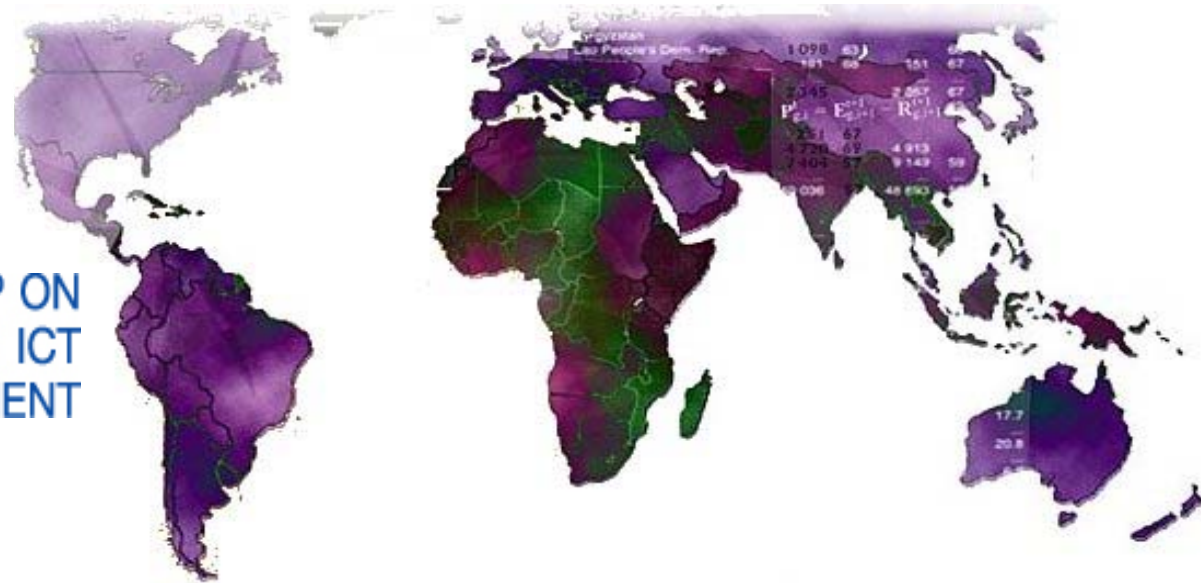




United Nations
Educational, Scientific and
Cultural Organization

UNESCO
INSTITUTE
for
STATISTICS



**PARTNERSHIP ON
MEASURING ICT
FOR DEVELOPMENT**

STI Indicators in the Global SDG Indicator Framework

Monitoring Science, Technology and Innovation for the Sustainable Development Goals

WSIS Forum 2016 - ICT Statistics in support of the 2030 Agenda

Geneva, 2 May 2016

Martin Schaaper, UNESCO Institute for Statistics



UNESCO Institute for Statistics (UIS)

- United Nations data repository for:
 - Education
 - *Science, Technology and Innovation*
 - Culture
 - *Communication and Information*



United Nations
Educational, Scientific and
Cultural Organization

UNESCO
INSTITUTE
for
STATISTICS



UIS is the UN lead agency for STI statistics

- ❑ Official STI data source for:
 - UNESCO Science Report
 - UNESCO World Social Sciences Report
 - UN Statistical Division: UN Statistical Year Book
 - UNDP: Human Development Report
 - World Bank: World Development Indicators
 - Global Innovation Index (partly)
- ❑ UIS website (<http://www.uis.unesco.org>)
 - Data centre
 - STI Information papers, fact sheets, eAtlas on R&D statistics, data viz. on women in science

STI and the SDGs

- 17 Goals, but none specifically for STI (although innovation appears in Goal 9)



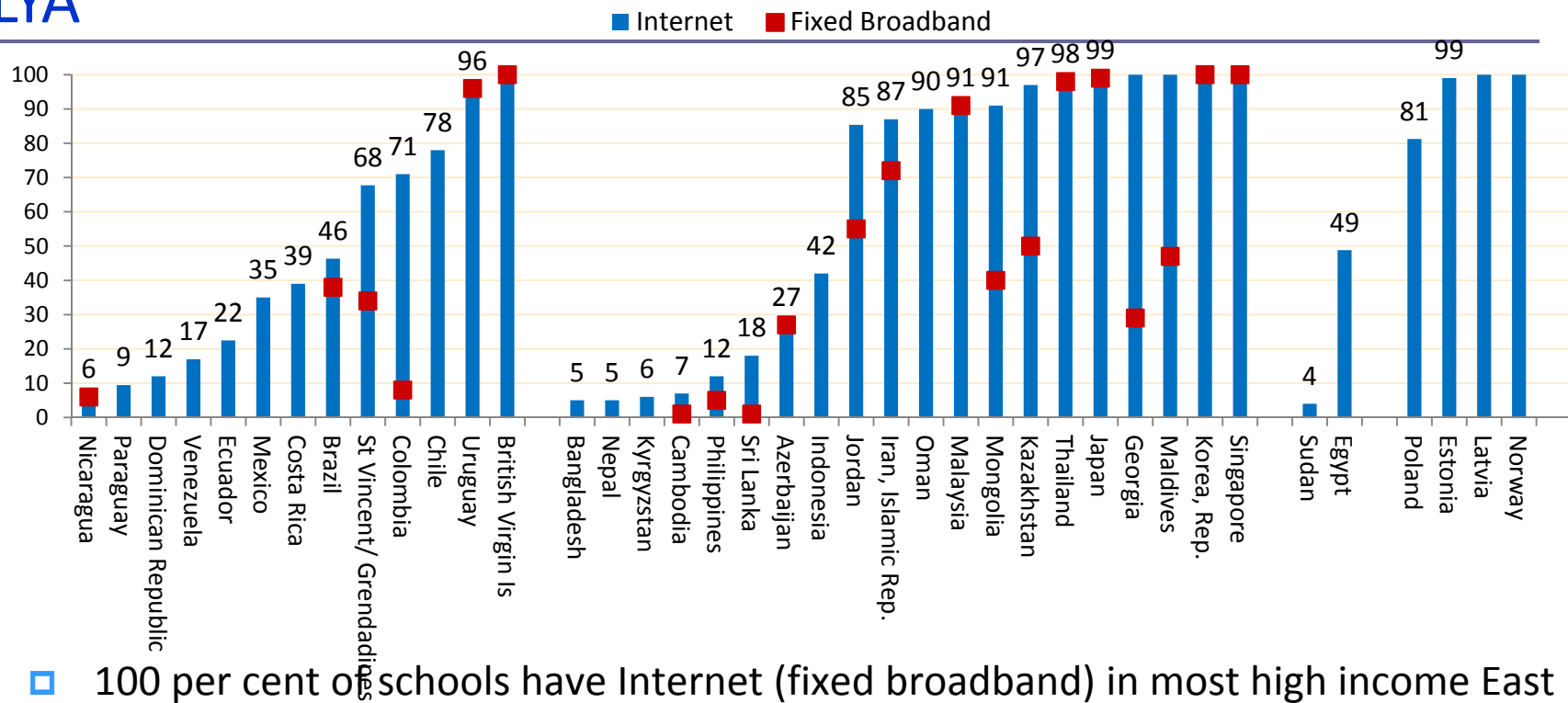
Selected targets

- ❑ 2a. Increase investment in **agricultural research**
- ❑ 3b. Support the **research and development of vaccines and medicines** for the communicable and non-communicable diseases
- ❑ 7a. facilitate access to **clean energy research and technology**
- ❑ 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and **innovation**
- ❑ 8.3 Promote development-oriented policies that support **entrepreneurship, creativity and innovation**
- ❑ 9.5 Enhance **scientific research, encouraging innovation**
- ❑ 9b. Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive **policy environment**
- ❑ 14a. Increase scientific knowledge, develop **research capacity** and transfer **marine technology**
- ❑ 17.6 Enhance North-South, South-South and triangular regional and international **cooperation on and access to science, technology and innovation**
- ❑ 17.8 Fully operationalize the **technology bank and science, technology and innovation capacity-building mechanism** for least developed countries

Selected indicators

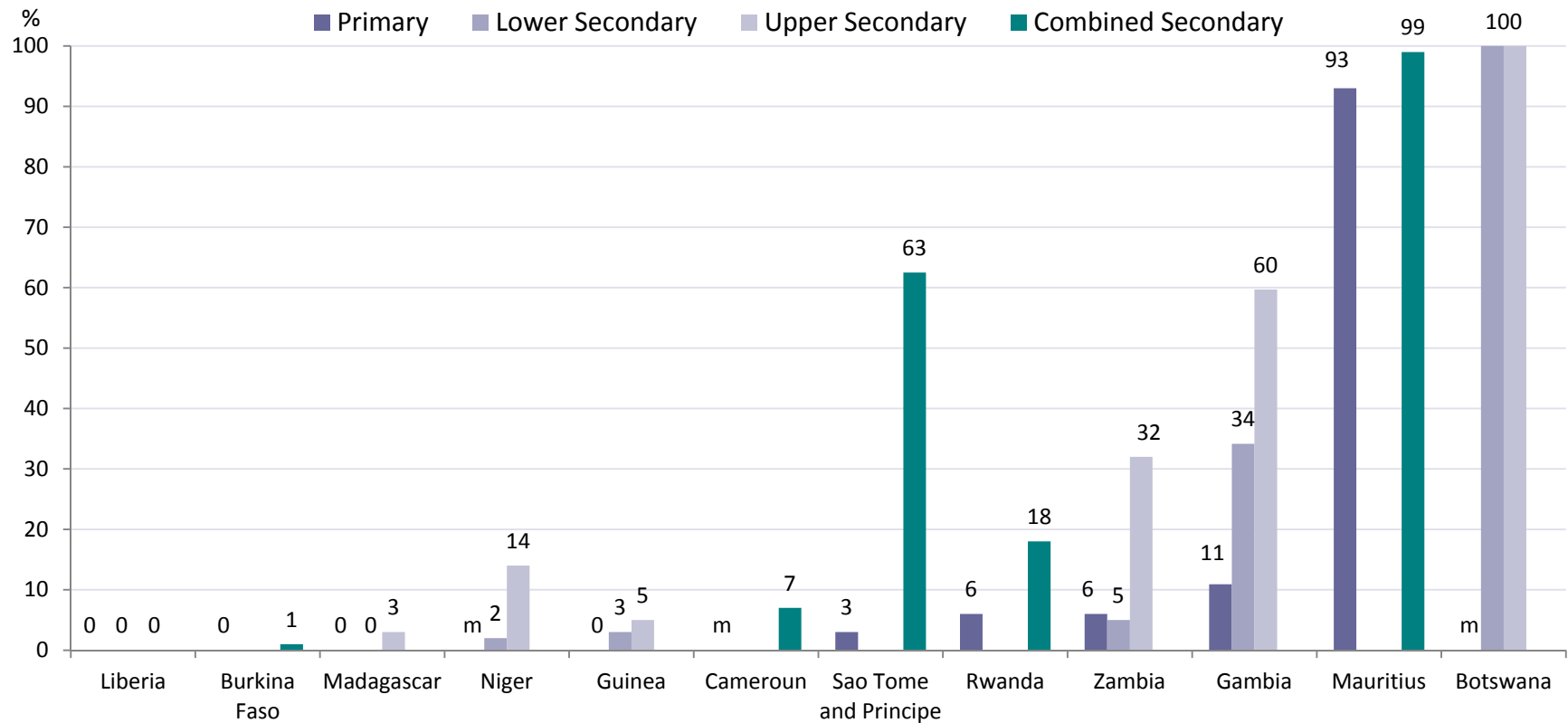
- ❑ 3.b.2 Total net official development assistance to medical research and basic health sectors
- ❑ 4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) etc.
- ❑ 9.5.1 Research and development (R&D) expenditure as a proportion of GDP
- ❑ 9.5.2 Researchers (in full-time equivalent) per million inhabitants
- ❑ 14.a.1 Proportion of total research budget allocated to research in the field of marine technology
- ❑ 17.6.1 Number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation

Educational institutions with Internet, or fixed broadband, combined primary and secondary, 2012 or LYA

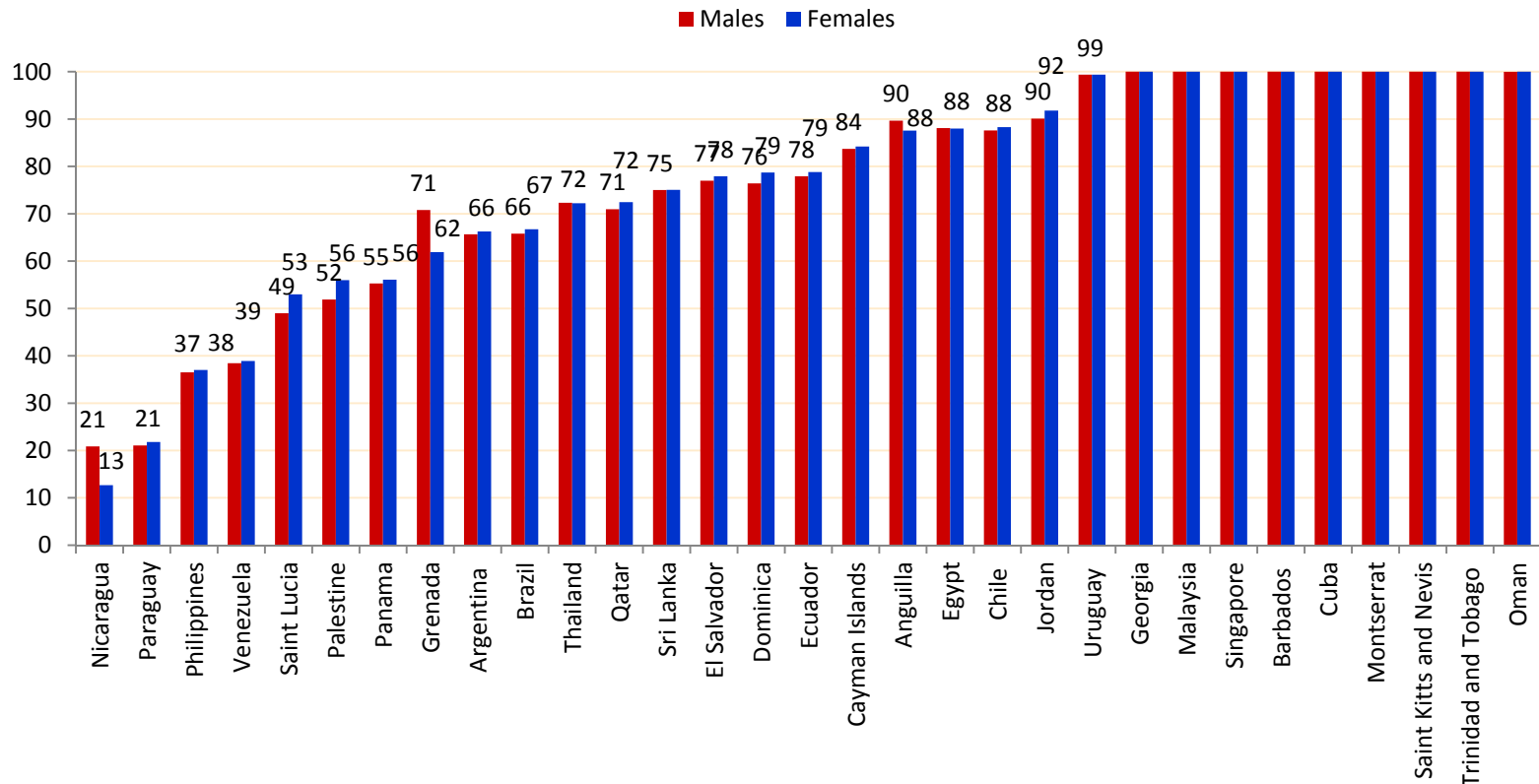


- ❑ 100 per cent of schools have Internet (fixed broadband) in most high income East Asian, Caribbean, and European countries
- ❑ Least common in low income and least developed countries (LDCs)
- ❑ Fixed broadband Internet varies from all to less than 50% of all Internet connections
- ❑ Some evidence of a leapfrogging phenomenon in some LDCs

Proportion of educational institutions with Internet, sub-Saharan Africa, 2013 or latest year available

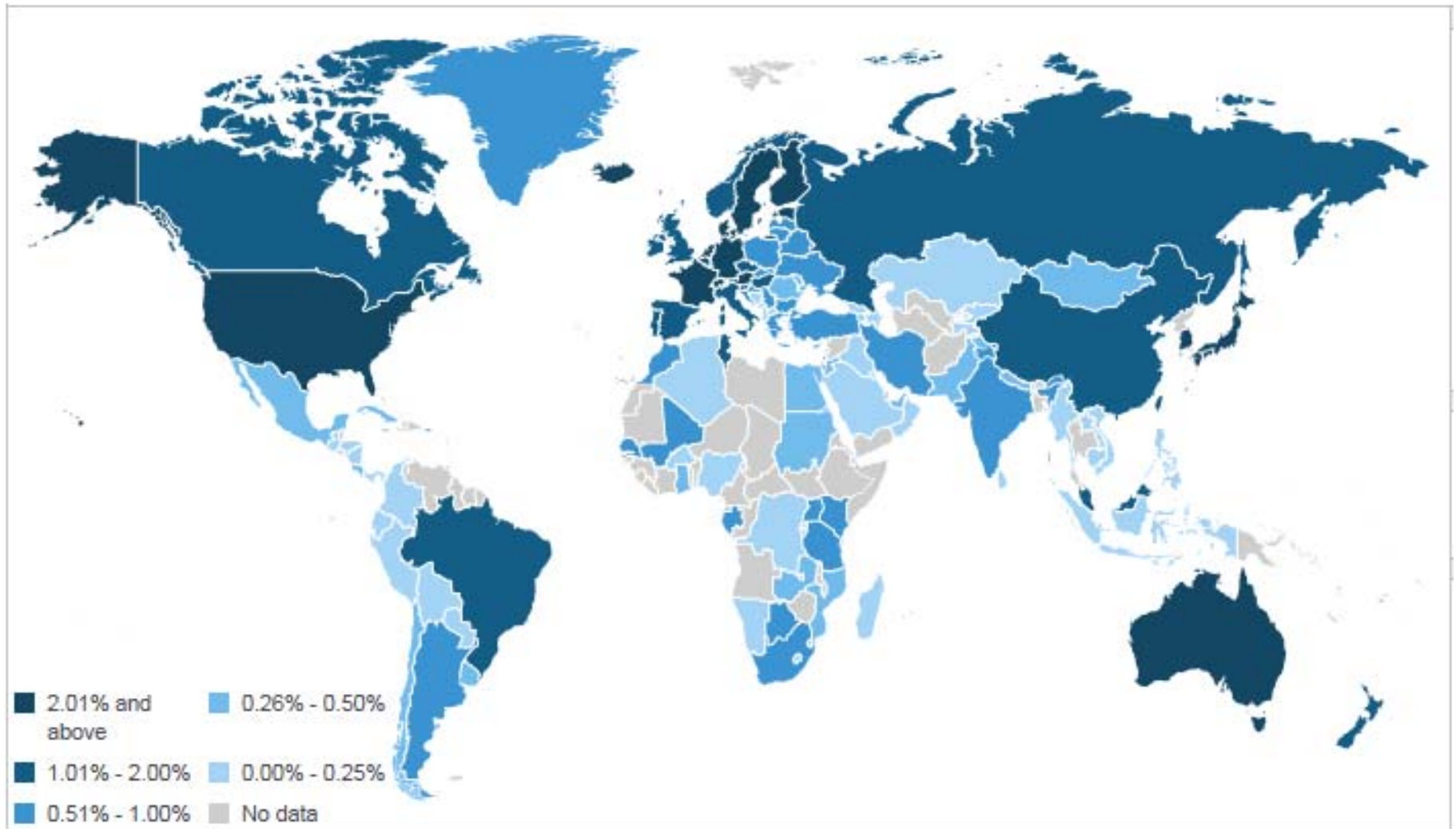


Participation of pupils in programmes with computers for pedagogical purposes, 2012 or LYA



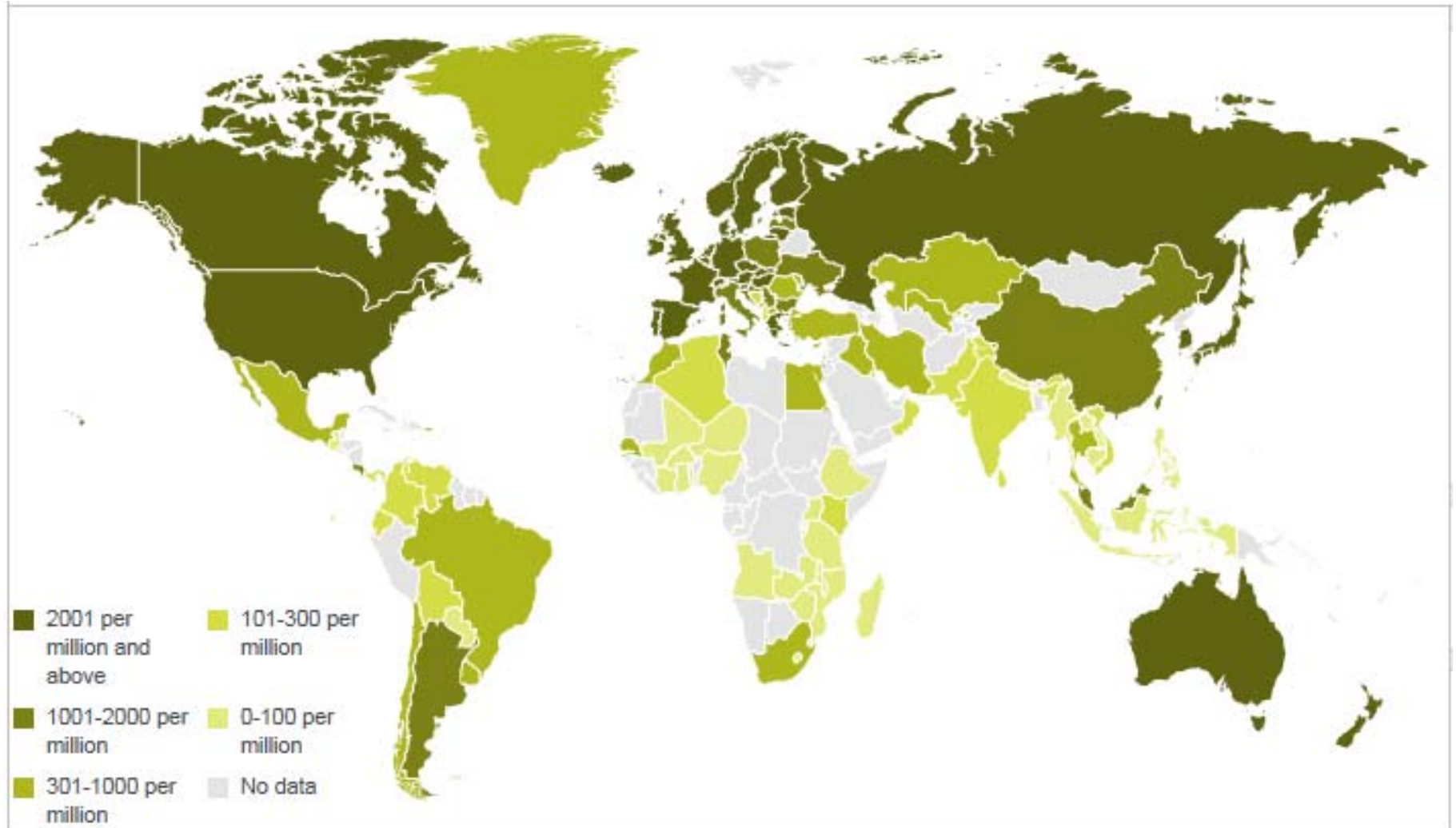
- Based on those enrolled; does not take into account out-of-school children
- Gender difference are marginal if not non-existent
- These data however do not measure usage!

R&D expenditure as a % of GDP



Source: UIS e-Atlas of Research and Development

Researchers (FTE) per million pop.



Source: UIS e-Atlas of Research and Development

Addis Ababa Action Agenda (1)

- ❑ Notes uneven **innovative capacity**
- ❑ Promote the development and use of **ICT**
- ❑ Craft **policies** that incentivize the creation of new technologies, research and innovation
- ❑ Importance of adequate, balanced and effective protection of **intellectual property rights**
- ❑ Promote **social innovation** to support social well-being and sustainable livelihoods
- ❑ Promote **entrepreneurship**, including through supporting business incubators
- ❑ Foster linkages between multinational companies and the domestic private sector to facilitate **technology development and transfer**
- ❑ **Traditional knowledge** innovations and practices of indigenous peoples and local communities can support social well-being and sustainable livelihoods
- ❑ Strive for **open access** to research for publicly funded projects

Addis Ababa Action Agenda (2)

- ❑ Public and private **venture funds** investments to diversify risks and capture the upside of successful enterprises
- ❑ Scale up investment in **STEM education**, and enhance technical, vocational and tertiary education and training, ensuring equal access for women and girls
- ❑ Encourage the development, dissemination and diffusion and transfer of **environmentally sound technologies**
- ❑ Strengthen scientific, technological and innovative capacity to move towards more **sustainable patterns of consumption and production**
- ❑ Support research and development of **vaccines and medicines**
- ❑ Investment in **earth observation, rural infrastructure, agricultural research** and extension services
- ❑ Increase scientific knowledge, develop research capacity and transfer **marine technology**

Thematic set of STI indicators (1)

- ❑ Business innovation data (UIS)
- ❑ Gender equality in STEM (UNESCO SAGA project)
- ❑ Higher education data (UIS)
- ❑ IPR data (WIPO et al)
- ❑ Publication data (various) and open access
- ❑ Industrial data (UNIDO)
- ❑ ICT (Partnership on Measuring ICT for Development)
- ❑ STI policies (UNESCO GO→SPIN, UNCTAD)
- ❑ Entrepreneurship (World Bank)

Thematic set of STI indicators (2)

- ❑ Venture capital
- ❑ Social innovation
- ❑ Technology transfer
- ❑ Traditional knowledge
- ❑ Data on research and innovation for
 - clean energy
 - marine technology
 - agriculture
 - vaccines and medicines
 - etc.

Mechanism for a thematic set of STI indicators

Addis Ababa Action Agenda:

- Establish a Technology Facilitation Mechanism
 - Multi-stakeholder collaboration
- United Nations inter-agency task team on science, technology and innovation for the sustainable development goals
 - Organise the multi-stakeholder forum on science, technology and innovation for the sustainable development goals
 - Development and operationalization of an online platform
- Set up a work stream in the IATT STI SDG

Conclusion

- ❑ STI important to achieve the SDGs
- ❑ ICTs are an important component, representing the “T” in STI
- ❑ Recognised by the Addis Ababa Action Agenda
- ❑ But not overly present in the SDG indicators
- ❑ Develop a set of thematic indicators
- ❑ Include the Partnership’s thematic list
- ❑ Requires collaboration between many agencies
- ❑ Possibly through the IATT STI SDG
- ❑ Develop monitoring reports

Thank you for your attention!

<http://www.uis.unesco.org>

m.schaaper@unesco.org

@UNESCOStat

@MSchaaper