Recent Developments in Disaster Management,

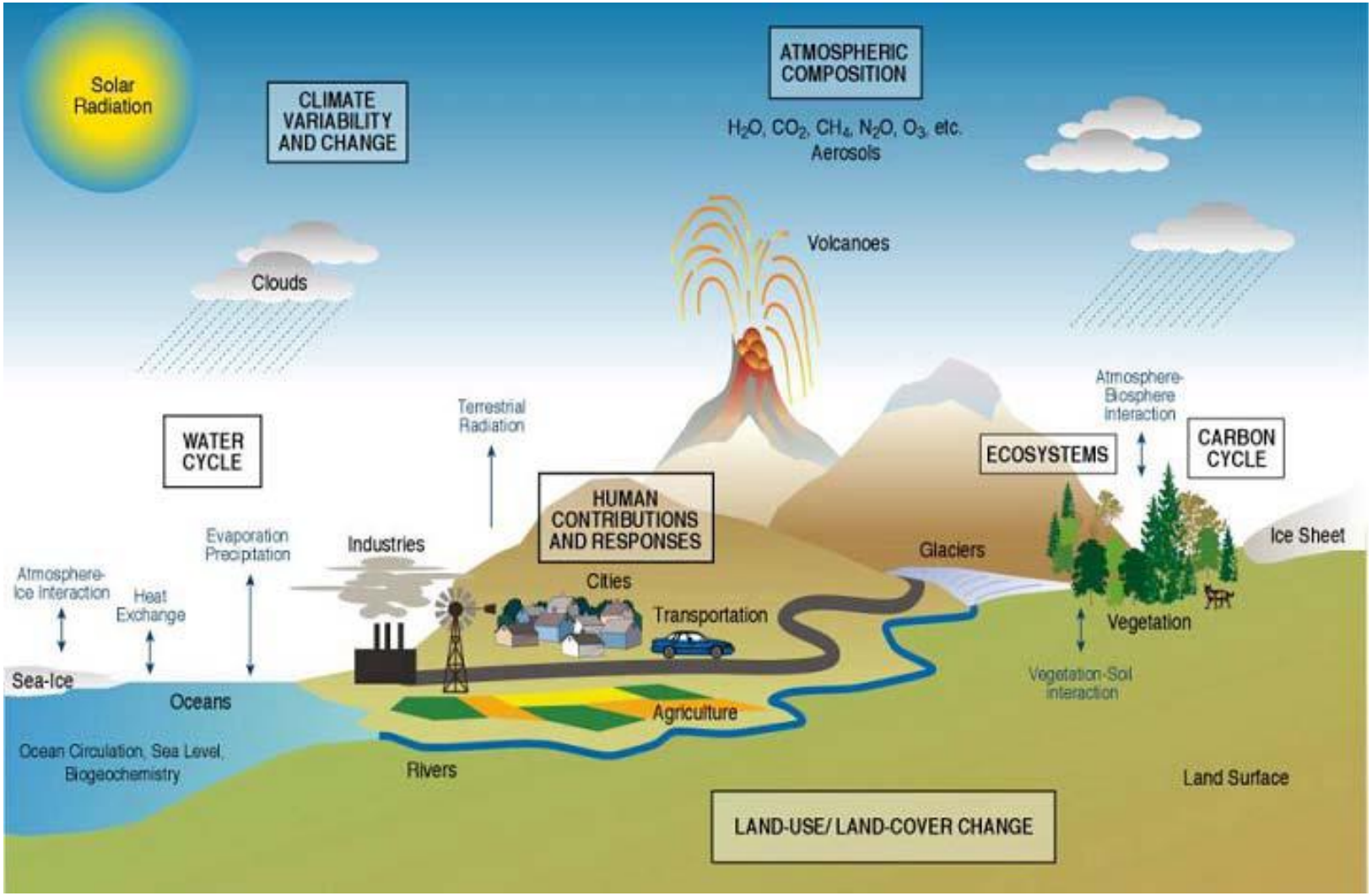
From Global to Regional Issues

Orhan ALTAN

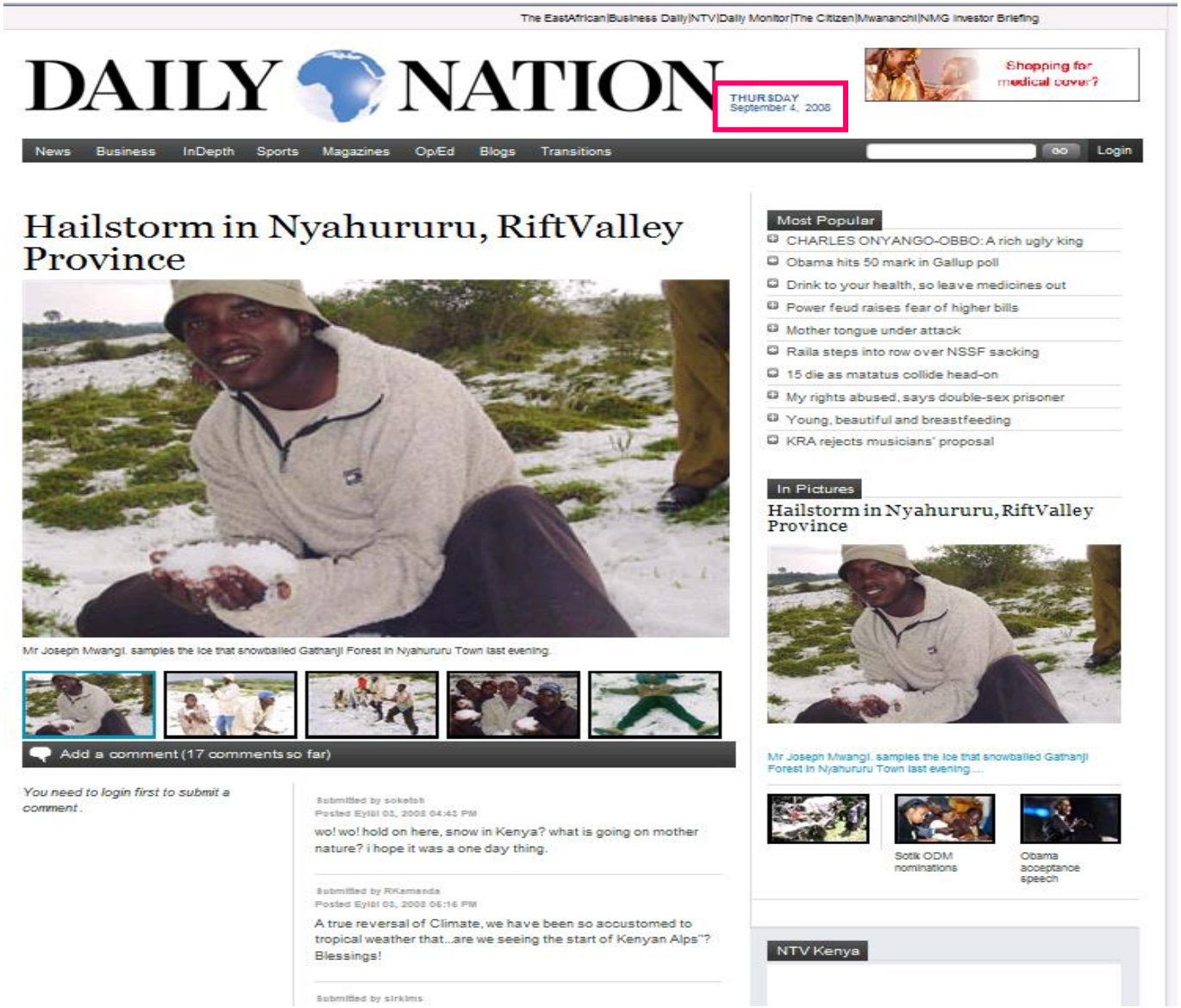
1st VP of ISPRS

Member of the ICSU EB

The Earth System



What is Changing?



The EastAfrican|Business Daily|NTV|Daily Monitor|The Citizen|Mwananchi|NMG Investor Briefing

DAILY NATION

THURSDAY September 4, 2008

Shopping for medical cover?

News Business InDepth Sports Magazines Op/Ed Blogs Transitions go Login

Hailstorm in Nyahururu, RiftValley Province

Mr Joseph Mwangi, samples the ice that snowballed Gathanji Forest in Nyahururu Town last evening.

Add a comment (17 comments so far)

You need to login first to submit a comment.

Submitted by sokelok
Posted Eylol 03, 2008 04:43 PM
wo! wo! hold on here, snow in Kenya? what is going on mother nature? i hope it was a one day thing.

Submitted by RKamanda
Posted Eylol 03, 2008 06:16 PM
A true reversal of Climate, we have been so accustomed to tropical weather that...are we seeing the start of Kenyan Alps"? Blessings!

Submitted by sirkims

Most Popular
- CHARLES ONYANGO-OBBO: A rich ugly king
- Obama hits 50 mark in Gallup poll
- Drink to your health, so leave medicines out
- Power feud raises fear of higher bills
- Mother tongue under attack
- Raila steps into row over NSSF sacking
- 15 die as matatus collide head-on
- My rights abused, says double-sex prisoner
- Young, beautiful and breastfeeding
- KRA rejects musicians' proposal

In Pictures

Hailstorm in Nyahururu, RiftValley Province

Mr Joseph Mwangi, samples the ice that snowballed Gathanji Forest in Nyahururu Town last evening....

Sotik ODM nominations

Obama acceptance speech

NTV Kenya

What is Changing?

What is Changing?

Heavier precipitation,
more intense and longer droughts….

What is Changing?

What is Changing?

Floods in Germany
June 2013

What is Changing?

Floods in Germany
June 2013

What is Changing?

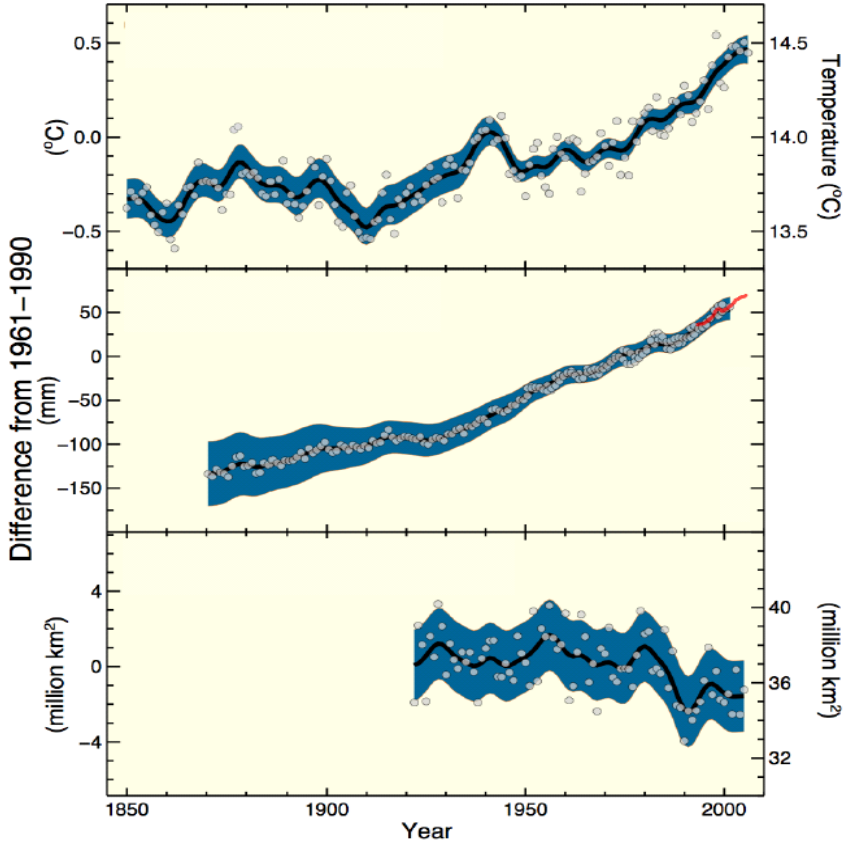
Direct observations of recent climate change

Global average temperature

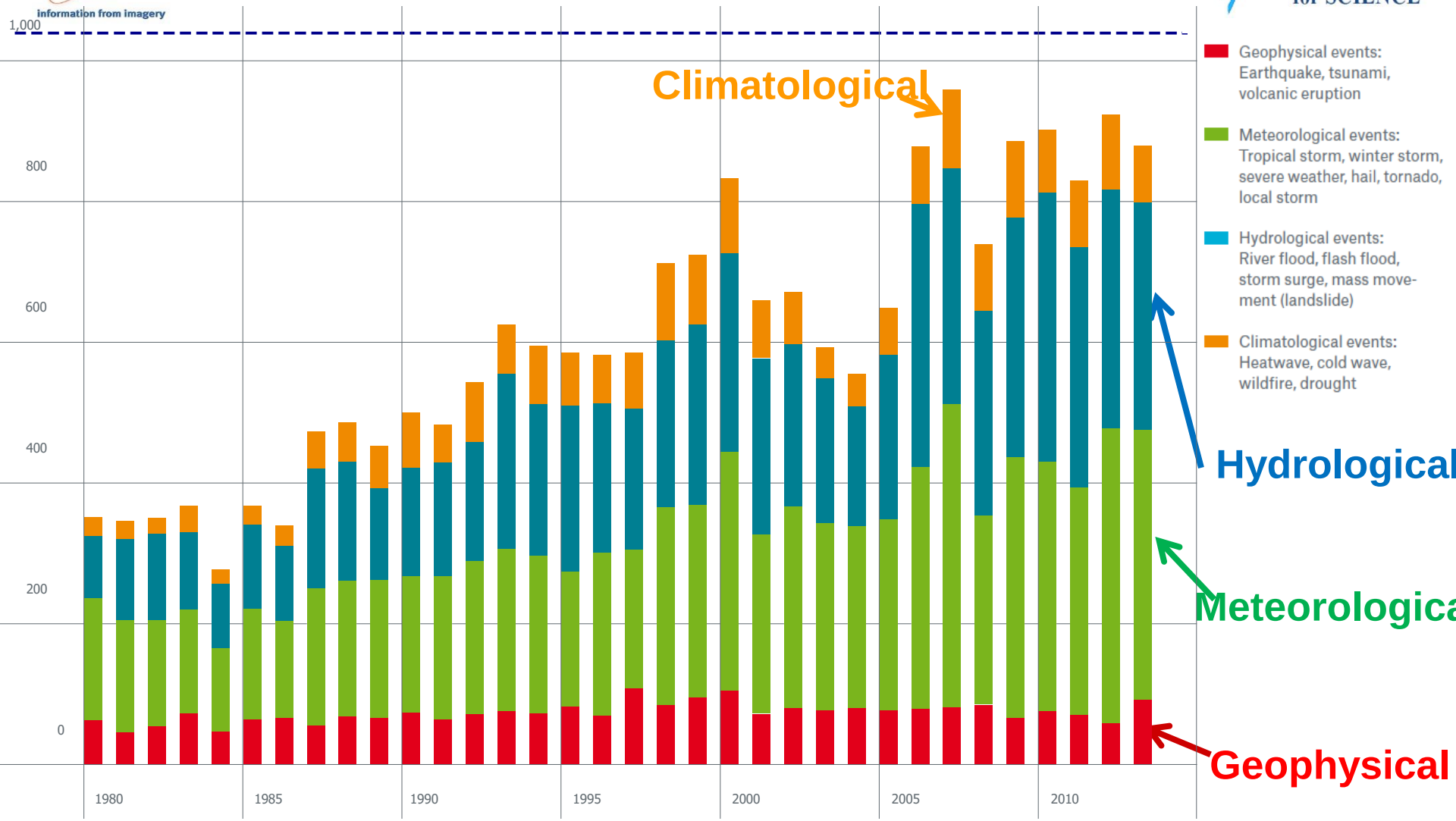
Global average sea level

Northern hemisphere snow cover

Changes in temperature, sea level and northern hemisphere snow cover

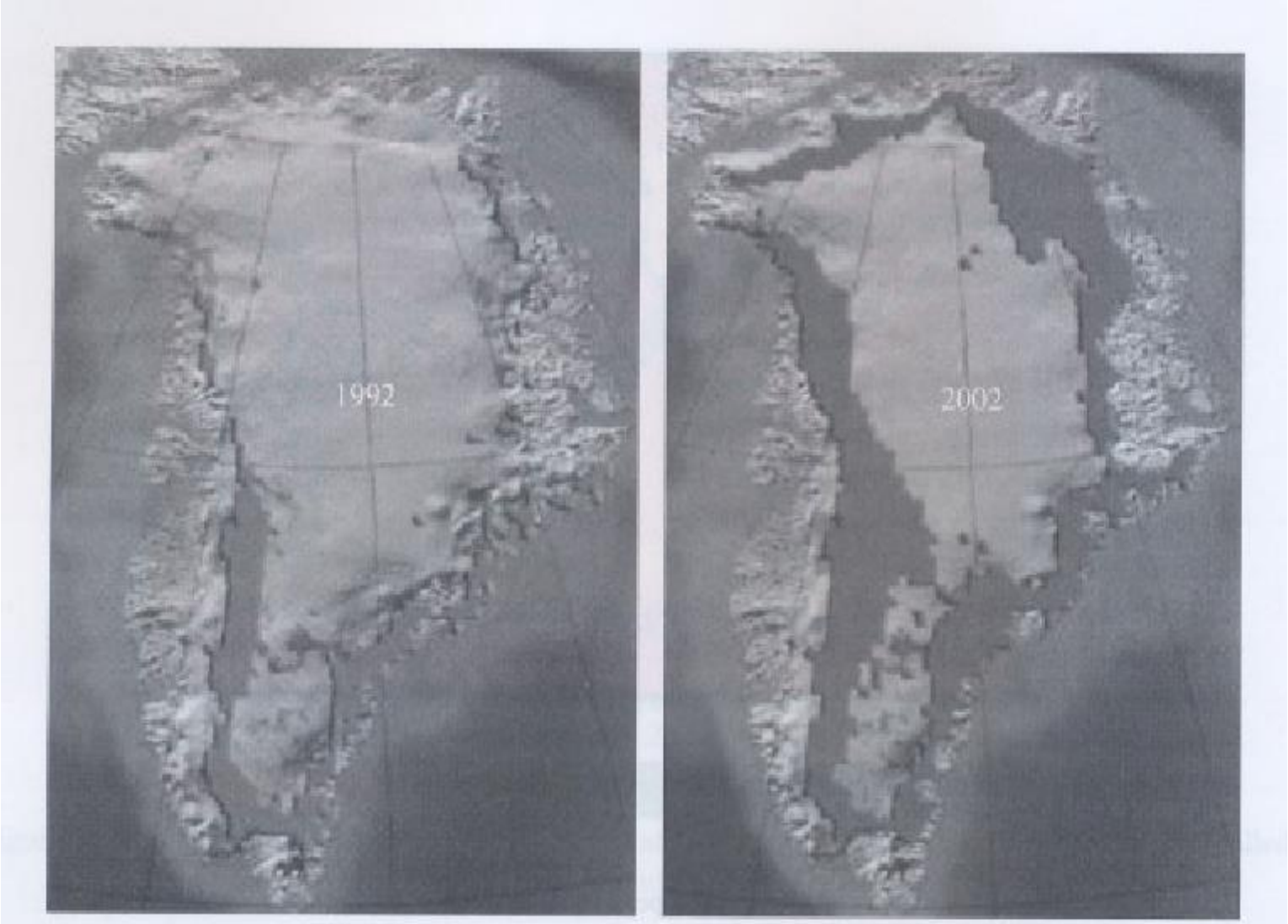


What is Changing?



NatCatSERVICE, Munich Re, 2014

What is Changing?

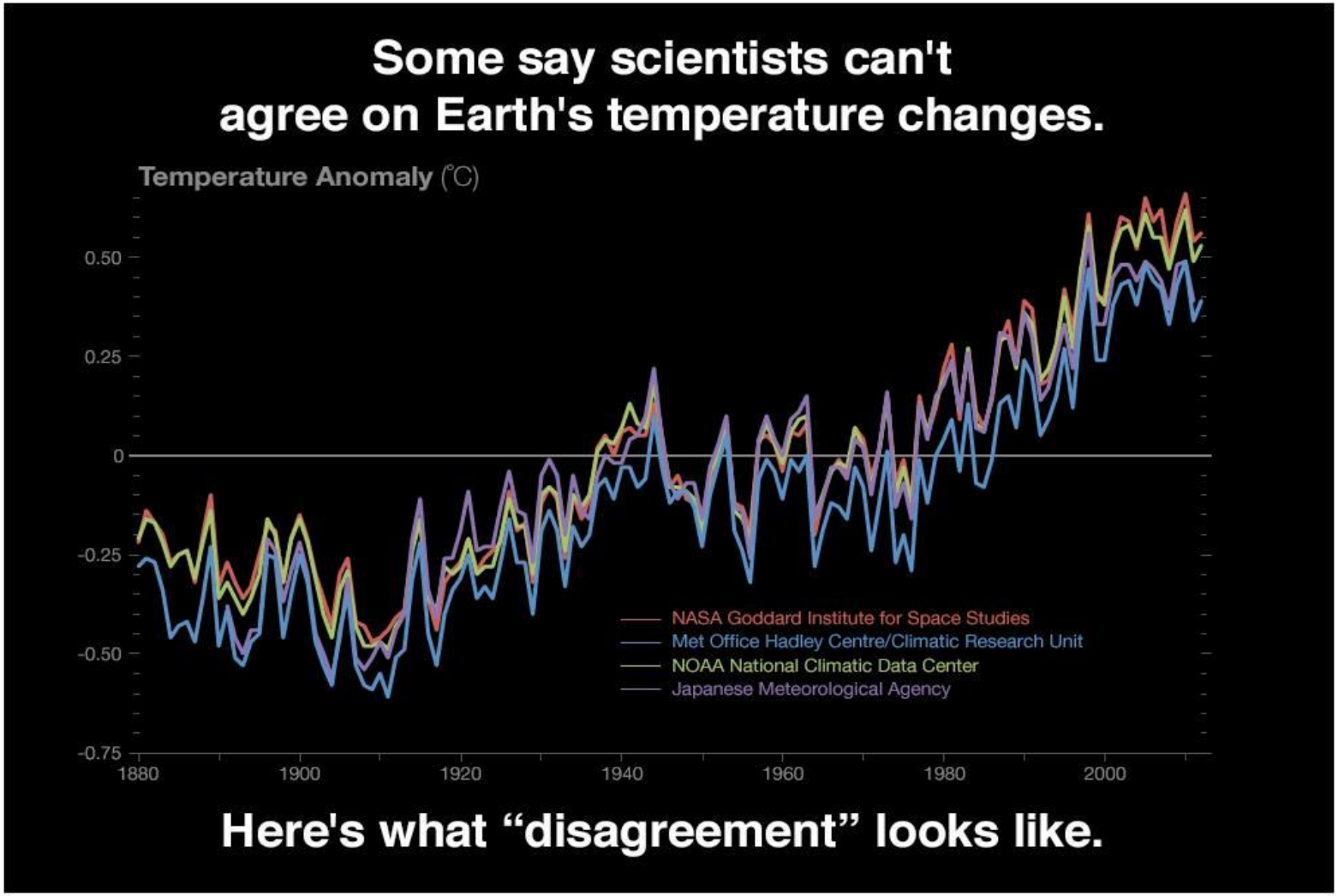


(L) 1992, (R) 2002: more melting occurred than model prediction

What is Changing?

What is Changing?

Gossip



CLIMATE 365

climate365.tumblr.com | go.nasa.gov/climate365

Key vulnerabilities to climate change

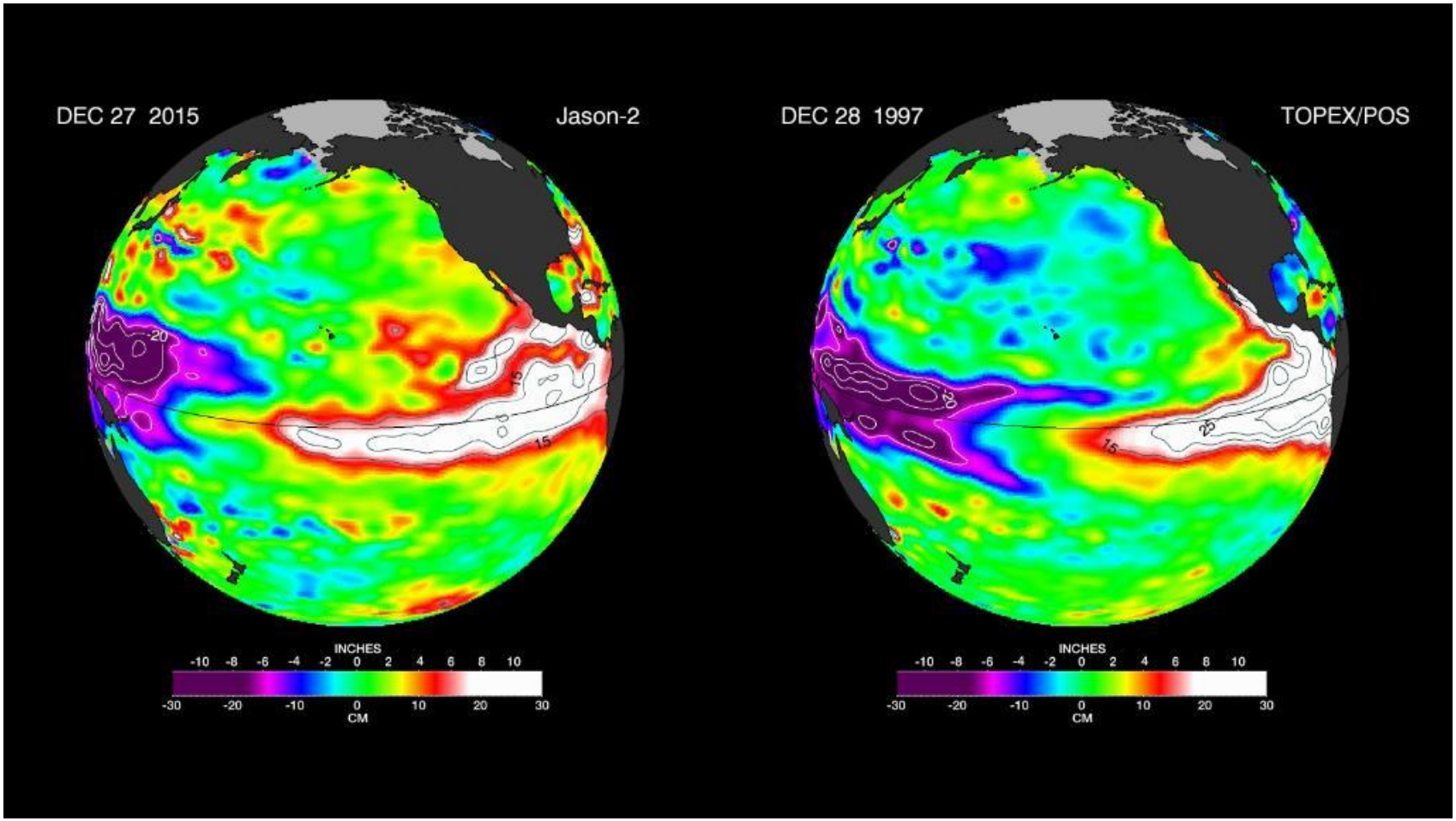
- **Some regions** will be more affected than others:
  - The Arctic (ice sheet loss, ecosystem changes)
  - Sub-Saharan Africa (water stress, reduced crops)
  - Small islands (coastal erosion, inundation)
  - Asian mega-deltas (flooding from sea and rivers)

- **Some ecosystems** are highly vulnerable:
  - Coral reefs, marine shell organisms
  - Tundra, boreal forests, mountain and Mediterranean regions
  - 20-30% of plant and animal species at risk of extinction

What is Changing?

Coastal settlements most at risk

This year of 2016



The still-growing El Niño shows no signs of waning

Global loss and damage databases

- *EMDAT*, the International Disaster Database, maintained by the Center for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain (www.emdat.be);
- *NatCatSERVICE, maintained by Munich Reinsurance (http://www.munichre.com/en/reinsurance/business/non-life/georisks/natcatservice/default.aspx); and*
- *Sigma, maintained by Swiss Reinsurance (e.g. http://media.swissre.com/documents/sigma1_2011_en.pdf);*
- *Disaster database project,* maintained by University of Richmond (http://learning.richmond.edu/disaster/index.cfm);
- *The on-line Global disaster identifier (GLIDE) database,* maintained by the Asian Disaster Reduction Center (ADRC) http://www.glidenumber.net

Regional Overview: Asia-Pacific [c)]

- Number of databases 19 (out of which 15 national, 4 sub-national)
- Countries having a database 30%
- Countries developing their database 3 (Pakistan, Cambodia and Myanmar)
- Number of databases using DesInventar 14 [a)]
- Number of databases using stand-alone 5 [b)]

[a)] UNISDR, the UNITED NATIONS OFFICE FOR DISASTER RISK REDUCTION is the host and main sponsor of the development and world-wide dissemination of DesInventar, especially in Asia, Africa and Oceania.

[b)] five including Australia, Bangladesh, the Philippines, Thailand and Vietnam; The Philippines and Vietnam databases are being migrated to DesInventar. Pakistan's is being developed and will use DesInventar, while Thailand's database has ceased operation.

[c)] **A comparative review of country-level and regional disaster loss and damage databases; UNDP Report 2013**

Asia and the Pacific-an outlook [I)]

- Asia and the Pacific region has suffered more losses from disasters compared to other regions in the world (UNDP[a)]). In 2013 alone, 19 million people were displaced by floods,
- typhoons, and earthquakes came from Asia. Typhoon Haiyan displaced 4.1 million, a million more than in Africa, the Americas, Europe and Oceania combined (b[)]). This trend is expected to continue for the next decades with demographic growth and socio-economic expansion in the region.

[a)] UNDP (2013). A Comparative Review of Country-Level and Regional Disaster Loss and Damage Data Bases. United Nations Development Program

[b)] Onita, L. (2014). Floods, Storms and Quakes Uproot 22 Million in 2013, Numbers to Rise. Available at:http://uk.reuters.com/article/2014/09/16/uk-foundation-disasters-displacedidUKKBN0HB2PC20140916

[I)] ALTAN et all...(2015) Disaster Risks Research and Assessment to Promote Risk Reduction and Management; ICSU-ISSC AD-HOC GROUP ON DISASTER RISK ASSESSMENT , Prepared for Sendai Meeting on March 2015

Asia and the Pacific-an outlook [I)]
Cont...

Out of ten worst disasters of the 21st century, caused by natural events, seven occurred in Asia and the Pacific region (human lives lost are given in the parentheses):

(1) the Indian Ocean earthquake and tsunami, 26 December 2004 (~230,000);
(2) Cyclone Nargis, 2 May 2008 (~146,000);
(3) the Kashmir earthquake, 8 October 2005 (~80,000); (
(4) the Sichuan (China) earthquake, 12 May 2008 (69,197);
(5) the Bam (Iran) earthquake, 26 December 2003 (~43,000);
(6) the Great East Japan earthquake and tsunami, 11 March 2011 (~18,400);
(7) the Bhuj (India) earthquake, 26 January 2001 (19,727).

The Russian heat wave in 2010 (~56,000) had also claimed human lives in Japan, Mongolia and Kazakhstan.

The financial losses due to the Great east Japan earthquake and the tsunami are estimated to be between USD 200 - 300 billion making it to be the most expensive disaster

[I)] ALTAN et all...(2015) Disaster Risks Research and Assessment to Promote Risk Reduction and Management; ICSU-ISSC AD-HOC GROUP ON DISASTER RISK ASSESSMENT , Prepared for Sendai Meeting on March 2015

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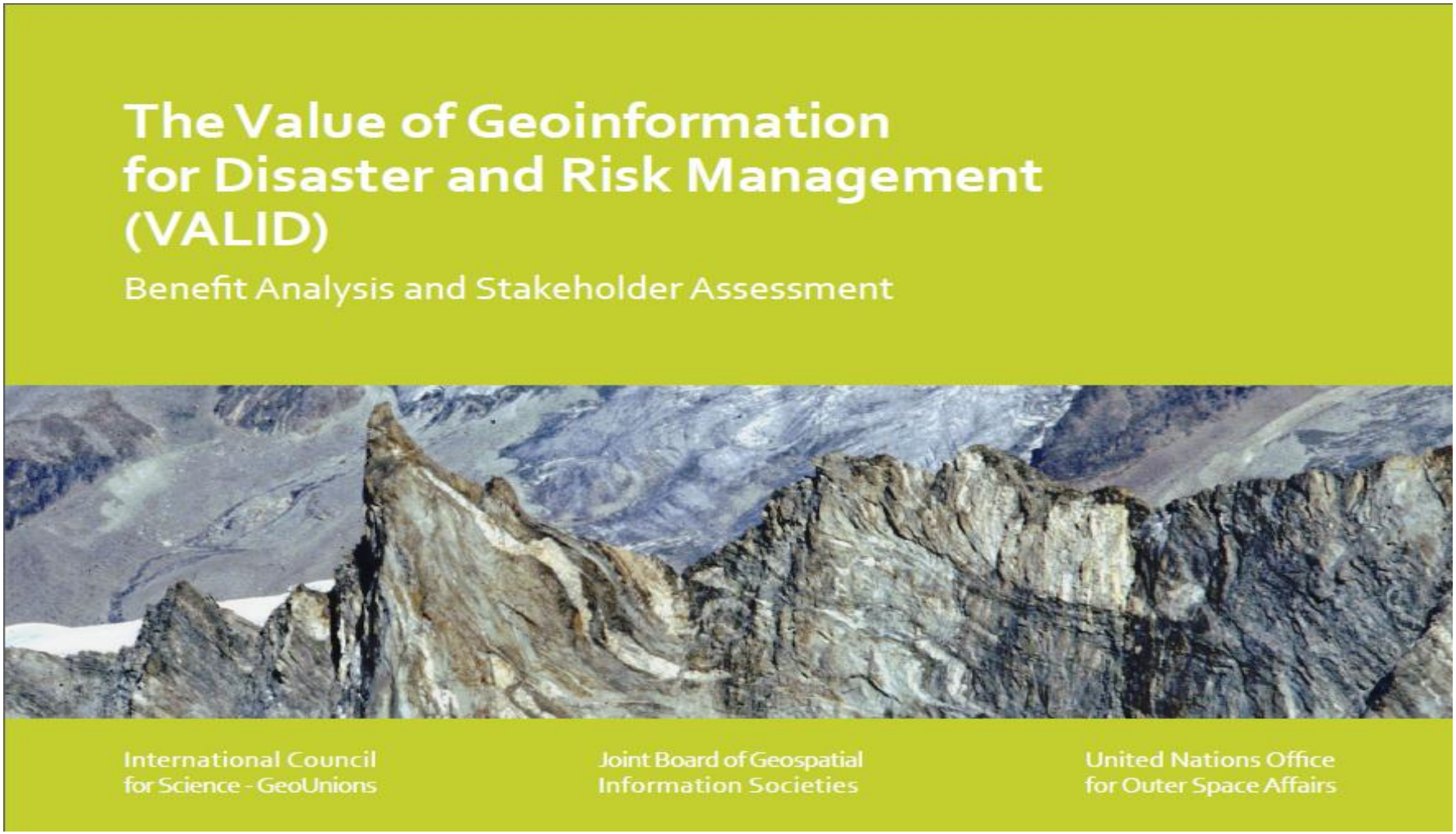
Joint Board of Geospatial Information Societies United Nations Office for Outer Space Affairs

Geoinformation for Disaster and Risk Management

Examples and Best Practices

UNOOSA-JBGIS and ICSU-GeoUnions Project



http://www.un-spider.org/sites/default/files/VALIDPublication.pdf

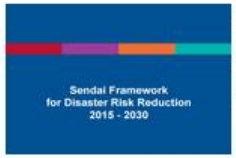
Third UN World Conference on Disaster Risk Reduction

UN World Conference on Disaster Risk Reduction
2015 Sendai Japan

14-18 March 2015
Sendai, Japan

HOME CONFERENCE PREPARATORY PROCESS MEMBER STATES UN & IGOS MAJOR GROUPS NEWS & MEDIA RESOURCES ENGAGE *Registration* *Sponsors*

Sendai Outcomes



Sendai Framework for Disaster Risk Reduction 2015-2030

Sendai Declaration

Voluntary commitments

Implementation and Commitments

Voluntary commitments by relevant stakeholders are important to identify modalities of cooperation and implement the Sendai framework.

Segments

Preparatory Meetings

Inter-Governmental Segment

Multi-Stakeholder Segment

Public Forum

Disaster Risks Research and Assessment to Promote Risk Reduction and Management

Authors:
Irasema Alcántara-Ayala (Mexico), Orhan Altan (Turkey), Daniel Baker (USA), Sálvano Briceño (France/Venezuela), Susan Cutter (USA), Harsh Gupta (India), Ailsa Holloway (South Africa), Alik Ismail-Zadeh (Germany/Russia), Virginia Jiménez Díaz (Venezuela), David Johnston (New Zealand), Gordon McBean (Canada), Yujiro Ogawa (Japan), Douglas Paton (Australia), Emma Porio (Philippines), Rainer Silbereisen (Germany), Kuniyoshi Takeuchi (Japan), Giovanni Valsecchi (Italy), Coleen Vogel (South Africa), Guoxiong Wu (China), and Panmao Zhai (China)

Reviewers:
David Alexander (UK), Reid Basher (New Zealand), Bronwyn Hayward (New Zealand), Ilan Kelman (UK), Allan Lavell (Costa Rica), Alberto Martinelli (Italy), Omar Perez (Venezuela), Roger Pulwarty (USA), and Ester Sztein (USA)

Editors:
Alik Ismail-Zadeh (Germany/Russia) and Susan Cutter (USA)

MARCH 12, 2015
ICSU-ISSC AD-HOC GROUP ON DISASTER RISK ASSESSMENT

Recent Publication

NATURE | COMMENT

Global risks: Pool knowledge to stem losses from disasters

Susan L. Cutter, Alik Ismail-Zadeh, Irasema Alcántara-Ayala, Orhan Altan, Daniel N. Baker, Salvano Briceño, Harsh Gupta, Ailsa Holloway, David Johnston, Gordon A. McBean, Yujiro Ogawa, Douglas Paton, Emma Porio, Rainer K. Silbereisen, Kuniyoshi Takeuchi, Giovanni B. Valsecchi, Coleen Vogel & Guoxiong Wu

17 June 2015

Public awareness, rigorous risk research and aligned targets will help policy-makers to increase resilience against natural hazards, say Susan L. Cutter and colleagues.

PDF | Rights & Permissions

Subject terms: Solid Earth sciences • Climate sciences • Policy • Environmental sciences

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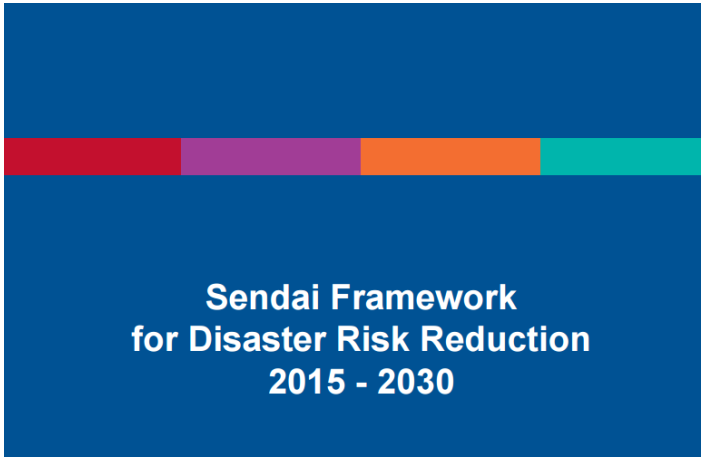
4. Sex divide seen in mechanism that produces persistent pain
   Nature | 29 June 2015



Taking into account the experience gained through the implementation of the Hyogo Framework for Action, and in pursuance of the expected outcome and goal, there is a need for focused action within and across sectors by States at local, national, regional and global levels in the following four priority areas:

Priority 1: Understanding disaster risk.
Priority 2: Strengthening disaster risk governance to manage disaster risk.
Priority 3: Investing in disaster risk reduction for resilience.
Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction.

www.preventionweb.net/english/professional/publications/v.php?id=45069

Third UN World Conference on Disaster Risk Reduction

- **Priority 1: Understanding disaster risk**
  - **National and local levels**
  - **24. To achieve this, it is important:**
- (c) To develop, periodically update and disseminate, as appropriate, location-based disaster risk information, including risk maps, to decision makers, the general public and communities at risk of exposure to disaster in an appropriate format by using, as applicable, **geospatial information technology**;
  - **Global and regional levels**
  - **25. To achieve this, it is important**
- c) To promote and enhance, through international cooperation, including technology transfer, access to and the sharing and use of non-sensitive data and information, as appropriate, communications and **geospatial and space-based technologies** and related services; maintain and strengthen in situ and **remotely-sensed earth and climate observations**; and strengthen the utilization of media, including social media, traditional media, big data and mobile phone networks, to support national measures for successful disaster risk communication, as appropriate and in accordance with national laws;

www.preventionweb.net/english/professional/publications/v.php?id=45069

- (g) To enhance the scientific and technical work on disaster risk reduction and its mobilization through the coordination of existing networks and scientific research institutions at all levels and in all regions, with the support of the United Nations Office for Disaster Risk Reduction Scientific and Technical Advisory Group, in order to strengthen the evidence base in support of the implementation of the present Framework; promote scientific research on disaster risk patterns, causes and effects; disseminate risk information **with the best use of geospatial information technology**; provide guidance on methodologies and standards for risk assessments, disaster risk modelling and the use of data; identify research and technology gaps and set recommendations for research priority areas in disaster risk reduction; promote and support the availability and application of science and technology to decision-making; contribute to the update of the publication entitled “2009 UNISDR Terminology on Disaster Risk Reduction”; use post-disaster reviews as opportunities to enhance learning and public policy; and disseminate studies;

www.preventionweb.net/english/professional/publications/v.php?id=45069

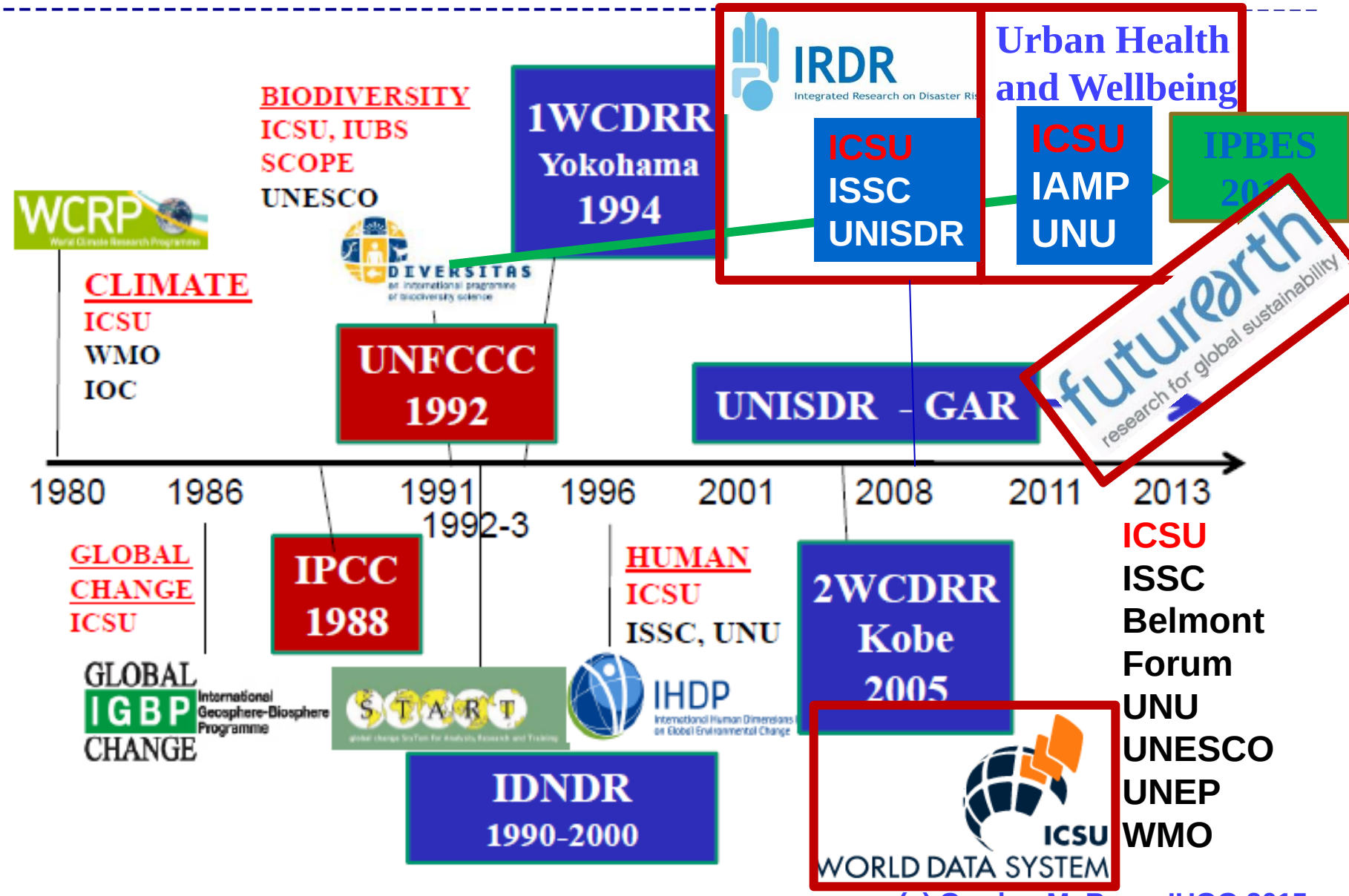
International Council for Science

- **established 1931 –non-governmental organisation with a global membership of national scientific bodies (120 Members, representing 140 countries) and International Scientific Unions (31 Members).**

Mission - ***to strengthen international science for the benefit of society. – <u>all societies</u>***

Vision - ***The long-term strategic vision is for a world where science is used for the benefit of all, excellence in science is valued and scientific knowledge is effectively linked to policy making.***

- **Key priorities and associated activities:**
  - **Science for Policy**
  - **Universality of Science**
  - **International Research Collaboration**



(c) Gordon McBean, IUGG 2015

COP21

Nations Unies
Conférence sur les Changements Climatiques 2015
COP21/CMP11
Paris-Le Bourget

COP21

Climate Change and Resilience: Co-design for Urbanization in China

In this side event, the Chinese National Committee for Future Earth (CNC-FE) sponsored by China Association for Science and Technology (CAST) will invite natural and social scientists to introduce activities in China on addressing climate change and enhancing resilience from the perspective of co-design for urbanization in China.

Speakers:

- **Professor Guoxiong Wu**, Vice Chair of CNC-FE, academician of Chinese Academy of Sciences
- **Professor Xiangwan Du**, Vice Chair of CNC-FE, academician of Chinese Academy of Engineering
- **Dr. Mou Wang**, Institute for Urban & Environmental Studies, Chinese Academy of Social Sciences
- **Professor Rongping Mu**, Institute of Policy and Management of Chinese Academy of Sciences
- **Dr Lei Huang**, National Climate Center, China Meteorological Administration
- **Professor Qian Ye**, Beijing Normal University

ICSU co-organizes key scientific press Conference at COP21

The panel of scientists consisted of

- **Hans-Joachim Schellnhuber, Director of the Potsdam Institute for Climate Impact Research,**
- **Johan Rockstrom, Executive Director of the Stockholm Resilience Centre,**
- **Steffen Kallbekken, Research Director at CICERO,**
- **Kevin Anderson, Deputy Director of the Tyndall Centre, and Joeri Rogelj, IIASA.**

More than 200 international journalists streamed into a side event room at Le Bourget to hear the comments of leading international scientists on the penultimate draft of the Paris Agreement. The press conference led to extensive coverage in the international press, with many of the key arguments presented by the scientists

COP21

It has been widely recognized, with unanimous agreement from scientists, that the earth's atmosphere is growing warmer due to greenhouse gas emissions generated by human activity.
The reached agreement marks a change in direction, towards a new world. It confirms the target of keeping the rise in temperature below 2°C. Scientists believe that a greater increase in temperature would be very dangerous. The agreement even establishes, for the first time, that we should be aiming for 1.5°C, to protect island states, which are the most threatened by the rise in sea levels.

Evidence, why and what we can achive

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XXIII ISPRS Congress, Prague 2016

From human history to the future with spatial information

July 12-19, 2016

Time table

	Monday 11 July	Tuesday 12 July	Wednesday 13 July	Thursday 14 July	Friday 15 July	Saturday 16 July	Sunday 17 July	Monday 18 July	Tuesday 19 July
8:30-10:00	Tutorials	Tutorials; General Assembly	Plenary	Oral Sessions; Forums*	Oral Sessions; Forums*	Plenary	Oral Sessions; Youth Forum	Plenary	Oral Sessions
10:00-10:30			Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30-12:00			Oral Sessions	Oral Sessions; Forums*	Oral Sessions; Forums*	Oral Sessions	Oral Sessions; Youth Forum	Oral Sessions	Oral Sessions
12:00-13:30	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
13:30-15:00	Tutorials	General Assembly; Exhibition	Oral Sessions; General Assembly; Exhibition	Oral Sessions; Forums*; CATCON; Exhibition	Oral Sessions; Forums*; Exhibition	Oral Sessions; General Assembly; Exhibition	Oral Sessions; Youth Forum	Oral Sessions; General Assembly	Closing Ceremony
15:00-15:30			Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
15:30-16:30			Interactive Sessions; General Assembly	Interactive Sessions; Forums*	Interactive Sessions; Forums*	Interactive Sessions; General Assembly	Interactive Sessions; Youth Forum	Interactive Sessions; General Assembly	
16:30-18:00		Openning Ceremony	Oral Sessions	Oral Sessions	Oral Sessions	Oral Sessions	Oral Sessions	Oral Sessions	
18:00-21:30		Welcome Reception 19:00-20:30	Exhibitors Reception 18:00-20:30	Concert 20:00-21:30	Youth Meeting 19:00-21:30	Boat Trip 19:30-21:30	Theatre 20:00-21:30	Congress Gala Dinner 20:00-23:00	

Two Fora at the Congress

ISPRS – UN-GGIM National Mapping and Cadastral Agency Forum
14 – 15 July 2016

An integral part of the XXIII ISPRS Congress in Prague

ISPRS – IAA Space Agency Forum
14 – 15 July 2016

An integral part of the XXIII ISPRS Congress in Prague

Joint session of both Fora
Use cases **Examples from space agencies** **Examples from NMCAs** **Multi-national programs**
Big data, **Coordination** **Integration**

Invited speakers of Space Agency Forum

Lawrence Friedl, NASA (ICORSE)
Volker Liebig, ESA
Ms. Haiyi Cao, CAST
Shizuo Yamamoto, JAXA
Barbara Ryan, GEO
Steven Briggs, CG

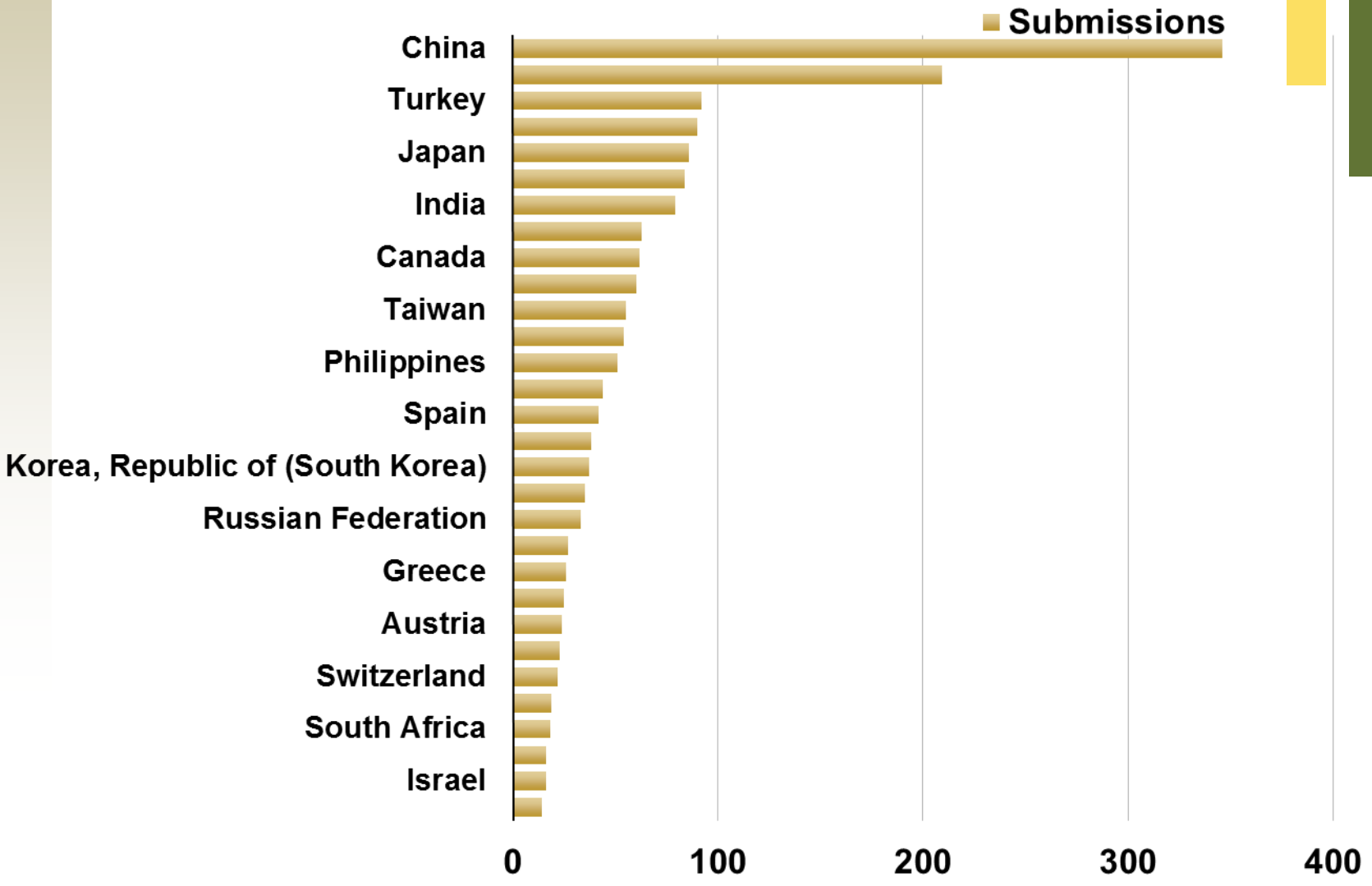
Number of Papers

Number of Abstracts 1 471

Number of Full Papers 471

Total number of submissions 1942

Submissions from individual countries



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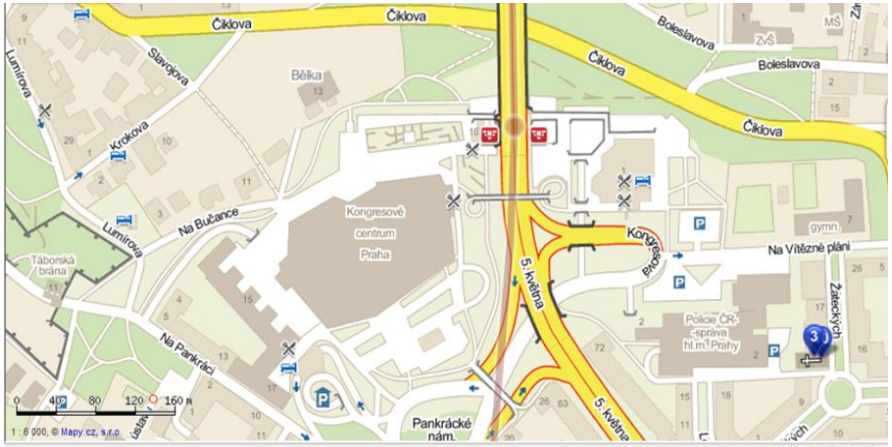

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