

Agenda 2030 and Sendai Framework – Indicators and Supportive Data

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S C I



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1. Introduction

2. Sustainable Development (SDG's) goals, targets and indicators

3. Disasters Risk Reduction Agenda: Sendai Framework, targets and global indicators

4. Data and Information Support: DBAR and U.N. GGIM comparison

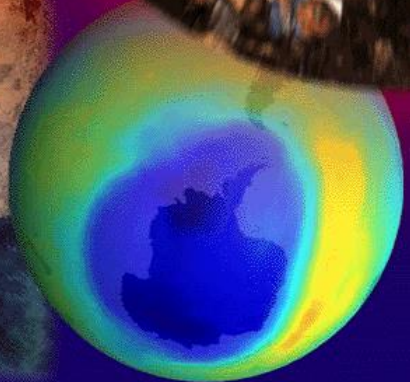
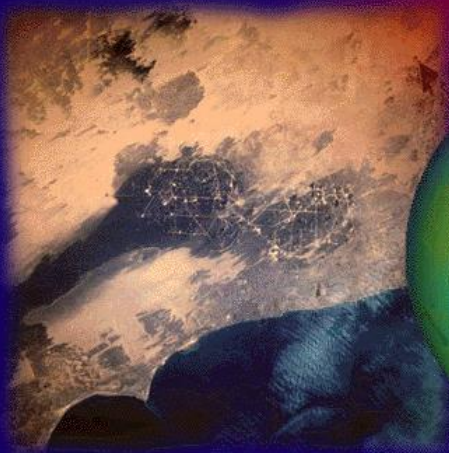
5. The Challenges of Geospatial Sciences (incl. Geodesy, Cartography, RS, etc.)

6. Innovative Types of Projects

1. INTRODUCTION

World Global Challenges:

**Sustainable Development Approach and
Disaster Risk Reduction**



1972 - Stockholm, the urgent need to respond to the problem of environmental deterioration ,

1992 – Rio de Janeiro, the protection of environment, social and economic development are fundamental to sustainable development;

Agenda 21, Global Mapping

2002 – Johannesburg, World Summit

on Sustainable Development (WSSD)

2003 – Geneva, WS on Information Society

„Information Society” is the term that is used to capture the increasing contemporary influence of information and communication technologies (ICTs).

Knowledge-based society enhances content of the processes based on data, information and knowledge.

Information Society

Sustainable Information Society

The linkage between sustainability
and information society development
is still poorly understood.



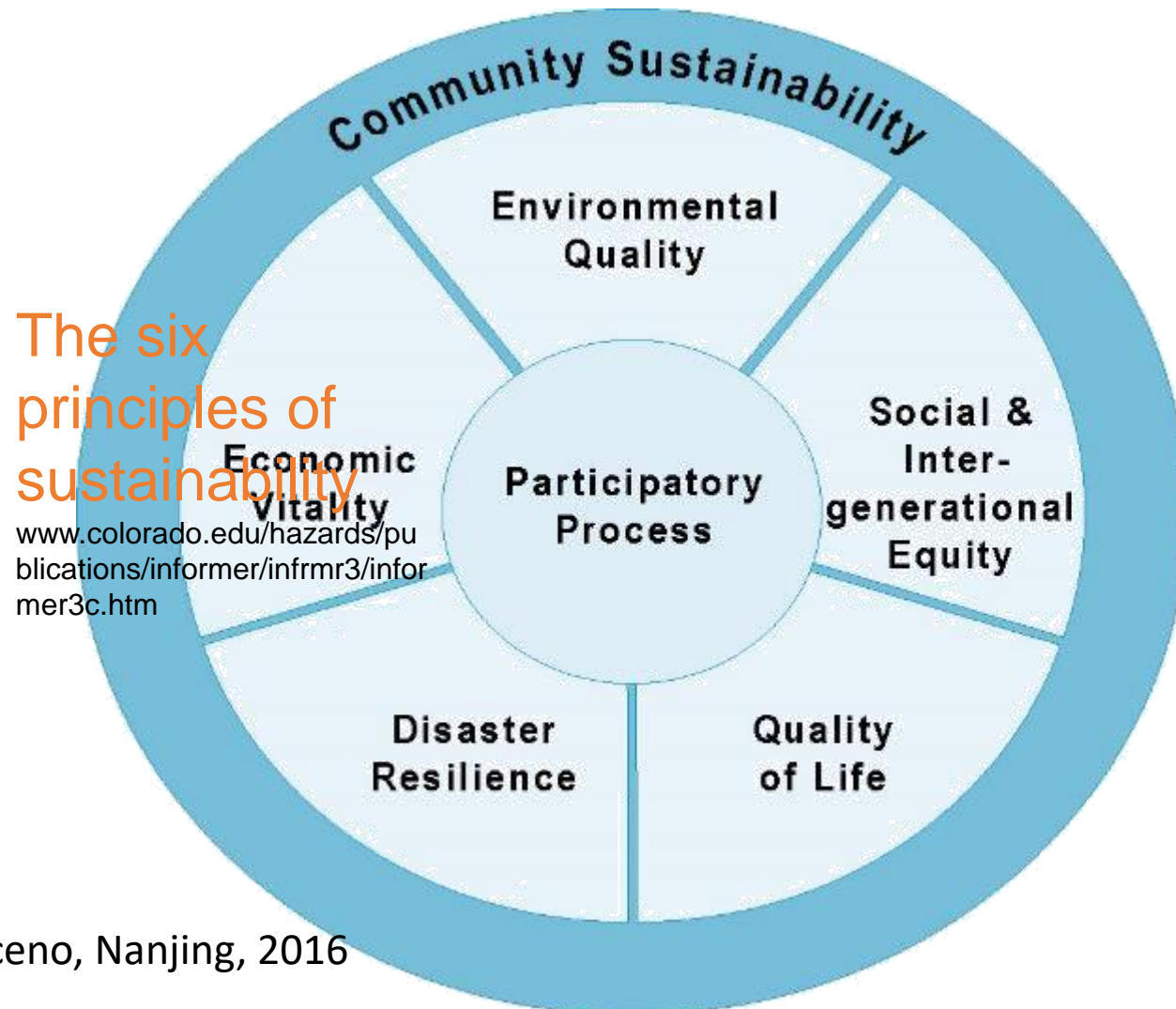
Sustainable Development – General Comments

Sustainable Development:

a set of the equal important aspects:

- economic,
- ecological,
- technological,
- social,
- cultural,
- ethical.

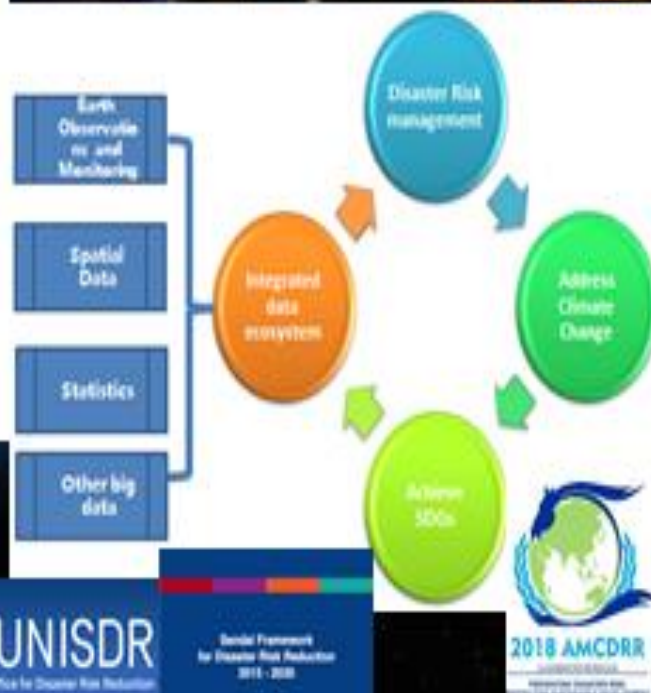
The vision of disaster risk reduction:
building resilience into sustainable development



2. Sustainable Development (SDG's) goals, targets and indicators

Goals and Targets of SDGs

UNEP 2030 Agenda DEVELOPMENT GOALS



UN disaster risk reduction Agenda
 Snowstorm, Drought, Earthquake, Flood, Hurricanes,
 Cyclones and typhoons, Landslide, Tomado, Tsunami
 Volcanic eruption, Wildfires

2030 Agenda: Goals, targets, indicators



UN-GGIM

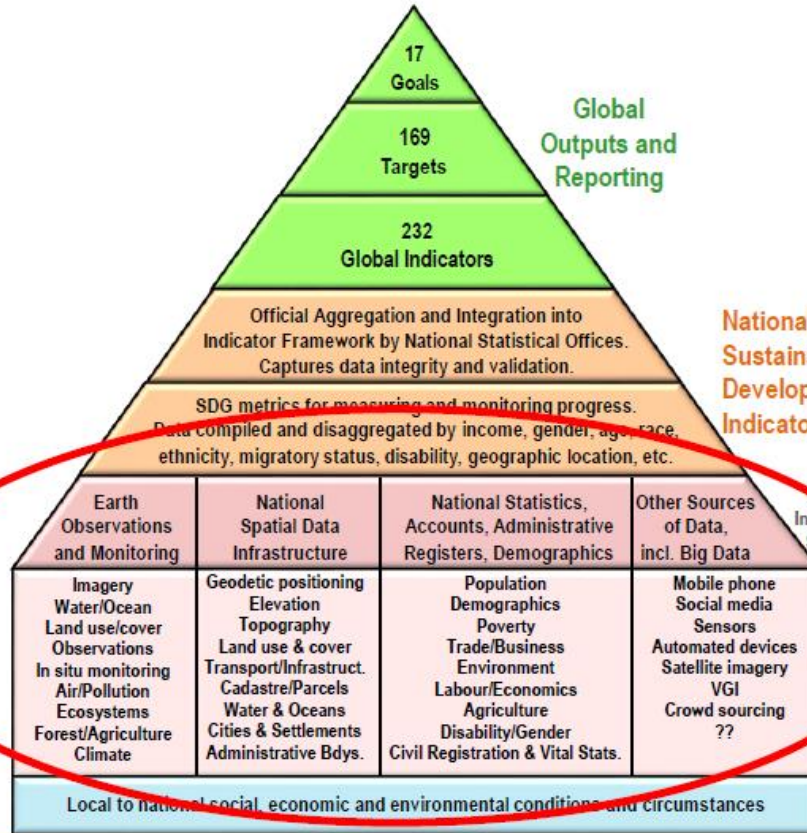
United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org



An integrative data ecosystem

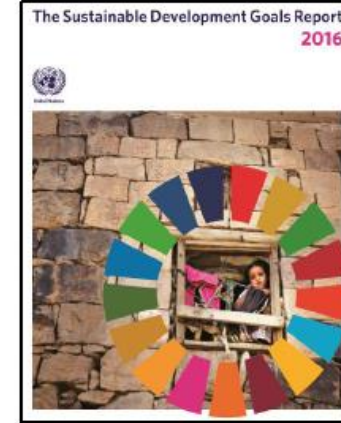


Global Outputs and Reporting

National Sustainable Development Indicators

National Information Systems
Data Inputs

Fundamental baseline data and new data sources



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org

Global development policy framework



United Nations
Framework Convention on
Climate Change



UN-GGIM

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Global Geospatial Information Management

Positioning geospatial information to address global challenges

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Indicators for SDGs

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

- **11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
- **11.2** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
- **11.1.1** Proportion of urban population living in slums, informal settlements or inadequate housing
- **11.2.1** Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

- **11.3** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- **11.4** Strengthen efforts to protect and safeguard the world's cultural and natural heritage.
- **11.3.1** Ratio of land consumption rate to population growth rate
- **11.3.2** Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically.
- **11.4.1** Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)

The critical step ahead is a fact that ***17th goals are accompanied by 169 targets, 232 global indicators*** to follow-up and review progress to know real state of the art of our planet according to measured characteristics.

Implementation of these efforts is expected by implementation via ***national planning processes***, policies, strategies and frameworks.

Measuring and monitoring will be done by statistics, geospatial information, Earth observations and other Big Data.

The **U.N. Statistical Commission**, as a functional commission of ***Economic and Social Council (ECOSOC)***, was asked to develop the **global indicator framework**.

Global indicator framework has primarily been based on a statistical data input-output approach, ***the need for 'geographic location'*** in a new era of data needs is well recognised. Many national statistical offices now understand that ***geospatial information, Earth observations and other Big Data*** are able to provide new and consistent data sources and methodologies **to integrate multiple 'location-based'** variables to support and inform official statistics and the indicators for the SDGs.

United NationsA/RES/71/313
General AssemblyDistr.: General
10 July 2017Seventy-firstsessionAgenda items 13 and 11717-
11371(E)*1711371*Pleaserecycle

**Resolution adopted by the General Assembly
on 6 July 2017**

[without reference to a Main Committee (A/71/L.75)]

**71/313. Work of the Statistical Commission
pertaining to the 2030 Agenda for Sustainable
Development**

Annex

***Global indicator framework for the Sustainable
Development Goals and targets of the 2030 Agenda
for Sustainable Development***

Global indicator framework, all indicators are classified into *three tiers based on their level of methodological development and the availability of data at the global level*, as follows:

February 2020: <https://unstats.un.org/sdgs/iaeg-sdgs/tier-classification/>

To facilitate the implementation of the **global indicator framework**,

all indicators are classified by the IAEG-SDGs into **three tiers based on their level of methodological development and the availability of data** at the global level, as follows:

Tier Classification Criteria/Definitions:

Tier 1: Indicator is conceptually clear, has an internationally established methodology and standards are available, and data are regularly produced by countries for at least 50 per cent of countries and of the population in every region where the indicator is relevant.

Tier 2: Indicator is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries.

Tier 3: No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested.

All indicators are equally important, and the establishment of the tier system is intended solely to assist in the development of global implementation strategies. For tier I and II indicators, the availability of data at the national level may not necessarily align with the global tier classification and countries can create their own tier classification for implementation.

Please note that Tier I and II indicators' metadata are available in the [metadata repository](#). Tier III indicators require work plans to be developed outlining the methodological development of the indicators for approval by the IAEG-SDGs.

Pomocné activity

Pilot study of OECD "Measuring the distance to the goals of sustainable development". OECD-Organization for Economic Co-operation and Development

OECD A SGDs

As part of the OECD Action Plan, a reporting methodology entitled "**Measuring Distance to the SDG Targets**" was developed in 2016, 2017 and 2019.

Their aim was to assist Member States in implementing the 2030 Agenda for Sustainable Development.

The measurement **results gradually improve the overview of the strengths and weaknesses of the implementation process across the SDGs** in individual countries and help to orientate in the complexity of the SDGs and to determine their priorities within the broad Agenda 2030.

The reports aim to assist Member States in their implementation, measurement and prioritization of data for Agenda 2030.

The first was a pilot edition of the report in 2016, the second and third were in June 2017 and May 2019
(<https://www.oecd.org/sdd/measuring-distance-to-the-sdgs-targets.htm>)

The report **uses a unique methodology** for assessing the amount of work that OECD countries have yet to do to meet all the objectives of the SDGs.

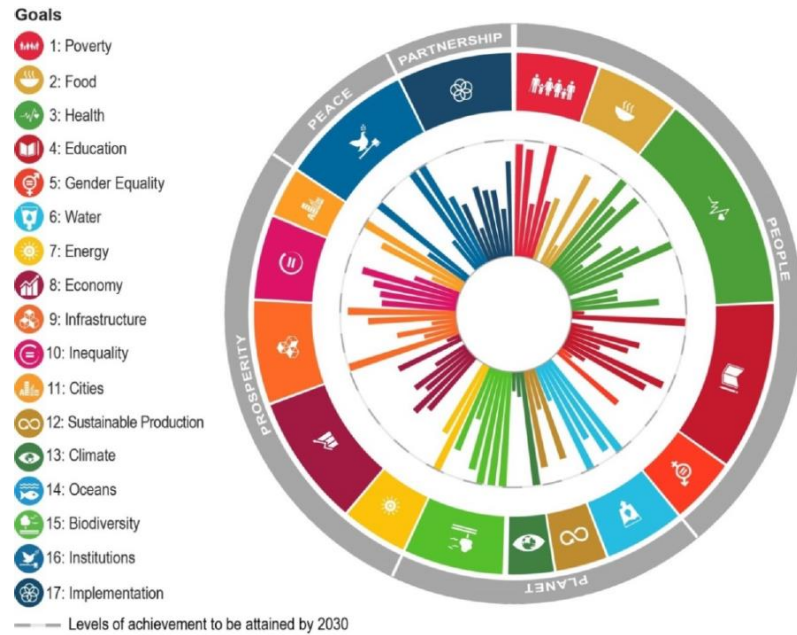
The procedure is based on the UN IAEG Global List of Indicators and uses publicly available data from OECD and UN SDG databases.

The results are visualized using special graphs on the status of SDGs solutions in individual countries and allow their comparison.

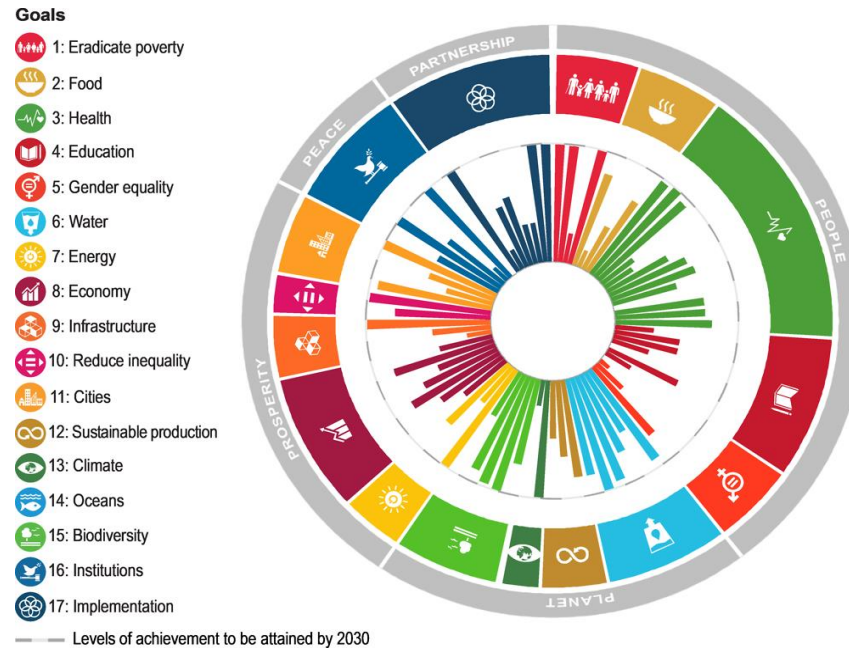
Trends since 2005 are assessed according to **76 indicators**.

The OECD measurement - distance to meet SDGs targets

ČR 2017

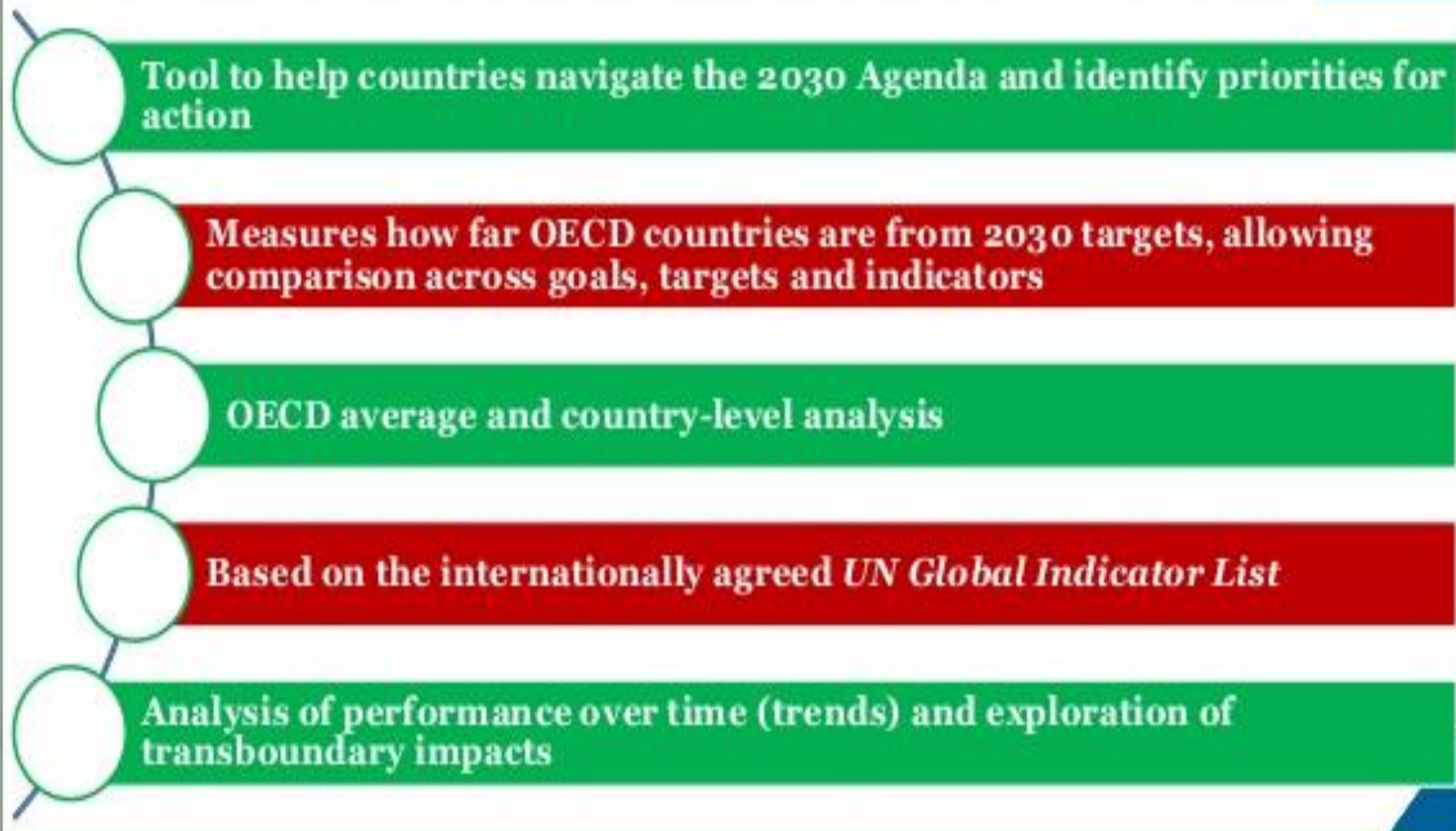


ČR 2019





What is the purpose of this study? What does it do?



3. Disasters Risk Reduction Agenda: Sendai Framework, targets and global indicators

DISASTER RISK REDUCTION SENDAI GOALS AND GLOBAL INDICATORS

In the Third U.N. World Conference on DRR, March 14, 2015, in Sendai, Japan. As never before the conference in its materials mentioned the role of ICTs, GIS, remote sensing, mapping, sensors, volunteer geographic information, etc.

In Sendai framework, **four new priorities** of action are defined:

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 (United Nations General Assembly, 2015).**

Priority 1:

Understanding disaster risk. National and local level

(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;

(f) To promote real time access to reliable data, make use of **space and in situ information**,

including geographic information systems **(GIS)**, and use information and communications technology innovations

to enhance measurement tools and the collection, analysis and dissemination of data;

Global and regional levels

To achieve this, it is important:

- (a) To enhance the development and dissemination of **science-based methodologies** and tools to record and share disaster losses and relevant disaggregated **data and statistics**, as well as to strengthen disaster risk modelling, assessment, **mapping**, monitoring and multi-hazard early warning systems;

Disaster Risk Reduction Sendai Global Targets and Indicators

**Resolution adopted by the General Assembly on
2 February 2017**

[without reference to a Main Committee (A/71/L.54 and Add.1)]

71/276. Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction

71/644 IV. Recommendations of the open-ended intergovernmental expert working group on global indicators for the global targets of the Sendai Framework for Disaster Risk Reduction 2015-2030 and on the follow-up to and operationalization of the indicators (**Global Targets A-G**, see next slides)

Sendai Framework Indicators

A set of 38 indicators was identified to measure global progress in the implementation of the Sendai Framework for Disaster Risk Reduction. The indicators will measure progress in achieving the global targets of the Sendai Framework, and determine global trends in the reduction of risk and losses.

Global indicators for the global targets of the Sendai Framework aim to operationalise **seven targets (A-G)**.

They have been selected and as well as related and reflected to the SDGs items **no. 1 - Poverty, 11 – Sustainable Cities and 13 – Climate Action** (Figures 1 and 2).



Seven Global Targets of Sendai Framework for Disaster Risk Reduction. Source: Policy Area Secure (2018).

Global target A: Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared with 2005-2015.

A-1 (compound) Number of deaths and missing persons attributed to disasters, per 100,000 population.

A-2 Number of deaths attributed to disasters, per 100,000 population.

A-3 Number of missing persons attributed to disasters, per 100,000 population.

The scope of disaster in this and subsequent targets is defined in paragraph 15 of the Sendai Framework for Disaster Risk Reduction 2015-2030 and applies to small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters caused by natural or man-made hazards, as well as related environmental, technological and biological hazards and risk.

Global target B: Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared with 2005-2015.

B-1 (compound) Number of directly affected people attributed to disasters, per 100,000 population.

B-2 Number of injured or ill people attributed to disasters, per 100,000 population.

B-3

Number of people whose damaged dwellings were attributed to disasters.

B-4

Number of people whose destroyed dwellings were attributed to disasters.

B-5

Number of people whose livelihoods were disrupted or destroyed, attributed to disasters.

Global target C: Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

C-1 (compound) Direct economic loss attributed to disasters in relation to global gross domestic product.

C-2 Direct agricultural loss attributed to disasters.
Agriculture is understood to include the crops, livestock, fisheries, apiculture, aquaculture and forest sectors as well as associated facilities and infrastructure.

C-3

Direct economic loss to all other damaged or destroyed productive assets attributed to disasters.

Productive assets would be disaggregated by economic sector, including services, according to standard international classifications. Countries would report against those economic sectors relevant to their economies. This would be described in the associated metadata.

C-4

Direct economic loss in the housing sector attributed to disasters.

Data would be disaggregated according to damaged and destroyed dwellings.

C-5

Direct economic loss resulting from damaged or destroyed critical infrastructure attributed to disasters.

The decision regarding those elements of critical infrastructure to be included in the calculation will be left to the Member States and described in the accompanying metadata. Protective infrastructure and green infrastructure should be included where relevant.

C-6

Direct economic loss to cultural heritage damaged or destroyed attributed to disasters.

Global target D: Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030

D-1 (compound) Damage to critical infrastructure attributed to disasters.

D-2 Number of destroyed or damaged health facilities attributed to disasters.

D-3 Number of destroyed or damaged educational facilities attributed to disasters.

D-4 Number of other destroyed or damaged critical infrastructure units and facilities attributed to disasters.

The decision regarding those elements of critical infrastructure to be included in the calculation will be left to the Member States and described in the accompanying metadata. Protective infrastructure and green infrastructure should be included where relevant.

D-5 (compound)

Number of disruptions to basic services attributed to disasters.

D-6

Number of disruptions to educational services attributed to disasters.

D-7

Number of disruptions to health services attributed to disasters.

D-8

Number of disruptions to other basic services attributed to disasters.

The decision regarding those elements of basic services to be included in the calculation will be left to the Member States and described in the accompanying metadata.

Global target E: Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.

- E-1** Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.

- E-2** Percentage of local governments that adopt and implement local disaster risk reduction strategies in line with national strategies.
Information should be provided on the appropriate levels of government below the national level with responsibility for disaster risk reduction.

Global target F: Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030.

- F-1** Total official international support, (official development assistance (ODA) plus other official flows), for national disaster risk reduction actions.
Reporting of the provision or receipt of international cooperation for disaster risk reduction shall be done in accordance with the modalities applied in respective countries. Recipient countries are encouraged to provide information on the estimated amount of national disaster risk reduction expenditure.
- F-2** Total official international support (ODA plus other official flows) for national disaster risk reduction actions provided by multilateral agencies.

- F-3** Total official international support (ODA plus other official flows) for national disaster risk reduction actions provided bilaterally.
- F-4** Total official international support (ODA plus other official flows) for the transfer and exchange of disaster risk reduction-related technology.
- F-5** Number of international, regional and bilateral programmes and initiatives for the transfer and exchange of science, technology and innovation in disaster risk reduction for developing countries.

- F-6** Total official international support (ODA plus other official flows) for disaster risk reduction capacity-building.
- F-7** Number of international, regional and bilateral programmes and initiatives for disaster risk reduction-related capacity-building in developing countries.
- F-8** Number of developing countries supported by international, regional and bilateral initiatives to strengthen their disaster risk reduction-related statistical capacity.

Global target G: Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

- G-1** Number of countries that have multi-hazard early warning systems.
(compound G2-G5)
- G-2** Number of countries that have multi-hazard monitoring and forecasting systems.
- G-3** Number of people per 100,000 that are covered by early warning information through local governments or through national dissemination mechanisms.

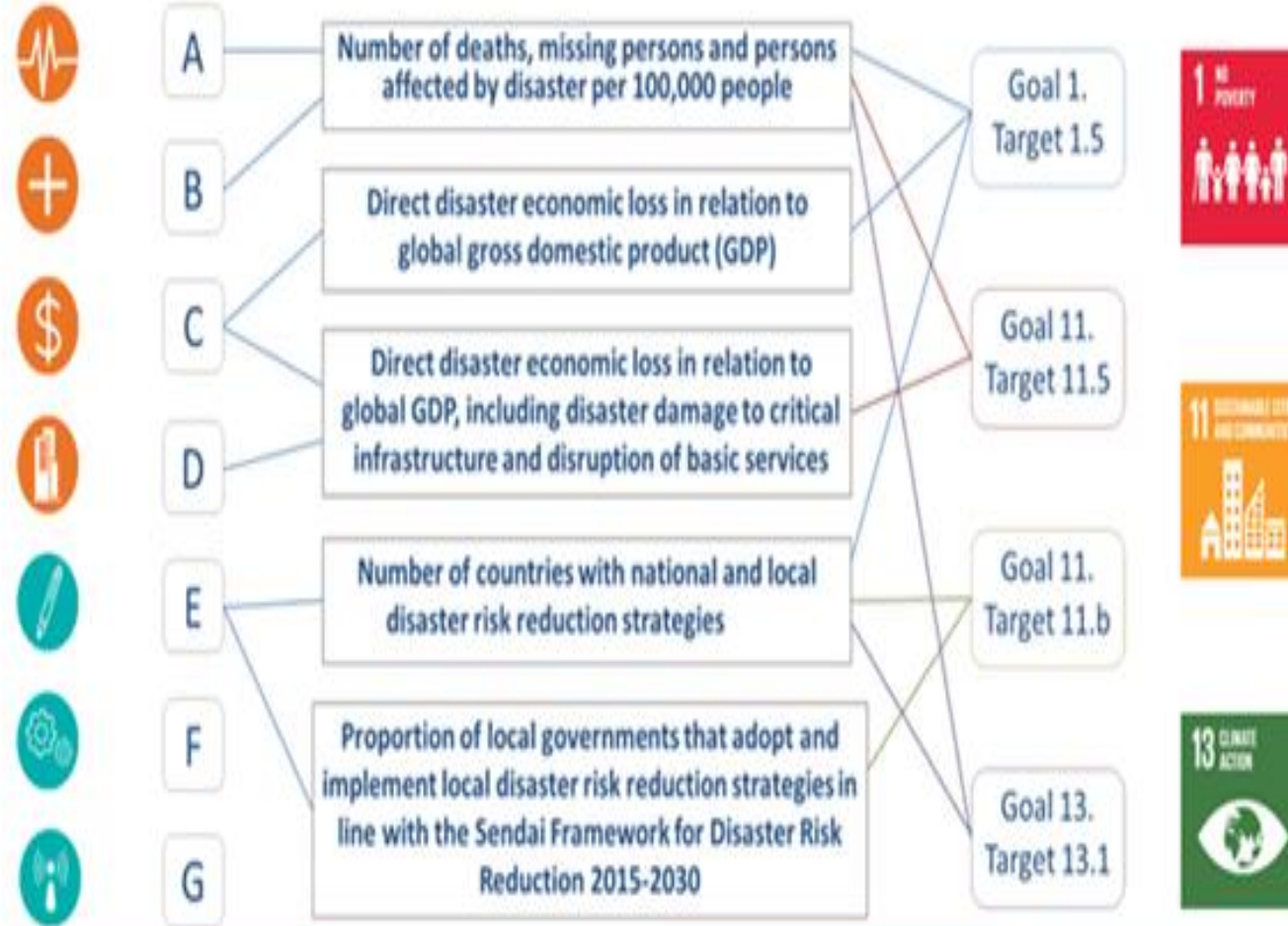
- G-4** Percentage of local governments having a plan to act on early warnings.
- G-5** Number of countries that have accessible, understandable, usable and relevant disaster risk information and assessment available to the people at the national and local levels.
- G-6** Percentage of population exposed to or at risk from disasters protected through pre-emptive evacuation following early warning. *Member States in a position to do so are encouraged to provide information on the number of evacuated people.*

Integration of SDGs and Sendai Framework Indicators

INTEGRATED MONITORING OF THE GLOBAL TARGETS OF THE SENDAI FRAMEWORK AND THE SUSTAINABLE DEVELOPMENT GOALS

The Sendai Framework targets and indicators contribute to measuring disaster-related goals and targets of the 2030 Agenda for Sustainable Development of above mentioned SDGs.

Outcomes are a product of complex and interconnected social and economic processes with overlap across the two agendas.



Integrated Monitoring of the Global Targets of the Sendai Framework and the Sustainable Development Goals. Source: PreventionWeb (2020).

HAZARD DEFINITION & CLASSIFICATION REVIEW

TECHNICAL REPORT



**Hazard Definition
and
Classification
Review:
Technical Report.**

**United Nations,
2020**

4. DBAR and U.N. GGIM: descriptions, commons and differences

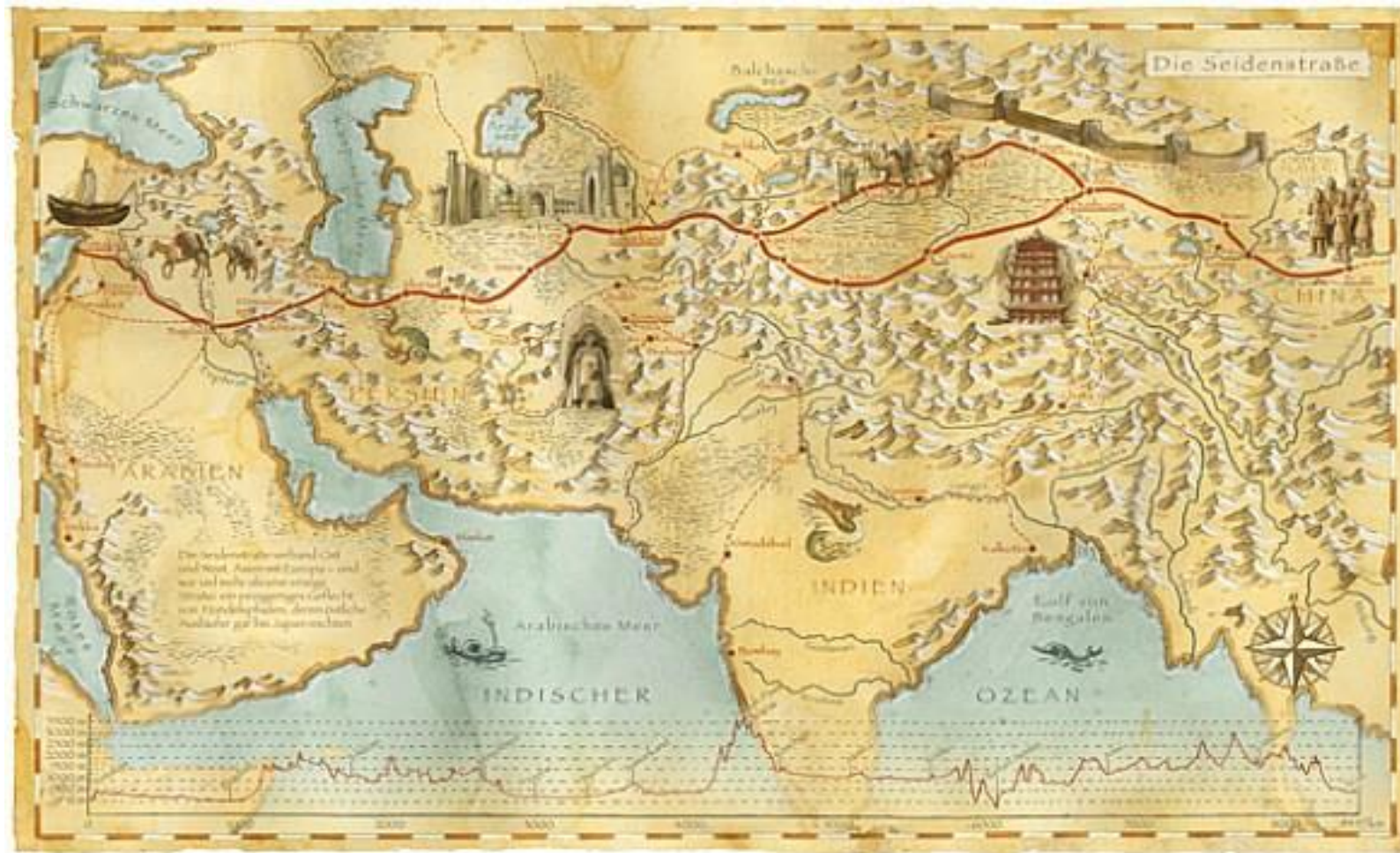


Digital Earth Alliance

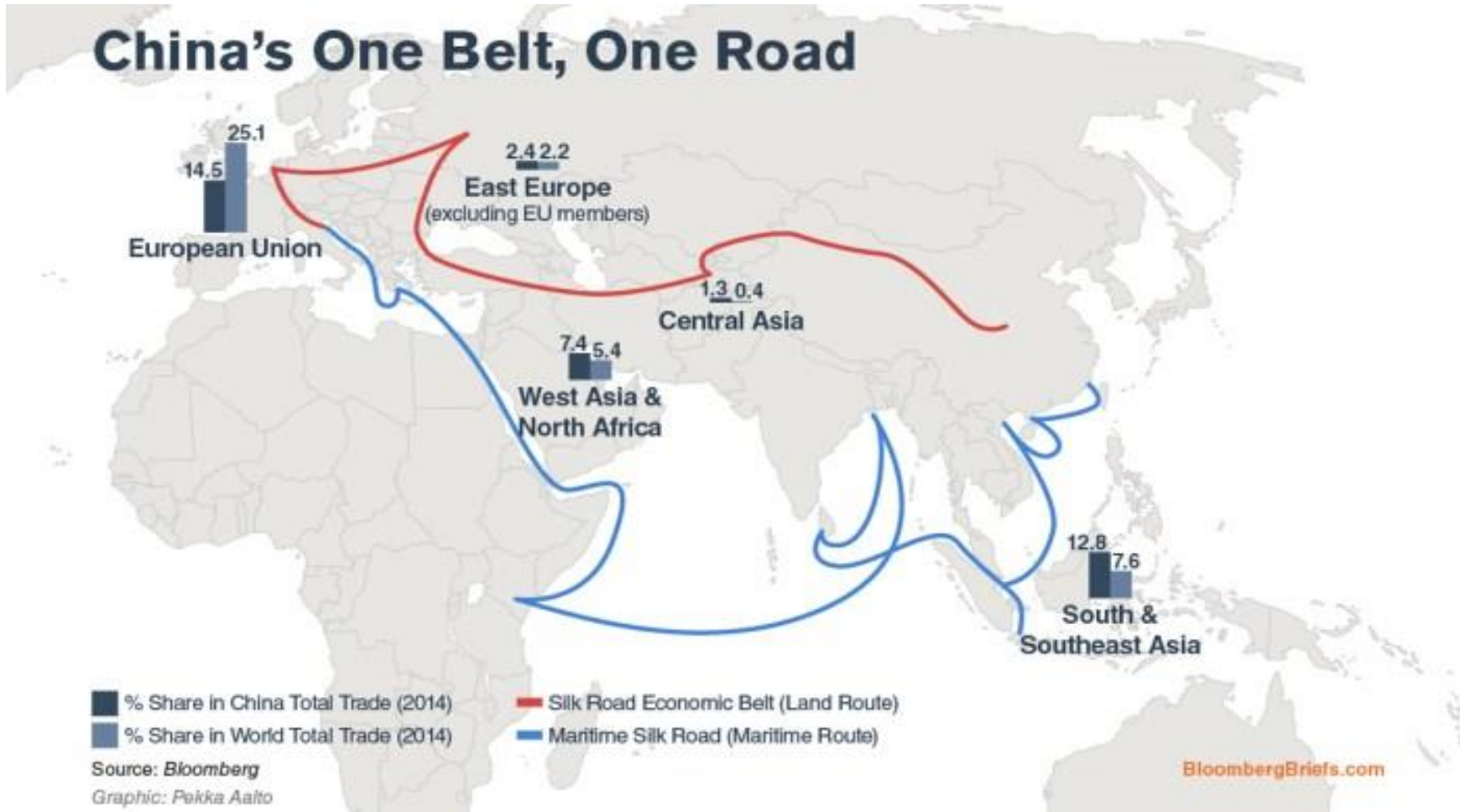
Digital Belt and Road Program (DBAR)

and

Digital Silk Road Alliance (DSRA)



Ferdinand von Richthofen's Map of the Silk Road in 1877. Source: <http://www.silkroutes.net/orient/mapssilkroutrade.htm>



The commercial weight of the New Silk Roads affected by the large regions in 2014. Source: <http://www.hellenicshippingnews.com/commodities-crash-boosts-chinas-new-silk-road/>

GUO Huadong-1:

Scientific Big Data and Earth Big one

As a branch of big data, **SCIENTIFIC Big Data** is a typical representative of data-intensive science.

Scientific big data has a number of characteristics, including

complexity, comprehensiveness, and global coverage, as well as high degree of integration with information and communication technology.

GUO Huadong-2:

Earth science research, like atmosphere, land and ocean, has produced huge data-sets derived from satellite observations, ground sensor networks, and other sources. This is collectively called **Big Earth data**.

It has features in common with scientific big data, but also has its own particular characteristics.

as *being massive, multi-source, heterogeneous, multi-temporal, multi-scale, high-dimensional, highly complex, nonstationary, and unstructured*. It provides support for data-intensive research in the Earth sciences

GUO Huadong-3:

Modern Earth science requires globally established, quasi real-time, all-weather Earth data acquisition capabilities, and ***has developed an integrated space-air-ground observation system with high spatial, temporal, and spectral resolutions. (Guo 2017, p.9)***

Working group 6 of DBAR says:

DBAR **Disaster aims** to integrate EO and social vulnerability data ***to promote the implementation of Sendai Framework in countries along the BAR region.***

The approach taken by this WG covers satellite information and communication technologies, but also implementation oriented technologies that involve hardware solutions to risk reduction challenges.

“If we do nothing, sensitive environments will be lost and exposure to risks will rise”

U.N. GGIM and Global Data Ecosystem

UN-GGIM

- **AIMS AND OBJECTIVES**

The United Nations initiative on Global Geospatial Information Management (UN-GGIM) aims at playing a leading role in setting the agenda for the development of global geospatial information and to promote its **use to address key global challenges**.

- **UN-GGIM: Strengthening the Global Data Ecosystem**

In U.N. GGIM case G. Scott defined data needs for the 2030 Agenda by following way (Scott, 2018):

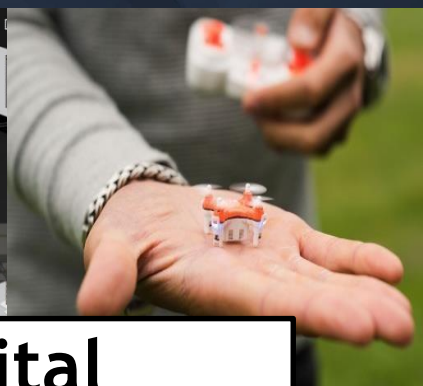
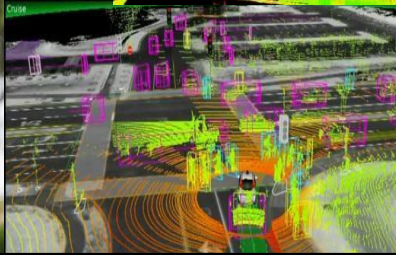
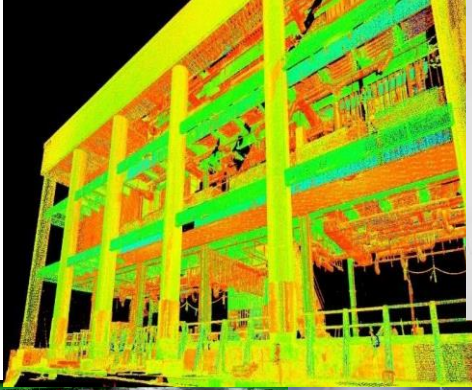
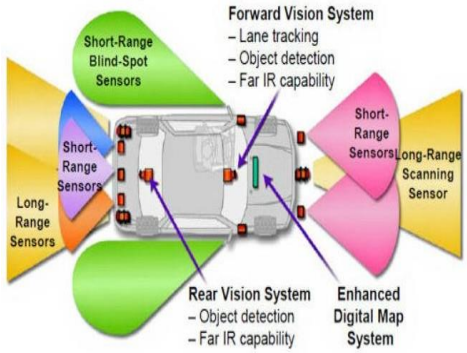
„The scope of the 2030 Agenda requires high-quality and disaggregated data that are ***timely, open, accessible, understandable and easy to use for a large range of users, including for decision making at all levels.***

There is a need for a reporting system on the SDGs that would have benefit from the sub-national (local) to the national level; and allow for global reporting that builds directly on the data shared by countries.

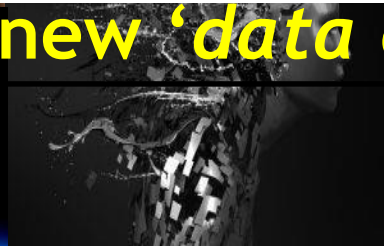
It is important to create an opportunity for countries to ***directly contribute*** to the global reporting.

While the challenges are immense, ***the digital technology*** that is available today ***allows*** the necessary transformation.

An aspiration is to strengthen countries' national geospatial and statistical information systems to facilitate and enable a ***'data ecosystem'*** that leverages an ***accessible, integrative and interoperable local to global system-of-systems.***"



Technology and society are driving digital transformation, but are we yet leveraging this new 'data ecosystem' effectively?



Robotics





Do we really understand the scale of the problems, where they are, whom they impact, what are the causes, and how they can be remedied?



Do we have the data for development??

Can we make it 'production ready' information for all?

Strengthening the Global Data Ecosystem



2017-2021 Strategic Framework

CONTEXT	VISION	<i>Positioning geospatial information to address global challenges</i>				
	MISSION	<i>Operating within agreed policies and institutional arrangements, and as an interconnected global community of practice, the Committee of Experts will ensure that geospatial information and resources are coordinated, maintained, accessible, and able to be used effectively and efficiently by Member States and society to address key global challenges in a timely manner</i>				
	MANDATED STRATEGIC OBJECTIVES	Provide leadership in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges	Provide a forum for coordination and dialogue with and among Member States and relevant international organizations on enhanced cooperation	Provide a platform for the development of effective strategies to build and strengthen national capacity and capability concerning geospatial information, especially in developing countries	Propose work-plans, frameworks and guidelines to promote common principles, policies, methods, standards and mechanisms for the interoperability and use of geospatial data and services	Make joint decisions and set the direction for the production and use of geospatial information within and across national, regional and global policy frameworks

		Transforming our World: The 2030 Agenda for Sustainable Development									
		GLOBAL POLICY FRAMEWORK	Sendai Framework for Disaster Risk Reduction 2015-2030	SIDS Accelerated Modalities of Action (SAMOA) Pathway	Addis Ababa Action Agenda	Paris Agreement on Climate Change	HABITAT III Urban Agenda				
REQUIREMENTS	GEOSPATIAL CHALLENGES & DRIVERS	Environmental management	Disaster management	Sustainable development	Population	Urban planning	Humanitarian assistance	Food security	Education	National security	
		Land management	Climate change	Water scarcity	Oceans & marine	Institutional governance	Legal & policy	Health & welfare	Poverty reduction	Sustainable cities	Socio-economic metrics
	DIRECT NATIONAL BENEFITS & EFFICIENCIES	<ul style="list-style-type: none"> • Reduced duplication of effort in the capture, management, and delivery of fundamental geospatial information • Authoritative, reliable and maintained geospatial data available nationally, regionally, and globally • Increased return on investment through better coordination, use and reuse of data, information and systems • Better evidence-based decision making, supported by good data, science and policy • More open, accountable, responsive and efficient governments • Presentation and delivery of timely and 'fit for purpose' data in times of need • Increased collaboration and integration of national data and information systems across all levels of government • Best practices and use cases for enriching national processes on geospatial information management 									
DELIVERABLES	OPERATING PRINCIPLES	Sound Nat. Policies, Legal Frameworks & Institutional Arrangements	Provision of Fundamental Authoritative Data and Information	Agreed Standards, Methods, Guides and Frameworks	Principles on Geospatial Information and Open Data	Integration and Interoperability of National Information Systems	Information Sharing and Knowledge Transfer	Building Local to Global Capacity & Capability			
	WORKING ACTIVITIES AND OUTPUTS	<ul style="list-style-type: none"> • Geospatial Information for Sustainable Development: 2030 Agenda, Sendai Framework, etc. • Integration of Geospatial & Statistical Information: Implement the Global Statistical Geospatial Framework • Geospatial Information and Services for Disasters: Implement Strategic Framework • Global Geodetic Reference Frame: Roadmap to Implement • Determination of global fundamental data themes • Marine geospatial information • Land administration and management • Legal and policy frameworks • National institutional arrangements • Implementation and adoption of standards for the global geospatial information community • National geospatial data and information systems 									



Digital Evolution



Implementing Nationally Integrated Information Systems

Digital Earth



Digital Transformation



Digital Divide



Digital Maturity



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org

Commons and differences

between

U.N. GGIM and DBAR

Integrated Geospatial Information Framework (IGIF)- part of UN GGIM

The Integrated Geospatial Information Framework (IGIF) provides a basis and guide for developing, integrating, strengthening and maximizing geospatial information management and related resources in all countries. It will assist countries in **bridging the geospatial digital divide, secure socio-economic prosperity, and to leave no one behind.**

The IGIF comprises three parts as separate, but connected, documents:

- 1) **an Overarching Strategic Framework;**
- 2) **an Implementation Guide; and**
- 3) **a Country-level Action Plan.**

The three parts **comprise a comprehensive** IGIF that serve a country's needs in addressing economic, social and environmental factors; which depend on location information in a continually changing world.

The Implementation Guide communicates to the user what is needed to establish, implement, strengthen, improve, and/or maintain a national geospatial information management system and capability.

The IGIF focuses on location information that is integrated with any other meaningful data to solve societal and environmental problems, acts as a catalyst for economic growth and opportunity, and to understand and take benefit from a nation's development priorities and the Sustainable Development Goals.

Anchored by 9 strategic pathways, the Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps.



The Integrated Geospatial Information Framework provides a basis and guide for developing, integrating and strengthening geospatial information management.

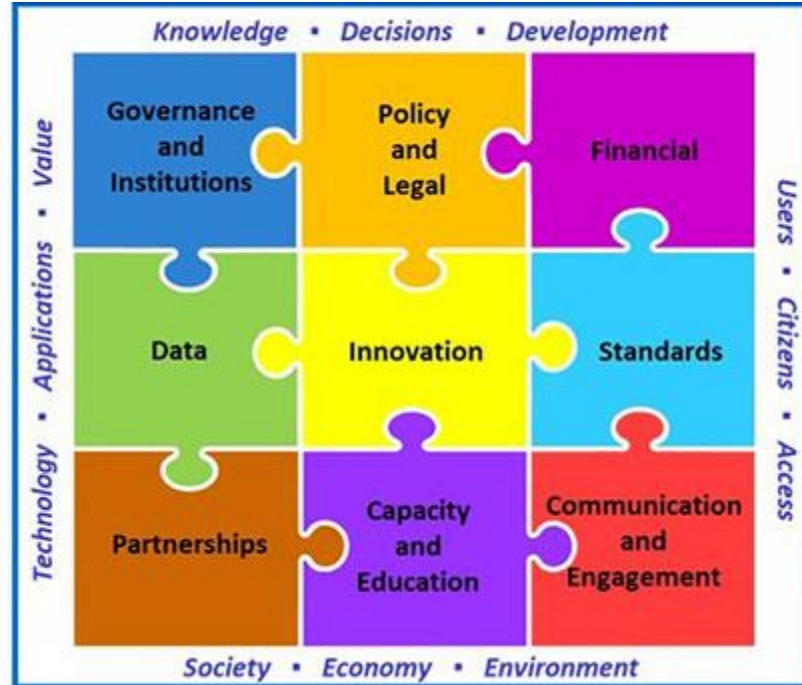
Governance



Technology



People



Anchored by 9 Strategic Pathways, the Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps.

At this moment it looks like that **U.N. GGIM** is mature project connected with stabile governmental and public infrastructures tending to solve SDG's and Sendai DRR needs. Covering needs of civil society and its organization.

DBAR has similar ambitious but coming mainly to the countries where SDI still was not fully developed according to Silk Belt and Road.

DBAR is coming with *new approach how to look for and elaborate data* mainly based on satellite images.

There is *still missing concept* how deliver data to interesting groups, private sector and individual inhabitants.

Different political systems and different data,
information and knowledge policies;

- In DBAR huge investments are coming which create ***hopes for fast improvement of situation***, but data and information are only part of the all efforts, incl. DRR
- In many countries are unappreciated geoinformatics and mainly cartography. ***Maps are created without knowledge*** how will be accepted by users (context and adaptive maps) and ***how information should be delivered for professionals and public ones***. Very important in EW, DRM and DRR.

Why U.N. GGIM contemporary leader?

Reacting and realizing for *needs of „normal“ people.*

Trying to solve SDG's.

But till now officially not calculating with activities coming from Silk Road and Belt initiative, e.g. DBAR started by International Society of Digital Earth in cooperation with Chinese Academy of Science.

New approaches, like VGI – volunteer geographic information more developed in UN GGIM

FUTURE?

It would be welcome if both approaches UN GGIM and DBAR, with commons and differences will develop together and support by smart solutions the human society.

New Initiative supportive for realizing of SDGs will be announce on September 6 2021 in Beijing.

The 1st International Forum on Big Data for Sustainable Development Goals (FBAS) is inviting scientists, engineers, policymakers and experts from diverse backgrounds from around the world for improved partnerships and networking towards collaborative and collective efforts in Big Data to support the SDGs

Sessions, e.g.: Big Data on Earth supports SDG's multiple goals: tradeoffs and synergies

BEIJING, September 6-8, 2021

Key objectives to discuss challenges in translating Big Data to information relevant to the SDGs and use of Big Data to enable science-informed policy and decision support. The Forum also marks the occasion of the inauguration of the International Research Center of Big Data for Sustainable Development Goals (CBAS), an important milestone for China's commitment to facilitate global efforts in science, technology and innovation towards the UN's Sustainable Development Goals.

For additional information on the Forum please visit the official website at <https://fbas2021.scimeeting.cn/en/web/>.

Newest issue from Nessebar and Sofia, Bulgaria:
The 8ICCGIS Proceedings, Vol. 1 are published online:

<https://iccgis2020.cartography-gis.com/proceedings-vol-1/>

5. The Challenges of Geospatial Sciences (incl. Geodesy, Cartography, RS, etc.)

ISPRS and ICA results, agenda, outputs

ICA: working group **2003** , commission **2005**,
conference with Gi4DM in Prague **2009** and Beijing on
behalf of Czech Republic Presidency of EU with ICA and
ISPRS people.

In last 4 years ICA commission Cartography for EW and
Crises Management realized 25 events over the World.

ISPRS: Gi4DM **2005**, important conference **2007** in
Delft, other conferences (Istanbul) with cooperation
with UNOOSA, **Orhan Altan** represented geospatial
organizations in Geneve conference, membership in
U.N. DRR conference.

Selected Publications



Joint Board of Geospatial Information Societies

United Nations Office for Outer Space Affairs

Geoinformation for Disaster and Risk Management

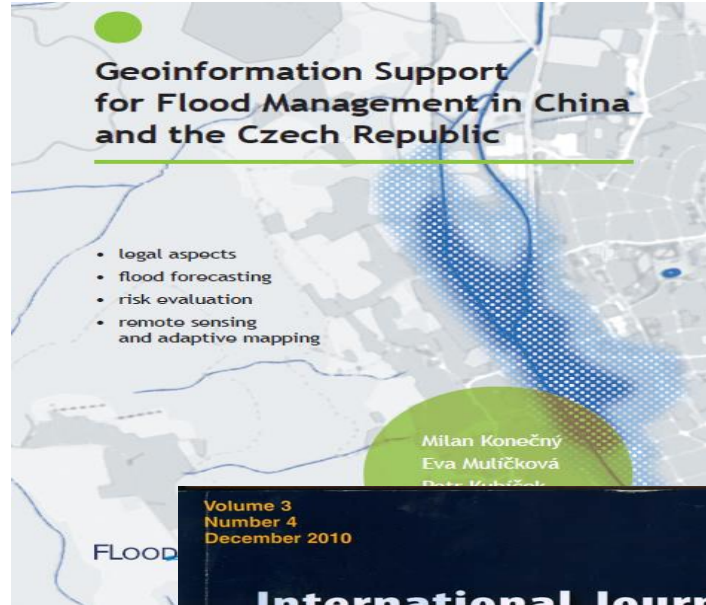
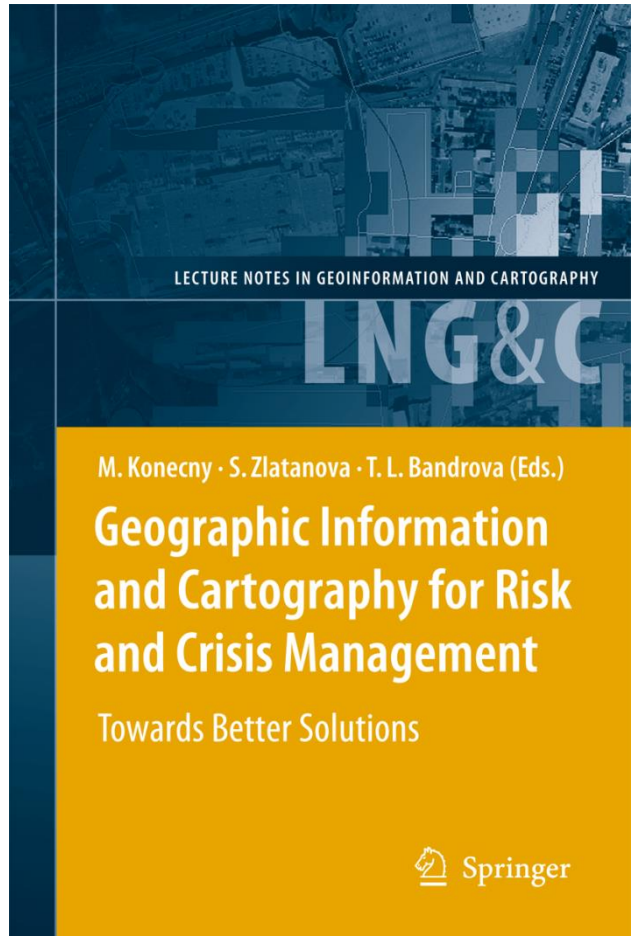
Examples and Best Practices



Orhan ALTAN, Robert BACKHAUS, Piero BOCCARDO, Sisi ZLATANOVA (2010)

ICA: KONEČNÝ, Milan - CARTWRIGHT, William. International Cartographic Association

More books and proceedings:



The Value of Geoinformation for Disaster and Risk Management (VALID)

Benefit Analysis and Stakeholder Assessment



International Council
for Science - GeoUnions

Joint Board of Geospatial
Information Societies

United Nations Office
for Outer Space Affairs

Orhan Altan, Robert Backhaus, Piero Boccardo, Niels van Manen, Fabio Giulio Tonolo, John Trinder and Sisi Zlatanova (2013):

...effects (of disasters) could be minimized and considerable losses of life and property could be avoided through improved risk assessment, early warning, and disaster detection and monitoring.

Earth observation can help to provide this information.

ICA:

Gartner Georg and Konecny Milan:

The role of modern cartography for disaster management

A lot a lot, but,.....

Where is our place now?

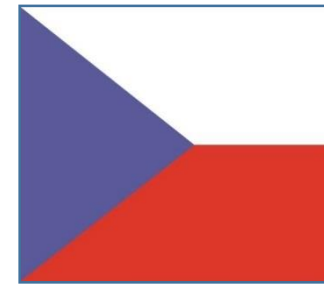
What are challenges in particularly items and all together?

Enhancement of integration.

6. Innovative Types of Projects



China-Czech Intergovernmental Science and
Technology Cooperation Project 2017.4-2019.12



Dynamic mapping for risk and crisis management in big data era



Xie, Xie!!!!

THANK YOU

SPASIBO

RACHMED

Muchas Gracias

O Brigada

Kammsa Hamida

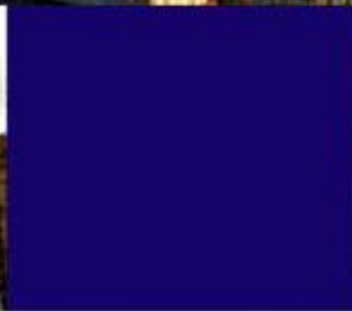
Aligator

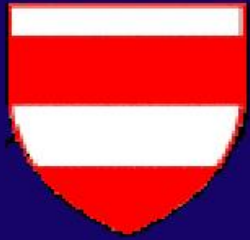
SHUKRAN

BLAGODARJA

DĚKUJI (in Czech)

PRAGUE





BRNO

