Domestic and International Experience of the Czech Republic in Implementation of the Sendai Framework for Disaster Risk Reduction

Presented by:

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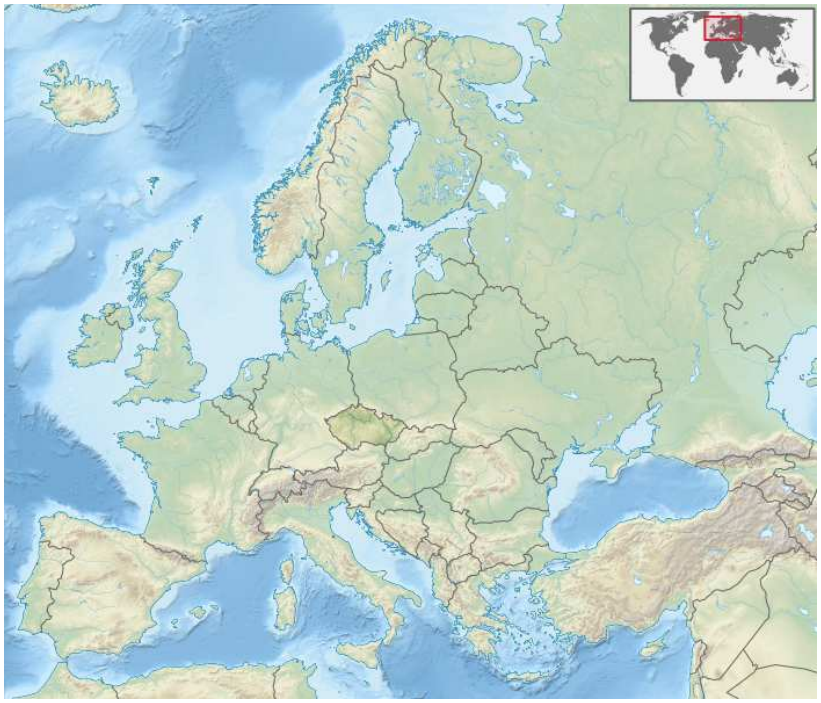
What will be this presentation about?

- Hazards in the CR
  - Natural hazards
  - Man-made hazards and multihazards
- Czech internal strategy for DRR
  - Disaster management and sustainability
  - Strategic documents
  - Politics and actions
- International cooperation
  - Strategy
  - Czech Republic and Sendai Framework
  - Other examples of action
- Conclusions

Czech Republic



Area: **78 866 km²**

Population: **10.572 mil ***

Location: Central Europe,
landlocked country

Regional structure: 14 regions;
228 districts;
6309 municipalities and communities.

*Czech Statistical Office (September 2016)

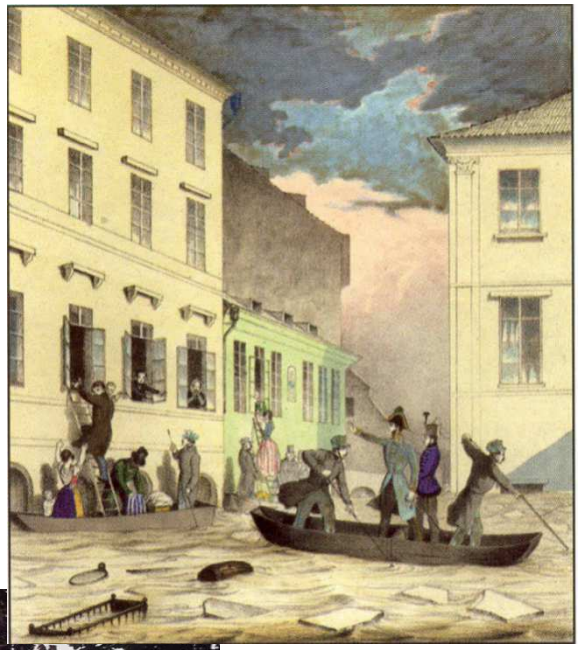
HAZARDS in the Czech Republic

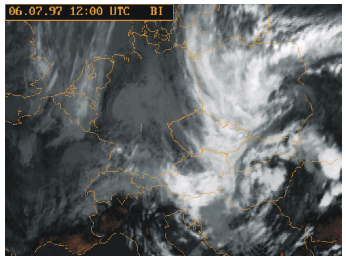
Hazard Analysis was last time performed by the Fire Rescue Service (civil protection service) in 2016

- **Natural Hazards** (biotic-, abiotic-, space-origin)
- **Antrophogenic hazards** (technological, sociological, economic)

NATURAL HAZARDS

- Floods, flash floods
- Drought
- Wind Storms
- Landslides
- Snow and ice
- Forest fires





1997 Flood

1998 Flash Flood

2002 Flood

2006 Spring flood

2006 Flash Flood

2009 Flash Floods

2010 Floods

2013 Flood

Emergency response

Legal Instruments

Protection - structural measures

Preparedness (EWS, planning)

Prevention (relocation, land-use)

Remaining issues and problems in floods

- Application of flood zones development restrictions and use them in spatial planning;
- Land ownership;
- Proper land management;

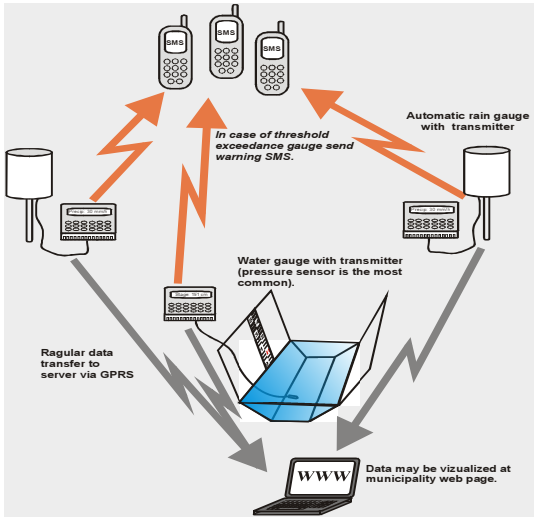
Flash Floods:

- Limited capability for targeted warnings;
- Safety of small reservoirs;

Lessons learned and response

Increased resilience through:

- **Preparedness**
- **Building Back Better**



Flash Floods Solutions:

- Local warning systems development
- Flash Flood Guidance System
- Guidance for better safety control of small reservoirs

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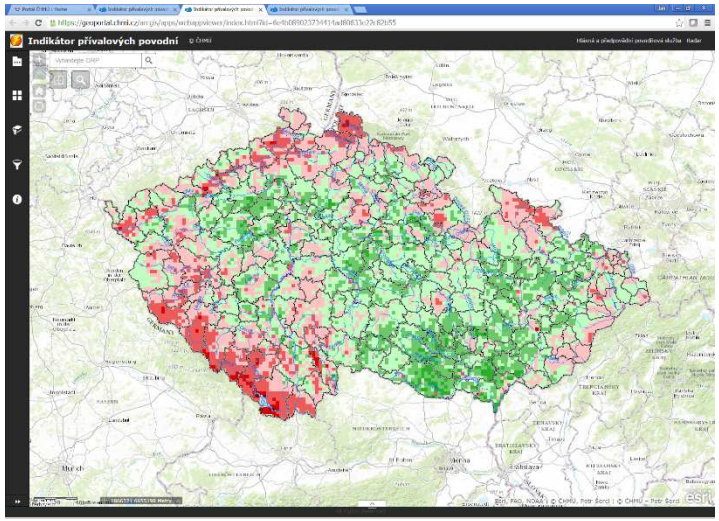


Multi-hazard context of floods

Dam-breaks

Landslides (1997, 2010, 2013)

Trees' falls

NATECH

Natural + man-made multihazards for DRR:

NATECHs - Natural Hazard Triggering Technological Disasters

Spolana Neratovice 2002,
chlorine (86 tons) released due to tank flooding
Case Involved in OECD NATECH study

Other NATECH examples, transboundary potential

Large part of major accidents since year 2000 with NATECHs signs

Chemicals release, flood 2002

Ostramo rafinery, flood 1997

MCHZ explosion 2002, ice formation

Fire and explosion Litvinov 2015,
loss of cooling, heat vawe

From hazard to disaster risk reduction:

- In the last decade, Czech Republic has followed (and activelly participated at) the change of general approach from disaster management to risk management

- Sendai Framework is guiding principle

Strategic Framework for Disaster Risk Reduction in the Czech Republic

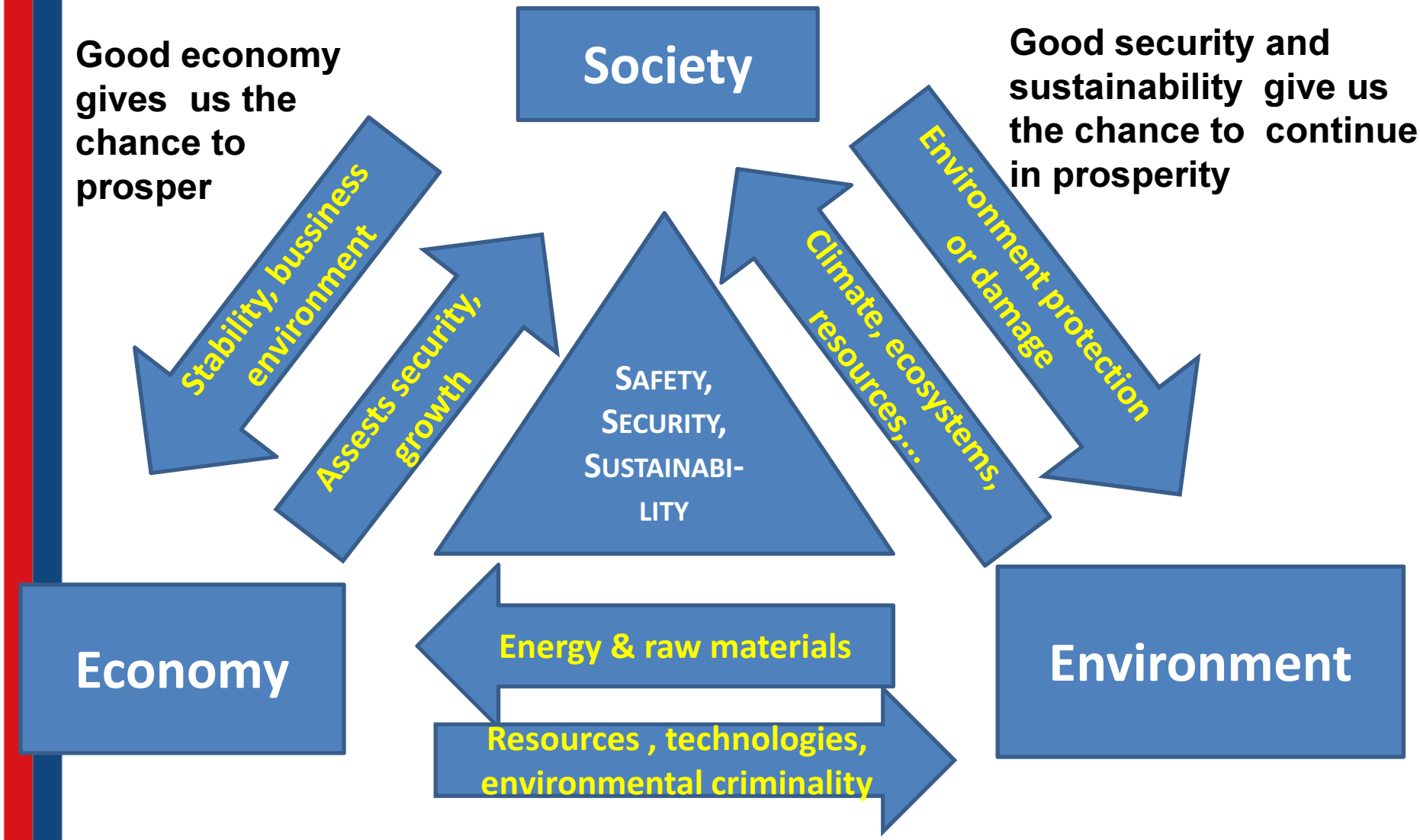
Implementation of Sendai Framework priorities:

1. Understanding disaster risk;
2. Strengthening disaster risk governance to manage disaster risk;
3. Investing in disaster risk reduction for resilience;
4. Enhancing disaster preparedness for effective response

Both fast-onset (crisis management) and slow-onset (sustainability) involved

National and international activities

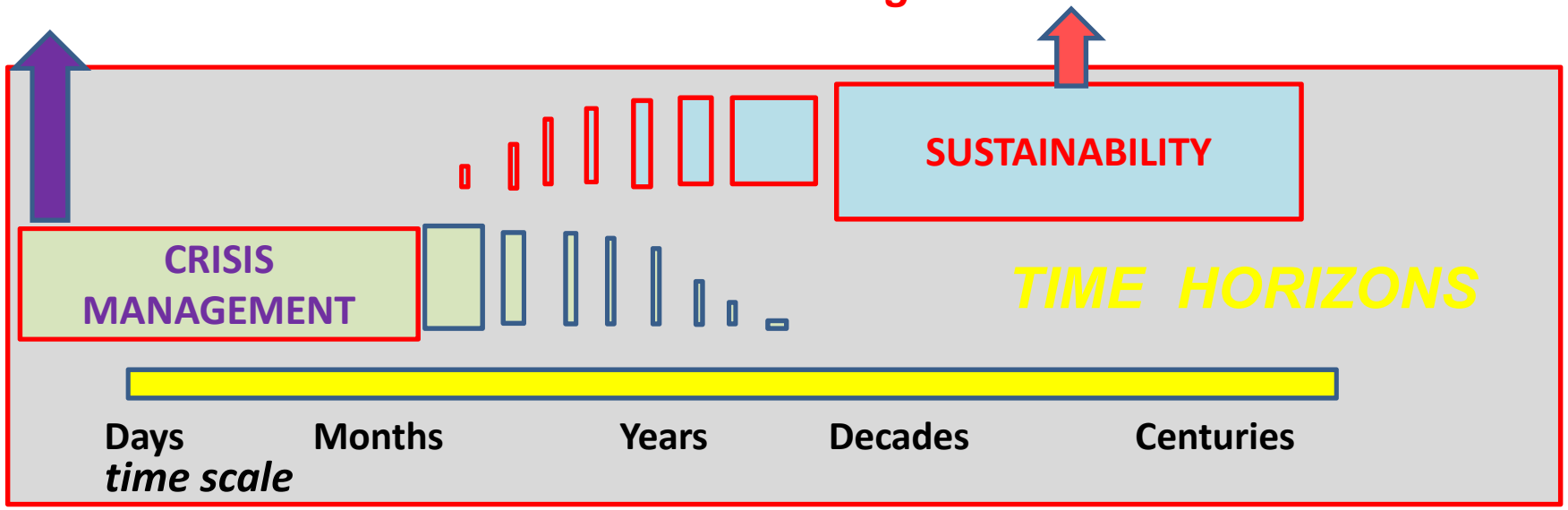
Security and sustainability aspects of environment, society and economy



TIME – SPACE HORIZONS OF DISASTER RISK REDUCTION

SPACE HORIZONS

local → state → international dimension ***global → state → local dimension***



WHAT IS OUR CONCLUSION:

WE NEED TO CREATE AND TO KEEP COMPLEX, MULTI-DISCIPLINARY, MULTI-STAKEHOLDER STRATEGY

How the Czech Republic faces this challenge?

ACTUAL KEY STRATEGIC DOCUMENTS IN THE CR

- The Security Strategy of the CR (2015)
- The State Environmental Policy of the CR 2012 – 2020
- The Stategic Framework for Sustainable Development (2010)
- **The Conception of Environmental Security (2015)**
- The Conception of Civil Protection 2015 - 2020 (2013)
- The Conception of Water Management Policy
- The Regional Development Strategy of the CR 2014 – 2020
- The Czech Republic Economy Growth Strategy (under preparation)
- Adaptation to climate change – action plan (2016)
- International treates (Paris Climate, UNECE transboundary, Aarhus, Stockholm…)

SUSTAINABILITY STRATEGIC VISION, ENVIRONMENTAL SECURITY & GROWTH

DRR PARTNERSHIP: NATIONAL PLATFORM FOR DISASTER RISK REDUCTION

Czech National DRR Platform is the advisory body of the Ministry of Environment

The main aim of the Platform is to support all actions leading to reduce human, social and economic losses caused by natural and man-made disasters.

Platform is directly related to the Sendai Framework for Action (UNISDR)

The Platform includes (beside of the MoE) experts from following institutions:

- Ministry of Agriculture
- Ministry of the Interior, Fire Rescue Service
- Ministry of Local Development
- Czech Hydrometeorological Institute
- Czech National Committee for Disaster Risk Reduction
- Union of Towns and Municipalities
- VSB – Technical University of Ostrava
- Mendel University
- CzechGlobe Research Institute, Academy of Sciences of the Czech Republic
- Water Research Institute
- Population Protection Institute

CONCEPTION OF ENVIRONMENTAL SECURITY

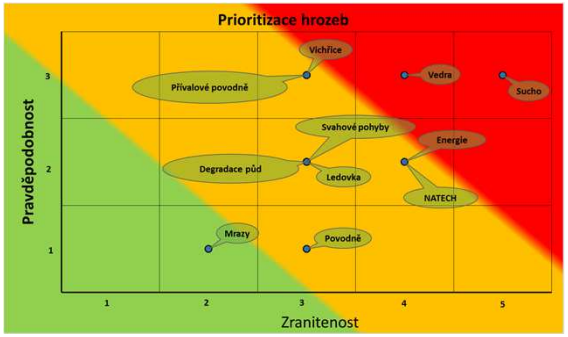
PREPARED WITH STRONG CONTRIBUTION OF NATIONAL DRR PLATFORM

Environmental security is understood as a state of environment and society, when the risk of disaster originated in environment and with crucial impact on society is still acceptable.

Main hazards recognized by CES:

- **Natural**
  - Extreme meteorological phenomena
  - Floods
  - Landsides
  - Drought
  - Forest (vegetation) fires
  - Long-lasting inversion with high air pollution
- **Anthropogenic (man-made):**
  - Hazardous materials, pollution and major accidents (chemical, nuclear)
  - Loss of Critical Infrastructure functions
  - Terrorist attack to environmental services (water, food, biosphere…)

Axis of DRR and resiliency building



– Knowledge building

– Sustainability and adaptation

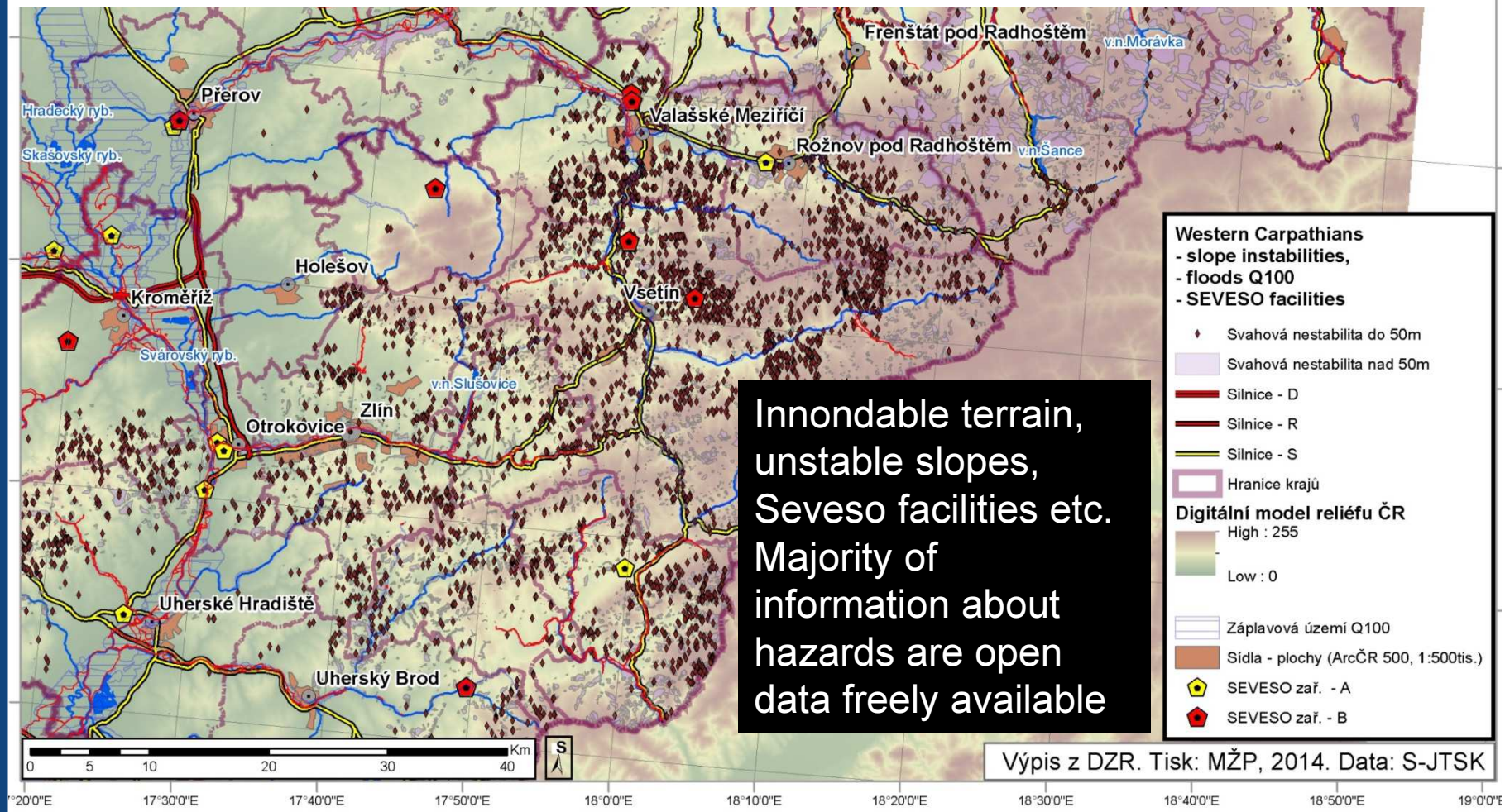
– Prevention

– Preparedness, mitigation, BBB

Knowledge building – understanding, mapping, research and development…

Example of multihazard mapping –

Crisis plans of MoE (environmental security, GIS based)



Sustainability and adaptation

At central level: Government Council for Sustainability, state policy…

Good practice example **at local level** :

- Municipalities and Local Action Groups (LAG) set-up strategies

- Hostětín municipality (White Carpathian region):

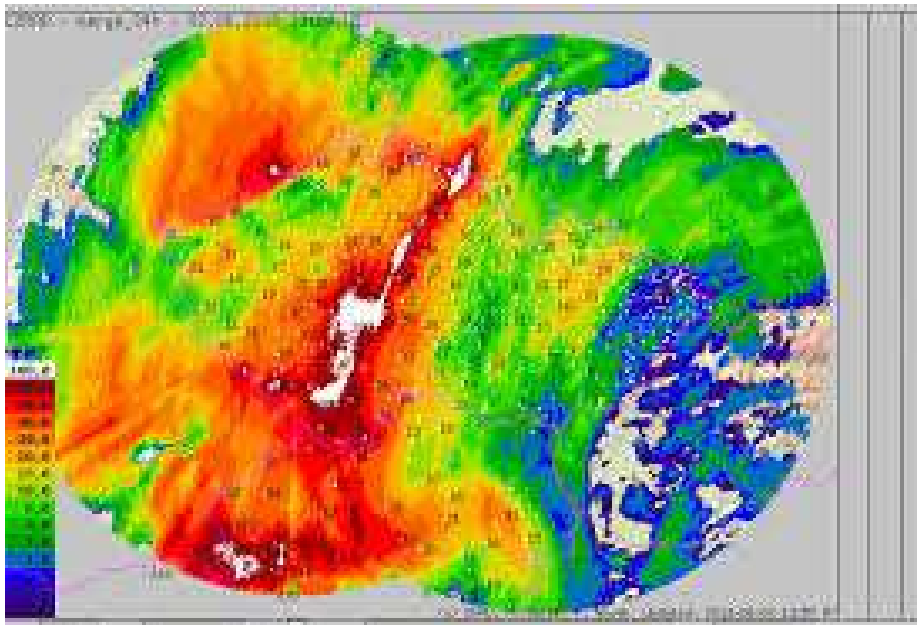
- Information & Education centre for sustainability
- Inspiration, ideas and examples collection (first passive house, muicipal carbon neutral central heating, sustainable agriculture…)
- „Learning by doing“ principle

Prevention

- Sustainability and resilience
- Land-use planning
- Water management
- Building codes
- Being ready to adapt
- Relations and communication
- Involvement of stakeholders – citizens, local industries, volunteers…
- Education process, including schools

Forecasting and early warning

- 8 groups with warning possibility and corresponding information background including recommended behaviour
  - temperature
  - wind
  - snow
  - Ice, icing
  - storms, lightening
  - rain
  - floods
  - fires
- Together 37 individual phenomena

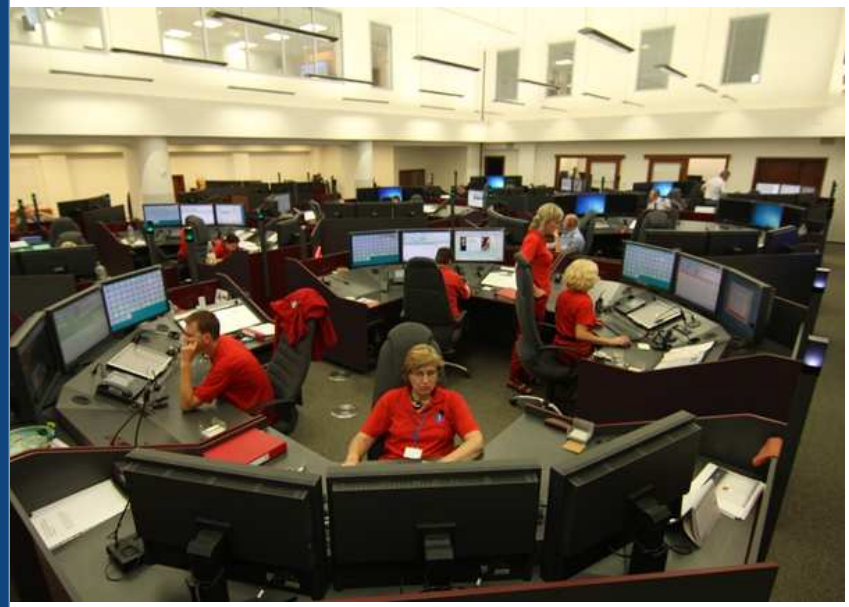


- Main responsibility – Czech Hydrometeorological Institute

Preparedness and mitigation strategy

Integrated emergency response teams. One from the first countries in world; pilot centre since 1993 (Ostrava city)

Practically each community has local volunteers firefighters (general emergency response team), firemen are important part of community life, there is a long tradition



Special issues:
DRR & Cultural heritage, environment etc.

- Systematic programme of cultural heritage against disasters, main focus on fires and floods
- Environment protection as a part of DRR
- Case story: seal Gaston during floods in Prague 2002 Attracted wide attention of people and media

Gaston before disaster

Downstream near German border

Statue in ZOO Prague

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Czech TV,
Peter Franek – Moje fotka, CC0, https://commons.wikimedia.org/w/index.php?curid=14708612

International dimension

Basic philosophy: Disasters do not respect national borders

- Czech Republic has a global concern for DRR and humanity – „we share one planet“
- Czech citizens may be exposed to the hazards when staying abroad as well as at home

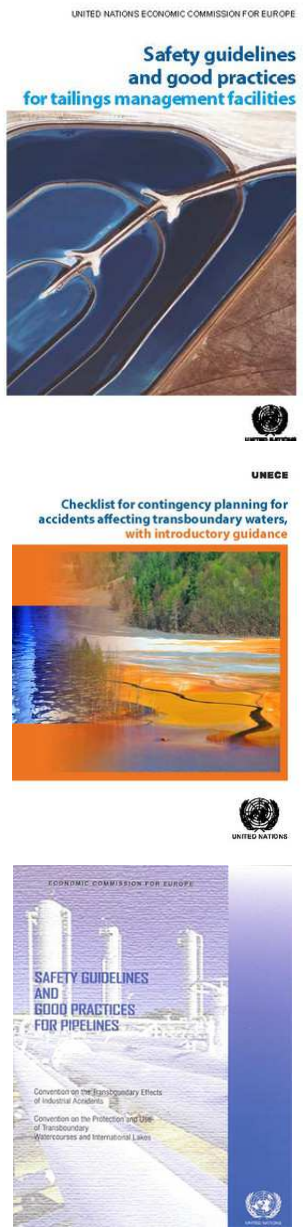
- Petra Nemcova after tsunami, Thailand 2004

Czech alpinists memorial under Huascaran, Peru

Disaster risk reduction at international level: strategy and national politics

- Czech active participation at theThird United Nations World Conference on Disaster Risk Reduction, Sendai (
- OEIWG on indicators and terminology
- National Platform on Disaster Risk Reduction as an advisory body of the Ministry of Environment and member of European Forum on DRR
- Participation in international DRR-oriented activities at multinational level (regional DRR platform, UNECE, UNEP, UNDP…)
- Bilateral cooperation and assisstance to other countries

Good practice in multilateral cooperation – Ad hoc Joint Expert Group UNECE



Strategy: Capacity building, collaboration support

- Preparing methodological assistance – guidelines
- 2017 – launched work on guidelines on fire water retention for accident prevention

- International UNECE transboundary trainings in industrial accident contingency

Danube delta training 2015

Eisenhüttenstadt training 2005

Bilateral cooperation in DRR

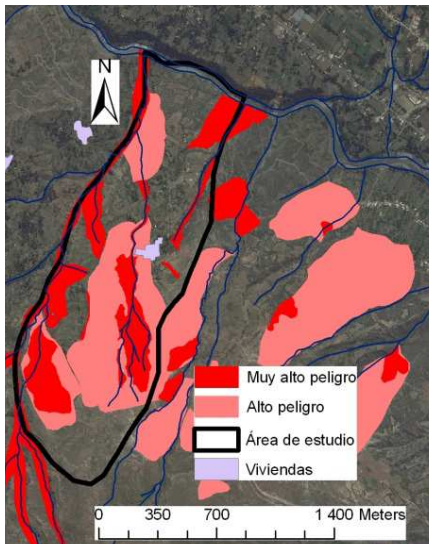
- Concentrated activities in priority countries
- Capacity building
- Direct assistance
  - In disaster situation
  - In recovery situation

Good practices examples:

International cooperation:
Peru - Landslide risk reduction in high mountains

Joint research with INAIGEM, Peru, 2016

- Deliverables for the local community:
  - Landslide hazard map
  - Warning signs showing the most dangerous areas
  - Landslide movement monitoring for detection of possible reactivations (done by Peruvian experts from INAIGEM)
- Sharing experience with landslide hazard mapping and movement monitoring with Peruvian experts



Other bilateral cooperation

Ethiopia

- Seismic/tectonic monitoring
- Capacity building: Joint research and education center

Moldova

- Firemen (first responders) training
- University course on risk management and disasters implementation
- Decontamination of obsolete pesticides

Georgia

- Major accident prevention legislation – proces facilitation
- Safety and security studies

…and others…

Conclusions

- Czech Republic, even if not being in high hazard prone territory, takes disaster risk reduction as a high priority
- Sendai Framework is fully accepted as guiding strategy
- Central government strategy is implemented to politics and combined with bottom-up approach (local level actions)
- International cooperation is an inherent part of DRR
- Both multilateral and bilateral activities involved internatinally
- Assistance in capacity building
- Openess to cooperation

… but still is there a lot of things to improve….

Thank you for your attention

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