The role of Cartography as enabler of geospatial knowledge

Georg Gartner
President, International Cartographic Association

UN GeoNow Week 2025, Deqing

The ICA and the UN-GGIM

- The ICA is a founding international professional society of the Geospatial Society thematic network of the UN-GGIM
- Served as the leader of the Geospatial Societies for several terms

The Strength of the ICA

- **People**
  - 28 Commissions and 1 Working Group focused on specific cartographic and geospatial topics
- **Conferences**
  - International Cartographic Conferences (ICCs)
    - 2021 Florence, Italy (Europe)
    - 2023 Cape Town, South Africa (Africa)
    - 2025 Vancouver, Canada (Americas)
    - 2027 Warsaw, Poland (Europe)
  - Regional Cartographic Conferences (RCCs)
    - 2022 EuroCarto, Vienna
    - 2022 AutoCarto, Redlands
    - 2024 EuroCarto, Vienna
    - 2024 AsiaCarto, HongKong
- **Publications**
  - International Journal of Cartography (peer reviewed)
  - ICA News
  - eCARTO News
  - ICA website – www.icaci.org
  - ICC Proceedings

ICA National Members

- National Mapping and Geospatial Agency
  - National Geographical Institute
  - Department of Surveys and Mapping
  - Geographical Military Institute
- National Cartographic Association
- National Committee for Cartography

ICA Members

ICA Collaborations

- One of the founding organizations of the UN-GGIM Geospatial Societies Network
- Member of the International Science Council ISC and the OGC
- MOUs with many organizations (currently: 11)

Four UN Initiatives of Interest to ICA

- Sustainable Development Goals (SDGs)
- Integrated Geospatial Information Framework (IGIF)
- Global Statistical Geospatial Framework (GSGF)
- UN Centres of Excellence (China, Germany, and Saudi Arabia)

A GOAL for ICA:
"Actionable" Cartography and GIScience

- There are more problems to solve than there are workable solutions to help them go away.
- Many challenges can be solved with existing data and simple solutions.
  - Keep it simple; keep it simple; keep it simple…

ICA Commissions

- Atlases
- Cartography and Sustainable Development * *new:* aligned to SDGs
- Cartography in Early Warning and Crisis Management
- Cognitive Issues in Geographic Information Visualization
- Digital Transformation of National Mapping Agencies * *new:* aligned to IGIF
- Education and Training opportunities for collaboration with GGKIC
- GeoAI * *new:* potential alignment with the proposed Centre in Riyadh
- Geospatial Analysis and Modeling
- Geospatial Data Analytics * *new:* potential alignment with Geospatial Societies

ICA Commissions

- Integrated Geospatial Information for Cartography * *new:* aligned to IGIF
- Location Based Services
- Map Design
- Map Projections
- Maps and the Internet
- Marine Cartography
- Topographic Mapping
- Toponymy
- Ubiquitous Mapping

ICA Commission Alignment to Current Needs: The Integrated Geospatial Information Framework IGIF

1. Cartography in Early Warning And Crisis Management
1. Digital Transformation of NMAs

4. Topographic Mapping
4. Atlases
4. Geospatial Data Analytics
4. Marine Cartography

5. Cognitive Issues in Geo Visualization
5. Geospatial Analysis and Modeling
5. Location Based Services
5. GeoAI
5. Ubiquitous Mapping

6. SDI and Standards

7. Sustainable Development

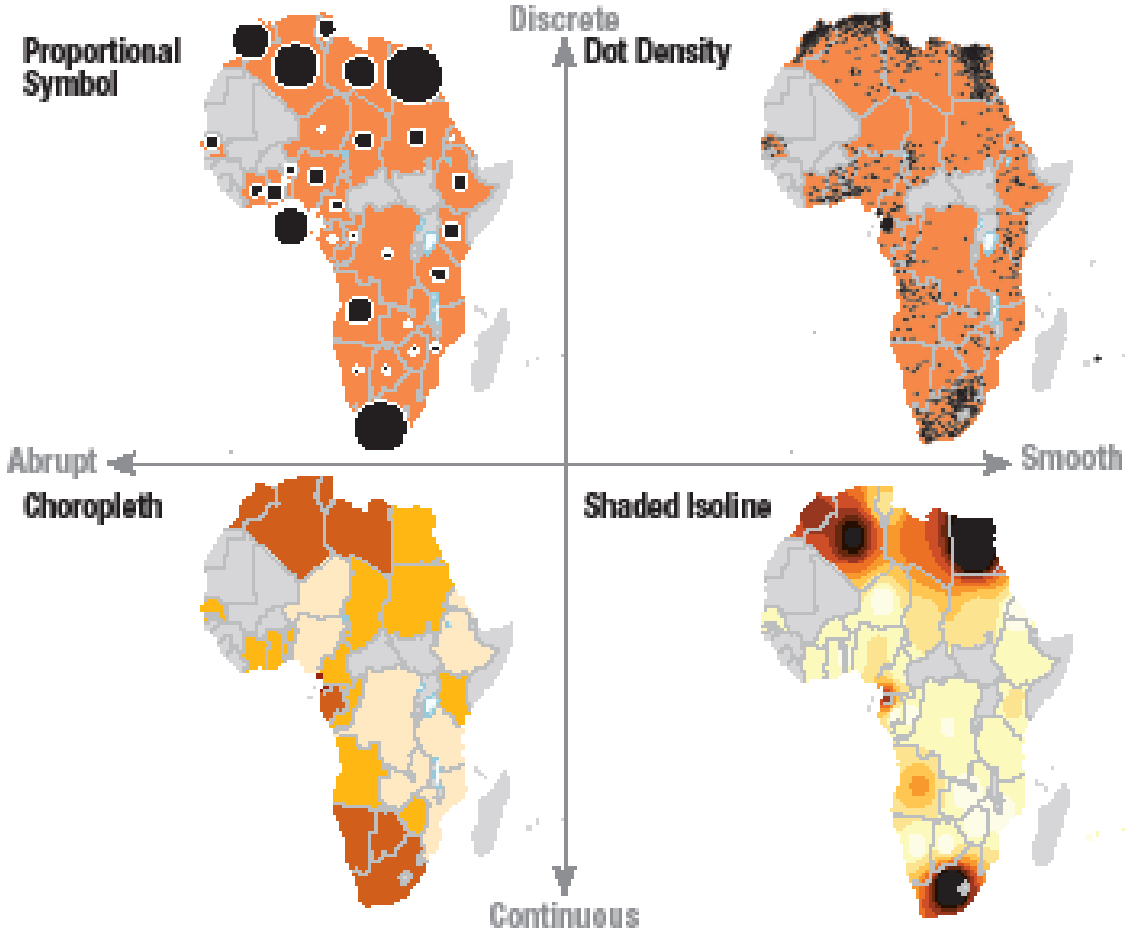
8. Education and Training
8. Cartography and Children

All. Integrated Geospatial Information for Cartography (IGIF)

Information is Oftentimes Complicated

- This is what cartographers are good at…
  - Selecting information that is most important
    - Eliminating or reducing unnecessary noise
  - Generalizing to aid in understanding
  - Simplifying to help focus attention
  - Displacing to include necessary content
  - Designing maps and cartographic visualizations to effectively communicate the message
  - …by using geodata integrated with other data types…

Different thematic map types using the same geodata

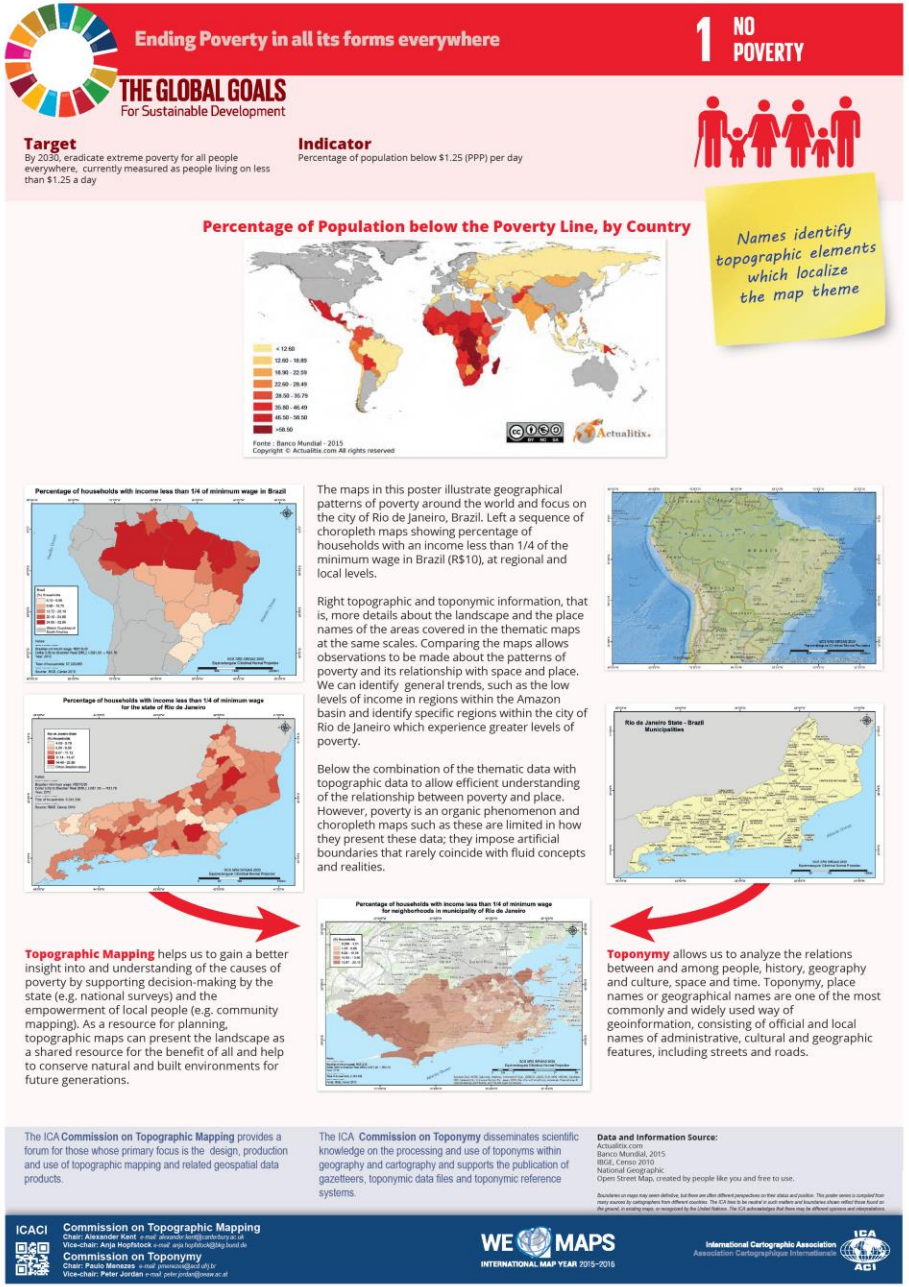


ICA and the SDGs

- **Full-Sized ICA Posters on the 17 SDGs**
  - https://icaci.org/maps-and-sustainable-development-goals/

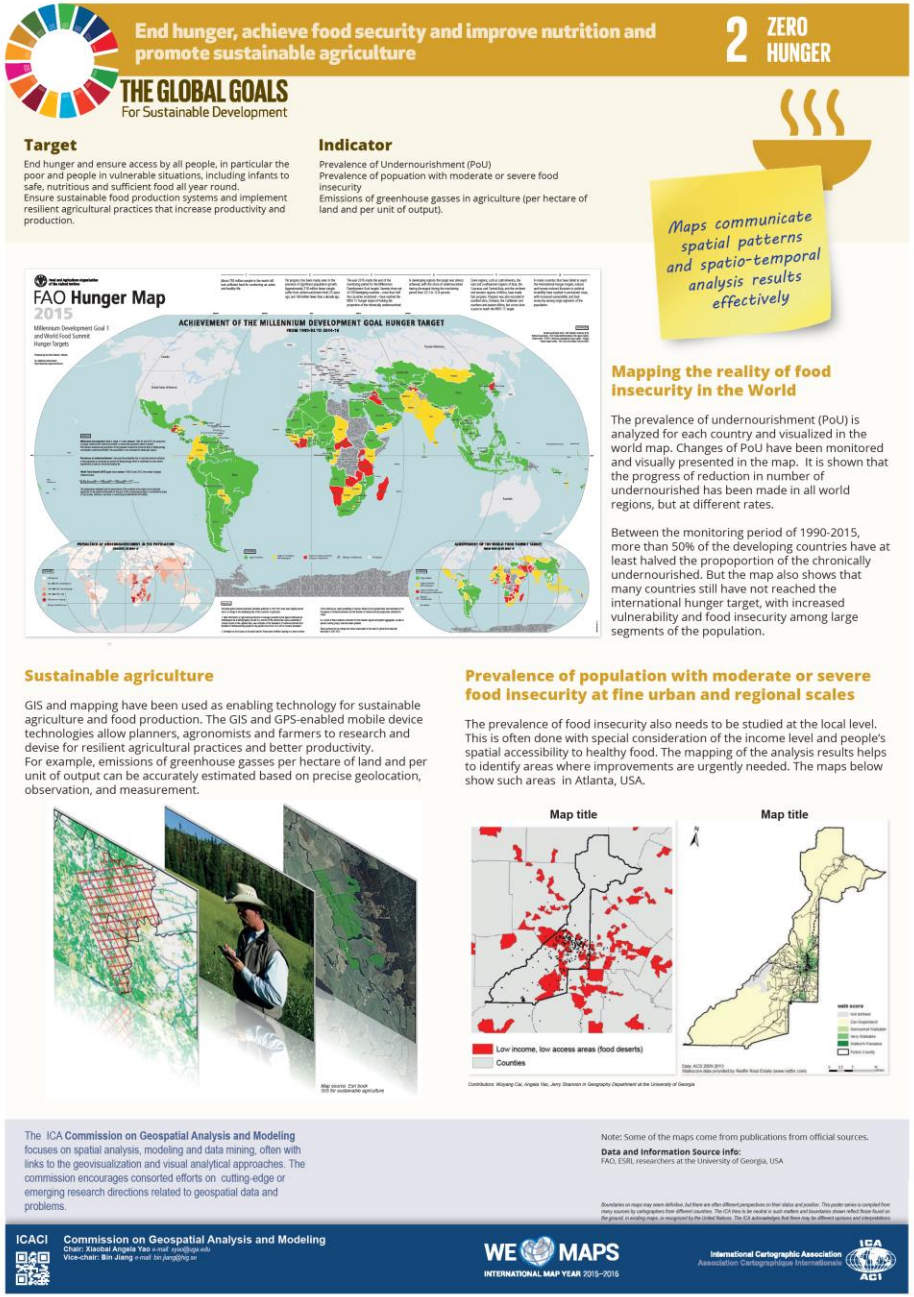
ICA and SDG Goal 1

No poverty



ICA and SDG Goal 2

End hunger



ICA and SDG Goal 4

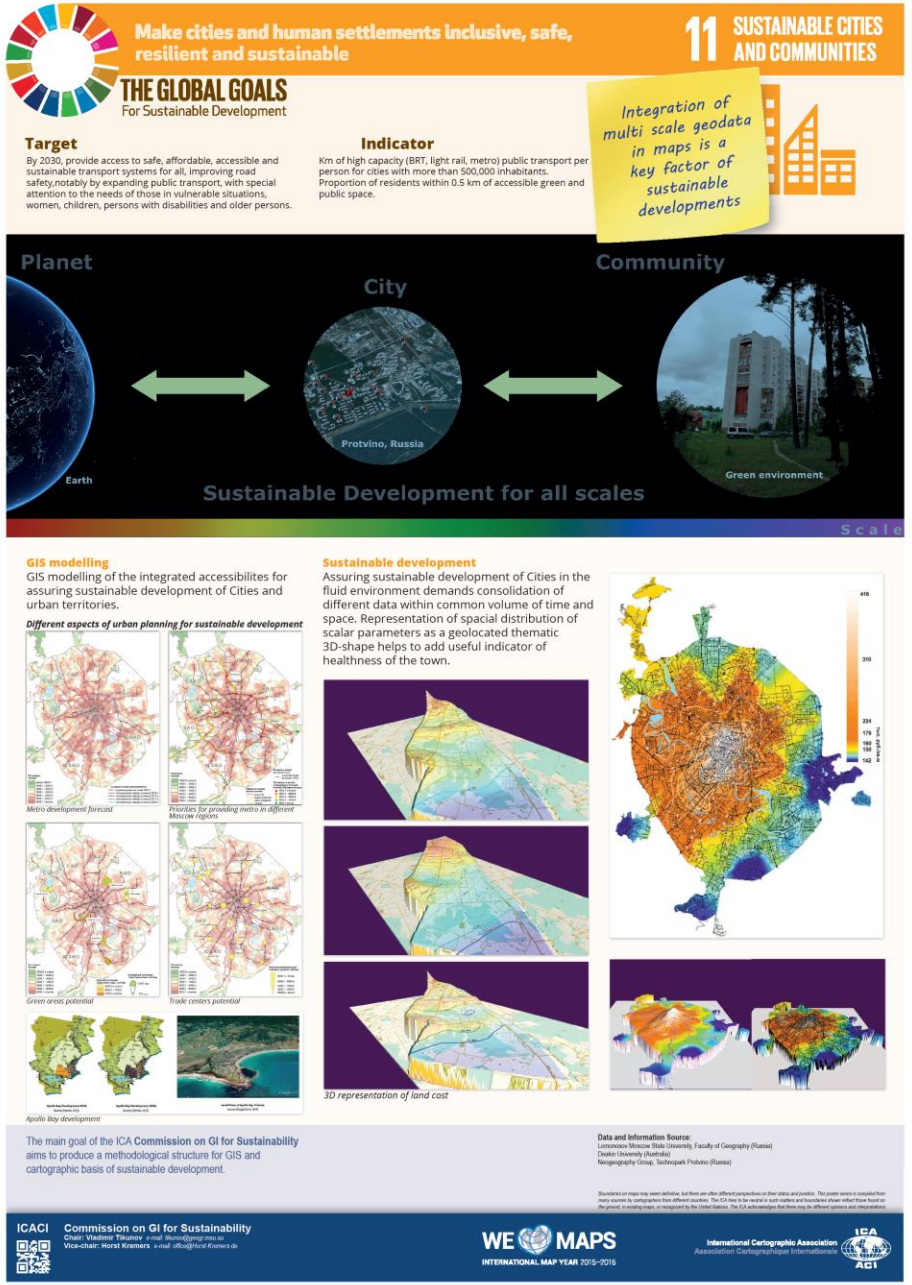
Quality education

ICA and SDG Goal 9

Industry, Innovation, and Infrastructure

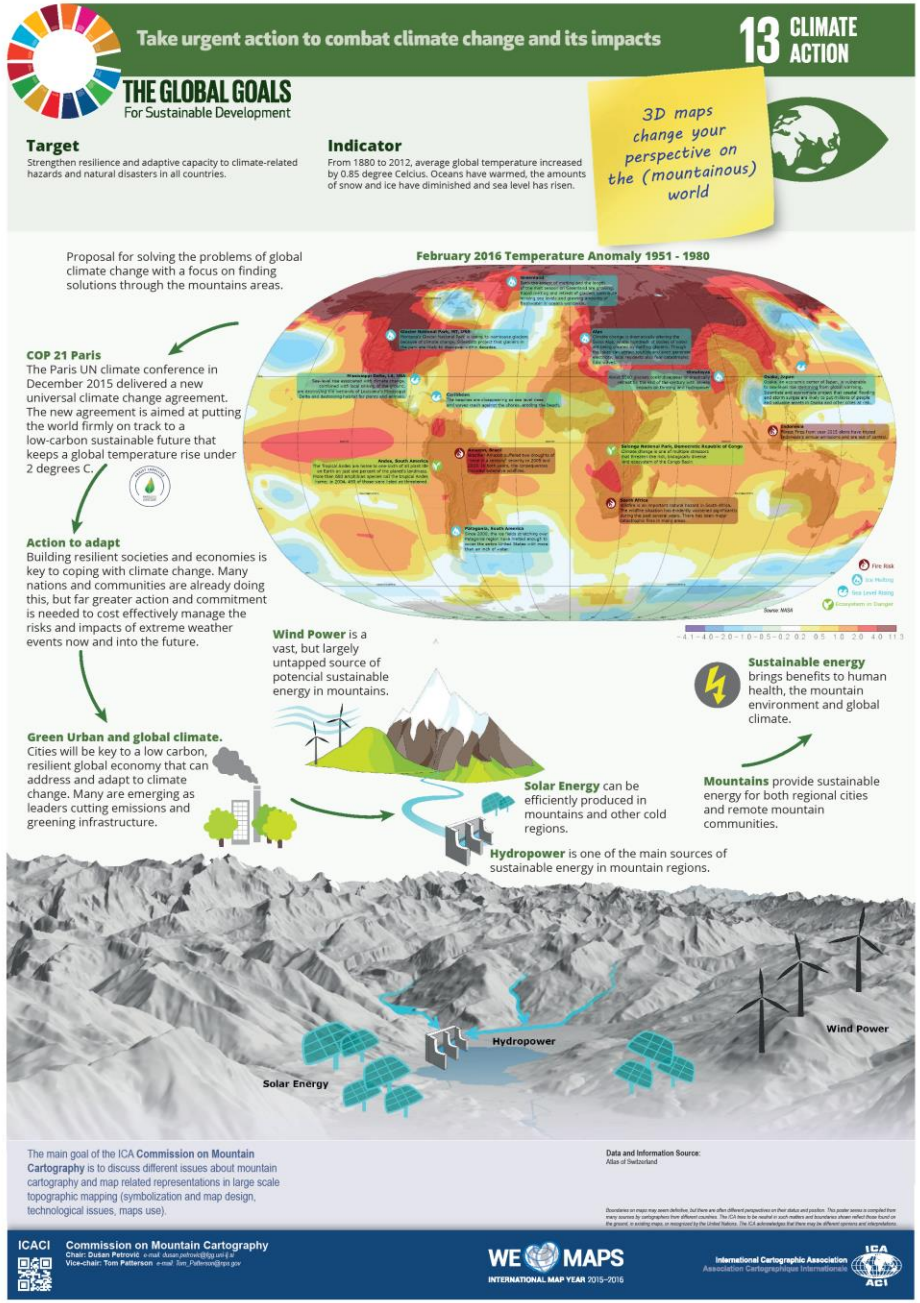
ICA and SDG Goal 11

Sustainable Cities and Communities



ICA and SDG Goal 13

Climate Change



Atlas of Sustainability

Let’s make the world a better place with maps