



SEVENTH WORK PROGRAMME
THE PEOPLE PROGRAMME
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**CHANGING HYDRO-METEOROLOGICAL RISKS – AS ANALYZED BY A NEW
GENERATION OF EUROPEAN SCIENTISTS**

Case study area Buzău County, Romania fieldwork report (part II)

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Bucharest, August 2012

1. Basic information about the fieldwork

Date	31. 7. – 03.08. 2012
Venues	
Pătărlagele	Natural Hazards Research Station
Nehoiu	Nehoiu Valley
Buzău	ISU Buzău (Emergency Situation Inspectorate)
Participants	Roxana Liliana Ciurean (ESR05, University of Vienna)
Objectives	<ul style="list-style-type: none"> - Cross check of image interpretation and mapping of building location and occupancy type in Nehoiu Valley - Meeting and presentation at the Operative Center of Emergency Situation Inspectorate Buzău (for presentation objectives and content see below)

2. Introduction

Nehoiu town is situated at the mouth of Nehoiu River, a right hand side tributary of Buzău River, at the foothills of Buzău Mountains (Fig. 1, 2). The main economic activity of the area is wood processing. The town has a population of 12 000 inhabitants distributed in 9 villages. Nehoiu River has a drainage area of approximately 35.5 km², several villages being located in its perimeter. Due to local geological, geomorphological and climatic conditions several hydro-meteorological events have been registered here in the last 40 years. Due to restrictive topography, the main settlements are mostly located in the vicinity of the river channel, bridges, roads, buildings, energy supply networks, etc. being affected by floods as well as landslides. In 2004 and 2005 damages of more than 4 mil. euros were registered along the valley due to the occurrence of hydro-meteorological hazards.

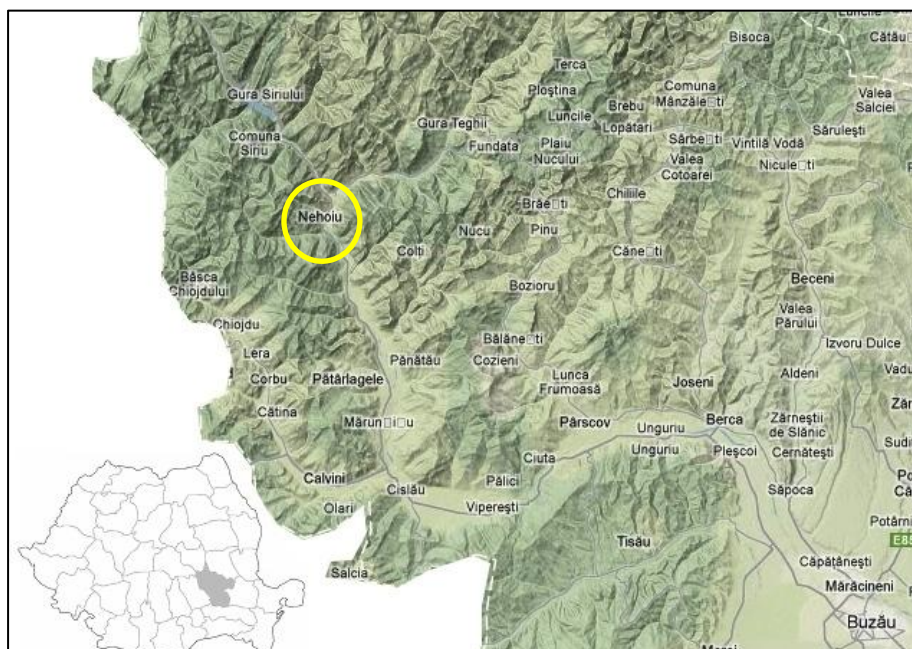


Figure 1: Case study area in the Buzău County with Nehoiu town location (Google Earth 2012)

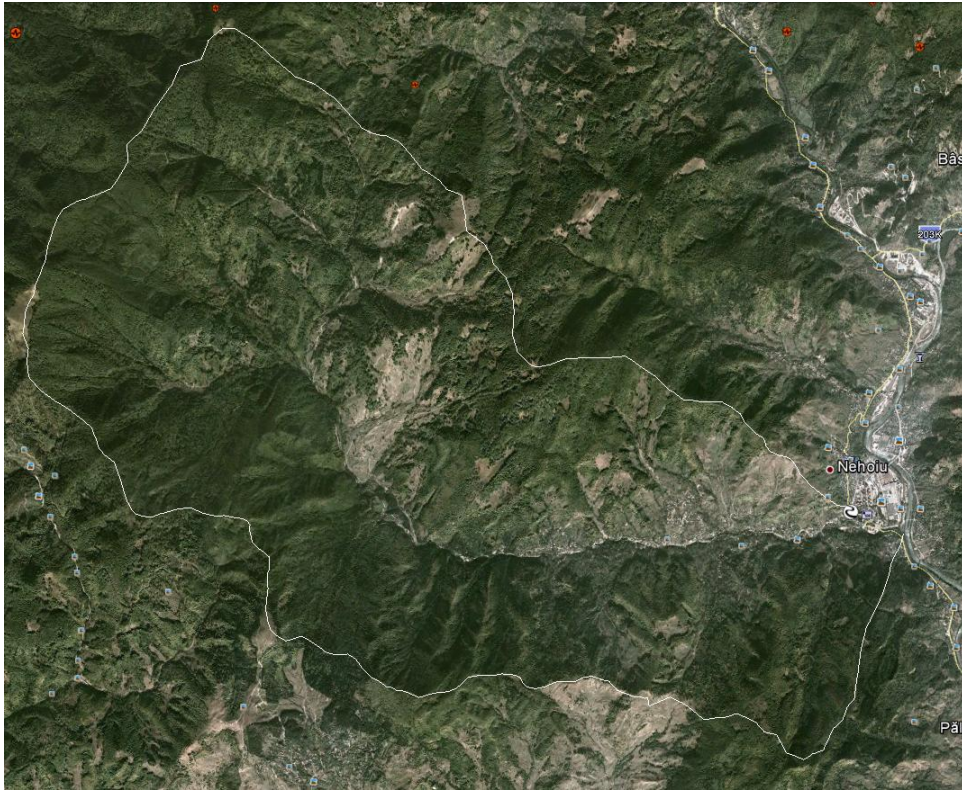


Figure 2: Nehoiu catchment ((Google Earth 2012)

A brief description of activities for the second part of the fieldwork is presented below.

3. Work description

In order to analyze the effects of changes in the Nehoiu catchment, information about the current elements at risk is needed. Thus, a first objective of this fieldwork was to collect data regarding the location and occupancy type of buildings along Nehoiu Valley. This work was performed with the help of Aroshaliny Godfrey who classified the building types based on interpretation of Google Earth images (Fig. 3). Subsequently, a field cross check was performed for the buildings selected, in order to validate the interpretation.

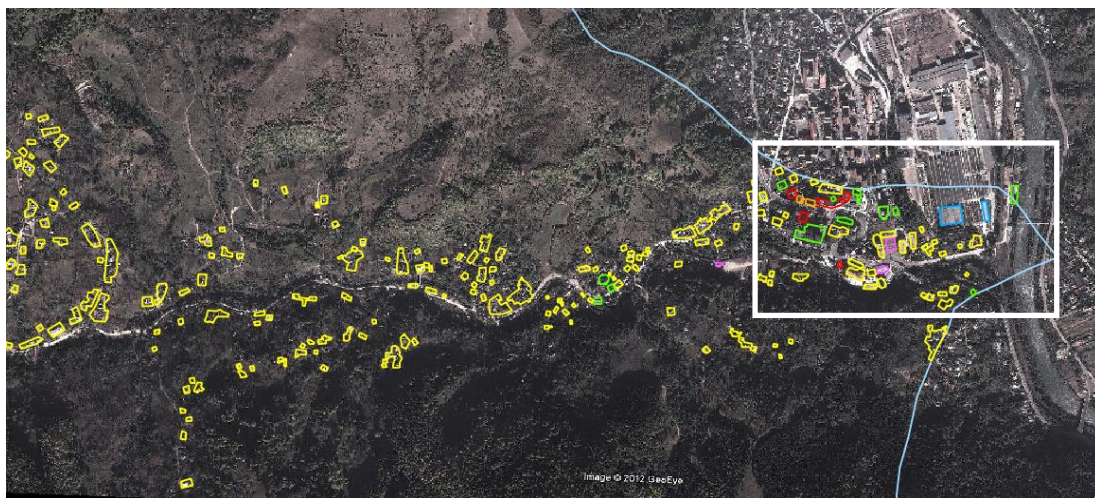


Figure 3 Building occupancy type classification based on Google Earth images

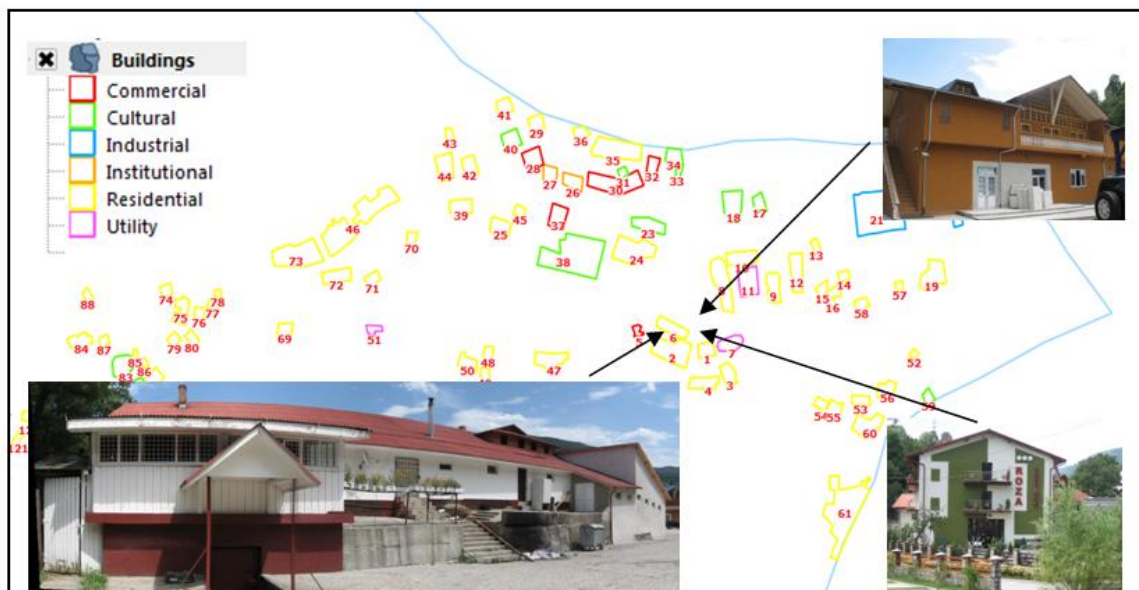


Figure 4 Building occupancy type classification based on field mapping

	A	B	C	D	E	F	G
1	Id	Occupancy_map	Occupancy_field	Photo No.	Obs		
2	1	Residential	Residential	132	Pension Roza		
3	2	Residential	Commercial	p1	mixed use, serves the market		
4	3	Residential	Commercial	126-127	multiple function, serves the market		
5	4	Residential	Commercial	125	multiple function, serves the market		
6	5	Commercial	Commercial		multiple function, serves the market		
7	6	Residential	Commercial		multiple function, serves the market		
8	7	Utility	Open space	131	no building		
9	8	Residential	Residential	128	residential complex		
10	9	Residential	Residential	26	residential complex		
11	10	Residential	Utility	26	gray roofs of garages or storage areas		
12	11	Utility	Open space	26-27	parking and recreational area		
13	12	Residential	Residential	150	residential complex		

A second objective of this field work was to set up a meeting at the Operative Center of Emergency Situation Inspectorate Buzău in order to discuss, among other, the possibility of implementing a set of protocol sheets for standardized registration of natural hazards and their consequences. The presentation was structured in three parts:

- 1. Introduction in natural hazards assessment and risk management** (the objective of addressing this topic was to enhance the understanding of concepts and stages in natural hazards risk management)
- 2. Natural hazards documentation** (the topic was addressed in order to propose a standardize method of natural hazards documentation)
- 3. Disaster management in Europe** (based on the example of the Italian Civil Protection - FVG Region, in the case of the August 2003 hydro-meteorological event, a discussion regarding the activity of the Emergency Situation Inspectorate Buzău, and their work, was initiated).

The overall objective of the meeting was to strengthen the collaboration between the Emergency Situation Inspectorate, as one of the main stakeholders in CHANGES project, and the rest of the research institutions within the consortium.

4. Final remarks

The following data necessary for the preparation of the field project during the September meeting still needs to be collected:

- Information about the triggers (rainfall, especially)
- Flood data (date of occurrence, discharge, magnitude/intensity, etc.)
- Climate change scenarios
- A more accurate DEM (current DEM has a resolution of 25 m/pixel)

An updated version of data collected can be found in Annex 1. The next step will involve data preparation and analysis for the specific groups of work present during the meeting.

5. Acknowledgements

The researcher would like to thank Mihai Micu and Prof. Dan Balteanu, Institute of Geography of the Romanian Academy, for providing accommodation at the Pătârlagele Natural Hazards Research Station and working space at the Institute. We would also like to extend our acknowledgements to Aroshaliny Godfrey who performed the building classification based on image interpretation in Nehoiu Valley.

Annex 1

DATA COLLECTION (situation at 07.08.2012)			
Source	Obtained	Format	Pending
Statistical County Direction	Population and residences census (2002 – commune level): buildings per category (#, year of construction), facilities (incl. installation), type of occupancy, area, # rooms per residence; population and residence census (2011 – county level): general info; statistical directory 2004, 2011; locality sheet 1990, 2000, 2010 (commune level); demographic sheet 2000 – 2005 (per commune)	Pdf, xls, docx, txt	
Environmental Protection Agency	Discussion – interview; Žiga’s questionnaire	Docx	
County Agriculture Direction	Land distribution and type per locality for 2010 and 2011 (commune level) without property distribution per type of owner	Pdf	Žiga’s questionnaire; SSTs with property distribution per type of owner
Office for Cadastre and Land Registration	Statistical Situation of Terrains (SSTs) only for 2001; land distribution and type per locality (commune level) without property distribution per type of owner for 1990	Jpg	Statistical Terrains’ Situation (SSTs) for 1990
County Council	Buzău County tourism and agro-tourism development strategy (2010 – 2015); Buzău County (socio-economic) sustainable development plan (2007 – 2013)	Jpg	Žiga’s questionnaire; Old photos of buildings in Buzău County
Nehoiu local authorities (town hall – spatial planning office, volunteer service)	Discussion-interview; documentation: social investigation (persons affected by 2005 flash flood); registration forms for hydro-meteorological hazards in 2005, 2006, 2010 (from Local Committee for Emergency Situations); geotechnical report for building construction; hydro-technical feasibility report along Nehoiu Valley (2010); technical feasibility report for road construction along Nehoiu Valley (2006); registration forms for compensation (materials of construction and money) for persons affected by 2005 FF; geotechnical report for embankment protection Nehoiu Valley; geotechnical study for a landslide affecting Mlăjeț-Trestioara road; contracts for bridge construction (2004, 2005); humanitarian aid documentation after 2004 FF; Chirlești mudflow documentation 2005 – 2012; registration forms for HMM in Chirlești and Nehoiu Valley, 2010; Nehoiu town monography (1996); General Urbanistic Plan – Nehoiu	Jpg	Žiga’s questionnaire
Association for Community Development Nehoiu (ADCN)	Archive photos (Nehoiu Valley)	Jpg	
Nehoiu Library	Archive documents, photos, references, newspaper articles, etc.	jpg, docx	Žiga’s questionnaire
Romanian Academy Forest District	Discussion –interview	Docx	Žiga’s questionnaire
Cislau State Forest District	Discussion – interview	Docx	Žiga’s questionnaire
Nehoiu Private Forest District	Discussion – interview	Docx	Žiga’s questionnaire
Field work Nehoiu Valley	Inventory of elements at risk (bridges, buildings, hydro-works, roads) with classification, type, location (gps); landslide inventory (location, size, approx. date of occurrence); flash flood	Shp, jpg	To be completed: EaR inventory (classification, occupancy, location) incl. land use; hazard

	extension and water height (in random locations)		(landslide and FF) inventory from image interpretation
IGRAC, Water Administration Agency, Meteorological Institute, Earth Physics Institute	<ul style="list-style-type: none"> - Rainfall (duration, intensity) - Flood data (date of occurrence, magnitude/ intensity) - Climate change scenarios - Accurate DEM 	Digital	Date of occurrence, magnitude and intensity of earthquakes