ESPRESSO

Enhancing Synergies for disaster PRevention in the EurOpean Union

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Risk Management Simulator tool

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Kick-off Meeting

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Hotel Palazzo Esedra

WP3 Development of hazard specific scenarios for RMT

The **RMT** or **Risk Management simulator Tool** is a scenario planning exercise, 'role playing game', used to elicite knowledge from and interact with end-users and stakeholders (e.g., community gorups) who are confronted with a realistic scenario and are asked to 'respond' to it.

Such a tool, will represent an extension of that that was developed in association with the FP7 project **SENSUM** by Cambridge Architectural Research in response to the finding that simply asking end-users what their requirements were was inadequate (e.g., via questionaires), as answers such as *'what do you have'* to *'give us everything'* were often given.

WP3 tasks

Task 3.1 ‘Development of hazard specific reference scenarios according to the project challenges’

Task 3.2 ‘Review and implementation of exisiting methodologies for scenario development and stakeholders knowledge elicitation’

Task 3.3 ‘Compilation of scenario design toolbox’

WP3 Task 3.1

Task 3.1 ‘Development of hazard specific reference scenarios according to the project challenges’

The provision of reference scenarios for each of the three challenges

Challenge 1: ‘Climate Change Adaption (CCA) with Disaster Risk Reduction (DDR) - e.g., winter storms, flood, drought.

Challenge 2: ‘Science vs legal policy issues in DRR’ - e.g., earthquakes, tsunamis, winter storms, explosive eruptions, floods, landslides, droughts.

Challenge 3: ‘National regulations for the preparation to trans-boundary crises’ - e.g., earthquakes, tsunamis, winter storms, explosive eruptions, floods.

WP3 Task 3.2

Task 3.2 ‘Review and implementation of existing methodologies for scenario development and stakeholders knowledge elictation’

Implementation and modification of the RMT toolbox.

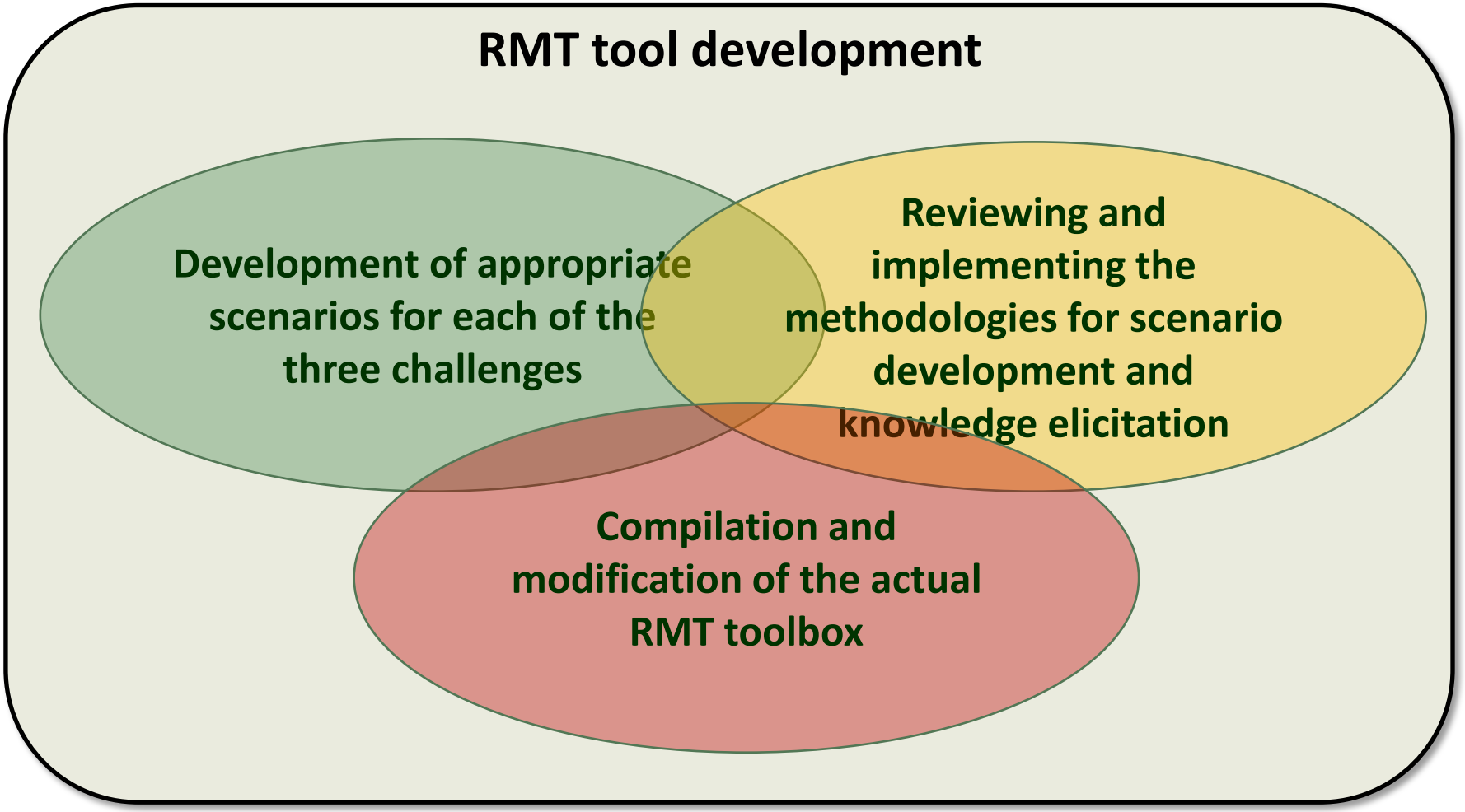
Need to employ realistic scenarios (Task 3.1)

WP3 Task 3.3

Task 3.3 ‘Compilation of scenario design toolbox’

Actual creation and utilization of the RMT toolbox. Will be an iterative process as new scenarios are developed, as new means of developing scenarios are thought of and how the process of presenting the scenarios, gauging the reception of end-users and eliciting information evolves.

WP3 tasks


RMT tool development
Development of appropriate scenarios for each of the three challenges
Reviewing and implementing the methodologies for scenario development and knowledge elicitation
Compilation and modification of the actual RMT toolbox

Scenarios

The first question should actually be ‘What is a scenario?’

- *A written outline of a film, novel, or stage work giving details of the plot and individual scenes: the scenarios for four short stories*

- *A postulated sequence or development of events: a possible scenario is that he was attacked after opening the front door*

- *A setting, in particular for a work of art or literature: the scenario is World War Two*

Oxford dictionary.

Scenarios

IN ESPREssO will we mean either simply:

An event of type A of size B occurred in location X

Or

An event of type A and siz B occurred in X, which is near Y, It also triggered another event A2 and consequences which in turn etc. etc. etc.

The SENSUM scenario tool

The SENSUM scenario tool divided the attending end-users into three groups:

- Events generators
- Decision makers
- Information providors

The scenario is divided into sessions (their length dependent upon the time allocated to the whole exercise) corressponding to time periods following an event, 1 day, 1 week, 1 month, 1 year, etc.

One issue that arose was that the attendees (more alligned to first responders) 'lost interest' in the periods longer after the event.

What a scenario exercise can reveal

- Cultural aspects play a major role:
  - Top down versus bottom up approaches, e.g., some civil protection are more alligned towards the military.
  - Gender participation.
- Actual knowledge of what information is available and/or what can be exploited.
- How ‘set’ are the response protocols. How flexible are they?
- Deficiencies (or successes) in communication.

Would be especially interesting within the context of Challenge 3 and cross boarder disasters.

What a scenario exercise can reveal – case of SENSUM

SENSUM employed the scenario training exercise to explore how technologies like GIS and remote sensing could be integrated into pre-disaster vulnerability assessment and post-disaster recovery planning and recovery.

- Transcripts revealed the interplay between events, decisions and information in a way that could not be gained from, e.g., surveys and interviews.

- A clear discontinuity was revealed when longer eras (e.g., beyond 1 year) were dealt with (i.e., they felt their work was done after a year).
- Longer term planning appeared to be neglected, but this is believed to be a function of those who attended.
- What information was employed was very dependent upon their experience (in this case, how exposed they had been to remote sensing).

Hence, is essential (relevant to WP1) to be careful who is involved.

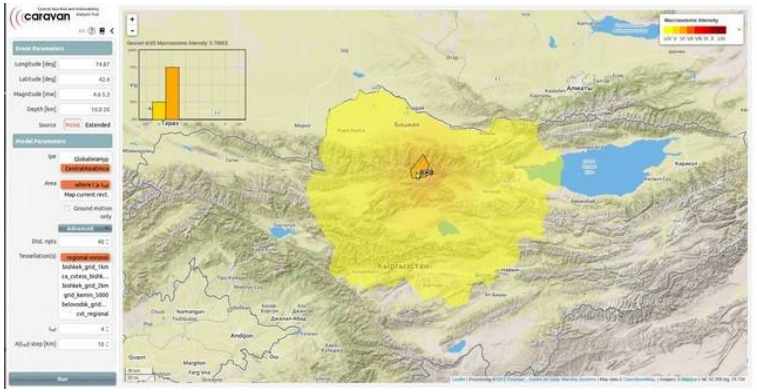
What a scenario exercise can reveal

- The excersise in SENSUM was aiming at investigating the response capability and to identify failures in this process

- Here we will look at the **reasons** (especially those related to those related to the National regulations) of the different responses

CARAVAN Risk estimation tool

CARAVAN is a free and open source web-based framework for on-demand seismic risk assessment, GFZ.



http://rz-vm161.gfz-potsdam.de/caravan/

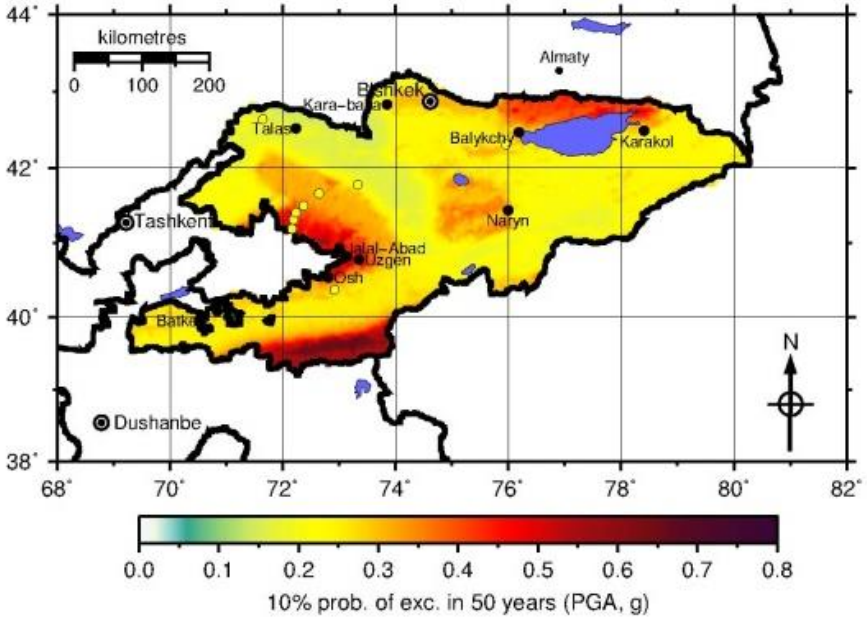
Originally designed for earthquake loss estimates in Central Asia for, it can be updated to be used within a European context and other disaster types.

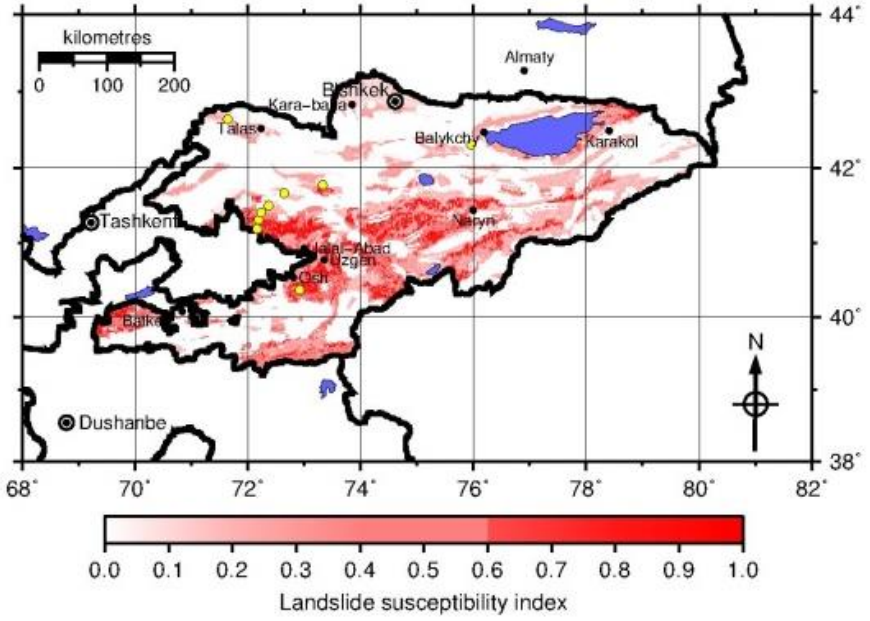
Its role would be to provide realistic loss estimates for the selected scenario, and to present this information to the scenario training session participants, either as input for them to respond to, or as background for the exercise controllers to judge the response of the participants.

CARAVAN Risk estimation tool

CARAVAN is also underdevelopment for cases where cascading events would need to be considered (again within the multi-hazard and risk framework).

For instance, earthquake triggered landslides and their effect on infrastructure such as dams (below).





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Questions/considerations in the RMT tool

- How long is it to be run?
- Will it be divided into ‘eras’ of the disaster risk chain?
- Who would be invited? Planners? Responders? Decision makers? Those who get their boots dirty?
- How complicated would the scenarios need to be? Multi-hazard and risk is required by the project but still, how complex?
- What would be the specific questions to consider?
  - Communication?
  - Flexibility?
  - Awareness of what sort of information is available?
- How would the ‘post exercise’ appraisal be carried out?