



IHU's Civil and Emergency Planning Department Awareness Event

“Global Catastrophic Risks”

International Hellenic University (IHU), Greece

Information Management for Action

Disaster Risk Management “all-of-Society” Information Demands in 2030+

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Structure

- Situation and Complexity of Current Tasks
- Information Management
- Some Challenges
- Recommendations for Action
- Disaster Risk Reduction 2030+

Situation and Complexity of Current Tasks (1)

The massive complexity of cross-organizational and cross-border information flows for decision support and operational management for emergency services, public administration, law enforcement agencies, critical infrastructure operators, the private sector, civil society organizations/institutions and civil-military cooperation requires comprehensive interoperability for information in all phases of disaster management (prevention, resilience management, long-term and short-term preparedness, early action, first aid/response, aftercare and reconstruction).



Situation and Complexity of Current Tasks (2)

Based on the current recommendations on how to proceed and with clear demands for adequate information management

at global, European and national level (UN Sendai Framework Midterm Review, G7, European Union Disaster Resilience Goals 2030 and National Resilience Strategies)

the task is: to ensure the required homogeneity, coherence and synergy for cross-organizational, cooperative and cross-border use in Decisions and Actions.

Situation and Complexity of Current Tasks (3)

Decision and Action Support

- for all
- at any time
- just-in-time



Business and Industry

Children and Youth

Farmers

Indigenous Peoples

Local Authorities

Non-Governmental Organizations

Scientific and Technological Community

Women

Workers and Trade Unions

Persons with Disabilities

Volunteers

Ageing

Education and Academia

Civil Society Financing for Development Mechanism

Together 2030

Sendai Stakeholder Mechanism

Asia Pacific Regional CSO Engagement Mechanism

LGBTI Stakeholder Group

Economic Commission for Europe Regional CSO Engagement Mechanism

Stakeholder Group for Communities Discriminated on Work and Descent

Africa Regional Mechanism of the Major Groups and other Stakeholders (ARMMGOS)

Major Groups and Other Stakeholders (MGoS)

<https://hlpf.un.org/mgos>

2025



Stakeholders / Pillars of Societal Resilience in all Phases of the Disaster Management Cycle

Organizations that stand up for people
Parliamentarians
Lawyers
Insurance companies
Local and national charities
Organizations for family caregivers
Technical and material assistance for reconstruction
Professional Support in the search for financial aid
Sociologists, psychotherapists, psychologists and behavioral consultants
Nursing (practitioners, professional organizations, etc.)
Ambulatory care midwifery
Advocacy for patients
Children in care homes
Medical associations
Chambers of pharmacists
Chambers of nursing
Chambers of psychotherapists
Health insurance companies
Health and care providers Organizations and Associations (public and private services)
Chambers of industry and commerce
Chambers of engineers

State Council for Building Regulations
Property owners' associations
Surveillance
Refugee-migrant organizations of people with disabilities (OPDs)
Organizations run by deaf people
Standardization organizations
Promoting policies that benefit children
Faith-based organizations and communities Health institutions (local, regional, national)
Salvation Army, missions
School services/parent-teacher associations
Medical care organizations
Community research and service centers
Amateur radio associations
Media (radio, TV, newspapers, magazines, etc.)
Social media
Food industry, nutrition logistics, transportation and distribution
Animals (zoo, pets, farm animals)
Consumer protection organizations
Auditors (public and private)
Legislators

... and others



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The main capabilities we need to develop are:

- **Descriptive analytics** that help us answer “What happened?” by evaluating historical data, for example to measure results or costs against targets.
- **Diagnostic analytics** to help us understand “Why did it happen?” through data discovery, data mining or correlation analysis.
- **Predictive analytics** that tries to give an answer to the question “What will happen?” based on historical data, statistical modelling and machine learning.
- **Prescriptive analytics:** analyses the best course of action given a certain scenario, incl. through machine learning.

United Nations Decade of Action: Data Strategy of the Secretary-General for Action by Everyone, Everywhere 2020-2022
<https://www.un.org/en/content/datastrategy/index.shtml>
full report 84 p. https://www.un.org/en/content/datastrategy/images/pdf/UN_SG_Data-Strategy.pdf

Basic Elements of Management

- Gaps and deficits analysis
- Decision, action and control cycle management
- Transparent analysis
- Compliance with regulations and other constraints
- Phases and techniques to ensure traceability
- Detailed financial structures
- Financial instruments (financial budgets, subsidies) and their application usage
- Reporting and controlling
- Targets achievement and effectiveness control
- Human resources
- Operational concept
- Avoidance of misconduct
- Analysis of weaknesses and vulnerabilities
- Innovations
- Accountability

Basic Elements of Information Management

- Ontologies
- Homogenized / coherent terminology / vocabulary
- Formats (Syntax)
- Meta information (Semantics)
- Standardized workflows, services and procedures (Pragmatics)
- Service and Quality Level Agreements
- SOPs - Standard Operating Procedures
(automation, networking capability, quality, traceability)



Ontologies

Explicit formal specification of a common conceptualization

- Terms
- Properties
- Relations
- Identity
- Status
- Context
- Annotation
- HR / Role
- Causality
- Semantic Networks
- Workflows; Operational Processes, Services, Procedural Networks

with processing options

Comparison, Merge, Abstraction, Coherence Analysis



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selected Challenges

- From Narrative to Implementation
- Legal Framework Supporting Mandatory Deployment
- From the visualization of complexity to the implementation of complexity
- Implementation of complexity on the basis of standards, scalability, traceability and technical and administrative coherence (with regard to regulations, rules, guidelines)
- Analysis of documented complexity (Post-event disaster documentations, e.g. parliamentary committee of inquiry into the Ahr flood disaster, Post-event disaster documentations)
- Information infrastructures, interoperable for just-in-time support in the overall social sense (overcoming the research-practitioners gaps)
- National/European/global status of development, objectives, governance structures
- Personnel / human resources / education / curricula
- Big data, IoT, process models, AI, decision support, documentation
- From Facts to Situations
- Creating the **Common European RISK Information Space**



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Towards a Comprehensive and Structured Approach

1. Creating a cross-sector governance structure
2. Understanding complex dependencies, resilience and vulnerabilities
3. Cross-Organizational common understanding of deficits, synergies, risks, resilience and vulnerabilities
4. Negotiate resilience goals that can be implemented and achieved
5. Prioritize measures across the entire life cycle of Critical Infrastructure and beyond
6. Ensuring accountability and monitoring the implementation of resilience measures
7. Consider the cross-border dimension of information infrastructure systems





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Disaster Risk Reduction 2030+

Start now Collecting Amendments / Extensions to be Considered in Negotiations for Shaping the 2030+ Disaster Risk Reduction Framework

- Broadening the Scope of „all-of-society“ Stakeholders respectively „Existing Pillars of Societal Resilience“
- Include Requirements of Information Society
- Situations of Exceptional Needs
- Accentuate Central Role of Information Management Mandatory Strategies, Roadmaps, Implementations based on Legal Frameworks
- Shaping Resilient Futures and reduce Situations of Exceptional Needs through Foresighting
- Empowering the Next Generations



Our Common Goals:

Digital innovation and Information Management
Increasing and ensuring efficiency
Cross-Organizational and Cross-Border coherence
granting just-in-time information availability and use
in line with interdisciplinary professional state of the art
and in line with societal expectations



End - of - Presentation

<https://RIMMA.org>