The International Cartographic Association
Maps and the Sustainable Development Goals

Menno-Jan Kraak
UNIVERSITY OF TWENTE,
The International Cartographic Association

Maps and the Sustainable Development Goals

• ICA

• Cartography and Maps

• Sustainable Development Goals
Map minded Estonia
Map minded
Estonia
ICA's Members and International Cartographic Conferences

1962 Frankfurt am Main
1964 London/Edinburgh
1967 Amsterdam
1968 Dehli
1970 Stresa
1972 Ottawa
1974 Madrid
1976 Moscow
1978 College Park
1980 Tokyo
1982 Warszawa
1984 Perth
1987 Morelia
1989 Budapest
1991 Bournemouth
1993 Cologne
1995 Barcelona
1997 Stockholm
1999 Ottawa
2001 Beijing
2003 Durban
2005 Coruna
2007 Moscow
2009 Santiago
2011 Paris
2013 Dresden
2015 Rio de Janeiro
2017 Washington
2019 Tokyo
2021 Florence
Origin of Commission and Working Group Chairs

Borders and names as of today
Number of Executive Committee members by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Officers</th>
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International Cartographic Association
Association Cartographique Internationale

UNIVERSITY OF TWENTE.
Location Executive Committee members over time

Borders and names as of today
Executive Committee members by country over time

Cartography and maps

CARTOGRAPHY

art

science

technology

making

using

MAPS

Tools

Process
Sustainability of the definition
Maps

A map is a visual representation of an environment

- maps tell stories
- maps invite
- maps show patterns
- maps reveal relationships

- maps explain
- maps provide overview
- maps offer insight
- maps are an interface to the world

Maps that matter should **raise interest**, be **engaging, instantly understandable**, and be **relevant to society**
Want to read it over.....
What about Maps and Sustainability

Cartography / Maps

Sustainability

Global Development Goals
How can maps be relevant for the global development goals?
Example: Goal 4 Education

- **Goals**
  
  Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

- **Targets**
  
  4.1  4.2  4.3  4.4  4.5  4.6  4.7

- **Indicators**
  
  4.1.1  4.2.1  4.3.1  4.4.1  4.5.1  4.6.1  4.7.1
  4.1.2  4.2.2  4.4.2  4.6.2  4.7.2

Goal 4: Education - Sample Targets

- **4.1** By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
- **4.2** By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
- **4.3** By 2030, ensure ........
- .....
Goal 4: Education - Sample Indicators

- **4.1** By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
  - **Indicator 4.1.1** Percentage of children who achieve minimum proficiency standards in reading and mathematics at end of: (i) primary (ii) lower secondary
  - **Indicator 4.1.2** Completion rate (primary, lower secondary, upper secondary)

- **4.2** By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
  - **Indicator 4.2.1** Early Childhood Development Index
  - **Indicator 4.2.2** Participation rate in organized learning (one year before the official primary entry age)
### Goal 4: Education - Analyzing the data

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
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<tbody>
<tr>
<td>4.1.1</td>
<td>% minimum proficiency</td>
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<td>4.1.2</td>
<td>Completion rate levels of education</td>
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<tr>
<td>4.2.1</td>
<td>Early Childhood Development Index</td>
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<td>4.2.2</td>
<td>Participation rate in organized learning</td>
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<td>4.3.1</td>
<td>Enrollment ratios by level and type</td>
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<tr>
<td>4.4.1</td>
<td>Participation rate among 25-65 years</td>
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<tr>
<td>4.4.2</td>
<td>% of computer and information literate</td>
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<td>4.5.1</td>
<td>Parity indices (female/male, urban/rural, .</td>
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<tr>
<td>4.6.1</td>
<td>% of proficient</td>
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<tr>
<td>4.6.2</td>
<td>Youth/adult literacy rate</td>
</tr>
<tr>
<td>4.7.1</td>
<td>% of 13yrs promoting governance</td>
</tr>
<tr>
<td>4.7.2</td>
<td>% of 15yrs proficiency of environmental science and geoscience</td>
</tr>
</tbody>
</table>
http://icaci.org/maps-and-sustainable-development-goals
Map design makes a difference because it is key to effective communication.
At the UN-GGIM
Lessons learned: sensitivity

- Language
- Base map
- Content
- Cartographic representation
- Graphic Quality

South Sudan

Western Sahara

NOTE

The objective of this exhibit is to display the power and importance of cartography and maps for sustainable development and the SDGs.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Should you have any questions and or concerns with the information shown on the posters/maps please contact the relevant Member State or the International Cartographic Association (ICA).
SDG data analysis

SDG data analysis

Select map / diagram type

SDG data analysis

Theme indicators qualitative, quantitative (rel/abs)

Location geographic unit regions continents


Topic symbology visual variables perceptual properties

Base map scale projection

Display options dynamics / Interaction

Environment

traditional and alternative visual representations

Bad maps to appreciate the good maps

New project Book with do’s and don’ts for SDG mapping
Future of cartography

Coding
Computation
Open

Data

Cartographer
Artist
Graphic Designer

Design

Interaction
Personalization
Story telling

Media

data

cartographic visualization

map

cartographers

International Cartographic Association
Association Cartographique Internationale
Our smart future

- **Cartography** is ready for tomorrow. However, we have to remain innovative and open, so we can handle societal and technological changes, without compromising on fundamental cartographic values, but also be willing to extend these values.

- The map has become an interactive, mobile, dynamic and collaborative interface between humans and the dynamically evolving environment.

- Today’s **cartographer** should be creative and be able to design maps for personalized interaction to reveal (hidden) stories. The cartographer should be able to code to hack the data, be cooperative with both graphic designers and data visualizers as well as (geo)scientists who know the problems and stories behind the data.
Let’s make the world a better place with maps