

Infrastructure Asset Management for urban resilience – Supporting local (and central) governments

Daniel Platz, Senior Economic Affairs Officer
Financing for Sustainable Development Office
UN DESA

Infrastructure Asset Management (IAM)- Key questions

1. What is Infrastructure Asset Management (IAM) and why does it matter?
2. Who implements infrastructure asset management at the national and local government level?
3. How does IAM build resilience?
4. What are some of the tools on infrastructure asset management the UN has piloted?



What is Infrastructure Asset Management (IAM)

- What are infrastructure assets?
 - ✓ Infrastructure assets are physical things of value that provide a public service to the community
 - ✓ Public infrastructure assets are essential to the delivery of basic public services and are owned or managed by the local or central government
- What is infrastructure asset management?
 - ✓ Infrastructure asset management refers to the coordinated series of activities that **monitor** and **maintain** these things of value
 - ✓ Infrastructure asset management involves balancing **risk, cost, opportunities** and **performance** to fully and effectively realize the value of an asset over its entire lifespan



Why does Infrastructure Asset Management matter?

- It is estimated that the realization of over **90 percent** of the Sustainable Development Goals is directly or indirectly linked to infrastructure
- Undermaintained infrastructure can lead to an annual **2 percent** loss in GDP
- Up to **85 percent** of life cycle cost occur after the construction phase
- Every **\$1** spent on infrastructure maintenance is as effective as **\$1.5** of new investments



Who implements public infrastructure asset management?

It's a multistakeholder effort... Example for the city level:

Level	Asset management tasks	Roles
Operational	<ul style="list-style-type: none">• Respond to operations and service requests• Conduct maintenance• Conduct inspections	<ul style="list-style-type: none">• Supervisor• Operator• Mechanic• Technician
Tactical	<ul style="list-style-type: none">• Develop capital plans• Optimize maintenance plans	<ul style="list-style-type: none">• Director• Manager• Engineer
Strategic	<ul style="list-style-type: none">• Allocate budget for capital and operating expenses• Endorse infrastructure investment plans	<ul style="list-style-type: none">• Mayor• City director• City council or committee• Chief Accounting Officer

How does the public infrastructure asset management (IAM) approach build resilience?

- IAM increases resilience across all three pillars of sustainable development



Environmental

-by using fewer natural resources as less asset need to be rebuilt or repaired...



Social

- by ensuring that the vital services infrastructure provides are less vulnerable to extreme events and disruptions...



Economic/Financial

- by reducing disruptions to industry from shocks, such as severe storms...

How does the public infrastructure asset management (IAM) approach build urban resilience?

- ✓ It is multidisciplinary and demand-based public sector management approach
- Helps develop spatial and temporal priorities for interventions across asset portfolio
- Treats infrastructure as an interlinked portfolio of assets:
 - Helps understand cascading failures: a lack of waste management => clogged drainage systems/flooding=> road washout
 - Follows a systems-approach that links assets functionally (e.g., smart tunnel in Kuala Lumpur)
 - Helps to “future-proof” by anticipating changes in climate, use patterns and growth in demand over their lifecycle as well as by building in flexibility and the potential to add capacity over time

What are some of the tools on infrastructure asset management the UN has piloted?

➤ UN Handbook on Infrastructure Asset Management

- Asset Management Diagnostic Tool
- Asset Management Action Plans (AMAP)
- Building data and information system
- Emergency response AMAPs
- Climate vulnerability assessment tool
- Process tool for building enabling environment

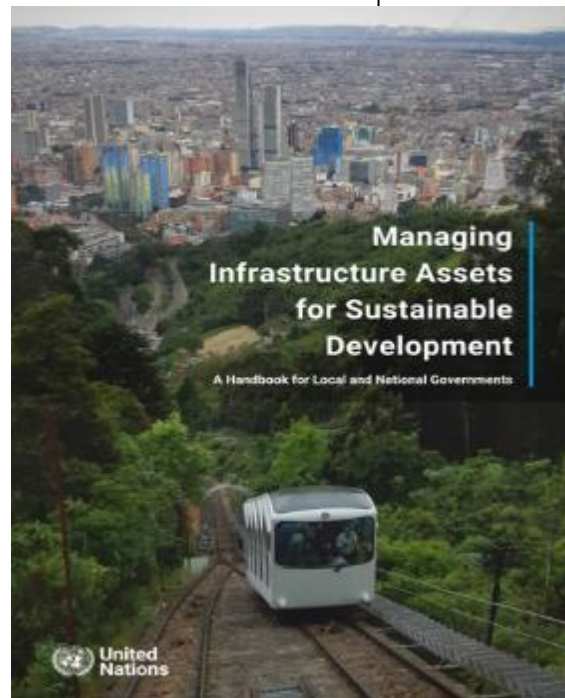


Figure 7
Climate risk assessment process

What is an asset?
The most basic definition of an asset is something that is of value to a person or an organization or public institution, owned, controlled, or managed.

Figure 1
Public assets
Public assets are all the physical assets that are essential to the delivery of basic public services and are owned or managed by a local or central government.

Scoping stage:

1. Which climate hazards are likely to affect your community?
2. How would each hazard affect your community?
3. Which climate impacts could cause significant disruption?

Medium or high vulnerability:

4. Which climate impacts are likely to have the most severe consequences?

Strategic evaluation:

5. Consider the big picture: Given your community's goals, which climate risks warrant response efforts now?

Owners and service value, they cost about important to public asset's contribute

at all levels asset; 'public infrastructure' define are essential services and for central at many factor in the of the direct public assets infrastructure like terms, as on, the policy system them al wetlands, centres.

Buildings

Equipment

Natural resources

Infrastructure

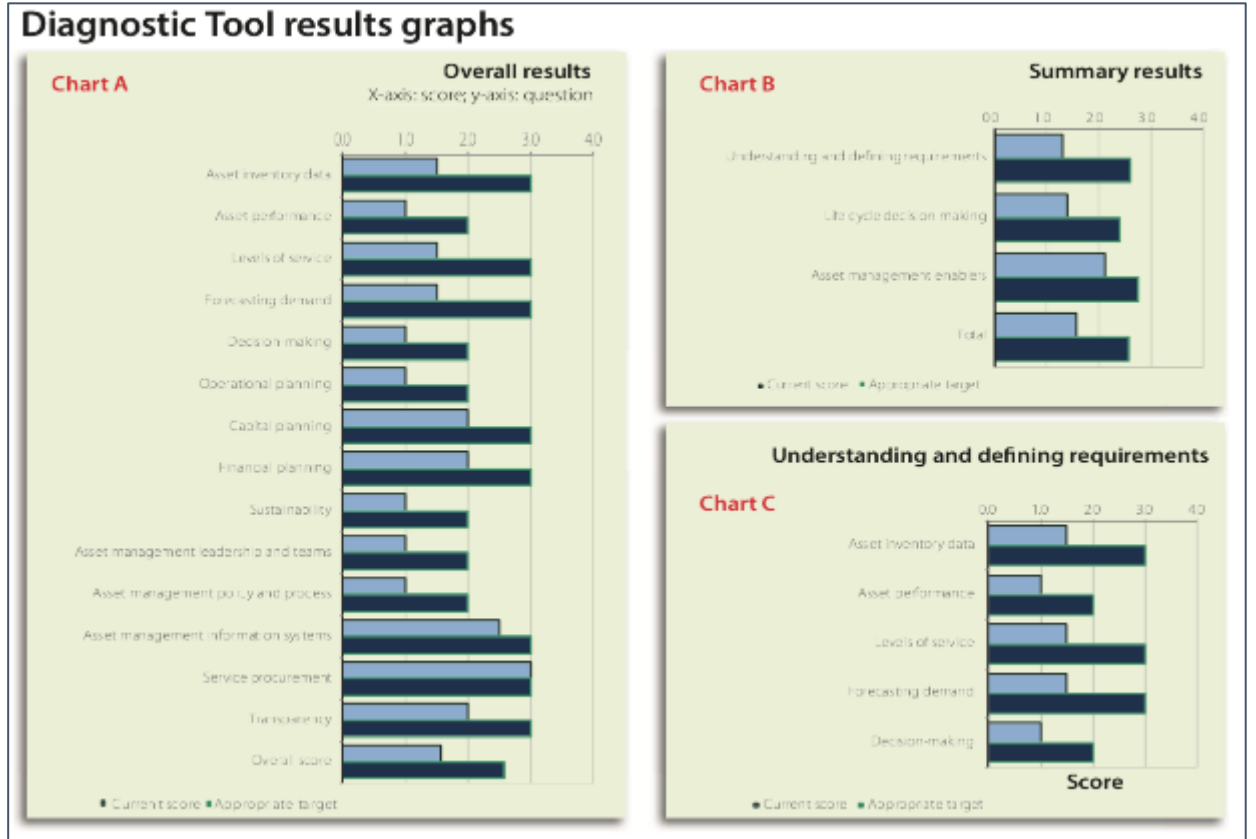
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UN IAM Toolkits: Asset Management Diagnostic Tool

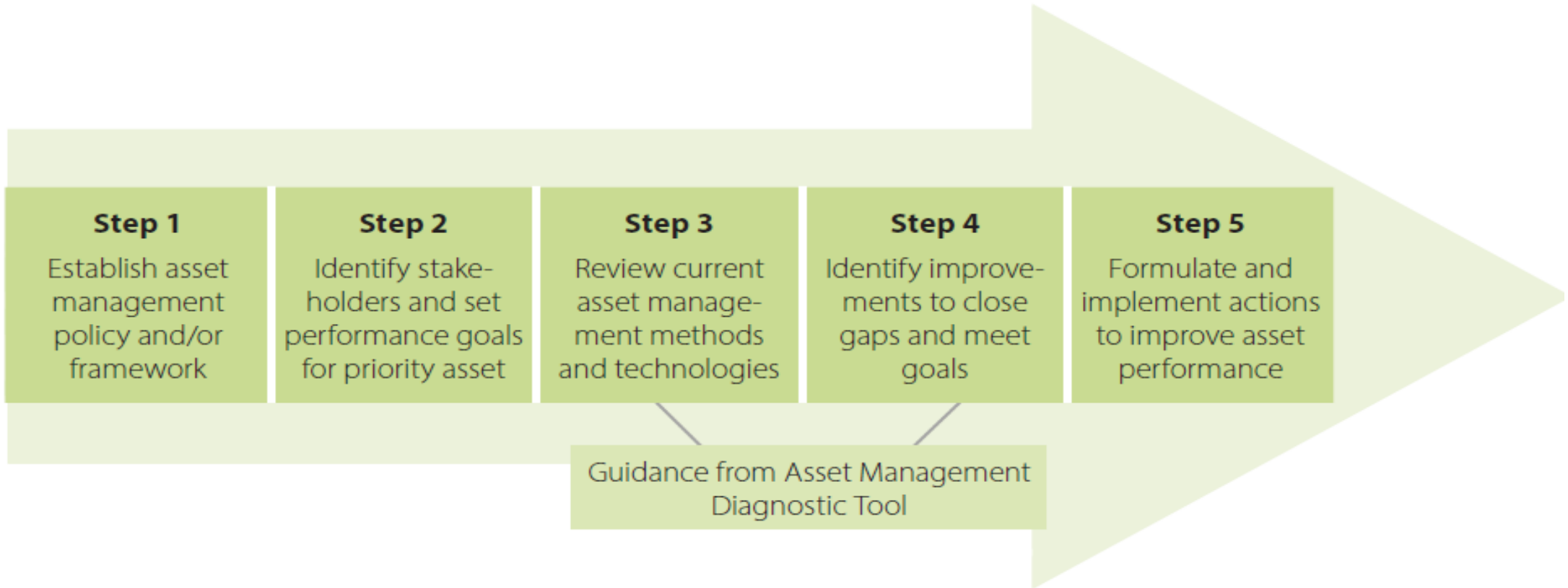
On-site Assessment

Evaluation



UN IAM Toolkits: Asset Management Action Plans (AMAP)

Asset management action plan (AMAP) steps



UN IAM Toolkits: Climate and Infrastructure risk management tool

Climate Change Hazards



Storm Surge



Wild Fire

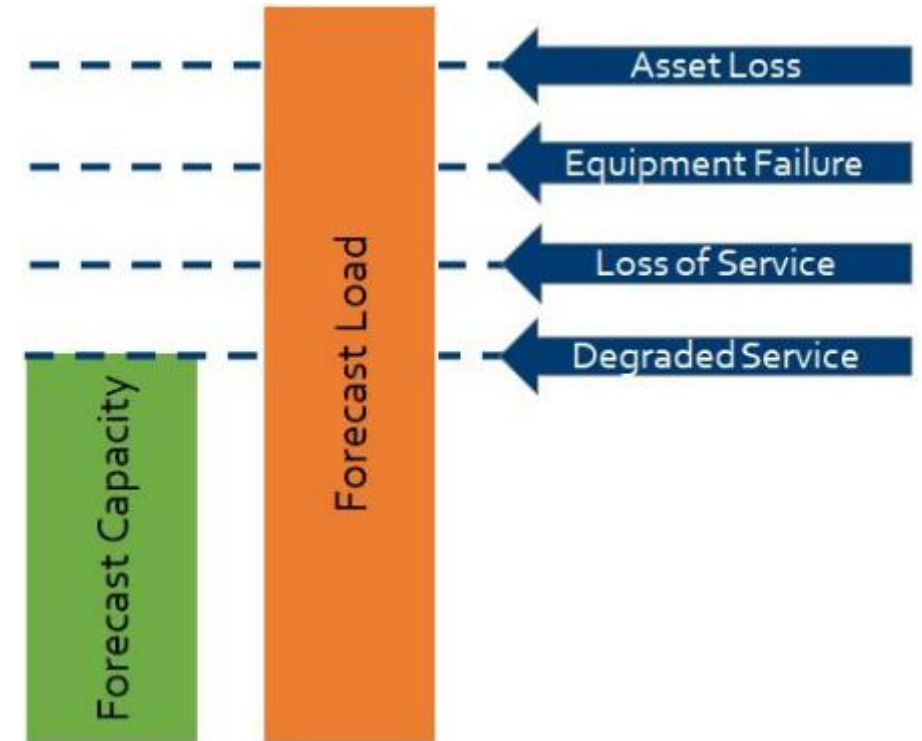


Drought

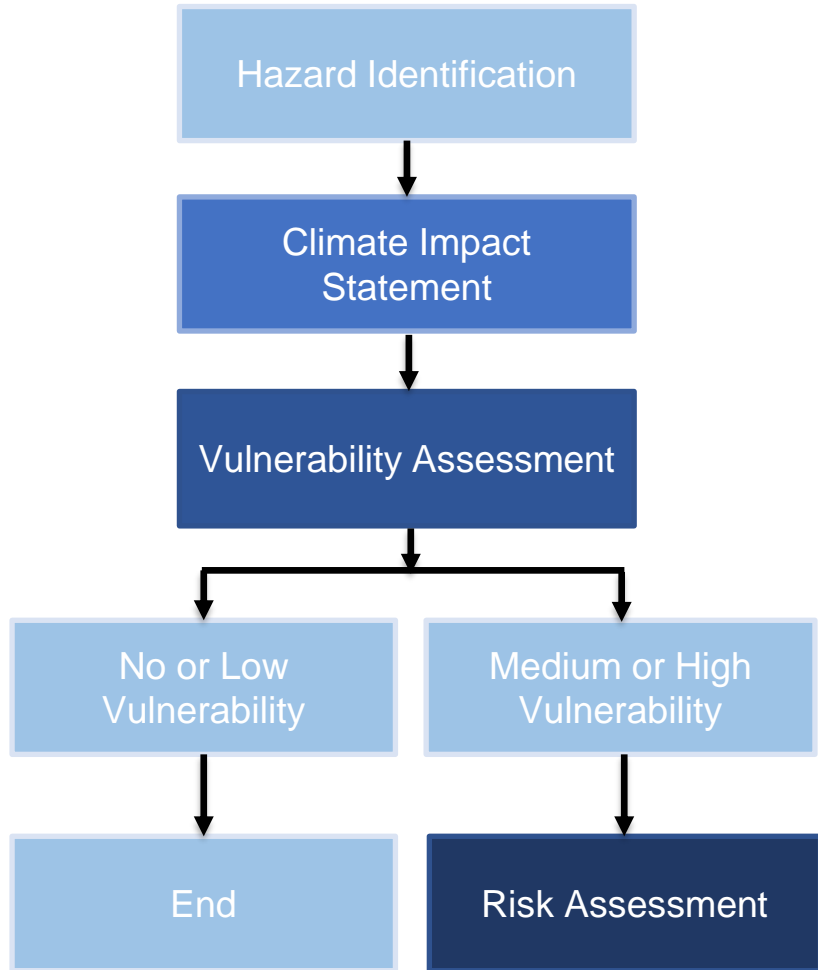


Landslides

Impacts of Climate Change on Infrastructure



UN IAM Toolkits: Climate Vulnerability Assessment Tool



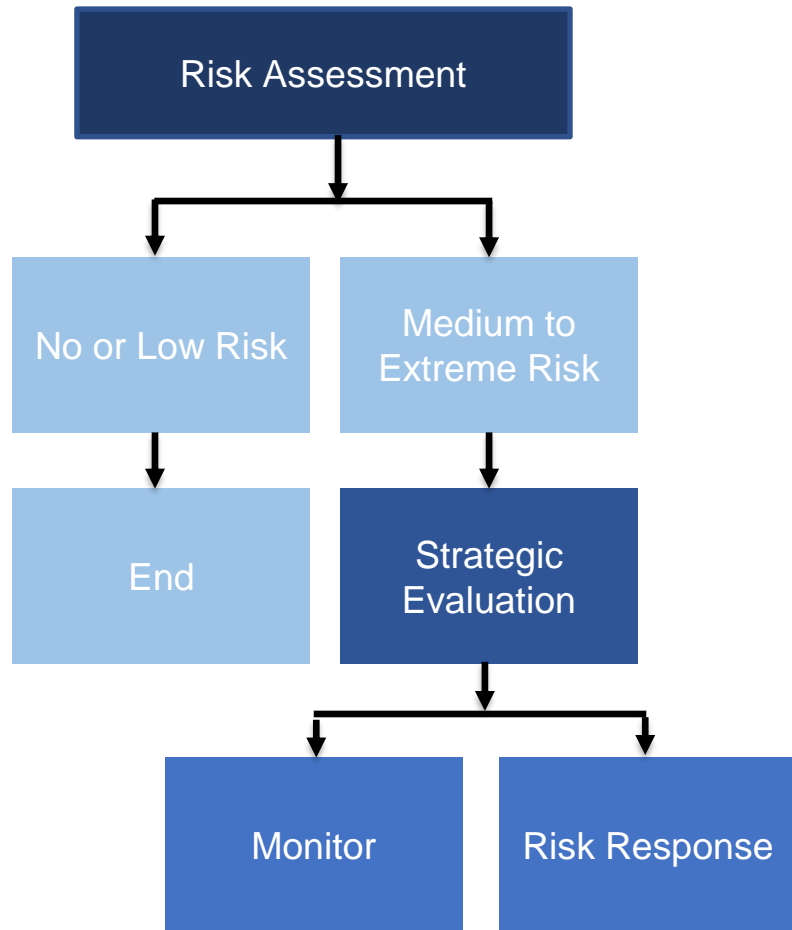
- 1 Which climate hazards are likely to affect your community?
- 2 How does it impact your community?
- 3 How vulnerable are you to those impacts? (Function of exposure and adaptive capacity)

- Define the relationship between a **climate hazard** and your **municipal services**, using a consistent and logical structure:



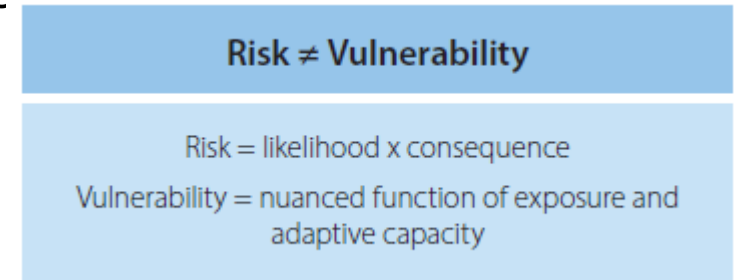
[climate hazard] impacting [service area, asset] resulting in [consequence]

UN IAM Toolkits: Climate Vulnerability Assessment Tool



4 Which climate impacts are likely to have the most severe consequences?

- Risk Evaluation Factor include:
 - Public Safety
 - Service Interruption
 - Financial implications
 - Environmental Harm
 - Asset Damage



5 Consider the big picture. Given your community's goals, which climate risks warrant response efforts now?

Likelihood x Consequence = Urgency

Risk level interpretations



Opportunities for you to engage


- Participate in online learning activities
- Contribute to global repository of Asset Management Action Plans (AMAPs)
- Join IAM network of local governments
- Request technical assistance

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Infrastructure Asset Management

The Infrastructure Asset Management (IAM) team at UN DESA, together with UNCDF, UNOPS and a [growing global team of experts](#), are shaping a robust programme of capacity development activities for local and central governments across the globe. The goal is to maximize the value of public infrastructure investments and leverage them to finance sustainable development for generations to come.

Drawing from the experiences of a four-year pilot project and extensive fieldwork, the team released in February 2021 the [Managing Infrastructure Assets for Sustainable Development](#) handbook that lays out a set of concrete tools and insightful lessons for countries and cities from any region to digest and apply to their unique local contexts. The handbook has already been translated for Spanish and French speakers, with the release of Arabic, Bangla, Chinese, Russian, Serbian and Swahili versions slated for late 2021, covering all six official UN languages and several local languages.



Capacity Development

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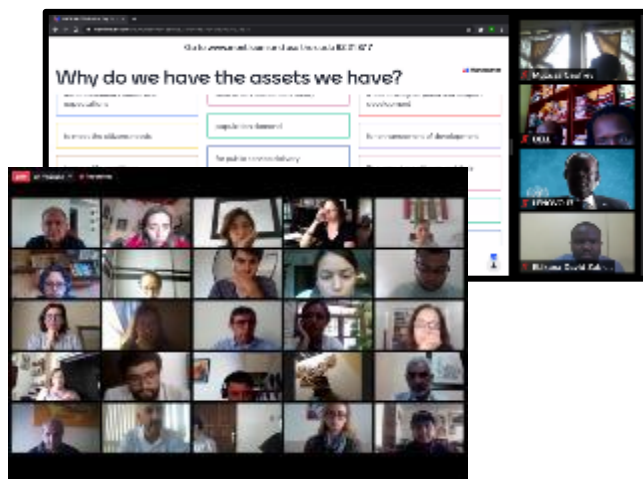
Online learning opportunities

1 Synchronous online learning

Online Solutions Dialogues: a 3-part virtual workshop series for regional audiences in Africa, Asia-Pacific and Latin America and the Caribbean

- Used new tools for promoting online interactivity
- Simultaneous interpretation
- Post workshop assignments for certification

✓ More than 2500 registered participants



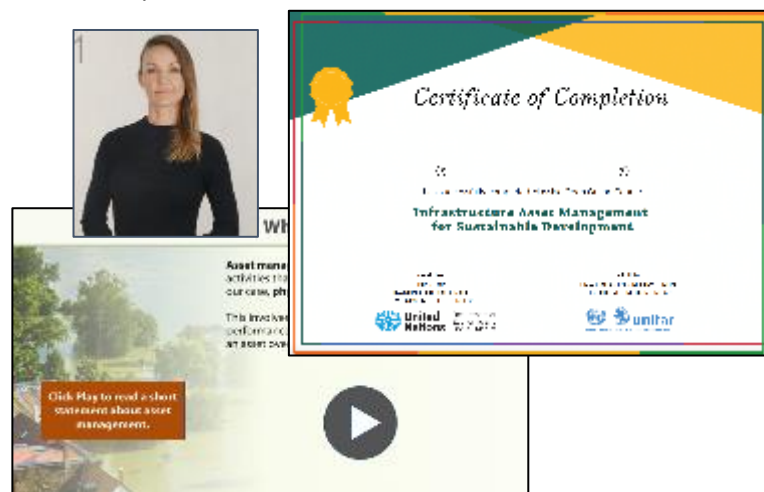
2 Asynchronous online learning

• A self-paced, 'offline' alternative to live workshops, providing more in-depth instruction and targeting a broader audience

• In partnership with UN Institute for Training and Research (UNITAR) and Columbia University and now Coursera

• Based on contents of the Handbook – 8 modules, 1 per chapter

✓ Participants can receive up to two UN Certificates of Completion



3 Hybrid learning

• Workshops with an innovative hybrid format in which participants are on-site and instructors are both online and on-site

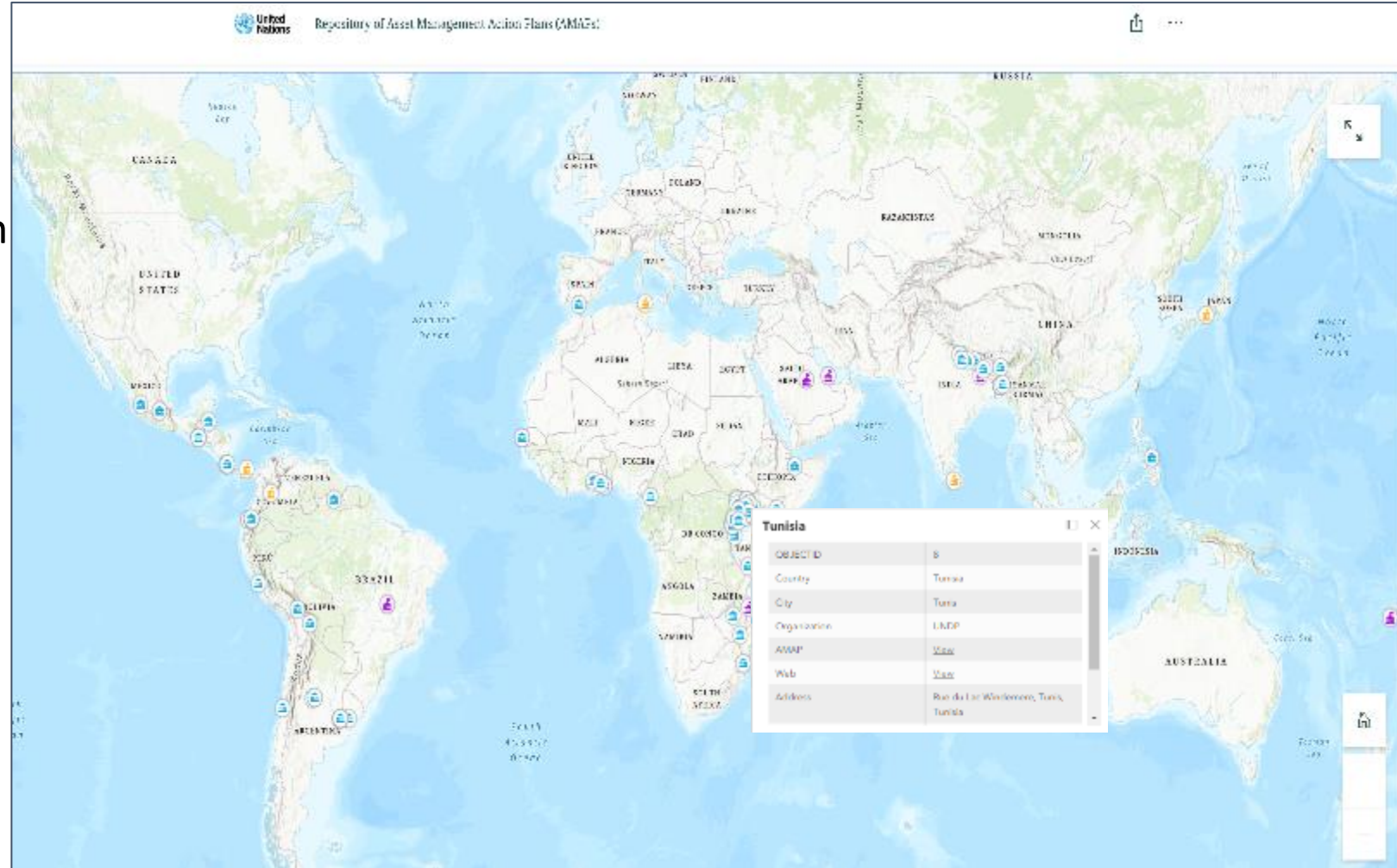
• On-site expert consultants guide participants in completing interactive assignments

✓ Local government officials finalized the Asset Management Action Plans (AMAP)



Contribute to global repository of Asset Management Action Plans

- More than 150 AMAPs available online
- ✓ Continued monitoring efforts on implementations in the field, which feeds back into future guidance



Join IAM network of local governments

Sign up to IAM newsletter:

- Biannual editions with the latest news and insights on IAM from the UN system and beyond
- Featured interviews with experts on IAM
- Successful experiences of sustainable IAM practices implemented around the world
- Accessible, online, and free

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PAVING THE WAY TO SUSTAINABLE INFRASTRUCTURE

AUGUST 2023 ISSUE

Four biannual roundups of news and insights on Infrastructure Asset Management (IAM) from across the United Nations system and beyond. Part of the joint IAM Initiative between the UN Department of Economic and Social Affairs (UN DESA), UN Capital Development Fund (UNCDF), and the UN Office for Project Services (UNOPS).



HIGHLIGHTS

KENYA, THE GAMBIA, AND NEPAL EMBARK ON SUSTAINABLE ASSET MANAGEMENT TRAINING

On-site training to apply the [UN Toolkit on AM](#) for local and central government officials has been conducted in Kenya, Nepal, and The Gambia. Learn more about the workshops on [page 2](#).

Overall, the UN AM work in the field is now supporting 7 countries, including Nepal, Lao PDR, Kenya, The Gambia, Costa Rica, Tanzania, and Bangladesh. Past project countries also include Uganda and Somalia. Check out all our project countries by clicking on the map below.



MASTER'S PROGRAM ON IAM LAUNCHED IN UGANDA

Following a series of UN DESA-led capacity development activities in Uganda, Makerere University launched a curriculum for a Master's Degree in [Public Infrastructure Management](#) based on the [UN Handbook on IAM](#). Learn more on [page 3](#).

CAPSTONE PROJECTS AT COLUMBIA UNIVERSITY SUPPORT UN IAM PROJECT

Access more on these recent research projects on [page 4](#).

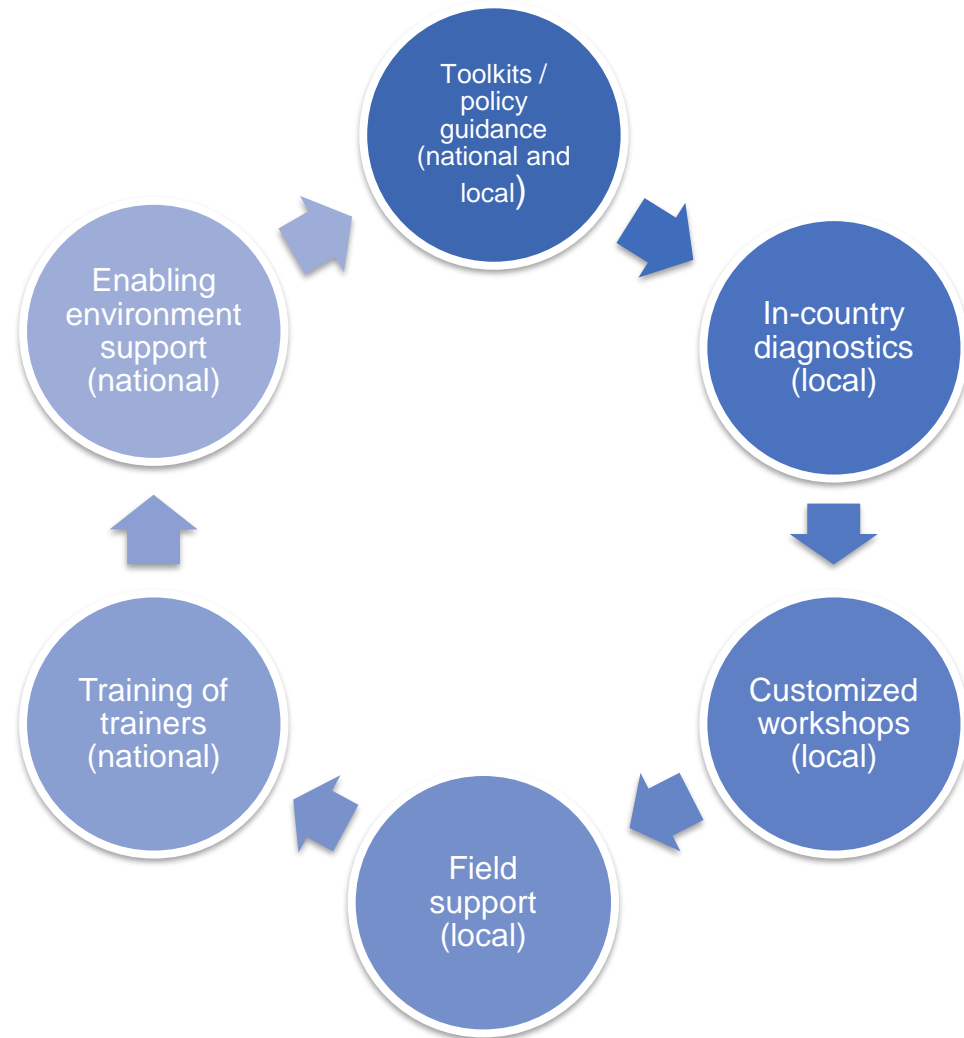
WHAT ELSE IS INSIDE?

- Learn more about the importance of resilient IAM in the context of earthquakes on [page 5](#).
- Meet some of our trainers on [page 5](#).
- Learn more about the hybrid certification workshop in Lao PDR on [page 6](#).

Submit any comments, inquiries or ideas for contribution to a future issue [HERE](#).

[IAM homepage](#) 1

Apply for UN technical assistance to support infrastructure asset management at local and national levels



Challenges encountered and how to address them?

- How to sustain IAM approach through lasting organizational change at local and central government level?
 - “Carrot and stick approach”(preferential access to capital funding and/or mandatory IAM reporting)?
- How to build national institutional capacity to train new urban IAM managers?
 - Develop new curricula and/ or with government training institutions? Mandatory certification?
- How to incentivize short-term expenditure increase that is tied to much larger long-term savings?
 - Provide seed funding for new/higher-frequency IAM funding?
- Who to train?
 - What is right mix of elected and technical officials to get political buy-in and long-term training effects?

Questions?



Please visit: bit.ly/UN-IAM

or contact: IAMH@un.org or platz@un.org