

ImProDiReT Risk Evaluation Approach for Solotvyno Municipality

				English	‡
Infor	ned Consent Form				
Q1.1.	Name of school				
0	Romanian Secondary School of Solotvyno				
0	Ukrainian Secondary School of Solotvyno				
0	Hungarian Secondary School named after Yanosh Bolyay of Solotvyno				
0	Romanian Lyceum of Solotvyno				
Q1.2.	Name of student / teacher				
Q1.3.	Type of participant (1)				
0	Teacher	0	Neighbour 1		
0	Student's Household	0	Neighbour 2		

Q1.4.

Before agreeing to participate in the study, it is important that you read the following explanation. After reading the explanation of the study (informed consent form), please, answer the following questions by ticking either the "Yes" or "No" boxes

Title and details of research: Risk Evaluation Approach for the Solotvyno Municipality. This study is part of the larger European Union project "Improving Disaster Risk Reduction in the Transcarpathia Region", Ukraine - ImProDiReT (Principal Investigator (henceforth "PI"): Prof. Bartel Van de Walle, EU DG ECHO project 783232 on Risk Governance). More information on this project can be found here: http://www.improdiret.eu/

Researcher: Dr. Abby Muricho Onencan (henceforth "Researcher"), Department of Multi-Actor Systems, Section Policy Analysis, Faculty of Technology, Policy and Management, Delft University of Technology, NL

Purpose of the research: The purpose of the survey is to assess how we can make the Solotvyno community safe. The data will provide input for the community action plan to reduce risks associated to the collapse of the land near the salt mines.

Confidentiality and data management: We will collect information about the risk evaluation, the disaster risk preparedness and the place attachment. In addition, geo-referenced data will be collected to map the community perceptions on the land subsidence risk. Processing and storing of your data will be handled in accordance with the European Union 2016/679 General Data Protection Regulation. You have the right to request access to, change or erasure of your personal data at any time. Any personal sensitive data, such as names, identities, location, will be replaced, scrambled or blurred to ensure that anonymized data cannot be linked back to you. The anonymized data may be used for research and publications. For the project duration (September 1 2019 - February 29, 2020), personal information will only be accessible to the project members (the Researcher a PI). The data are stored in the Netherlands and are never made available to third parties. After the project, the anonymized data and research results (non-personal) will be archived for a period of 10 years and will be accessible to anyone.

Explanation of procedures: You will be invited to answer a set of questions about your perceptions of the land subsidence risk in Solotvyno municipality, your level of preparedness and how attached you are to the area. The estimated duration to answer the questions ranges from 15 - 30 minutes.

Risks: The main risks of participating in the study are linked to the interception of your personal data during the processing and storage of the information provided by you to complete this study. The researcher has minimized the risks by using only the anonymized data that cannot be linked back to you and taking the appropriate measures of storage and access control to secure the sensitive data during and after the project. The data interception risks are thus minimal. Participation in the survey is otherwise safe for the participants. By participating in this study, you do not undergo specific health risks.

Questions: Any questions concerning the research and the survey and/or in the case of issues due to the research can be directed to the researcher, Abby M. Onencan, TU Delft /Faculty of TPM, Jaffalaan 5, 2628 BX Delft, Email: A.M.Onencan@tudelft.nl.

1. I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked were answered to my satisfaction.

'es No



109/2019	Quan	uic	s Survey Software				
	i aki aki akuk lumdanakan dibak laan marana ak			Yes	No		
I voluntarily consent to be a participant in this study. I understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.							
3. I understand that taking part in the study involves the risk of the interception of my personal data during the processing and storage of the information provided by me to complete this study. I furthermore understand that the researcher has minimized the risks by taking the appropriate measures of storage and access control to secure the sensitive data during and after the project.							
4. I understand that the anonymized infor (e.g., reports, website, blogs, etc.).	mation (anonymized survey transcript) I provide will b	be ι	used for publications and other research-related activities	0	0		
5. I understand that personal information collected about me that can identify me, where I live, will not be shared beyond the researcher and the PI.							
Q1.5. Signature							
SIGN × HERE							
Demographics							
Q2.1. Age							
O Under 18	0)	55-64				
O 18-24	0)	65-74				
O 25-34	0)	75-84				
35-44	0		Other				
O 45-54							
Q2.2. Gender							
O Male							
O Female							
Q2.3. Highest completed education							
None	0		Bachelors				
Basic / Primary	0		Masters				
Secondary	0)	Doctorate				
Vocational	0)	Post-doctorate				
Q2.4. Marital status							
Single	0)	Separated				
Married	0		Widowed				

Q2.5. Religion

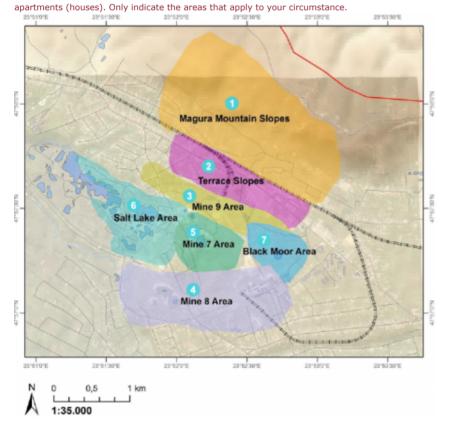
O Not sure

O Buddhism

Atheisn

O Paganism

Q2.9. Based on the zoning in the map (below), please indicate which area you reside, work, your children go to school, you go to church, conduct business, or rent



		Reside	Work	Children go to school	Attend church	Have a business	Regularly frequent the area	Rent apartments / house (s)	
3. N	line 9 area	0	0	0	0	0	0	0	
4. N	line 8 area	0	0	0	0	0	0	0	
5. N	line 7 area	0	0	0	0	0	0	0	
6. S	alt Lake area	0	0	0	0	0	0	0	
7. B	lackmoor area	0	0	0	0	0	0	0	
8. C	Other	0	0	0	0	0	0	0	
9.0	Other	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	
10.	Other	O	O	U	O	O	O	U	
Hous	sehold								
Q3.1.	. How many years have you liv	red in Solotvyno?							
O3.2. What is your housing type? Fully owned Rented Mortgaged Other, please specify O3.3. What is your household size?									
Q3.4.	What is your family type?								
0	Nuclear								
0	Extended								
0	Single parent								
0	Childless								
0		please specify							
Q3.5.	What is your living situation?								
0	House alone								
0	House with partner								
0	Nucleur Family								
0	Joint Family								
0	Extended Family								
0		please specify							
Q3.6.	. Does any member of your ho	usehold have a disability	/ (mobility, visua	al, hearing, cognitiv	/e)?				
0	Yes								
0									

Place Attachment Scale

Q4.1. Please indicate, to what extent do you agree or disagree with the following statements? Solotvyno is important to me because:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Being a border town, Solotvyno provides many opportunities.	0	0	0	0	0
2. At this place, I have friends who can give me financial support.	0	0	0	0	0
3. Here, I can get loans easily.	0	0	0	0	0
4. I cannot think of a place other than this because I have fertile land here.	0	0	0	0	0
5. The place provides me with livelihood opportunities that no other place can offer.	0	0	0	0	0
6. Tourism business runs well here.	0	0	0	0	0
7. The quality of salt in Solotvyno superior to other places.	0	0	0	0	0
8. This is the only house that I have built.	0	0	0	0	0
9. My forefathers and family lived and were buried in Solotvyno.	0	0	0	0	0
10. Here, people know me by my house.	0	0	0	0	0
11. My forefathers were very well known persons in Solotvyno.	0	0	0	0	0
12. I find the memory of my parents/grandparents in many parts of Solotvyno.	0	0	0	0	0
13. My family members can work in the Czech Republic, Russia, Hungary and Ukrainian cities, and still continue to be residents of Solotvyno	0	0	0	0	0
14. Due to my ethnic origin, I feel more at home in this place than any other part of Ukraine	0	0	0	0	0
15. I cannot feel contented without visiting my village church once a week.	0	0	0	0	0
16. The collective festivals organized here like are very important to me.	0	0	0	0	0
17. I like the diversity in local languages, schools and churches.	0	0	0	0	0
18. Being my ancestral place, I get all types of support here.	0	0	0	0	0

Land Subsidence Preparedness Scale

Q5.1. Do you have the following ready in case the land subsides? Please check to each item either 'yes', 'unsure' or 'no.'

	Yes	Unsure	No
1. Important documents stored in a portable lockbox or safe-deposit box.	0	0	0
2. Home inventory stored it in a portable lockbox or safe-deposit box.	0	0	0
3. The radio is on and fully serviced.	0	0	0
4. Torch lights / flashlights (with enough batteries) /candles / hurricane lamps / backup generator are ready.	0	0	0
5. Emergency Supplies Kit that can serve as a "grab and go" bag	0	0	0
6. Clean drinking water.	0	0	0
7. First aid box.	0	0	0
8. Necessary financial arrangements in case of a sudden evacuation.	0	0	0
9. Insurance policy (property, health, life, and/or land subsidence)	0	0	0
10. Emergency Response Communication Plan with a "family contact" outside Solotvyno?	0	0	0

Q5.2. Please rate the difficulty of preparing for each item, by your household, on a five-point scale ranging from 'not difficult at all' to 'extremely difficult.'

	Not difficult at all	A little difficult	Somewhat difficult	Very difficult	Extremely difficult
1. Important documents stored in a portable lockbox or safe-deposit box.	0	0	0	0	0
2. Home inventory stored it in a portable lockbox or safe-deposit box.	0	0	0	0	0
3. The radio is on and fully serviced.	0	0	0	0	0
4. Torch/flashlights (with enough batteries) /candles/ hurricane lamps / backup generator are ready.	0	0	0	0	0
5. Emergency Supplies Kit that can serve as a "grab and go" bag	0	0	0	0	0
6. Clean drinking water.	0	0	0	0	0
7. First aid box.	0	0	0	0	0

	Not difficult at all	A little difficult	Somewhat difficult	Very difficult	Extremely difficult
8. Necessary financial arrangements in case of a sudden evacuation.	0	0	0	0	0
9. Insurance policy (property, health, life, and/or land subsidence)	0	0	0	0	0
10. Emergency Response Communication Plan with a "family contact" outside Solotvyno?	0	0	0	0	0

Q5.3. Please indicate the extent of disaster risk preparedness by your household to each item, by checking either 'yes', 'unsure' or 'no.'

	Yes	Unsure	No
1. Do you know which government agency to contact when the land subsides?	0	0	0
2. Do you know the emergency warning signals and alert notifications used in Solotvyno?	0	0	0
3. Do you participate in community discussions regarding land subsidence preparedness?	0	0	0
$4.\ Do$ you attend land subsidence preparedness meetings held by schools / NGOs / Municipality / Government ?	0	0	0
5. Have you familiarized yourself with the emergency plans of your family member's employment building, school, daycare centre, or nursing home?	0	0	0
6. Have you made the necessary property preparations to reduce the damage from land subsidence?	0	0	0
7. Are you or someone in your family trained in first aid?	0	0	0
8. Do you know how to prepare temporary shelter houses?	0	0	0

Q5.4. Please rate the difficulty of preparing for each item, by your household, on a five-point scale ranging from 'not difficult at all' to 'extremely difficult.'

	Not difficult at all	A little difficult	Somewhat difficult	Very difficult	Extremely difficult
1. Do you know which government agency (local, regional or central) to contact when you face land subsidence problems?	0	0	0	0	0
2. Do you know the emergency warning signals and alert notifications used in Solotvyno?	0	0	0	0	0
3. Do you participate in community discussions regarding land subsidence preparedness?	0	0	0	0	0
4. Do you attend meetings held by schools / NGOs / Municipality / Government to improve land subsidence preparedness?	0	0	0	0	0
5. Have you familiarized yourself with the emergency plans of your family member's employment building, school, daycare centre, or nursing home?	0	0	0	0	0
6. Have you made the necessary property preparations to reduce the damage from land subsidence?	0	0	0	0	0
7. Are you or someone in your family trained in first aid?	0	0	0	0	0
8. Do you know how to prepare temporary shelter houses?	0	0	0	0	0

Solotvyno Community-based Risk Evaluation

Q6.1. In your opinion, what is the level of danger for people living or conduct business(es) in the following areas? (refer to the Q2.8 map)

	CATASTROPHIC (Immediate relocation)	CRITICAL (Very dangerous, living there is not recommended)	MODERATE (need for risk reduction measures to reduce the risks)	MINOR (risky only in specific places that can be avoided or cured)	INSIGNIFICANT (generally safe)
1. Magura Mountain Slopes	0	0	0	0	0
2. Terrace Slopes	0	0	0	0	0
3. Mine 9 area	0	0	0	0	0
4. Mine 8 area	0	0	0	0	0
5. Mine 7 area	0	0	0	0	0
6. Salt Lake area	0	0	0	0	0
7. Black moor area	0	0	0	0	0

Q6.2. In your opinion, what is the likelihood/probability that the following subsidence related consequences will occur if the current situation continues unchecked?

	Highly Probable	Probable	Remote	Improbable	Extremely Improbable
1. Loss of Life / Lives	0	0	0	0	0
2. Severe casualties (locals and tourists).	0	0	0	0	0

	Highly Probable	Probable	Remote	Improbable	Improbable
3. Economic loss (damaged/collapsed buildings & infrastructure).	0	0	0	0	0
4. No drinking water (destruction of water facility)	0	0	0	0	0
5. No schools (Hungarian, Romanian etc.)	0	0	0	0	0
6. Salination of agricultural grounds	0	0	0	0	0
7. Salination of Tisza and Danube Rivers (downstream)	0	0	0	0	0
8. Loss of work	0	0	0	0	0
9. Homelessness	0	0	0	0	0
10. No transport infrastructure (destruction of rail and main roads)	0	0	0	0	0
11. No cooking gas (destruction of the gas pipeline)	0	0	0	0	0
12. Backout in Solotvyno (long-term) and Rakiv region (destruction of the electric power substation)	0	0	0	0	0

Q6.3. Suppose you have been given ownership to a house in any of the areas below, based on your current understanding of the land subsidence risk in Solotvyno, what would you choose? For each item, please select either 'Option A' (accept ownership and move in immediately), 'Option B' (only accept ownership if certain safety measures are implemented first), or 'Option C' (decline to reside in the area)

	Accept ownership and move in immediately	Only accept ownership if certain safety measures are implemented first	Decline to reside in the area
1. Magura Mountain Slopes	0	0	0
2. Terrace Slopes	0	0	0
3. Mine 9 area	0	0	0
4. Mine 8 area	0	0	0
5. Mine 7 area	0	0	0
6. Salt Lake area	0	0	0
7. Black moor area	0	0	0

Q6.4. Suppose you have been given business license to construct your tourist resort in any of the areas below, based on your current understanding of the land subsidence risk in Solotvyno, what would you choose? For each item, please select either 'Option A' (accept the license and construct the resort immediately), 'Option B' (only accept the license if certain safety measures are implemented first), or 'Option C' (decline to conduct any business in the area)

	Accept the license and construct the resort immediately	Only accept the licence if certain safety measures are implemented first	Decline to conduct business in the area
1. Magura Mountain Slopes	0	0	0
2. Terrace Slopes	0	0	0
3. Mine 9 area	0	0	0
4. Mine 8 area	0	0	0
5. Mine 7 area	0	0	0
6. Salt Lake area	0	0	0
7. Black moor area	0	0	0

Q6.5. Suppose you have been given license to mine salt and construct a speleotheraphy hospital in any of the areas below, based on your current understanding of the land subsidence risk in Solotvyno, what would you choose? For each item, please select either 'Option A' (accept the license and start mining and construction immediately), 'Option B' (only accept the license if certain safety measures are implemented first), or 'Option C' (decline to conduct any business in the area)

	Accept the license and start mining and construction immediately	Only accept the licence if certain safety measures are implemented first	Decline to conduct business in the area
1. Magura Mountain Slopes	0	0	0
2. Terrace Slopes	0	0	0
3. Mine 9 area	0	0	0
4. Mine 8 area	0	0	0
5. Mine 7 area	0	0	0
6. Salt Lake area	0	0	0
7. Black moor area	0	0	0

Q6.6. What would you prefer to be **DONE** to resolve the subsidence problem? For each item, please select either '**Option A**' (prefer 100% implementation), '**Option B**' (prefer implementation to acceptable levels), or '**Option C**' (prefer no change to current situation).

	100% implementation	Implementation to acceptable levels	No change of current situation
1. Clean the salt lakes	0	0	0
2. Strengthen the retaining wall systems	0	0	0
3. Speedup liquidation of the salt mining company	0	0	0
4. Implement an early flood warning system	0	0	0
5. Restore critical infrastructure	0	0	0
6. Conserve old mining industrial archaeology	0	0	0
7. Develop a drinking water network for the salt lakes zone	0	0	0
8. Develop a sludge line system for the salt lakes zone	0	0	0
9. Divert and update the sewer system	0	0	0
10. Fill the sinkholes	0	0	0
11. Clean-up all the salt lakes	0	0	0
12. Cap old boreholes and shafts	0	0	0
13. Strict application of building codes and construction laws	0	0	0
14. Establish and fence off exclusion zones	0	0	0
15. Reclaim land in the exclusion zones	0	0	0
16. Identify relocation zones in or near Solotvyno	0	0	0
17. Relocate inhabitants living near Black Moor	0	0	0
18. Relocate inhabitants living in other high-risk zones	0	0	0
19. Remove mine shafts and other objects	0	0	0
20. Demolish old and unsafe mining infrastructure above the surface	0	0	0
21. Demolish unsafe buildings	0	0	0
22. Demolish unsafe infrastructures	0	0	0

Q6.7. What would you prefer to be **STOPPED** to resolve the subsidence problem? For each item, please select either '**Option A'** (prefer 100% implementation), '**Option B'** (prefer implementation to acceptable levels), or '**Option C'** (prefer no change to current situation)

	100% stopped	stopped only to acceptable levels	No change to current situation
1. Stop underground flooding in the mines	0	0	0
2. Stop leakage of water pipelines	0	0	0
3. Stop leakage from sewage pipelines near Mine 8	0	0	0
4. Stop issuance of salt mining business licenses	0	0	0
5. Stop issuance of recreation business licenses	0	0	0
6. Stop future plans for shaft (underground) salt mining	0	0	0
7. Stop future plans for salt solution (open) salt mining	0	0	0
8. Stop exploitation of the Solotvyno mine and surrounding area	0	0	0
9. Stop exploitation of the recreation (Salt Lake) area	0	0	0
10. Stop pumping brine from abandoned mines into salt pools	0	0	0
11. Stop the use of salt resources (brine and rock salt) for health purposes (hospital: speleotherapy)	0	0	0
12. Stop further construction in the Salt Lake zone	0	0	0
13. Stop the pollution of the salt lakes	0	0	0
14. Stop exploitation of alluvium in the Tisza River floodplain	0	0	0
15. Stop digging boreholes	0	0	0
16. Stop unregulated disposal of waste near collapses and sinkholes	0	0	0

Final Reflection

Q7.1 In v	vour oninion	can the Solotyyn	o land be restored	/rehabilitated/ cured?

O Yes

O No

O Maybe, please explain

Thank you for taking the time to complete this survey. We truly value the information you have provided. Your responses will help us identify the most effective solutions that may ensure that Solotvyno is safe. Please check for the report on the on www.improdiret.eu, which will be available early 2020. If you have any comments on the survey or the project, please leave a comment below.

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