





**Ninth Session of the Committee of Experts on UN-GGIM  
UN-GGIM Academic Network and Geospatial Societies Open Forum**

**Building Technical Capacities for Resilience and Sustainability**

**Forum conducted by UN-GGIM Academic Network and UN-GGIM  
Geospatial Societies**

**Monday 5 August 2019  
10:00 am - 13:00 pm  
Venue: Conference Room 12 (CR-12), GA building  
United Nations Headquarters, New York**

# Opening Remarks





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# Setting the Scene



# Acknowledgment



The Academic Network is a formal body consisting of geospatial societies as part of the UN-GGIM Academic Network and is the strategic, knowledge, research, and training arm of UN-GGIM.



Geospatial Societies leverage the work of the UN-GGIM while leveraging global networks. These networks are typically locally organized. In aligning these UN-GGIM working group topics.



# Forum Aims - *Building Technical Capacities*

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Exchange ideas  
on best  
practices and  
technical  
capacities  
available



Examine SDGs  
requirements,  
connections  
and links



Potential  
pathways for  
sustainable and  
resilient future



# Forum Objectives

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## Building Technical Capacities for Resilience and Sustainability *Challenges and Opportunities*

1. Discuss resilience and resilience impact of national land and geospatial.
2. Present the status of geospatial techniques applied for resilience and sustainability.
3. Discuss the current capacity building related to these techniques, identifying the main challenges and designing possible solutions.
4. Develop a roadmap that discusses methods and tools for improving geospatial and land and technical capacity, particularly in (but not limited to) developing countries.
5. Develop a work plan to assist UN-GGIM and member states to respond to the need for developing technical capacity building for resilience and sustainability in the context of SDGs.



# Forum Structure

- Opening
- 2 Sessions
- 10 Presentations
- Open Discussion

TIME	DETAILS
<b>OPENING SESSION</b>	
10:00 – 10:30	<p><b>Welcome and Opening by Forum Co-Chairs</b>            Prof. Abbas Rajabifard (Chair, UN-GGIM Academic Network)            Prof M.J. Kraak (Chair, UN-GGIM Geospatial Societies)</p> <p><b>Opening Remarks</b>            Mr. Stefan Schweinfest (Director, United Nations Statistics Division)-TBC            Mr. Wael Zakout (World Bank Sr. Technical Advisor, Global Lead, Land Policy and Geospatial)</p>
<b>SESSION 1</b>	
	<p><b>Resilience and Sustainability - Challenges and Opportunities</b>            FIG and SDGs, Prof Rudolf Staiger (President, FIG)</p>
10:30 – 11:30	<p>Resilience and Sustainability- Legal Challenges and Requirements, Prof. Harlan Onsrud (Advisory Board, UN-GGIM Academic Network/Director, School of Computing &amp; Information Science, University of Maine)</p> <p>Improving Resilience and Resilience Impact of National Land and Geospatial Systems            Mr. Alvaro Barra (World Bank, Global Land &amp; Geospatial Unit, Social Urban, Rural &amp; Resilience)</p> <p>Supporting Sustainability – Institutional needs and Governance Framework – Prof. Joep Crompvoets (Advisory Board, UN-GGIM Academic Network/KU Leuven)</p> <p>Improving professional skills in support of resilience and Sustainability. The Role of Surveyors in the Era of crowdsourcing and VGI, Prof Chryssy Potsiou (Member of Academic Network, Honorary FIG President)</p>
11:30 – 11:45	BREAK
<b>SESSION 2</b>	
11:45 – 12:50	<p>Open Data and Open Software in Building Technical Capacities-Prof Maria Brovelli (Politecnico di Milano University, Deputy Chair, Academic Network)</p> <p>Mapping for a Sustainable World, Prof. Menno-Jan Kraak (ICA President, Advisory Board, UN-GGIM Academic Network/University of Twente)</p> <p>Prof Songnian Li (ISPRS, Member of Geospatial Societies)</p> <p>Academia underpins insight, innovation and interoperability for resilience and sustainability, Mr Mark Reichardt (OGC Director, Strategic Opportunities)</p> <p>Data Infrastructure and SDGs Dashboard– Prof. Abbas Rajabifard (Chair, UN-GGIM Academic Network/Director, Centre for SDIs &amp; Land Administration, The University of Melbourne)</p>
<b>CLOSING SESSION</b>	
12:50 – 13:00	<p><b>Way Forward and Closing Remarks</b>            Prof. Abbas Rajabifard and Prof M.J. Kraak (Forum Co-Chairs)</p>





# Acknowledgment: Speakers

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# The SDG Report 2019

The Sustainable



“The coming years will be a vital period to save the planet and to achieve sustainable, inclusive human development.”

— ANTONIO GUTERRES  
SECRETARY-GENERAL OF THE UNITED NATIONS

19-06517

ISBN 978-92-1-101403-7



CLOSE TO HALF  
OF EXTREMELY POOR PEOPLE  
ARE CHILDREN UNDER 14 YEARS



YOUTH ARE  
3 TIMES  
MORE LIKELY  
TO BE

UNEMPLOYED  
THAN ADULTS



UN COVERAGE HAS LARGE GAPS



OF PEOPLE  
ABOVE  
RETIREMENT  
AGE RECEIVE  
PENSIONS



OF PEOPLE  
WHO ARE  
UNEMPLOYED  
RECEIVE  
UNEMPLOYMENT  
BENEFITS

Overview



UN-GGIM

Academic Network and Geospatial Societies

[unggim.academicnetwork.org](http://unggim.academicnetwork.org)



# Interlinked Nature of Challenges



# The SDG Report 2019

11 SUSTAINABLE CITIES AND COMMUNITIES

## MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE



2 BILLION PEOPLE

DO NOT HAVE ACCESS TO WASTE COLLECTION SERVICES

1 OUT OF 4 URBAN RESIDENTS LIVE IN SLUM-LIKE CONDITIONS (2018)



ONLY HALF (53%) OF URBAN RESIDENTS HAVE CONVENIENT ACCESS TO PUBLIC TRANSPORT (2018)



150 COUNTRIES HAVE DEVELOPED

NATIONAL URBAN PLANS, WITH ALMOST HALF OF THEM IN THE IMPLEMENTATION PHASE

9 OUT OF 10 URBAN RESIDENTS BREATHE POLLUTED AIR



4 ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

617 MILLION CHILDREN AND ADOLESCENTS LACK MINIMUM PROFICIENCY IN READING AND MATHEMATICS

750 MILLION ADULTS STILL REMAIN ILLITERATE

MORE THAN HALF OF THE SCHOOLS IN SUB-SAHARAN AFRICA LACK ACCESS TO: BASIC DRINKING WATER, SANITIZING FACILITIES, THE INTERNET, COMPUTERS

1 OUT OF 5 CHILDREN BETWEEN AGE 17 YEARS AND NOT ATTENDING SCHOOL

IN CENTRAL ASIA, 27% MORE GIRLS THAN BOYS OF PRIMARY SCHOOL AGE ARE NOT ATTENDING SCHOOL

5 ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

18% OF EVER-PARTNERED WOMEN AND GIRLS AGED 15 TO 49 YEARS HAVE EXPERIENCED PHYSICAL AND/OR SEXUAL PARTNER VIOLENCE IN THE PREVIOUS 12 MONTHS

40% OF WOMEN AGED 15 TO 49 YEARS WHO HAVE EVER BEEN PARTNERED WITH A MAN HAVE EXPERIENCED PHYSICAL AND/OR SEXUAL PARTNER VIOLENCE IN THE PREVIOUS 12 MONTHS

24% OF NATIONAL PARLIAMENTS ARE NOW REPRESENTED BY WOMEN

AT LEAST 200 MILLION SINGLE AND WIDOWED WOMEN HAVE BEEN SUBJECTED TO FEMALE GENITAL MUTILATION

6 ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

785 MILLION PEOPLE REMAIN WITHOUT EVEN BASIC DRINKING WATER SERVICES (2017)

2 OUT OF 5 PEOPLE WORLDWIDE DO NOT HAVE A BASIC SANITIZING FACILITY WITH SOAP AND WATER AT HOME (2017)

1 OUT OF 4 HEALTH-CARE FACILITIES WORLDWIDE LACK BASIC DRINKING WATER SERVICES

673 MILLION PEOPLE (10% OF THE GLOBAL POPULATION) STILL PRACTISE OPEN DEFECATION (2017)

10 REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

IN MORE THAN HALF OF 103 COUNTRIES WITH DATA, INCOME OF THE BOTTOM 40% OF THE POPULATION GREW FASTER THAN THE NATIONAL AVERAGE

IN A RECENT SURVEY OF 103 COUNTRIES, 66% OF COUNTRIES HAVE TAKEN STEPS TO REDUCE INEQUALITY

MOST COUNTRIES HAVE PROMISED TO FACILITATE SAFE AND AFFORDABLE HOUSING, BUT HOW MANY PROMISES ARE MADE TO PROTECT HOMELESS PEOPLE AND HOMELESSNESS WILL REMAIN UNKNOWN

ONLY HALF (53%) OF URBAN RESIDENTS HAVE CONVENIENT ACCESS TO PUBLIC TRANSPORT

11 MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

2 BILLION PEOPLE DO NOT HAVE ACCESS TO WASTE COLLECTION SERVICES

9 OUT OF 10 URBAN RESIDENTS BREATHE POLLUTED AIR

12 ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

THE GLOBAL MATERIAL FOOTPRINT IS RAPIDLY GROWING, OUTPACING POPULATION AND ECONOMIC GROWTH

60% HIGHER NATIONAL FOOTPRINT FOR CEMENT IN HIGH-INCOME COUNTRIES

16 PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS

80% OF HOMICIDE VICTIMS OVERALL ARE MEN

64% OF HOMICIDE VICTIMS ARE WOMEN AND GIRLS

387 ADDITIONAL KILLINGS BY HUMAN RIGHTS DEFENDERS, JOURNALISTS AND TRADE UNIONISTS WERE REPORTED WORLDWIDE IN 2018

46% OF HUMAN RIGHTS DEFENDERS, JOURNALISTS AND TRADE UNIONISTS WERE REPORTEDLY KILLED IN 2018

17 STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

NET ODA TRENDED DOWN BY 2.7% FROM 2017

3% FELL BY IN 2018

4% FELL BY IN 2018

CONVENT COMMITMENTS TO ENHANCE 5.5% OF TOTAL ODA

# The SDG Report 2018 & 2019

The Sustainable Development Goals Report  
2018



## Interlinked nature of the SDGs



*This Forum*  
Building Technical Capacities for Resilience and Sustainability  
*Challenges and Opportunities*





# Requirements: Forum Themes

**Transdisciplinary  
Roadmaps**

**Spatial Enablement**

**Mapping social, economic &  
environmental interconnections for  
sustainable development**

**Building Technical  
Capacities for  
Resilience and  
Sustainability  
in the context of  
**SDGs****

**Enabling tools for  
the SDGs addressing  
Resilience and  
Sustainability**

**Capacity  
Building &  
Training**

**Geospatial  
Technologies  
& Platforms**

**Utilize Urban Analytics to  
enhance social and spatial  
attributes of communities**

**Spatial Data  
Infrastructures**

**Interdisciplinary  
research frameworks**





# INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK (IGIF) TO SUPPORT **SDGs**



UN-GGIM

United Nations Secretariat  
Global Geospatial Information Management

*Positioning geospatial information to address global challenges*  
[ggim.un.org](http://ggim.un.org)



## VISION

The efficient use of geospatial information by all countries to effectively measure, monitor and achieve sustainable social, economic and environmental development – leaving no one behind

## MISSION

To promote and support innovation and provide the leadership, coordination and standards necessary to deliver integrated geospatial information that can be leveraged to find sustainable solutions for social, economic and environmental development.

## STRATEGIC DRIVERS

National Development Agenda • National Strategic Priorities • National Transformation Programme • Community Expectations • Multilateral trade agreements • Transforming our World: 2030 Agenda for Sustainable Development • New Urban Agenda • Sendai Framework for Disaster Risk Reduction 2015–2030 • Addis Ababa Action Agenda • Small Island Developing States Accelerated Modalities of Action (SAMOA Pathway) • United Nations Framework Convention on Climate Change (Paris Agreement) • United Nations Ocean Conference: Call for Action

## UNDERPINNING PRINCIPLES

Strategic  
Enablement

Transparent  
and  
Accountable

Reliable,  
Accessible and  
Easily Used

Collaboration  
and  
Cooperation

Integrative  
Solution

Sustainable and  
Valued

Leadership and  
Commitment

## GOALS

Effective Geospatial  
Information Management

Sustainable Education and  
Training Programs

Increased Capacity,  
Capability and Knowledge  
Transfer

International Cooperation  
and Partnerships Leveraged

Integrated Geospatial  
Information Systems and Services

Enhanced National Engagement  
and Communication

Economic Return on  
Investment

Enriched Societal Value and  
Benefits

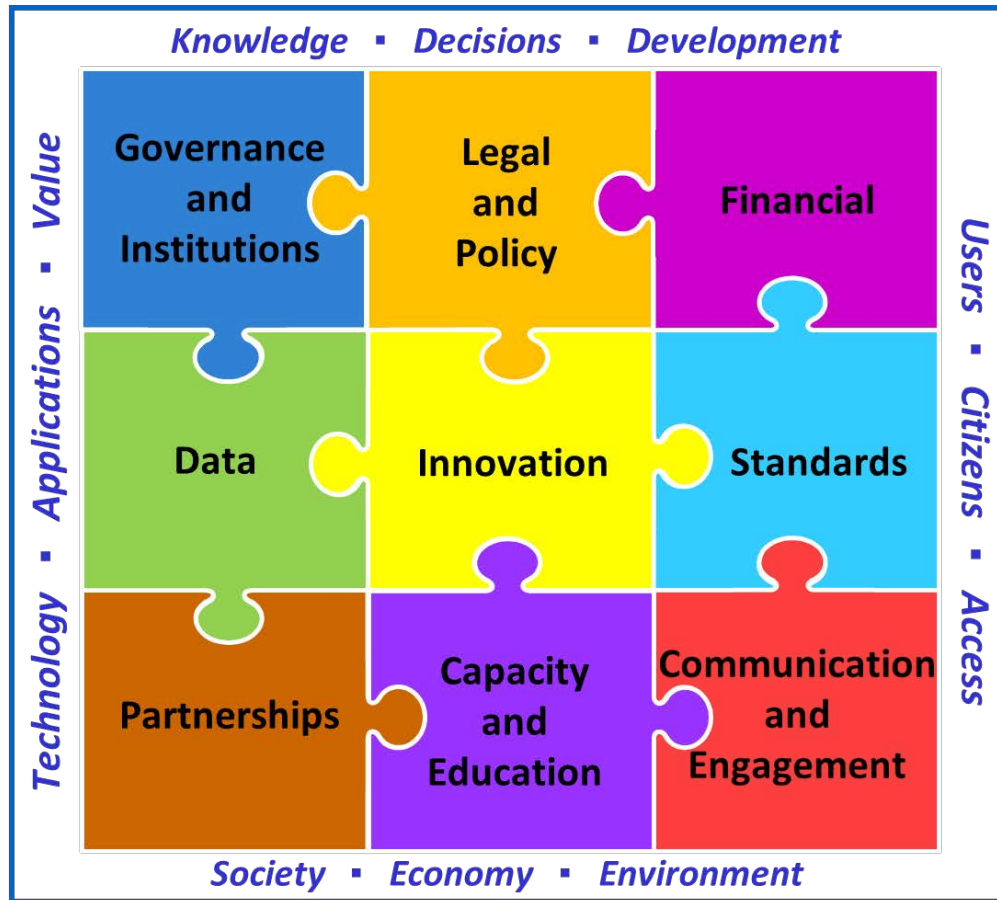


# 9 Strategic Pathways

Governance →

Technology →

People →



Anchored by 9 Strategic Pathways, the Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps.



# Forum Objectives – *Opportunity for Discussions*

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## Building Technical Capacities for Resilience and Sustainability - *Challenges and Opportunities*

1. Discuss **resilience and resilience impact** of [national land and geospatial](#).
2. Present the **status of geospatial techniques** applied for resilience and sustainability.
3. Discuss the **current capacity building** related to these techniques, **identifying the main challenges and designing possible solutions**.
4. Develop a **roadmap** that discusses **methods and tools for improving** geospatial and land and technical capacity, particularly in (but not limited to) developing countries.
5. **Future workplan** to assist UN-GGIM and member states **to respond to the need for developing technical capacity building for resilience and sustainability** in the context of SDGs.



# Presentation Themes

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## Today's Discussions

### Connectivity

Urban Analytics  
Mapping SDG  
Indicators  
Monitoring  
Progress  
SDGs  
Interactions

### Sustainability

Land  
Administration  
Governance  
Framework

### Resilience

Resilient Cities  
Resilience  
Impact of  
National Land  
and Geospatial  
Systems  
Urban Resilience



