ASEAN AUSTRALIA SMART CITIES TRUST FUND

2022 ANNUAL PROGRESS REPORT

ASEAN AUSTRALIA SMART CITIES TRUST FUND
Asian Development Bank

Australian Government
Department of Foreign Affairs and Trade

ADB

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In this publication, "$" refers to US dollars, unless stated otherwise.

All photos and screenshots by Ramboll, unless stated otherwise.

Cover page photo from Adobe Stock; Photo of Makassar, Indonesia (page 24) from Adobe Stock; Photo of Penang, Malaysia (page 27) by Sabeer Darr on Unsplash; Photo of Battambang, Cambodia (page 29) from Adobe Stock; Photo of Hue, Viet Nam (page 31) by Apaha Spi on Unsplash; Photo of Chonburi, Thailand (page 33) by FritzDaCat on Wikimedia Commons; Photo of Luang Prabang (page 35) by Swapnil Kulkarni on Unsplash; Photo of Davao City (page 37) from the Province of Davao Oriental official website.

ABBREVIATIONS

AASCTF	ASEAN-Australia Smart Cities Trust Fund
ADB	Asian Development Bank
ALPA	Activity Level Performance Assessment
APR	Annual Progress Report
ASEAN	Association of Southeast Asian Nations
COVID-19	coronavirus disease
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DFAT	Department of Foreign Affairs and Trade, Australia
DOST-CAR	Department of Science and Technology - Cordillera Administrative Region (Philippines)
DOST-ASTI	Department of Science and Technology - Advanced Science and Technology Institute (Philippines)
DMF	Design and Monitoring Framework
EEC	Eastern Economic Corridor
EECO	Eastern Economic Corridor Office
FEWS	flood early warning system
GESI	gender equality and social inclusion
HPBS	High Priority Bus System
ICD	Inclusive Cities Dialogues
LGU	local government unit
M&E	monitoring and evaluation
MLCP	Makassar Livable City Plan
MTR	Mid-Term Review
NbS	nature-based solutions
OPPP	Office for Public-Private Partnership
OTJ	on-the-job
O&M	operations and maintenance
PAGASA	Philippine Atmospheric Geophysical and Astronomical Services Administration
QPR	Quarterly Progress Report
SCFM	smart city financial management
SURF	Southeast Asia Urban Services Facility
TO	task order

Members of the AASCTF project team during a field survey with officials in Luang Prabang in September 2022.

SNAPSHOTS OF AASCTF 2022 ACHIEVEMENTS

FOUNDATIONAL ACTIVITIES

5 NEW TASK ORDERS endorsed

4 TASK ORDERS variated

29 ACTIVITY LEVEL PERFORMANCE ASSESSMENTS (ALPA) prepared & monitored (TO level)

IMPLEMENTING ACTIVITIES

31 TASK ORDER REPORTS finalized

1 TASK ORDER concluded

3 DIRECT CHARGE activities ongoing

INFLUENCING ACTIVITIES

4 INT'L EVENTS participated in

1 E-LEARNING COURSE launched (English and Indonesian)

4 PUBLIC WORKSHOPS organized

8 VIDEO & MULTIMEDIA PRODUCTS produced

4 QUARTERLY NEWSLETTERS issued

270 SOCIAL MEDIA POSTS published

1 TWINNING WEBINAR organized

2 GOLD CITY INTRO WORKSHOPS conducted

2 SILVER CITY INTRO WORKSHOPS conducted

5 BRONZE CITY INTRO WORKSHOPS conducted

3 REGIONAL CAPACITY BUILDING WORKSHOPS organized

9 INCLUSIVE CITIES DIALOGUES organized

OVERVIEW

On 1 April 2019, the Asian Development Bank (ADB) approved the establishment of the **ASEAN Australia Smart Cities Trust Fund** (AASCTF or the Fund) under the Urban Financing Partnership Facility. On 2 April 2019, the Government of Australia, through its Department of Foreign Affairs and Trade (DFAT), committed to contribute A$20 million (Approx. $13.94) towards the Fund. The Fund is currently scheduled to close on or before 30 June 2024. This Annual Progress Report (APR) covers activities for the 2022 calendar year.

The Fund's envisioned impact aligns with ADB's Strategy 2030, particularly its fourth operational priority on building livable cities that are green, competitive, inclusive, and resilient,[1] and the ASEAN Sustainable Urbanisation Strategy (ASUS), which aims to promote high quality of life, competitive economies, and sustainable environments.[2]

Figure 1 : Map of Existing 24 AASCTF Participating Cities with Tier Designation

Source: Ramboll.

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[1] ADB. 2018. Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific. Manila. https://www.adb.org/documents/strategy-2030-prosperous-inclusive-resilient-sustainable-asia-pacific.

[2] ASEAN Secretariat. 2018. ASEAN Sustainable Urbanization Strategy. Jakarta. https://asean.org/book/asean-sustainable-urbanisation-strategy/

PROGRAM AIMS AND ORGANIZATION

EXPECTED OUTCOME

The expected outcome of the Fund will be that through the adaptation and adoption of digital solutions, across three core functional areas (planning systems, service delivery, and financial management), systems and governance in participating ASEAN cities are improved, vis-a-vis:

(i)   Planning systems

(ii) Service delivery

(iii) Financial management

Across all the Fund's work lies three important crosscutting themes that are addressed and embedded within every activity – Gender Equality and Social Inclusion, Climate Change, and Private Sector. Through the adoption of digital solutions to improve the three core functional areas, and by addressing the crosscutting issues throughout, the AASCTF will deliver capacity development, partnership support, and investment grants with the intent that scalable and replicable best practices across ASEAN are identified (Figure 2).

Figure 2: Overview of the AASCTF Program
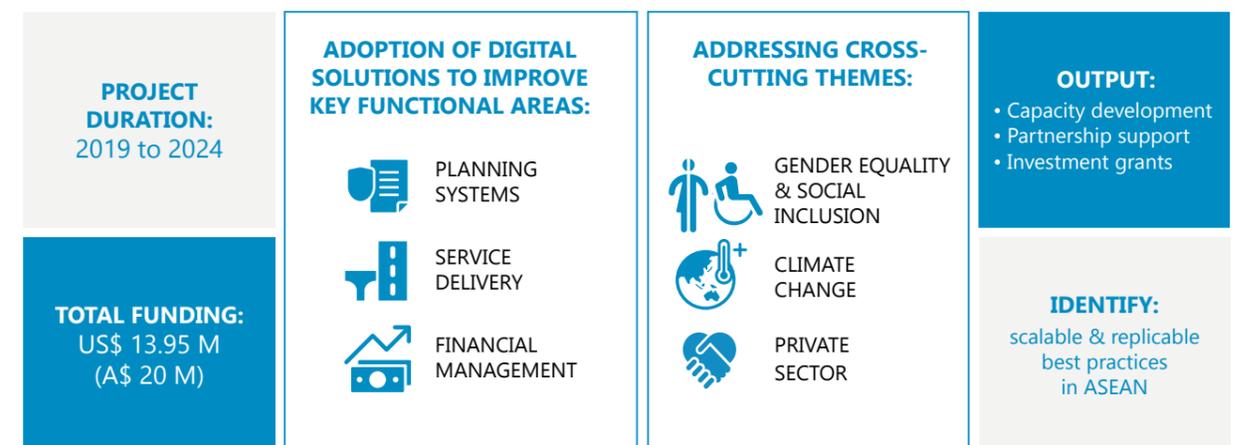
Source: Ramboll.

WORKSTREAMS

Subsequent sections of this Annual Progress Report (APR) are structured in accordance with the Fund's three workstreams:

1. **Foundational Activities** refer to activities that are either preparatory, such as city selection and task order development, or provide overarching and/or crosscutting strategic direction.

2. **Implementing Activities** refer to technical assistance, direct charges, and investment grant targeted city interventions undertaken in the pilot (silver and gold tier) cities.

3. **Influencing Activities** refer to broad communication and knowledge sharing activities, regional networking, city twinning, and targeted capacity development activities.

YEAR IN REVIEW

This section presents the key 2022 achievements and activities of the AASCTF. When referring to "AASCTF team" this denotes the considerable and highly active role of the Southeast Asia Urban Development and Water Division in ADB tasked with managing the overall Fund, alongside global consulting firm Ramboll[3] as the main implementing partner of the Fund. Where other partners have been engaged under the AASCTF umbrella, their respective roles and contributions have (with care and to the greatest extent possible) been directly credited.

A water level station at Camp 6 Bridge overlooks the Bued River in Tuba, Benguet. This existing station is integrated into the AASCTF's Baguio City Smart Flood Warning, Information, and Mitigation System pilot project.

FOUNDATIONAL ACTIVITIES

CITY SELECTION AND DESIGNATION

In 2022, the AASCTF program focused on building and sustaining the gains made during the previous years, as well as expanding support to other cities within the ASEAN region. As was the case at program commencement, city selection continues to be guided by each individual city's alignment with four key considerations, as set out in Figure 3.

Figure 3: AASCTF City Selection

ASEAN Smart Cities Network membership

DFAT bilateral and regional programs

AASCTF CITY SELECTION PROCESS

Government priorities

ADB country partnership and lending program

Source: Ramboll.

The total number of participating cities throughout 2022 was 24, as indicated in Figure 1.

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[3] Ramboll homepage: https://ramboll.com

AASCTF is working with different types of approaches and methodologies towards defining, designing, and implementing its city-focused activities. The approaches and methodologies applied in a certain city varies, mainly according to:

(i)   Level of intervention – bronze, silver, and gold, with a deepening engagement at the silver and gold tiers;

(ii) Entry points, in terms of sector or themes as aligned with ASUS and prioritized by local government counterparts; and

(iii) Timeline of ongoing and planned ADB lending activities.

An overview of the current designation of participating AASCTF cities is shown in Table 1, with some further specifications on the three different levels of engagement provided in Figure 4.

Table 1: City Designation by Level of Intervention

COUNTRY	CITY	BRONZE	SILVER	GOLD
Cambodia (CAM)	Battambang	◯	◯	
	Bavet	◯		
	Kampot	◯		
	Poipet	◯		
	Phnom Penh	◯		
Indonesia (INO)	Makassar	◯	◯	
	Palembang	◯		
	Pontianak	◯		
	Semarang	◯		
Lao PDR (LAO)	Kaysone	◯	◯	
	Luang Prabang	◯	◯	◯
	Pakse	◯		
Malaysia (MAL)	Penang	◯	◯	
Myanmar (MYA)	Yangon	◯	◯	
Philippines (PHI)	Baguio	◯	◯	
	Coron	◯		
	Davao	◯	◯	◯
	El Nido	◯		
Thailand (THA)	Chonburi/EEC	◯	◯	
Viet Nam (VIE)	Gia Nghia	◯		
	Ho Chi Minh City	◯	◯	◯
	Hue	◯	◯	
	Phan Rang	◯		
	Phan Thiet	◯		

Source: Ramboll.

Figure 4: Levels of City Intervention

BRONZE: Participation in regional capacity development and knowledge sharing events

SILVER: Leverage ongoing and/or future projects, namely through the undertaking of proofs of concept and pilots

GOLD: Investment grants to be used to support the development of demonstration projects
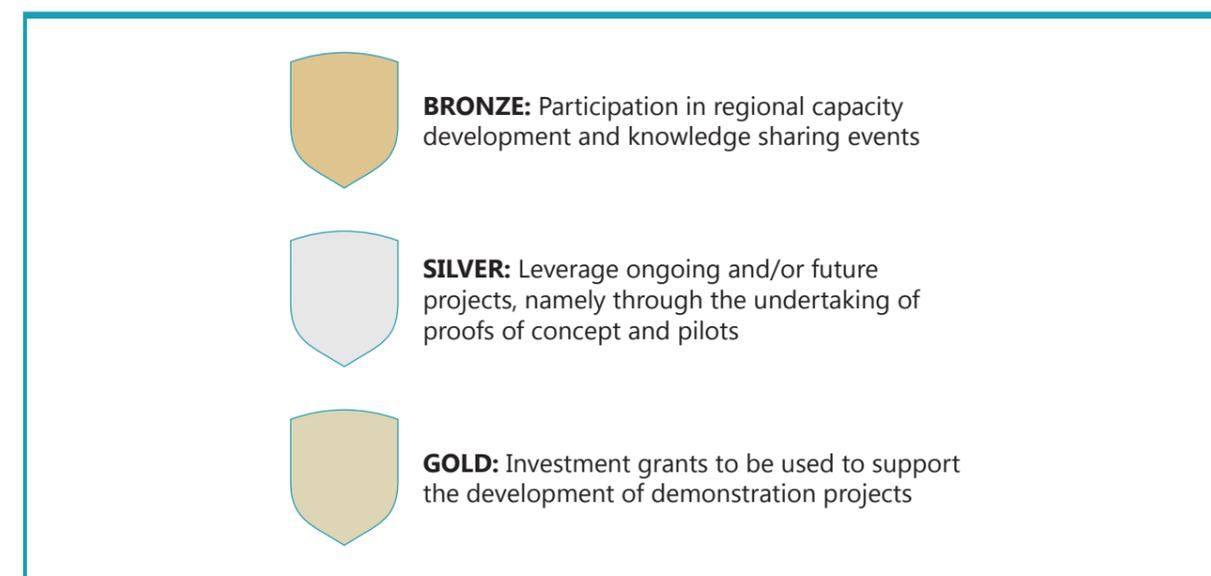
Source: Ramboll.

In 2022, traction and engagement at the bronze tier increased severalfold following an uptick in regional knowledge sharing and capacity building activities (e.g., networking conference, thematic workshops, guided learning program, etc.).

Engagement at the silver tier also increased and expanded in 2022, with the number of designated silver cities totaling 11 at the close of the reporting period.

At the gold tier level, three cities – Davao (PHI), Luang Prabang (LAO), and Ho Chi Minh City (VIE) – are currently earmarked to receive AASCTF investment grants which piggyback on larger ADB loan packages. Given the substantial progress and continued effectiveness of interventions in Makassar (INO) and Baguio (PHI), discussions are ongoing with the consideration to graduate both cities in the near term. The graduations could be either within the current funding window or future windows under the new Smart and Livable Cities in Southeast Asia (SALC) Knowledge Support Technical Assistance (KSTA).

As evidenced to-date, city designation under the AASCTF program remains fluid and demand-driven, with the ever-present possibility of graduation from bronze to silver and silver to gold tiers.

CONCEPT/TASK ORDER DEVELOPMENT

Entry points for targeted support have been identified in each silver city through consultations by the AASCTF team with the respective government officials and other key stakeholders as appropriate. One new city intervention task order and two scope variations to existing task orders (1 regional and 1 city intervention) were endorsed in 2022.

In terms of process, task orders are developed inclusively based on the seven-step approach outlined in Figure 5.

Figure 5: Seven-Step Approach Applied to AASCTF Task Order Development Process

Source: Ramboll.

Task Orders Endorsed

In total, one new city intervention task order and one scope variation to an existing city intervention task order were endorsed by ADB in 2022 (Table 2).

Table 2: City Intervention (Silver Tier) Task Orders Endorsed, 2022

City	Project Title [NEW/VARIATION]	Date Endorsed
Davao (PHI)	Davao Bus Driver Training & Technology Study Pilot Preparation & Implementation Support [NEW]	2 Mar 2022
Chonburi/EEC (THA)	Eastern Economic Corridor City Visioning and Strategic Urban Data Platform Assessment [VARIATION]	20 Oct 2022

Note: The cost neutral TO variation for Chonburi/EEC, endorsed on 20 October 2022, involved both scope and personnel changes. The delivery of the revised scope will contribute to the enhancement of the provincial authority's planning, capability, and functioning within the Eastern Economic Corridor (EEC) along sustainable lines and improving strategic prioritization through the development of a city vision as well as mapping the opportunities and livability outcomes enabled by ICT from investing in an Urban Data Platform.

Further details regarding implementation status, progress to-date, and targets ahead for the 2022-endorsed city intervention task orders (along with the city intervention task orders already under implementation at the commencement of the current reporting period) can be found under the heading Implementing Activities in both the **Year in Review** as well as **Work Plan for 2023** chapters of this APR. Meanwhile, targeted capacity development activities which are conducted under the frame of the city intervention task orders are specified under the heading Influencing Activities.

In addition to the city intervention task orders endorsed in 2022 as overviewed above, one regional level task order scope variation was endorsed by ADB in 2022 (Table 3).

Table 3: Regional (Bronze Tier) Task Order Endorsed, 2022

City	Project Title [NEW/VARIATION]	Date Endorsed
Regional (REG)	Baseline Development and Capacity Building for ASEAN Australia Smart Cities Trust Fund (AASCTF) Participating Cities [VARIATION]	2 Mar 2022

Note: The TO variation, endorsed on 6 May 2022, involved expansion of scope, increase in budget, and personnel changes. The expanded scope covers the validation of the M&E baseline, delivery of two thematic workshops (NbS and SCFM), delivery of the Guided Learning Program, support to twinning programs, planning and execution of a networking conference, and broad support to program-wide knowledge management and communications.
Source: Ramboll.

Further details regarding implementation status, progress to-date, and targets ahead for the 2022 endorsed regional task order variation can be found under the heading Influencing Activities in both **Year in Review** as well as **Work Plan for 2023** chapters of this APR.

Task Orders Under Development

By the end of 2022, a total of four new city intervention task orders and one scope variation to an existing city intervention task order were under development (Table 4).

Table 4: City Intervention (Silver Tier) Task Orders Under Development, 2022

City	Project Title [NEW/VARIATION]	Status (Year-end)
Baguio (PHI)	Baguio City Smart Flood Warning, Information and Mitigation System [VARIATION]	Task Order development (Step 6) – ongoing
Hue (VIE)	Smart Digital City Model for Master Planning - Stage 2 (model application) and 3 (citizen engagement) [NEW]	Task Order development (Step 6) – ongoing
Battambang (CAM)	Smart Solid Waste Financial Management (Phase 2) [NEW]	Concept development (Step 4) – ongoing
Makassar (INO)	Smart Digital Ecosystem Transformation Strategy [NEW]	Idea Generation, Initial Concept development (Step 2) – ongoing
Ho Chi Minh City (VIE)	TBD [NEW]	Idea Generation, Initial Concept development (Step 2) – ongoing

TBD = to be determined.
Source: Ramboll.

Further details regarding task order finalization timeline and implementation targets for the city intervention task orders which remain under development at the close of the reporting period can be found under the headings Foundational Activities and Implementing Activities in the **Work Plan for 2023** chapter of this APR.

Furthermore, one scope variation to an existing regional level task order was under development at the close of the reporting period (Table 5).

Table 5: Regional (Bronze Tier) Task Order Under Development, 2022

City	Project Title [NEW/VARIATION]	Status (Year-end)
Regional (REG)	Baseline Development and Capacity Building for ASEAN Australia Smart Cities Trust Fund (AASCTF) Participating Cities – scope variation TBC [VARIATION][6]	Task Order development (Step 6) – ongoing

TBD = to be determined.
Note: While still in a preliminary stage of development, the foreseen variation will involve expansion of scope, increase in budget, and personnel changes. The expanded scope is likely to cover support to, among other things, TO evaluations, continued support to twinning programs, and repository development.
Source: Ramboll.

Further details regarding task order finalization timeline and implementation targets for the regional task order variation which remains under development at the close of the reporting period can be found under the headings Foundational Activities and Influencing Activities in the **Work Plan for 2023** chapter of this APR.

One of the many street art—this one involving a motorcycle—along the streets of Georgetown in Penang, Malaysia (photo by Sandip Roy on Unsplash.com).

OVERARCHING/CROSSCUTTING THEMES

Operationalization of the 2020-endorsed crosscutting theme strategy (AASCTF Gender Equality and Social Inclusion Strategy) and discussion note (Private Sector Engagement and Climate Change) guiding documents continued throughout 2022.

The coronavirus disease (COVID-19) travel restrictions were eased significantly from Q2 2022, enabling greater mobility and in-person engagement by the AASCTF team.

Gender Equality and Social Inclusion

The operationalization of the AASCTF Gender Equality and Social Inclusion (GESI) Strategy, approved in December 2020, was in full swing in 2022. The GESI Strategy builds on the core principles of fostering GESI across all facets of AASCTF workstreams by applying a twin track approach in which GESI is:

(i) Mainstreamed into all task order/pilot project activities via development, implementation, and continuous monitoring of GESI Action Plans and/or key performance indicators (reported on as part of the task order Quarterly Progress Reports (QPR)/Activity Level Performance Assessments (ALPAs)); and

(ii) Conceptualized (where appropriate) into specific, targeted activities at a strategic regional and/or city intervention level within the AASCTF action areas.

Two GESI targeted intervention task orders were under implementation for the duration of the reporting period, namely:

(i) Baguio (PHI) city intervention task order for Gender Transformative Approach for Strengthened Development, Application and Replication of the Baguio City Flood Early Warning System; and

(ii) Regional (REG) level task order for Smart Cities–Inclusive Cities Capacity Building Programme for ASEAN Australia Smart Cities Trust Fund (AASCTF) Participating Cities.

Women vendors at one of Baguio City's tourist spots (photo by Leandro Gepila on Unsplash).

Private Sector

AASCTF views private sector and small and medium-sized enterprise (SME) engagement as an important strategic and operational aspect of the Fund's activities, to not only deliver best and next practice solutions in the immediate term, but to also enable cities to sustain, replicate, and scale the implemented solutions over the longer term. The 2020 ADB-endorsed Discussion Note for 'Increased Private Sector Participation' has continued to inform and guide actions in this key crosscutting area throughout the reporting period. In 2022, the focus was on both:

(i) Applying a private sector engagement lens across all task order/pilot project activities via, where appropriate, the development, implementation, and continuous monitoring of small- and medium-sized enterprises and Private Sector Engagement Action Plans and/or key performance indicators (reported as part of the task order QPR/ALPAs); and

(ii) Conceptualizing (where appropriate) specific, targeted activities at a strategic regional and/ or city intervention level within the AASCTF functional areas.

At the city intervention level, several entry points have been identified in select silver tier cities. This is particularly the case in Battambang and Chonburi/Eastern Economic Corridor (EEC) task orders where private sector engagement is a prerequisite for the next phase of successful execution), operation, and overall long-term sustainability of the delivered intervention. Furthermore, both regional level task orders under implementation in 2022 viewed private sector as a key stakeholder having a seat at the table throughout the majority of activities and dialogues taking place and planned for within the reporting period.

In Q3/Q4 2022, the AASCTF team executed three successful smart data management focused webinars, each spotlighting use cases from regional/international private sector, including Ramboll, University of New South Wales (Australia), Rajah & Tann Cybersecurity (Singapore), and Centre for Liveable Cities (Singapore).

Also, over the reporting period, the AASCTF team continued discussions with colleagues from ADB's Office for Public-Private Partnership (OPPP), ADB's Private Sector Operations Department, and ADB's Ventures Financing Partnership Facility, the latter of which is in particular working to de-risk, finance, and scale impactful technology solutions.

Looking ahead, the AASCTF will seek to further expand different types of engagement with the private sector, including among others: city twinning, capacity building, knowledge sharing, collaboration, co-creation, resource sharing, and co-investment.

Climate Change

Supporting climate change resilience (mitigation and adaptation) in the ASEAN region, through both targeted and mainstreamed interventions, is a high priority of participating cities and partner agencies (DFAT, ADB, etc.). On a planning level, reducing emissions from greenhouse gases through changes in the energy, transportation, and housing sectors, are important focus areas for the AASCTF, as well as the development of energy-efficient service delivery across all sectors.

At the city intervention level, three task orders – Makassar (INO), Baguio (PHI), and Luang Prabang (LAO) – carried forward the Fund's climate change agenda over the course of the reporting period.
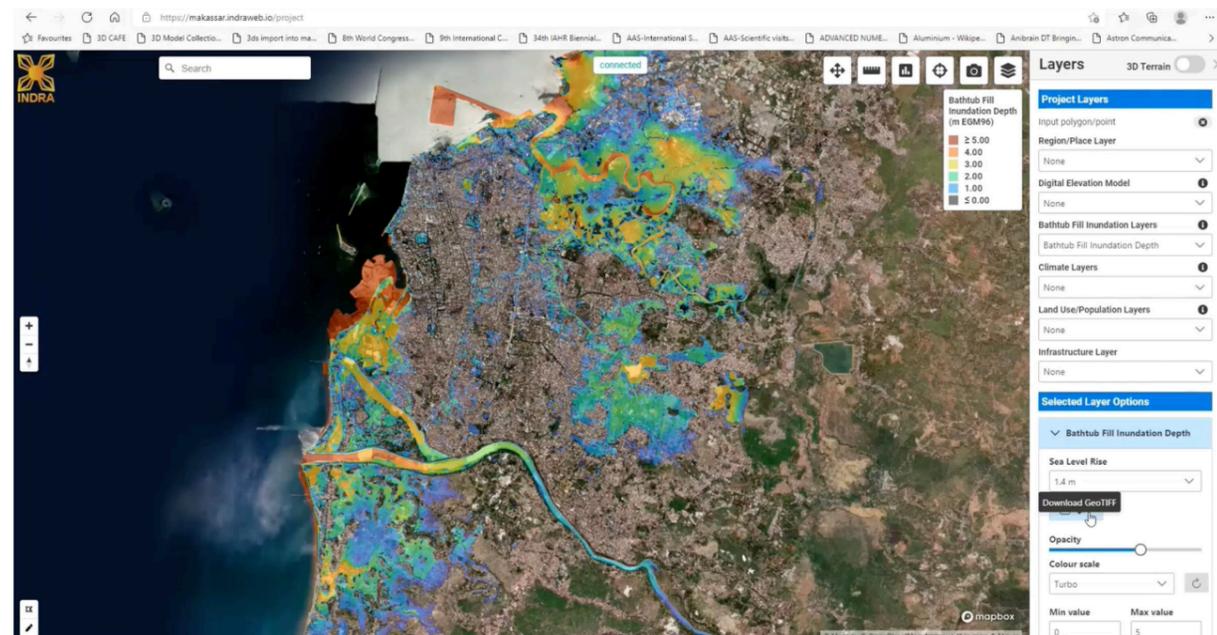
Built as a prototype for the city of Makassar by CSIRO's Data61 team, the INDRA Makassar web tool features climate risks and hazards analytics and visualization capabilities.

In Makassar (INO), a digital climate risk resilience platform, INDRA Makassar, formed an integral part of the final AASCTF city intervention output, the Makassar Livable City Plan (MLCP) and Prioritization Tool. The INDRA platform was the outcome of a collaboration with Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO)[4], whereby CSIRO provided both modelling capabilities and digital tools for visualizing and interpolating spatial data to inform urban planning.

In Baguio (PHI), climate change is the main impetus behind the entire AASCTF city level intervention, wherein the ongoing development and implementation of a new flood early warning system (FEWS) coupled with the delivery and endorsement (in 2021) of a Flood Mitigation Action Plan for Baguio, places a uniquely sharp and distinct focus on climate resilience and adaptation among all of the Fund's current portfolio of activities.

Finally, in Luang Prabang (LAO), climate change and disaster risk reduction were key focus areas of the ongoing development of a holistic urban strategy and intervention prioritization framework.

Beyond the city interventions, a strong climate change focus was also embedded on both regional task orders, as exemplified within their 2022 executed influencing activities summarized below:

The Baguio City FEWS project's Flood Mitigation Action Plan includes a number of conceptual designs using nature-based solutions for existing places in the city.

(i) REG: Smart Cities–Inclusive Cities Capacity Building Programme for AASCTF Participating Cities – the Inclusive Cities Dialogues (ICDs) and the final Inclusive Cities Event highlighted the importance of inclusion from the perspective of climate resilience.

(ii) REG: Baseline Development and Capacity Building for AASCTF Participating Cities – a two-part climate resilience/nature-based solutions thematic workshop targeting a select number of qualified participants from AASCTF cities was executed in Q3 2022.

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[4] CSIRO homepage: https://www.csiro.au/en/

Toward a Sustainable Smart Flood Early Warning System: A Resilient Model for Capacity Building

Background

In August 2020, work on the "Baguio City Smart Flood Warning, Information, and Mitigation System" pilot project commenced with the support of the Government of Australia and the Asian Development Bank through the ASEAN Australia Smart Cities Trust Fund (AASCTF). Together with the City Government of Baguio, the project team worked on developing a flood early warning system (FEWS) that would help reduce the city's vulnerability to climate change-enhanced hazards and improve community disaster preparedness and awareness.

But beyond the technological interventions that the project provided, one critical factor in the project's success was building the local government's capacity to operate and utilize the FEWS effectively beyond the pilot project's timeframe. Thus, the year-long "Targeted Capacity Building Program to Enhance Delivery of a Sustainable FEWS" component was added to the Baguio pilot project in December 2021 to ensure the program's continued success and long-term viability.

Specific Interventions Supported

The targeted capacity-building program consisted of two components: First was a 3-module online training program, which focused on giving the participants a general understanding of the FEWS and training for the software used in the specific FEWS being implemented by the pilot project.

This component was led by Denmark-based water environment consulting firm DHI Group, and was carried out online through both self-paced and instructor-led sessions.

The second component was the on-the-job (OTJ) training led by Ramboll, which aimed at preparing the Operation and Maintenance (O&M) Team with the skills and knowledge for setting up, operating, and maintaining the FEWS.

These in-person training sessions reinforced and built upon the foundational learnings from the online courses, providing in-depth hands-on experiential learning opportunities for the trainees in order to build their confidence. These sessions were carried out as pre-monsoon sessions in June 2022, and post-monsoon sessions in September 2022.

The OTJ training focused on four core elements:

1. Understanding of the hydrological and hydraulic characteristics specific to Baguio;

2. Understanding the historical and real-time data available for Baguio;

3. Capability of managing annual post-monsoon management, calibration, and evaluations and applying changes to the system; and

4. Capability of troubleshooting and operating the system in real-time during monsoon.

Stephanie Trinidad from Baguio CDRRMO (a member of the Baguio FEWS core group) interacts with Jens Christian Riise from the Ramboll project team while visiting the newly installed water level station at Sadjap.

The OTJ training was essential to fostering a sense of teamwork among the members of the FEWS O&M Team. Participants were able to communicate and collaborate more effectively, while the project team had a better awareness of their talents and possible roles in the operation and maintenance of the FEWS as a result of their being at the same place for the OTJ sessions. These OTJ sessions also allowed participants to apply their new knowledge and skills related to the Baguio flood models and the specific FEWS developed by the pilot project.

Eleven professionals were selected to participate in this targeted capacity building program. Of these 11 professionals, five staff members from the local government unit (LGU) constituted the "core group". They will have the main responsibility for the O&M of the FEWS. A "peer group" comprising six professionals from local public institutions, such as PAGASA, DOST-CAR, and two local universities has also been selected for the program to

> **With the additional knowledge and skills I acquired through the capacity building program, I am more confident of the responsibilities given to me as part of the core team in the operationalization of the FEWS and also being one of the DRRM officers of the Baguio LGU.**
>
> — **Stephanie Trinidad,** DRRM Officer, City Government of Baguio

Members of the Baguio City FEWS core and peer groups together with the project team in June 2022.

Core and peer group members at an in-person on-the-job training session led by Ramboll's Prajnya Nayak.

to support the core group.

Before the trainings were carried out, a Baseline Knowledge Assessment was conducted at the beginning of this capacity building component to confirm the group's initial knowledge in the areas of hydrology, hydraulics, and modeling, since it was established in the initial stages of the pilot project implementation that no one from the core group members had any educational background in these areas. However, through the online training program and OTJ training, they gained knowledge and experience in FEWS and the software used in the specific FEWS being implemented.

Through extensive dialogue, feedback, and evaluation of the training's content and format with participants, the project team was able to continuously learn and adapt the program's delivery to maximize its overall effectiveness. The project team also prioritized open communication with trainees to tailor the course material to their interests and incorporate their feedback at every stage. Participants were asked to fill out evaluation forms during and after each of the three modules concluded to provide feedback on the individual sub-modules in addition to the feedback received during the sessions. With the goal of exceeding participant expectations, this evaluation bolstered efforts toward ongoing

development and program modification. The results of the evaluation surveys for all three modules have shown that the level of satisfaction among the training participants were very high and that all participants were very happy with the training.

Results and Impact

One of the core group members, Chester Comicho from Baguio's City Engineering Office, attested to the training program's positive impact on him, professionally and personally. Chester is a civil engineer by profession and was selected to participate in the capacity building program. Despite having no prior knowledge in hydrology or hydraulic modeling, he committed himself to the training and was eager to learn everything he could about the FEWS.

"The training has removed the sense of stagnation in me, considering the fact that I am a government employee and a civil engineer in a profession that is purely engaged in infrastructure projects," Chester explained. "But... attending the [training sessions] and just thinking of all the opportunities that my role in this project moving forward gives me a sense of excitement because I know that there are so many things ahead of me, and I can be so much more after this."

Stephanie Trinidad, a key local Disaster Risk Reduction and Management (DRRM) officer, shared how the capacity building component of the Baguio FEWS project has significantly built up her confidence level. "I was able to gain knowledge on how the data from the installed water level stations were being processed," she affirmed. "This training increased my technical capacity, especially because this is not really my field of expertise. With the additional knowledge and skills I acquired through the capacity building program, I am more confident of the responsibilities given to me as part of the core team in the operationalization of the FEWS and also being one of the DRRM officers of the Baguio LGU."

Shan-ry Roberts from Baguio's Management Information and Technology Division (MITD) shared his experience learning about the systems and data management side of the FEWS. "It's really quite amazing and somewhat very challenging because it's my first time learning it," he said. "And, of course, I want to learn more. So, it is quite an amazing experience that we're having."

The targeted capacity building program had not only given Stephanie, Chester, Shan-ry, and the rest of their team members the knowledge and skills they needed to operate Baguio's FEWS independently but also instilled in them a sense of ownership and responsibility. Based on this and the results of the program's evaluation, the capacity building component of the Baguio FEWS project has significantly raised the level of knowledge and experience among the FEWS O&M team, though further technical support and expert advice to enable the O&M Team to manage fully and independently is recognized. Such further support, for which the project partners are in discussion on, will bring the project closer to ensuring the long-term sustainability of Baguio's FEWS.

The completion of the capacity building component is one of the Baguio FEWS project's significant milestones in 2022. Aside from this, the project also installed five additional real-time water level monitoring stations and automatic rain gauges in key locations around Baguio City. The real-time data collected by these stations and gauges will feed directly into the FEWS. In the future, the FEWS will be connected to Baguio's Smart City Command Center, helping to further strengthen the city's capacity to issue timely warnings to communities in high-risk areas and improve preparedness.

To further support the sustainability and resiliency of Baguio's FEWS, the trust fund also facilitated the signing of two Memoranda of Agreement (MOA) between the City Government of Baguio, the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (or PAGASA, the Philippines' national meteorological and hydrological services agency) and the Department of Science and Technology – Cordillera Administrative Region (DOST-CAR), which establishes a framework of cooperation and mutual partnership to support the operation and maintenance of the FEWS. The two MOAs will strengthen collaboration between the three organizations on real-time weather data gathering and processing, operation and maintenance of the FEWS, training, and other technical support.

IMPLEMENTING ACTIVITIES

TECHNICAL ASSISTANCE

The year 2022 saw a considerable uptick in the number and diversity of implementing activities in the AASCTF silver cities. The AASCTF task teams have remained vigilant and adaptable in the delivery methods and modalities applied within and across pilot project activities, maximizing the effectiveness of on-site visits as COVID-19 travel restrictions were eased/lifted from Q2 2022 onwards.

In total, nine city intervention task orders (Figure 6) were operational in 2022.

Figure 6: Location of Silver Tier City Intervention Pilot Projects, 2022

Luang Prabang
Luang Prabang Smart and Integrated Urban Strategy
Feb 2022-Jul 2023

Chonburi
City Visioning and Strategic Urban Data Platform Assessment
Jan 2022-Jun 2023

Penang
Penang Smart Mobility Micro-Simulation Model Development
May 2021-Dec 2023

Hue
Hue Smart Digital City Model for Master Planning
Jan 2022-Apr 2023

Baguio
Baguio City Smart Flood Warning, Information and Mitigation System;
Aug 2020-Dec 2022
Gender Transformative Approach for Strengthened Development, Application and Replication of the Baguio City FEWS
Apr 2021-Dec 2022

Battambang
Battambang Smart Solid Waste Financial Management (Phase 1)
May 2021-Apr 2023

Davao
Davao Bus Driver Training & Technology Study – Pilot Preparation & Implementation Support
Mar 2022-Jun 2023

Makassar
Makassar Strategic Urban Framework
Jul 2020-Mar 2022

Source: Ramboll.

Implementation of the **Makassar Strategic Urban Framework** city intervention task order, which commenced in August 2020, continued through mid-2022, when the final task order outputs were delivered and endorsed by the city and ADB.

Across the Fund's three functional areas, the Makassar task order's specific objectives included:

(i) **Planning systems:** The task order aimed to deliver a smart and livable city plan that would support the local government in identifying potential strategies for achieving the city's ambitious vision, while also utilizing digital tools to integrate citizen's feedback in order to enhance planning processes toward more inclusive governance models.

(ii) **Service delivery:** The task order supported the local government to collaborate smartly across agencies in order to prioritize investment decisions based on comprehensive evidence base and strategic prioritization tool. This allows local government decision-making to consider multi-sectoral matters in delivering government services (municipal utilities and digital services) in line with Makassar's smart city vision and ambition, with a view to maximizing equitable benefits to all city inhabitants.

(iii) **Financial management:** The task order provided a strategic prioritization tool and a multi-disciplinary analysis of urban issues, including a review of financial sustainability and governance to improve Makassar local government officials' understanding of, often competing, urban challenges. The suite of tools and evidence supports local government collaboration across agencies in order to prioritize investments based on data, evidence, and demonstrated need. With greater evidence-based collaboration and investment prioritization, the task order outputs can support prudent financial management by the local government.

On 14 April 2022, the project team delivered its final presentation to city counterpart agencies in Makassar. During the meeting, Makassar Mayor Mohd. Ramdhan Pomanto expressed his gratitude for the support given by the Australian Government through DFAT, ADB, and the Ramboll team, and looked forward to strengthening the city's relationship with the trust fund in the period to come. The final suite of the Makassar Livable City Plan (MLCP) tools is available here.
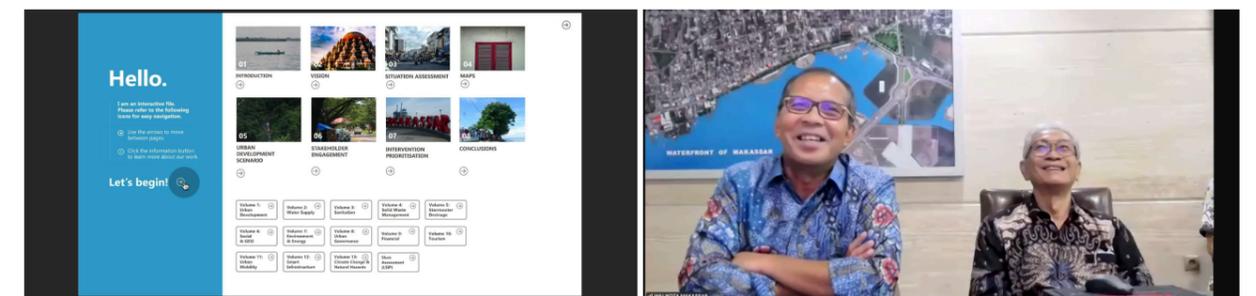
The final interactive Makassar Livable City Plan (left) was formally turned over to Makassar City officials led by Mayor Mohd. Ramdhan Pomanto (left in right photo) during the final virtual workshop held in April 2022.

Implementation of the award-winning[5] **Baguio City Smart Flood Warning, Information and Mitigation System** city intervention task order, which commenced in August 2020, continued throughout the duration of the reporting period.

While the task order initially targeted to be finalized by end of 2022, a lack of historic water level data to properly calibrate the flood model, in addition to other mitigating factors,[6] contributed to the recommendation by the AASCTF task team (and subsequent endorsement by ADB) in the second half of 2022 to extend the task order implementation period till end-2023. In addition, there could be a potential need (to be discussed late 2023) for an AASCTF extended consolidation phase support thereafter.

Despite the timeline extension, 2022 proved to be an intensive and productive period for the AASCTF task team.

Across the Fund's three functional areas, the Baguio (main and complimentary) task order's specific objectives are as follows:

(i) **Planning systems:** The main task order will support to establish and operationalize a smart flood early warning information system, a data dissemination and outreach plan, and a high-level flood mitigation action plan; the latter providing the Baguio local government unit (LGU) with a strategic roadmap outlining potential investment projects to reduce flood risks in Baguio, increasing urban resilience and triggering benefits and co-benefits of nature-based solutions. The complimentary GESI-focused task order will support to improve the understanding of decision-makers regarding drivers of gendered vulnerability and the implications of such in terms of varying FEWS needs within and between communities, as well as to link the needs of vulnerable and marginalized groups to considered and meaningful planning of preparedness and response actions.

(ii) **Service delivery:** All outputs of both the main and complimentary task orders will inform the resiliency of infrastructure management and improve the delivery of flood early warning messages, operations, and responses, seeking as it does to improve representation and inclusion of marginalized groups.

(iii) **Financial management.** Neither the main nor complimentary task order explicitly addresses financial management aspects.

Various smart solutions were pursued and delivered as part of the two task orders within the reporting period, including:

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[5] Government of the Philippines, Department of Environment and Natural Resources (DENR). DENR Names Winners of 'Klima-likasan' Awards for Climate and Disaster Resiliency. https://www.denr.gov.ph/index.php/news-events/press-releases/4704-denr-names-winners-of-klima-likasan-awards-for-climate-and-disaster-resiliency (accessed 12 December 2022).

[6] Other mitigating factors include: inconsistency of data collection at real-time monitoring stations, datum related issues and persistent problems with the existing monitoring stations, real-time data from newly installed stations available only from start of September (after the monsoon), and lack of cooperation and communication across institutions.

Chester Comicho from Baguio's City Engineering Office (and one of the Baguio FEWS core group members) inspecting one of the newly installed water level stations during a project site visit at Ferguson Bridge.

(i) The kick-off of the **targeted capacity building program** in March 2022, which sought to solidify and enhance program effectiveness and sustainability beyond the completion of the pilot project.

(ii) **Procurement and installation of new water-level stations** in selected locations and finalization of the data assimilation and forecast modeling, completed in August 2022. Following a delay in procurement and delivery of materials, local Filipino contractor IFUBENG completed the construction of the platforms in July; the Department of Science and Technology – Cordillera Administrative Region (DOST-CAR) completed the installation of the sensor equipment in August; and Department of Science and Technology – Advanced Science and Technology Institute (DOST-ASTI) provided application programming interface (API) access to the real-time data in September.

(iii) **Migration of the FEWS setup and historical weather and research forecast and water level data to the Baguio LGU's servers**. In addition, regular weather and research forecast every 3 hours were successfully established through a code that was co-developed by Ramboll and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA).

(iv) Completion of the development and dissemination of the final **FEWS Data Dissemination and Outreach Plan** in December 2022. As part of the plan development, the AASCTF team undertook a preliminary FEWS Governance Assessment and analysis of communication and dissemination channels in Baguio in the context of disaster risk response. The findings from these analyses have been validated by the LGU, and feedback has been incorporated into a visual product showing the outreach and dissemination structure in Baguio. Findings and recommendations on appropriate approaches and considerations in delivering truly inclusive FEWS dissemination and outreach activities have been onboarded as part of this activity.

(v) Delivery of the **FEWS Final Report** in December 2022, which has laid the groundwork for the consolidation and system enhancement activities that will be conducted in 2023.

PENANG, MALAYSIA

Implementation of the **Penang Smart Mobility Micro-Simulation Model Development** city intervention task order commenced in May 2021, with an official project kick-off meeting held virtually on 15 June 2021.

Across the Fund's three functional areas, the Penang task order's specific objectives are as follows:

(i) **Planning systems:** There are four main objectives in this task order related to improving the planning system for smart traffic policies in Penang, namely: (i) provide the authorities with a micro-simulation model of Penang's Georgetown area to simulate different traffic policy options; (ii) better communicate implications of specific transport policies and/or solutions to key stakeholders; (iii) test/trial implications of different transportation schemes arising from previous planning exercises; and (iv) share knowledge and skills on digital tools to enhance or improve smart mobility strategies.

(i) **Service delivery:** The objective of the micro-simulation traffic model is to empower the local government to improve the traffic policies in Penang by informing the decision-making process and simulating the impacts of different traffic policy choices. Further knowledge sharing and training activities aim at improving the city's capacity to deliver digital services in the field of smart traffic policies and solutions.

(ii) **Financial management:** The task order did not explicitly address financial management aspects.

The task order utilizes the VISSIM micro-simulation modeling software to enable the LGU to assess new transport solutions for Georgetown, including sustainable mobility proposals such as the pedestrianization of streets and improved public transport and walking and cycling facilities. Additionally, following the completion of the task order, the local government will be able to check and assess the implications of developer plans in the area, and thus improve the implementation and enforcement of transportation policies. Meanwhile, 3D visualization model outputs of transport impacts will greatly aid the city in conducting community outreach and dissemination activities, enabling clearer communication for effective and inclusive decision-making.

Within the reporting period, Stage 1 of the task order or the pilot/trial area model development was completed, including delivery of the Inception Report, Survey Report, Trial Area Model Calibration Report, and Trial Area Model Scenario Testing Report. Stage 1 resulted in a proof of concept that shows the value in simulating and testing localized mobility options, as well as demonstrating differences between schemes.

Commencement of Stage 2 (model development for the larger Georgetown district, a designated UNESCO World Heritage Zone) was paused in Q3 and Q4 2022 until (in early 2023) institutional ownership and additional data capture discussions could be held and concluded upon by all parties. Stage 2 seeks to develop an accurate replica of traffic in the historic area of Georgetown to show the benefit of future mobility interventions especially in reducing congestion.

Figure 7: Stage 1 Scenario Street View Scheme Comparison: Downing Street

Existing

1.8 m	2.2 m	3.5 m	3.5 m	2.2 m	1.8 m
Sidewalk	Parking lane	Drive lane	Drive lane	Parking lane	Sidewalk

Proposed

2.4 m	1.5 m	2.2 m	3.1 m	3.1 m	2.2 m	1.5 m	2.4 m
Walking path	Land-scaping	Parking lane	Drive lane	Drive lane	Parking lane	Land-scaping	Walking path

Source: Ramboll.

BATTAMBANG, CAMBODIA
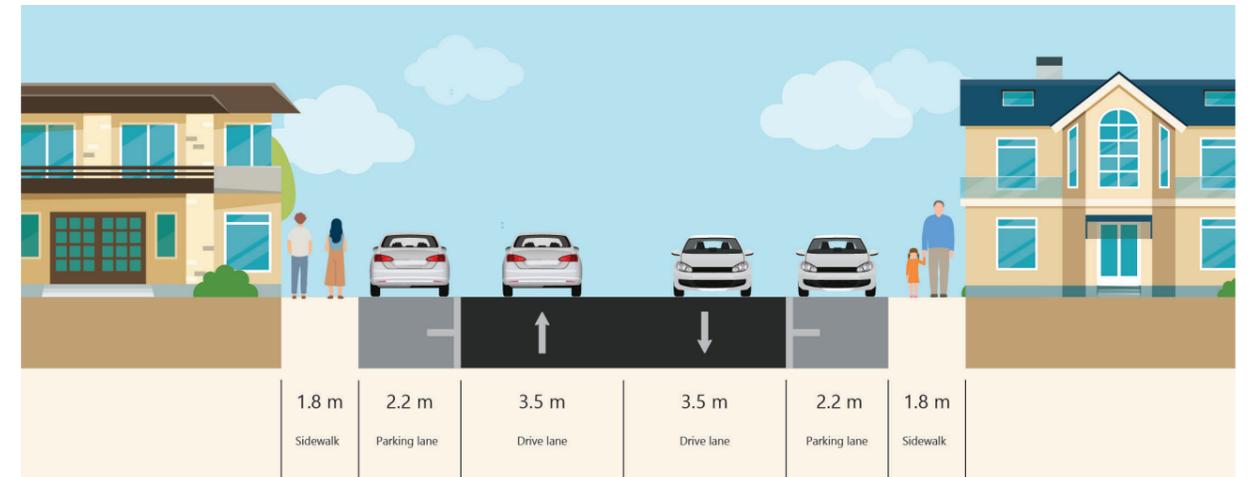
Implementation of the **Battambang Smart Solid Waste Financial Management (Phase 1)** city intervention task order officially commenced in May 2021.

Stage 1 waste sector diagnostics and readiness reporting was concluded in early 2022 and the Stage 2 options analysis report was endorsed in August 2022. A decision gate note remained under preparation at the close of the reporting period, the conclusion of which remained a prerequisite to commencing the final Stage 3 detailed pilot scoping of the task order.

Across the Fund's three functional areas, the Battambang task order's specific objectives are as follows:

(i) **Planning systems:** The objective of the task order is to identify, assess, and short-list smart tools and digital solutions to improve the quality and capacity of planning and monitoring within the waste management sector. The Phase 1 task order will contribute to the establishment of a better understanding of current waste management practices in Battambang and the identification of relevant needs, challenges, and priorities of the waste sector. Further, the assessment and short-listing of potential solutions aims to provide the basis for implementing such via a subsequent Phase 2 task order.

(ii) **Service delivery:** The task order aims to identify, assess, and short-list smart solutions that can improve the delivery of waste management services in Battambang. These short-listed solutions will have the potential to improve the waste management services in Battambang by e.g., increasing the amount of collected and recycled waste and improving the quality of facilities and equipment used for waste collection.

(iii) **Financial management:** As part of this task order, the objective is also to identify, assess, and short-list revenue-generating activities, such as digital payment solutions for waste collection services. These short-listed solutions will have the potential to e.g., increase revenues collected by the municipality, support better monitoring of payments and revenue flows, as well as simplify and digitize the payment processes for users.

Given that the task order is preparatory in nature, the focus in 2022 has been on the initial setting out and options analysis of potential smart solutions which could be pursued and delivered as part of the Phase 2 task order. The Options Analysis report identified two software options currently being applied in Cambodia which could support the delivery of a multifaceted solution, including:

(i) The introduction of digital tools (such as GIS or geographic information system) for storage, processing, and management of digital data; and

(ii) The introduction of digital payments and economic incentives for waste collection services.

Of the two software options considered which could support the noted functionalities, Battambang Province and Municipality in September endorsed moving forward with the Sam Raam app. The decision gate note under preparation at the end of the reporting period took forward the considerations and subsequent discussions with the different parties, including Luma Systems (Sam Raam app developer). Upon endorsement of the decision gate note by ADB, as expected in early 2023, the AASCTF will commence work on the Stage 3 detailed pilot scoping for subsequent AASCTF financing and implementation.

Figure 8: Preliminary Pilot Scope as Presented in the Options Analysis Report
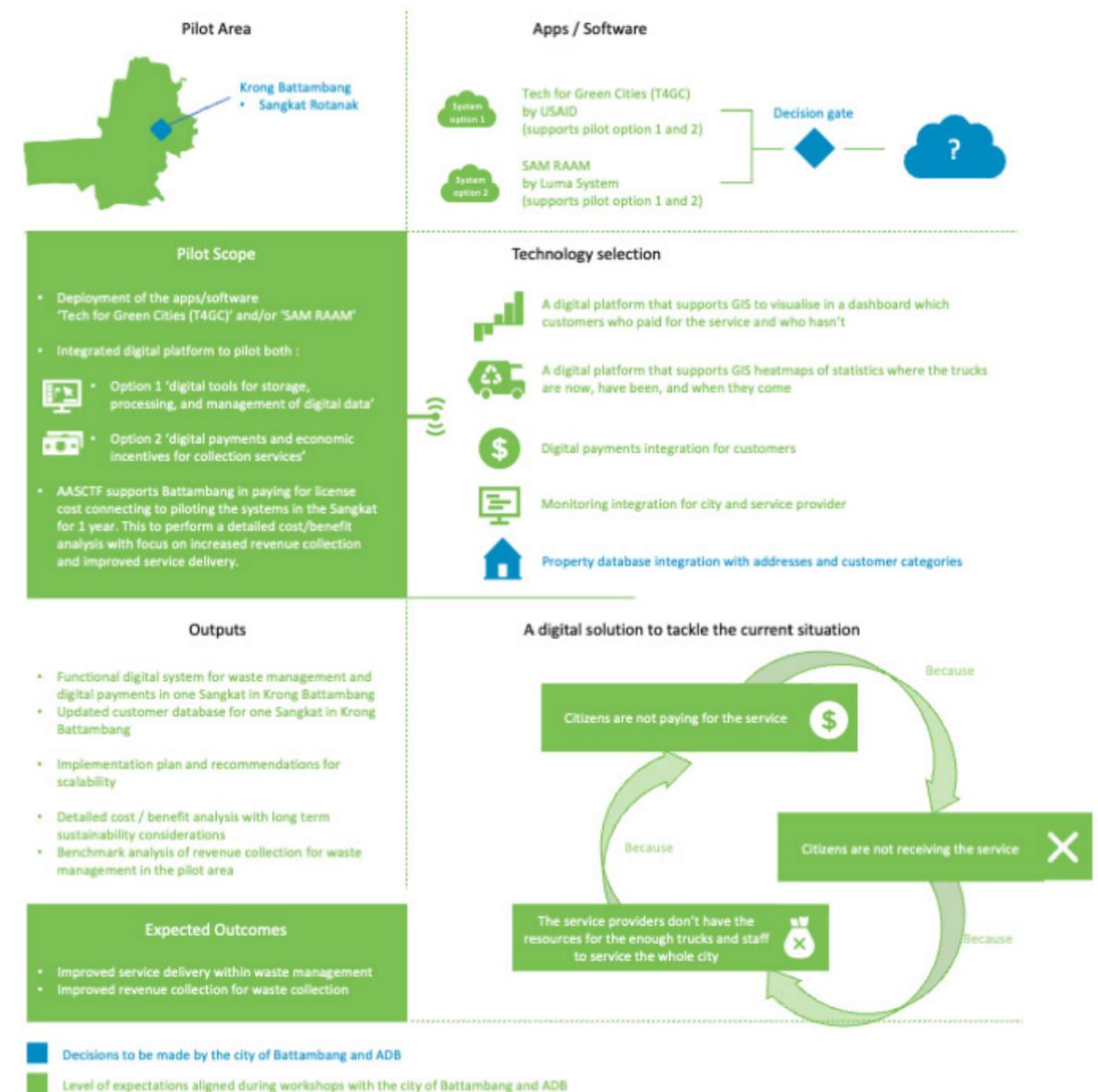
Source: Ramboll.

Implementation of the **Hue Smart Digital City Model for Master Planning** city intervention task order, which commenced with a soft start in Q1 2022, was carried out during the reporting period.

Across the Fund's three functional areas the Hue task order's specific objectives are as follows:

(i) **Planning systems:** The primary objective of this task order is to improve integration and efficiency of city urban planning systems and governance processes in Hue through the development and application of digital 3D master planning tools (3D model) and associated capacity building efforts. The 3D model provides a visualization of development scenarios (for example, new developments, new infrastructure, or planning strategies), which promotes meaningful engagement/collaboration with persons who may not easily understand detailed reports or interpret 2D plans – such persons may include government officials, citizens and private sector. The 3D master planning model, along with an integrated spatial database, is also intended to influence government development procedures/regulations, such as improving the assessment, approval, public exhibition, monitoring, and enforcement of construction projects.

(ii) **Service delivery:** The 3D model aims to demonstrate the importance of integrated data and holistic decision-making towards the realization of the city's vision and maximize the benefits to the people of Hue. Data inputted to the model will be tailored to Hue province's key government services (for example, public open space, capacity of utility infrastructure, flood/disaster management, and services for women and vulnerable groups) and key urban challenges (for example, urban renewal, heritage preservation, transport, and climate resilience).

(iii) **Financial management:** As part of this task order, the objective is to identify opportunities to support improved decision-making and management of infrastructure investments to reflect future development and prioritize spending. The data-driven 3D model (i.e., 3D visualization generated from 2D data) embeds metrics/attributes for buildings within the database. By providing data on

Figure 9: Preliminary 3D Model of Hue Using Satellite Images and Deep Learning Techniques
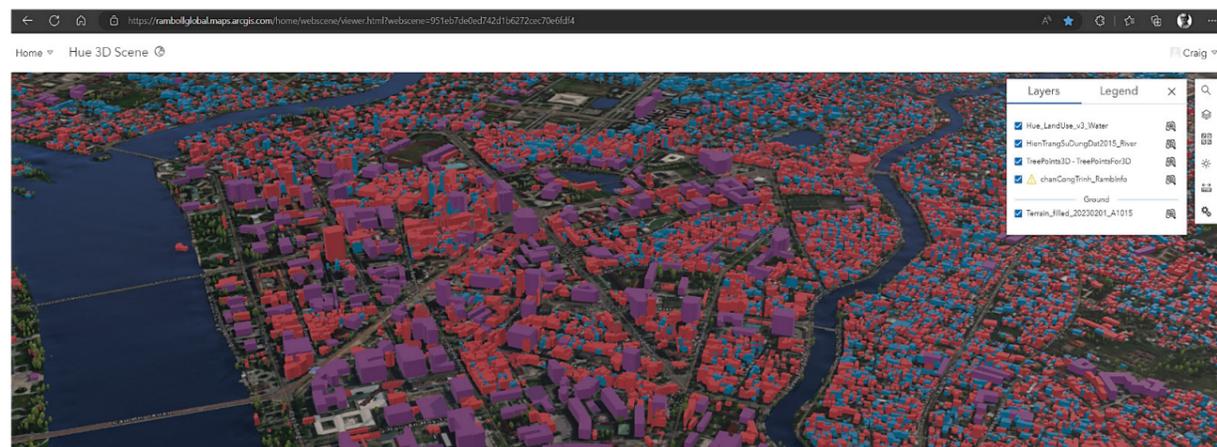
Source: Ramboll.

Left photo: AASCTF Project Lead Craig Niles (sixth from left) with the Thua Thien Hue PPC Project Management Unit during a project visit in September 2022. Right photo: Participants from the virtual preliminary inception workshop in July 2022.

various city metrics, such as population densities, demographics, jobs distribution, traffic, air quality, and energy consumption, the 3D model can assist government officials to identify trends and make informed evidential decisions. The Hue 3D model enables targeted spending by government in locations of greatest need.

Within the reporting period, initial progress was made toward the delivery of the following:

(i) Completion and submission of the **Preliminary Gap Analysis Report** in August 2022. The report identified and evaluated gaps or deficiencies in available information, and fielded recommendations to achieve a functional, robust, and sustainable Hue Smart Digital City Model for use by the Thua Thien Hue Provincial People's Committee (PPC).

(ii) A **virtual preliminary inception workshop** on 20 July with city stakeholders to update the Hue project management unit on the work that the team has been doing in the development of a smart digital city model, discuss key elements of this ongoing work, and plan for the next stage of the project. The meeting was participated in by Mr. Alex Nash and Ms. Quynh Anh from ADB, and Mr. Craig Niles and Mr. Dang Minh Nam from the Ramboll/VSDI project team. From the counterpart side, a delegation from the People's Committee of Thai Then Hue Province, led by Mr. Phan Quoc Son from the Department of Planning and Investment, joined the discussion.

(iii) A **project visit** in Hue on 26–30 September, where the project team met with the Project Management Unit set up by the Thua Thien Hue PPC, different government departments, and Hue city government officials to present the progress on the smart digital city model, such as the early testing work done to develop the model using satellite imagery. The team also discussed the functional requirements of the model, the data collection needed, its use cases, training, and implementation. Familiarization surveys were also carried out.

CHONBURI/EEC, THAILAND

Following a kick-off meeting and Inception Report issuance in Q1 2022, the project scope was, on the back of extensive discussions and a June 2022 study visit by the AASCTF task team, adjusted in Q3 2022 to comprise City Visioning and Strategic Urban Data Platform Assessment to support the Eastern Economic Corridor Office of Thailand (EECO) in their planning for a new smart livable city development in EEC.

Across the Fund's three functional areas the Chonburi/EEC task order's specific objectives are as follows:

(i) **Planning systems:** The task order sets out to develop a best practice methodology for developing a holistic vision for the EECO's New Smart City, building on policy, strategy, stakeholder engagement, and local context, and providing long-term perspective and direction for decision-making.

(ii) **Service delivery:** The development of the New Smart City's holistic vision also involves the setting of desired livability outcomes for the city's future inhabitants. These outcomes are expected to detail, for example, what benefits the masterplan will deliver not just for the New Smart City's citizens or businesses, but also for nature and the environment.

(iii) **Financial management:** Though financial management is not a specific focus, the task order is expected to provide guidance on the development of operational models, as well as the procurement and funding of the New Smart City's ICT components, including how to approach the IoT (Internet of Things) and platform product vendors.

Within the reporting period, substantial progress was made toward the delivery of the two main outputs of the task order, namely:

(i) **Smart City Visioning Methodology:** Development of a methodology to create a vision for the new smart city including considerations about the livability outcomes for inhabitants and how to attract the right people to the new area. This also includes key considerations about the Sustainable Development Goals and other sustainability dimensions and objectives, such as ADB's Green and Blue Bonds Framework, that the new city could pursue.

(ii) **Vendor Playbook:** The vendor playbook serves as a guide for EECO on how to approach the ICT smart city ecosystem vendors from the industry, to act as a starting point for engagement. It is intended as an internal EECO document detailing how to approach and communicate with vendors and partners. Further, there will be two specific tools for EECO to receive: a visualization of a technical setup illustrating the ICT layers that allows vendors to cross-mark where they map into the IT architecture and a catalogue of ICT solutions.

Figure 10: Benefits Realization Methodology Proposed as the Basis for EEC New City Visioning Process
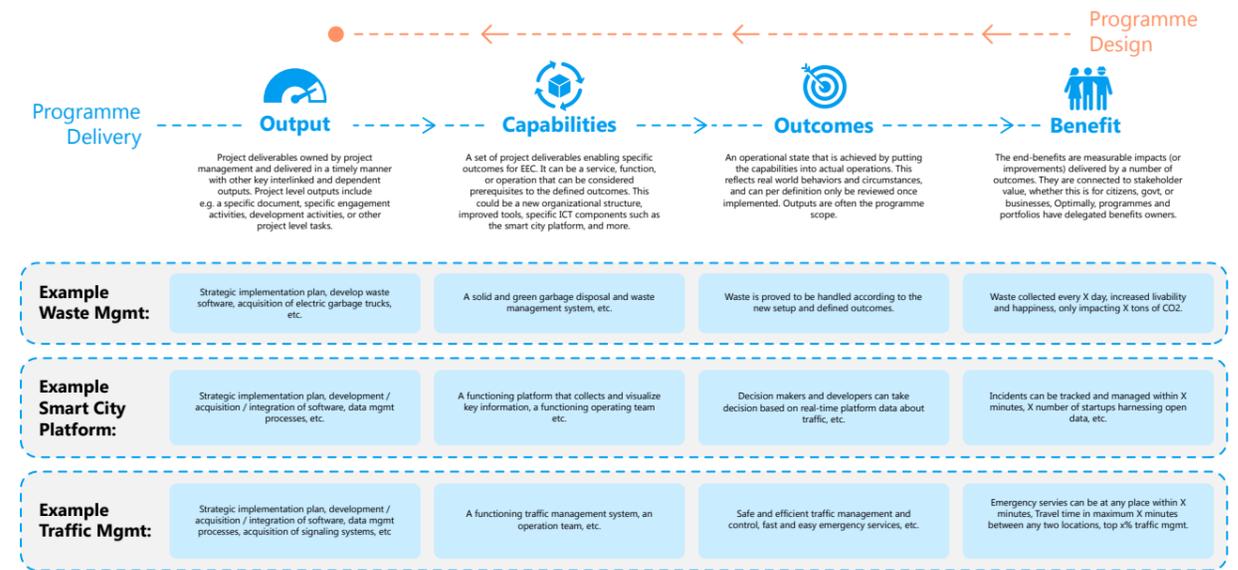
Source: Ramboll.

Members of the Ramboll project team, together with ADB's Kyaw Thu (third from right, front row) and EECO stakeholders during one of the project team's visits to Chonburi in 2022.

LUANG PRABANG, LAO PDR

Implementation of the **Luang Prabang Smart and Integrated Urban Strategy** city intervention task order commenced in Q1 2022, with an official project kick-off meeting held online on 29 March 2022.

Similar to the Penang task order, this Luang Prabang intervention also involves a UNESCO World Heritage Site. Previously the royal capital of the Lan Xang Kingdom, one of the largest kingdoms in Southeast Asia from the 1350s to early 1700s, Luang Prabang has a rich architectural, natural, and cultural heritage, which the government rightly wants to preserve as the city grows. The historic town of Luang Prabang was inscribed in the World Heritage List in 1995. By developing a smart and integrated urban strategy, the AASCTF is supporting the local government to address the challenges of rapid urbanization and increasing tourism impacts by setting in motion a smart livable city roadmap to guide future development initiatives.

During the reporting period, three stages have been undertaken concurrently to implement the city intervention task order: (i) urban assessment, (ii) urban scenario, and (iii) the smart and integrated urban strategy. The first two stages inform the third stage, so that the strategy will include recommendations for smart city projects that can enable the city to reach a sustainable urban development scenario by 2040.

The urban scenario (and entire intervention) is aligned with the proposed $45 million ADB investment, the Urban Environment Improvement Investment Project (UEIIP), to ensure consistency between both programs.

Across the Fund's three functional areas the Luang Prabang task order's specific objectives are as follows:

(i) **Planning systems:** The overall focus of the task order is to develop a smart and integrated urban strategy that examines the urban development, heritage, and tourism needs of Luang Prabang in order to guide its development up to 2040. To start, the goal is to conduct an assessment of the existing challenges and opportunities in Luang Prabang by gathering quantitative and qualitative data across various sectors, so as to analyze the urban context and articulate the strengths, weaknesses, opportunities, and threats faced. For Stage 2, the Urban Scenario, the objective is to forecast a feasible urban development scenario for Luang Prabang in 2040, looking closely at a land use plan and tourism projection numbers. For Stage 3, the Smart and Integrated Urban Strategy, the aim is to present strategies and interventions through a detailed roadmap, including an implementation governance structure with roll-out for different timeframes.

(ii) **Service delivery:** The task order did not explicitly address service delivery aspects. However, as noted, the strategy will include strategies and proposed smart city projects that can help improve urban services in Luang Prabang aligned with a more sustainable growth trajectory. This can include ticketing and visitor management systems, improving water service delivery through digital technologies, and introducing a smart sanitation management program, among others.

(iii) **Financial management:** The task order did not explicitly address financial management aspects.

The three stages of the task order were all in varying levels of ongoing development by the close of the reporting period. Three field missions were conducted: one inception mission in May 2022, which was attended by Mayor Viengthong Hatsachan, and two interim missions in September and November 2022, to further meet and discuss with stakeholders on the proposed smart city project recommendations and project prioritization criteria, as well as conduct additional field surveys and interviews to explore possible smart city ideas that are appropriate for Luang Prabang's urban context.


Officials and other project stakeholders at the inception meeting in Luang Prabang in May 2022, which was led by ADB UEIIP project officer Steven Schipani and Mayor Viengthong Hatsachan.

Figure 11: Luang Prabang Spatial Plan as Presented in the Urban Scenario Report
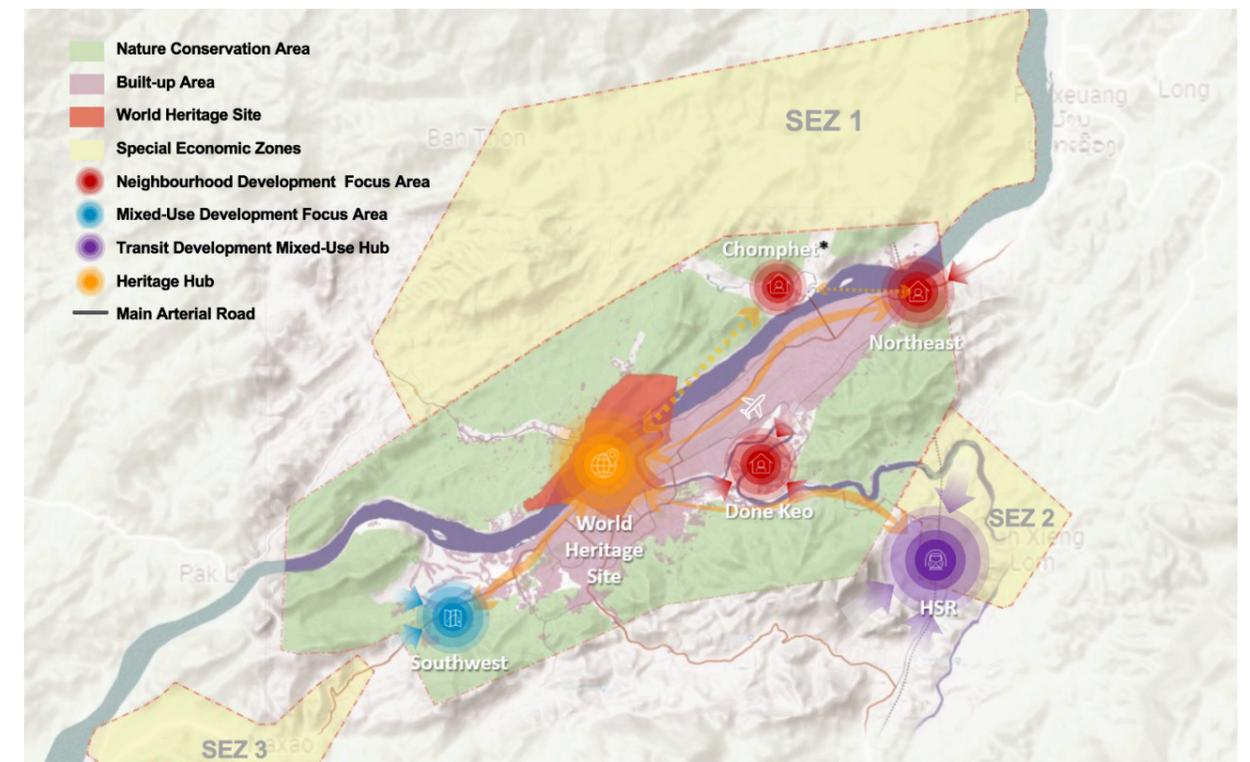
Source: Ramboll.

Implementation of the **Davao Bus Driver Training & Technology Study – Pilot Preparation & Implementation Support** city intervention task order, commenced in Q2 2022, with an official project kick-off meeting held online on 07 April 2022.

This task order is linked to an ambitious undertaking by the city government to transform its city public transportation system, including upgrading its intelligent transport management system and intelligent operations center. ADB is supporting the government with an equally ambitious investment, the more than $1 billion Davao Public Transport Modernization Project, also commonly referred to as the High Priority Bus System (HPBS) Project, which at its core will replace jeepneys with electric, hybrid, and diesel buses, and include the construction of bus depots, terminals, and a bus driving school, among other components. This project is the first of its kind in the country. As such, the reporting period saw a productive (albeit slightly tumultuous) run of activities – the latter pertaining to the training technology demonstration that was scheduled for November 2022 but was postponed to January 2023. A highlight of the task order, given the complexities of the overall project, is bringing multiple stakeholders (such as various government agencies) together to consider a coherent and collaborative plan for the training and driving school.

The task order aims to conduct a study to determine the training needs of drivers, including awareness of GESI considerations, undertake a market study of solutions, and provide recommendations for the implementation arrangements of the Davao bus driver training school, particularly the training framework. Of the GESI considerations, in particular, this includes having representation of women and persons with disabilities during workshops (e.g., the needs assessment workshop) to inform planning and design of interventions, as well as recognizing the need for a code of conduct for future bus drivers to ensure the rights, safety, and convenience of marginalized groups (such as women and girls, people with disabilities, older persons, and children).

Across the Fund's three functional areas, the Davao task order's specific objectives are as follows:

Project team leader Von Lopez Levine with the Davao City Project Management Unit during a project visit in September 2022.

(i) **Planning systems:** Planning aspects are secondary to the main focus of the task order, which is improving service delivery. Nonetheless, the training framework to be developed under the task order can help inform planning that is part of the HPBS Project, such as the timeline of progress and helps to inform the existing training environment on the expected learning journey and its suitable indicative training modules which looks towards the next actions of implementing the training institution and comprehensive training programs.

Davao City Mayor Sebastian Duterte (rightmost in left photo foreground) watches the demonstration of the VR simulator, which drivers can use to learn about pre-trip assessments; while then Department of Transportation Undersecretary for Road Transport and Infrastructure Mark Steven Pastor (in green in right photo) tries the driving simulator.

(ii) **Service delivery:** The specific task order objectives relating to service delivery include delivering: a training needs-oriented selection of appropriate technologies; an independent review of driver training technologies (which is both impartial and outside of suppliers' undue influence); review of the existing practices of bus academies similar or as can be applied to Philippine settings; a training program and resource base centered on 'pooled training technologies' to increase the utilization of the equipment; an ability to standardize core training content while providing flexibility for operators to bolt on their business-specific training; an operational model that can be managed and maintained in the long term by the local authority, if desired; and, a training paradigm that actively supports the Sustainable Development Goals, highlighting drivers' roles and attitudes that drive the achievement of accessibility targets.

(iii) **Financial management:** The task order did not explicitly address financial management aspects.

Various smart solutions were pursued and delivered as part of the task order within the reporting period, which include an initial desktop study of 30 vendors, comparing their capabilities, and identifying a shortlist of those with promising technologies, as well as the following key outputs:

(i) **Engagement Report and Functional Requirements** – These detail the four workshops conducted with key stakeholders, drivers, and private sector and other end users to discuss the project and assess their needs and challenges, as well as ensure that the task order is delivered with social inclusion in mind.

(ii) **Preliminary Evaluation and Shortlist** – Several vendors were engaged and reviewed based on capabilities, cost, and against the functional requirements. The training technology preferred should include a simulator and digital learning component that can supplement on-the-road training and provide procedural scenarios to inform/examine a driver's choice, respectively. A report was prepared to capture this evaluation and shortlisted vendors, which can inform the employer requirements for the eventual procurement for the driving school. This also led to the demonstration of the technologies with stakeholders.

This Davao task order is essentially a preparatory stage that would lead to procuring the training technology (as a pilot) under a separate task order or other financing mechanism under a new ADB technical assistance.

INVESTMENT GRANTS

In close collaboration with ADB project officers and participating cities, opportunities to finance physical investments (including works and goods) in select cities (i.e., gold tier cities[7]) continued to be explored during the reporting period.

DIRECT CHARGES

Three direct charge activities were ongoing during 2022:

(i)   The **City Resource and Finance Tool (CRAFT)** was approved in May 2020. Activities implemented by CRISIL Limited (India) for Indonesian cities continued throughout the reporting period. The project, which seeks to help cities to develop (i) financial management and creditworthiness, and (ii) a strategy for resource mobilization and prudent borrowing to meet medium-term infrastructure needs, is set to be concluded with the delivery of the Final CRAFT and Pilot City Assessment in June 2023. The direct charge is supervised by ADB's OPPP.

(ii) The direct charge for **Support to Development of New Indonesian Capital Nusantara** was approved in June 2022 and implemented with the support of Arup. The aim is to improve the capacity of the Nusantara New Capital Authority to plan and manage the spatial planning and design process of the new capital city. Activities to be executed under the direct charge, with target of completion, include: (i) international expert/advisory group meetings organized; (ii) review of design principles introduced for the new capital; (iii) provision of recommendations for additional regulations for planning and developing the new capital (such as building codes, etc.); (iv) compilation of plans prepared for the new capital; and (v) preparation of road map for development of a data platform conceptualized.

(iii) Activities under the **Enhance Soft Skills for Youth Employability in Kaysone Phomvihane** was approved in August 2022 and implemented with the support of individually contracted consultants. It aims to support graduates from higher education institutions and technical and vocational education and training (TVET) schools in Kaysone Phomvihane to be better prepared for entering into the labor market. Three main outputs are sought to be achieved under the direct charge by mid-2022, including: (i) e-learning module tools developed, including modules on job application and negotiation skills, and interpersonal and problem-solving skills; (ii) e-learning modules and videos promoted, including webpage launch and job fair to promote employers and match job seekers; and (iii) sustainability and stability action plan developed.

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[7]   Currently named gold tier cities (Davao, Ho Chi Minh City, and Luang Prabang) have been identified considering possibility of linking investment grants to ADB loans being processed, whereby there is some confidence at this stage that the investment grants can be achieved/utilized within the current fund period (until mid-2024). However, gold tier city selection is subject to change, in particular in the case of any changes in loan processing.

Members of the Ramboll team with local officials during a site visit in Battambang, Cambodia as part of the Battambang Smart Solid Waste Financial Management project.

Putting People First: Elevating the Conversation around Inclusion in Southeast Asian Cities

Background

Cities, for all that they promise in terms of opportunities and a better life, are sometimes not what they purport to be. For many women and girls, people with disabilities, older persons, and children, as well as those classified as minorities due to their ethnicity, religion, or sexual orientation, or a combination of these, life in the city can be riddled with difficulty. They are often marginalized due to cultural norms and attitudes and patriarchal stereotypes and are typically left out of conversations and leadership positions that determine policy and decisions that affect their lives.

Many cities, for all their growth and sprawl, are also gender-insensitive in terms of design. They also do not account for the needs of the differently abled, aging, and the young; thus, limiting their ability to access basic services, livelihood, and social activities.

When the COVID-19 pandemic struck, this challenging reality worsened. In Southeast Asia, research shows that women bore the brunt of job losses. Gender-based violence also escalated during the lockdowns. However, as with before the pandemic, these numbers tend to be underreported. This points to another challenge for women and marginalized groups—there is a lack of disaggregated data. Therefore, it is hard to get a full grasp of the issues faced (and not just of unemployment or harassment), affecting the solutions that can be implemented.

Specific Interventions Supported

In August 2021, AASCTF commenced the Smart Cities–Inclusive Cities Capacity Building Program, also commonly called the Inclusive Cities Dialogues (ICD) Project. Executed in collaboration with The Asia Foundation, this regional initiative aimed to provide a thoughtfully designed platform to directly hear, appreciate, and unpack the lived experiences of marginalized groups, while also bringing on board diverse representatives across different entities and urban sectors, to discuss and galvanize collaborative action for more inclusive cities in Southeast Asia.

The project began with a stakeholder and issues mapping exercise, which was undertaken to assess the local political economies and to understand the scale and depth of inclusion issues across the region and within the AASCTF participating cities. The purpose of the mapping was also to identify the appropriate participants for the dialogues, particularly stakeholders who can potentially lead and support reforms. Over 20 conversations were held with 11 cities from AASCTF's network of 24 cities in the region. From these conversations, three core inclusion issues were defined: access to infrastructure and services, urban safety and security, and decent work and livelihood. These three core issues reflect the challenges that resonate most among marginalized groups in these cities, and this became the framework for the subsequent dialogues.

Then Australian Ambassador for Women and Girls Christine Clarke delivered the opening remarks during the third cohort of Module 1 of the Inclusive Cities Dialogues.

The Inclusive Cities Dialogues, an online and interactive gathering, comprised three modules (one for each core inclusion issue) with participants taking part in one of three cohort sessions (with the first two targeting the 14 participating cities, and the third session for national-/regional-level discussions). In all, nine dialogues were held. Each dialogue highlighted two or three ongoing initiatives in the region and provided time for country-specific breakout groups and/or in-plenary discussions. This allowed participants, especially those representing marginalized groups and local governments, to openly share their own experiences and provide inspiration and insight for further action.

One such crucial point was raised by Shiela May Aggarao, from the Nationwide Organization of Visually-Impaired Empowered Ladies (NOVEL) in the Philippines. Highlighting siloed thinking and the lack of comprehensive approaches to inclusion, she said: "Lack of the intersectionality perspective across all levels of development process is a key barrier. As intersectionalities, most of the time, are taken as an afterthought... For example, you're a person with disability—you're just that. You do not see the gender dimension or the age dimension, so the solutions are only seen in just one dimension."

> "Failure to consider the needs of women, girls, and vulnerable groups, who comprise the majority of a society, ultimately leads to a situation where they are less visible."
>
> — **Christine Clarke**, Australian Ambassador for Women and Girls, DFAT
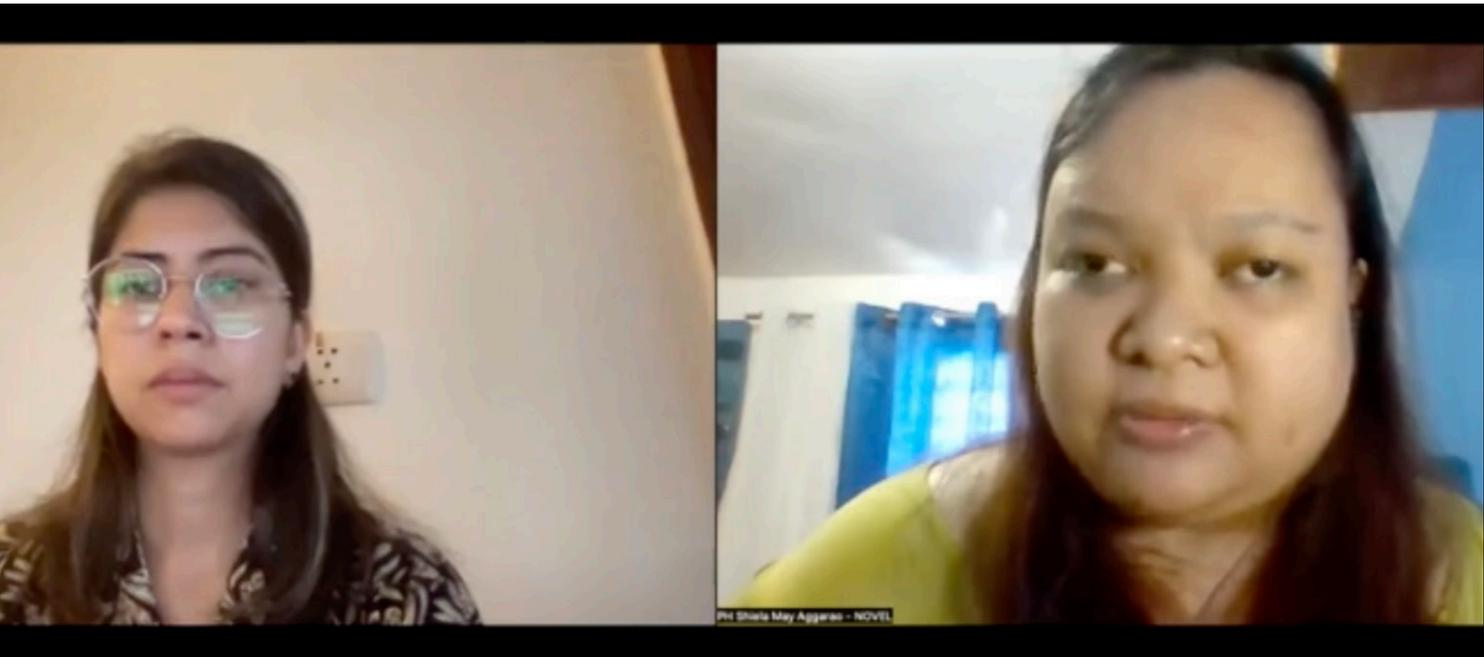
Shiela May Aggarao from the Philippines (right of photo), a visually impaired yet empowered woman, shares her thoughts on the importance of intersectionality in inclusion, as Sumaya Saluja from The Asia Foundation (left of photo) listens and moderates the discussion.


Mayor of Makassar (Indonesia) Moh. Ramdhan Pomanto; Australian Government Department of Foreign Affairs and Trade Deputy Head of Mission to the Australian Mission to the ASEAN Caroline Scott; and ADB's Wendy Walker, Kyaw Thu, and Elizabeth Jung, are just some of the more than 100 participants in the final inclusive cities event.

Results and Impact

The Inclusive Cities Dialogues activated and engaged over 180 stakeholders during its five-month period from March to July 2022. Although the inclusion issues tackled are complex and even systemic, or at times nuanced to a specific culture, city, or country, the dialogues were able to create an open space to raise awareness and prompt deeper introspection into how cities currently function and are planned. Otherwise, as then Australian Ambassador for Women and Girls Christine Clarke mentioned in one dialogue: "Failure to consider the needs of women, girls, and vulnerable groups, who comprise the majority of a society, ultimately leads to a situation where they are less visible."

The success of the dialogues culminated in a final event that was open to the public, gathering over 100 attendees. Billed as 'At the Intersection: Smart Inclusive Cities in Southeast Asia,' the event not

only captured the momentum and takeaways of the dialogues, but also led the thinking back to AASCTF's approach—that being inclusive is part of realizing people-centered smart livable cities. This final event showcased inspiring initiatives that use technologies to integrate marginalized groups into city planning, resilience building, and simply, having a better quality of life.

To further expand the lessons from the ICD Project, (at the time of writing) a free e-learning course on inclusive cities will soon be available in the ADB eLearn website. This combines the concepts and core inclusion issues discussed in the dialogues with a practical guide to start mainstreaming gender equality and social inclusion in projects.
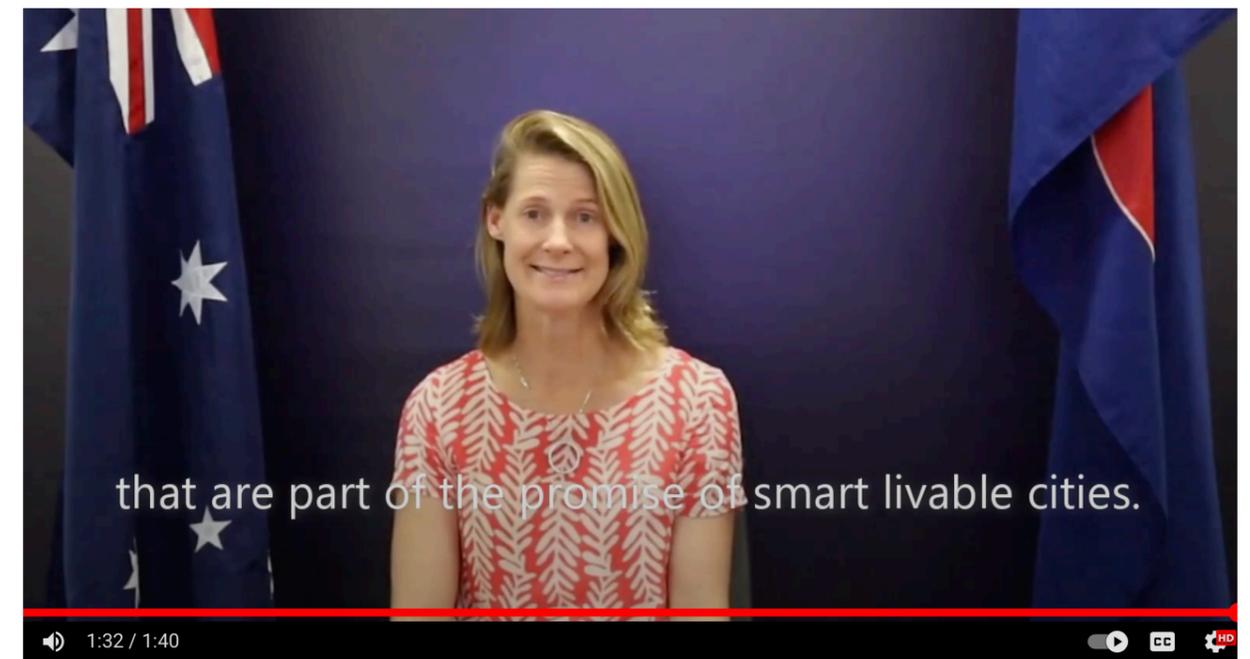
Caroline Scott, Deputy Head of Mission to the Australian Mission to the ASEAN, under the Australian Government's Department of Foreign Affairs and Trade, supported the promotion for the final inclusive cities event through a short video inviting the public to join the event. The video was posted across the AASCTF social media channels and in a special mailer, and is currently available in the AASCTF YouTube channel.

INFLUENCING ACTIVITIES

COMMUNICATION & KNOWLEDGE SHARING

Social media

The AASCTF social media channels continued to grow their following during the reporting period (Figure 13) thanks to consistent posting and producing quality content. In Q2 2022, the team held a discussion with DFAT on how to leverage the trust fund's social media and create synergies with its ASEAN and country missions in the region. This was also followed by another update during the annual meeting between ADB and DFAT in October 2022, where it was included in the presentation for DFAT. The team continues to find and tap opportunities to cross-post with the DFAT ASEAN Twitter account (or other related DFAT accounts) and generate awareness for Australia's support to the AASCTF toward the delivery of smart livable cities in Southeast Asia.

Figure 13: Growth of Social Media Followers, 2020–2022
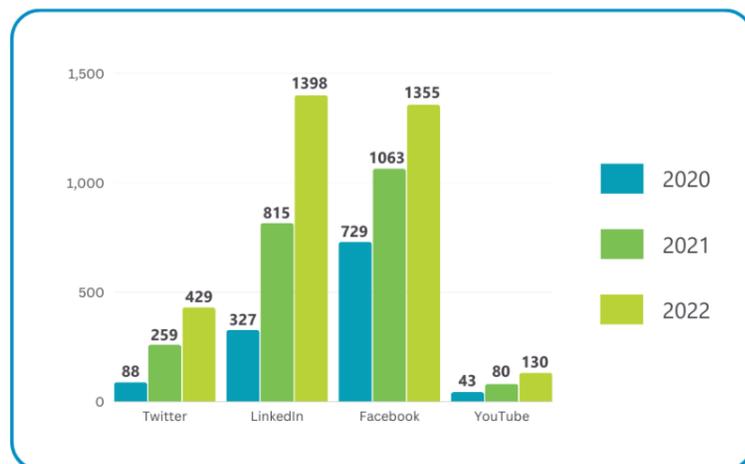
Source: Ramboll.

With the trust fund's deepening engagement and impact, the social media approach in 2022 focused on more intentional and targeted posts of project updates and activities (Figure 14), as well as diversifying the types of content shared to showcase the range of the trust fund and gain more interest. The approach prioritized quality over quantity, hence the dip in number of posts. The posts aimed to balance the coverage of different projects and activities, from the wrap-up of the Makassar task order (promoting the Makassar project video and the interactive Makassar Livable City Plan) to the sharing of the first on-the-ground visits in AASCTF cities (with the opening up of countries from the pandemic) and other succeeding trips, to the promoting of the various targeted capacity building programs under e.g., the Baguio and regional task orders. Social media was also crucial for marketing the Smart City Networking Days 2022, which involved regular posts leading up to the event.

Figure 14: Number of Social Media Posts, 2020–2022
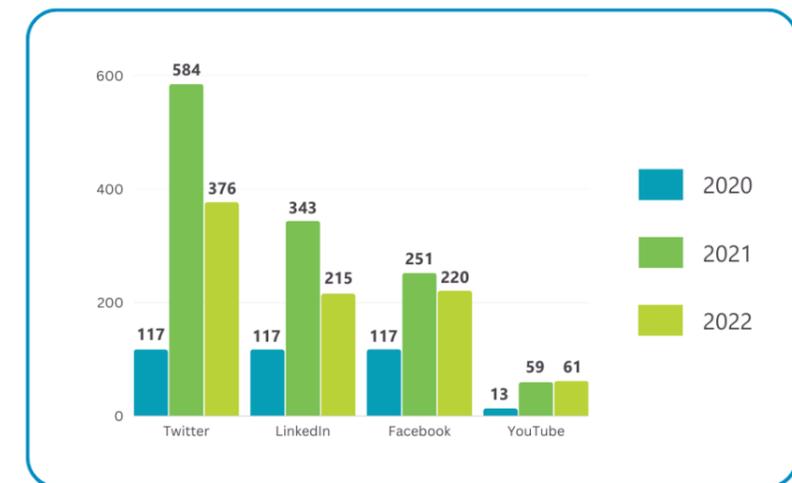
Source: Ramboll.

As for the types of content, branded templates were created to highlight announcements of new projects or task orders, reports, insightful quotes, and relevant international days, such as World Water Day and ASEAN Day. Photo carousels were also designed to present longer types of information in a visual way, such as for those prepared as part of the outreach campaign for the Inclusive Cities Dialogues. Each module of the dialogue had a corresponding carousel to introduce the topic. Meanwhile, audiograms were developed to capture interesting points from the Guided Learning Program webinars. For LinkedIn, this meant speakers could be tagged and featured, enabling reach extension through their respective networks whenever the post has been liked or shared.

In addition, continuing from last year, live tweets were done for the Guided Learning Program (3 webinars) and the Inclusive Cities Dialogues together with the final Inclusive Cities Event (10 online sessions in total). One of the top highlights from the live tweets was receiving the support of Australian Ambassador to ASEAN Will Nankervis and then Australian Ambassador for Women and Girls Christine Clarke, who both tweeted about the dialogues. As for the final Inclusive Cities Event, the team collaborated with Deputy Head of Mission for the Australian Mission to the ASEAN Caroline Scott to produce a promotional teaser video to highlight the importance of inclusion and encourage people to join the event.

In 2022, a social media campaign was also conducted to launch AASCTF's first-ever e-learning course, **Increasing Livability: An Introduction to Smart Cities**. This consisted of a promotional video and succeeding posts featuring smart city 'champions' from ADB, Ramboll, and some representatives from the region, which also included a course participant (a member of the Philippines' Department of Transportation). Part of the social media campaign was to invite learners who completed the course to share their testimonials and/or certificates via their own social media profile(s) and/or through the AASCTF channels. This opportunity for learners to voice their feedback or experience was a way to become more inclusive in the trust fund's communications and feature more direct perspectives from ASEAN countries.
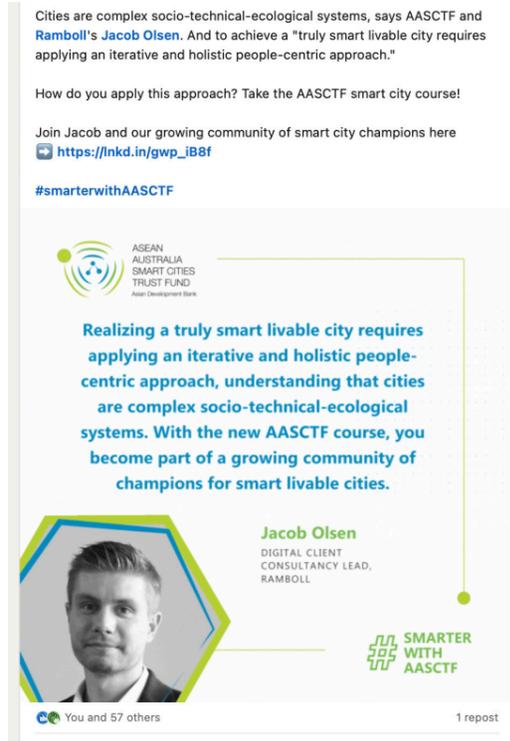
Left photo: Tweet by then Australian Ambassador for Women and Girls Christine Clarke during the Inclusive Cities Dialogues. Right photo: One of AASCTF's most liked LinkedIn posts featuring a smart city champion promoting the smart cities e-learning course.


Part of the promotional photo carousel for Module 2 of the Inclusive Cities Dialogues on Urban Safety and Security.

Webinars and virtual workshops

During the reporting period, AASCTF organized 4 webinars and virtual workshops:

AASCTF Smart City Networking Days 2022

Held from 21-22 June 2022, the AASCTF Smart Cities Networking Days 2022 was a two-day virtual networking event that showcased ideas, approaches, digital solutions, and lessons learned from AASCTF's ongoing pilot projects in Indonesia, Malaysia, and the Philippines, as well as use cases from partners in Australia and Europe. Sessions focused on smart city planning, smart mobility, strengthening urban resilience, and increasing institutional capacity in cities. Various stakeholders ranging from local government officials and city managers working in the areas of urban planning systems, urban service delivery, and/or financial management to the private sector, international financial institutions, multilateral organizations, non-government organizations, members of the academe, and urban development and smart city practitioners joined the conference. A total of 154 participants from 66 cities in the ASEAN region, as well as other parts of the world, joined the event.
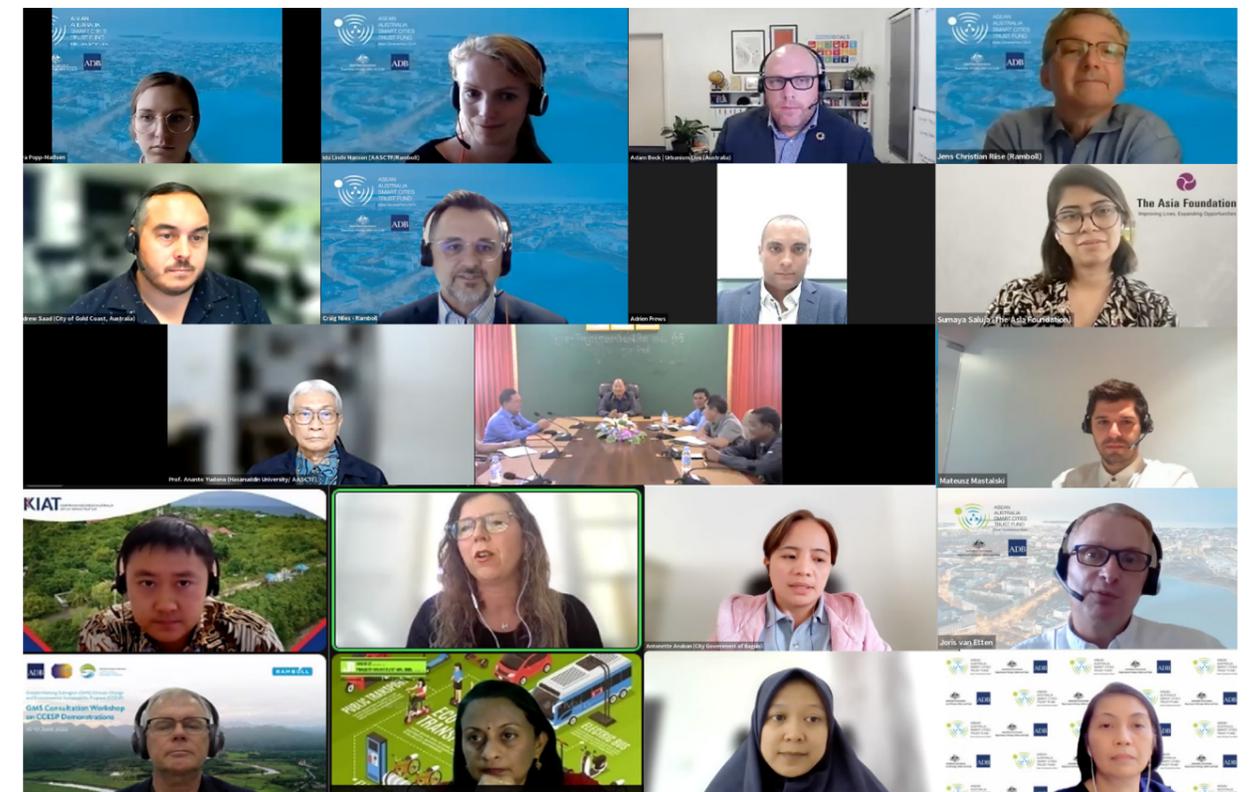
Speakers from the AASCTF Smart City Networking Days 2022 sessions.

AASCTF Guided Learning Program (GLP) webinars

Speakers from the AASCTF GLP webinars.

During the reporting period, AASCTF organized three public webinars as part of the Guided Learning Program focusing on three key aspects of smart data management for people-centric smart city development:

1. **Webinar 1: Data Collection and Storage** (8 Sep 2022) provided a deeper examination of how data flows and impacts our cities. The barriers that local governments face in collecting and storing data were also discussed, and the session showcased innovative examples of data collection and storage that are part of ongoing smart city programs.

2. **Webinar 2: Data Governance and Security** (20 Oct 2022) discussed data protection and privacy, and how cities can navigate this challenging issue while aiming to manage the vast amounts of data generated in cities to improve urban life. This session zoomed into the ways cities can make accurate data available and ensure data is maintained in a secure environment.

3. **Webinar 3: Analysis and Decision-Making** (1 Dec 2022) presented methods for data processing and analysis and looked into potential pitfalls, such as bias and limited data. It wrapped up the lessons from the previous two webinars, completing a journey into understanding urban data and how to develop a successful data project for cities.

These three webinars were rolled out over a 3-month period from September to December, with each session utilizing interactive engagement tools such as audience polls, online Q&A, and digital evaluation forms. The webinar recordings and speaker presentations were also uploaded on ADB's Knowledge Events repository and shared through AASCTF social media channels.

Table 6: Metrics for 2022 AASCTF-led Public Webinars and Workshops

Webinar Title	Date	No. of Participants	No. of Countries Represented	Nat/City Gov't participants (%)	Gender Balance of Speakers[a] (%)	Overall Evaluation: Webinar Attendees' Needs/ Expectations Met
AASCTF Smart City Networking Days 2022[b]	21-22 Jun 2022	154	24 countries	35%	41% (9 out of 22)	Strongly Agree: 49%; Agree: 41%
AASCTF GLP Webinar 1: Data Collection and Storage	8 Sep 2022	55	10 countries	45%	33% (1 out of 3)	Strongly Agree: 38%; Agree: 54%
AASCTF GLP Webinar 2: Data Governance and Security	20 Oct 2022	53	13 countries	49%	33% (1 out of 3)	Strongly Agree: 31%; Agree: 69%
AASCTF GLP Webinar 3: Analysis and Decision-Making	1 Dec 2022	57	15 countries	56%	33% (1 out of 3)	Strongly Agree: 63%; Agree: 26%

Notes:
[a] The gender balance column shows the female speakers who participated.
[b] For the AASCTF Smart City Networking Days 2022, the figures under the overall evaluation column shows the average response for all 6 sessions during the 2-day event.
Source: Ramboll.

AASCTF participation in regional/international events

The AASCTF team supported the organization and execution of two knowledge-sharing events within the reporting period:

1. The **Fifth Meeting of the GMS Urban Development Working Group,** hosted by the Ministry of Public Works and Transport (MPWT) of the Government of Lao People's Democratic Republic (Lao PDR). Held on 23 February 2022, the AASCTF team supported the organization of the workshop, with Ramboll's Mr. Antony Gibson moderating the event and Mr. Cor Merks serving as a resource person on "Smart Solutions for Reducing Non-Revenue Water."

2. The **Joint Webinar on Setting Priorities: Smart Ways to Make Indonesian Cities Smarter**, organized by ADB and Institut Teknologi Bandung (ITB). Held on 10 March 2022, the AASCTF team provided support towards the organization and promotion of the workshop, which discussed priorities and actions for smart city development. Over 150 participants, primarily from Indonesia, participated in the workshop.
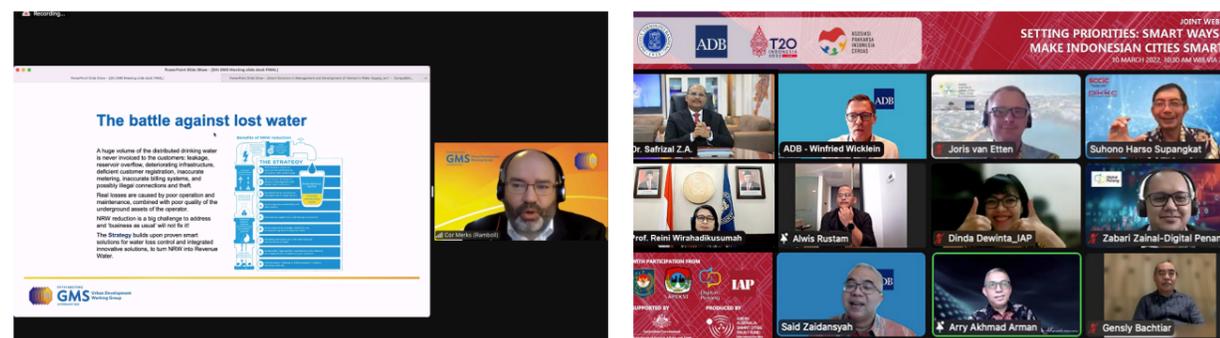
Left photo: Ramboll's Cor Merks spoke during the afternoon session of the 5th GMS Working Group Meeting. Right photo: Participants of the joint webinar by ADB and ITB.

The AASCTF team was also invited to participate in two high-profile events:

1. As training session organizer during the **11th World Urban Forum** in Katowice, Poland on 29 June 2022. The session, entitled "Build-A-Smart-City: From Best Practice to Next Practice", was a three-hour in-person training workshop where participants learned about the concepts of a smart livable city, how to move from best practices to next practices in terms of urban planning, and how these were applied in Makassar, Indonesia. In total, 29 participants from various cities around the world took part in the session.

2. As speaker during the **Asia Water Forum 2022**, organized by ADB's Water Sector Group, Ms. Antonette Anaban, Assistant City Planning and Development Coordinator of the City Government of Baguio and AASCTF focal point/smart city champion of the Baguio smart FEWS project, served as a presenter in the session on "Technologies for climate resilience." During the session, Ms. Anaban shared the design and different features of the smart FEWS being developed under the project, including how a gender and inclusion lens was applied, to ensure timely, appropriate, and applicable early warning reaches all Baguio residents, especially the most vulnerable.

Left photo: Participants in discussion during the AASCTF-organized session during the WUF11. Right photo: Ms. Antonette Anaban presented the Baguio project during the AWF 2022.

Project videos produced

During the reporting period, three project videos were developed showcasing specific AASCTF-supported interventions. These videos have been uploaded on the AASCTF's YouTube channel, and disseminated through Facebook, Twitter, and LinkedIn.

1. A Smart and Interactive Livable City Plan for the City of Makassar, which gives an overview of the Makassar Livable City Plan developed by the trust fund. The video is also available in Bahasa Indonesian.

2. An online platform enabling accessible telehealth and community health services, which showcases Alaga Health, the runner up of the AASCTF Smart Cities Datathon 2021.

3. ADB Waste Analytical Resource Planning Scenarios (WARPS) Tool, which gives an overview of how to use the tool. The WARPS Tool automates the calculation of waste flows between various processes and generates economic and environmental results that can be used by decision-makers such as policymakers and planners.

Thumbnails of the three videos produced and uploaded to the AASCTF YouTube channel.

Five animated videos were also produced under the Smart Cities–Inclusive Cities regional task order, specifically for the Inclusive City Dialogues (ICD), a series of workshops that discussed and identified actions to improve inclusion for marginalized groups. The videos were developed by The Asia Foundation, and were shown during the workshops.

1. Welcome to the Inclusive Cities Dialogues, which gives an overview of the objective of the dialogues;

2. Inclusive Cities Dialogues: Why Inclusion?, which emphasizes the importance of inclusion as an essential part of achieving smart livable cities;

3. Inclusive Cities Dialogues: Access to Infrastructure and Services, serves as an introduction to the first module, and gives an overview of the five dimensions affecting access to infrastructure and services: physical, economic, geographic, political, and social;

4. Inclusive Cities Dialogues: Urban Safety and Security, which looks at some urban safety and security issues from the perspective of marginalized groups, particularly women, girls, and members of the LGBTQIA+ community; and

5. Inclusive Cities Dialogues: Access to Decent Work and Livelihood, which emphasizes the importance of valuing the marginalized and investing in decent work that supports their growth and at the same time, the development of smart cities.
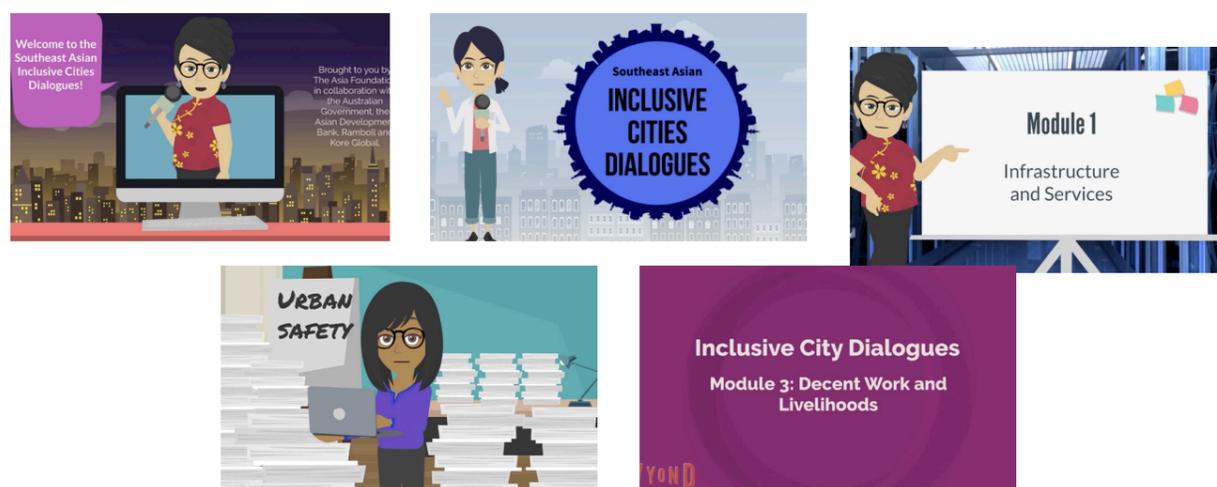
Thumbnails of the five videos modules produced under the AASCTF ICD program (photos from The Asia Foundation).

Quarterly newsletter

Over the course of 2022, the AASCTF team disseminated four quarterly ASEAN Smart Cities newsletters (Figure 15) as an additional outreach to the program's target stakeholders. The newsletter serves as a digest of AASCTF activities and stories during the respective quarter period covered. On average, email recipients of the newsletter (issues 5-8) totaled just over 2,600. Recipients included DFAT headquarters and mission staff, ADB staff, city and national government officials, and various other individuals across diverse regions, sectors, and industries who have become part of the AASCTF network by signing up to the trust fund's email distribution list.

Aside from the quarterly newsletters, the AASCTF also sends out special mailers to subscribers to announce key activities and provide more details, such as for the networking conference, final inclusive cities event, and GLP webinars, among others.

Figure 15: Thumbnail Images from AASCTF's Quarterly ASEAN Smart Cities Newsletter

Issue 5 (issued 3 Feb)	Issue 6 (issued 11 May)	Issue 7 (issued 24 Aug)	Issue 8 (issued 16 Dec)

REGIONAL NETWORKING

Introduction workshops

To better understand bronze tier city interests and needs for the purpose of informing the planning and design of future capacity development and regional networking activities under the trust fund, nine introduction workshops were successfully executed in Q1/Q2 of 2022 (in addition to the 11 introduction workshops that were executed in 2021) (Table 7). These workshops were executed under the frame of the Baseline Development and Capacity Building for AASCTF Participating Cities regional task order which commenced in June 2021.

Table 7: Overview of Introduction Workshops Conducted in 2022

#	City	Date	No. of Participants	% Female Participation
1	Pontianak (INO)	12 Jan 2022	12	50%
2	Davao (PHI)	4 Feb 2022	25	36%
3	Phnom Penh (CAM)	17 Feb 2022	18	11%
4	Semarang (INO)	23 Feb 2022	44	63%
5	Palembang (INO)	21 Mar 2022	12	67%
6	Kampot (CAM)	21 Apr 2022	28	50%
7	Ho Chi Minh City (VIE)	26 Apr 2022	19	45%
8	Battambang (CAM)	29 Apr 2022	27	35%
9	Penang (MAL)	13 Jun 2022	15	35%

Source: Ramboll.

In all 20 cities where introduction workshops were conducted between 2021 and 2022, the AASCTF team thereafter liaised with city officials (and other stakeholders as relevant from the public and private sector) in order to:

(i) complete a web-based smart city needs assessment survey/questionnaire, including assessment of current levels of utilization and mastery of digital tools in the areas of planning, service delivery, and financial management;

(ii) establish a solid and defendable smart city (smart government) baseline;

(iii) develop a peer network of AASCTF recipient bronze tier cities to foster increased exchange of knowledge and best practice in smart city development and implementation; and

(iv) identify bronze tier cities having potential for graduation to silver and gold tiers within the fund program period.

Inclusive Cities Dialogues and Final Inclusive Cities Event

Organized under the Smart Cities–Inclusive Cities task order, the Inclusive Cities Dialogues (ICD) is a series of nine online discussions with more than 180 diverse stakeholders across 14 Southeast Asian cities. Held over the course of March to July 2022, the dialogues focused on the exclusion experiences of women, persons with disabilities, the urban poor, and other marginalized groups, and the policies and programs made by different organizations and agencies in the region to address these challenges. The ICD sought to create a space for open dialogue, learning, and connection to understand and examine the dynamics of exclusion, to build consensus, and incentivize actionable and participative reforms. The ICD was structured according to three core inclusion issues that arose from an initial stakeholder and issues mapping process. Each issue served as a module for the dialogues, with three cohorts per module to accommodate the different ASEAN cities and regional/national level discussions. For each cohort, there were 2–3 presenters and if time permitted, breakout discussions per country; otherwise, these were taken in plenary. Below are the modules and dialogues conducted:

1. Module 1: Access to Services and Infrastructure (held on 4, 17, and 24 March)

2. Module 2: Urban Safety and Security (held on 12 and 19 May, and 2 June)

3. Module 3: Access to Decent Work and Livelihood (held on 14, 21, and 28 July)

Participants during one of the virtual Inclusive Cities Dialogues sessions (screenshot by The Asia Foundation).

These nine dialogues informed the final inclusive cities event that was open to the public, entitled "At the Intersection: Smart Inclusive Cities in Southeast Asia", which was held on 26 October. This half-day event served as the culmination of the Inclusive Cities Dialogues, bringing the takeaways into a deeper discussion on how smart solutions (whether innovative or low-tech, but always context-appropriate) can help improve public participation, access, spaces, and livability, not only for the marginalized but for everyone. Over 120 participants joined this final event, which included inspiring messages from DFAT's Caroline Scott, ADB's Wendy Walker, and Makassar Mayor Ramdhan Pomanto.

CITY TWINNING

The AASCTF supports regional networking, twinning, and capacity building programs to enable ASEAN cities to develop holistic smart city plans that prioritize livability and resilience. The City Twinning Program aims to increase recipient cities' capacity and knowledge to pursue holistic smart city initiatives and foster long-lasting partnerships between the twinned cities.

Through twinning activities, cities:

 (i) increase understanding of the complexity of smart city development,

 (ii) develop new technical skills and knowledge,

 (iii) gain greater confidence through the exchange of best practices and lessons learned,

 (iv) develop mutually inspiring relationships,

 (v) strengthen cross-cultural collaboration skills, and

 (vi) receive support from the AASCTF.

The AASCTF currently has two city twinning projects underway. These twinned cities comprise:

RECIPIENT CITY	MENTOR CITY
Baguio, Philippines	Perth, Australia
Makassar, Indonesia	Gold Coast, Australia
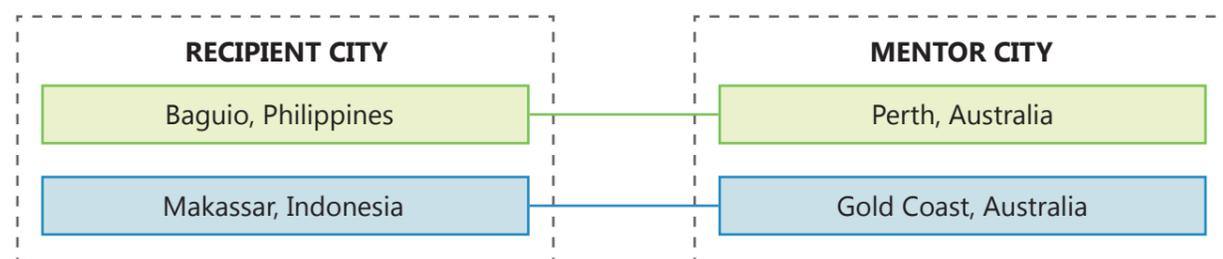
The city twinning activities initiated in 2020 and formalized in 2021 progressed throughout 2022 in accordance with the agreed stepwise approach (Figure 16) in two selected silver cities, Makassar (INO) and Baguio (PHI). Together with their mentor cities (i.e., Gold Coast (AUS) as mentor to Makassar and Perth as mentor to Baguio), both cities finalized Twinning Plans in Q1/Q2 2022. Key focus areas of cooperation between the twinned cities were set out in the Twinning Plans, along with target activities, as follows:

1. **Makassar (INO)–Gold Coast (AUS).** Key focus of cooperation: tourism, climate change, and livable and smart transport.

2. **Baguio (PHI)–Perth (AUS).** Key focus of cooperation: air pollution and water and wastewater pipeline leak detection.

The overall aim of the AASCTF twinning program is for the beneficiary city to:

 (i) increase their understanding of the complexity of smart city development,

 (ii) develop new technical skills and knowledge, and

 (iii) gain greater confidence through the exchange of best practices and lessons learned.

For both cities (mentor and beneficiary), the overall aim is to develop mutually inspiring relationships, and to strengthen cross-cultural collaboration skills.

Figure 16: Steps in AASCTF Twinning Arrangements

Source: Ramboll.

Makassar and City of Gold Coast
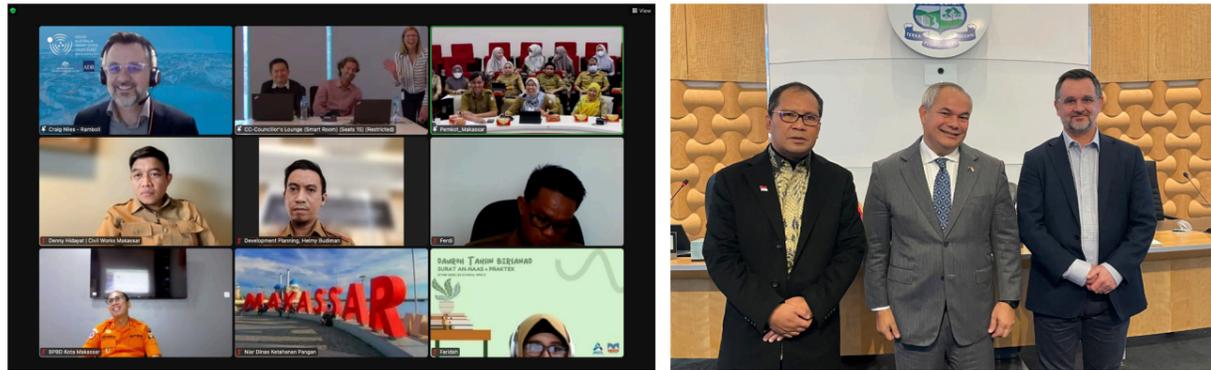
Left photo: Organizers and participants of the first technical webinar on climate resilience and flood modeling between the City of Makassar and the City of Gold Coast. Right photo: City of Gold Coast Mayor Tom Tate (center) is flanked by Makassar City Mayor Mohd. Ramdhan Pomanto (left) and Ramboll's AASCTF Project Lead Craig Niles (right) during a visit by the Makassar delegation to the City of Gold Coast in July 2022.

Several key activities strengthened the twinning between Makassar and the City of Gold Coast in 2022. In July, a delegation from Makassar, led by Mayor Ramdhan Pomanto, visited Australia where they met with Gold Coast Mayor Tom Tate, and was joined by AASCTF's Craig Niles. The meeting included a discussion on the twinning program, particularly how Gold Coast can share their knowledge and expertise on climate change/flood modeling, transport, and tourism. The visit also highlighted the centuries of cultural ties between Aboriginal people and the Makassarese, which was celebrated at the Centuries of Friendship cultural program in Sydney that was attended by the Makassar delegation.

In August, a technical webinar focusing on climate resilience and flood modeling was held online. The webinar showcased Australian expertise from the City of Gold Coast's Natural Hazards team on increasing resilience to natural hazards and climate change. Approximately 40 officials from Makassar City participated during the webinar, where speakers shared similarities and differences between the two cities, data capture sources for flood modeling, as well as natural hazard resilience tools and disaster management preparedness strategies.

In September, Mr. Niles visited Makassar to not only provide a hands-on demonstration of the Makassar Livable City Plan (MLCP) to city officials, but also to define the next steps of support under the twinning program.

Baguio City and Perth
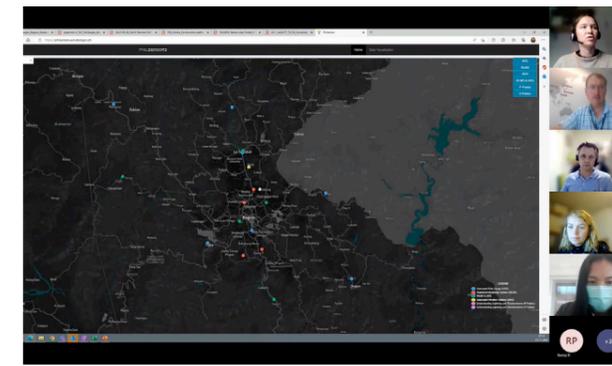
Technical specialists from Baguio and Perth participating in online fact finding and technical specifications/locations for low-cost sensors in Baguio.

The twinning coordinators of Baguio and Perth, along with the AASCTF support team, had their first meeting in January 2022, where the twinning partnership was officially endorsed. The focus of the arrangement is to share knowledge by co-designing a low-cost system of urban sensors, data management, and analytical dashboards that is scalable and technically robust.

Ten online workshops and online technical sessions were held between Baguio and Perth officials, coordinated by the AASCTF team. The focus of workshops during 2022 included:

(i)   developing use case for low-cost sensors and specify sensor types,

(ii) identifying potential locations and networks to support sensors, and

(iii) preparing terms of reference and expression of interest documentation for procurement and commissioning of low-cost sensors.

Baguio officials participated in the workshops and knowledge from Perth was transferred to Baguio officials through the practical application of the Perth city technology to the Baguio context. Knowledge sharing meetings were also held with the AASCTF Baguio Task Lead to learn from their experiences in the implementation of sensor systems in Baguio.

The twinning program has served as a platform to showcase Perth City Council's technical expertise and digital solutions in the realm of urban management through the utilization of Internet of Things (IoT). Baguio has been able learn from the shared practical implementation of the digital solutions that have been developed by Perth City Council to monitor various city metrics, including a network of low-cost sensors, integrated database architecture, and real-time dashboards. Perth City Council's approach to digital urban management is highly compatible with the customized technological solutions that would be desirable for ASEAN smart cities.

CAPACITY DEVELOPMENT

City intervention capacity development

In silver tier cities, capacity development took place in the form of workshops and (in select cities) dedicated training programs/activities, spanning the duration of the reporting period.

In Makassar (INO), accompanying the development and ultimate handover of the MLCP tool, local government staff were introduced to and trained in navigating and interrogating the Prioritization Tool (a PowerBI dashboard, supported by back-end Excel-based prioritization analysis data) as well as appreciating the data collection process and analytics associated with the Stakeholder Survey (KoBo Survey Questionnaire and Excel-based survey data, and sampling theory and techniques).

A screenshot of the DHI Group training team with two members of the Baguio FEWS peer group during one of the group's online instructor-led training session.

In Baguio (PHI), an enhanced FEWS capacity building program was developed and executed to supplement the OTJ training program. The capacity building program was delivered to a total of 11 participants, five (5) of which constituted the 'core group' of LGU staff tasked with the long-term operation and maintenance of the FEWS. In addition to the LGU staff, six (6) participants from other local/regional institutions took part as members of the 'peer group', each committing to support the long-term sustainability of the delivered system. The targeted training was delivered in three modules, led by DHI Group, and combined self-paced and instructor-led trainings, coupled with mentoring and peer learning. The online training program was delivered between March and October, while the OTJ training was delivered in two phases in June (6 days in-person) and September (5 days in-person). Reporting for the OTJ training was included in the FEWS report (delivered in October), while reporting for the online training program was covered by the Scoping and Training Course Design report delivered back in April, and the Module 1, 2, and 3 course evaluation reports were delivered in July, August, and November respectively.

In Penang (MAL), initial discussions on superuser identification were prompted. Nomination was received but not concluded in 2022 due to the program pause. Superuser selection is expected to be finalized upon commencement of Stage 2, targeted for Q2 2023.

Due to the preparatory nature of the Battambang (CAM) task order, no capacity development activities took place in 2022. The detailed scoping to be done in the final Stage 3 of the current task order will incorporate capacity building activities as deemed appropriate to support the sustainment and localization of the intervention to be piloted in a subsequent Phase 2 task order.

In Hue (VIE), superuser needs and profiles were deliberated and established together with the counterpart government agencies during the reporting period. Final superuser identification/selection and commencement of training activities will be undertaken in 2023.

The Chonburi/EEC (THA) and Luang Prabang (LAO) task orders, similar to Battambang, did not include targeted capacity building activities due to the early planning/visioning stage level of the activities undertaken. Despite this, in cases where key counterpart agencies or staff were actively involved in the project, workshops and related engagements were conducted throughout 2022.

Finally, in Davao (PHI), the aim of the task order was to establish a holistic training framework for bus drivers. Accordingly, different workshops were organized to define the needs of and establish the training framework itself. The participation in these workshops were high and diverse and generated positive feedback.

Regional capacity development

Beyond the various silver tier city capacity development activities, the Baseline Development and Capacity Building for AASCTF Participating Cities regional task order delivered the following targeted capacity building activities in 2022:

- **Increasing Livability: An Introduction to Smart Cities:** a self-paced 3-part e-learning course with certification, made freely accessible mid-2022, hosted indefinitely on ADB eLEARN website.[8] The course was also converted to a Bahasa Indonesian version, available in the same website.
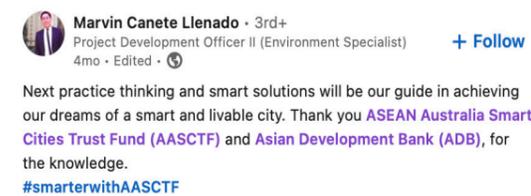
A participant of the AASCTF's "Introduction to Smart Cities" e-learning course proudly shares his course certificate on LinkedIn.

1. **Thematic workshop on Climate Resilience and Nature-based Solutions (NbS):** a facilitated training program for select participants, executed over a 3-week period between August and September 2022.

2. **Thematic workshop on Smart Cities Financial Management (SCFM):** a facilitated training program for select participants, executed over a 3-week period in November 2022.

3. **Guided Learning Program (GLP) on Smart Data Management:** a facilitated training program for select participants, executed over a 5-month period between August and December 2022.

Also under development during the reporting period was an e-learning course on smart data management, targeted to be concluded and uploaded on ADB eLEARN within early 2023.

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8 ADB eLEARN homepage: https://elearn.adb.org/

Increasing Livability: An Introduction to Smart Cities
(Meningkatkan Kelayakhunian: Pendahuluan Tentang Kota Cerdas)

A Bahasa Indonesian version of "Introduction to Smart Cities" eLearning course has also been developed.

To sustain the capacity development that AASCTF has been delivering since its inception, particularly the smart cities introduction workshops, the Fund developed its first e-learning course, called **Increasing Livability: An Introduction to Smart Cities**. Comprised of three comprehensive modules, the course was released on the ADB eLearn website in July. The course is self-paced and comes with a certificate upon completion, which learners are encouraged to share via their social media channels.

Through the course, learners will be able to gain an understanding of the concepts and approach to achieving a smart livable city, based on ADB's Smart City Analytical Framework. Various case studies were included in the course to provide a practical guide to implementing smart city projects. As of writing, 150 participants have joined the course, while 13 participants completed the course in 2022. Participants who have completed the course include staff from the Governments of the Philippines and India.

This smart cities introduction course was also translated and developed into a Bahasa Indonesian version, called **Meningkatkan Kelayakhunian: Pendahuluan Tentang Kota Cerdas**. Launched in December, the course caters to the Indonesian audience, with an aim to potentially complement the concluded Makassar task order, as well as gauge the appetite for more locally oriented courses (and products), such as have this translated to additional languages. As of writing, 18 participants joined the course. While none completed within the last month of 2022, to date one participant has completed the course.

"

"It was worth investing time in such knowledge enhancement. I found it to be an in-depth course with great practical implications …"

— **Er. Tushar S Pradhan**, Disaster Risk Management and Climate Change Professional, Former District Disaster Management Officer (DDMO), Government of Maharashtra, India

Thematic workshop on Climate Resilience and Nature-based Solutions
(AASCTF Climate Resilience and Nature-based Solutions Training Program)
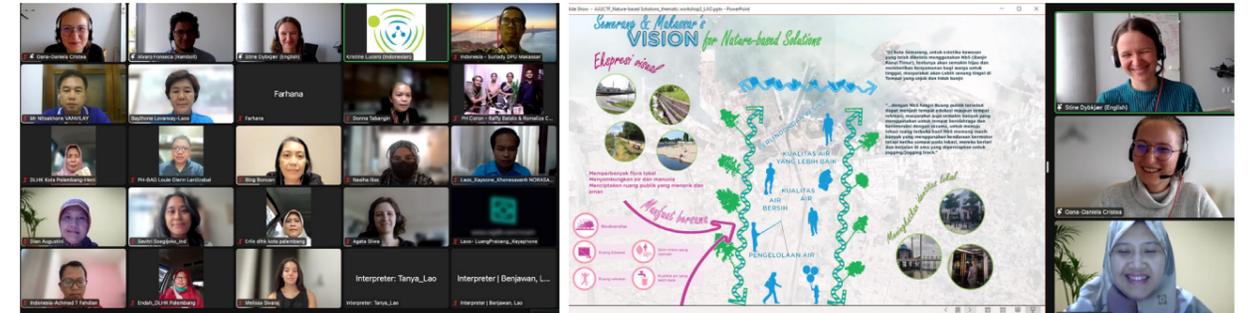
Left photo: Organizers and participants of the Thematic Workshop on Climate Resilience and NbS. Right photo: Workshop organizers presenting the vision board developed based on participants' course exercise outputs.

The AASCTF team organized its first thematic workshop focusing on Climate Resilience and Nature-Based Solutions (NbS) in August and September. Also referred to as the Climate Resilience and Nature-based Solutions Training Program, it was designed to develop an understanding of the impact of flooding and climate change in cities and provided tools for assessing their own city's context in which NbS can be applied. The program introduced the concept of NbS, its functions, benefits, and applicability to achieve urban resiliency.

About 31 participants from 9 cities in 4 countries participated in the program, which produced different vision boards with NbS for participants' own cities based on their feedback during the workshops.

The program was facilitated in a span of 3 weeks, during which 2 workshops with all participants and individual group mid-way meetings were held. Group exercises were assigned and completed in-between workshops and mid-way meetings. Direct communication to participants was facilitated by National Focal Points, WhatsApp groups were established for internal communication between participants, and all workshops and meetings were interpreted in Laotian and Bahasa. Participants were actively involved and encouraged to share their input, present their findings, and present their understanding of NbS. Online tools, such as Miro, Mentimeter, Kobo and WhatsApp were used to facilitate interaction, collaboration, and knowledge-sharing.

Thematic workshop on Smart Cities Financial Management
(AASCTF Smart Cities Financial Management Training Program)
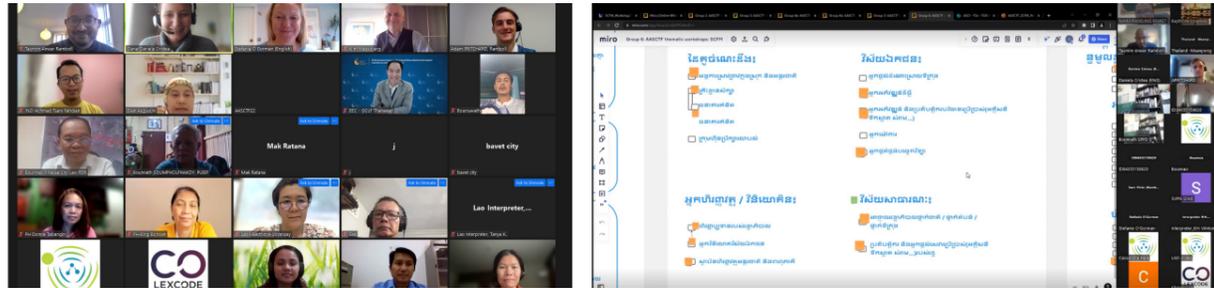
Left photo: Organizers and participants of the Thematic Workshop on SCFM. Right photo: One of the groups presenting their course exercise outputs.

Aside from the NbS workshop, the team also organized thematic workshops on Smart Cities Financial Management (SCFM) in November. The program was scoped to develop participants' understanding of SCFM concepts, including each step on the journey toward specific investment methods. It also encouraged participants to apply the above concepts to their own city context, building an "SCFM roadmap" for their own city by identifying their unique challenges and solutions. A total of 22 participants from 11 AASCTF cities in 7 ASEAN countries participated in this program.

The program was facilitated in a span of 3 weeks, during which 2 workshops with all participants and individual group mid-way meetings were held. Group exercises were assigned and completed in between workshops, with midway meetings acting as progress updates for the groups to evaluate their exercise and resolve challenges before their presentations at the second workshop.

Guided Learning Program on Smart Data Management
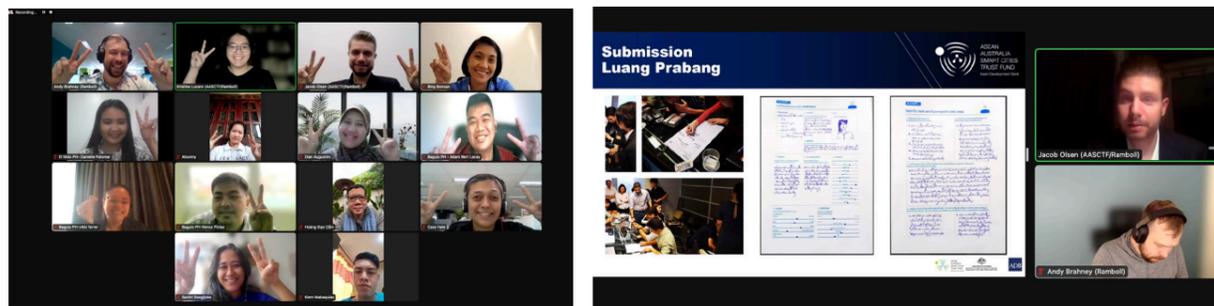
Left: Organizers and participants of the GLP on Smart Data Management. Right: Course facilitators discussing course outputs with participants from Luang Prabang during one of the mentor sessions.

The Guided Learning Program (GLP) aimed to assist cities in managing increasing amounts of data and enhance urban planning and services. The program aimed to educate participants on data management for people-centric smart city development, provide the participants with the knowledge and skills needed to effectively manage the growing amounts of data being generated in their cities and to use that data to improve urban planning and services, and develop an understanding of the significance of governance and security in smart cities, the importance of developing use cases to define data collection, and how to combine data with analysis for improved decision making.

A screenshot of the home exercises from the GLP course.

This program was designed to introduce participants to a user-centric approach for developing smart city data projects and enable participants to create a basic smart city data project proposal for their cities through learnings from:

(i) Data collection and storage

(ii) Data governance and security

(iii) Analysis and decision-making

A total of 11 participants from 4 different countries were actively involved in sharing their experiences, findings, and reflections on the topics. Combining online tools such as home exercises with mentor sessions, participants received a well-rounded and effective learning experience.

PROGRESS AGAINST DESIGN AND MONITORING FRAMEWORK (DMF) TARGETS

Figure 17: AASCTF Logic Diagram
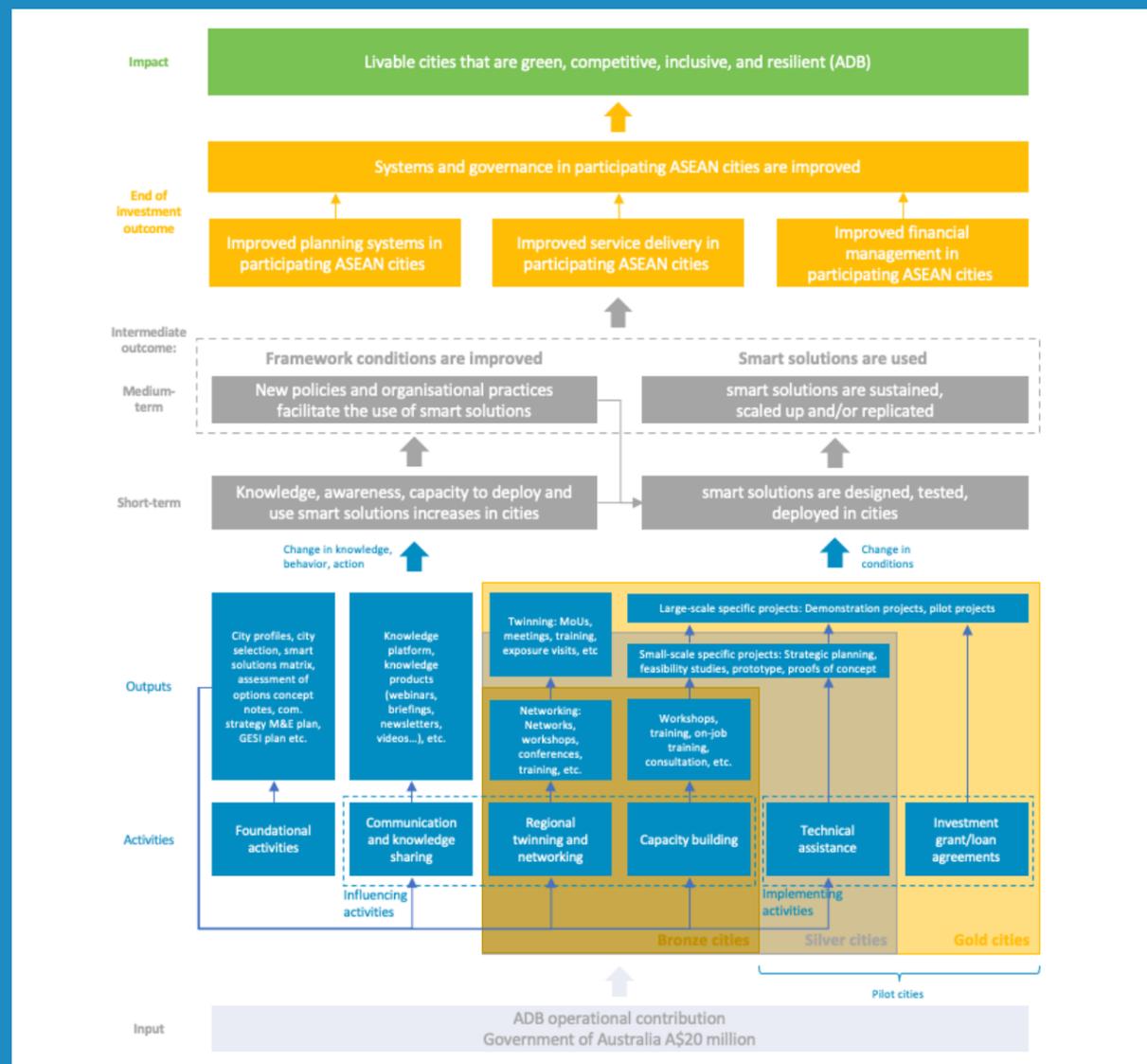
Source: Ramboll.

AASCTF MONITORING & EVALUTION (M&E) ECOSYSTEM

OVERVIEW

The operationalization of the December 2020 endorsed Monitoring and Evaluation (M&E) Strategy, for which the logic diagram (Figure 17) is a central element, was in focus throughout 2022. An overview of the AASCTF M&E Ecosystem is captured in Figure 18.

Figure 18: Overview of the AASCTF M&E Ecosystem
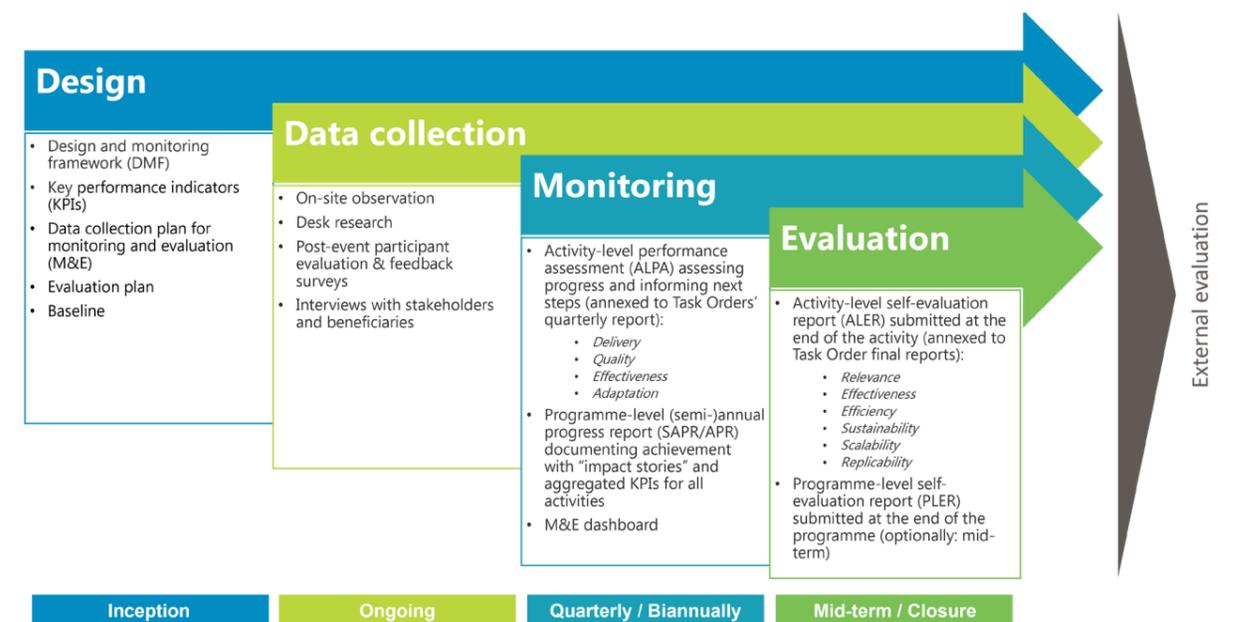
Source: Ramboll.

PROGRESS TO DATE

Q1 2022 M&E activities included: (i) updating of the progress against DMF targets as input to the 2021 APR and for purposes of updating the program-level DMF dashboard; (ii) preparation of Activity-Level Performance Assessments (ALPAs), consolidating data collection and monitoring activities, as part of the Quarterly Progress Report (QPR) for each task order under implementation during Q4 2021; and (iii) preparation of an internal program-level self-evaluation report (PLSER).

Q2 2022 M&E activities included: (i) updating of the progress against DMF targets as input to the program-level DMF dashboard; (ii) preparation of ALPAs, consolidating data collection and monitoring activities, as part of the QPR for each task order under implementation during Q1 2022; (iii) preparation of the Makassar (INO) activity-level self-evaluation plan; and (iv) provision of support (as required) to the consultancy team in the initiation/preparation of the external mid-term review (MTR).

Q3 2022 M&E activities included: (i) updating of the progress against DMF targets as input to the 2022 SAPR and for purposes of updating the program-level DMF dashboard; (ii) preparation of ALPAs, consolidating data collection and monitoring activities, as part of the QPR for each task order under implementation during Q2 2022; (iii) drafting of the Makassar (INO) activity-level self-evaluation report (ALSER); (iv) review of the external MTR teams findings and recommendations, as well as drafting of AASCTF team responses; and (v) commencement of ALPA and program logic revisions.

Q4 2022 M&E activities included: (i) updating of the progress against DMF targets as input to the program-level DMF dashboard; (ii) preparation of QPR (no ALPA due to ongoing template revisions) for each task order under implementation during Q3 2022; (iii) progressing of revisions to the Makassar (INO) ALSER following ADB feedback; (iv) provision of final AASCTF team responses and feedback to the external MTR final report; and (vi) continuation of efforts to revise the ALPA and program logic.

Tables 8, 9, and 10 provide an overview of progress to-date against the DMF targets in each functional area. For a detailed definition on the indicators kindly refer to the AASCTF M&E Strategy (Section 3: Design and Monitoring Framework).[9]

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9 AASCTF M&E Strategy: https://events.development.asia/materials/20210115/aasctf-monitoring-and-evaluation-me-strategy

Table 8: Functional Area A – Planning Systems

Results Chain		Objective		
Outcome		**By 2025, planning systems in participating ASEAN cities have improved**[a]		
Output		**By 2024, projects for improving planning systems in participating ASEAN cities have been implemented**		

	Indicator	Target	Value	Evidence
Outcome	# cities where emerging evidence shows that **planning systems have improved**	4	1 🔵	Makassar: Preliminary results from the final TO evaluation indicate that planning systems in Makassar have improved. (To be validated following task order evaluations: Baguio, Penang, Hue, Chonburi/EEC, Luang Prabang)

IMPLEMENTING ACTIVITIES

	Indicator	Target	Value	Evidence
Outcome	# cities where smart solutions designed, tested and/or implemented for urban planning show potential for being **sustained and/or scaled up**	4	1 🔵	Makassar (To be validated following task order evaluations: Baguio, Penang, Hue, Chonburi/EEC, Luang Prabang)
Output	# cities where smart solutions were designed, tested and/or implemented to enhance **urban planning systems**	4	6 🟢	Makassar, Baguio, Penang, Hue, Chonburi/EEC, Luang Prabang
	# cities where smart solutions were designed, tested and/or implemented to enhance planning for **climate resilience**	2	5 🟢	Targeted activities/outputs: Makassar, Baguio
	# cities where smart solutions were designed, tested and/or implemented to enhance planning for **gender equity and social inclusion**	2	5 🟢	Targeted activities/outputs: Makassar, Baguio Mainstreamed activities/outputs: Hue, Chonburi/EEC, Luang Prabang
Outcome	# smart solutions designed, tested and/or implemented for urban planning that show potential for being **replicated in other cities**	4	3 🔵	Makassar (MLCP + Citizen Engagement Tool + INDRA tool) (To be validated following task order evaluations: Baguio - Flood Mitigation Action Plan; Penang - Micro-simulation model; Hue - 3D city model; Chonburi/EEC - Visioning methodology + Vendor playbook)

🟢 Achieved   🔵 In Progress - On Track   🟠 In Progress - At Risk   🟣 Not Started

Note:
a Currently, one task order has been evaluated. Further details regarding the outcome indicators will become available following the evaluations of the remaining 11 task orders.

Table 8 continued

	Indicator	Target	Value	Evidence
Output	# smart solutions designed, tested and/or implemented to **enhance urban planning systems**	8	12[b] 🟢	INO (Makassar): **Makassar Smart and Livable City Plan (MLCP)** (Plan – designed); Citizen Engagement Tool (ICT Tool – designed, tested) PHI (Baguio): **Flood Mitigation Action Plan** (Plan – designed) MAL (Penang): **Micro-simulation model** (ICT Tool – designed, tested/under development) VIE (Hue): **3D city model** (ICT Tool – designed/under development) THA (Chonburi/EEC): **Visioning methodology** (Plan – designed); **Vendor playbook** (Plan – designed) LAO (Luang Prabang): **Urban Integrated Strategy** (Plan – designed/under development) Other (DCs, RPs, etc.): **Nusantara DC (Arup): urban design guidelines** (Plan – designed/under development); **Makassar RP (CSIRO): INDRA web-based modelling tool** (ICT Tool – designed, tested, implemented); **Makassar RP (FCL): C19 geospatial platform** (ICT Tool – designed, tested, implemented); **Indonesia (Indiv Cons): WARPS Tool** (ICT Tool – designed, tested)
	# smart solutions designed, tested and/or implemented to enhance planning for **climate resilience**	4	8 🟢	INO (Makassar): **Makassar Smart and Livable City Plan (MLCP)** (Plan – designed) PHI (Baguio): **Flood Mitigation Action Plan** (Plan - designed) VIE (Hue): **3D city model** (ICT Tool – designed/under development) THA (Chonburi/EEC): **Visioning methodology** (Plan – designed) LAO (Luang Prabang): **Urban Integrated Strategy** (Plan – designed/under development) Other (DCs, RPs, etc.): **Nusantara DC (Arup): urban design guidelines** (Plan – designed/under development); **Makassar RP (CSIRO): INDRA web-based modelling tool** (ICT Tool – designed, tested, implemented)

🟢 Achieved   🔵 In Progress - On Track   🟠 In Progress - At Risk   🟣 Not Started

Note:

[b] This number does not include smart solutions (6) related to influencing activities.

Table 8 continued

	Indicator	Target	Value	Evidence
INFLUENCING ACTIVITIES				
	# smart solutions designed, tested and/or implemented to enhance planning for **gender equity and social inclusion**	4	8 🟢	INO (Makassar): **Makassar Smart and Livable City Plan (MLCP)** (Plan – designed); **Citizen Engagement Tool** (ICT Tool – designed, tested) PHI (Baguio): **Flood Mitigation Action Plan** (Plan - designed) VIE (Hue): **3D city model** (ICT Tool – designed/under development) THA (Chonburi/EEC): **Visioning methodology** (Plan – designed) LAO (Luang Prabang): **Urban Integrated Strategy** (Plan – designed/under development) Other (DCs, RPs, etc.): **Nusantara DC (Arup): urban design guidelines** (Plan – designed/under development); **Makassar RP (FCL): C19 geospatial platform** (ICT Tool – designed, tested, implemented)
Outcome	# cities where **awareness, knowledge and/ or capacity in urban planning has increased**	8	0 🟠	(To be validated following task order evaluations: Makassar, Baguio, Penang, Hue, Chonburi/EEC, Luang Prabang)
Output	# cities that **took part** in influencing activities for increased awareness, knowledge and/or capacity in urban planning	8	21 🟢	**Gold/Silver level of engagement**: Makassar, Baguio, Penang, Hue, Chonburi/EEC, Luang Prabang **Bronze level of engagement**: Battambang, Davao, Kaysone, Pakse, Bavet, Pontianak, Coron, El Nido, Poipet, Phan Thiet, Phnom Penh, Semarang, Palembang, Kampot, Ho Chi Minh City
Outcome	# participants in influencing activities who consider that their **knowledge and/or capacity in urban planning has increased**	2,000	439[c] 🟠	INO (Makassar): **MLCP workshop** to present the Prioritization Tool to specialists in city government (4/5: 80%) PHI (Baguio): **NBS typology workshop** (4/4: 100%) MAL (Penang): **Micro-simulation model workshop – pilot area** (12/13: 92%) REG (CB): **Networking conference**: Smart livable cities – opening session (41/45: 91%), Session #1 - How digitalization can support smart city planning (44/47: 94%), Session #2 - How digitalization can reduce traffic congestion (8/22: 36%), Session #3 – How digitalization can help create resilient and inclusive cities (17/25: 68%), Session #4 -

🟢 Achieved   🔵 In Progress - On Track   🟠 In Progress - At Risk   🟣 Not Started

Note:

[c] The low value relative to the total number of participants is attributed to the low response rates of participants to post-event surveys. Similarly, not all events have been followed by a post-event survey due to their more informative nature. To address this, we have extrapolated the participants who have likely felt that their capacity/knowledge has increased. The resulting value is 2294.

Table 8 continued

	Indicator	Target	Value	Evidence
				How digitalization can help improve smart city capacity development across the ASEAN (20/27: 74%), and Closing session - Inclusive cities (27/30: 90%); **WUF11 smart urban development training session** (9/14: 64%); **City twinning (Makassar-Gold Coast):** Webinar #1 - Disaster Risk Management (18/20: 90%) and Flooding Webinar and Webinar #2 - Climate Resilience Webinar (10/10: 100%); **Guided Learning Program training** (8/8: 100%); **Thematic Workshops: #1** - Smart Climate resilience/ Nature-based solutions workshop (31 ppl. across 9 cities); **Introduction workshops** (97/107: 91%) REG (ICDs): **Inclusive Cities Dialogues: Module 2** (21/25; 84%) and Module 3 (10/14; 71%) Core Team (pre-TOs): **Webinar Series: #2** - Mitigating flooding impact w/IOT early warning technology (29/29: 100%), #3 - Digitized urban planning for improved efficiency and compliance (18/21: 86%), #6 - Next practice smart mobility lab (9/10: 90%), and #8 - Digital tools for enhanced community engagement in urban planning (37/40: 93%)
Output	# participants who **took part** in influencing activities for increased awareness, knowledge and capacity in urban planning	3,000	3,657 🟢	INO (Makassar): **MLCP workshops** (185 ppl. across 7 workshops) PHI (Baguio): **NBS typology workshop** (7 ppl.) MAL (Penang): **Micro-simulation model workshops** (10 ppl. across 2 workshops) VIE (Hue): **3D city model inception workshops** (48 ppl. across 2 workshops) THA (Chonburi/EEC): **Scoping/visioning workshops** (31 ppl. across 3 workshops) LAO (Luang Prabang): **Strategy inception/ engagement workshops** (91 ppl. across 4 workshops) REG (CB): **Networking conference:** Smart livable cities – opening session (121 ppl.), Session #1 - How digitalization can support smart city planning (130 ppl.), Session #2 - How digitalization can reduce traffic congestion (61 ppl.), Session #3 - How digitalization can help create resilient and inclusive cities (89 ppl.), Session #4 - How digitalization can help improve smart city capacity development across the ASEAN (74 ppl.), and Closing session - Inclusive cities (92 ppl.); **WUF11 smart urban development training session** (28 ppl.);

🟢 Achieved   🔵 In Progress - On Track   🟠 In Progress - At Risk   🟣 Not Started   *Continued on next page*

Table 8 continued

	Indicator	Target	Value	Evidence
Output				**City twinning (Makassar-Gold Coast)**: Webinar #1 - Disaster Risk Management (50 ppl.) and Flooding Webinar and Webinar #2 - Climate Resilience Webinar (70 ppl.); **Smart Data Management 3-part webinar series:** #1 – Data collection and storage (197 ppl.), #2 – Data governance and security (199 ppl.), and #3 – Analysis and Decision Making (195 ppl.); **Guided Learning Program training** (11 ppl.); **Thematic Workshops**: #1 - Smart Climate resilience/ Nature-based solutions workshop (31 ppl. across 9 cities); **Introduction workshops** (415 ppl. across 20 cities) REG (ICDs): **Inclusive Cities Dialogues:** Module 2 (140 ppl. across 14 cities) and Module 3 (109 ppl. across 14 cities) Core Team (pre-TOs): **Webinar Series**: #2 - Mitigating flooding impact w/IOT early warning technology (108 ppl.), #3 - Digitized urban planning for improved efficiency and compliance (130 ppl.), #6 - Next practice smart mobility lab (102 ppl.), and #8 - Digital tools for enhanced community engagement in urban planning (142 ppl.) Other (DCs, RPs, etc.): **Nusantara DC (Arup)**: Support to Development of New Indonesian Capital Nusantara – expert group meeting (151 ppl.); **Makassar RP (FCL)**: C19 geospatial platform (30 ppl.)
	# participants who **took part** in influencing activities for increased awareness, knowledge and capacity in urban planning for **gender equity and social inclusion**	500	1,397 🟢	REG (CB): **Introduction Workshops** (415 ppl. across 20 cities); **Networking Conference**: Opening session – Smart Livable Cities (121 ppl.), Session 3 – How digitalization can help create resilient and inclusive cities (89 ppl.), and Closing session – Inclusive Cities (92 ppl.) REG (ICDs): **Inclusive Cities Dialogues:** Module 2 (140 ppl. across 14 cities) and Module 3 (109 ppl. across 14 cities). Core Team (pre-TOs): **Webinar Series:** #2 Mitigating flooding impact w/ IOT early warning technology (108 ppl.) and #8 - Digital tools for enhanced community engagement in urban planning (142 ppl.) Other (DCs, RPs, etc.): **Nusantara DC (Arup)**: Support to Development of New Indonesian Capital Nusantara – expert group meeting (151 ppl.); **Makassar RP** (FCL): C19 geospatial platform (30 ppl.)

🟢 Achieved   🔵 In Progress - On Track   🟠 In Progress - At Risk   🟣 Not Started

Source: Ramboll.

Table 9: Functional Area B – Service Delivery

Results chain		Objective			
Outcome		**By 2025, service delivery in participating ASEAN cities have improved**			
Output		**By 2024, projects for improving service delivery in participating ASEAN cities have been implemented**			
	Indicator	**Target**	**Value**	**Evidence**	
Outcome	# cities where emerging evidence shows that **service delivery has improved**	4	0 🟠	(To be validated following task order evaluations: Baguio, Kaysone, Davao)	
IMPLEMENTING ACTIVITIES					
Outcome	# cities where smart solutions designed, tested and/or implemented for service delivery show potential for being **sustained and/or scaled up**[a]	4	1 🟠	Baguio (To be validated following task order evaluations: Kaysone, Davao)	
Output	# cities where smart solutions were designed, tested, and/or implemented to enhance **quality and efficiency of service delivery**	4	6 🟢	Baguio, Kaysone, Davao, Battambang, Pontianak, Ho Chi Minh City	
	# cities where smart solutions were designed, tested, and/or implemented to enhance **services for women and vulnerable groups**	2	3 🟢	Targeted activities/outputs: Baguio Mainstreamed activities/outputs: Kaysone, Davao	
Outcome	# smart solutions designed, tested, and/or implemented for service delivery that show potential for being **replicated in other cities**	4	2 🔵	Baguio (FEWS + Mixed Method Gender and Inclusion Study) (To be further validated: Davao – Driver training simulator + Holistic training framework)	

🟢 Achieved   🔵 In Progress - On Track   🟠 In Progress - At Risk   🟣 Not Started

Note:

[a] It is challenging to provide concrete values with regard to the outcome-level indicators prior the evaluation of the task orders. The evidence collected to date suggests that some solutions such as the capacity building and training program developed in Baguio, as well as the flood early warning system and system governance structure have potential for scaling and replication and can inspire other cities within the AASCTF and beyond. The scalability of the training simulation technology and digital learning platform (Davao) has also been discussed and shows promise.

Table 9 continued

Indicator	Target	Value	Evidence
# smart solutions designed, tested and/or implemented to enhance **quality and efficiency of service delivery**	8	11[b] 🟢	PHI (Baguio): **Smart FEWS** (ICT Tool – designed, tested, implemented/under development), **Mixed Method Gender and Inclusion Study** (Plan – designed, tested) LAO (Kaysone): **Smart Learning Platform** (ICT Tool – conceptualized) PHI (Davao): **Driver Training Simulator** (ICT Tool – designed, tested), **Holistic Training Framework** (Plan – designed/under development) Other (DCs, RPs, etc.): **Nusantara DC (Arup): smart data platform roadmap** (Plan – designed/under development); **Battambang Firm (EGIS): Deep Trasher** (ICT Tool – designed, tested); **Philippines RP (Alaga Health): Digital Health Service Deliver** (ICT Tool – designed, tested); **Regional Firm (Atkins): NetCreate (Baguio, Battambang, Pontianak, Ho Chi Minh City)** (ICT Tool – designed, tested); **Indonesia (Indiv Cons): Waste Management App – Towards a Circular Economy** (ICT Tool – designed, tested); **Kaysone DC (Indiv Cons): Soft Skills e-learning modules** (ICT Tool – designed, tested, implemented/under development)
# smart solutions designed, tested and/or implemented to enhance **services for women and vulnerable groups**	4	4 🟢	PHI (Baguio): **Mixed Method Gender and Inclusion Study** (Plan – designed, tested) LAO (Kaysone): **Smart Learning Platform** (ICT Tool – conceptualized) PHI (Davao): **Holistic Training Framework** (Plan – designed/under development) Other (DCs, RPs, etc.): **Nusantara DC (Arup): smart data platform roadmap** (Plan – designed/under development)
INFLUENCING ACTIVITIES			
# cities where **awareness, knowledge and/or capacity in service delivery has increased**	8	0 🟠	(To be validated following task order evaluations: Baguio, Kaysone, Davao)
# cities that took part in influencing activities for **increased awareness, knowledge and/or capacity in service delivery**	8	12 🟢	**Gold/Silver level of engagement**: Baguio, Kaysone, Davao **Bronze level of engagement**: Makassar, Hue, Chonburi/EEC, Luang Prabang, Coron, El Nido, Semarang, Phnom Penh, Pakse

🟢 Achieved   🔵 In Progress - On Track   🟠 In Progress - At Risk   🟣 Not Started

Note:

[b] This number does not include smart solutions (2) related to influencing activities.

Table 9 continued

	Indicator	Target	Value	Evidence
Outcome	# participants in influencing activities who consider that their **knowledge and/or capacity in service delivery has increased**	2,000	413[c] 🟠	PHI (Baguio): **FEWS baseline, model, data dissemination workshops** (24/27: 89%); **FEWS superuser (classroom + OTJ) training workshops** (140/140: 100%); **Gender Transformative FEWS workshops** (5/6: 83%) PHI (Davao): **Driver training simulator and framework workshop #2** (2/2: 100%) REG (ICDs): **Inclusive Cities Dialogues: Module 1** (23/26: 88%); **Final Event** (11/11: 100%) Core (pre-TOs): **Webinar Series:** #1 Tracking the spread of COVID-19 through digital solutions (107/114: 94%), #4 Intelligent water management systems using AI and IoT (15/15: 100%), #5 Digitalized solutions connecting labor market and students (9/9: 100%.), #7 Promoting tourism sector recovery via smart virtual reality (77/83: 93%)
Output	# participants who **took part** in influencing activities for increased awareness, knowledge and capacity in service delivery	3,000	1,607 🟠	PHI (Baguio): **FEWS baseline, model, data dissemination workshops** (144 ppl. across 3 workshops); **FEWS superuser** (classroom + OTJ) **training workshops** (151 ppl. across 15 workshops); **Gender Transformative FEWS workshops** (67 ppl. across 2 workshops) LAO (Kaysone): **e-learning and smart learning platform workshops** (122 ppl. across 3 workshops) PHI (Davao): **Driver training simulator and framework workshops and demonstration** (302 ppl. across workshops) REG (ICDs): **Inclusive Cities Dialogues: Module 1** (180 ppl. across 14 cities); **Final Event** (107 ppl.) Core (pre-TOs): **Webinar Series:** #1 Tracking the spread of COVID-19 through digital solutions (248 ppl.), #4 Intelligent water management systems using AI and IoT (87 ppl.), #5 Digitalized solutions connecting labor market and students (49 ppl.), #7 Promoting tourism sector recovery via smart virtual reality (150 ppl.)

🟢 Achieved 🔵 In Progress - On Track 🟠 In Progress - At Risk 🟣 Not Started

Note:
[c] The low value relative to the total number of participants is attributed to the low response rates of participants to post-event surveys. Similarly, not all events have been followed by a post-event survey due to their more informative nature. To address this, we have extrapolated the participants who have likely felt that their capacity/knowledge has increased. The resulting value is 1506.

Table 9 continued

	Indicator	Target	Value	Evidence
Output	# participants who **took part** in influencing activities for increased awareness, knowledge and capacity to enhance **services for women and vulnerable groups**	500	602 🟢	PHI (Baguio): **Gender Transformative FEWS workshops** (67 ppl.) REG (ICDs): **Inclusive Cities Dialogues: Module 1** (180 ppl. across 14 cities); **Final Event** (107 ppl.) Core (pre-TOs): **Webinar Series**: #1 Tracking the spread of COVID-19 through digital solutions (248 ppl.)

🟢 Achieved 🔵 In Progress - On Track 🟠 In Progress - At Risk 🟣 Not Started

Source: Ramboll.

Table 10: Functional Area C – Financial Management

Results chain		Objective		
Outcome		By 2025, financial management in participating ASEAN cities have improved		
Output		By 2024, projects for improving financial management in participating ASEAN cities have been implemented		
	Indicator	**Target**	**Value**	**Evidence**
Outcome	# cities where emerging evidence shows that **financial management has improved**	2	0 ●	(To be validated following task order evaluations: Battambang, Makassar)
IMPLEMENTING ACTIVITIES				
Outcome	# cities where smart solutions designed, tested and/or implemented for financial management show potential for being **sustained and/or scaled up**	2	0 ●	(To be validated following task order evaluations: Battambang, Makassar)
Output	# cities where smart solutions were designed, tested and/or implemented to enhance **quality and efficiency of financial management**	2	2 ●	Battambang, Makassar
Output	# cities where smart solutions were designed, tested and/or implemented to enhance **financial inclusion for women and vulnerable groups**	1	0 ●	
Outcome	# smart solutions designed, tested and/or implemented for financial management that show potential for being **replicated in other cities**	2	0 ●	(To be validated following task order evaluations: Battambang, Makassar)
Output	# smart solutions designed, tested and/or implemented to enhance **quality and efficiency of financial management**	4	3 ●	CAM (Battambang): **Sam Raam App** (ICT Tool - conceptualized) Other (DCs, RPs, etc.): **Regional DC (CRISIL): CRAFT** (ICT Tool – designed/under development); **Regional RP (Aeloi Technologies): Digital Tokens – loan insight software** (ICT Tool – designed, tested)

● Achieved   ● In Progress - On Track   ● In Progress - At Risk   ● Not Started   *Continued on next page*

Table 10 continued

	Indicator	Target	Value	Evidence
Output	# smart solutions designed, tested and/or implemented to enhance **financial inclusion for women and vulnerable groups**	2	1 ●	Other (DCs, RPs, etc.): **Regional RP (Aeloi Technologies): Digital Tokens – loan insight software** (ICT Tool – designed, tested)
INFLUENCING ACTIVITIES[a]				
Outcome	# cities where **awareness, knowledge and/or capacity in financial management has increased**	4	0 ●	(To be validated following task order evaluations: Battambang, Makassar)
Output	# cities that **took part** in influencing activities for increased awareness, **knowledge and/or capacity in financial management**	4	14 ●	**Gold/Silver level of engagement**: Battambang, Makassar **Bronze level of engagement**: Baguio, Davao, Chonburi/EEC, Penang, Hue, Kaysone, Luang Prabang, Pakse, Palembang, Semarang, Bavet, Poipet, Coron
Outcome	# participants in influencing activities who consider that their **knowledge and/or capacity in financial management has increased**	1,000	36[b] ●	CAM (Battambang): **Stakeholder consultation workshop** (8/8: 100%) REG (CB): **Thematic Workshops:** #2 Smart City Financial Management (16/16: 100%) Core (pre-TOs): **Webinar Series:** #9 Digital payment solutions for smart and inclusive cities (12/12: 100%)
Output	# participants who **took part** in influencing activities for increased awareness, knowledge and capacity in financial management	1,500	106 ●	CAM (Battambang): **Stakeholder consultation workshop** (20 ppl.) REG (CB): **Thematic Workshops:** #2 Smart City Financial Management (22 ppl.) Core (pre-TOs): **Webinar Series:** #9 Digital payment solutions for smart and inclusive cities (64 ppl.)
Output	# participants who **took part** in influencing activities for increased awareness, knowledge and capacity to enhance **financial inclusion for women and vulnerable groups**	250	64 ●	Core (pre-TOs): **Webinar Series:** #9 Digital payment solutions for smart and inclusive cities (64 ppl.)

● Achieved   ● In Progress - On Track   ● In Progress - At Risk   ● Not Started

Notes:

[a] It is important to note that the assistance provided is demand-driven. While the option of focusing on this functional area was offered, it was ultimately not preferred by cities, which has an impact on the overall targets achieved.

[b] The low value relative to the total number of participants is attributed to the low response rates of participants to post-event surveys. Similarly, not all events have been followed by a post-event survey due to their more informative nature. To address this, we have extrapolated the participants who have likely felt that their capacity/knowledge has increased. The resulting value is 106.

Source: Ramboll

FINANCIALS

Local stakeholders in Luang Prabang participating in one of the activities during the inception workshop for the Luang Prabang Smart and Integrated Urban Strategy project, conducted in May 2022.

RESOURCE ALLOCATION

TECHNICAL ASSISTANCE

In May 2019, a technical assistance (TA) grant of $10 million was approved to support the Southeast Asia Urban Services Facility (SURF) in the implementation of various AASCTF activities. To date, approximately $9.96 million has already been committed under the SURF TA to cover the engagement of Ramboll Danmark A/S and various individual consultants and resource person contracts.

Table 11 provides an overview of all AASCTF TA contracts executed up to the close of the reporting period.

Table 11: Overview of Technical Assistance Contracts Executed, 31 December 2022

Entity	Scope	Contract Type	Contract Value ($)	Contract Duration
Ramboll (Denmark)	Main Implementing Partner to AASCTF	Firm (Sole Framework)	9,399,870	25 Nov 2019 – 30 Jun 2024
		Resource Person	15,000	22 Sep 2021 – 31 Mar 2022
Future Cities Lab (Singapore)	Development of Indonesia's Geospatial platform to support COVID-19 analysis in Makassar	Resource Person (x2)	66,000	1 Oct 2020 – 31 May 2021
Atkins International (UK)	Development of complete sewer network designs for four (4) project cities	Resource Person (x2)	59,400	11 Jan 2021 – 30 Sep 2021
CSIRO (Australia)	Design of an interactive web-based modeling tool/ platform for climate resilience	Resource Person (x2)	66,000	15 Feb 2021 – 31 May 2021
Individual	Support digital waste management planning	Resource Person	33,000	15 Jul 2021 – 31 Mar 2022
Egis (France)	Implement an innovative, AI-driven, city-wide smart waste management system in Battambang	Firm	147,359	23 Sep 2021 – 28 Feb 2022
Aloi Technologies (Nepal)	AASCTF Datathon 2021 Winner (Fintech)	Individual Consultant	20,000	17 Sep 2021 – 31 Jan 2022
Alaga Health (Philippines)	AASCTF Datathon 2021 Runner-up (Digital Health)	Individual Consultant	10,000	18 Oct 2021 – 31 Dec 2021

Table 11 continued

Entity	Scope	Contract Type	Contract Value ($)	Contract Duration
Individual	Development of a planning tool for Indonesia's Ministry of Finance which will show technology options in various specific planning scenarios with focus on circular economy	Individual Consultant (x4)	72,743	15 Aug 2021 – 31 Mar 2022
Individual	Support the Nusantara National Capital Authority (NNCA) to gain understanding of the: • requirements to further plan, develop, and manage the IKN sustainably; • tools necessary to monitor the sustainability progress of the city; and • regulatory requirements to ensure that the IKN be planned, constructed, developed, operated, and inhabited sustainably.	Individual Consultant (x3)	59,800	3 Aug 2022 – 15 Oct 2022
Individual	Assist in the implementation of the Hue task order on three-dimensional (3D) urban master planning technical assistance and related activities.	Individual Consultant	9,600	30 Aug 2021 – 31 Dec 2023

IKN = Ibu Kota Nusantara (Capital City of Nusantara).
Source: Ramboll.

In December 2022, AASCTF also approved a $1.75 million knowledge support technical assistance (KSTA) to partially finance the implementation of AASCTF activities under the Smart and Livable Cities in Southeast Asia (SALC). No commitment recorded under this TA during this reporting period.

INVESTMENT GRANTS

No investment grants were approved during the reporting period.

DIRECT CHARGES

During the reporting period, two direct charges were approved, including: (i) $0.23 million (awarded to consulting firm Arup) to support the development of the new Indonesian capital, Nusantara; and (ii) $0.23 million (awarded to various individual consultants) to enhance soft skills for youth employability in Kaysone Phomvihane in Lao PDR.

Table 12 provides an overview of all AASCTF direct charge contracts executed up to the close of the reporting period.

Table 12: Overview of Direct Charge Contracts Executed, 31 December 2022

Entity	Scope	Contract Type	Contract Value ($)	Contract Duration
The Asia Foundation	Support to delivery of Asian Livable Cities Forum	Direct Charge	75,000	12 Nov 2019 – 3 Apr 2020
CRISIL Limited (India)	Development and delivery of City Resource and Finance Tool (CRAFT)	Direct Charge	195,000	8 Dec 2020 – 30 Jun 2023
Arup (Indonesia)	Support to the development of New Indonesian Capital Nusantara	Direct Charge	225,000	1 Aug 2022 – 31 Mar 2023
Individual	Supporting the development and promotion of soft-skills e-learning modules targeting university and vocational graduates entering to workforce in Kaysone	Direct Charge	135,000	1 Aug 2022 – 30 Jun 2023

Source: Ramboll.

FUND FLOW

CONTRIBUTIONS

The indicative total contribution from the Government of Australia, through DFAT, for AASCTF is $13.94 million (A$20 million).[10] As of 31 December 2022, actual DFAT contribution received was $9.37 million (A$13,184,717). The contribution is to be released in tranches with its last tranche envisioned in Q4 2022; however, there were no replenishments recorded in 2021 and 2022.

COMMITMENTS

Approximately 90% of the expected total contribution from DFAT has been committed to date, including the (i) $10 million for utilization by SURF; (ii) $1.75 million for the implementation of SALC; and (iii) $720,000 for the four (4) direct charges.

DISBURSEMENTS

Of the $12.47 million committed, about $6.61 million (or 53% of committed amount, cumulative) have been disbursed as of 31 December 2022.

**Figure 19:** Disbursements as of 31 December 2022
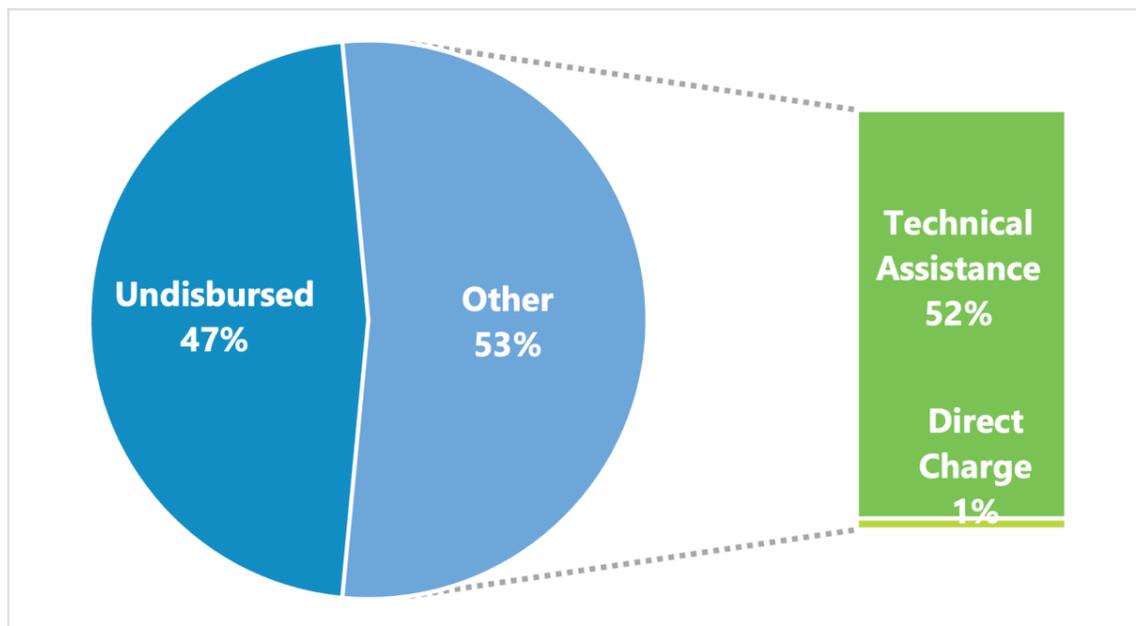
Source: Ramboll.

Figure 20: Total Contract Award to-date and Forecast as of 31 December 2022
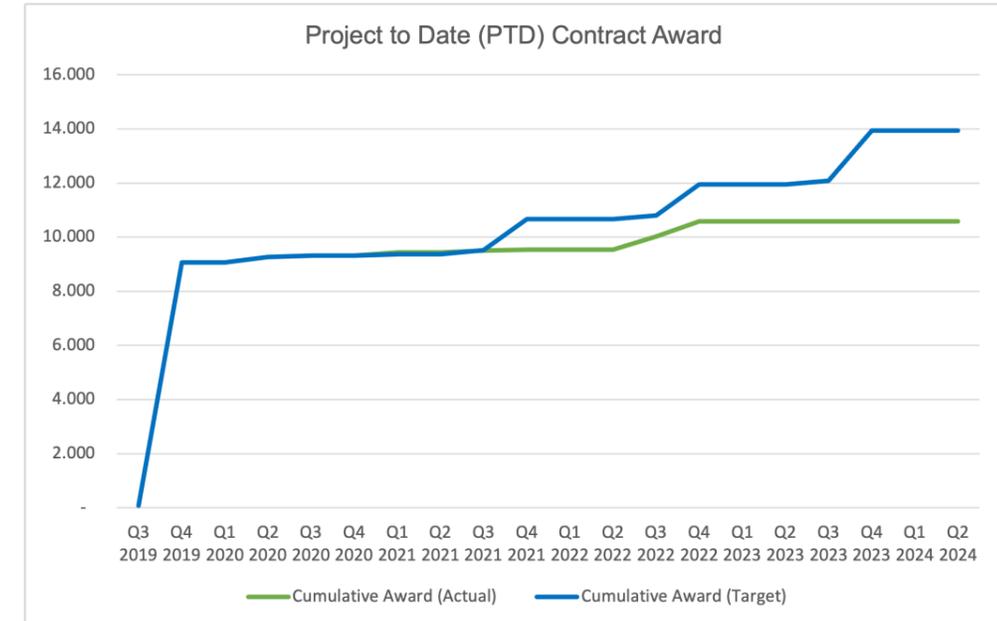
Source: Ramboll.

Figure 21: Total Disbursements to-date and Forecast as of 31 December 2022
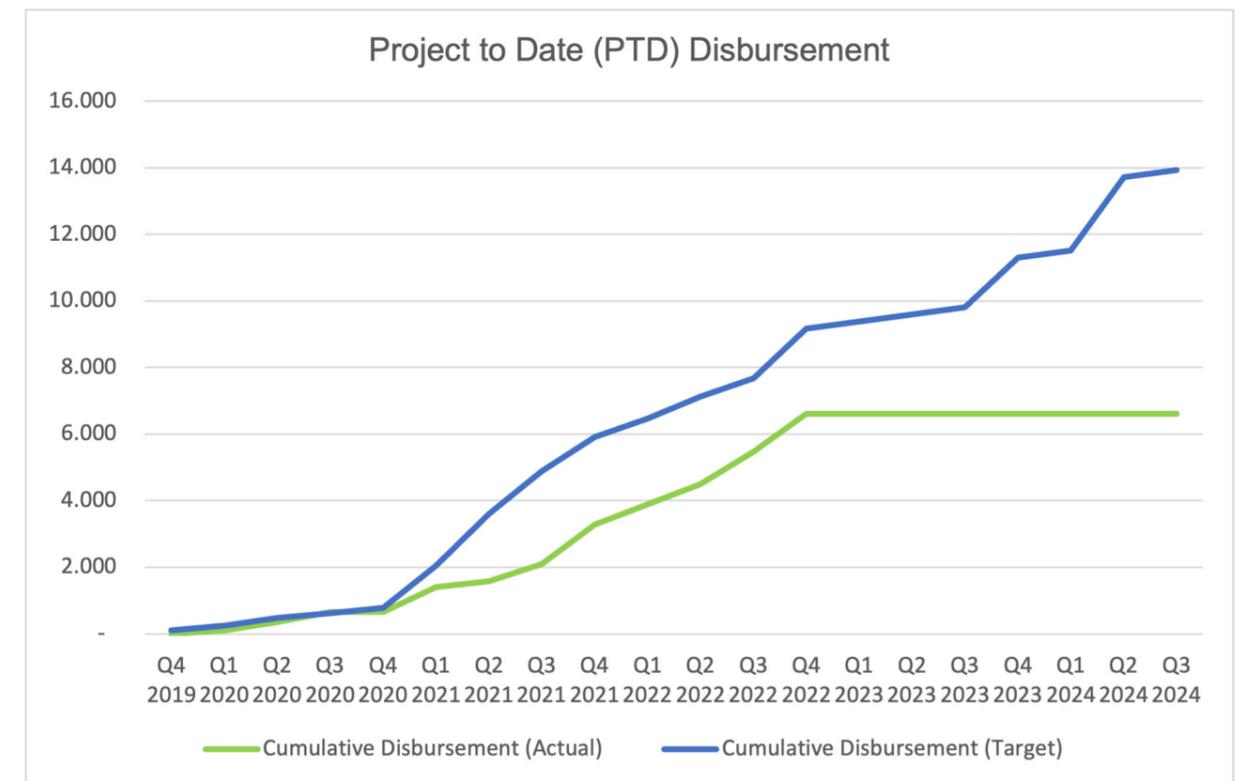
Source: Ramboll.

WORK PLAN FOR 2023

ADB's Alexander Nash (left, partly hidden) with local stakeholders during a field visit in Battambang, Cambodia.

FOUNDATIONAL ACTIVITIES

CITY SELECTION AND DESIGNATION

No city selection activities are currently foreseen for 2023. Should a lack of traction or other issue arise with any of the currently selected participating cities, the AASCTF team will work closely with DFAT to determine the appropriate course of action, including a potential removal of a city from the AASCTF list of cities.

Figure 22: Overall AASCTF Program Workplan

MILESTONES	2019			2020				2021				2022				2023				2024	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Trust Fund Start-up																					
1 Establish Trust Fund																					
2 Engage and mobilize consultants																					
3 Prepare and approve frameworks																					
Foundational Activities																					
1 City Selection and Designation																					
2 Concept/Task Order Development																					
3 Overarching/Cross-Cutting Themes																					
Implementing Activities																					
1 Technical Assistance																					
2 Investment Grants																					
Influencing Activities																					
1 Communication & Knowledge Sharing																					
2 Regional Twinning & Networking																					
3 Capacity Development																					

Source: Ramboll.

CONCEPT/TO DEVELOPMENT

Limited task order development activities are foreseen in 2023, until such time as the new knowledge support technical assistance (KSTA) financing window is officially online.

Of the five city intervention task orders under development at the end of 2022 (overviewed in Table 4), only the Baguio (PHI) scope variation is expected to be concluded and fully endorsed in 2023. The other city-level scoping activity expected to be well progressed (up to step 6 of the task order development process) during 2023 is the Battambang (CAM) Phase 2 pilot intervention task order/ direct charge preparation, which is set to be fully specified and costed under Stage 3 of the current Phase 1 task order.

Additional to this, the scope variation under development at the close of 2022 related to the Baseline Development and Capacity Building for AASCTF Participating Cities regional task order (Table 5) is expected to push through within Q2 2023.

OVERARCHING/CROSSCUTTING THEMES

In the second half of 2022, on the back of the internal PLSER and the external MTR, the AASCTF team commenced work on an 'AASCTF Beyond 2022 Strategy'. The revised program-level strategy work is expected to continue into Q2 2022, with sub-strategy work focused on engagement (including partnerships with private sector), city graduation, intervention sustainment, and inclusion and resilience (containing both GESI and climate change aspects).

The revised program logic and ALPA is expected to be concluded and rolled out across all task orders in early 2023. A plan for final task order and program-level evaluation activities and reporting is to be agreed and subsequently executed. The AASCTF DMF will continue to be updated and reported within the APR/SAPR and program-level dashboard. Finally, as requested by DFAT on the back of the external MTR recommendations, additional detailed bi-annual progress reporting (for internal purposes) is to be prepared in Q1 and Q3 2023, with quarterly check-ins between program partners (DFAT, ADB, and Ramboll) on program risks and mitigation measures.

IMPLEMENTING ACTIVITIES

TECHNICAL ASSISTANCE

All city intervention task orders (inclusive of any expected variations to be endorsed in 2023) are set to conclude in full within the close of 2023 (Table 13). This is of course subject to change in the event of any unforeseen obstacles to the otherwise timely implementation of such.

Table 13: Expected Implementation Timeline of Ongoing City Intervention (Silver Tier) Task Orders

City	Project Title	Duration
Baguio (PHI)	Baguio City Smart Flood Warning, Information and Mitigation System	Aug 2020 – Dec 2023
	Gender Transformative Approach for Strengthened Development, Application and Replication of the Baguio Flood Early Warning System	Apr 2021 – Dec 2023
Penang (MAL)	Penang Smart Mobility the Micro-Simulation Model Development	May 2021 – Aug 2023
Battambang (CAM)	Smart Solid Waste Financial Management (Phase 1)	May 2021 – May 2023
Hue (VIE)	Smart Digital City Model for Master Planning	Jan 2022 – Jul 2023
Chonburi/EEC (THA)	Eastern Economic Corridor City Visioning and Strategic Urban Data Platform Assessment	Jan 2022 – Apr 2023
Luang Prabang (LAO)	Luang Prabang Integrated and Smart Tourism, Heritage and Urban Plan	Mar 2022 – Jul 2023
Davao (PHI)	Davao Bus Driver Training & Technology Study – Pilot Preparation & Implementation Support	Apr 2022 – May 2023

Source: Ramboll.

Furthermore, both regional-level task orders are foreseen to be fully executed within 2023 (Table 14). Any potential further time/scope extension of the regional-level task orders will be subject to review and discussion.

Table 14: Expected Implementation Timeline of Ongoing Regional (Bronze Tier) Task Orders

City	Project Title	Duration
Regional (REG)	Baseline Development and Capacity Building for ASEAN Australia Smart Cities Trust Fund (AASCTF) Participating Cities	Jun 2021 – Dec 2023
Regional (REG)	Smart Cities–Inclusive Cities Capacity Building Programme for ASEAN Australia Smart Cities Trust Fund (AASCTF) Participating Cities	Aug 2021 – Apr 2023

Source: Ramboll.

INVESTMENT GRANTS

To the extent possible, the AASCTF team will be working to fully conceptualize the targeted gold city investment grant projects within 2023, including commencement of procurement procedures where feasible.

DIRECT CHARGES

All three direct charges noted as ongoing at the end of 2022 are set to be concluded within 2023.

One new direct charge is targeted to be in place and executed fully within 2023. This new direct charge will provide additional financing to deliver the devised Baguio (PHI) city intervention 2023 consolidation phase support.

INFLUENCING ACTIVITIES

COMMUNICATION & KNOWLEDGE SHARING

AASCTF communication and knowledge sharing activities planned for 2023 include consolidating project and program level outcomes and achievement via the development of a variety of knowledge products, such as blogs/thought pieces, videos, brochures/flyers, impact stories and articles, quarterly newsletters and special mailers, etc. Furthermore, public outreach through frequent social media posts will also continue throughout the year.

The AASCTF team will continue to seek out opportunities to participate in international and regional conferences to share relevant project experiences/highlights and lessons learned.

REGIONAL NETWORKING

Regional (bronze tier) networking activities in 2023 will be limited to socialization of achievements and strategy work to inform the next phase of program delivery.

CITY TWINNING

City twinning activities in Makassar (INO) and Baguio (PHI) will move forward and be largely concluded (as currently conceptualized) in 2023. A mid-way twinning report is set to be concluded in early 2023 in order to inform and guide the conclusion of said activities and chart the path forward for further twinning activities in the next phase of program delivery.

CAPACITY DEVELOPMENT

Several targeted capacity development activities in both bronze and silver cities are targeted to be executed within 2023.

At the regional (bronze tier) level, no new capacity development activities are foreseen to be conceptualized or undertaken; however the following activities, which were ongoing at the end of 2022, are expected to be concluded within 2023:

(i) **Unleashing the Power of Data: An Introduction to Data Management for Smart Cities' (e-learning course)** – finalization and publishing on ADB eLEARN, as well as subsequent targeted promotion of the 3-module AASCTF developed course, delivered as part of the scope of the Baseline Development and Capacity Building for AASCTF Participating Cities regional task order.

(ii) **Cities for All: An Introduction to Inclusive Cities (e-learning course)** – finalization and publishing on ADB eLEARN, as well as subsequent targeted promotion of the 3-module AASCTF developed course, delivered as part of the scope of the Smart Cities–Inclusive Cities Capacity Building Programme for AASCTF Participating Cities regional task order.

City intervention targeted capacity development activities include: (i) on-the-job (OTJ) training in Baguio (PHI); (ii) accredited PTV Vissim training in Penang (MAL); and (iii) 3D City Model Superuser training in Hue (VIE).

AASCTF Project Team Leader Craig Niles (first from left) walks with key city partners during a field visit in Makassar, Indonesia in October 2022.

RISKS AND MITIGATION

The busy streets of Davao City, located in the southern part of the Philippines, during rush hour.

Table 15: AASCTF Risks and Mitigation Measures for Remaining Fund Period

Risk	Mitigation Measure
Change in political support of local governments	The cities selected to participate in AASCTF have significant collaborations with ADB (including ongoing planned loans and grants). As such, ADB (through the respective project officers) has a vested interest to maintain good working relationships with each of these cities and its political leadership. If on the other hand, cities showcase little commitment or interest to participate in the AASCTF-funded activities, their participation in the program can, in coordination with DFAT, be terminated.
Economic disruption has changed the ability and willingness of the private sector to engage	Disruption has affected all economic sectors but at the same time ushered in greater opportunities for digital innovation in cities. Disruption exacerbates existing inequalities, and AASCTF will work to ensure gender minorities, vulnerable communities, and the informal sector are embedded as outcome beneficiaries in all proposed investments. In this environment, the AASCTF appears more relevant and will guarantee to provide a platform for cities to exchange ideas with the private sector.
Lack of alignment with DFAT and ASEAN institution priorities/ strategies	Relevant DFAT project officers are kept informed of the project progress through distribution of AASCTF progress reports and regular exchanges with ADB project officers. AASCTF team to map program strategy and interventions against relevant ASEAN institution policy/strategy documents and to engage more regularly with ASEAN institution entities throughout 2023, in relation to the preparation of the next phase strategy.
Delays in completing procedures required to implement investment projects	In many of the ASEAN countries, ADB cannot work directly with cities without proper endorsement by the national government. As the AASCTF uses an existing technical assistance facility for which countries have already provided No Objection Letters, technical assistance can start right away. However, for investment projects, other regulations govern ADB's ability to finance construction of pilots. Project officers responsible for selected countries will proactively collaborate with relevant national government agencies to ensure compliance with national procedures. DFAT and ADB to discuss/agree in 2023 strategy workshops expanding the definition of what constitutes gold tier "investments", e.g., to comprise not only "investment grants", but also (where applicable) large scale pilots, etc.
Lack of clear pathway to implement gold tier investments.	The next phase strategy is being elaborated at present to include a 'Graduation Strategy' (among the different sub-strategies/plans) with clarification on gold tier city status, including conditions/requirements for cities to qualify for a 'gold level investment'. Socialization of the Graduation Strategy is expected to be undertaken with participating cities ahead of finalization in late 2023.

Table 15 continued

Risk	Mitigation Measure
Sustained use of processes, systems, and tools by city governments	AASCTF team to prepare sustainment plans as part of each ongoing task order within mid-2023. City report cards will also be prepared for each city to assess graduation potential as well as to identify and address sustainment challenges and solutions. Task team leaders will continue to work to finish well all current task orders, identifying opportunities therein to build a sufficient knowledge base through OTJ training, knowledge transfer and, where possible, targeted capacity building to enable long-term system operation.
Lack of sustained impact from influencing activities despite considerable resource allocation	AASCTF team to prepare sustainment plans as part of each ongoing task order within mid-2023. City report cards will also be prepared for each city to assess graduation potential as well as to identify and address sustainment challenges and solutions. Task team leaders will continue to work to finish well all current task orders, identifying opportunities therein to build a sufficient knowledge base through OTJ training, knowledge transfer and, where possible, targeted capacity building to enable long-term system operation.
Lack of sustained impact from influencing activities despite considerable resource allocation	Approach/strategy elaboration with regard to influencing activities underway as part of the next phase 'Engagement Strategy'. All bronze-level capacity development activities seen as part-and-parcel of the graduation journey, becoming increasingly targeted, with a deepening of learning in demand-driven themes, as the program progresses. Establishment of an AASCTF repository (for greater institutionalization and embedded learning) to be explored further in 2023.
Lack of coverage and results related to financial management	The demand-led nature of the task order scoping process and the fact that financial management is difficult in some cities due to various sensitivities, has meant that financial management targets have not been sufficiently met to-date. The next phase strategy preparation is underway and will identify/elaborate entry points for further strategic focus of AASCTF activities going forward.
AASCTF GESI Strategy is not successfully implemented, potentially compromising sustainment/ expansion	The AASCTF GESI Strategy (2021) has to this point served a pivotal role in directing the program's GESI efforts and attentions, with the key provisions therein having been implemented to date, including the named GESI-targeted interventions as well as GESI mainstreaming activities. As many of the task orders are winding down in the first half of 2023, there is a keen focus within the team to 'finish well' all task orders as regards GESI. This is supported by the revised program logic, monitoring tools, KPIs, and final evaluations.

Source: Ramboll.

Hue's illuminated streetscape at night lined by motorbikes, a dominant mode of transportation in the city.

ASEAN AUSTRALIA SMART CITIES TRUST FUND
Asian Development Bank

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 urban solutions and systems. By working with cities, AASCTF facilitates their transformation to become more livable, resilient, and inclusive, while in the process identifying scalable best and next practices to be replicated across cities in Asia and the Pacific. The Trust Fund is supported by the Australian Government through the Department of Foreign Affairs and Trade (DFAT), managed by the Asian Development Bank (ADB), and implemented by Ramboll.

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