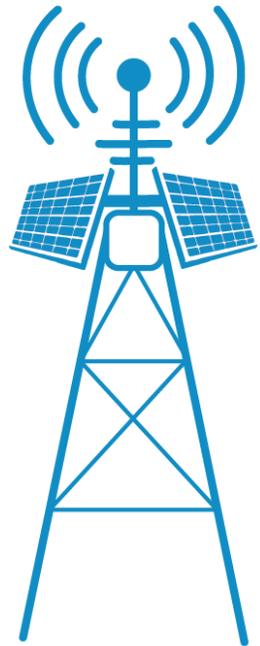
Project outputs

- Establishment and execution of a Smart Flood Early Warning Information System (FEWS)
- Establishment of a real-time data capture system in four river basins in Baguio City
- Preparation of a flood mitigation action plan



Key highlights

FEWS – conceptual design





Key focus on institutional capacity

ENHANCED CAPACITY BUILDING AND ON-THE-JOB TRAINING

Main objective:

“Ensuring the long-term sustainability for the established FEWS by securing the required local capacity for operating and utilizing the FEWS as an active risk mitigation instrument beyond the timeframe of the pilot project”



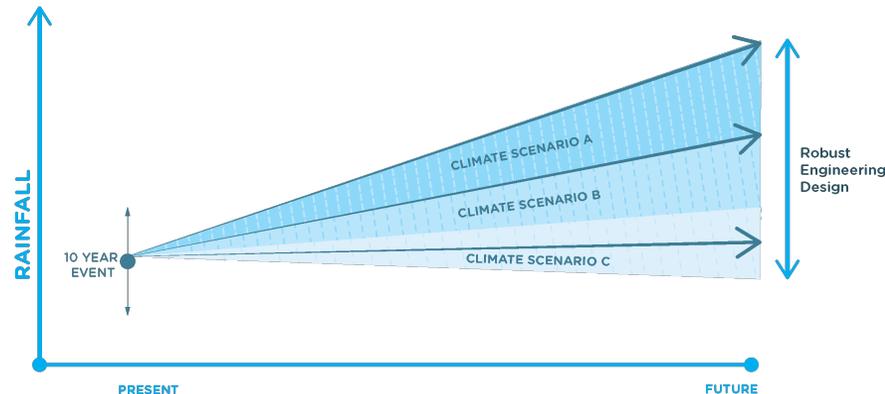
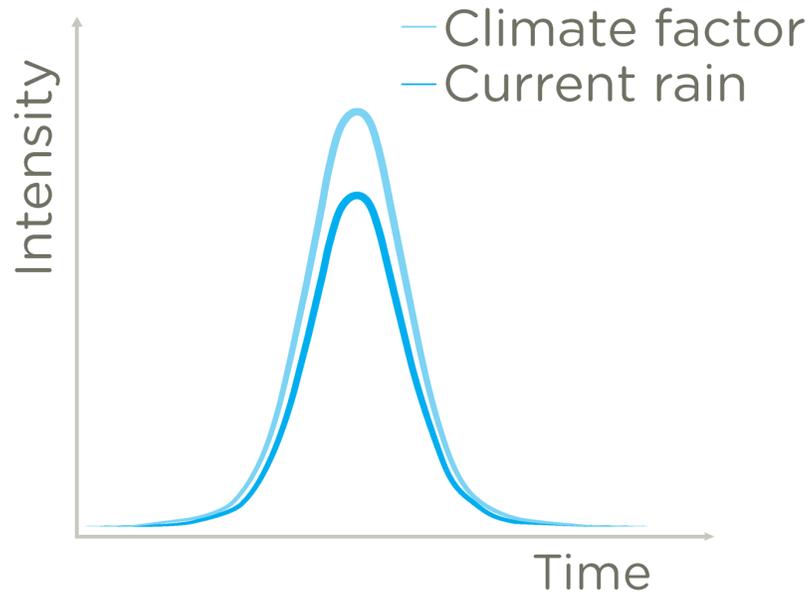


Key focus on climate change

CLIMATE CHANGE ASSESSMENT AS INPUT TO MODELLING & DESIGN FOR ENHANCING CITY RESILIENCE

Main objective:

- to ensure inclusion of an appropriate climate factor into the hydraulic model for design and establishment of a future-proof FEWS.
- to develop a flood mitigation action plan aimed at increasing city resilience while answering the following questions:
 - which types of NbS are most feasible?
 - what are the key design considerations for NbS?
 - what are the co-benefits of implementing NbS?
 - how may NbS be planned and implemented?
 - how may NbS be replicated and scaled city-wide?

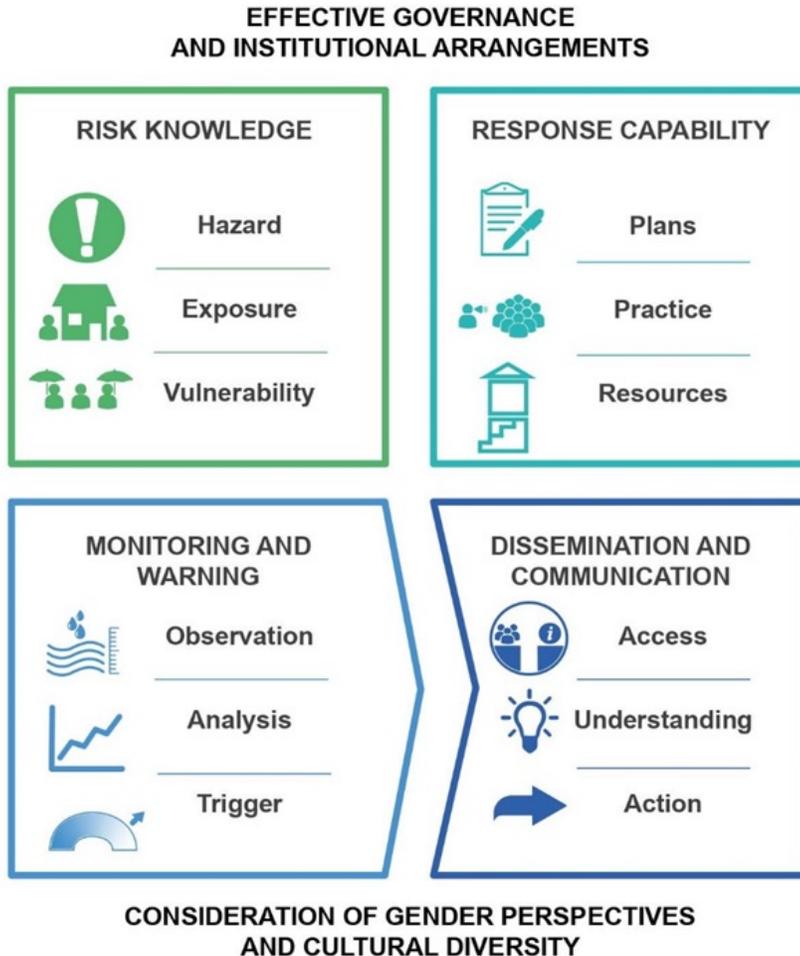




Key focus on gender & inclusion

GENDER TRANSFORMATIVE APPROACH FOR STRENGTHENED DEVELOPMENT, APPLICATION AND REPLICATION OF THE BAGUIO CITY FEWS

INVOLVEMENT OF LOCAL COMMUNITY



A MULTI-HAZARD APPROACH

Main objective:

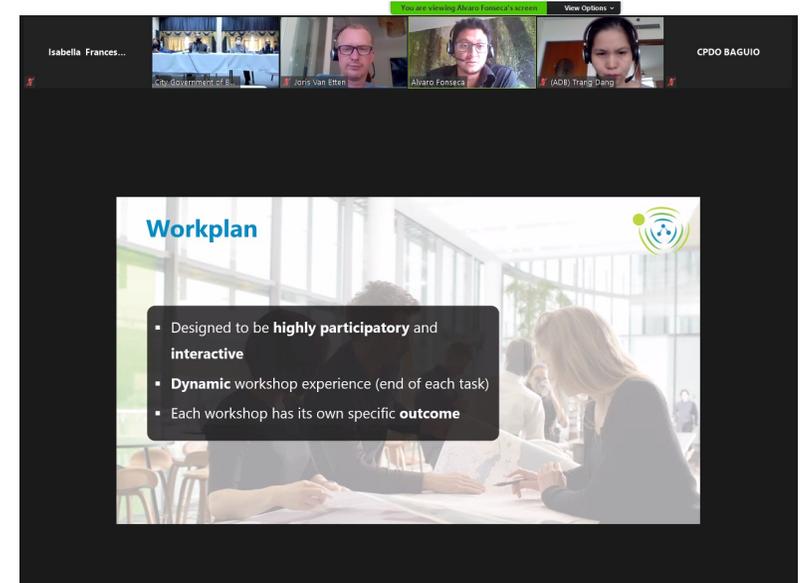
- to ensure appropriate, applicable, and timely early warning reaches the last mile, including the most vulnerable, recognizing that effective FEWS are people-centric.
- to provide specific, usable, and relevant actions/guidance on gender transformative approaches that can be built into the design and implementation of the FEWS.

Project Challenges

- COVID-19 restrictions (in the project's initial stage)
- Identified data gaps and IT infrastructure
- Mapping and coordinating with the different stakeholders in charge of maintaining various data sources/infrastructure

Success Factors & Opportunities

- The value of digital solutions during a pandemic situation
- Strong commitment of LGU in smart city development
- Support from various city stakeholders
- Strong technical expertise and support from the project team



Vision Statement

A resilient and smart Baguio.

A city with a dynamic and interconnected economy, green environment, responsive and innovative education, enlivened multi-cultural society, and a global tourist destination driven by good governance.

Lessons learned

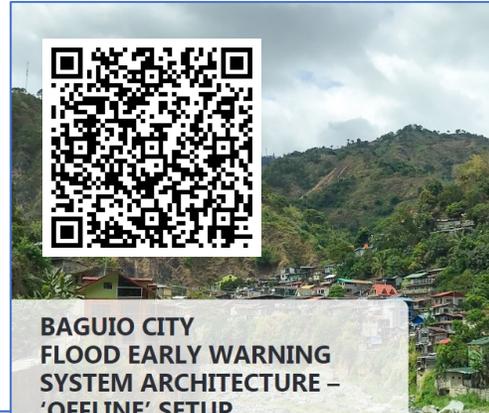
- Local government support and commitment is key to the success of every project;
- Need for a centralized repository of updated data that are accessible to every department;
- Local development plans and processes must integrate gender-equality and social-inclusion (GESI); and
- Digital innovation and solutions is a continuing process to improve the delivery of government service to intended beneficiaries.

Project reports



PHI: BAGUIO CITY SMART FLOOD WARNING, INFORMATION AND MITIGATION SYSTEM

BASELINE ASSESSMENT REPORT
JANUARY 2021



BAGUIO CITY FLOOD EARLY WARNING SYSTEM ARCHITECTURE – 'OFFLINE' SETUP

PHI: BAGUIO CITY SMART FLOOD WARNING, AND MITIGATION SYSTEM

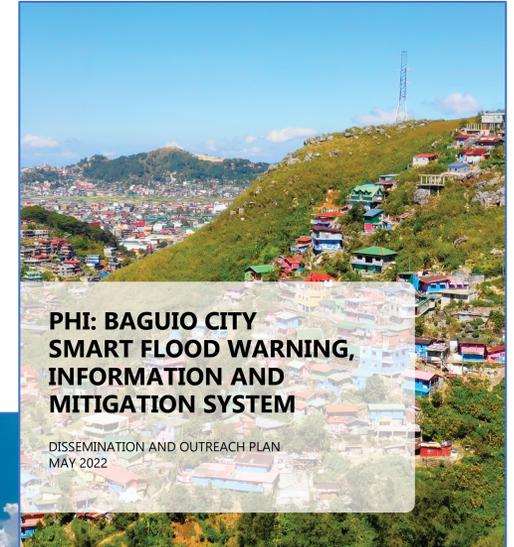
SEPTEMBER 2021



BAGUIO CITY GENDER AND INCLUSION STUDY

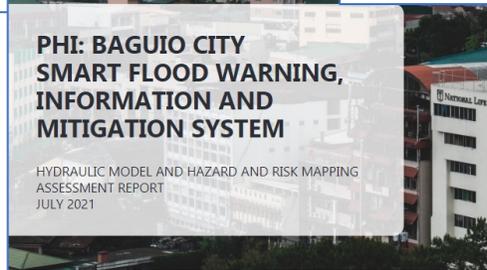
FINDINGS AND SOLUTIONS TO INFORM THE BAGUIO SMART FLOOD EARLY WARNING SYSTEM

AUGUST 2021



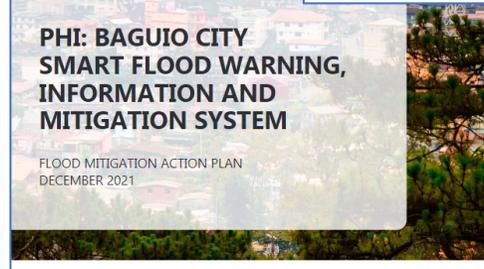
PHI: BAGUIO CITY SMART FLOOD WARNING, INFORMATION AND MITIGATION SYSTEM

DISSEMINATION AND OUTREACH PLAN
MAY 2022



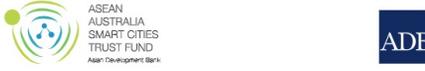
PHI: BAGUIO CITY SMART FLOOD WARNING, INFORMATION AND MITIGATION SYSTEM

HYDRAULIC MODEL AND HAZARD AND RISK MAPPING ASSESSMENT REPORT
JULY 2021



PHI: BAGUIO CITY SMART FLOOD WARNING, INFORMATION AND MITIGATION SYSTEM

FLOOD MITIGATION ACTION PLAN
DECEMBER 2021



PHI: BAGUIO CITY SMART FLOOD WARNING, INFORMATION AND MITIGATION SYSTEM

SCOPING AND TRAINING COURSE DESIGN REPORT
TARGETED CAPACITY BUILDING PROGRAM TO ENHANCE DELIVERY OF A SUSTAINABLE FEWS

APRIL 2022





Thank you!

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