

KEMENTERIAN SUMBER ASLI DAN ALAM SEKITAR

SIMPOSIUM MAKLUMAT GEOSPATIAL KEBANGSAAN

NGIS ke-6

GEOSPATIAL PEMACU WAWASAN NEGARA
GEOSPATIAL DRIVES NATIONAL VISION



17-18 Mac 2014

Pusat Konvensyen Antarabangsa Putrajaya

<http://ngis.mygeoportal.gov.my>

Penganjur Utama

Penganjur Bersama

Dengan Sokongan



Sesi II: GEOSPATIAL IN SOCIAL AND ECONOMIC GROWTH

Kertas 1:

Spatial Information for Social, Environmental and Economic Development

Fédération Internationale des Géomètres
International Federation of Surveyors
Internationale Vereinigung der Vermessungsingenieure



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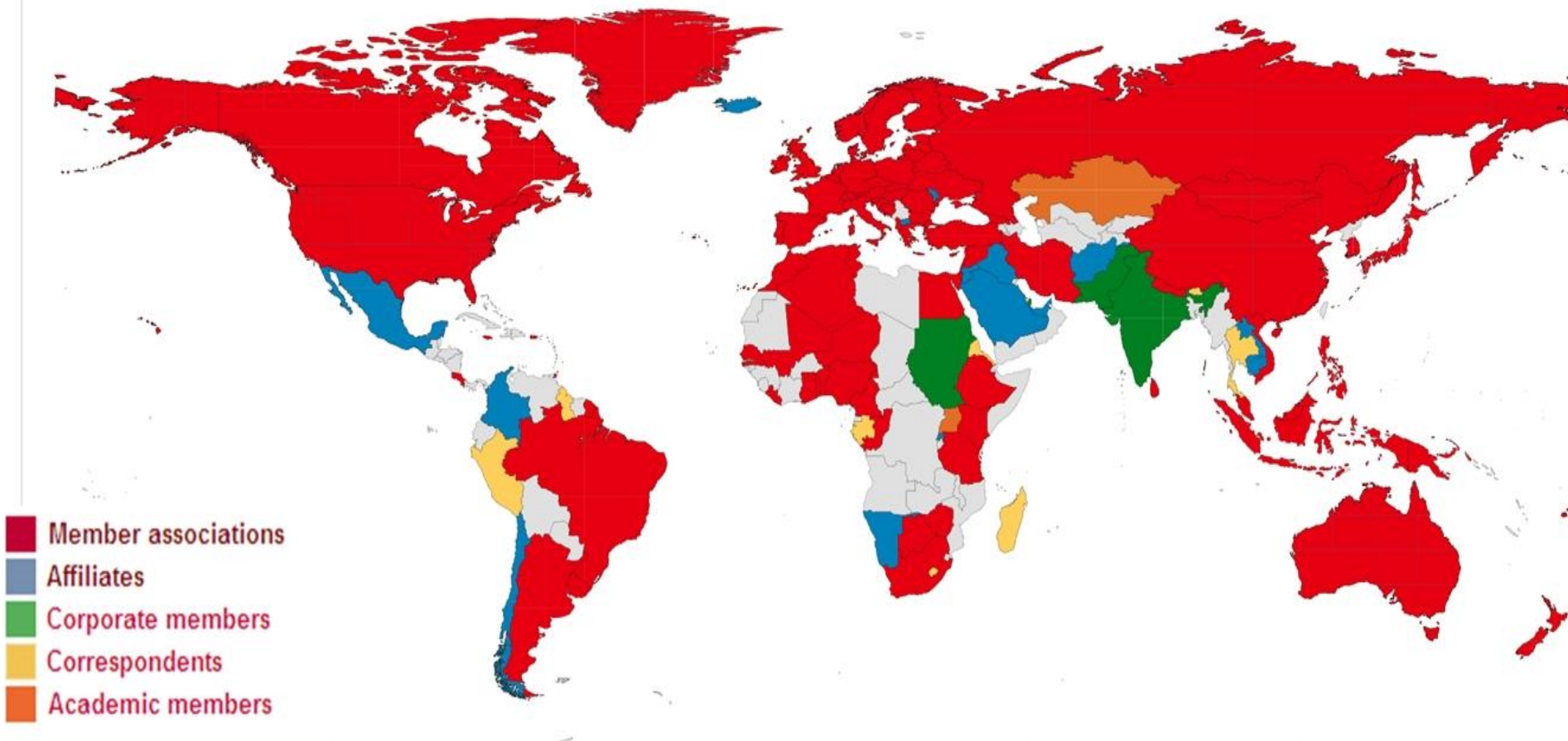
Kalvebod Brygge 31-33
DK-1780, Copenhagen V, Denmark
Tel: +45 3886 1081; Fax: +45 3886 0252
url: www.fig.net



XXV FIG Congress

"Engaging the Challenges, Enhancing the Relevance"
16 - 21 JUNE 2014, MALAYSIA





Member Associations; Affiliate Members; Academic Members;
 Corporate Members & Correspondents
125+ Countries



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World Bank Group

United Nations Human Settlement Program (UN-Habitat)

Food and Agriculture Organization of the United Nations (FAO)

United Nations Global Geospatial Information Management (GGIM)

United Nations Office for Outer Space Affairs (UNOOSA)

United Nations Economic Commission for Europe (UNECE)

United Nations Economic Commission for Africa (UNECA)

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)



United Nations Department of Economic and Social Affairs (UN DESA)

United Nations Conference on the Standardization of Geographic Names

United Nations Regional Cartographic Conferences (UNRCC)

Global Land Tool Network (GLTN) (facilitated by UN-Habitat)

International Organization for Standardization (ISO)



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GLTN
GLOBAL LAND TOOL NETWORK



A Review of Social Tenure Domain Model (STDM) Phase II Summary Report

**SOCIAL TENURE DOMAIN MODEL
TRAINING OF TRAINERS WORKSHOP**
13th – 16th June 2014, Kuala Lumpur, Malaysia

About STDM
The STDM is an initiative of GLTN, as facilitated by UN-Habitat. It is a support to pro-poor land administration systems, intended to help developing countries address the very difficult task of covering the needs of the rural and customary areas. The STDM is not limited to a specific type of property management system, but rather focuses on the relationships between people and land. It is a tool that can be used at the level of formalization, or as a support to the STDM's specialization in the ISO-standard Administration Domain Model (ADM).

Tentative Program

- Land challenges in perspective
- Introduction to Global Land Tool Network
- STDM current developments and overview
- STDM system applications

Aim of the event
The aim of the Social Tenure Domain Model (STDM) Training of Trainers Workshop will be to provide Young Ambassadors with the skills to conduct STDM trainings. With the knowledge gained through the training, they should be able to assist further research and GLTN/FIG and future work as well as a follow-up STDM.

Venue
To be notified
Kuala Lumpur, Malaysia

Application
For an application please fill in this form:
[http://www.fig.int/STDM](#)

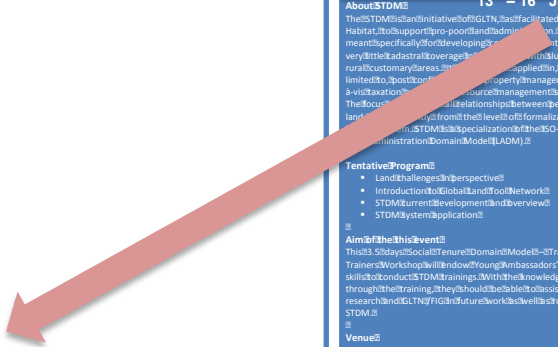
Lead Organisers
Eva-Maria Unger (FIG/UNH)
Nur Zurairah Ibrahim (UNH/FIG/UNH)
Daniel Antonio (GLTN)
John Giteau (GLTN)
Solomon Jigaju (GLTN)

Important Dates
End of Application: 29th March 2014
Announcement of Participants: 1st April 2014
Training Dates: 13th - 16th June 2014

Website
[http://www.fig.int/STDM](#)











Social Tenure Domain Model
Training of Trainers Workshop
13 – 16 June, 2014,
Kuala Lumpur, Malaysia

FIG REPORT
FIG PUBLICATION NO 52

**The Social Tenure Domain Model
A Pro-Poor Land Tool**


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Integrating Land Governance into the Post-2015 Agenda Harnessing Synergies for Implementation and Monitoring Impact

Annual World Bank Conference on Land and Poverty Washington DC, March 24-27, 2014



Joint World Bank and International Federation of Surveyors Spatial Innovation and Good Practices Forum 28th March 2014, World Bank, Washington DC



Spatially Enabling Governments & Societies for Sustainable Land Administration & Management

A joint World Bank – International Federation of Surveyors Workshop
April 24, 2012, 8 am - 4 pm, Preston Auditorium and Evening Round Table
6:15 - 8 pm, MC 13-121

FIG FIG PUBLICATION NO. 60
FIG GUIDE

Fit-For-Purpose Land Administration

JOINT FIG / WORLD BANK PUBLICATION



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FIG Council

**FIG Commission 1
Professional Practice**

**FIG Commission 2
Professional
Education**

**FIG Commission 3
Spatial Information
Management**

**Commission 4
Hydrography and
Administration of
Marine Spaces**

**Commission 5
Positioning and
Measurement**

**Commission 6
Engineering Surveys**

**Commission 7
Cadastre and Land
Management**

**Commission 8
Spatial Planning and
Development**

**Commission 9
Valuation and
Management of Real
Estate**

**Commission 10
Construction
Economics and
Management**

Standards Network

Young Surveyors Network

Task Force for Africa

**Task Force on Surveyors and
Climate Change**

**Task Force on Property and
Housing**

**FIG Permanent Institution on History of Surveying and
Measurement**

FIG International Office of Cadastre and Land Records

FIG Foundation



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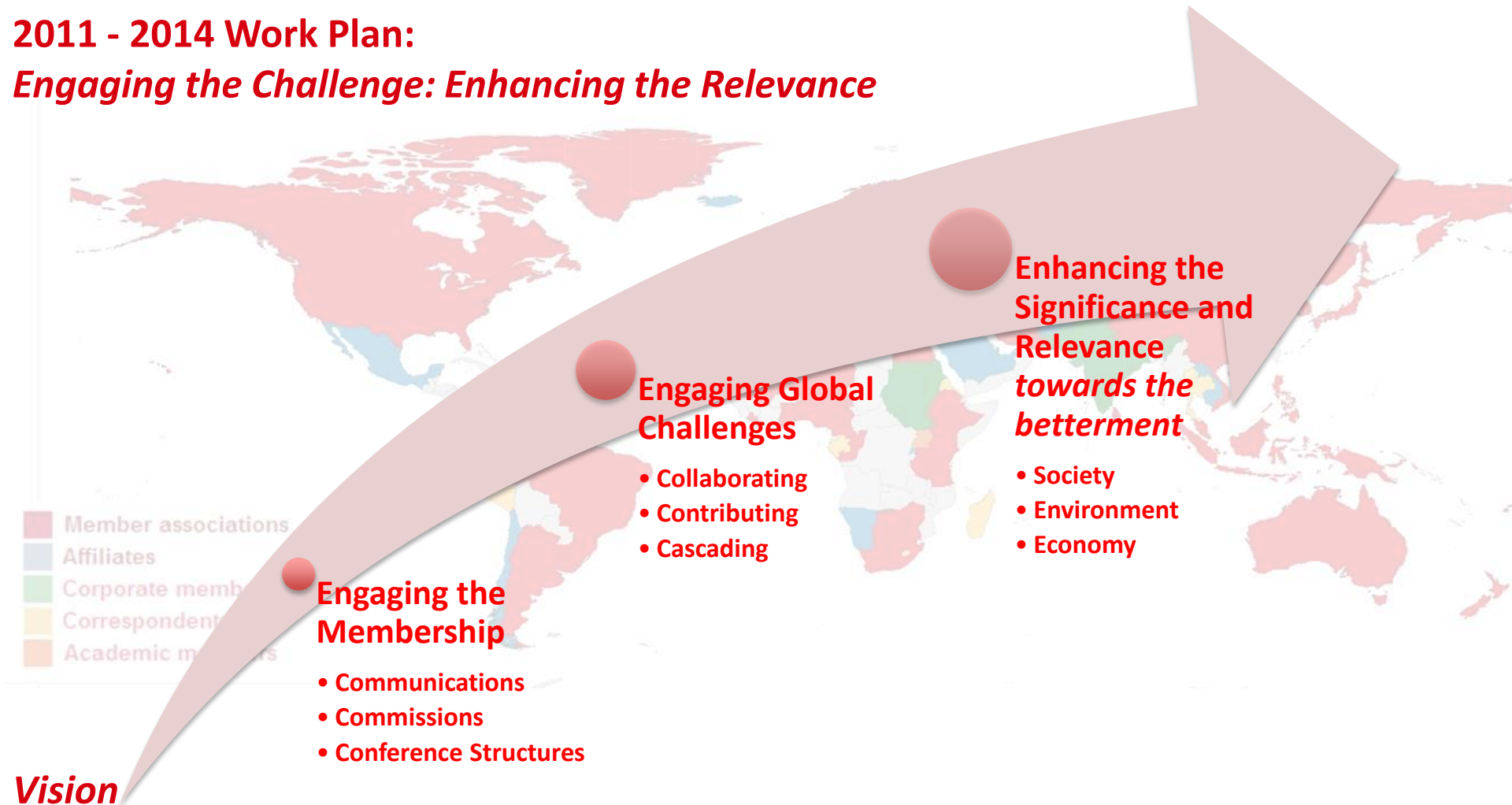
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2011 - 2014 Work Plan:

Engaging the Challenge: Enhancing the Relevance



Vision

A Profession, armed with knowledge and best practices, extending the usefulness of surveying for the benefit of society, environment and economy, increasingly positioned in significance and relevance, next door to everywhere.



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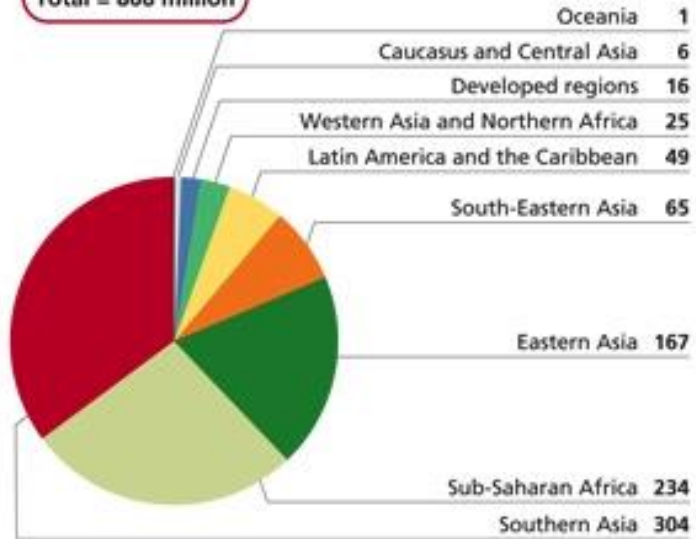
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Undernourishment in 2010–12, by region (millions)

Total = 868 million



Source: FAO.



ACCESS TO LAND, FISHERIES AND FORESTS



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FAO Hunger Map 2013

Progress in reducing hunger is assessed against two key targets: the 1996 World Food Summit (WFS) target aims at halving the **number** of undernourished by 2015, while the first Millennium Development Goal (MDG) aims at halving the **proportion** of hungry people by 2015.

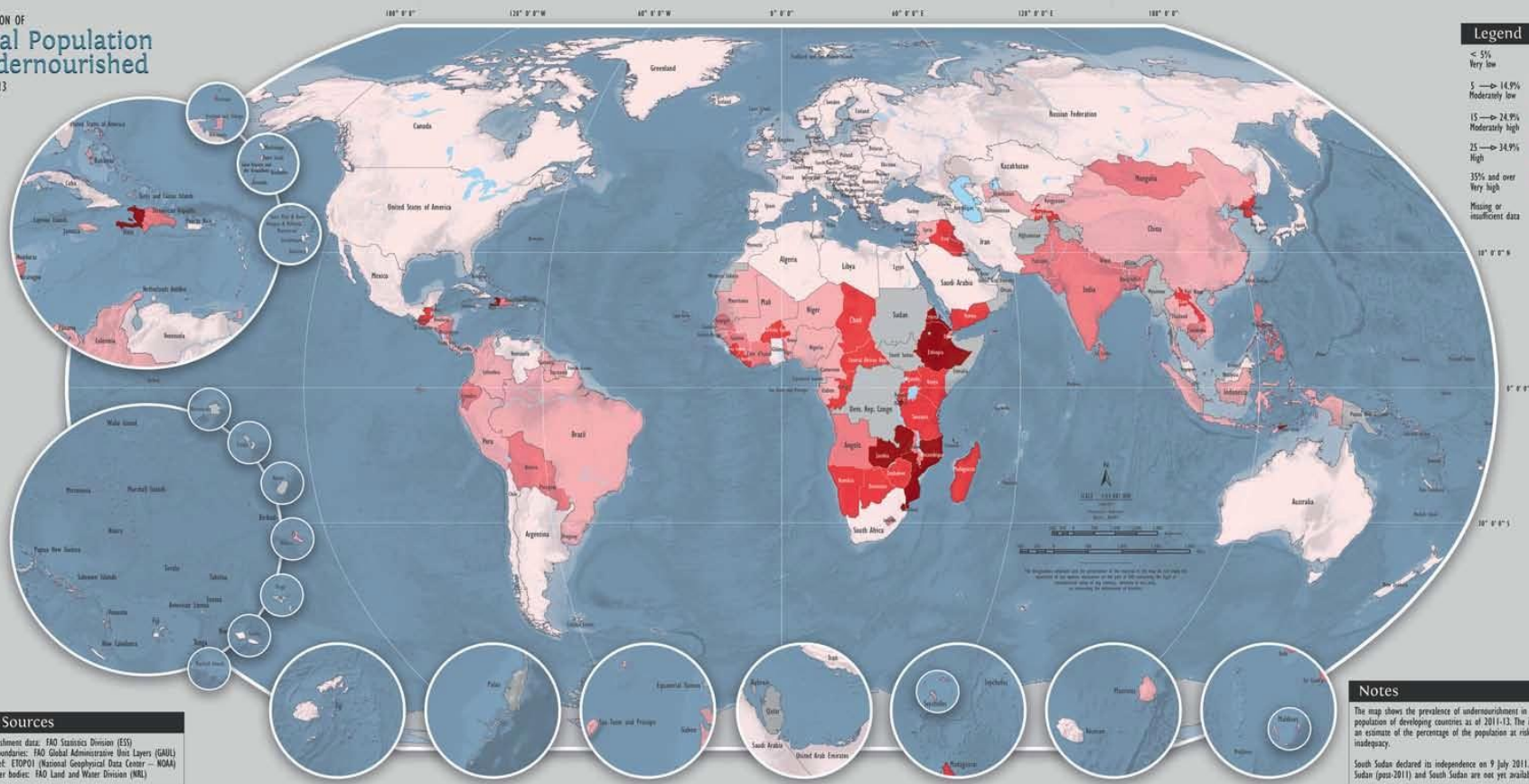
- ✓ In 2011–13 a total of 827 million people were hungry in developing regions. This number has fallen by 169 million, or 17 percent, since 1990–92.
- ✓ More than 60 countries have reached or are expected to reach the MDG hunger target. Significant reductions have occurred in most countries of Eastern and South-Eastern Asia, and in Latin America.
- ✓ The World Food Summit target is out of reach, at least at the global level. Yet approximately 20 countries have met the target or are estimated to do so by 2015.
- ✓ In 16 countries, undernourishment estimates for 2011–13 either point to a lack of progress or a deterioration of food security conditions since 1990–92. Nine of these countries are in sub-Saharan Africa, the region with the highest prevalence of undernourishment and where only modest progress has been made in recent years.

Produced by
The Statistics Division
Food and Agriculture Organization
of the United Nations



For additional information please visit:
<http://www.fao.org/economic/ess/>

PROPORTION OF Total Population Undernourished IN 2011-13



Data Sources
Undernourishment data: FAO Statistics Division (ESS)
Political boundaries: FAO Global Administrative Unit Layers (GAUL)
Global relief: ETOPO1 (National Geophysical Data Center — NOAA)
Inland water bodies: FAO Land and Water Division (WRL)

Notes
The map shows the prevalence of undernourishment in the total population of developing countries as of 2011–13. The indicator is an estimate of the percentage of the population at risk of caloric inadequacy.
South Sudan declared its independence on 9 July 2011. Data for Sudan (post-2011) and South Sudan are not yet available.



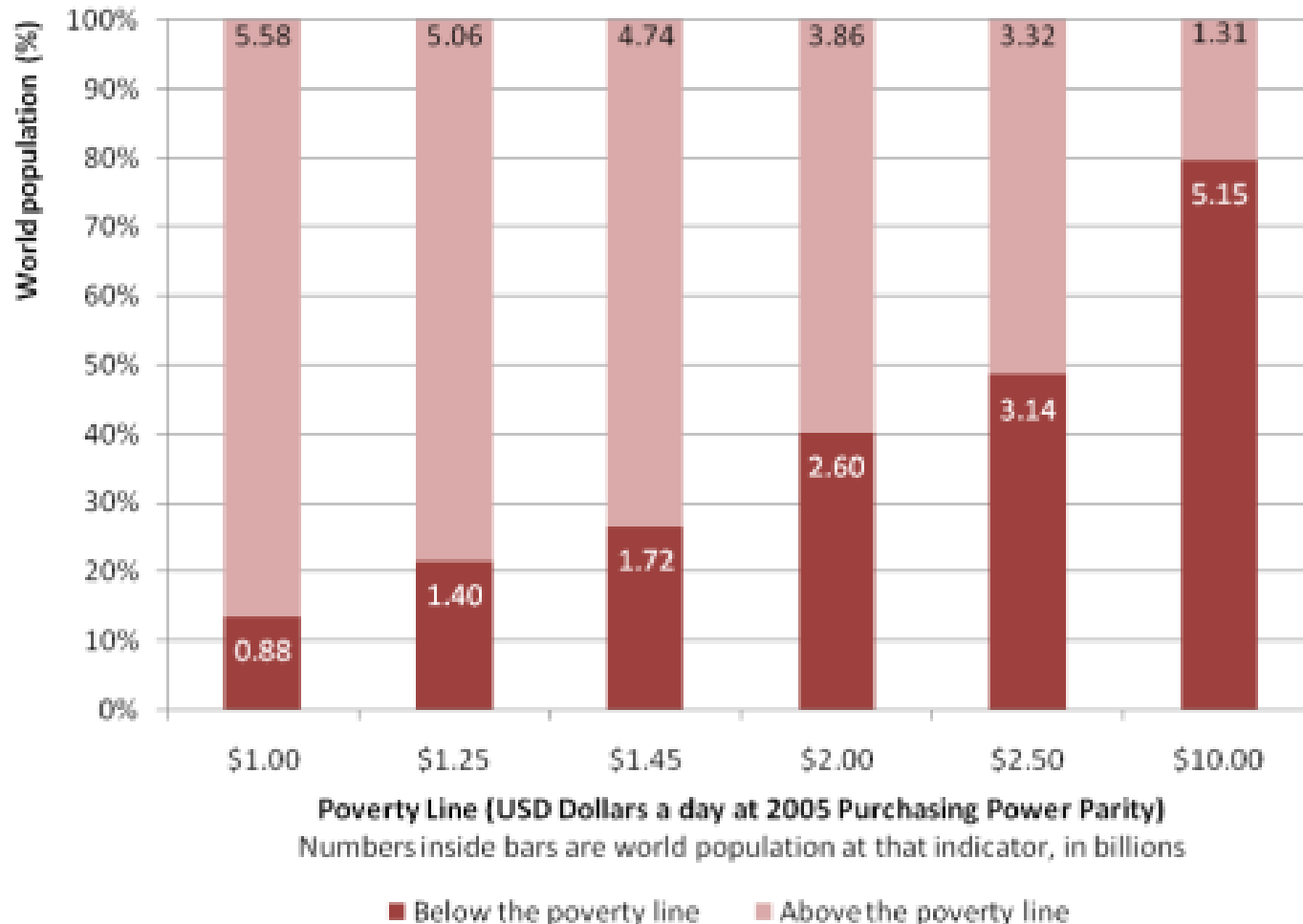
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Percent of people in the world at different poverty levels, 2005

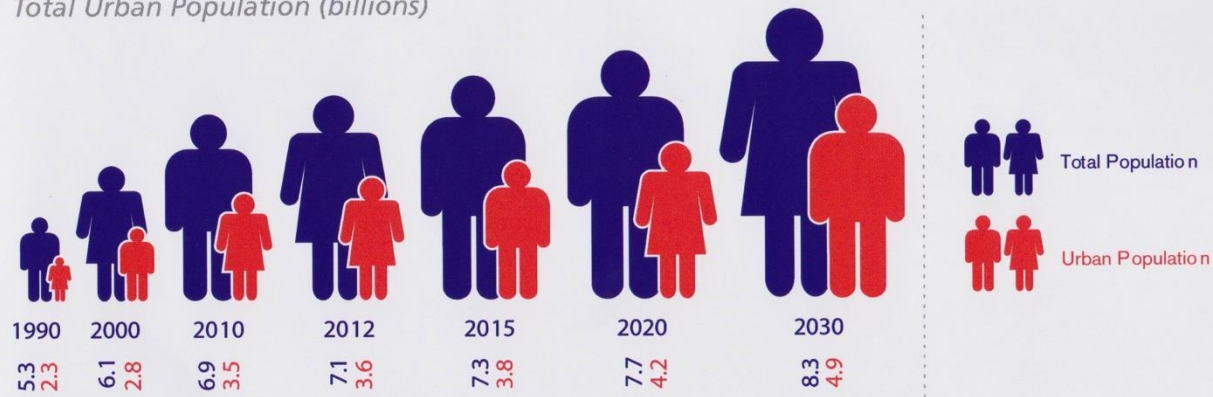


Poverty Line (USD Dollars a day at 2005 Purchasing Power Parity)
Numbers inside bars are world population at that indicator, in billions

Source: World Bank Development Indicators 2008

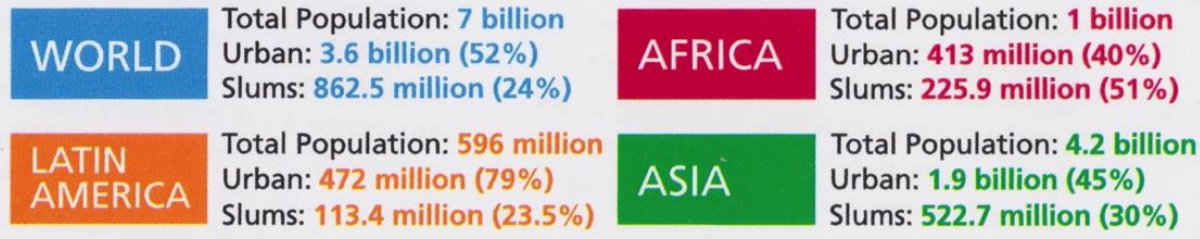
At least 80% of humanity lives on less than US\$10 a day.

Total Urban Population (billions)



Source: United Nations (2010).

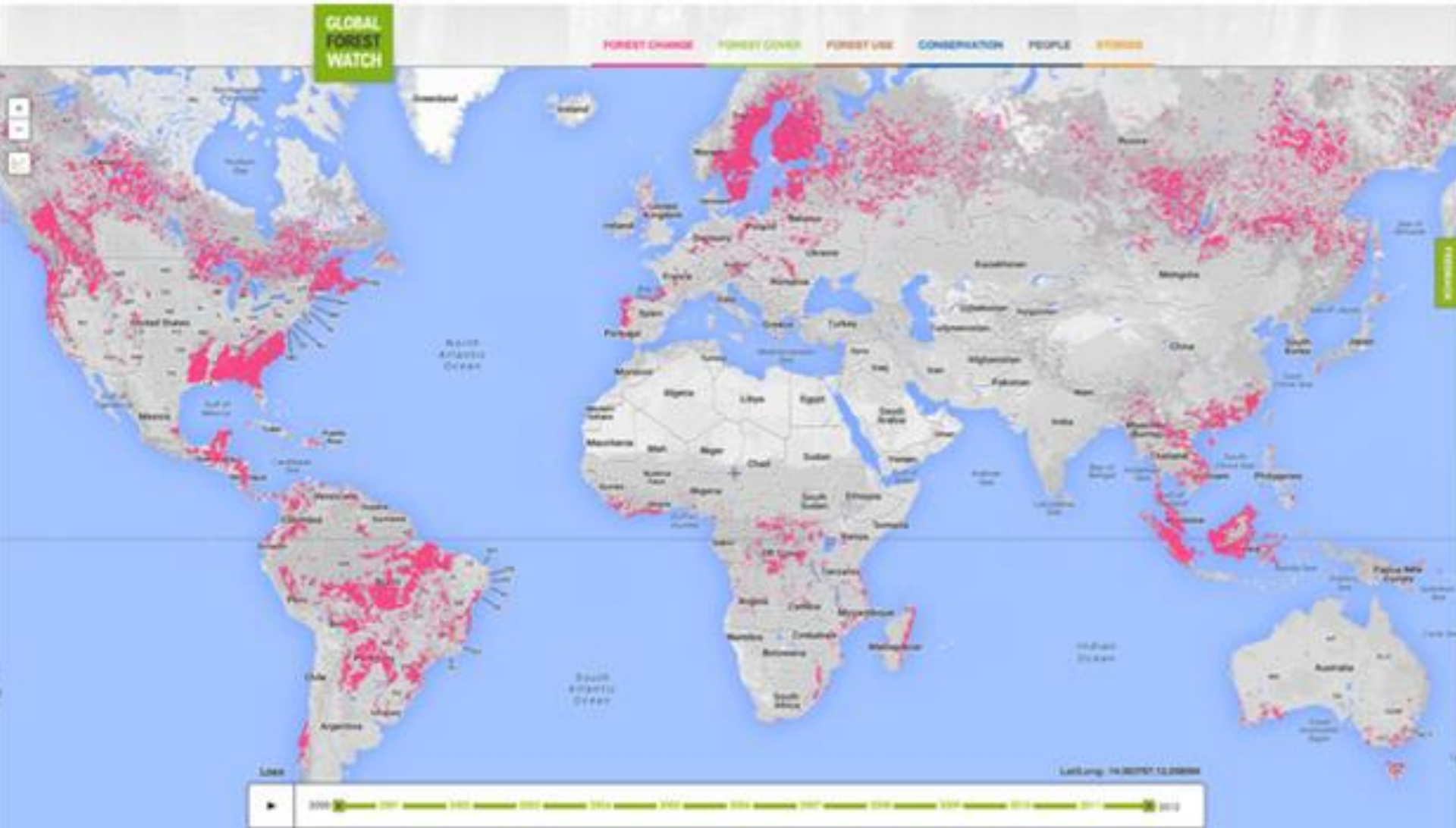
URBAN STATISTICS 2013



- 1 out of 2 people in the world lives in urban areas
- 1 out of 4 people living in urban areas lives in slums
- 1 out of 2 people living in urban areas in Africa lives in slums
- 1 out of 4 people living in urban areas in Latin American lives in slums
- 1 out of 3 people living in urban areas in Asia lives in slums

Source: UN-Habitat, State of the World Cities Report 2012/2013





A new global monitoring system has been launched that promises "near real time" information on deforestation around the world.

Highlighted in red, the new tool can show the scale of tree cover loss between 2000 and 2012

(BBC News, 21 Feb 2014)

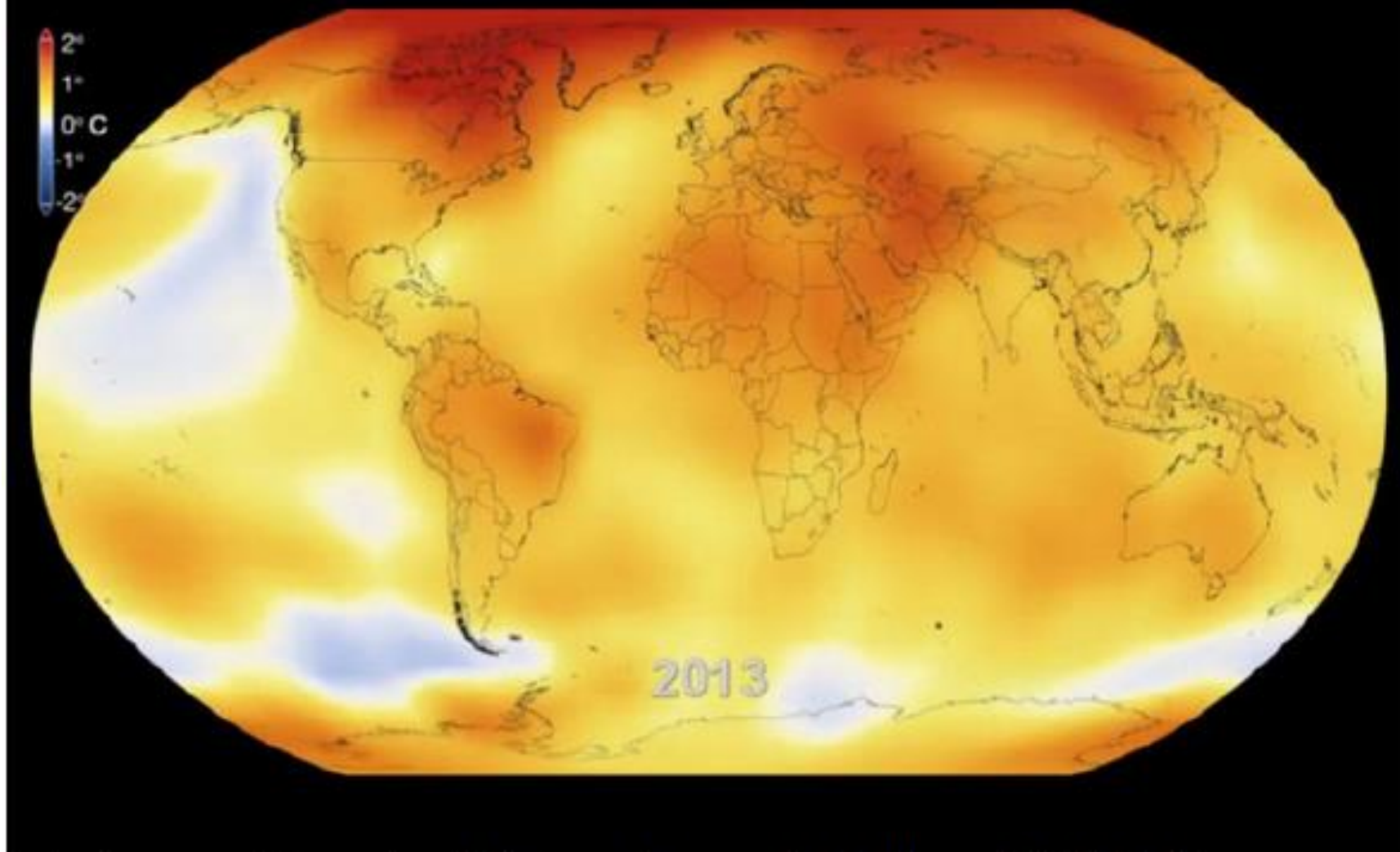


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(http://www.youtube.com/watch?feature=player_embedded&v=gaJJtS_WDmI)

This visualization shows how global temperatures have risen from 1950 through the end of 2013. Source: NASA Goddard



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Technology Convergence

Angle & Distance Measurement



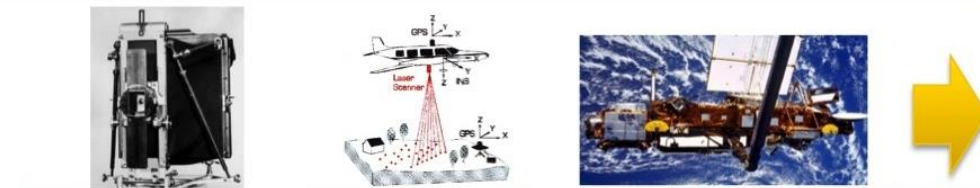
Theodolites, tapes, chains EDM Total Stations 3D Scanning

Space & Inertial Measurement



Inertial Surveying Transit GPS Multi-GNSS + Inertial

Photogrammetry & Remote Sensing



Photogrammetry Airborne Scanning High Resolution Remote Sensing

Peripheral Sensors



Barometers, Gravimeters RFID Automotive Sensors Billions Devices/Sensors

Computation & Communications



Manual Computation Digital Computation Real Time Information

Integrated Mobile Mapping



BIG
(Geospatial)
DATA

(Pete Lage, Trimble, FIG-Abuja, 2013)

Technology is Changing Rapidly

Coevolving with Other Enabling Technologies



(Brent Jones, ESRI, FIG-Montevideo, 2012)

Geospatial information has evolved from paper maps, to GIS, to 3D virtual models of the world, accessible to billions.

(Pete Lage, Trimble, FIG-Abuja, 2013)



Paper Maps
Large Scale
Small Scale

Map Makers
Map Users



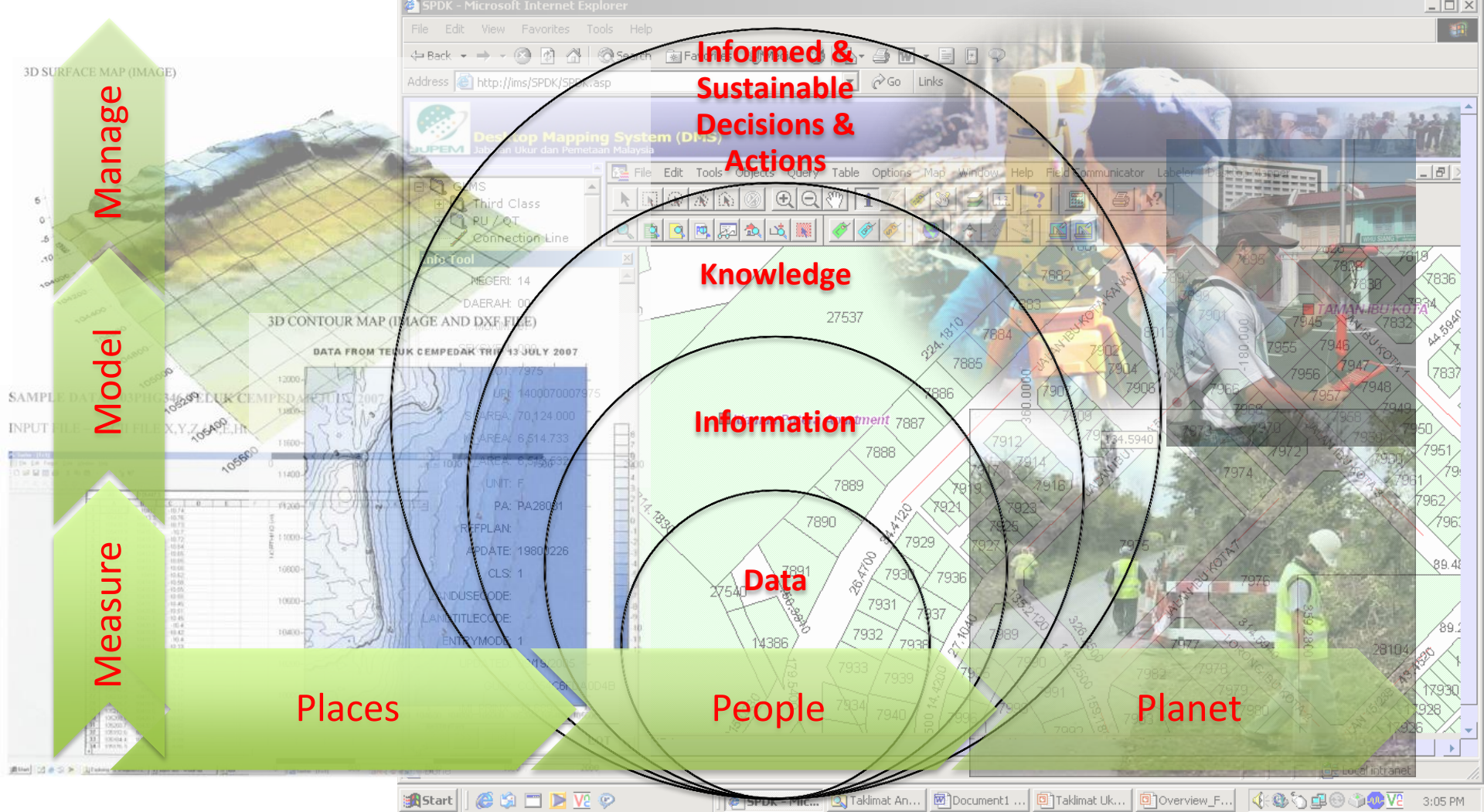
GIS
Digital Maps
coupled to a
database

GIS DC
Map Users



Virtual Worlds
Accurate 3D in
the cloud

**Billions of
Data Users**



Informed & Sustainable Decisions & Actions

Knowledge

Information

Data

Manage

Model

Measure

Places

People

Planet

"Like water, this rising tide of data can be viewed as an abundant, vital and necessary resource. With enough preparation, we should be able to tap into that reservoir - and ride the wave - by utilising new ways to channel raw data into meaningful information. That information, in turn, can then become the knowledge"
(Les Alberthal [alb95])

**Informed &
Sustainable
Decisions &
Actions**

Knowledge

Information

Data

A new generation of web and mobile services, such as online maps and location based services, are stimulating a greater interest and use of location in society today. This location revolution in our personal lives is being mirrored in our professional lives.

Information, with both geographic and temporal context, is increasingly being used, for example, to ensure emergency services arrive at incidents in time, to support the formulation of policies to mitigate the impact of climate change, to ensure that services are better targeted to citizens needs and to empower citizens and communities to manage their communities and administer their spaces more effectively.

**Informed &
Sustainable
Decisions &
Actions**

Knowledge

Information

Data

The delivery of the benefits associated with this location (spatial) revolution is dependent on the availability of spatial data that is readily accessible for re-use, has minimal restrictions, is affordable, has appropriate quality and can be easily integrated and linked into collaborative environments using common frameworks.

It is therefore essential that information managed within any administration and management solutions is also spatially enabled to ensure that such information can be combined with other socio-economic information to derive wider societal, environmental and economic benefits.



(Abbas Rajabifard, 2012)

Spatially enabled Government and Societies, recognizing that all activities and events have a geographical and temporal context, make decisions and organize their affairs through the effective and efficient use of spatial data, information and services.



UN-GGIM-AP Kuala Lumpur Declaration on Spatially Enabled Government and Society, 2012

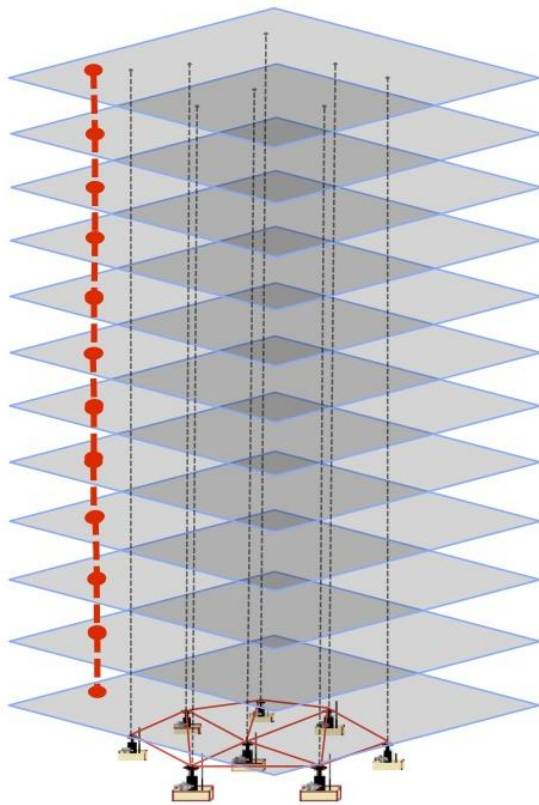


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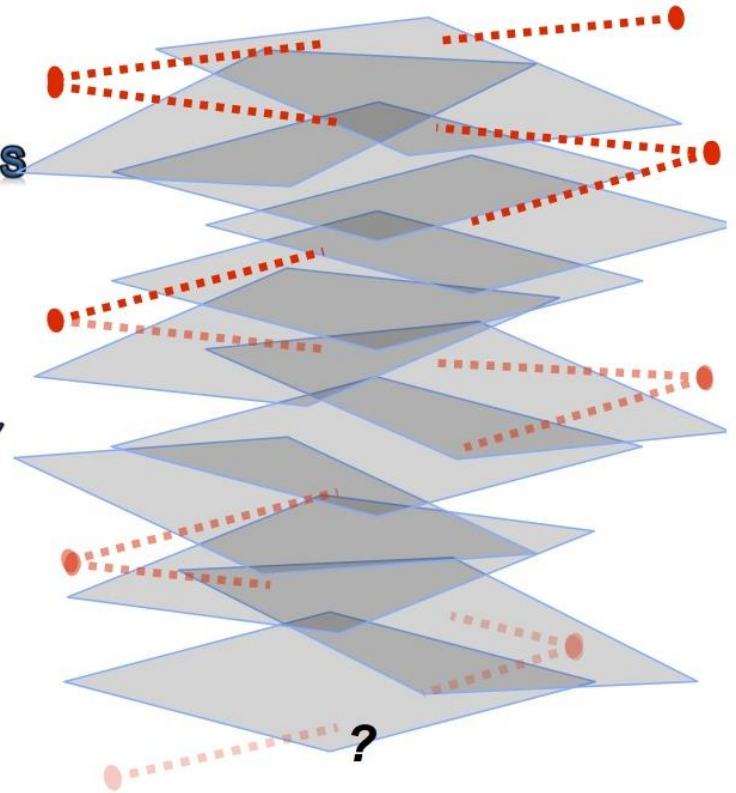
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Regional Reference Frame

- METEOROLOGY**
- NATURAL RESOURCES**
- CROSS BORDER UTILITIES**
- BOUNDARY DISPUTES**
- URBAN DATA**
- CONSTRUCTION**
- MILITARY**
- GEOLOGY / SEISMOLOGY**
- REGIONAL PLANNING**
- TRANSPORTATION**
- DTM, DEM**
- NATIONAL BOUNDARIES**



Discrete Reference Frames

—●—●—●— = spatial “dialogue”

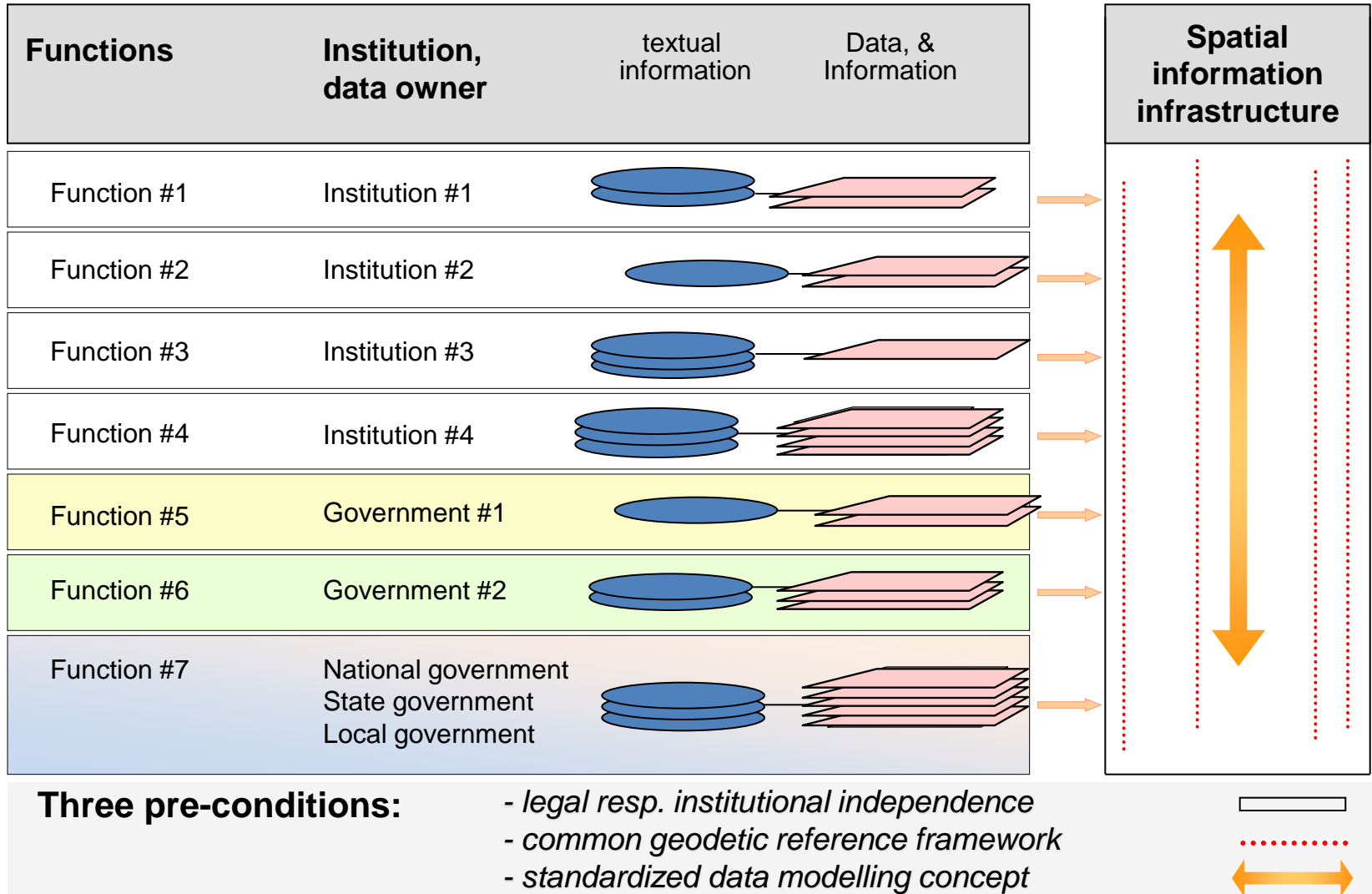
(John Whitehead, UNRCC-Bangkok, 2012)

Current

Coherent

Credible

Data & Information Collaboration Concept



(Daniel Steudler & Jurg Kaufman, 2012)

FIG Publication No. 58: Spatially Enabled Society)



RIO+20

United Nations Conference on Sustainable Development

“Recognize the importance of comprehensive hazard and risk assessments, and knowledge and information sharing, including reliable geospatial information”

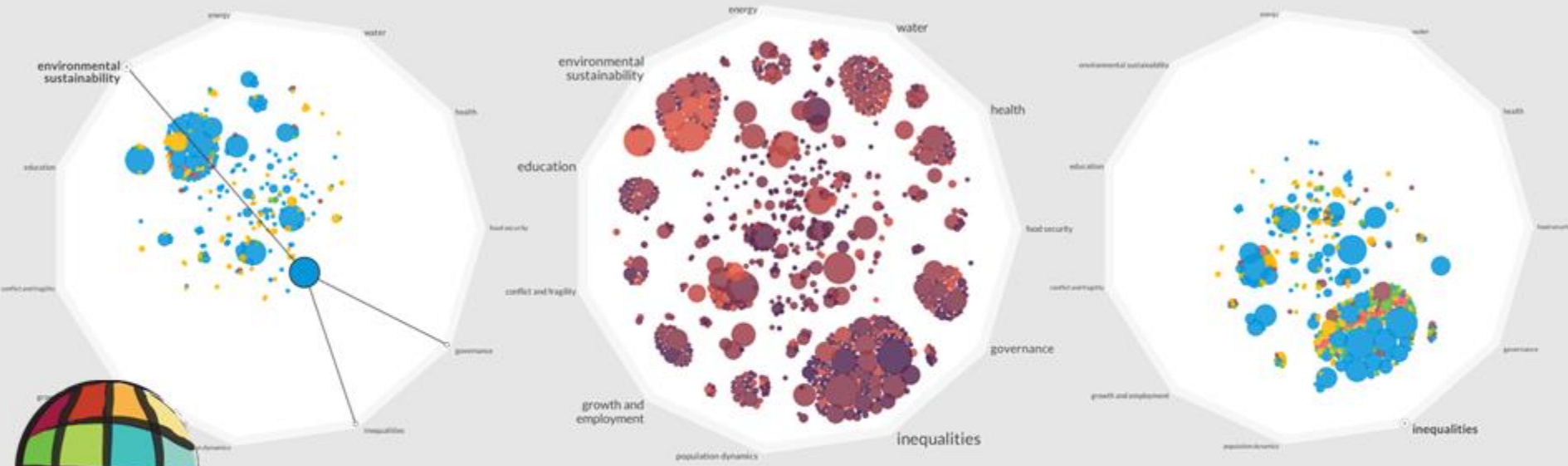
*‘The Future We Want’
2012 Rio +20 Conference*

“Sound geospatial information is crucial for addressing the complex problems the world is facing today. These problems are global in nature and affect different regions, rural and urban areas alike, requiring coordinated efforts, more innovative and sophisticated approaches, as well as effective tools to ultimately guide our way to sustainable development”

*Prof. Paul Cheung
(UN Statistics Division & GGIM Secretariat),
February 2012*



High-level Panel the Post-2015 Development Agenda



The High Level Panel Report is of the view that “business-as-usual” is not an option. It concluded that the post-2015 agenda is a universal agenda with universal goals and national targets.

“Society can be regarded as spatially enabled when location and spatial information are commonly available to citizens, businesses and governments to encourage creativity, innovation and product development, evidence based decisions and informed actions.”

(FIG Publication on Spatially Enabled Society)

