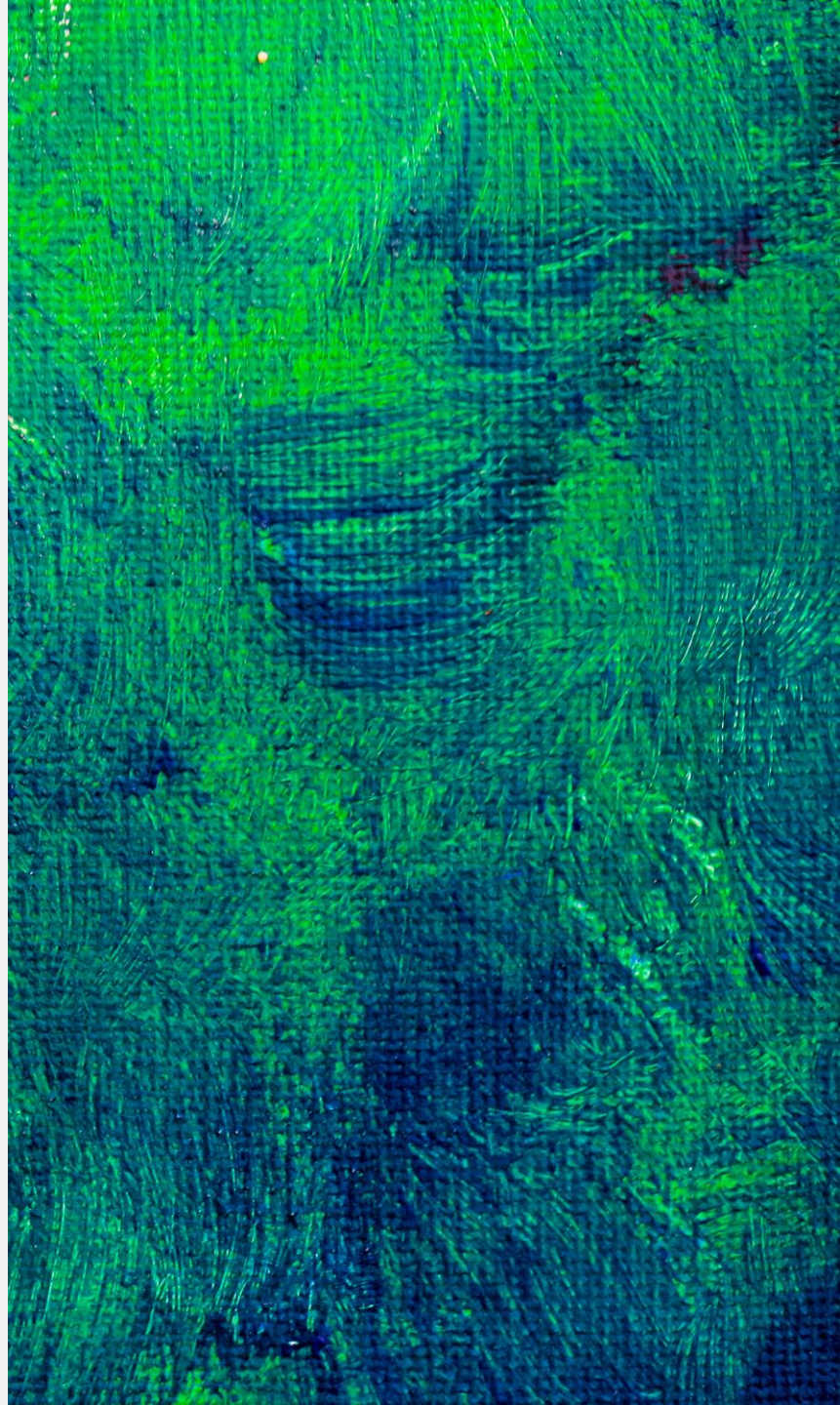
Digital Transformation to Accelerate

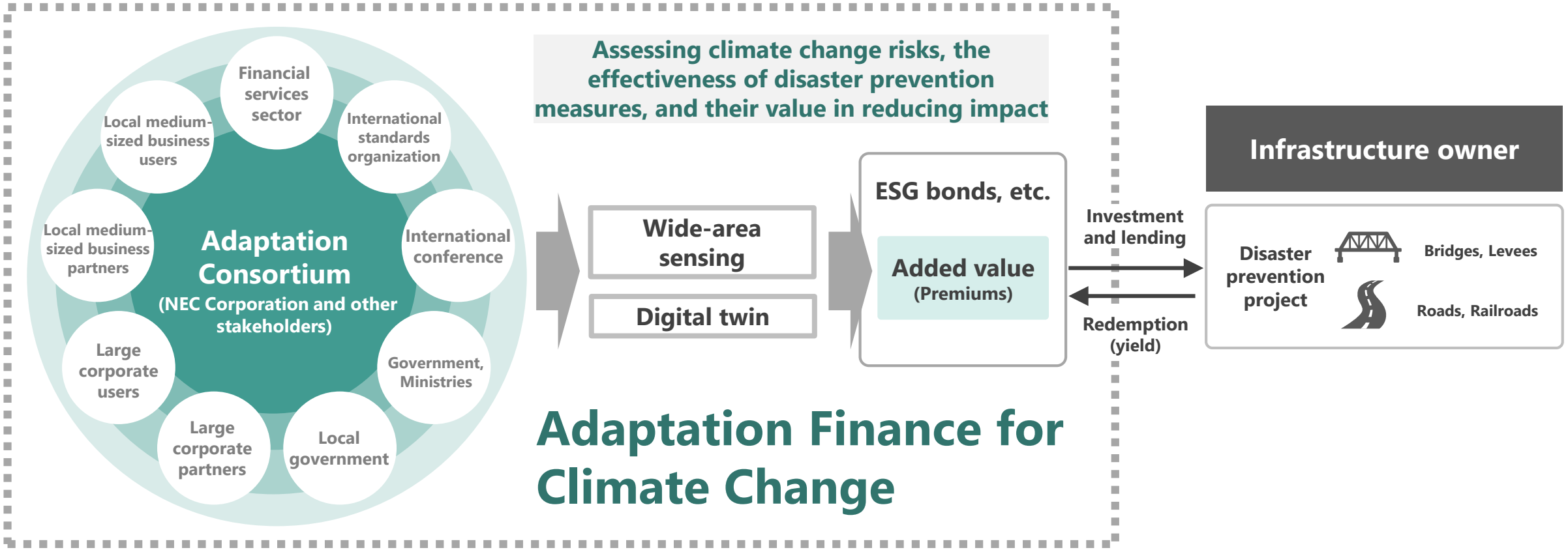
Adaptation Finance for Climate Change

Adaptation Consortium Prep Office (NEC Corporation, etc.)



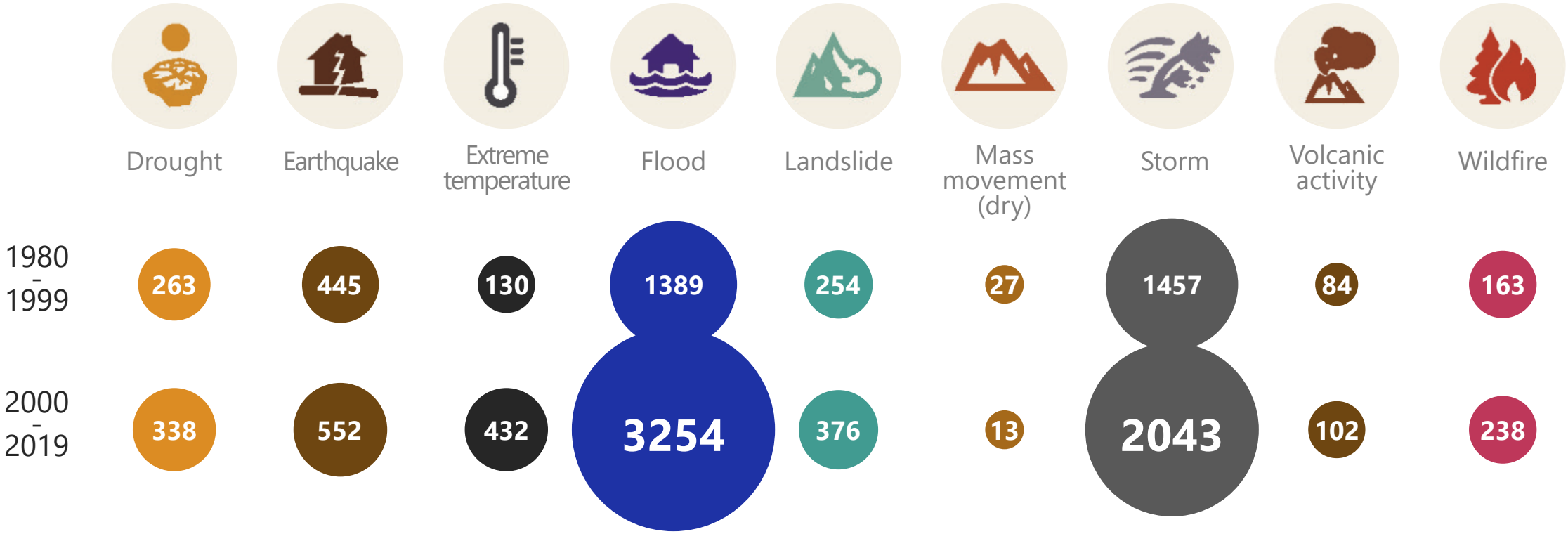
Introduction

We present an initiative that leverages ICT to quantitatively assess the effectiveness and environmental value of disaster prevention, aiming to boost funding for these projects.



Total disaster events by type: 1980-1999 vs. 2000-2019

The human cost of disasters: an overview of the last 20 years (2000-2019)
(https://www.undrr.org/publication/human-cost-disasters-overview-last-20-years-2000-2019)



With global warming intensifying, extreme weather events like floods and storms are occurring more frequently.

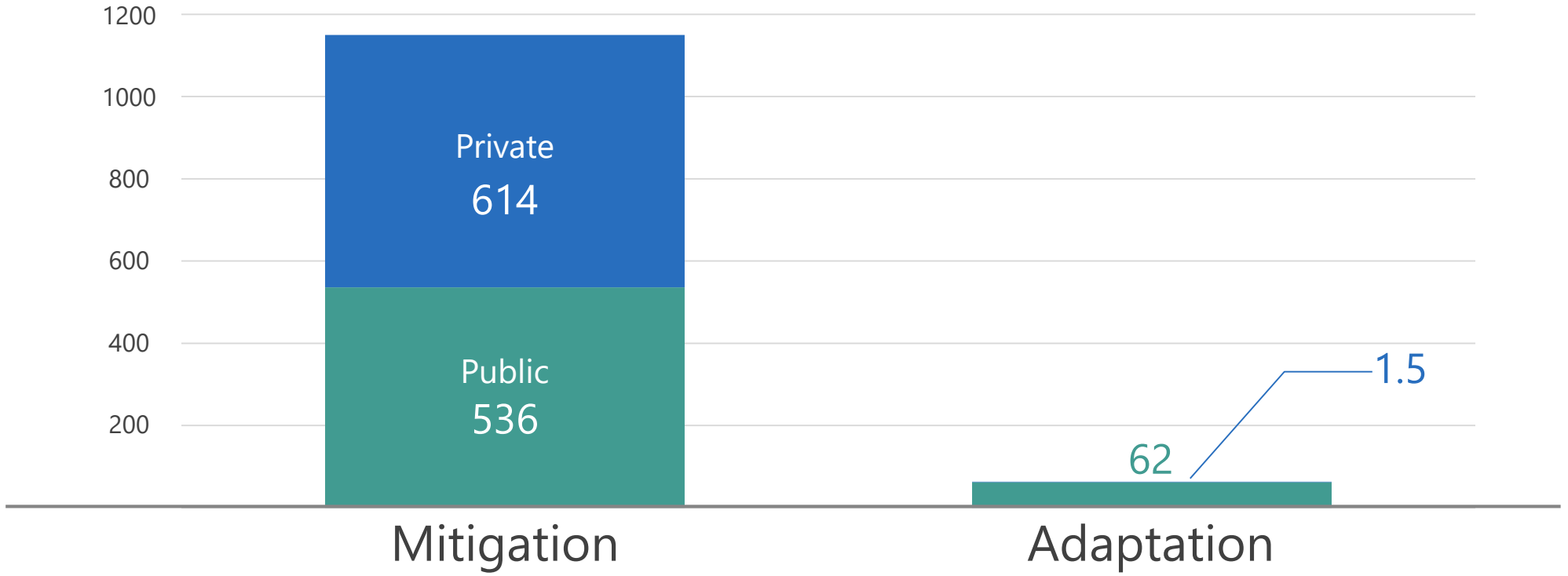
CO_2 emissions resulting from environmental destruction

CO_2 emissions generated by reconstruction work

Natural disasters are exacerbating CO_2 emissions and highlighting a substantial issue.

Uses of climate finance with private-public splits (USD billion)

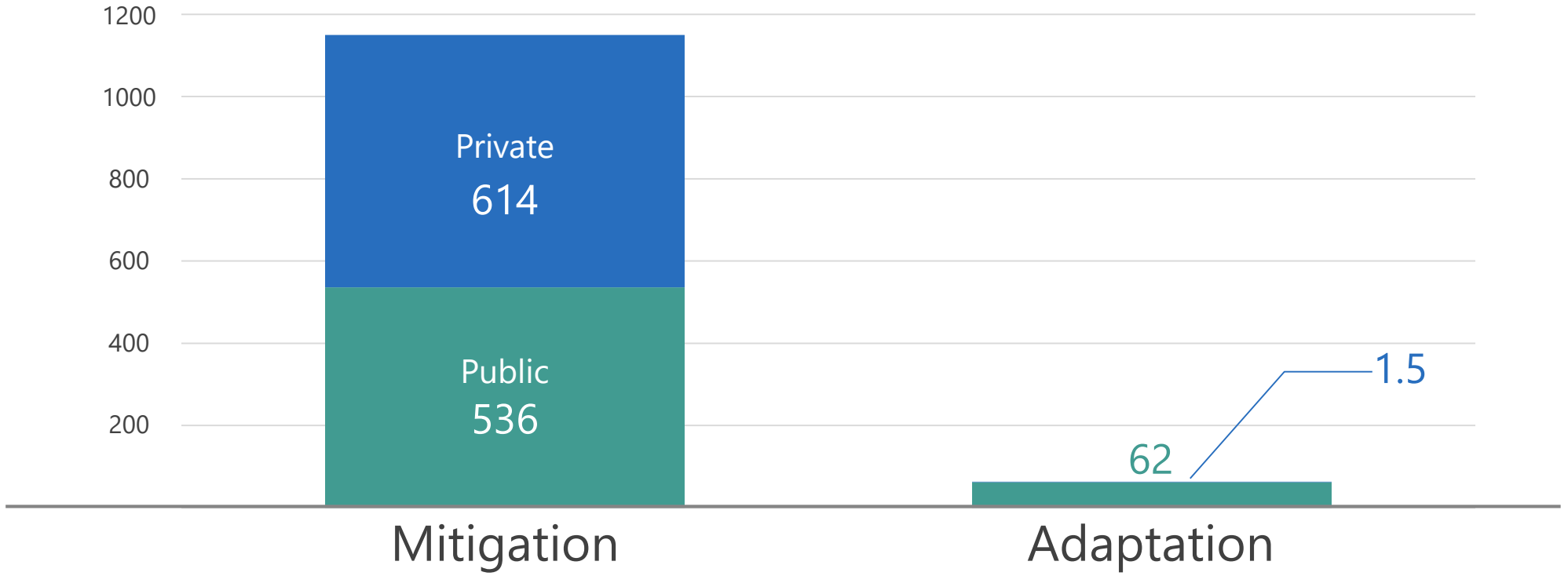
Global Landscape of Climate Finance 2023
(https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/Global-Landscape-of-Climate-Finance-2023.pdf)



Despite global actions against climate change,
current efforts lack the necessary breadth.

Uses of climate finance with private-public splits (USD billion)

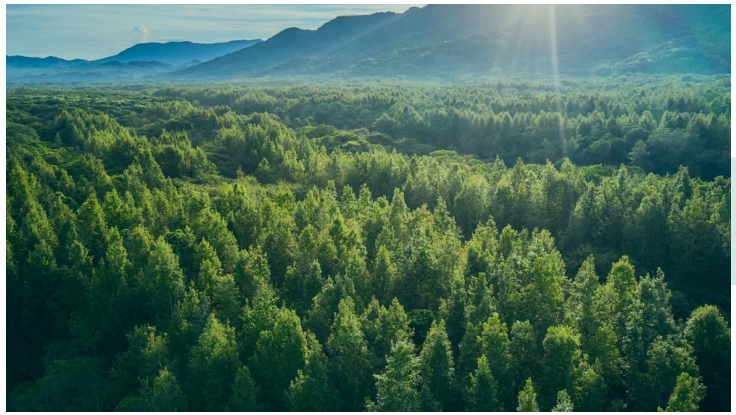
Global Landscape of Climate Finance 2023
(https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/Global-Landscape-of-Climate-Finance-2023.pdf)



Especially in the critical areas of 'mitigation' and 'adaptation,'
the latter is suffering from insufficient funding.

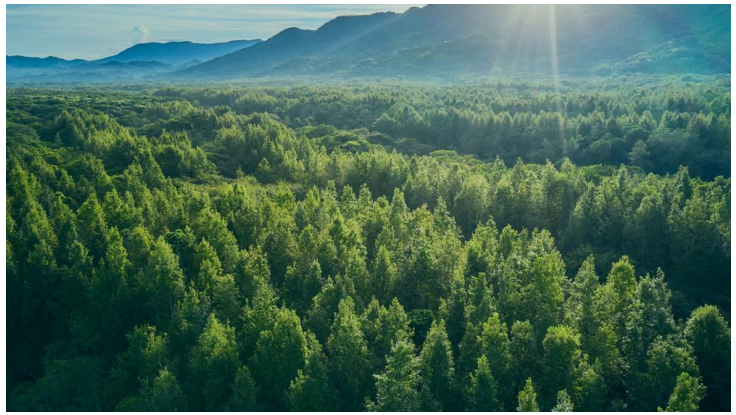
Present

Future



To address this gap, we propose a method of using ICT to quantify the effectiveness and environmental value of disaster prevention measures.

Present

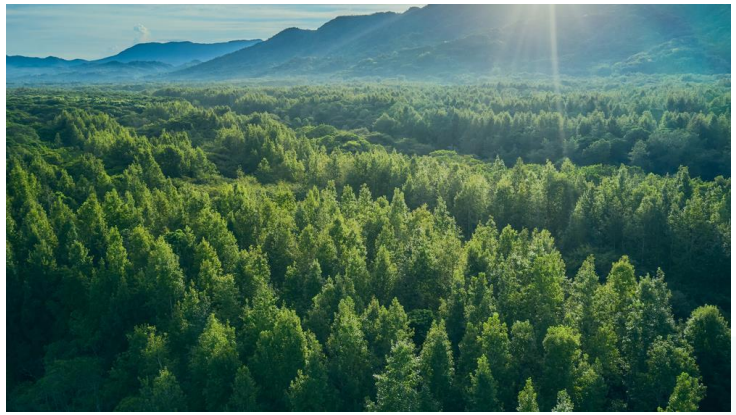


Disaster prevention measures

Future

To address this gap, we propose a method of using ICT to quantify the effectiveness and environmental value of disaster prevention measures.

Present



Wide-area sensing

SAR Optical fiber IoT

Disaster prevention measures

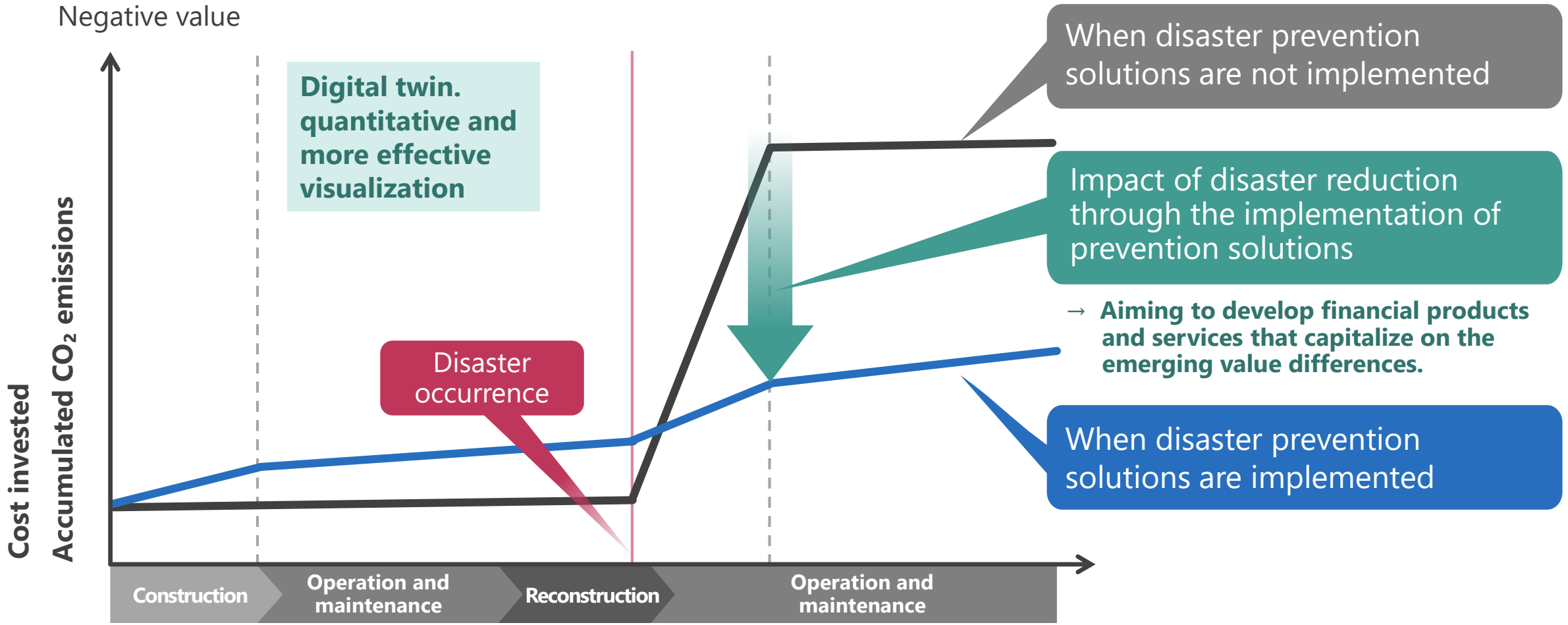
Digital twin

Simulation

AI

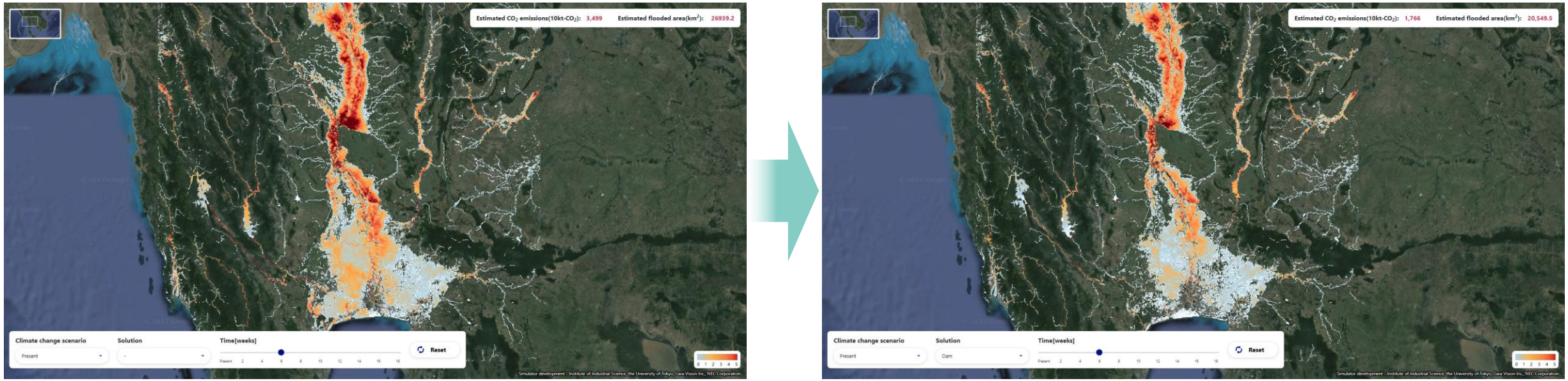
Future

Central to this approach is the adoption of wide-area sensing and digital twin technology for more accurate simulations.



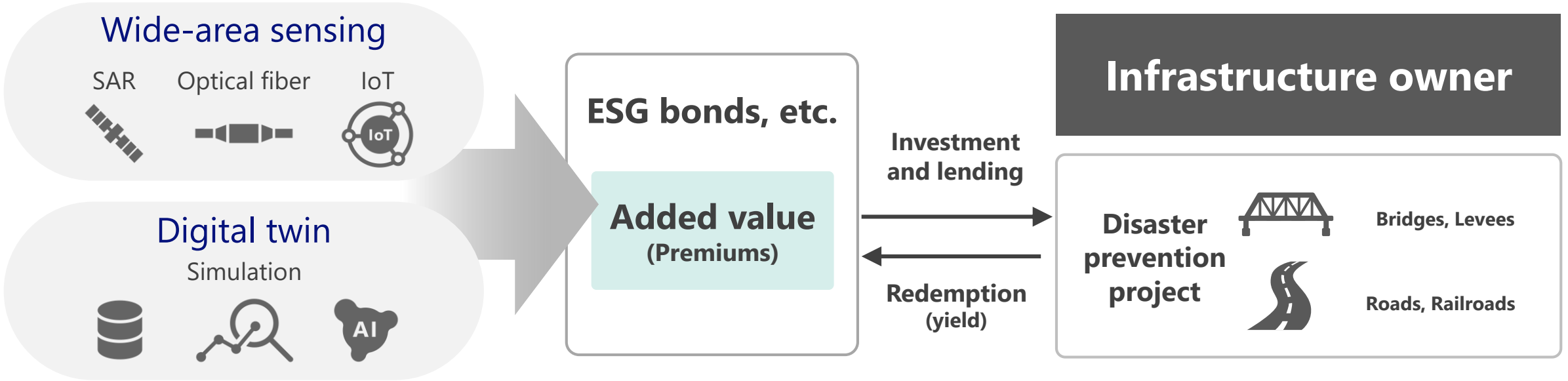
By calculating both the prevented damages from disasters and the reduction in CO_2 emissions, we can quantify the value of disaster prevention.

Flood damage simulation: A case study of flooding in Thailand



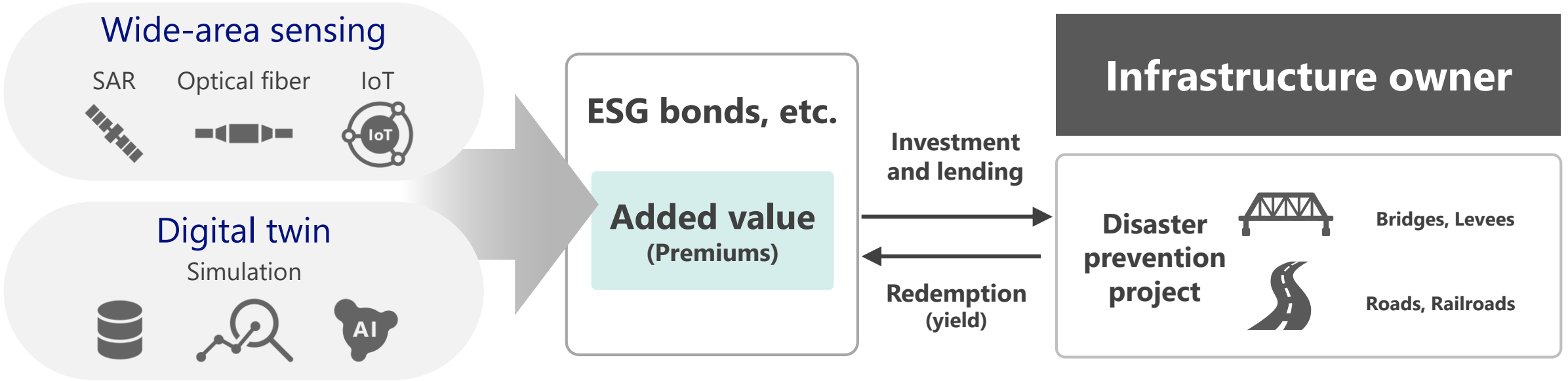
For instance, this simulation illustrates the potential damages from floods and the efficacy of various response strategies in different climate change scenarios.

Assessing climate change risks, the effectiveness of disaster prevention measures, and their value in reducing impact



Our objective is to increase investment in disaster prevention projects through these quantitative assessments.

Assessing climate change risks, the effectiveness of disaster prevention measures, and their value in reducing impact



To this end, we are in discussions with financial institutions to devise a mechanism that channels funds specifically towards disaster prevention initiatives.

To accelerate real-world implementation, we are in the process of establishing a consortium with a diverse range of stakeholders.

Adaptation Finance for Climate Change

Scan for details

For further details, scan the QR code.

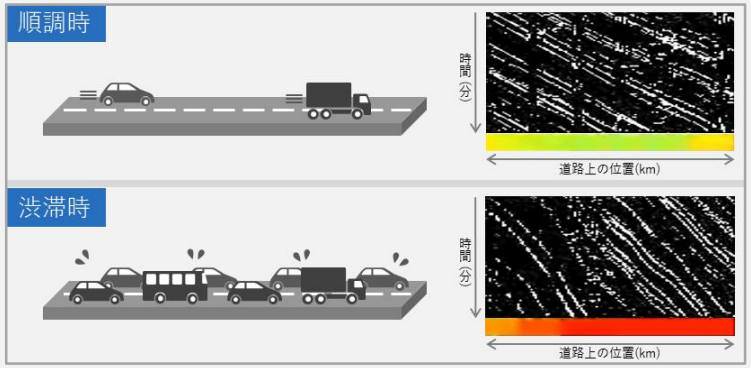
Disaster Prevention Solutions

SAR Remote Sensing

Detection of an abnormal deflection of the bridge for accident prevention

Optical Fiber Sensing

Real-time, wide-area anomaly detection using fiber already installed in the infrastructure

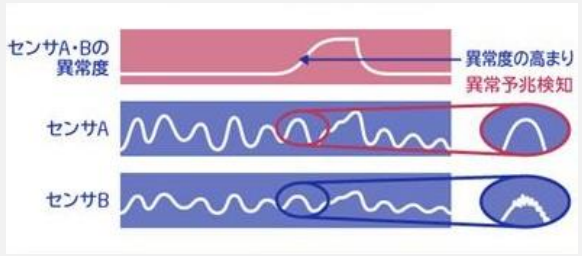


Drive Recorder Sensing

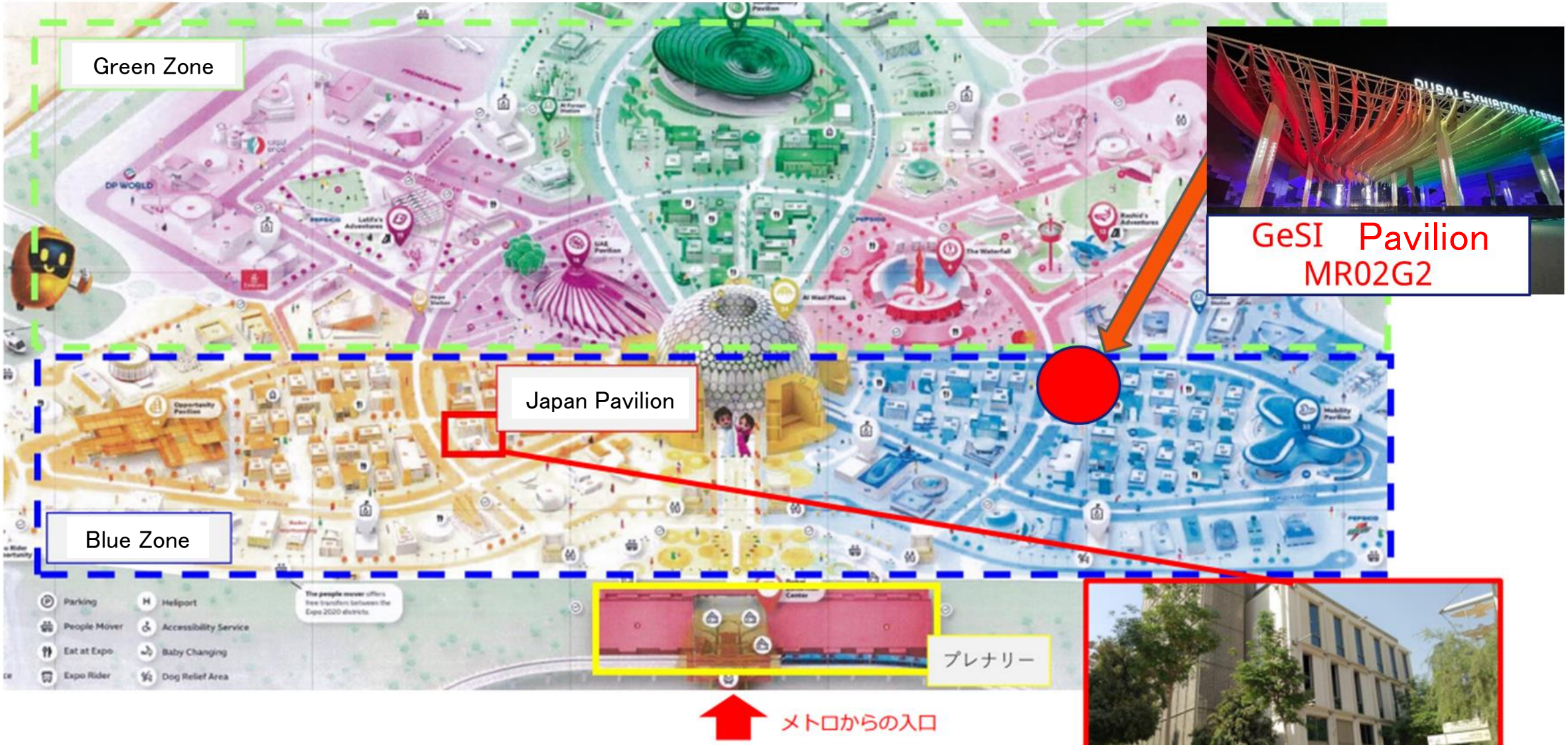
Road surface damage detection using in-vehicle drive recorder

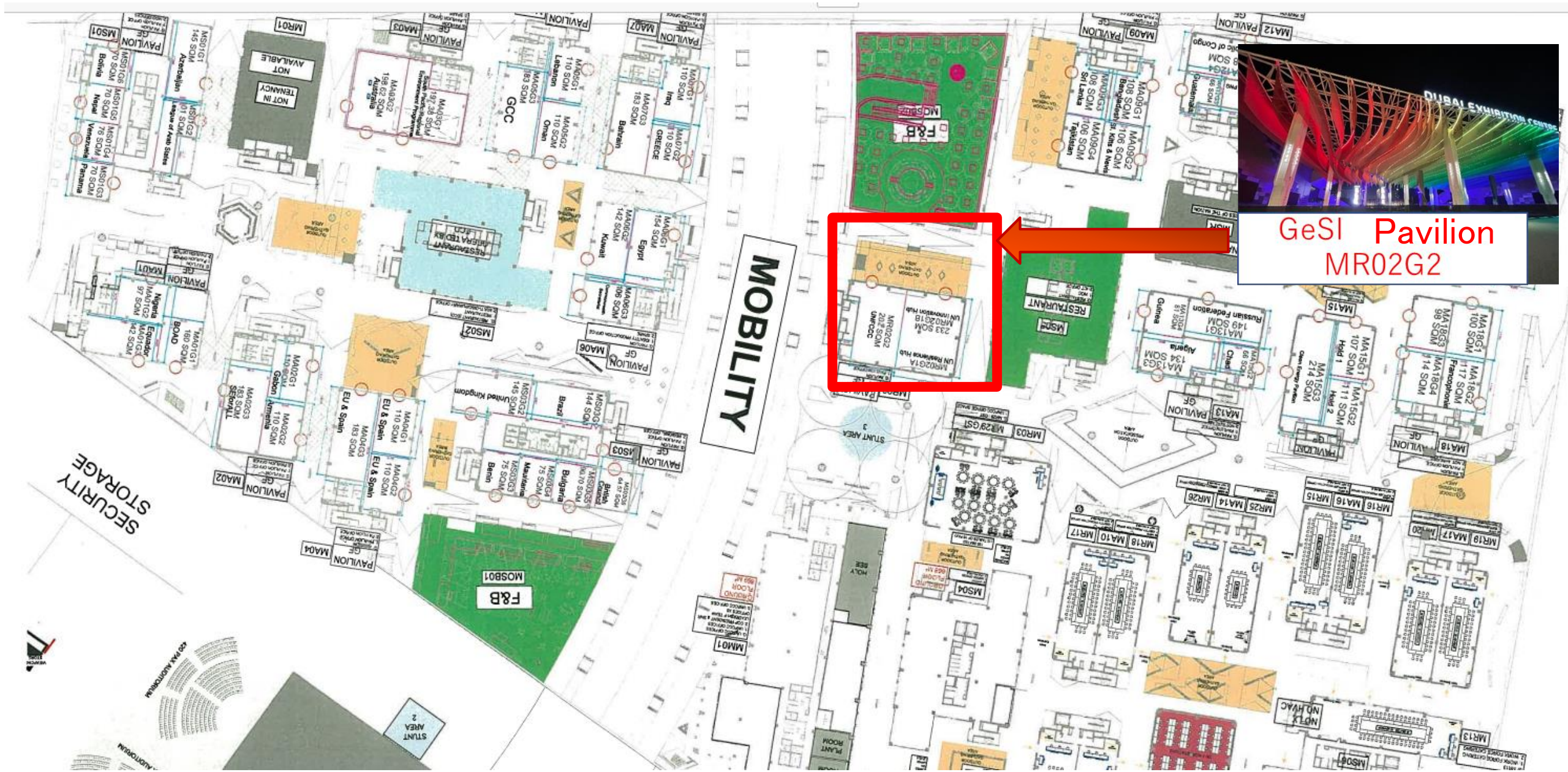
Invariant Analysis

Automatically detect predictive anomalies from large amounts of time series data



MAP




GeSI Pavilion
MR02G2
MOBILITY
SECURITY STORAGE
F&B
MOSB01
MR02G2
20.8 SQM
UNFCCC
MR02G1A
UN Innovation Hub
RESTAURANT
MS02
MA06
MA03
MA02
MA04
MA05
MA07
MA08
MA09
MA12
MA13
MA15
MA18
MR01
MR03
MR17
MR18
MR19
MR20
MR25
MR26
MS01
MS02
MS03
MS04
MM01
GCC
Lebanon
Oman
Iraq
Bahrain
GREECE
Kuwait
Egypt
Brazil
United Kingdom
Benin
Mauritania
Bulgaria
EU & Spain
Gabon
Armenia
Nigeria
Ecuador
BOAD
Azerbaijan
League of Arab States
Bolivia
Nepal
Venezuela
Panama
Guinea
Algeria
Chad
Russian Federation
Francophonie
Green Energy Pavilion
Hold 1
Hold 2
Bangladesh
Sri Lanka
Tajikistan
Guatemala
Congo
STUNT AREA 2
STUNT AREA 3
PLANT ROOM
NOT AVAILABLE
NOT IN TENANCY
NO HVAC
DUBAI EXHIBITION CENTRE