ITSAK : Institute of Engineering Seismology & Earthquake Engineering, Thessaloniki, GREECE

Seismic Hazard Assessment Methodologies
Regional – Local Scale

Activities and Deliverables

Hazard	x	Vulnerability	=	Risk

Probability per year of experiencing earthquake severity $\geq$ H
1×10^{-3}

Damage (as a proportion of replacement cost) if facility experiences severity H
1.0
0.8
0.6
0.4
0.2
0

Relative Contribution of each level of severity to total annual cost

Total Annual Expected Cost (Area under curve)

10 20 50 100 200
Severity of Earthquake Ground Motion, H
%g @ 0.2s Spectral Acceleration

10 20 50 100 200
Severity of Earthquake Ground Motion, H
%g @ 0.2s Spectral Acceleration

10 20 50 100 200
Severity of Earthquake Ground Motion
%g @ 0.2s Spectral Acceleration

Basil N. Margaris
Dr. Eng.Seismologist

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Activity 1.3: Recording of the existing legislation framework in relation to Seismic hazard prevention and management.

Activity 1.6: Review of available bibliography regarding methodological approaches for seismic hazard assessment at Regional and local scales.

Activity 1.9: Evaluation of existing seismic hazard assessment models in terms of scientific soundness, data demands and result credibility. Widely accepted seismic hazard assessment models are evaluated in the proposed areas of the project in order to define the most appropriate results, theoretical analyses are confronted to empirical data collected per country, as a consequence of seismic events

Activity 1.13: Development/modification/adaptation of existing seismic models that will be used to assess seismic hazard, based on local conditions and needs of the proposal. Seismic hazard are examined at a regional scale on the areas proposed for implementation. Strong motion parameters, necessary for assessment of seismically induced landslides are calculated.
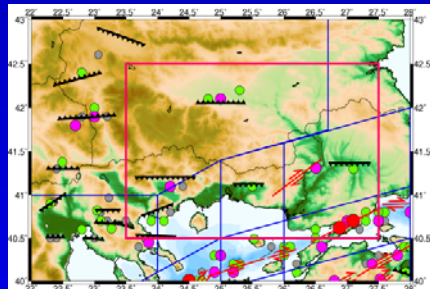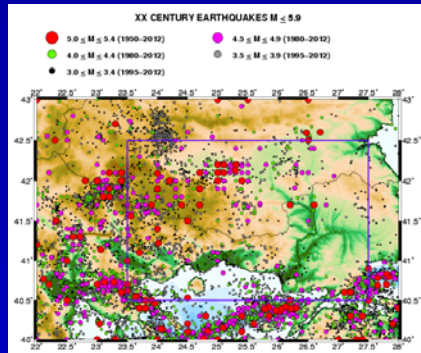
Activity 2.5: Update and completion of geodatabase with new field data, in situ measurements, or any other relevant data

Activity 3.3: Seismic hazard assessment at regional scale, based on selected methodology (model) from GA1.
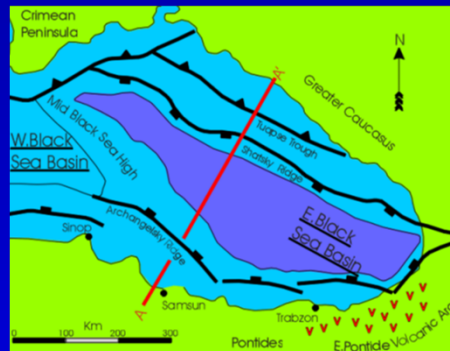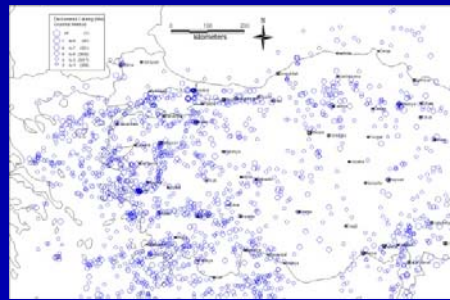
Activity 3.6: Seismic hazard assessment on local scale.
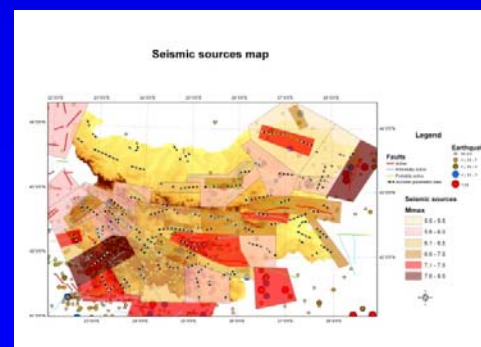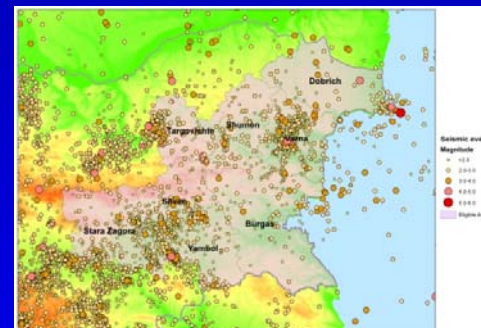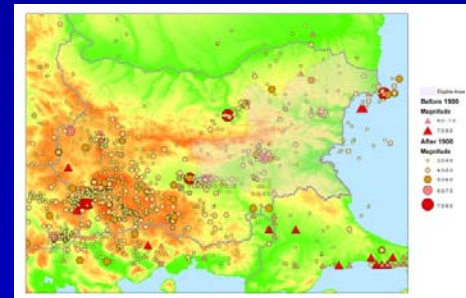
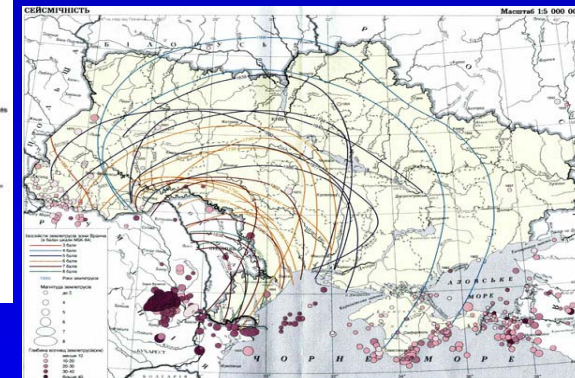**Activity 3.7:** Results Synthesis

Activity 1.9:
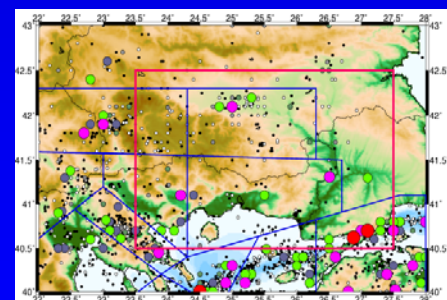
Greece

Turkey

Bulgaria

Ukraine

Activity 1.13
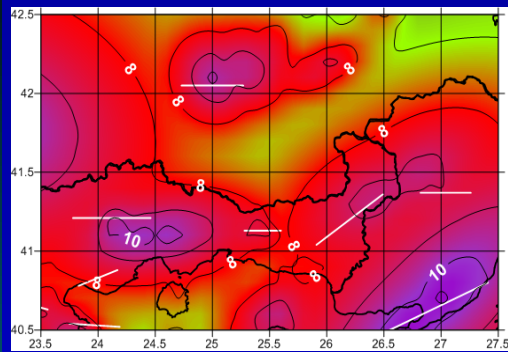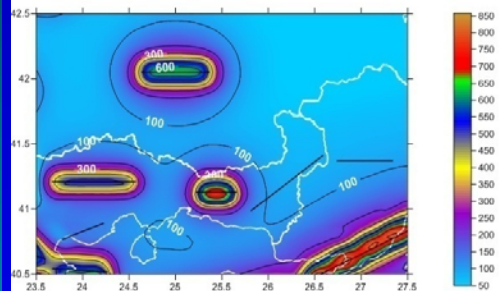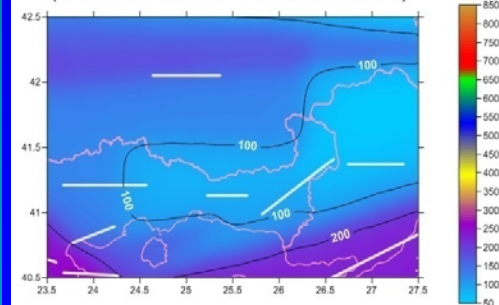
Tr : 475 years
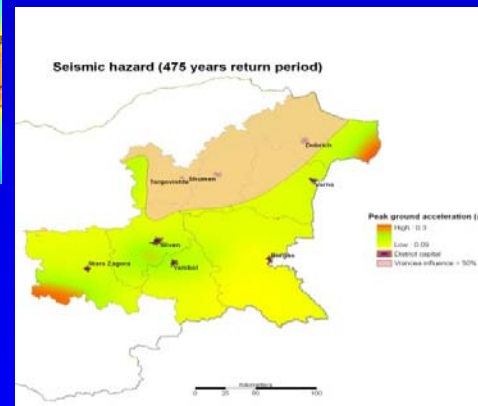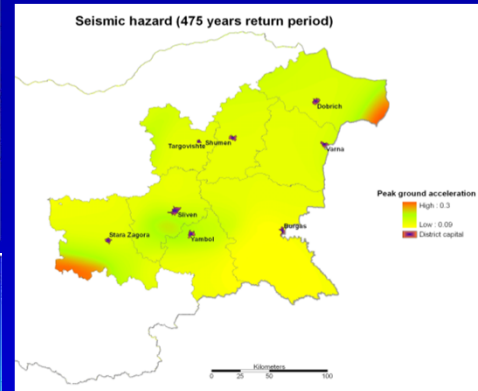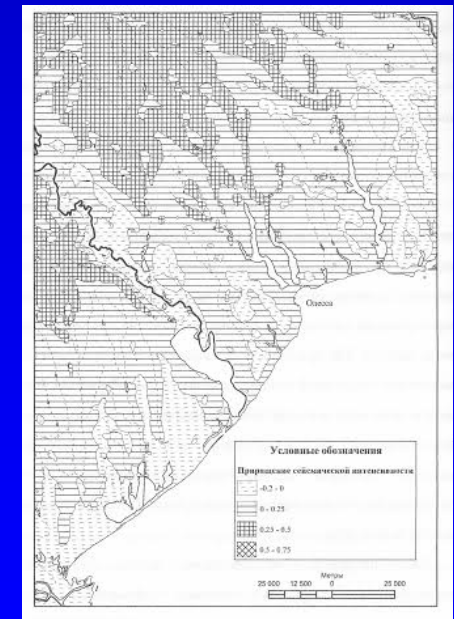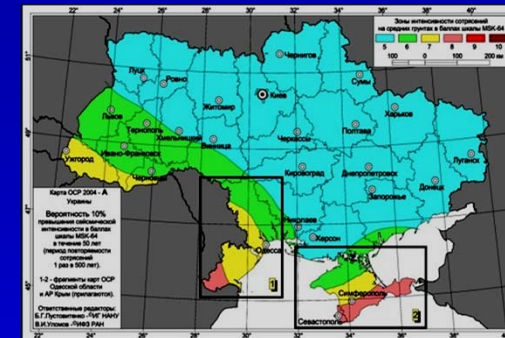

Greece
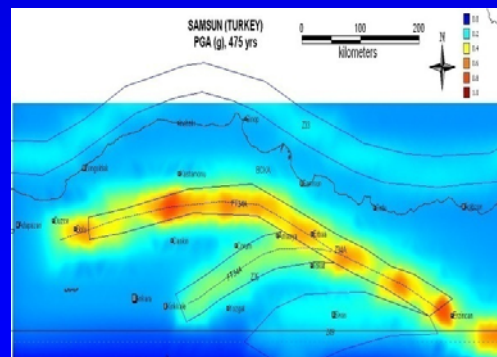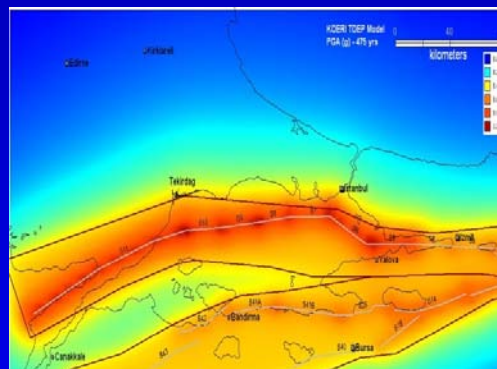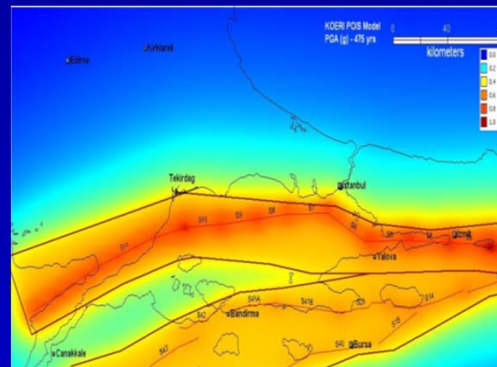
Turkey

Bulgaria

Ukraine

Expected Outputs: *Deliverable that will incorporate results from seismic hazard assessment coming from regional implementation of adopted methodogies. Models' efficiency and reliability will be demonstrated through historical data collected or/and field work.*

Expected Results: *A decision supporting tool development, based on methodologies appropriately adapted or modified, to assess seismic hazard. Preventive measures based on critical parameters local assessment could largely mitigate their impact on environment, society and economy.*

Issues should be discussed - Conclusions

1. **Adoption of the applied methodologies for final seismic hazard assessment.**

2. **Homogeneity of the seismic hazard assessment in the cross-border Implementation areas.**

3. **Documentation of the whole digital data from the various partners**

4. **Data uploaded at the Website tool (under preparation).**