

Climate Change and disaster risk reduction in Carpathian region



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Content of presentation

- Czech part of Carpathians: characterization
- Climate change in Czech – history and models
- Disasters Risk in Czech Carpathians
- Disaster risk reduction: strategy documents and state approach
- Disaster Risk at Local Level:
 - Sustainability and adaptation
 - Prevention
 - Preparedness and mitigation
- Local strategies set/up and implementation

Czech part of Carpathians



Czech part of Carpathians



Region character

- **Landscape:** hilly to mountains, altitude 500 – 1500 m, soil rarely with high fertility
- **Settlement:** dispersed, prevailing villages and individual farms, small cities
- **Economy:** Agriculture, forestry, small industries (wood industry, alimentary, shoes, textile, electronics, military industry)
- **Geology:** flysh, very limited deposit's of raw materials

Climate change

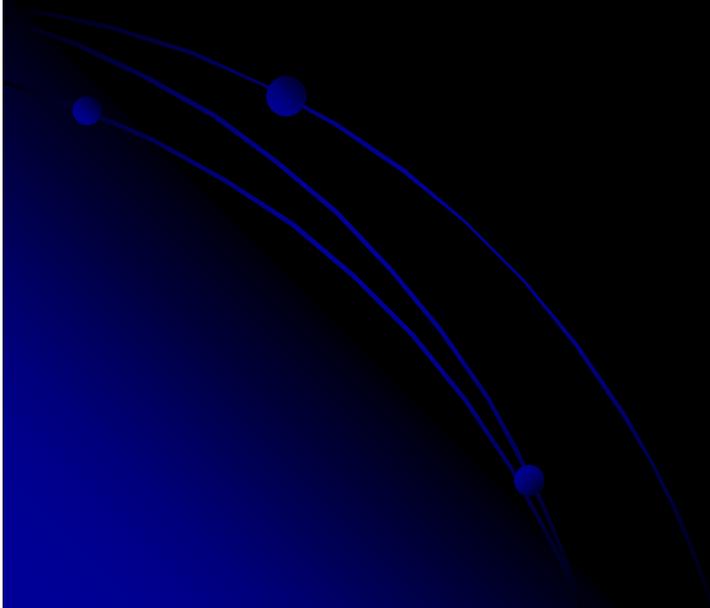
...here I refer to the keynote presentation of Mr. Radim Tolasz...

What we can expect: More extremes in weather

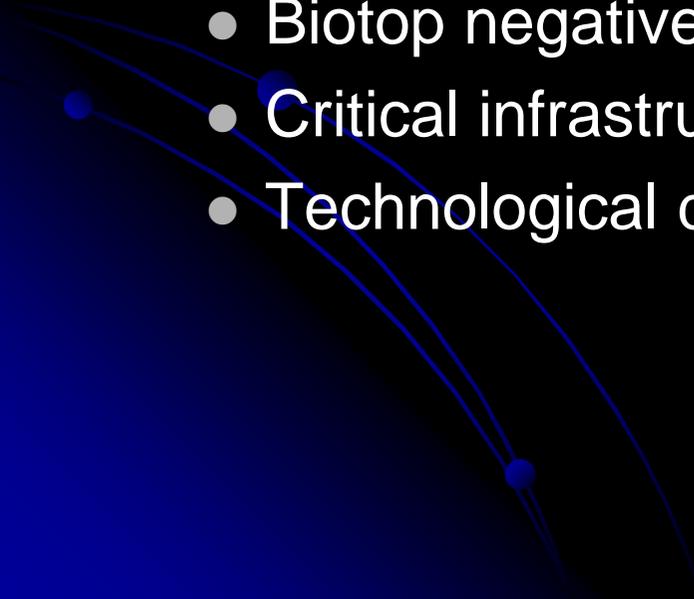
- Extreme, even torrential rains
- But drought periods as well
- Increasing temperature
- In Czech Carpathian slight increasing of average precipitation
- Heat waves and maybe even cold waves

Climate change may have impacts to disasters

- Direct:
 - Floods, flash floods
 - Drought
 - Heat waves
 - Storms

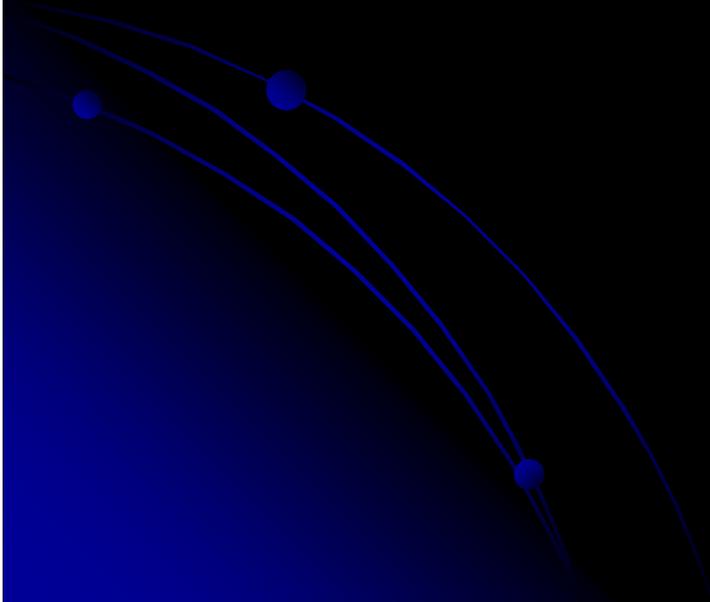


Climate change may have impacts to disasters

- Undirect:
 - Starving from crop failure
 - Epidemics
 - Landsliding
 - Forest fires
 - Biotop negative changes, new illnesses
 - Critical infrastructure failing
 - Technological disasters (“NATECHs”)
- 

Examples of weather related disasters or incidents in recent history

- Floods, flash floods
- Landsliding
- Forest fires



Flood: Jeseník nad Odrou, 24th and 25th June 2009



Flash flood

- Uherskobrodsko 2010
- Všechnovice 2011
- Huslenky 2014



Photos: Slováký deník, Novinky, Přeovsko

Landslide – Gírová 2010

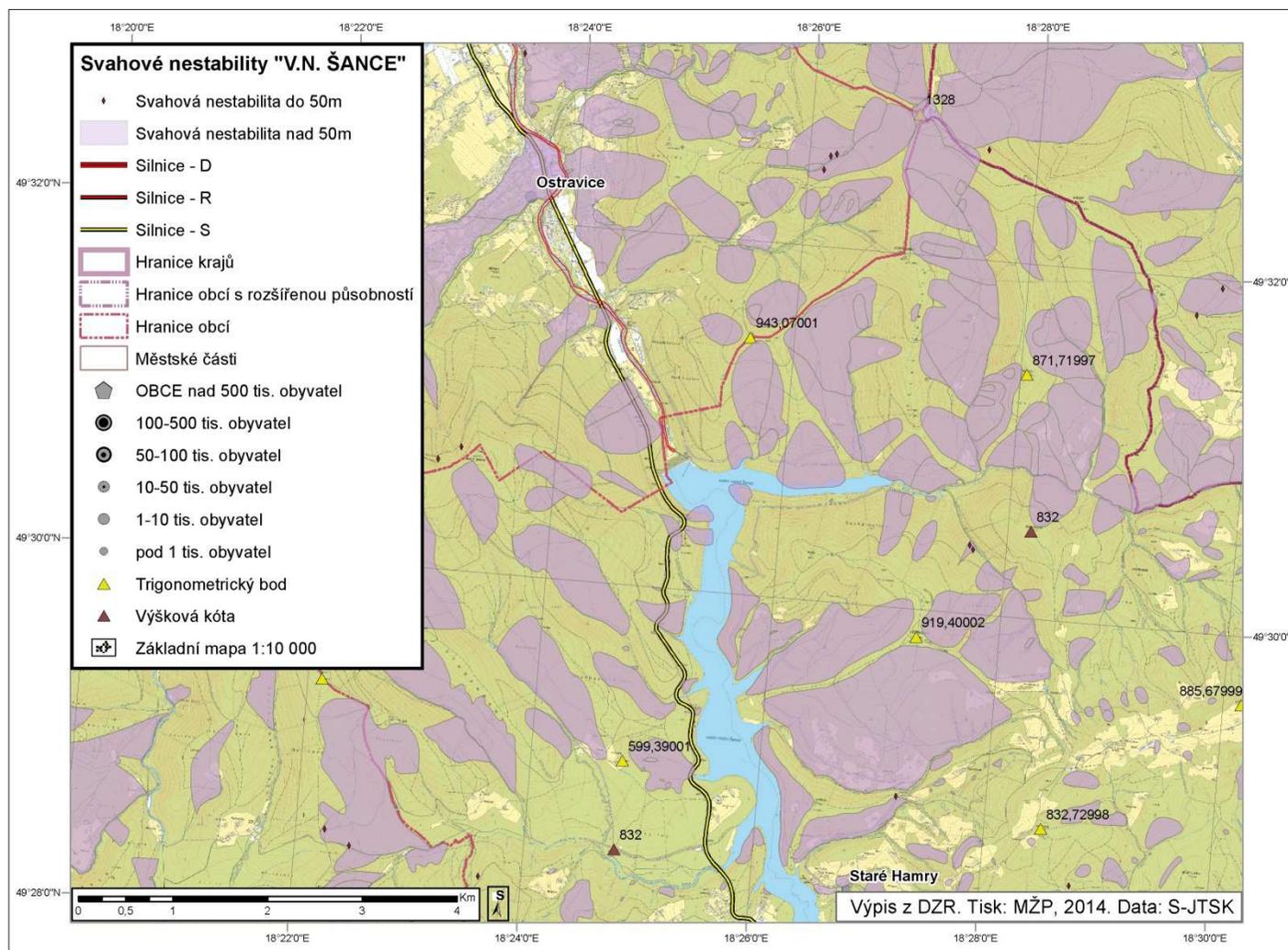


Flood and landslide risk 1997 Řečice, Šance



Source: Povodí Odry

Instable terrains around Šance dam



Source: Crisis plan of MoE CR

Forest fires Staré Hamry, Lukoveček...

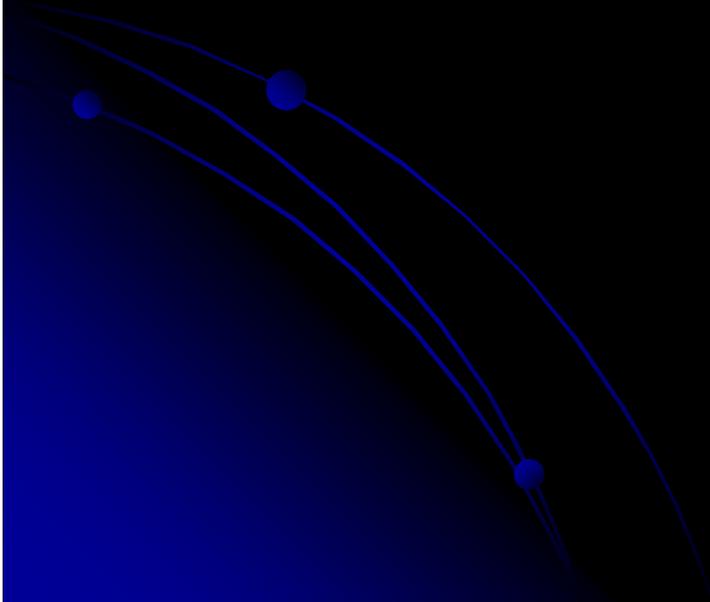


msk.hzs.cz
www.hasid.tv



Result:

- Climate (weather) related disasters happen and we can expect that their risk will increase with climate change



Disaster risk reduction: strategy documents and state approach

- Conception of environmental security
 - Agreed by State security council 2012
 - Contain list of threats including floods, droughts, heat/cold waves, infrastructure protection, combined risks etc.
- Conception of citizens protection (2014)
- Adaptation to climate change (in the process of agreement)



Disaster risk reduction: strategy documents and state approach – international level

- Czech participation at Third United Nations World Conference on Disaster Risk Reduction, Sendai
 - Result: Sendai Framework for Disaster Risk Reduction 2015-2030
- National Platform on Disaster Risk Reduction as an advisory body form the Ministry of Environment annd member of European Forum on DRR
- Kyoto Protocol to the United Nations Framework Convention on Climate Change and related activities
- ...other international documents.

Disaster risk reduction at local level - resiliency building

DRR at both central and local levels is one from principles of the Sendai Framework for Disaster Risk Reduction

- Effective rural area ensures food security
- People in mountains and rural area naturally searching for resiliency (and building it)
- Local people are best informed
- Indigenous knowledge existing and vital
- Stakeholders in rural and mountain areas more used to cooperate
- Mutual help still common
- Carpathian region is a good environment for DRR implementation b

Three levels of DRR and resiliency building and examples of good practices in Carpathian region

- Sustainability and adaptation
 - Prevention
 - Preparedness and mitigation
- 

Sustainability and adaptation

Good practice: Hostětín (White Carpathian):

- Information centre
- Inspiration, ideas and examples collection
- Education centre for sustainability
- „Learning by doing“ principle



Sustainability examples:

- One from the first passive houses in Czech
- CO₂ – neutral central heating of village
- Sustainable gardens and agriculture



Prevention

- Land-use planning
- Biodiversity keeping
- Keeping variety variability
- Building relations
- Being ready to adapt
- Education process, including schools



Prevention – focus on food security

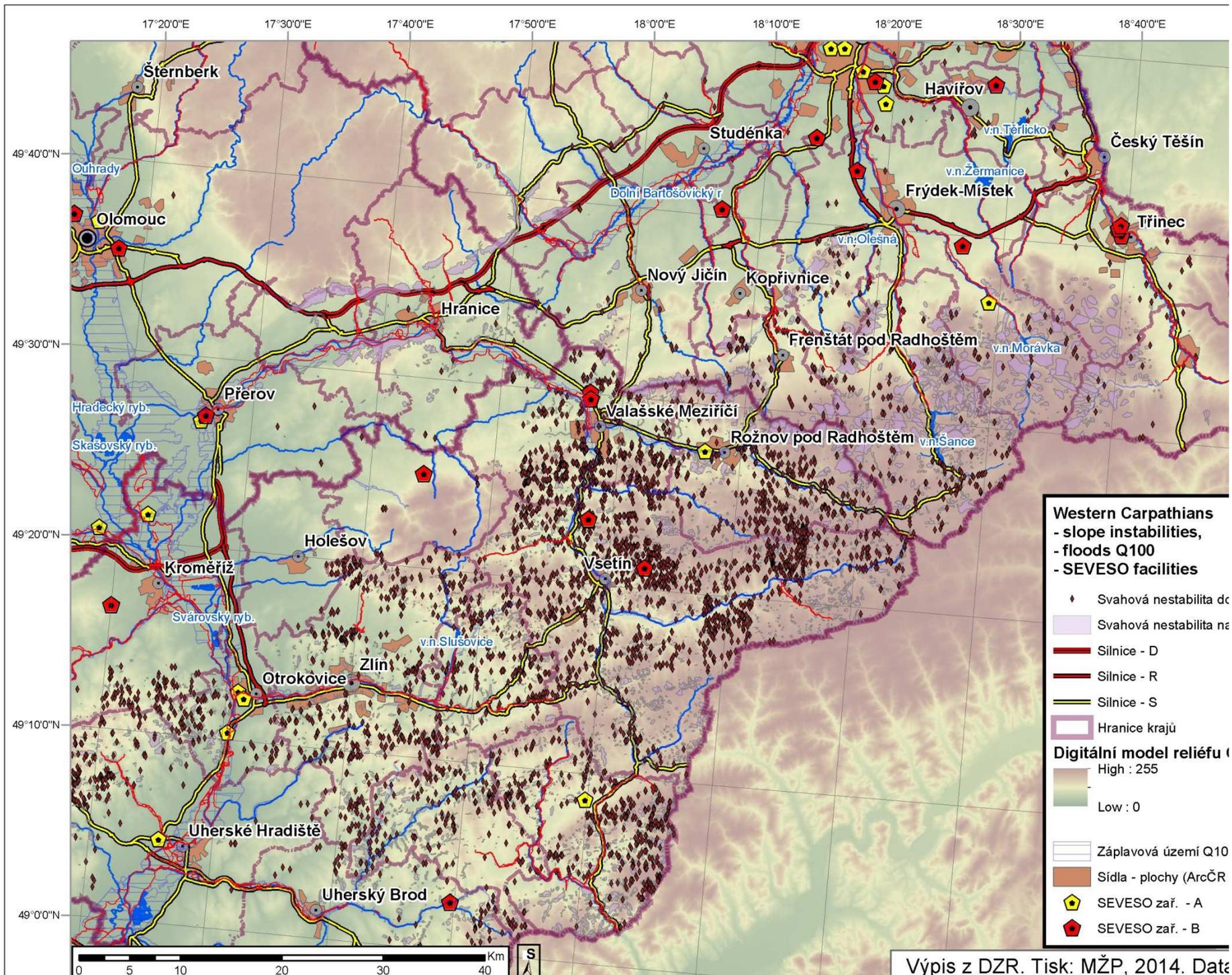
- Supporting local food production
- Supporting short supply chains
- Land-use planning
- Keeping variability of production plants
- Water management



Prevention and preparedness

- Information based approach
- Crisis plans serves for prevention as well
- Risk mapping with multihazard approach
- Involvement of stakeholders – citizens, local industries, volunteers...





Preparedness and mitigation

- Integrated emergency response teams (one from the first countries of EU)
- Practically each community has local volunteers firefighters (general emergency response team), firemen are important part of community life, there is a long tradition



Preparedness and mitigation

- For special cases, for example industrial accidents, full scale training is realized, e.g. Internationally training for transboundary accident at river Morava



Local strategies set/up and implementation

- Municipalities and Local Action Groups (LAG) set-up strategies
- EU Structural funds supports climate change prevention and adaptation process
- Running project of EHP Funds EHP-CZ02-OV-1-035-01-2014 „Resilience and adaptation to climate change in regional strategies; about 10 LAG will be involved

Conclusions

- Carpathian region is as rural and mountain region vulnerable and risk of disasters increases with climate change.
- On the other hand, natural resiliency of settlement in this region, together with organised process of adaptation and resiliency building and already existing activities and structures give the good chance to adapt to changing situation and to build up strong region, community and individual resiliency to both existing as emerging risks.

Thank you for your attention

