

# **RISK MANAGEMENT FROM THE PERSPECTIVE OF A DEVELOPING COUNTRY: THE CASE OF UNGHENI, REPUBLIC OF MOLDOVA**



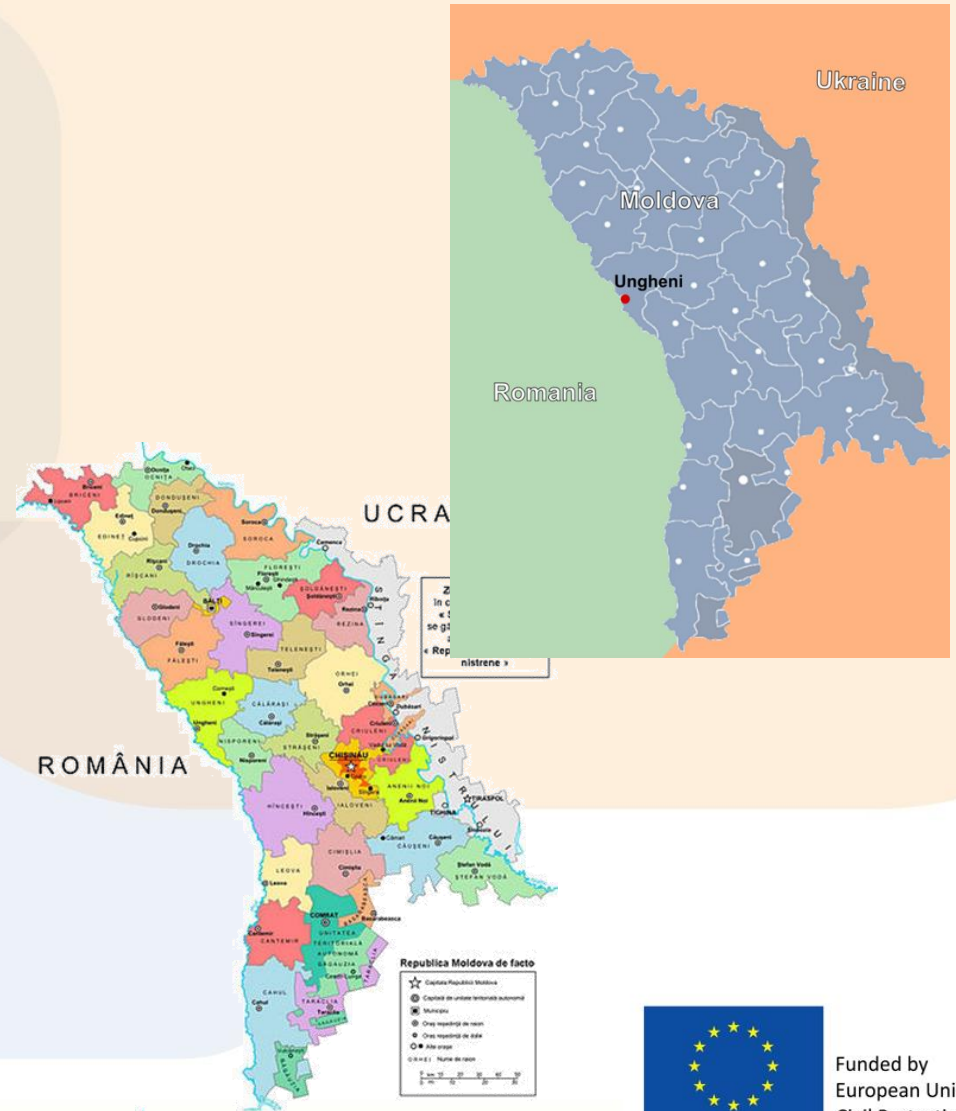
Coimbra, Portugal

24.05.2017



# Administrative-territorial structure of the Republic of Moldova

- **Republic of Moldova** is located in southeastern Europe. Moldova is bordered on the west and southwest by **Romania** and on the north, south, and east by **Ukraine**. Most of its territory lies between two main rivers, the **Dniester** and the **Prut**.
- **Districts** – 32
- **Municipalities** – 13 (Chisinau, Balti, Bender, Comrat, Tiraspol + Cahul, Ungheni, Soroca, Orhei, Ceadâr-Lunga, Strășeni, Edineț, Hîncești)
- **Territorial units** - ATU Gagauzia, Transnistria
- **Towns** – 52
- **Communes and villages** – 1614



# Ungheni District – General Data

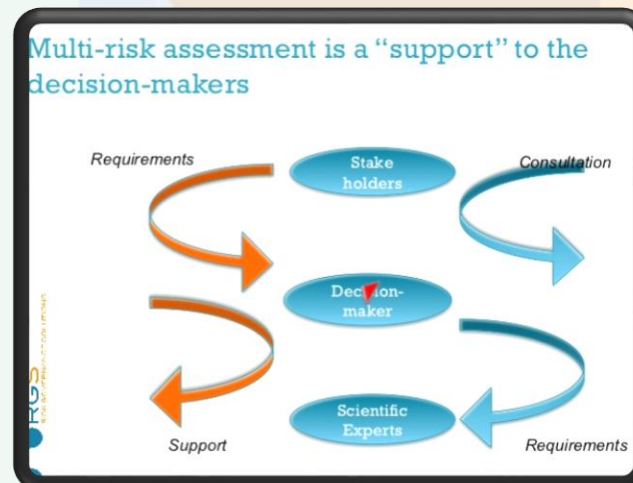
- **Geographical position of Ungheni District** – in the Central-Western part of the Republic of Moldova
- **Surface of Ungheni District** - 108,3 thousand hectares (49,9 thousand ha – agricultural surface, 28,8 thousand ha – forests and other lands with forest vegetation, 4,7 thousand ha – water resources)
- **Population** - 110,5 thousand inhabitants
- **Economic potential** – agriculture, processing agricultural products industry, 80 % in district industry is fibers preparation, carpets and mats production, 3650 small and middle enterprises, that can be find in all production and providing services branches.
- **Ungheni District** – 33 mayoralties (12 villages, 19 communes, 2 towns)
  - **Distance Ungheni – Chisinau: 105 km**
  - **Distance Ungheni – Balti: 80 km**
  - **Distance Ungheni – Iasi (Romania): 21 km**



# CASE STUDY OF UNGHENI DISTRICT COUNCIL: MULTI-HAZARD RISK ASSESSMENT - CONTEXT

## Multi-risk assessment preconditions:

- Need to achieve complete compatibility and interoperability with collective safety systems as are EU, UN
- Sector approach in evaluation of the situations and absence of a unified assessment of all the risks, threats and dangers;
- Need for rising the level of coordination and efficiency in the use of resources owned by a number of state institutions and local public authorities
- Necessity to link multi-risk assessment and decision-making process that will lead to improvements in land-use planning, enhanced response capacity, identification of priorities for mitigation actions, and enhanced levels of risk awareness and cooperation.





# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Multi-risk assessment preconditions



**„Natural events can't be prevented, but potential disasters can be 'managed' to minimize loss of life through a four-part cycle of mitigation, preparedness, response and recovery”**



Emergency Management Cycle





# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Multi-risk assessment preconditions



- **Draft of the National Strategy for Disaster Risk Management 2015-2020** is a response to the need to support and strengthen efforts to ensure nationally and internationally the resilience to disasters
- ✓ **Sectoral Strategy of Disaster Risk Reduction 2016 – 2020 of Ungheni City**, financed by UNDP *Project „Moldova Disaster and Climate Risk Reduction”, Phase II*

$$\text{Risk (R)} = \text{Hazard (H)} \times \text{Vulnerability (V)}$$

**Coping capacities/Resilience(C)**

- ✓ **CRISMAS Project** – appropriate environment for developing a Disaster Risk Reduction Strategy for Ungheni district





# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Aim and Goal



- To reduce the existing risks and prevent new risks, empower sustainability, including the local public authorities' responsibility to prevent and reduce the disaster risks, and engagement of the whole community and government institutions.
- The Disaster Risk Reduction Strategy determines the will of the local public authorities from Ungheeni district for cooperation, coordination and unified approach of the local institutions and local/regional partnership to confront with natural, technological and biological-social disasters, and the challenges resulting from them.
- Prevention of new risks and reduction of current disaster risks, through implementation of integrated and overwhelming economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce the exposure and vulnerability from disaster risks, increase the preparedness, response and recovery, hence strengthening sustainability.



# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Challenges



- Limited local resources and limited national assistance
- Difficulties in collecting data, information on disasters and impacts
- Difficulty in aggregating vulnerability across sectors
- Large number of stakeholders with roles to play in shaping risks
- Difficulty of measuring human vulnerability
- Difference in expert risk assessments and public perceptions of risk





# CASE STUDY OF UNGHENI DISTRICT COUNCIL:

## Multi-risk assessment process

### Natural Risks

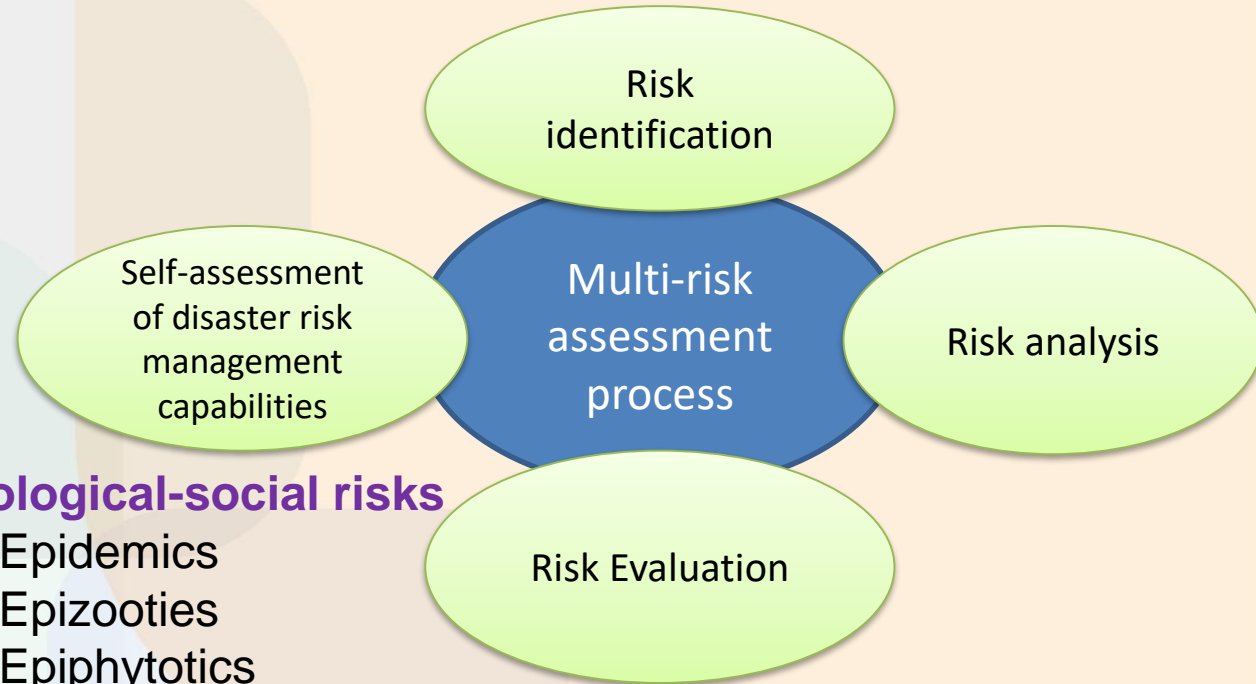
- Floods
- Earthquakes
- Soil erosion
- Heavy snow
- Glaze
- Strong wind
- Strong hail
- Torrential rains
- Drought

### Biological-social risks

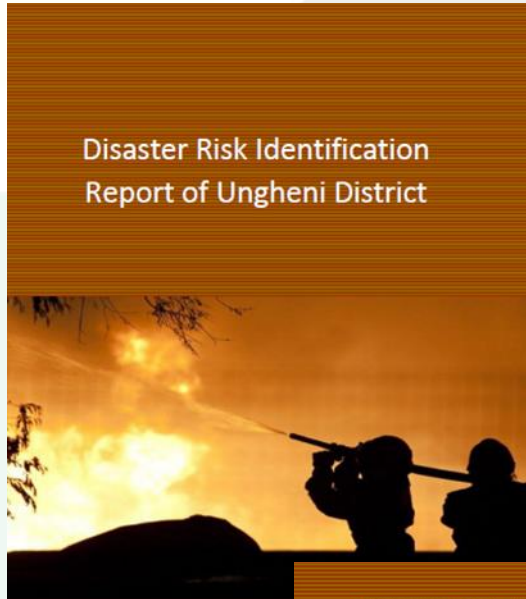
- Epidemics
- Epizooties
- Epiphytotics

### Technological risks

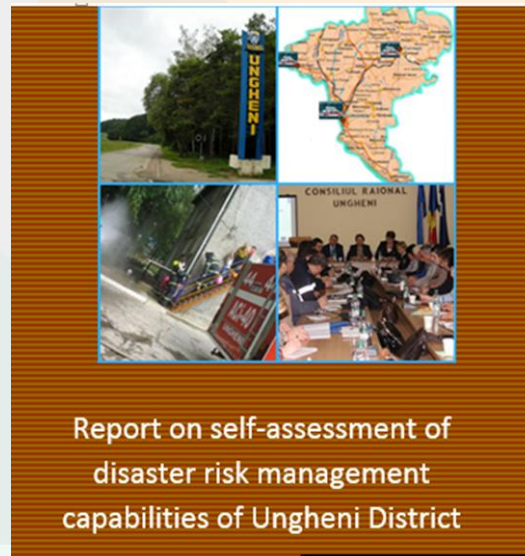
- Accidents with potential damage emission of dangerous chemicals
- Accidents with potential danger of radioactive emission substances
- Fire, explosion, explosion hazard
- Transportation accidents



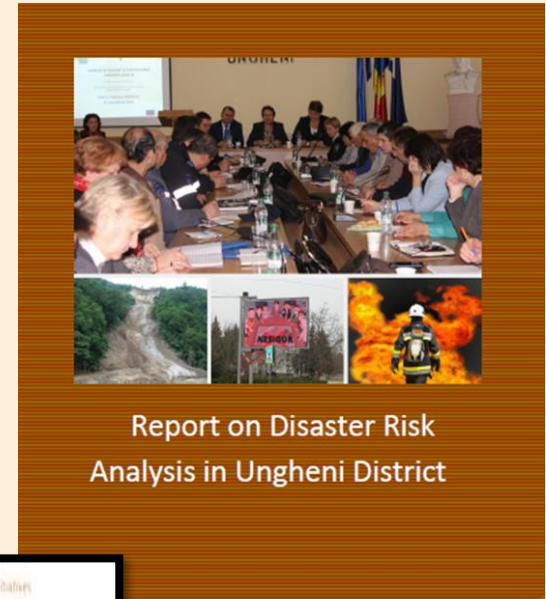
# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Multi-risk assessment process



Disaster Risk Identification  
Report of Ungheni District



Report on self-assessment of  
disaster risk management  
capabilities of Ungheni District



Report on Disaster Risk  
Analysis in Ungheni District

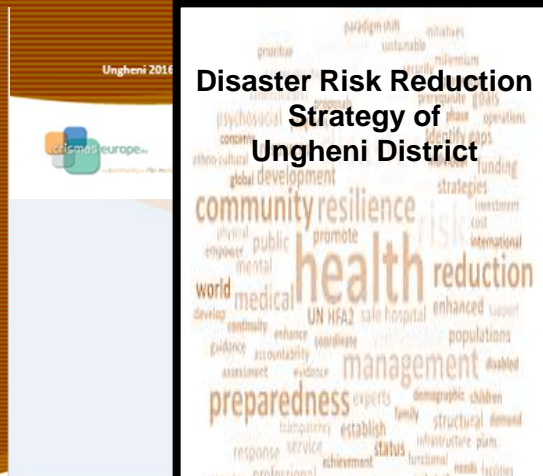


Ungheni 2011



Raport de evaluare unitară  
a riscurilor de dezastre din  
raionul Ungheni

Ungheni 2017



Ungheni 2016



Ungheni 2017

# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Multi-risk assessment process

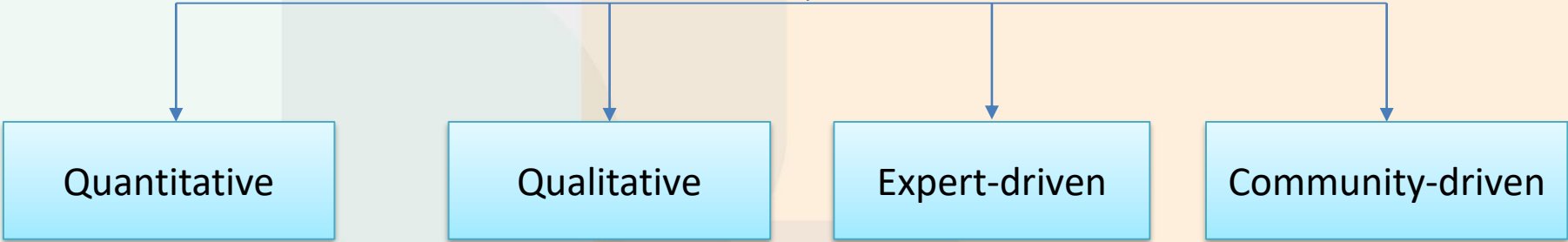
- Intensive stakeholder cooperation
- High level of involvement and commitment of entities to exchange information and knowledge
- Strong political leadership
- Close involvement of the population itself
- High involvement of the civil society and NGOs





# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Multi-risk assessment methods and techniques

## Multi-Risk Assessment Methods



### Risk Matrix

Impact	A	B	C	D	E
Catastrophic consequence - E				Drought	
Very serious consequence - D				Earthquakes Floods	
Serious consequence - C			Hail Transport accidents Fires		Landslides
Substantial consequence - B			Unexploded ammunitions		
Limited consequence - A					
Likelihood	A Very unlikely	B Unlikely	C Probable	D Likely	E Very likely

### Scenario Analysis

**Scenario 1**  
The impact of the flood in the meadow of the river Prut may be substantial. Big areas may be flooded, as well as "houses" (over 45), the local road and infrastructure of the quarter Ungheeni-Vale. In the vicinity is situated the biggest railway junction of the country. In the vicinity center, transit necessary for the customers towards Central Europe. This passing point is crossed daily by over 3000 passengers. Thus, through the railway junction, the cross-border crossing may be affected. Near the railway junction is the historical monument Ethel Bridge, a railway bridge over the river Prut. Also here is situated the Regional Resource Center for Youth and the resting camp "Plus Armonei" which is used over 800 children of the district. In each summer round. At the same time, the building of the National College of Border Police and the Department of Border Police of IMA may be affected. Due to the flood and high quantity of water it is stopped the quarter electricity and the local road is impracticable. People affected by floods can lose their

**Scenario 2**  
Scenario with middle farms  
The heavy rains that don't stop for some days produced flood on the river Prut that caused the dam damage and flooded the localities of the commune (houses). 71 houses were partially flooded and 27 houses were badly damaged, being necessary the displacement of 40 persons. The agricultural grounds near the meadow were flooded as well. The local roads were mined and on a portion of the regional road the traffic is difficult. Significant damages were produced to the telecommunication and electrical networks, both localities being without energy.

**Scenario 3**  
Scenario resulted with minor farms  
The rainfalls of the last days flooded the agricultural grounds in the localities Ungheeni, Vale Mare, Hecarest of Ungheeni District. Over 5 ha of crops were stopped, more than 50% of them being compromised. The consequence of the phenomenon are: approximately 4 to 5 losses in agricultural grounds and crops on them.

### SWOT Analysis

**SWOT analysis of prior disaster risks in Ungheeni District**

STRENGTHS	S	W	WEAKNESSES Puncte slabe
<ul style="list-style-type: none"> <li>Ungheeni District has experience in elaborating local public policies, organizing informing, education and citizens participation in decision-making process at local level (public consultations) campaign</li> <li>Ungheeni District has experience in promoting some mass-media aware and informing campaigns regarding disasters</li> <li>There exist some efforts at local level to improve the inter-institutional</li> </ul>			<ul style="list-style-type: none"> <li>Within local public administrations of Ungheeni District there are no persons accountable for disaster prevention and liquidation in the locality</li> <li>Insufficient training of accountable persons in disaster prevention and liquidation</li> <li>Weak involvement of civil society in disaster prevention and liquidation field</li> <li>Very small budgetary allocations in disaster prevention and liquidation field</li> <li>Funding of projects in disaster</li> </ul>

### Cause-effect Analysis

**3.2 Cause-effect analysis of prior disaster risks in Ungheeni District**

**3.3.1 NATURAL RISKS**

**1. DROUGHT RISK**

**Causes:**

- Absence of rainfall, increase of potential evapotranspiration
- Characteristics of active areas (features of relief, soil, depth of groundwater, degree of vegetation covering, etc.)



# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Conclusions



- *Disaster risk reduction is a cross-cutting issue in the context of sustainable development.*
- There is a specific need to closely tie local DRM strategies to Sustainable Development Goals as disaster losses can seriously impede sustainable development.
- Reducing disaster risk and increasing resilience to natural hazards in different development sectors had multiplier effects and accelerate achievements of the MDGs.
- Building disaster resilience is critical to achieving the goal of eradicating extreme poverty.
- The high impact of disaster and climate risk on agriculture calls for enhanced mainstreaming of disaster risk reduction and climate adaptation strategies within the agriculture sector.
- Investing in disaster risk reduction and resilience is imperative to secure economic growth and development.
- DRR Strategy helps the local public authorities and the local stakeholders to prioritize the own actions and attract external donor funds.

**Investing in disaster risk reduction is a precondition  
for developing sustainably in a changing climate.**



**THE GLOBAL GOALS**  
For Sustainable Development



Funded by  
European Union  
Civil Protection

# CASE STUDY OF UNGHENI DISTRICT COUNCIL: Conclusions



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