



ENSURE PROJECT

Contract n° 212045

ENSURE E-LARNING TOOL

Sol07b

Working on the assessment process

Reading the assessment steps in Negev case study



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Area "Environment"
Activity 6.1 "Climate Change, Pollution and Risks"



Working on the assessment process

Negev case study ENSURE_DeI5.3.2

Synthesis of the working sequence

See also file F31 in module 2 *Methodological framework for an Integrated multi-scale vulnerability and resilience assessment*

1. General presentation of the case study

- ✓ Identification of the region and of the hazard – drought – which will be the assessment object in the case study.

2. Characterization of the Negev's territorial system

- ✓ Analysis of the structure of the territorial system concerned:
 - geographical elements
 - description of the population with respect to agricultural activities. Notice that, among many other possible descriptors of the region, this indicators has been selected because particularly representative with reference to the selection of drought as the analysed hazard
 - description of the administration organization

3. Drought as hazardous phenomenon

- ✓ General introduction to drought and its main characteristics: definitions of drought, indicators to describe drought and evaluation criteria, phenomena description and impact. Notice the use of graphs for the description of phenomena and of the related impacts
- ✓ Activities in the region in “business as usual” conditions. What happens in normal conditions, without drought?
 - water management organisation and activities in the region
 - water uses in agriculture

4. The major components of Negev's territorial system

- ✓ Selection and description of some main indicators describing the region with reference to the exposure to drought
 - land and land uses. Notice the selection of indicators
 - population
 - institutions
 - planning – the “drought line”

5. Interactions between lands, population and institutions in the Negev territorial system and impacts of drought

- ✓ Description of the main characteristics of the interactions between populations and administrations in "business as usual" dynamics: land use, irrigation, agriculture and other economic sectors
- ✓ The influence of the droughts on "business-as-usual" dynamics in the region: impacts of drought on the regional water use model and connected socio-economic and political effects

6. Mitigation capacity

From file F31, chapter 2.3 *"In the first set of matrices, the capacity to mitigate is addressed; this means concretely that the vulnerability of the natural environment, the characteristics of the hazard are known, mapped and monitored appropriately. With respect to the vulnerability of objects and artefacts what is checked here is whether or not vulnerability assessment has been carried out and taken into consideration in planning and risk prevention policies; in the case of critical facilities, not only the awareness of systemic vulnerability is addressed but also the capacity to reduce it in ordinary maintenance programs should be envisaged and new facilities or replacement of existing ones must be considered. With respect to agents, their awareness of existing threats and fragilities is assessed as well as their willingness/capacity to address them when the hazard does not seem to impede in any particular fashion and time has passed since the last catastrophic event"* .

- ✓ Application of the ENSURE Project vulnerability assessment matrices for drought.
- ✓ Four assessment framework are considered
 - Natural environment
 - Built environment
 - Infrastructures and production sites
 - Social system
- ✓ Notice which aspects, parameters/indicators, criteria, descriptors for assessment have been selected for drought.
- ✓ Notice here the assignment of scores (importance ranking associated with the result of the measurement)
- ✓ Notice the result of the application of the method to the region concerned in the column "Application to case study"
- ✓ Notice the long summary, in which main elements, phenomena and dynamics can be underlined concerning the assessment results

7. Physical vulnerability

From file F31, chapter 2.3: *"In the second set of matrices, the physical propensity to damage of the natural environment, objects, critical facilities and people is assessed. All factors that may increase the potential damage are considered, including the possibility of enchainned effects, both between natural hazards (like for example landslides triggered by earthquakes) or between natural and vulnerable built systems (like for example na-tech)"*.

- ✓ The same steps as above

8. Vulnerability to losses

From file F31, chapter 2.3: *“In the third set of matrices, the potential reaction to first level losses is addressed: secondary effects in the natural environment, like for instance lahars or debris flows consequent to fires denuding entire slopes is considered. With respect to artefacts, urban areas and critical facilities, the capacity to keep functioning despite some level of physical damage is evaluated, considering the interdependencies among systems and among components of vital systems. With respect to agents, the capacity to manage emergencies, to endure in time of limited facilities and restricted access to resources and markets is considered.”*

- ✓ The same steps as above
- ✓ Notice the use of an integrated approach, with particular reference to physical infrastructures networks and interactions among territorial elements, subjects and activities

9. Resilience

From file F31, chapter 2.3: *“In the last set of matrices, the recovery potential is appraised. As for the natural environment the ecological resilience is referred to, particularly for those hazards like fire or drought that may significantly disrupt the natural environment itself with permanent damage. For buildings and cities, the capacity to embed the lessons learnt in the disaster while reconstructing artefacts and places is evaluated, as well as the capacity to couple the physical reconstruction with the symbolic one, accompanying the healing process of a traumatized social system. Regarding the latter, access to resources for reconstruction, availability of good administrative procedures, fast delivery of compensation are elements that seemed particularly relevant to recover in a satisfactory way. Fast access to compensation need not to be taken as an isolated indicator: the capacity to couple it to the control of how reconstruction will proceed and to what extent pre event vulnerabilities will be addressed is equally, if not more, important.”*

- ✓ Application of the ENSURE project resilience assessment matrices for drought.
- ✓ The same steps as for vulnerability assessment
- ✓ Notice the particular importance of social system in resilience assessment

10. Dynamic view of the Negev vulnerability

- ✓ Going deeper into the characteristics of drought and the related impacts in the Negev region: use of additional measurement approaches and methodologies.
- ✓ Landscape vulnerability to drought as a temporal phenomenon. Notice the use of scientific references, evaluation procedures, tables of data, graphs and maps.
 - vulnerability as a dynamic phenomenon.
 - possible influence of the drought on Negev's territorial system: building of scenarios under different hazard and territorial conditions
 - vulnerability as spatial phenomenon
 - effect of droughts on the relationships between the components of the Negev territorial system: a brief socio-economic analysis under the impacts of drought

- dynamic spatially explicit model of the Negev's agricultural as a tool for estimating territorial vulnerability: an example of site-specific assessment tools. Notice the development of a number of possible scenarios as an important result of this model

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11. Weaknesses and strengths of the Ensure framework

- ✓ Some points about the operational performance of the ENSURE project methodology. Useful for future research developments and operational application of the methodology in other regions.