



ASEAN
AUSTRALIA
SMART CITIES
TRUST FUND
Asian Development Bank



Australian Government
Department of Foreign Affairs and Trade

ADB

BAGUIO, PHILIPPINES – Delivering a smart and socially inclusive flood early warning system



The ASEAN Australia Smart Cities Trust Fund (AASCTF), financed by the Australian Government and managed by the Asian Development Bank (ADB), has been supporting Baguio in its ambition to become a truly resilient city, catering to the needs of all its citizens, since August 2020. Beset with torrential flooding and landslides, the city will soon have a flood mitigation action plan and an inclusive smart flood early warning system (FEWS) that will help reduce these climate change-enhanced risks.

DEVELOPING THE FLOOD EARLY WARNING SYSTEM

Due to the city's high vulnerability to climate hazards, combined with the expansion of impervious paved areas, Baguio experiences increasing runoff volumes and flood damages each year. The AASCTF project implementation team, led by global consulting firm Ramboll, is working closely with the city to develop a truly smart, holistic, nature-based, gender-sensitive, and socially inclusive approach to address these challenges. This centers on the smart FEWS with a real-time data capture system covering four river basins in the city, along with a [flood mitigation action plan](#) that includes a toolbox of scalable and replicable nature-based solutions applied at three pilot sites, and an enhanced capacity building and on-the-job (OTJ) training program to ensure long-term sustainability of the smart FEWS. In developing the FEWS, a series of studies were undertaken, such as a [baseline assessment](#), [hydraulic modeling and risk mapping](#), [offline FEWS setup](#), spatial overlay analyses, gender equality and social inclusion studies, among others.

IMPLEMENTING PARTNER



SUPPORTED BY



SDGs SUPPORTED



Building capacity for early warnings, risk reduction and fast response to extreme rain events



Working with local authorities to ensure gender-sensitive and timely early warnings to all citizens, including the most vulnerable



Application of a nature-based approach to promote restoration and protection of the natural water cycle, ecosystems, and biodiversity



Encouraging access to nature within city limits by showcasing and promoting nature-based solutions (NbS) that enhance livability



Actively mitigating for climate adaptation and resilience planning by developing infrastructure design guidelines and conceptual design of NbS

APPLYING A GENDER AND INCLUSION LENS

To ensure an effective FEWS, it has to be people-centric. The project applied a gender-sensitive lens to better allow for appropriate, applicable, and timely early warning to those who might be left behind—that is, the most vulnerable and marginalized. These include women, other gender minorities, and individuals facing multiple axes of marginalization (such as elderly women or those with a disability) who are often excluded from disaster risk reduction policies, strategies, and decision-making due to unequal power relations, gender norms, and gendered socioeconomic inequality. To incorporate their needs and experiences into the design of the FEWS, a **gender and social inclusion study** was conducted. This included the application of the UN Women-endorsed 'Missing Voices' methodology from Practical Action Consulting, which helped build trust with individuals and gather valuable project insights. The study is supplemented with a **policy brief** containing concrete policy and practice recommendations and a draft **action plan** for an inclusive gender transformative FEWS.

ENSURING SUSTAINABILITY OF THE FEWS

The success and long-term sustainability of the developed FEWS is dependent on a close partnership between the city and AASCTF. Five staff members from the Baguio city government, who will be responsible for the long-term operations and maintenance of the FEWS, will participate in an enhanced capacity building program. This program will comprise mentoring and a progressive e-learning format, which will be coupled with an on-the-job training program to equip trainees with skills and knowledge for setting up, operating, and maintaining the system. A network of peers outside of the city government will also be established through active participation in the capacity building program.

ABOUT THE ASEAN AUSTRALIA SMART CITIES TRUST FUND

The ASEAN Australia Smart Cities Trust Fund (AASCTF) assists ASEAN cities in enhancing their planning systems, service delivery, and financial management by developing and testing appropriate digital solutions and systems. Digital solutions address vital cross-cutting themes such as social inclusiveness, gender equity & women's empowerment, climate change & environmental sustainability, and public-private partnerships. By working with cities, AASCTF facilitates their transformation to become more livable, resilient, and inclusive, while in the process identifying scalable best practices to be replicated across cities in Asia and the Pacific.



COLLABORATION ROADMAP

The city, AASCTF, and its partners have been developing and maintaining sound collaboration by sustaining close communication and engaging in various feedback sessions. Key stakeholders with local expertise have been identified and involved in a series of workshops aimed at anchoring the project in Baguio's context.

