

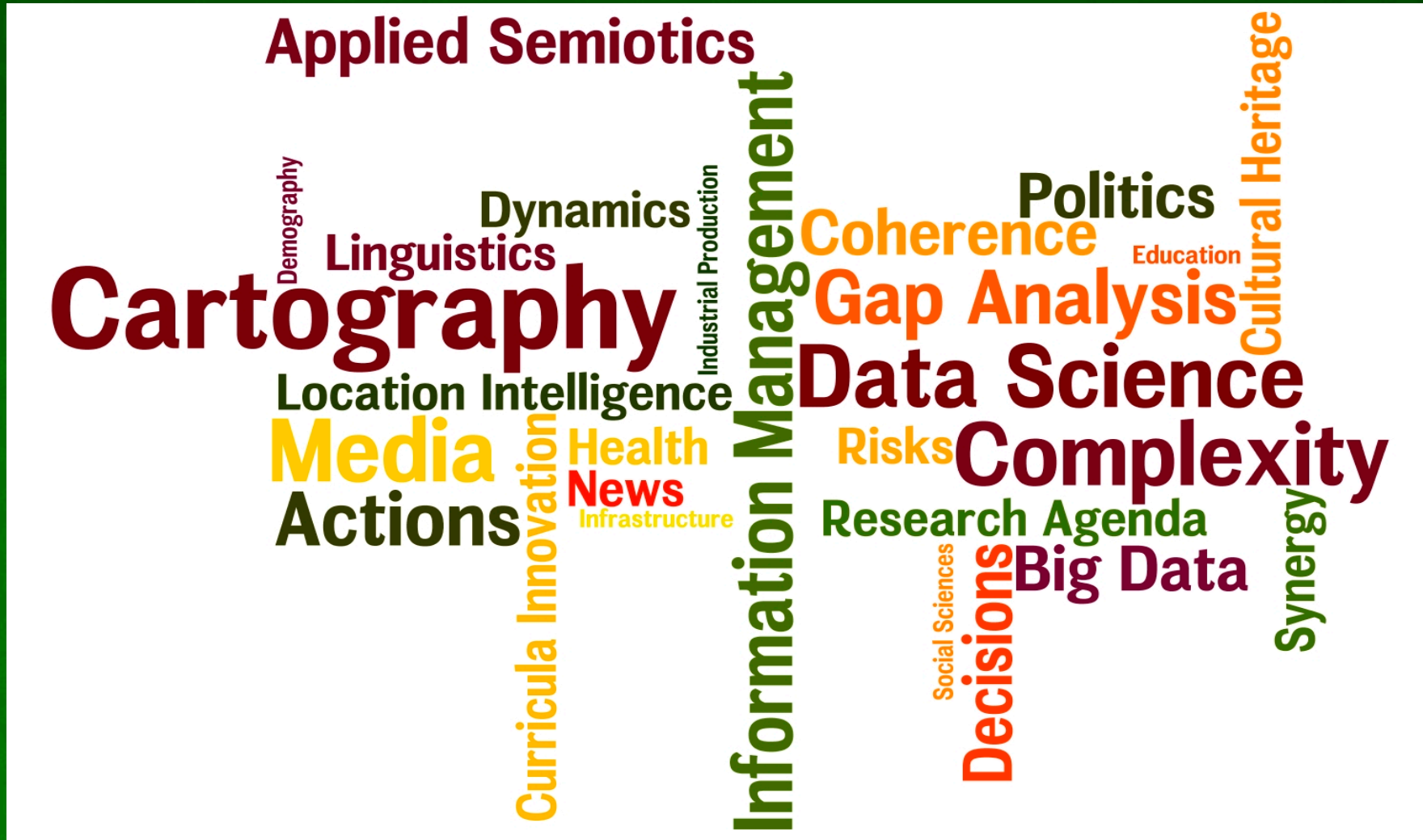
Information Management in Support of Operational Tasks in Sustainable Development and Disaster Reduction

Webinar “Climate Risk Management, Disaster Risk Reduction and Sustainable Development”
IEPSL Institute of Environmental Professionals, Battaramulla (Sri Lanka)

2021-01-12

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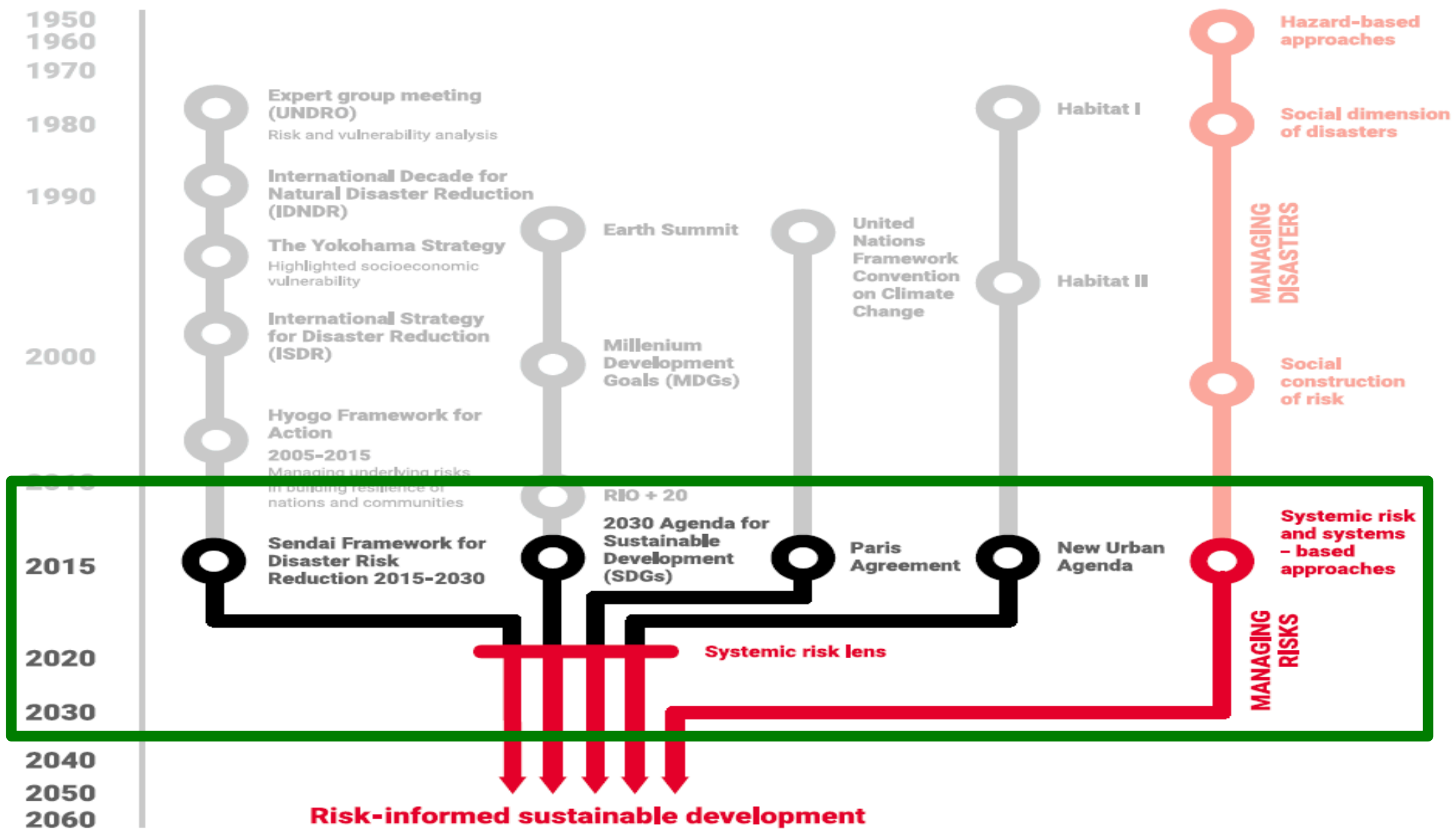
Structure

- Sustainable Development Goals and related UN Instruments
- Information Management and Complexity
- Selected Challenges
- Recommendations for Action

United Nations Instruments

Transnational Declarations, Conventions, Treaties, Frameworks and Directives

UN HABITAT,
UN Sustainable Development Goals SDGs,
UN HCR Refugee Convention,
UN Disaster Risk Reduction (SENDAI Framework),
UN Framework Convention on Climate Change,
Int. Platform on Biodiversity and Ecosystem Services IPBES,
Universal Declaration of Human Rights,
UN Convention on the Rights of the Child,
Doha Declaration on Disability and Development
and many others



(Source: UNDRR 2019)

- The UN Instruments call for a paradigm shift towards an impact-based, risk-informed multi-hazard integration approach
 - Cross-organizational complexity management
 - Cooperation with the private sector (industries, companies, organizations)
 - BCM Business Continuity Management
 - Holistic approach
- <http://www.unisdr.org/we/inform/publications/43291>

24. To achieve this, it is important to:

(a) Promote the collection, analysis, management and use of relevant data and practical information. Ensure its dissemination, taking into account the needs of different categories of users, as appropriate;

(b) Encourage the use of and strengthening of baseline and periodically assess disaster risks, vulnerability, capacity, exposure, hazard characteristics and their possible sequential effects at the relevant social and spatial scale on ecosystems in line with national circumstances;

(c) Develop, update periodically and disseminate, as appropriate, location-based disaster risk information, including risk maps, to decision makers, the general public and communities at risk to disaster in an appropriate format by using, as applicable, geospatial information technology;

(d) Systematically evaluate, record, share and publicly account for disaster losses and understand the economic, social, health, education, environmental and cultural heritage impacts as appropriate, in the context of event-specific hazard-exposure and vulnerability information;

(e) Make non-sensitive hazard exposure, vulnerability, risk, disasters and loss disaggregated information freely available and accessible, as appropriate;

(f) 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;

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Basic Management Principles

- critical thinking
- gaps and deficits analysis
- decision, action, and control cycle support
- transparent analysis
- compliance to legal and technical regulations and other boundary conditions
- include financial structures, budgets and the use of financial instruments in reporting and control
- constructive goal-reaching and effectivity control
- guidance on human resources (quantity, future competence levels)
- avoidance of malpractice
- extend concepts of FAIR information principles to support transparency goals and accountability
- extensive documentation and reporting obligations
- quality indications on confidence, weaknesses, uncertainties, error propagation, and vulnerabilities

Establishing Cross-Organizational Information Infrastructures

- ❖ Catalog of Information Sources Metainformation
- ❖ Improved Data Access (Time and Cost Savings)
- ❖ Enable and Improve Data Exchange between different Institutions and Application Domains
- ❖ Consistent and Efficient Use of Data
- ❖ More Efficient Development of Services using existing Data and Standards
- ❖ High-Quality Data for Action Alternatives and Decision-Making Support
- ❖ Service-Level-Agreements (Preparatory and Operational)
- ❖ Improvement of Strategic, Tactical and Operational Decisions
- ❖ Possibility of Decision-Making about Policies (Administration, Jurisdiction etc.)
- ❖ Including the Private Sector
- ❖ Facilitating the Development of Knowledge Generation, Communication and Comparison
- ❖ Comprehensive Documentation and holistic Ex-Post Analysis
- ❖ Analysis Across all Phases of Planning, Implementation, Operation and Control of Goal-Reaching Effects

Selected Domains and Organizations of Current Interoperability Best Practice

Environmental Information

(UNEP Digital Transformation towards a Global Data Strategy, EU INSPIRE Directive)

Geoinformation (Open GIS Consortium OGC)

Observational Health Data Sciences and Informatics (OHDSI)

Essential Biodiversity Variables (EBVs)

Group on Earth Observations

Resource Description Framework (W3C)

Process Modeling Standards (BPM)

Data Documentation Initiative (DDI)

W3C Data Activity: Semantic Web

Elements of Information Management

The elements of Information Management are not only “pure” data but all facts

values, metainformation, methods, functions, processes, models, measures, principles,
expectations, actors and their sociology, documentation,
decisions, actions, effects and control

Consequences:

Enabling Operational Complexity, Improvement of Transparency,
Avoidance of Misinterpretation, Essentially speeding-up Alternatives and Decisions,
Support of Accountability

Participatory Inclusion of all Actor Groups in all Phases
leave no-one behind

Facts Algebraic Properties

Completeness

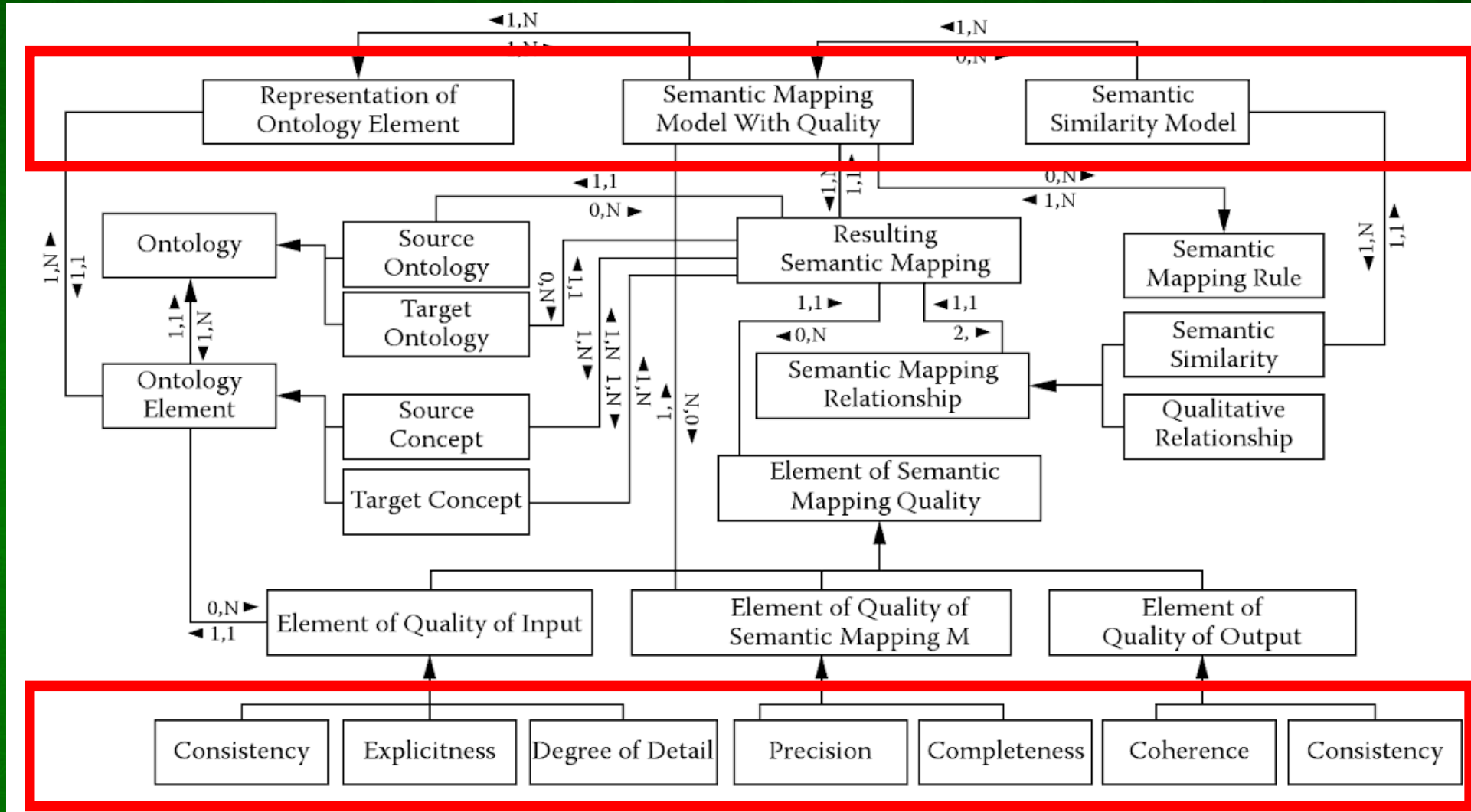
Continuity

Differentiability

Isotropy

Holonomy

etc.



Quality Aspects in Spatial Data Mining. Eds. A. Stein, W. Shi, W. Bijker, CRC Press, 2016

The Complexity Challenge (1)

- Complexity and Dynamics of Facts
- Complexity and Dynamics of Contexts
- Complexity of Actors
- Complexity of Organizations
- Complexity of Ecosystems Interdependence

The Complexity Challenge (2)

- Information capturing and data analysis
- Information documentation
- Data-driven understanding of our world
- Decision-making support and control
- Thresholds, signals, triggers
- Alerts
- (re-)Action
- Processes, Workflows
- Goals-reaching
- Effects, Consequences

- 4/1 Innovative pathways to achieve sustainable consumption and production
- 4/2 Promoting innovative solutions for curbing food loss and waste
- 4/3 Sustainable mobility
- 4/4 Addressing environmental challenges through sustainable business practices 4/5 Sustainable infrastructure
- 4/6 Marine plastic litter and microplastics
- 4/7 Environmentally sound management of waste
- 4/8 Sound management of chemicals and waste
- 4/9 Addressing single-use plastic products pollution
- 4/10 Innovations on biodiversity and land degradation
- 4/11 Protection of the marine environment from land-based activities
- 4/12 Sustainable management for global health of mangroves
- 4/13 Sustainable coral reefs management
- 4/14 Sustainable nitrogen management
- 4/15 Innovations in rangelands and pastoralism
- 4/16 Conservation and sustainable management of peatlands
- 4/17 Promote gender equality, and the human rights and empowerment of women and girls in environmental governance
- 4/18 Poverty-environment nexus
- 4/19 Mineral resource governance
- 4/20 Fifth programme for the development and periodic review of environmental law (Montevideo V): Delivering for people and the planet
- 4/21 Implementation plan “Towards a pollution-free planet”
- 4/22 Implementation and follow up of United Nations Environment Assembly resolutions
- 4/23 Keeping the world environment under review: Enhancing the UNEP science-policy interface and endorsement of the Global Environment Outlook

The UN Declarations and other UN Instruments texts increasingly enforce the demands for coherence and mutual synergies

There is special emphasis on

- defining the basic elements of coherence
- consequences for holistic information management across programs and conventions
- rising awareness on the key role of stakeholder driven participative information governance needed to foster of cross-domain and cross-organizational national as well as international implementations.

Timeliness implementations guided by the principles of holistic information management are key prerequisites in societal, natural, technical, humanistic and ethical aspects for the future of people and planet.

Aims

Coherence and Accountability Improvements for Information Society

Structure


- Sustainable Development Goals and related UN Instruments
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Sri Lanka's NDCs comprise of following four areas;

- **Mitigation** - Reducing the GHG emissions against the Business-As-Usual (BAU) scenarios in the sectors of energy (electricity generation), transportation, industry, waste and forestry. The key contributors to GHG are Carbon Dioxide (CO₂), Methane (CH₄) and Nitrous Oxide (N₂O).
- **Adaptation** - Building resilience in most vulnerable communities, sectors and areas to adverse effects of climate change. Adaptation will focus on human health, food security (agriculture, livestock and fisheries), water and irrigation, coastal and marine, biodiversity, urban infrastructure and human settlement, tourism and recreation. Adaptation initiatives that derive mitigation co-benefits will be prioritized.
- **Loss and Damage** - In order to address issues related to losses and damages resulting from extreme weather events, a local mechanism will be developed in accordance with the Warsaw International Mechanism for Loss and Damage.
- **Means of Implementation**- External support for Finance, Technology Development and Transfer, and Capacity Building for the above sectors are considered in the implementation process of the NDCs of Sri Lanka.

WARSAW INTERNATIONAL MECHANISM FUNCTIONS

The WIM promotes the implementation of approaches to address loss and damage associated with the adverse effects of climate change by undertaking the following functions:



Enhancing knowledge and understanding of comprehensive risk management approaches

Strengthening dialogue, coordination, coherence and synergies among relevant stakeholders

Enhancing action and support, including, finance, technology and capacity-building

Adopted 5th December 2017

Seventy-second session

Agenda item 77 (a)

Oceans and the law of the sea



Preambular Part

Recalling also the cross-cutting role of ocean science in Sustainable Development Goal 14 of the 2030 Agenda for Sustainable Development, and taking note that, at its twenty-ninth session, the Assembly of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization endorsed the proposal for an international decade of ocean science for sustainable development, to be established for the period 2021–2030,

292. *Decides* to proclaim the United Nations Decade of Ocean Science for Sustainable Development for the 10-year period beginning on 1 January 2021, within existing structures and available resources, and calls upon the Intergovernmental Oceanographic Commission to prepare an implementation plan for the Decade in consultation with Member States, specialized agencies, funds, programmes and bodies of the United Nations, as well as other intergovernmental organizations, non-governmental organizations and relevant stakeholders;

https://www.oceandecade.org/documents/oceandecade_unomnibusresolution_extract_en_final.pdf

<https://www.oceandecade.org/>

The United Nations General Assembly has endorsed seven outcomes for the Decade of Ocean Science for Sustainable Development leading to 2030:

- 1. A clean ocean where sources of pollution are identified and reduced or removed,**
- 2. A healthy and resilient ocean where marine ecosystems are understood, protected, restored and managed,**
- 3. A productive ocean supporting sustainable food supply and a sustainable ocean economy,**
- 4. A predicted ocean where society understands and can respond to changing ocean conditions,**
- 5. A safe ocean where life and livelihoods are protected from ocean-related hazards,**
- 6. An accessible ocean with open and equitable access to data, information and technology and innovation,**
- 7. An inspiring and engaging ocean where society understands and values the ocean in relation to human wellbeing and sustainable development.**



GEBCO WEEK

MAP THE GAPS SYMPOSIUM | GEBCO COMMITTEE MEETINGS

JANUARY 11 - 15, 2021

VIRTUALLY from **PARIS, FRANCE**

Remotely Collaborating to Map our Oceans

<https://www.mapthegaps.org/symposium/>

Structure

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General Conditions

Besides multi-stakeholder inclusion and discussion in the development of strategies, implementing a concept of follow-up roadmap / action-plan is to be anticipated already in preparatory phases:

- negotiate for standards for situation/action phases definition
- make Information Management elements a prerequisite of comprehensive reporting and (annual) National Reporting (National Focal Points for UN Instruments)
- specify a priori documentation requirements according to UN Instruments extensive requirements,
- enable content search by timestamp, time period, content or actor group involved (define information management elements in strong anticipation of information use)
- check with all stakeholders for potential fraud in decisions and actions in operation as well as in administration, financial and private sector domains
- implement awareness on best practice ethical principles

Governments should engage with relevant stakeholders

including

- women,
- children and youth,
- persons with disabilities,
- poor people,
- migrants,
- indigenous peoples,
- the community of practitioners,
- older persons,
- investigative and data journalists,
- the media

in the design and implementation of policies, plans and standards.

There is a need for the public and private sectors and civil society organizations, as well as academia and scientific and research institutions, to work more closely together and to create opportunities for collaboration, and for businesses to integrate extensive interoperability into their management practices

Recommendations for Action (1)

- Make Data Management Plans mandatory to grant correctness dynamically in the course of system availability and modifications, possibly to be supported by Data Lifecycle Management tools.
- Find flagship actors in Private Sector, Administration, R&D and current implementations with considerable potential to strive for advanced methods, techniques and solutions, including national/CEN/ISO and administrative standards development and applications
- Match with national and International strategies supporting Digitalization, Digital Transformation, Interoperability Frameworks and Cross-Border information exchange
- Realize the considerable information use overlap and expected synergy from joint strategies from UN Instruments
- Find adequate ways for closing the R&D / Practitioners gaps by making technical best practice mandatory for routine procedures in operational actors groups and organizations

Recommendations for Action (2)

- Enable steps in direction of institutionalizing participative Governance of RISK Information, including periodic reporting as well as independent auditing according to holistic management principles on all levels. Alignment of interest and operational role of different stakeholder groups is achieved by open participative procedures.
- Audit against the full requirements of the UN Instruments text and encourage NGOs to document their stakeholders view and recommendations from situations in the crisis / disaster and from the aftermath situation
- Consider the role of UN National Platforms in cross-domain and inclusive participation, especially for and with most vulnerable groups and socio-economic effects
- Draw from existing previous long-term experiences in the broad fields of environmental information and geoinformation (INSPIRE, Open GIS Consortium, ORCHESTRA 2008).

join us today !

Community and Interdisciplinary International Conference Series on RISK Information Management, Risk Models and Applications



The RIMMA Community on Risk Information Management, Risk Models, and Applications will enable sharing of best practices as well as giving space for discussing methodological problems in risk (NaTech) and security (CBRNE) modeling from the information systems point of view for all phases of the disaster management cycle.

Sustainable Development Information Management

join us today !

<http://susinf.net> [home](#) [SusInf_List](#) [Membership Request](#) [Blog](#) [Team](#)



Sustainable Development Information according to the adopted UN 2030 Agenda for Sustainable Development and other related UN Instruments

The 2030 Agenda for Sustainable Development provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. The 17 Sustainable Development Goals (SDGs) have to be guided by strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.



DEFINING THE DATA REVOLUTION

Since the phrase was coined in May 2013 in the report of the High-Level Panel of Eminent Persons on the post-2015 Development Agenda, the “data revolution” has come to mean many things to many people. Here, we take it to mean the following:

The data revolution is:

- » An explosion in the volume of data, the speed with which data are produced, the number of producers of data, the dissemination of data, and the range of things on which there is data, coming from new technologies such as mobile phones and the “internet of things”, and from other sources, such as qualitative data, citizen-generated data and perceptions data;
- » A growing demand for data from all parts of society.

The data revolution for sustainable development is:

- » The integration of these new data with traditional data to produce high-quality information that is more detailed, timely and relevant for many purposes and users, especially to foster and monitor sustainable development;
- » The increase in the usefulness of data through a much greater degree of openness and transparency, avoiding invasion of privacy and abuse of human rights from misuse of data on individuals and groups, and minimising inequality in production, access to and use of data;
- » Ultimately, more empowered people, better policies, better decisions and greater participation and accountability, leading to better outcomes for people and the planet.

A World that Counts: Mobilising the Data Revolution for Sustainable Development

The United Nations Secretary-General's Independent Expert Advisory Group on a Data Revolution for Sustainable Development (IEAG) <http://www.undatarevolution.org>

Thank You for Your Attention !

For further information, communication and cooperation
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-----End-of-Presentation-----

additional material for your information

Table 1: Key Sectors and Priority Areas

Sector	Priority areas
Food security : agriculture, livestock and fisheries	<ul style="list-style-type: none"> • Rice • Other food crops (OFC) • Horticultural crops • Sugarcane • Livestock • Fisheries • Agriculture and land degradation
Water resources	<ul style="list-style-type: none"> • Water for agriculture • Water for human consumption • Water for industry and energy • Degradation of watersheds
Coastal and marine sector	<ul style="list-style-type: none"> • Coastal zone management • Beach stability • Coastal bio-diversity • Ocean acidification
Health	<ul style="list-style-type: none"> • Climate altering pollutants • Diseases: Spread and outbreaks • Hazardous events: Health impacts • Heat/thermal stress
Human settlements and infrastructure	<ul style="list-style-type: none"> • Urban settlements and infrastructure • Rural settlements and infrastructure • Estate settlements and infrastructure • Coastal settlements and infrastructure
Ecosystems and biodiversity:	<ul style="list-style-type: none"> • Forests • Wild life • Wetlands • Agro ecosystems: home gardens • Loss of ecosystem services
Tourism and recreation	<ul style="list-style-type: none"> • Coastal tourism • Tourism and bio-diversity • Cultural assets
Export agriculture sector	<ul style="list-style-type: none"> • Tea • Rubber • Coconut • Export agricultural crops
Industry, energy and transportation	<ul style="list-style-type: none"> • Industry • Energy • Transportation

<https://www4.unfccc.int/sites/NAPC/Documents%20NAP/National%20Reports/National%20Adaptation%20Plan%20of%20Sri%20Lanka.pdf>

WSIS2020 High-Level Policy Session 10 : Ethical Dimensions of Information and Knowledge Societies

Tuesday, 28 July 2020 High-Level Policy Session

"The Information Society should respect peace and uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature."

We acknowledge the importance of ethics for the Information Society, which should foster justice, and the dignity and worth of the human person.

The widest possible protection should be accorded to the family and to enable it to play its crucial role in society. The use of ICTs and content creation should respect human rights and fundamental freedoms of others, including personal privacy, and the right to freedom of thought, conscience, and religion in conformity with relevant international instruments.

All actors in the Information Society should take appropriate actions and preventive measures, as determined by law, against abusive uses of ICTs, such as illegal and other acts motivated by racism, racial discrimination, xenophobia, and related intolerance, hatred, violence, all forms of child abuse, including paedophilia and child pornography, and trafficking in, and exploitation of, human beings."

Geneva Declaration of Principles, WSIS 2003, <https://www.itu.int/net/wsis/docs/geneva/official/dop.html>

Digital Transformation towards a Global Environmental Data Strategy

People, Places and Planet

UN 
environment

Report to CPR 10 December 2019

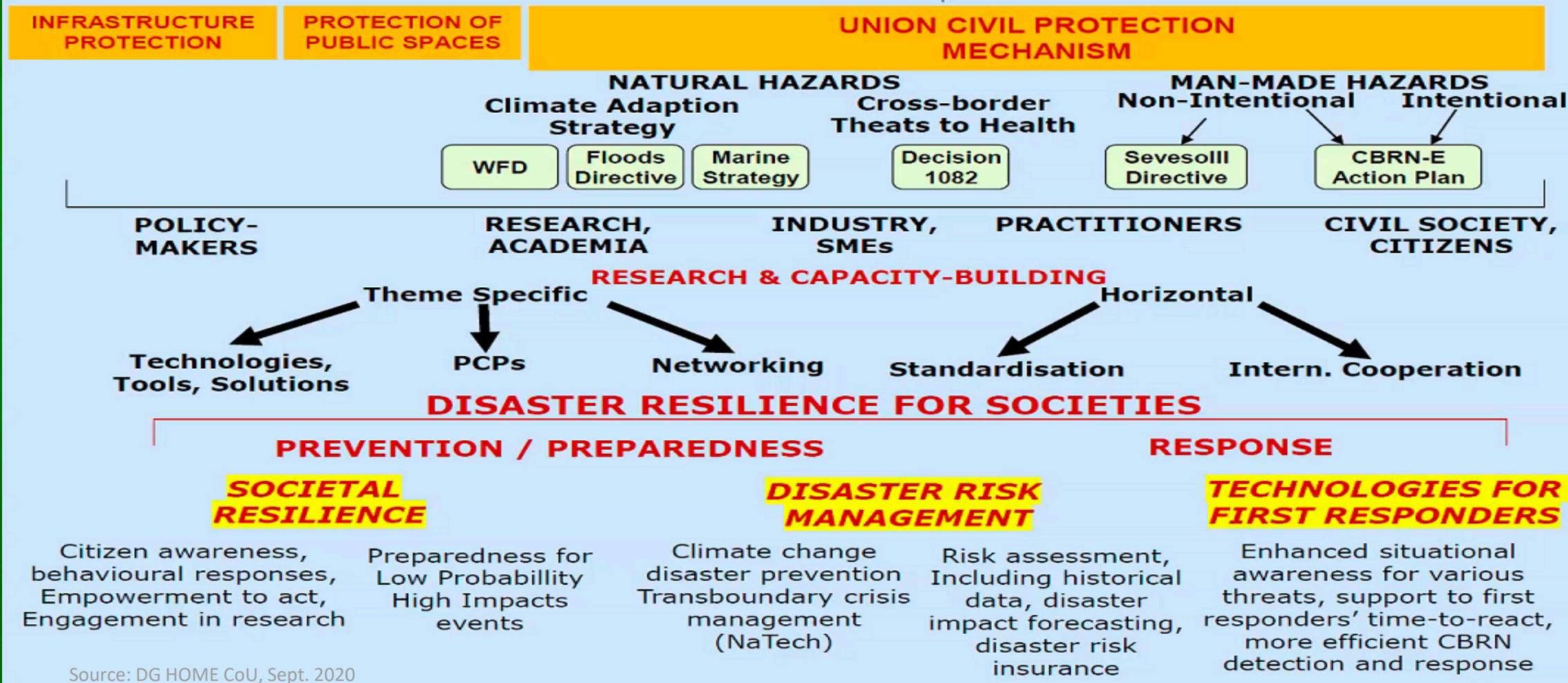


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http://wedocs.unep.org/bitstream/handle/20.500.11822/29769/DigitalTransformation_GlobalDataStrategy_ReportCPR_10Dec2019.pdf

Webinar Series on The Importance of Safeguarding the Environment in National Development, January 12, 2021

Sendai Framework for Disaster Risk Reduction



<https://informatik2021.gi.de/programm/enviroinfo>

ENVIRO  **INFO**
BERLIN | 27.09. – 29.09.2021

Environmental Informatics – A bogeyman or saviour to achieve the UN Sustainable Development Goals?

27th – 29th September 2020 in Berlin, Germany

The EnviroInfo 2021 is the 35th edition of the long standing and established international and interdisciplinary conference series on leading environmental information and communication technologies. The conference is open for contributions covering innovative topics at the interface between informatics and environmental research.

The conference will be organized in thematic sessions and special tracks. The event is taking place at the historic centre of Berlin at the School of Business and Economics, Humboldt-University, in parallel to the annual convention of the German Informatics Society ("Gesellschaft für Informatik") under the umbrella topic "Computer Science and Sustainability".

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