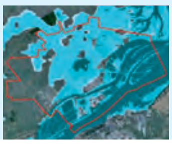
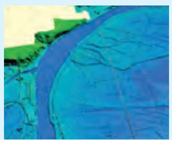
Danube Flood Risk
Pilot Projects

Map: courtesy of ICPDR, Vienna





Jointly for our common future

Foreword

The DANUBE FLOODRISK project brings together scientists, public servants, NGOs and stakeholders who develop jointly a scalable system of flood risk maps for the Danube River floodplains. Transnational methodology and models will be defined and implemented for flood risk assessment and mapping. This results in proposals for flood mitigation measures, adjustments of spatial development plans, assessment tools for economic development in flood plains and raised awareness of flood risk of stakeholders, politicians, planners and the public. Assets at risk like industry, power stations and supply infrastructure will play a key role in the project.

Danube Floodrisk provide hazard and risk map along the Danube at large scale. Spatial planning is very complex, regarding either its object: the flood risk management project and its environment (ecosystems, landscapes, socio-economics, etc.), or its process, which implies many actors, with different world's representation and related interests, and who are individually attached to a specific territory. Spatial planning is nowadays an extremely sensitive issue, especially in Danube Catchment, where high population densities within some critical areas, harbors, old traditional settlements, and complex political influences and relations, lead to a situation of permanent disputes regarding the use and destiny of lands. Environmental awareness, specially flood risk management has brought new issues and related procedures, which tend to widen the potentially embedded system of people and constraints. Consequently, the process of spatial planning must be hardly controlled, integrated, highly decentralized, and major projects, can last for decades but for flood risk management we need to apply rapid research appraisal methods. Furthermore, the rationality of final solutions is not always obvious, regarding either social or environmental aspects.

Issues like risk information and spatial representations of stakeholders interests, relationships between many distant actors, negotiation support and simulation, multi-actor multi-criteria decision support in floodrisk management for continuous spatial planning, are usually not addressed by current hazard and risk maps methodologies using GIS database and hydraulic modelling. In the Floodrisk project approach, we support and simulate the exchange and dynamics of spatial representations and policies, considering the general political values, the specific spatial constraints, and the socio-relational characteristics of embedded actors.The spatial objectives are derived from the identified issues and the spatial vision. They illustrate, in a meaningful way, how the strategy contributes to the outcomes outlined in the spatial vision. Whilst the objectives should be clear, focused and concise, they should not be overly narrow or mechanistic, knowing that any delay in emergency situations can cost lives.

An important aspect in the pilot activities in the Danube Floodrisk Project was integration of flooding maps in emergency situation management. Working with Civil Protection and fire fighters brigades, for flood risk maps detailing and with stakeholders and population for better understanding of the identified risk and representation of this aspect on maps, it was an important activity in pilot selected areas. More, WP7-PILOT includes exemplary implementation of the risk information into regional and / or local spatial planning with involvement of municipalities or in structural measures for industry or infrastructures. The WP includes action for the discussion and specification of local planning demands on the risk maps. In workshops and an evaluation feedback to the work packages harmonization and mapping in the transnational context is provided.

COMMUNICATING RESIDUAL RISK IN KREMS, AUSTRIA

Because of a long-standing experience with floods, and because of being a leading edge in flood protection issues, the city of Krems was the pilot area for Austria. As one of the larger cities in the province Lower Austria and being located in an area of potential flood risk, Krems was especially suited for this task, as all four receptors mentioned in the EU Floods Directive – human health, economy, environment, culture – are present here.

In close cooperation with political and administrative city representatives, it was agreed to investigate hazard and risk for a one hundred year flood event on the Danube, as had happened in 2002. In contrast to the event ten years ago, failure of two protective structures was assumed: a) the settlement area Krems Stein and large parts of Krems would suffer from flooding if the mobile defense wall at the shipping pier would fail; and b) the harbor area with its several IPPC installations would be flooded if the harbor gate would fail to close.

Thorough numerical simulations, accounting for new regulations of a hydropower station downstream of Krems and for the current river bed situation, showed how fast and how far the water would progress into the city, especially if the old second defense line were not put into place in time. Hazard maps were created showing the maximum water depths in classes selected by and helpful for emergency management units. Risk maps showing the population at risk, potential damage based upon municipal register data and special point information were also developed. A workshop with emergency management units was organized to better understand and implement their special needs for flood information in the hazard and risk maps. Additionally, an event for public participation was held in order to learn about the uptake of the residual risk information by the broad public, and to get feedback for residual risk information, which is comprehensible to the public.

With regards to the harbor, the companies in the harbor area showed high interest in new flood information, and discussed in a series of workshops possible weak points in the harbor defense and how to overcome them.

Moreover, as the companies in the harbor are very different in character and vulnerability, a method for qualitatively assessing the risk in a way that all companies felt to be well represented was developed and implemented. The hazard and risk maps were designed in an iterative process and showed how relevant the re-installment of the old second defense line would be with regards to hazard and risk reduction.

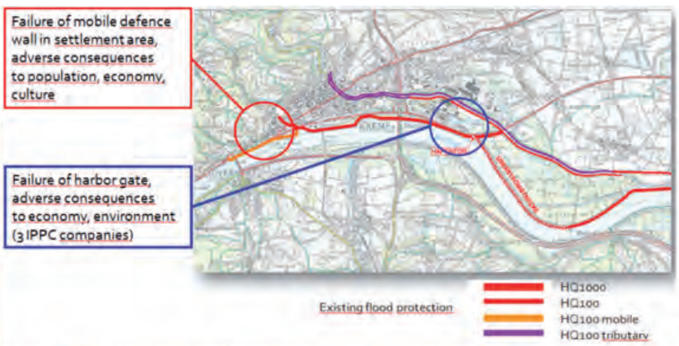


Figure 1: Flood protection structures in Krems and failure scenarios considered

Austria

Experience with both pilot activities were extremely positive: the fears of city representatives in the beginning of the project, that population might be irritated to be confronted with failing flood protection instead of being assured of continuously improving structural flood protection, did not come true. On the contrary, it was found that these residual risk investigations helped to communicate the relevance of public understanding in a flood event, and to underline the importance of the second defense line. And last but not least, it might deliver new scenarios for flood disaster intervention exercises.

As for the harbor, the pilot study will lead to additional flood risk management measures by installing additional valves, and by rehabilitating the old second defense line. For the first time, the companies located in the harbor area have a method for comparative flood risk assessment. It could be shown that lay persons are interested in complex topics like risk assessment and bring in additional knowledge for the design of risk maps.

Figure 2: Discussing the risk map for the settlement area with affected inhabitants

Figure 3: Discussion of the hazard map for the harbor area in the public participation event

Figure 4: Open dialogue with the affected harbor companies

BULGARIAN PILOT PROJECT LOM

The pilot area is spread over the territory of Municipality of Lom, where the Lom River flows into the Danube. The Danube River section in the pilot area Lom is about 35 km long. Municipality of Lom includes the town of Lom with its 24.300 inhabitants and 9 villages. The population density of the municipality is 103.4 inhabitants/ sq km.

Port Lom is the second most important Bulgarian port on the Danube after Port Ruse. The existing rail network connects Port Lom with the Port Thessaloniki - a big transport hub of the Mediterranean. 57 buildings in the municipality of Lom are cultural monuments. In a close proximity is the ancient town Almus mentioned in a number of ancient sources. According to the Roman road map Tabula Peutingeriana on that place was located the fortress Almus, part of the Roman fortification system on the Danube River.

Lom was selected as a pilot due to the frequent floods in the last decade, the regional importance of Port Lom and the insufficient protective infrastructure. This is the lowest section of the Bulgarian river bank and the Danube high-waters are the most common flood hazard in the area. Until protective dikes were built, floods were registered in 1938, 1942, 1943, 1954, 1970, 1975, 1980, 1981. Nowadays there are 5 potentially flooded areas in Lom; 4 of them are dike-protected. The fifth zone is protected by temporary constructions and gets flooded from the harbor-side almost every year due to the Danube high-waters.

A binding point of the European transport corridors No7 and No4 the region is of national importance, but of transboundary as well since the past floods in this area affected not only the Bulgarian but also the Rumanian territory. The pilot area includes one of the main tributaries of the Danube - the Lom River and gives an opportunity of studying the reciprocal impact of both the rivers.

The pilot activities include detailed flood risk mapping, based on and combined with cadastral information; flood risk assessment providing help to the local authorities with regard to spatial planning and infrastructural development as well as flood risk management in the region.

Bulgaria

BULGARIAN PILOT PROJECT NIKOPOL

The Nikopol municipality is located over an area of 415.9 square kilometers and borders with the municipalities of Pleven and Levski in the south, with Belene in the east and with Gulyantsi in the west. In the north is the Danube River with Turnu Magurele on the opposite river bank.

According to archaeological studies, the earliest traces of life in Nikopol date back to the Stone Age. On the "Kaleto" hill remains from the Thracian times are found (1200-100 BC). In Roman times the settlement was part of the province of Mizia. In the IV century after the crash of the Roman Empire it remains within the Eastern Roman Empire (Byzantium), and in 1059 accepts the name Nikopol (Nicopolis - City of Victory). Nikopol was the last capital of the Turnovo Kingdom from 1393 until 1395. In the period between XV and XVII centuries, Nikopol was one of the largest military and administrative centers with a strong fortress and intensive economic, spiritual and political life. Cultural landmark of the town is the monument of the crusaders passed in the 12th century. Another cultural attraction is the fortress of Nikopol, called by the locals simply „Kaleto", where part of the great palace of Tsar Ivan Shishman is preserved. The oldest monument is a cruciform church „St. Peter and Paul", built in 13-14 centuries, known as „Manastircheto."

„Persina" is one of the youngest natural parks in Bulgaria. Established in 2000, it is situated on the territory of three Danube municipalities: Nikopol, Belene and Svishtov, with a total area of 21 762.2 ha. The park is named after the biggest Bulgarian and fourth largest in Europe Danube island - Persin (also known as Belene island), with its 15 km in length and up to 6 km in width. The most important type of ecosystems in the park are the Danube flood forests and inland swamps.

Nikopol came within the BG pilots for its insufficient protective infrastructure, the poor technical condition of the drainage systems of the municipality and the presence of the National Park "Persina" including flooded forests and swamps, protected areas and habitats. Among the reasons for choosing this region for a pilot are also historical monuments of national significance, threatened by inundation. The water level of the Danube influences the level of the Osam River at a distance of 35 km. An extension to the pilot project Nikopol by a potentially threatened area of Belene, (part of the dike) was subsequently discussed and considered.

The pilot activities in Nikopol-Belene include a detailed flood risk mapping, based on and combined with cadastral information; flood risk assessment providing help to the local authorities with regard to spatial planning and infrastructural development as well as flood risk management in the regions.

BULGARIAN PILOT PROJECT RUSE

Municipality of Ruse is situated on the high right bank of the Danube and borders with Slivo Pole, Vetovo, Ivanovo and Kubrat. Municipality's center — the city of Ruse, is located northeast from the estuary of Rusenski Lom River and covers the western part of the largest Danube lowland — Pobrejie. The city lies on the high terraced Danube bank between the land-connected Matey Island and the estuary of Rusenski Lom river to the west and to Srabcheto hill to the east.

Favorable geographic location is the main reason for the emergence and existence of Ruse. Besides the Danube waterway, ever since antiquity an important road that led from Russia and Scandinavia to Aegean Sea, Anatolia and the Levant crossed the area. Known under the names Sexaginta Prista, Pristapolis, Rusi, Rusçuk, during the different ages Ruse was used as a fleet harbor. As a Danube port, today Ruse is connected to the other Danube countries' ports, as well as the Rhine countries and the canal connections of West and Central Europe through the means of the Rhine-Main-Danube "Europe Canal".

Ruse is an old Bulgarian city. From time immemorial people settled by the river, which provides their livelihood. The fortress was situated at the main road along the Danube leading from today's Belgrade to Danube's delta. After the Liberation of Bulgaria Ruse became the largest city and economic centre of the Principality of Bulgaria with successfully developing economy, giving European appearance on the city's architecture.

Due to its location, the Municipality of Ruse is an important national transport, communication and trading junction with Danube border points and Customs free area, situated on its territory. Several important roads merge from the north to the city: Budapest—Brasov—Bucharest—Ruse, Warsaw—Lvov—Bucharest—Ruse and Moscow—Kiev—Bucharest—Ruse—Sofia leading to the Republic of Macedonia and Albania. The entire national and transit rail traffic to/from Central, North and East Europe passes through the city of Ruse. Ruse is a point of intersection of the European transport corridors No7 and No9. For the last 50—60 years the economic activity near Danube has been increased — two industrial zones were established with nearly 80 industrial plants.

The city of Ruse is the fifth largest city in Bulgaria. According to the population census, conducted it 2011, Ruse's population is estimated to be nearly 150 thousands of people. The city is a big economic and cultural center in Northeast Bulgaria. The Rusenski Lom River, one of Danube's large tributaries on the territory of Bulgaria, flows through the city. Being a part of the Ruse - Gurgu Euro region this pilot project is of transboundary significance. A part of the industrial area of Ruse where considerable building and economic activities occur is situated along the Danube.

Over the last decade cases of floods, flooded potable water wells were observed due to the high water levels of Danube which backwatered the sewerage. As a consequence of the backwatering, the wastewater reaches the streets. Several sections of the protective embankment of Rusenski Lom river have been compromised and can't properly serve their purpose. Some of the bridges connecting the two parts of Sredna Kula district suffer from damaged constructions.

Pilot activities in Ruse: as a consequence of an analysis of fulfilled and ongoing projects and meetings with the local authorities and in order to avoid duplicated actions it was decided a web-based simulation of the flood hazard to be developed aiming to increase the awareness and preparedness of the population.

ITALIAN PILOT ACTIVITY SUMMARY

Italia

INTRODUCTION

The Italian study-pilot area is the basin of the Drava (German: Drau; Italian, Croatian, and Slovene: Drava; Slovak: Dráva) river, one of the main tributaries of the Danube, draining through the Lienz outlet before the confluence with the Isel River. The pilot area covers 670 km^2: about 25% in Italy and the rest in Austria.

The sources of the Drava are in Toblach/Dobbiaco, Italy, from where the river flows east through West Tyrol and Carinthia in Austria, into Slovenia, and then southeast, passing through Croatia and forming most of the border between Croatia and Hungary, before joining the Danube near Osijek.

The Drava, Spoel, Slizza and some minor catchments draining in the Inn river basin, are the only rivers originated in Italy which drain into the Danube basin. For the Italian sector of the Drava the reference administration is the Autonomous Province of Bolzano and for the Austrian part the Land Tyrol.

The studied basin area is a typical alpine catchment characterized by pastures, conifers, natural grassland and mountain areas. Some small areas in the first bottom in which we find light city patterns with small towns. Some small towns are located at the bottom of narrow valley areas whose main economic activities are tourism, agriculture and small industry. A big effort is made for safeguarding and maintaining the environment and its biodiversity.

OBJECTIVES

According to the general concept of the Danube Flood Risk Project it was important also to investigate the mountainous areas and not only the main stream river network, although only as a study area. The Drava basin has two important characteristics in the general overview of the project: it is a transnational and mountainous catchment, with different hydraulic conditions (different type of events) and different scale of study respect to the Danube main stream. In particular, following the Italian Legislative Decree for the adoption of the Flood Directive (N.49/2010), special attention has to be paid to **floods with high volume of sediment transport and debris flow** which are more influenced by **climate change**.

Both these aspects have been investigated on the Italian pilot area with different approaches and results. In particular, for some of the activities applications and tools integrated within the framework of GIS have been developed, or improved under Free and Open Source license and are available for download.

ACTIVITIES

Data collection and harmonization between the two countries, Italy and Austria, were the first step for all the activities related to the study-pilot area. Thanks to the local administrations and to the project partners, the data of DTM and other important layers where collected and harmonized. The most important issues in this process were related to the individuation of the local services in charge of data updating and distribution and of the precision of the available data. Obviously, the integration of data with different accuracy results in a uniform layer of the minimum accuracy between the two. Luckily between the two local administrations there are some important agreements for data collection and exchange facilitating the integration of the different type of data.

After this first important step, the analysis of the state of the art has been completed with some basic geomorphological analysis integrated and validated by field survey. Some tools for digital field mapping has been developed and improved, in particular, an application for tablet-PC and tablet Android which allows the usage of personal digital data in the field and the collection of geonotes (like georeferenced Post-it) containing text, audio and images.

Following the indication of the EU Flood Directive, the next activity was to understand the main historical events occurred in the area. Thanks to the previous work done by the local administrations, the past events were integrated in a centralized database. Using past events, the geomorphological analysis and the field data collected, it was possible to define the expected phenomena on the whole catchment. Before starting with hydraulic modeling and in consideration of the area extension, the main issue was to understand the degree of study of each small basin inside the study area, where a debris flow could occur. To do this evaluation, which is the most important to define the models that can be used for hydraulic simulations of water level and debris accumulation, a big effort was made in analyzing the scientific state of the art of the studies on debris flow and extracting a common practical methodology.

The methodology for hazard mapping on debris flow fans is summarized on the Guidelines "**The triggering of landslides and debris flow and their mapping**", written by professor Rigon of the University of Trento. These guidelines represent one of the main outputs of this study activity of the project.

Following the indications of these guidelines, it is possible to calculate for all the alluvial fans of the entire study area the input liquid and solid discharge to be used in hydraulic models. The tools developed within GIS framework consider as input some maps derived from DTM analysis, the statistical elaboration of the rainfall measured data, and some geological parameters defined during the field surveys and detailed geological investigation both in field and in laboratory. They give as output the evaluation of the maximum expected discharge for each return time. The evaluation of the liquid discharge is done using the Peakflow model (Rigon et al., 2011), the solid available discharge for debris flow is evaluated using a methodology based on Shalstab model (Montgomery and Dietrich, 1992) and the concepts of propagation and runout distance of Vandre (1985). Given the morphology of the alluvial fan and the total input discharge is then possible to model each fan and to elaborate the hazard maps.

Hazard levels for debris flow can be defined on the basis of a number of intensity classes (3-5) each corresponding to a different destructive potential for the event. The threshold values for torrential phenomena consider not only the physi-

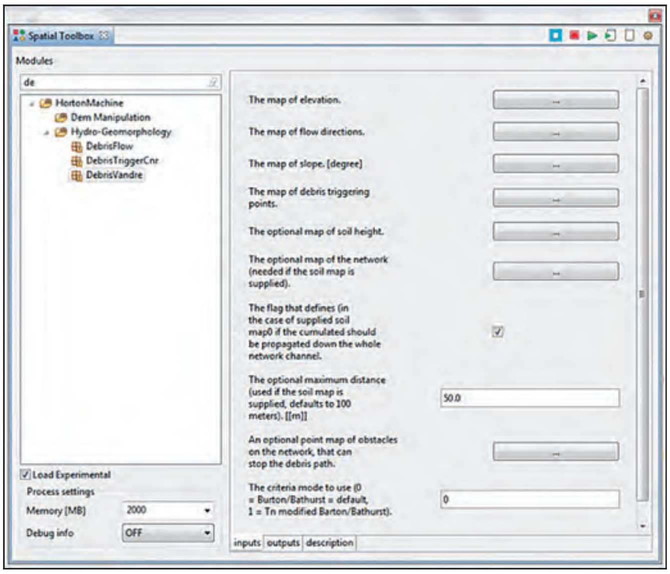


Illustration 1: Graphical User Interface of one of the tools developed in JGrassTools for the localization of triggers and the evaluation of propagation along the network

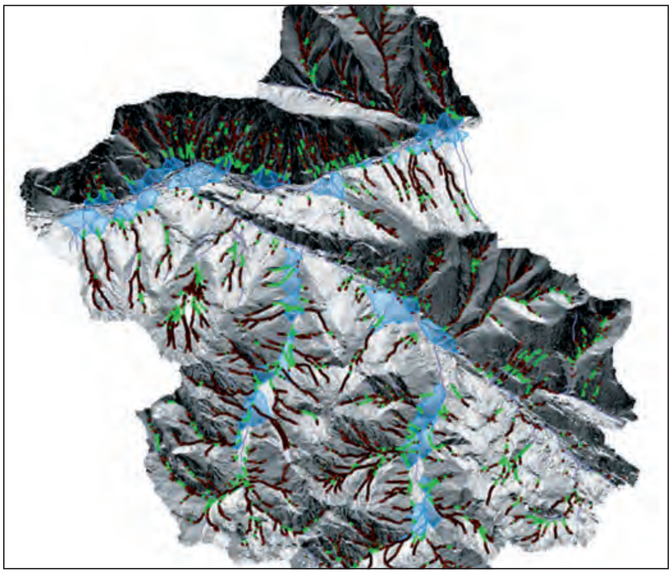


Illustration 3: The map of debris flow triggers and propagation paths till the fans on the pilot-study area

Illustration 2: Field data collection: defense from debris flow on a tributary of the Drava river

Illustration 4: Field data collection on a tributary to the Drava river: rest of a past debris flow

cal quantities of **velocity and depth** of the flow, but also the **thickness of the debris deposition** outside the river and the **depth of scouring**.

Hazard classes are then evaluated considering the probability of the event (return period) and the intensity using a matrix. The complete hazard map is then drafted by assigning to each cell the highest hazard value relative to all return periods.

The hazard classification of the different areas obtained with the described methods must be analyzed, taking account of the working hypotheses used and evaluating the possible influence of buildings and structures on flooding events and on the modelling simulations. The critical analysis of the maps can bring to very important observations that need to be highlighted: unusual behavior of the flows; qualitatively similar areas with different risk levels; areas with continuous characteristics (e.g. same slope, same granulometry, etc.) presenting discontinuities in the results.

OUTPUT

Important and tangible outputs have been developed during this project and these are, from one side, the guidelines of hazard mapping for debris flow "**The triggering of landslides and debris flow and their mapping**", written by prof. Rigon of the University of Trento, and, on the other hand, some practical tools integrated in a GIS.

The developed tools are available for download at the project site www.jgrasstools.org where there are also some instructions on installation and usage. Regarding the digital field mapping tools, the developed extension for uDig (http://udig.refractions.net/) is available at http://code.google.com/p/beegis/ with complete instruction on installation and a user manual in English and Italian will be available soon.

LESSON LEARNED

The first important aspect handled during the activities in the study area is the need of a common database and approach for hazard and risk mapping in case of transnational basins. This is important not only for big basins, but also for the smaller ones, where the problems are different but the effects of a flood event will affect population (local and tourists), structures and the general ecosystem.

There is a big need for the involvement of the scientific world in the process of hazard and risk mapping to assure that the methodologies and the models used are the most valid ones with the most reliable results.

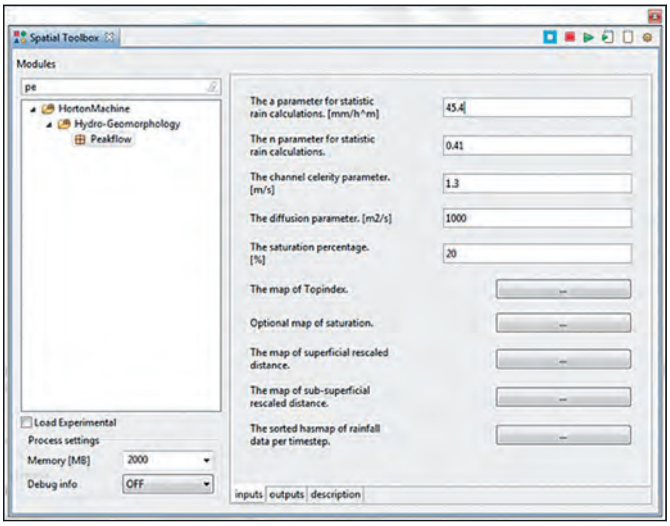


Illustration 5: Graphical User Interface of the Peakflow model integrated in JGrassTools for the calculation of the maximum discharge for the different return times

Illustration 6: Digital field mapping on Drava river

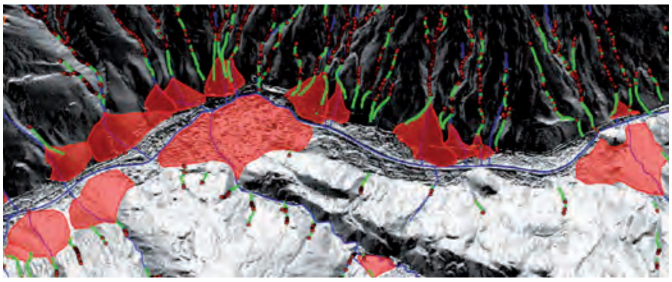


Illustration 7: Identification of alluvial fans with indication of extracted triggers and debris flow propagation paths

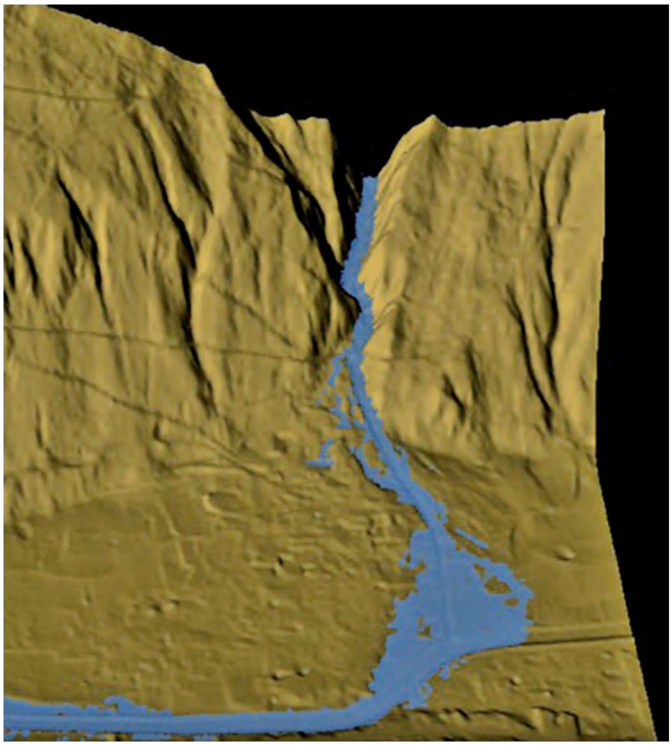


Illustration 8: Hydraulic modelling of a debris flow on a fan given as input the liquid and solid discharge

ROMANIAN PILOTS ACTIVITY
GIURGIU CITY

Giurgiu City, lies the Danube Meadow, the soil being sandy. It is located at the intersection of River Pan-European Corridor 9 and Auto Pan-European corridor 7. Town area is 47,6 km². Its population on July 1, 2010 was 71.915 inhabitants and the density: 1. 538 inhabitants/km². Giurgiu is a major transit center by road, rail and river and point of contact with Ruse City (Bulgaria) through road and rail bridge (2 200 m long) constructed over the Danube in the years 1952-1954 (inaugurated on June 20, 1954), and it is also an important crossing point (customs) for goods and passenger traffic. In 1996 it was founded the Autonomous Administration of Free Zone (AZL) situated in the South-East of the town (on the shore of the Danube River). The presence of AZL has created new possibilities for the development of all economic activities but in same time increase the flood risk. The AZL's facilities offered to attract the interest of Romanian and foreign investors through leasing and rental consisted as premises for activities in production, trade and services. Since then the town became an important road, railway and river transit center.

This region has had to struggle with increasing flood risks and actual floods, which have created much damage, particularly in the last few years. Because the Danube was recently channelized and enclosed by dikes, there is hardly room for the reduction of peak flow during rainy periods or for the development of nature along the river. Due to climate change and large-scale deforestation, these peak flows are occurring not only more frequently, but they also carry a greater volume of water over a shorter time. The river foreland of the Danube at Giurgiu has insufficient capacity to relieve the peak flows, as seen during the summers of 2004 and 2005 and spring 2006 when a large part of the region flooded and required large-scale evacuations.

Romania

NUCLEAR PLANT PLATFORM IN CERNAVODA TOWN

The only nuclear plant in Romania is located in Cernavoda. Two units operate currently in Cernavoda and produce together cca 18% of electricity consumption of the country. Cernavoda Central Power Plant is based on the Canadian system **CANDU** (*Canadian Deuterium Uranium*) and having an installed capacity of 706 MW for each of the 5 reactors. The structure of a **CANDU** reactor consists of a horizontal cylindrical container with bars for fuel tubes and for coolant (heavy water) placed horizontally. Putting into service the first unit of Nuclear Center - Electric in 1996 entered Cernavoda between the large energy producers of our country.

The original plan, dating from the early 1980s, provided the construction of five units. Unit I was completed in 1996, has an installed electrical power of 706 MW and produces annually about 5 TWh. Unit II was started on May 6, connected to the national energy system on August 7 and operate at normal parameters.

Over time were conducted a series of studies on the possibility of flooding in the Cernavoda Nuclear Plant Platform site. These studies, conducted in accordance with existing standards and methods when carrying had two types of objectives:

(i) Demonstrate that measures made during location and designing are sufficient for safe operation of nuclear facilities, and are not affected by the flood;

(ii) Demonstrate that the Danube water flow and Danube water level provide economic parameters of reactors operating at nominal power units.

In the context of EU requirements, revaluation of design limits for nuclear units, generated by extreme events that have severely affected the functioning of the units at Fukushima, it was necessary to upgrade these studies for CNE Cernavoda, to ensure validity of that inputs data used and touch the actual standards and methods of analysis. Study consider the following natural phenomena that have the potential, at least theoretically, to lead to site floded:

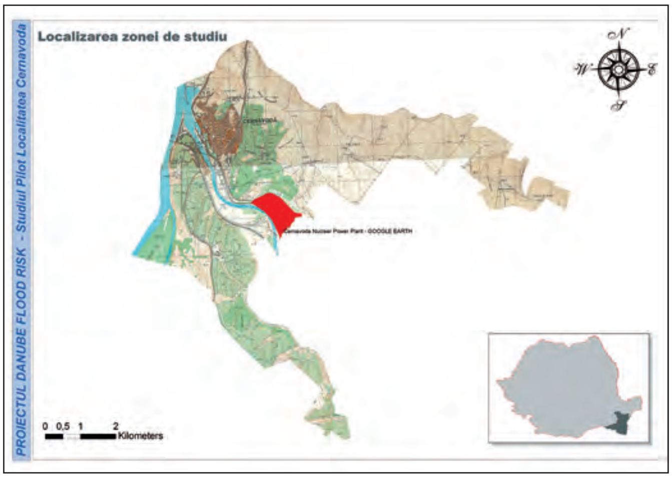
– Increase of the Danube;
– heavy rainfall.

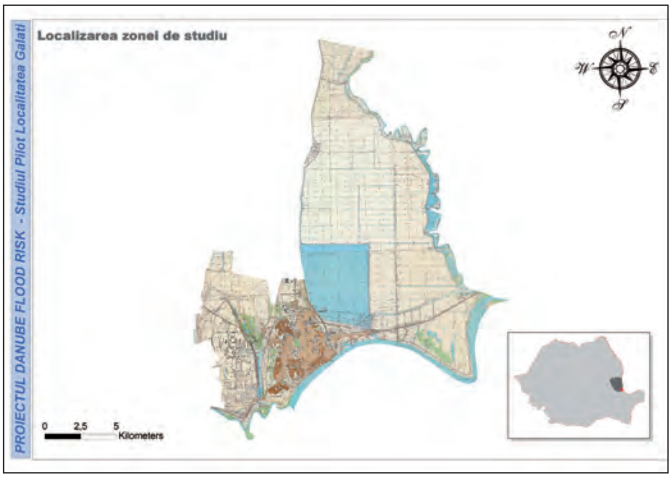
GALATI CITY

Galati City were selected as study area of the project because they frequently suffered massive flooding and the serious water management problems must be solved, because the natural water system was greatly changed in the recent past.Galati is one of the largest components of commercial traffic in Romania, connected to the main European communication corridors: by the river - Rhine-Main-Danube connecting the North Sea to the Black Sea; the railway ensured the transfer from european gauge to that one used in ex-Soviet countries; *Galati Free Zone* is a strategical point in the eastern area of the city, all the ways of communication mentioned above (road, rail and Russian-European Joint) meeting on its territory; have triage station Barbosi triage in the Movileni village. Road transport is achieved by a dense network of national and county roads.

Galati human community life is directly influenced by the Danube waters and its tributaries Siret and Prut rivers. On July, 2010, Galați population was 325 057 inhabitants and the density: 2 778 inhabitants /km^2, the locality surface is 118,9 km^2.

The changes in the landscape have had more negative effects. Reclamation of floodplain for agricultural use has diminished the room for the Danube river, thus leaving less space for water discarge in case of high water levels. This has caused floods to become more severe, especially in 2004, 2005 and 2006.





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Stakeholder oriented flood risk assessment for the Danube floodplains

Project partners

MEF – Ministry of Environment and Forests (RO)
UBA-A – Federal Environment Agency Austria Ltd. (AT)
VD – via donau, Austrian Waterway Company (AT)
MOEW – Ministry of Environment and Water (BG)
VKKI – Central Directorate for Water & Environment (HU)
VITUKI – Environmental Protection and Water Management Research Institute (HU)
DEF – Danube Environmental Forum (HU)
ISPRA – Higher Institute for Environmental Protection and Research (IT)
TUCEB – Technical University of Civil Engineering of Bucharest (RO)
RWNA – "Romanian Water" National Administration (RO)
DDNI – "Danube Delta" National Institute for Research and Development (RO)
CESEP – Centre for Environmentally Sustainable Economic Policy (RO)
SWME – Slovak Water Management Enterprise, state enterprise (SK)
CroWa – Croatian Waters, Legal entity for water management (HR)
IJC – "Jaroslav Cerni" Institute for the Development of Water Resources (RS)
JVP SV – Public Water Company „Srbijavode" (RS)
JVP VV – Public Water Management Company "Vode Vojvodine" (RS)

MAFWM – Ministry of Agriculture, Forestry and Water Management (RS)
RHMSS – Republic Hydrometeorological Service of Serbia (RS)

Observers:

ICPDR – International Commission for the Protection of the Danube River (AT)
JRC – European Commission - DG Joint Research Center (IT)
BfG – Bundesanstalt für Gewässerkunde (DE)
LfU – Bavarian Environmental Agency (DE)
RPT BWL – Regional Council Tübingen (DE)

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