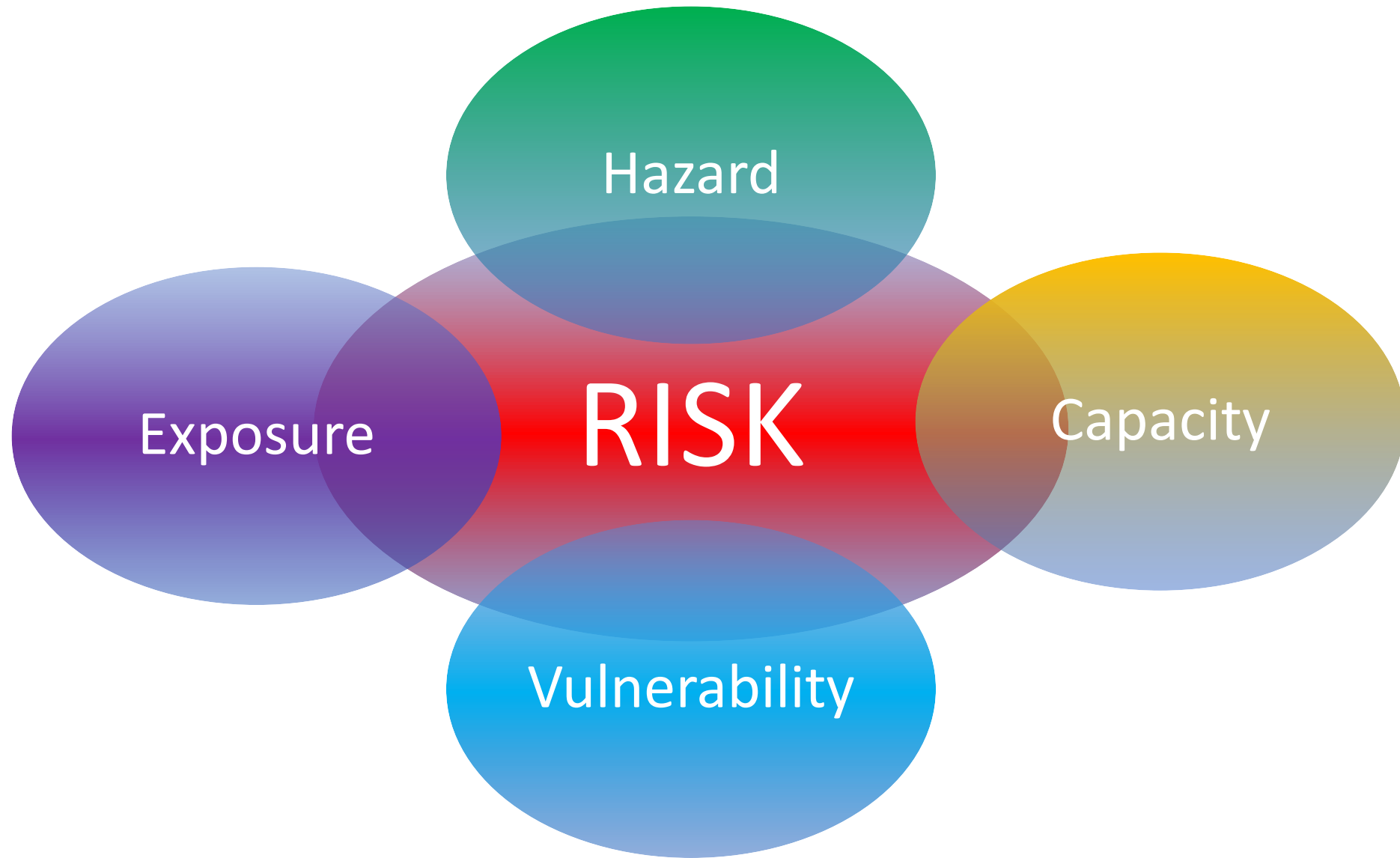*Methodologies for Social Vulnerability Assessment to track changes in community resilience in the face of climate change and disasters*

National Evaluation Capacities Conference 2017

20 October 2017, Istanbul, Turkey

What constitutes DISASTER RISK?

Hazard

120 m

Exposure

Capacity

Vulnerability

A GUIDE TO PRACTITIONERS

- **Overview of Social Vulnerability**
- *Assessment of Methodologies and Tools Globally*
- *CCA/DRR Social Vulnerability Case Studies*

- **Social vulnerability indicators**
- *Development of Indicators*
- **Index calculation and application**
- *Index validation*
- *Index calculation*

- **Examples, Conclusions and Recommendations**

Social Vulnerability - definition

There are numerous operational definitions of social vulnerability to natural hazards, but it is most commonly defined as:

 „the differential capacity of groups and individuals to deal with hazards, based on their positions within physical and social worlds" (Dow, 1992), or as:

 „the inability to take effective measures to insure against losses" (Bogard, 1989).

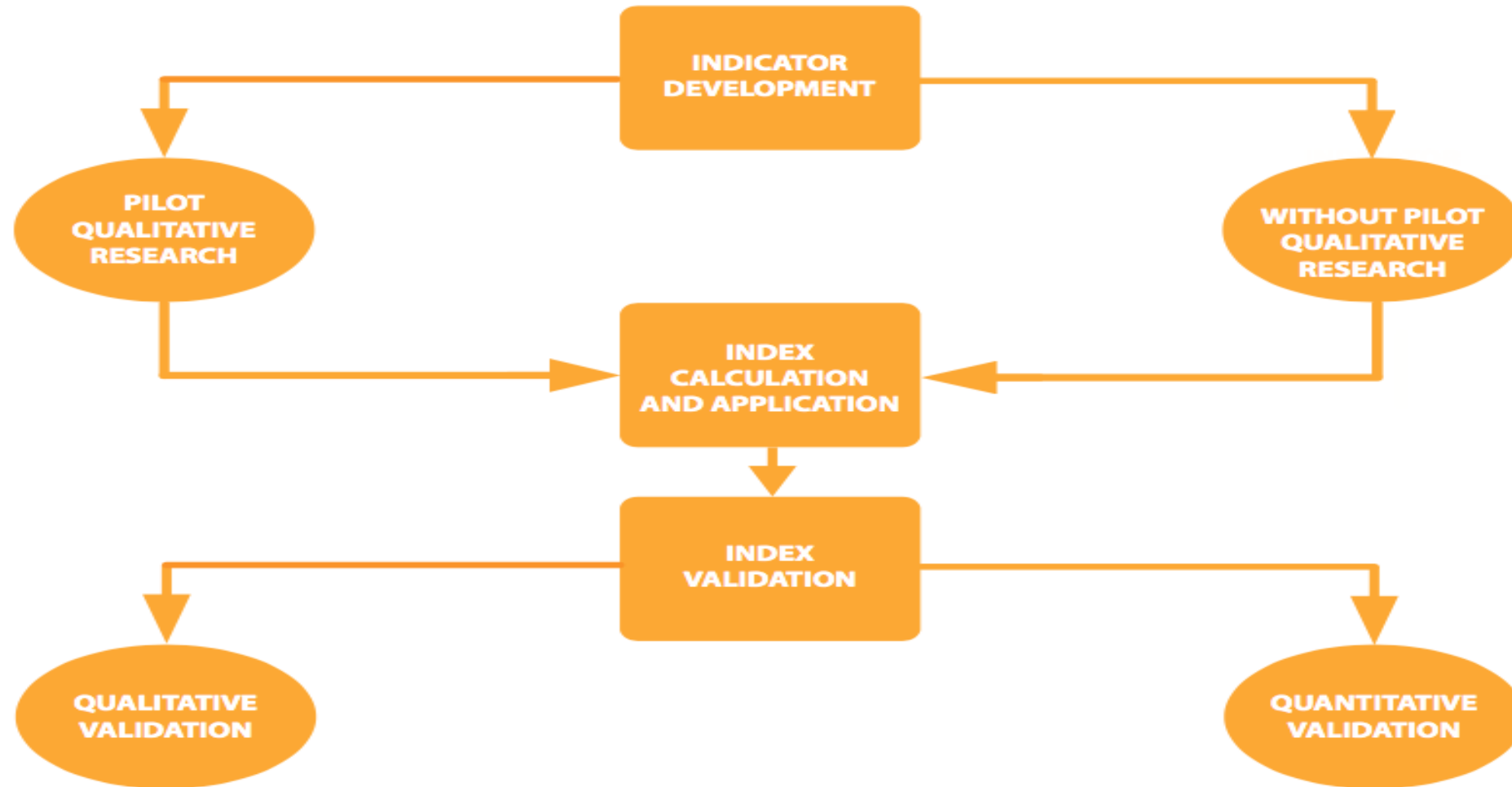**DIFFERENT PEOPLE ARE DIFFERENTLY AFFECTED BY DISASTER RISKS!!!**

Social Vulnerability stages

Figure 1. Outline of the SVA study

Measurement of social vulnerability

When it comes to measurement of social vulnerability, Cutter, Boruff and Shirley (2003) have started out from the wide-encompassing groups of variables which can be divided into two groups considering the level of data collection:

a) **individual level variables** (e.g., education, age and gender) that are aggregated to produce community-level numbers.

b) **community-level variables** such as infrastructure quality and urban/rural division, that need not to be aggregated.

Social Vulnerability variables/indicators

GDP per capita	Age	Immigrants	Quality of infrastructure	Age of infrastructure
Average Monthly salary	Education	Rapid population growth	Population density	Average property value
Unemployment level	Gender	Single-parent households	Percentage of renters	Sense of community
Socially dependent	Marginalized minorities	Single-member households	Percentage of urban population	Civic participation
Occupation	Disabled	Large families	Distance from nearest hospital	Number of hospitals

GROUP	INDICATORS	EXPECTED INFLUENCE (↑ increases social vulnerability / ↓ decreases social vulnerability)
Socioeconomic	GDP per capita	↓
	Average monthly salary	↓
	Unemployment level	↑
	Number of socially dependent individuals/citizen	↑
	Occupation (profession and managerial level)	
	Occupation – open space (e.g., agriculture, construction)	↑
	Economic sector (e.g., resource extraction)	↑
Demographics	Age (proportion of youth and elderly population)	↑
	Gender (female)	↑
	Education	↓
	Special needs/disability population	↑
	Vulnerable minorities	↑
	Immigrants	↑
	Rapid population growth	↑
Family structure	Single-parent households	↑
	Single-member households	↑
	Large families	↑
Medical services	Number of medical personnel per capita	↓
	Number of hospitals per capita	↓
	Average distance from nearest hospital	↑
Urban	Percentage of urban population	↑ ↓
Renters	Percentage of renters	↑
Built environment vulnerability	Population density	↑
	Quality of infrastructure	↓
	Age of infrastructure	↑
	Average property value	↓
Social capital	Sense of community	↓
	Attachment to a place	↓
	Perceived level of social support	↓
	Civic participation	↓

Table 2. List of Examples of Social Vulnerability Indicators

SV Index Calculation

➢The choice of the appropriate data collection method should be based on local circumstances, budget constraints, and project goals.

➢The development of indicators should include desk research, qualitative research involving local experts and a population survey (as feasible).

CSV PROFILE	AGE (V)	GENDER (V)	EDUCATION (V)	MINORITY (V)	INCOME (V)	DISSABILITY (V)	RESULT		CSVP
CSVP COMPARABILITY TABLE COMMUNITIES 1-7									
Community 1	+	+	+	+	+	+	0	+6	H
Community 2	-	+	+	+	+	+	-1	+5	H
Community 3	-	-	+	+	+	+	-2	+4	M
Community 4	-	-	-	+	+	+	-3	+3	M
Community 5	-	-	-	-	+	+	-4	+2	M
Community 6	-	-	-	-	-	+	-5	+1	L
Community 7	-	-	-	-	-	-	-6	0	L

Table 5. Values of Vulnerability Indicators

Source: Comparable Social Vulnerability Profiling – CSVP Case Study: Croatia (2015)

Index application – SV mapping
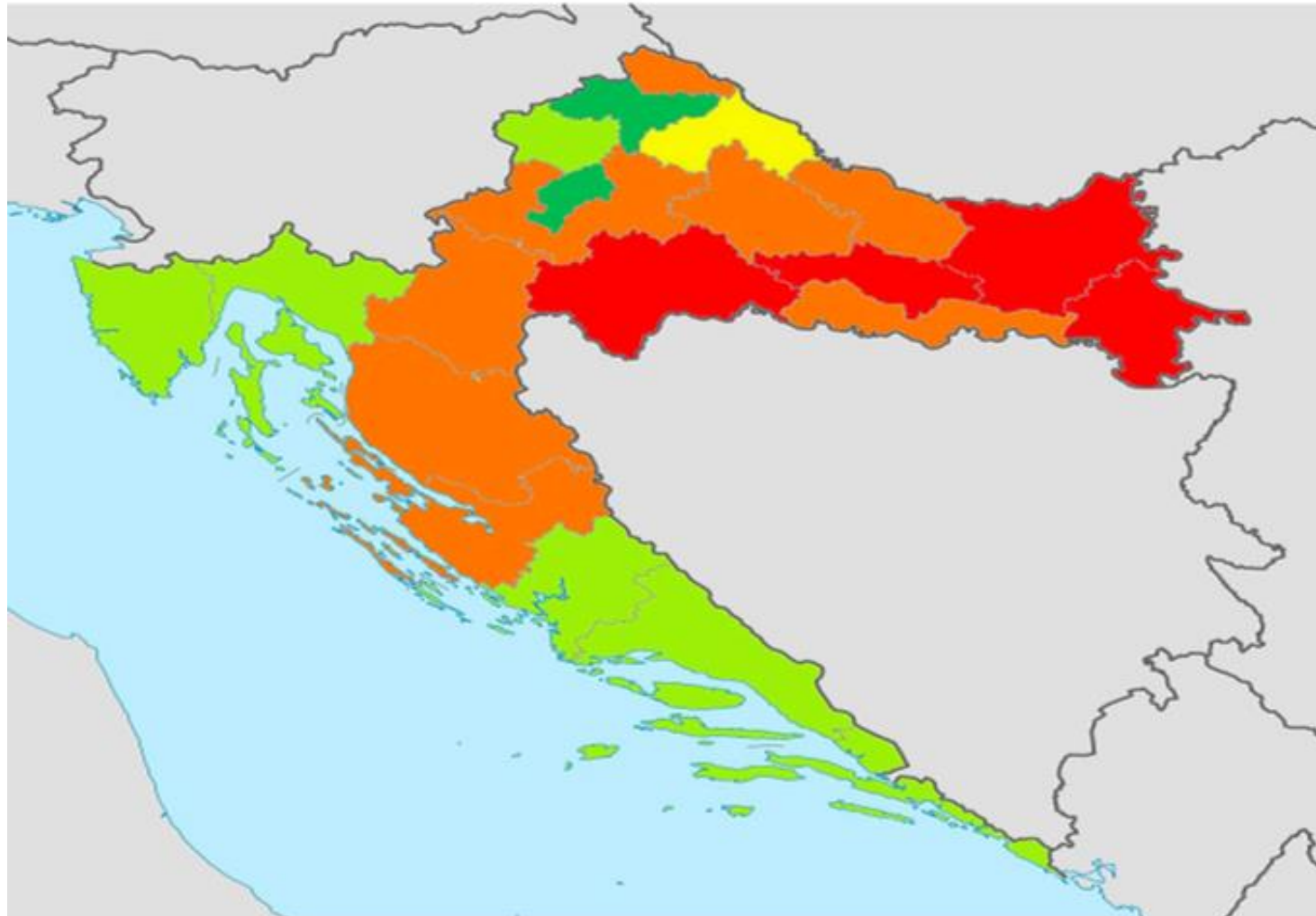
🟩	LOW
🟩	MEDIUM LOW
🟨	MEDIUM
🟧	MEDIUM HIGH
🟥	HIGH

Figure 2. Example of Social Vulnerability Index Mapping Created by MS Paint (CSVP Croatia)

Index validation

a) qualitative research **(in-depth interviews, Delphi method, focus groups)** with the key informants (local experts and stakeholders) who will check the value of the index for the geographic units from their own perspective.

b) calculating correlation with the number of disaster declarations in the geographic unit, or another measure of disaster frequency and severity, if available.

SVA study – entire process

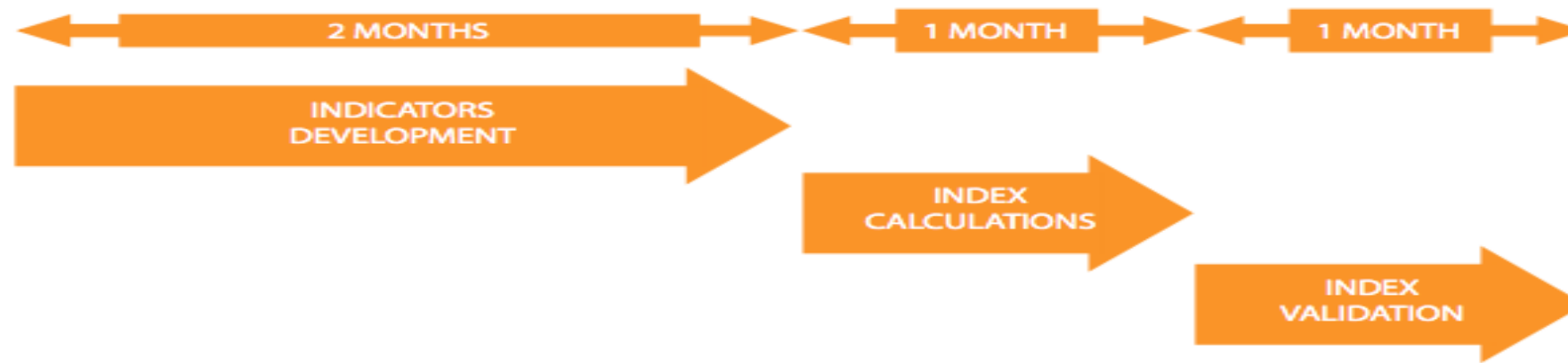| LEVEL OF RESEARCH	INDICATORS DEVELOPMENT	INDEX CALCULATION	INDEX VALIDATION	TOTAL
City/ municipality	1. Desk research (1 month) 2. In-depth interviews (10 interviews) (1 month) or Focus groups (1 month) or Delphi method (1 month)	1 month	1 month	5 months
County	1. Desk research (2 months) 2. In-depth interviews (10 interviews) (1 month) or Focus groups (1 month) or Delphi method (1 month)	1 month	1 month	6 months
State	1. Desk research (3 months) 2. In-depth interviews (10 interviews) (1 month) or Focus groups (1 month) or Delphi method (1 month)	1 month	1 month	7 months

Figure 6. Indicative Timeline for Conducting a Complex SVA

Vulnerability is the human dimension of disasters!

THANK YOU!

Krunoslav Katic
SEE Regional Technical Advisor
SEE URBAN Project
Istanbul Regional Hub
Regional Bureau for Europe and CIS
Email: krunoslav.katic@undp.org
Mobile: +385 95 904 9449
Skype: krunoslav.katic
Web: http://eurasia.undp.org
www.undp.org

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