Draft Declaration

Presented by
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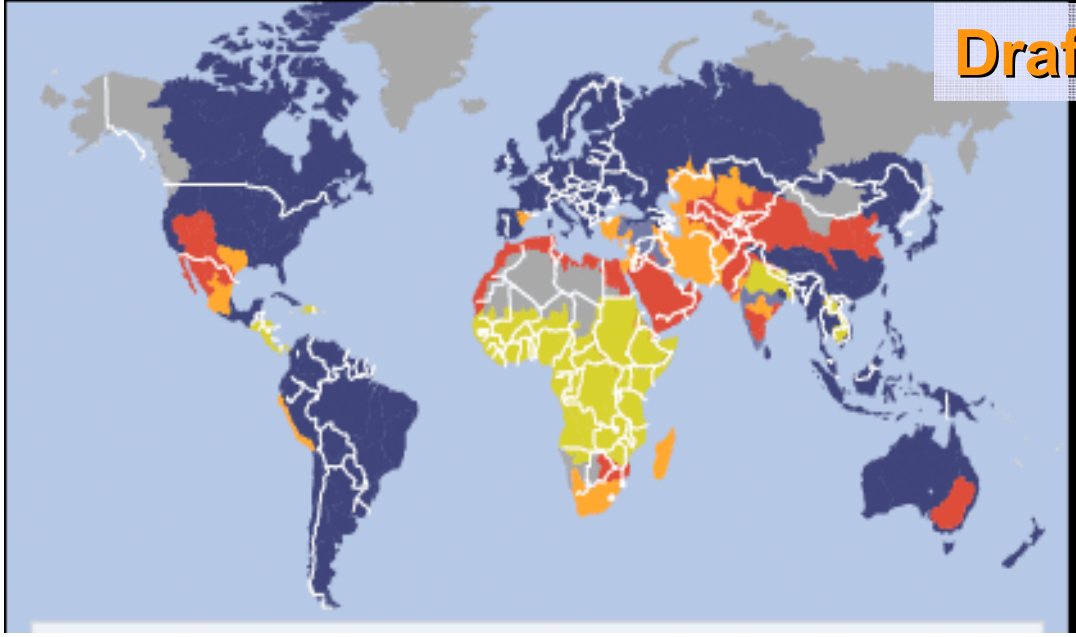
- Target audience: GEO Plenary, November 17-18, 2009
- Goal: Bring the roadmap to the attention of the Plenary, emphasize key benefits and challenges that require decisions

Draft Declaration: Societal Motivation

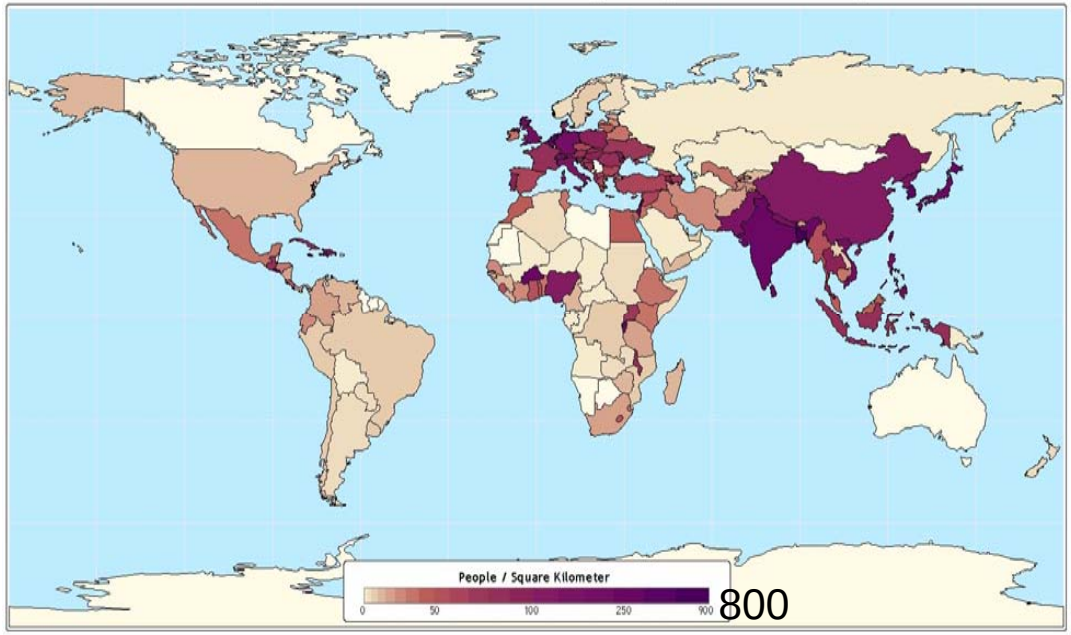
Little or no water scarcity
Not estimated
Approaching physical water scarcity
Physical water scarcity
Economic water scarcity

Source: International Water Management Institute

Draft Declaration: Societal Motivation



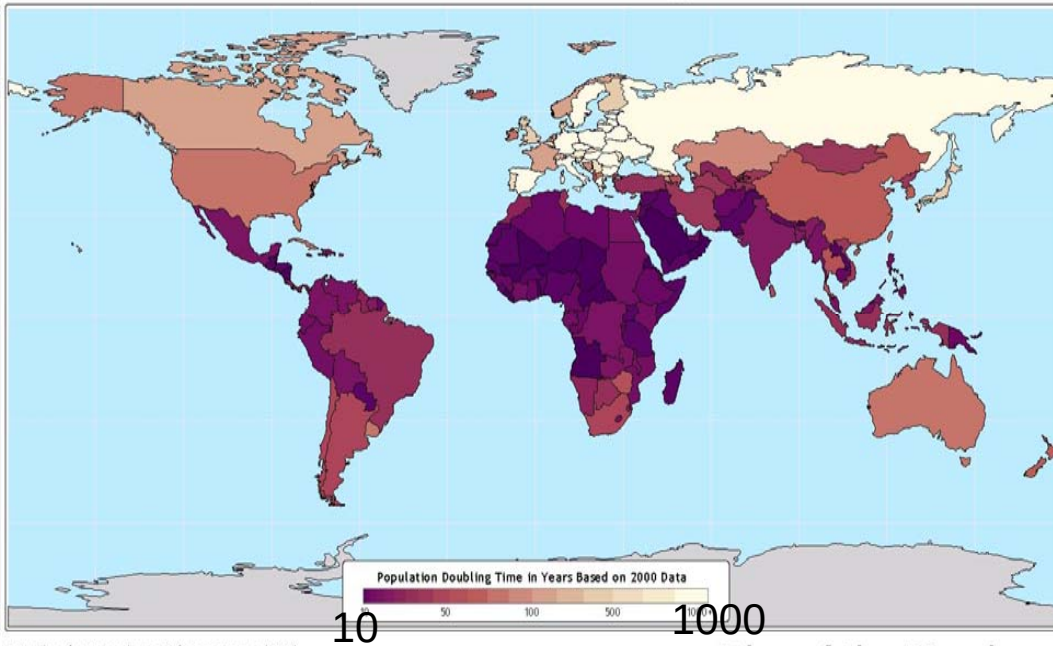
Population Density by Country



Data taken from: ESRI (2000)

Atlas of the Biosphere
Center for Sustainability and the Global Environment
University of Wisconsin - Madison

Population Doubling Time



Data taken from: Population Reference Bureau (2000)

Atlas of the Biosphere
Center for Sustainability and the Global Environmen
University of Wisconsin - Madiso

Draft Declaration: Societal Motivation

- Pressure on water resources is rising (food, energy, industry, urban uses);
- climate change and human interference are changing the water cycle, with potentially major impacts (droughts, floods, sea level rise, ...);
- 1 billion people without access to sufficient drinking water,
- United Nations Water Report (2006): Access to water is not so much a problem of abundance but of governance
- Important for governance: understanding of water cycle, quantitative information

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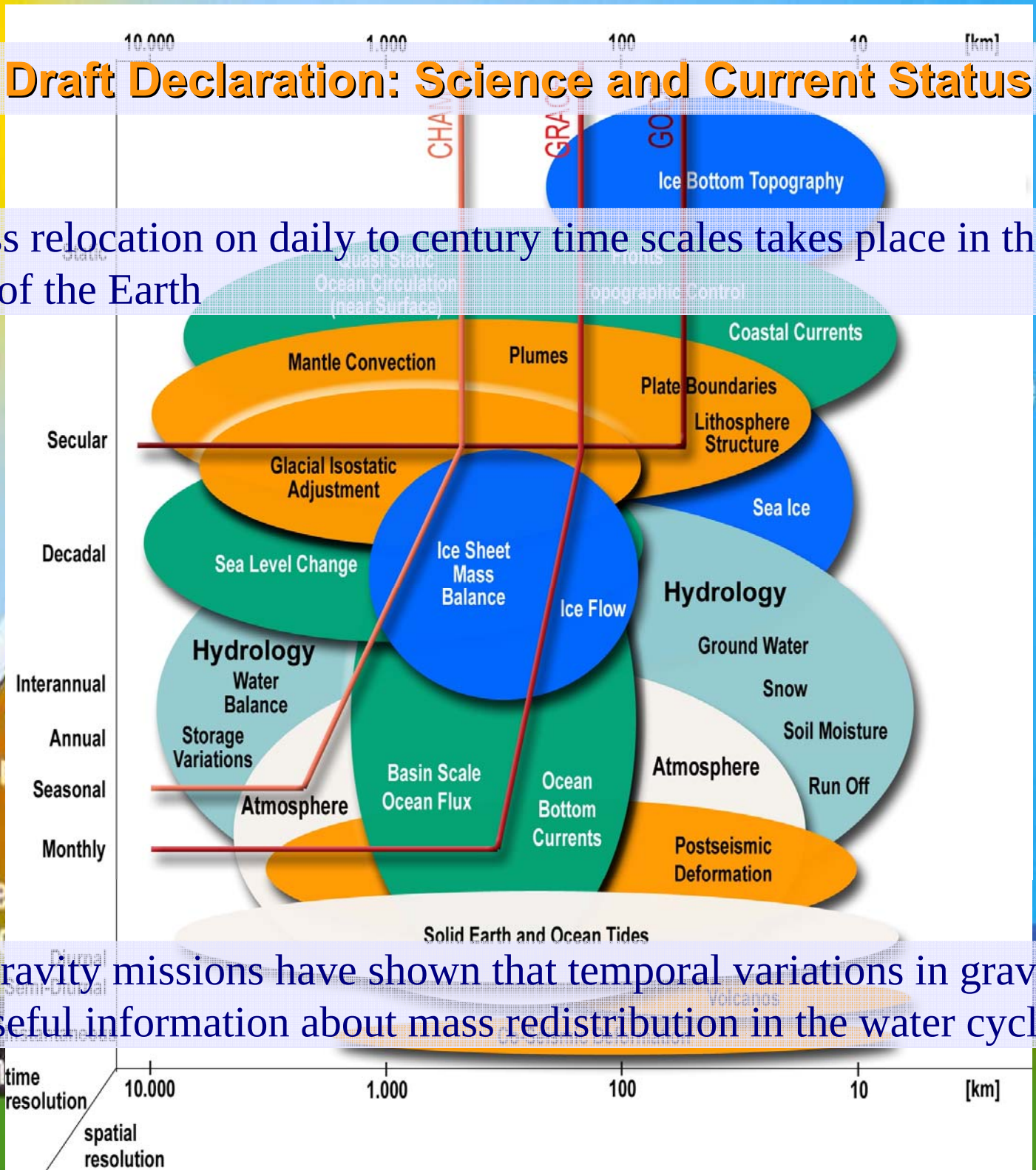
Draft Declaration: Science and Current Status

- Most mass relocation on daily to century time scales takes place in the fluid envelope of the Earth



- satellite gravity missions have shown that temporal variations in gravity changes contain useful information about mass redistribution in the water cycle

Draft Declaration: What could be done and achieved ?

Steps towards major benefits:
- uninterrupted sequence of satellite gravity missions
- scientific and technological developments to support better understanding and quantification of the water cycle;
- virtual constellation for mass relocation;

What we want/hope for:
- bring the roadmap to the attention of the GEO Plenary;
- a major international effort to implement the roadmap, i.e.
  * facilitate the science and technology development;
  * realize the missions.