

# 5<sup>th</sup> Stakeholders Conference

Floods in the region of Skadar Lake and the river Bojana

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Causes of floods in 2010/2011

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Activities-local plans

Proposals for the Future



Fraskanjel, 3.12.2010.





# Floods – river Bojana





# Floods – river Bojana





# Floods - Virpazar



# Causes of floods in 2010/2011

- Climate change and extreme weather conditions with heavy rainfall, rapid snowmelt and heavy winds;
- Irregular maintenance of the Bojana River and its tributaries and canals;
- Sudden and unplanned construction and urbanization in flood zones;
- Untimely taking legally prescribed preventive measures.



# Causes of floods in 2010/2011

- A causal relationship with the wider hydrotechnical and water systems in the immediate environment;
- Specific hydrological situation in Albania and method of regulation of Drin river;
- The decades-long lack of maintenance of the embankment on the Bojana and lack of maintenance of the riverbed;
- Narrowed mouth of the river Bojana, as a result of the application of sand from the sea;





# Narrowed mouth of the river Bojana





# Hydroelectric power plants in Albania



Jadranski breg



Jadranski breg

# Level of importance of the floods-effects

- 4 municipalities in Montenegro are directly threatened by floods
- all the settlements along the perimeter of the lake have been flooded
- all the villages in the I zone along the coast of Bojana were flooded
- the greatest damage to agriculture, infrastructure and livestock
- significant damage to objects and auxiliary objects in the flood areas



# Condition of the dam – location St.Đorđe and location Reč(04.12.2010.)

Water breaks the dam –St. Đorđe-04.12..2010.



Bojana overflow the embankment  
Reč- Crveni brijeg, 04.12.2010.



# Short term responses (actions undertaken to minimize effects of floods occurred.

- Urgent intervention measures... sandbags on critical stocks, evacuation of the population and domestic animals from the floodareas, informing the population and giving warning
- mobilization of all local capacities
- Quick rehabilitation of the embankment on the Montenegrin side bringing them into better condition.
- Establishing cooperation with Albania in order to obtain official and valid information
- Day-to-day monitoring of the situation and taking operational measures



# The most prominent problems:


- Insufficient inclusion of local knowledge based on relevant historical events (the largest floods so far);
- Insufficient use and involvement of local experts, knowledge and science;
- Insufficient use of media for promotion, education, prevention and other prevention activities;
- Unplanned use of space and poor planning in flood-prone areas;
- Lack of transport infrastructure and equipment for operational actions during floods;

# The most prominent problems:

- Incomplete databases for the population, infrastructure, facilities, protected areas and cultural heritage on the potentially flood-prone area;
- Undefined flood-prone zones and the effects of floods by zones in the plans;
- Lack of cooperation between the various competent authorities, at local and regional level;
- Low participation of the most responsible FRM stakeholders in planning, defining and implementing measures thereof;
- Problems of FRM in operational activities;



# Problems according to FRMC:

- Participation all actors in FRM activities;
  - Identification of measures;
  - Take over responsibility for the planning and implementation of measures;
  - Development of measures by responsible actors;
  - Coordination between all important stakeholders/actors
  - Cooperation between all receptors/users of Plans and Maps;
- 



# STAKEHOLDERS INVOLVEMENT

- Municipalities
- Spatial planning
- Rescue services
- Emergency management
- Insurances
- NGOs
- Nature conservation
- Agriculture / forestry
- Energy Facilitators
- Human health
- Environment
- Cultural heritage
- Economic activities
- Water management
- Red Cross
- Civil protection

**The most important thing is to identify stakeholders  
and content of the activities!**



# MEASURES OF DIFFERENT RESPONSIBILITIES

- Measures of Water Management
- Measures of Spatial Planning
- Measures of Urban Planning
- Measures of Cultural Heritage
- Measures to protect risk areas
- Retention measures
- Technical protection measures
- Measures for flood adapted constructions
- Measures for risk prevention
- Information measures
- Measures for self preparedness
- Disaster Management Measures
- Measures for recovering



# What has been done since 2010 up to now?

## The Directorate for Emergency Situations / Municipalities / GIZ

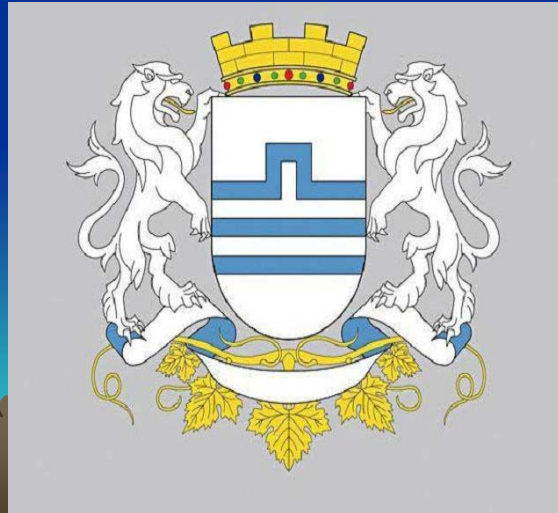
- Update the National plan for protection of flooding;
- Elaborated 5 municipal plans for protection of flooding (Ulcinj August 2011, Bar March 2013). Budva, Pljevlja, Rožaje, Herceg Novi i Kotor –December 2013;
- Based on the catalog of measures, rehabilitation of one of the watercourses in Budva was carried out, and measures are being integrated into urban development and planning;
- Guidance for the population living in flooded areas along the Skadar Lake and the Bojana River (montenegrian and albanian language)
- Established Operational Communication Centre 112 in Podgorica, Bijelo Polje and Bar
- Defined memorandum on bilateral cooperation between Montenegro and Albania on assistance in case of natural and other disasters.



# Municipal plans for protection and rescue from floods

PODGORICA

ULCINJ    CETINJE    BAR

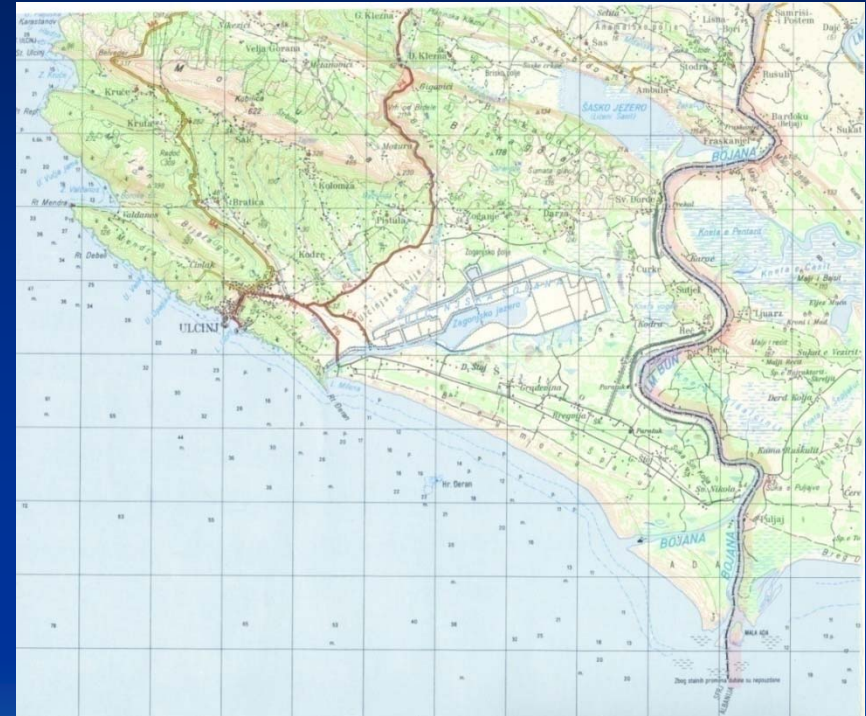


# Content of the Flood protection Plan

- The general part of the Plan
- Special part of the Plan-
- Preventive, operational and sanitary measures

## Contributions:

Review of vulnerable households in the zone of flooding, Rescue equipment review, Review of competent authorities that may be involved and the types of activities that can be executed, Review of Team for Emergency Management, etc.

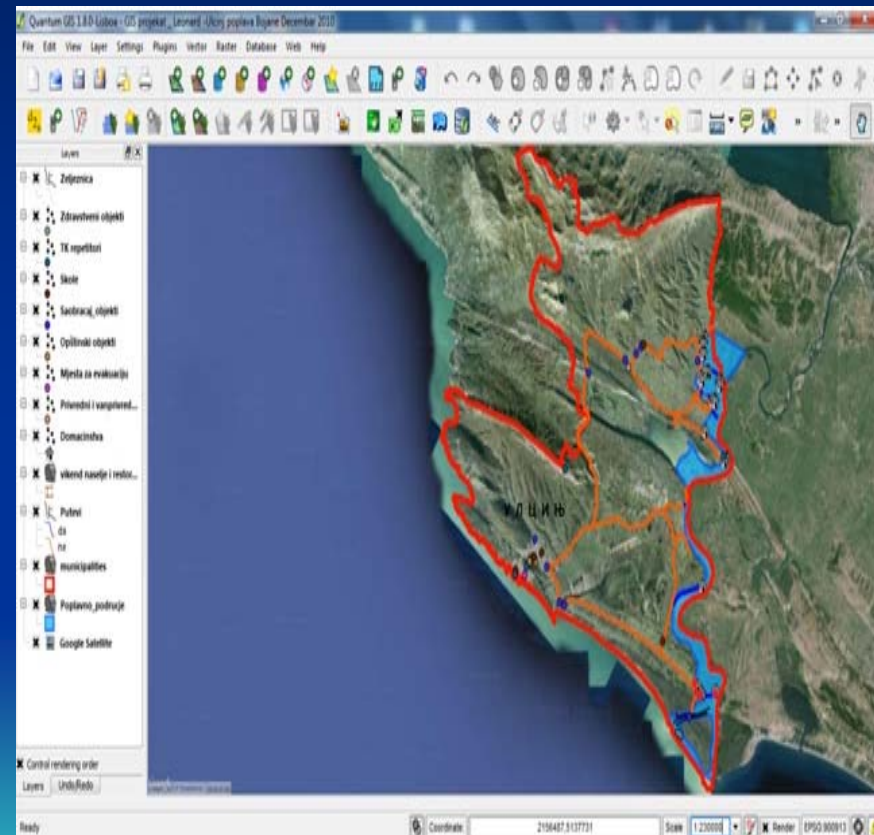
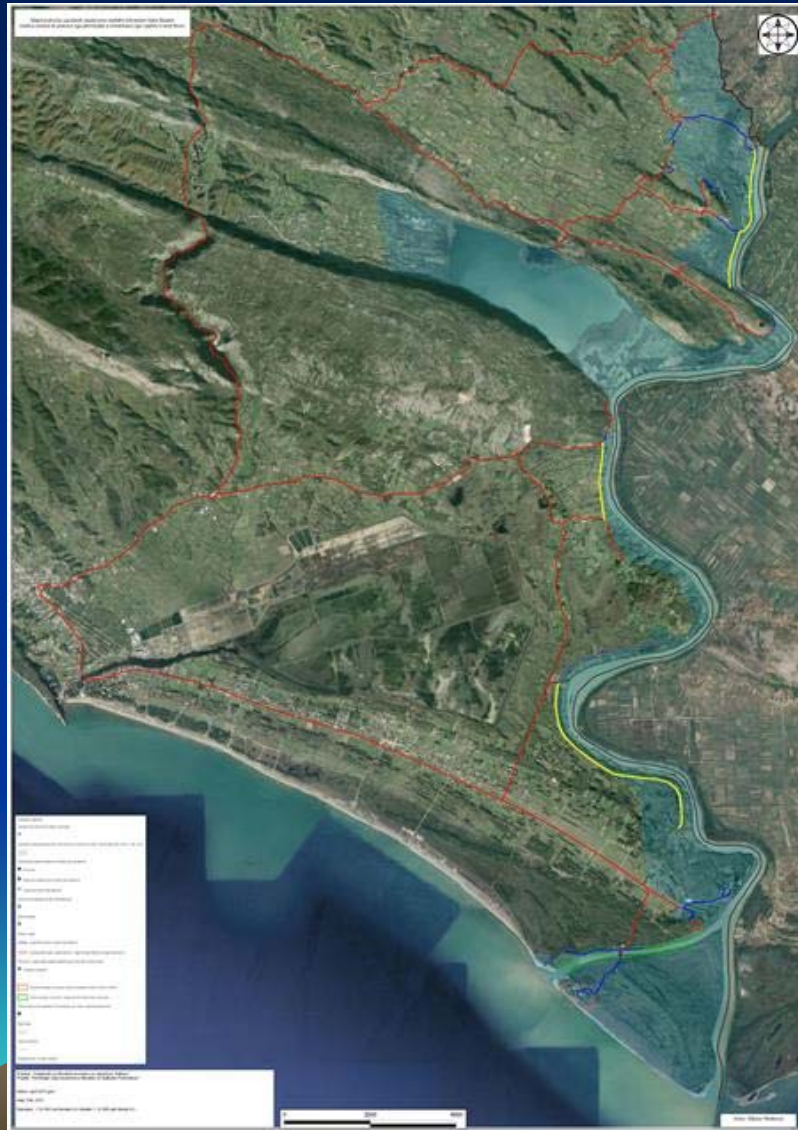




# Methods worked well in developing Plans

- Coordination of all planned activities at the national and local level;
- A tour of areas that were previously endangered by the floods- critical sections of fast flow
- Organized meetings with representatives of local governments
- Education of local government officials regarding the use of GIS tools and previously created risk maps for areas affected by floods
- The updating of municipal flood protection and rescue plan, with special emphasis on preventive, operational and sanitary measures of protection and rescue, in accordance with the Catalog of measures developed by GIZ In the first phase of the CCAWB project
- Inclusion of local knowledge
- Database

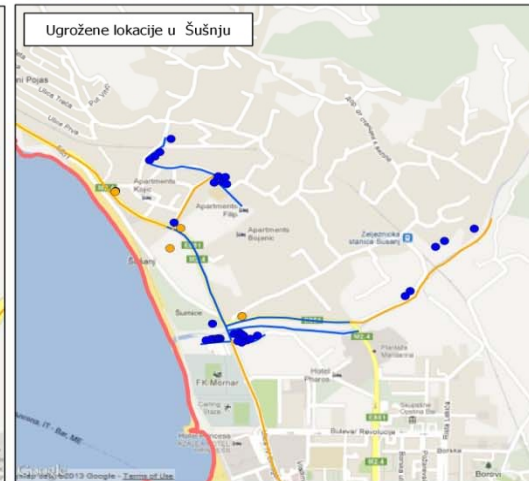
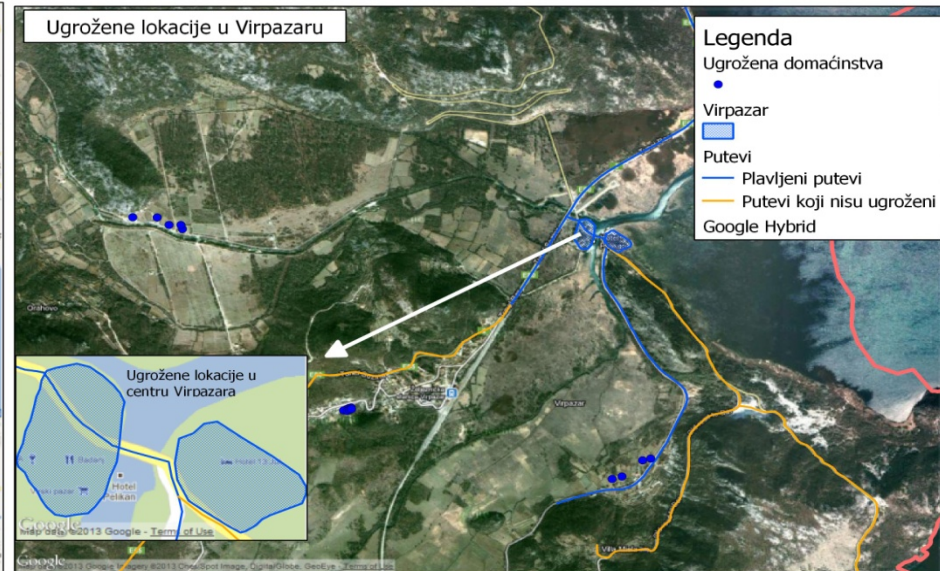
# Map of flooding areas in Ulcinj





# Map of locations vulnerable to floods of 2010- municipality of Bar

Mapa ugroženih lokacija u poplavama u 2010 godini





# Floods awareness raising material for the population

## Menaxhimi i rrezikut nga përmbytjet Zona e liqenit të Shkodrës dhe lumit Buna

Informacion publik



Ulqin

### Plani i emergjencave nga përmbytjet

Në rast të një përmbytje është e rëndësishme të jeshë i përgatitur. Për këtë arsye janë hartuar planet e emergjencës nga përmbytjet për banesa dhe biznese. Është e rëndësishme të fillosh të njohëshit zonën tënde, veçanërisht nëse ka historik përmbytjeje dhe ju duhet të jeni të ndërgjegjshëm për rreziqun specifik në pronën tuaj. Pavarësisht nëse ju jeni duke planifikuar për shtëpi apo biznes gjërat e mëposhtme duhen pasur në konsideratë.

<b>Itinerari evakimit qendrat e ndihmës së emergjencave</b>	Detaje të regjistruara që ju janë dhënë nga skuadra e mbrojtjes dhe shpëtimt të Bashkisë mbi planet lokale të përmbytjes, zonat problematike dhe itinerarët e shpëtimt dhe qendrat e ndihmës së emergjencave. Për të gjetur më shumë detaje vizitoni faqen e internetit e shërbimeve të vetë-qeverisjes vendore ose telefononi shërbimet në detyrë.
<b>Lokalizoni token më të afërta të sigurisë (të lartë)</b>	Lokalizoni një zonë të sigurtë (të lartë) toke ku do të ishit e sigurtë që të spostoni automjetet dhe pajisjet.
<b>Mobilja</b>	Planifikoni se cilat objekte ju duhet të ngrihen në rast se uji meqan shpëtimt tuaj – mobilja, vesja, sende me vlerë.
<b>Substanca të rrezikshme</b>	Bëni një listë me artikujt e rrezikshëm siç janë kimikate ose helme që kanë dhe që do të duhet të ngrihen dhe në vende të sigurtë larg uji.
<b>Energji, ujë, gaz</b>	Regjistroni se kush janë çelësat kryesorë për ujën, gazin dhe elektricitetin në mënyrë që të mund të stakohen në rast se do të jetë e nevojshme.
<b>Siguracion</b>	Kontrolloni nëse ka një siguracion që mund t'ju mbulojë dëmet e shkaktuara nga përmbytjet.
<b>Kutia e emergjencës</b>	Përgatitni një kuti emergjence për përmbytjet.
<b>Komunikimi</b>	Bëheni të ditur planin tuaj të emergjencës për të gjithë pjesëtarët e familjes dhe kullinë e emergjencës, si dhe ku ndodhen ato. Caltoni se ku do të takohani ose se si do të kontaktoni njëri tjetrin në rast se do të ndaheni nga një emergjencë.



### Kutia e emergjencës



<b>Jetike për familjet</b>	Bëni një listë me artikujt jetikë që do ju nevojiten. Për shembull qumësht, ushqim për bebe, shishe dhe lugë të sterilizuara, bebëlina dhe paceta, veshje për tu ndëmuat bibaron, lodrën e preferuar.
<b>Kafshët shtëpiake</b>	Bëni një listë me artikujt jetikë që do t'ju nevojiten për kafshën tuaj shtëpiake. Identifikoni ku është stahimi më i afërt për kafshët në rast se nuk mund ta mëmni me vete në qendrën e ndihmës së emergjencave.
<b>Artikuj të përgjithshëm</b>	<ul style="list-style-type: none"> <li>Çanta rezistente ndaj ujit</li> <li>lista e dokumenteve lyçe personale që do ju duhet të përshini</li> <li>detajet e siguracionit dhe identifikimi personal</li> <li>Racion dhe elektronik dore me bateri, bateri rezervë</li> <li>Telefon celular</li> <li>Kuti të ndihmës së shpejtë dhe batanije</li> <li>Ushqim i konservuar, hapësë konservash, ujë i freskët servis për të ngrënë ushqimin</li> <li>Veshje rezistente ndaj ujit (duke përfshirë dorëza gome, çanta llastiku)</li> </ul>
<b>Medikamente</b>	Çdo medikament familjar që mund të nevojitet, një listë me emrat e medikamentave dhe detajet e mjekut tuaj të familjes.
<b>Thasë me rërë dhe rërë</b>	Mbari disa thasë rërë të pambushur gati për të bllokuar dyert, kanalizimet dhe tualetet. (Thasët me rërë duhet të mbushen me rërë të thatë ose dhe). Informohuni se kush mund t'ju pajisë me thasë rërë bosh.



# Flood Risk Management Planning

## Catalogue of measures

Measures	Description	Competences
Improvement of flood precautions in the spatial planning and urban planning systems.	Protection and Recovery of flood plains by designation of priority and reserve areas.	Spatial planning Agencies, Municipalities
Support of the development towards natural floodplains.	site-appropriate agriculture and forestry, Extensive use of the floodplains, leaving them for natural succession	Municipality, Agriculture, Forestry
Construction of a protective construction (dike, dam or flood wall)	Construction of dikes, dams or flood walls based on the interactions with adjacent sections of valleys, involved plans and verifications by calculation	Municipality, Organizations
keeping clear flood discharge cross-sections in settlement areas	Clearance of the river section out of vegetation or sedimentation	Municipality, Organizations, Civil Protection
Object / Facility protection of infrastructure facilities (e.g. transport nodes, switching and branching systems )	Construction of dikes, dams or flood walls for facility protection, strengthening of primary substations, infrastructure nodes relocation from flooded areas	Municipality, Organizations, utilities companies

# Flood Risk Management Planning

## Catalogue of measures

Measures	Description	Competences
Continuing advancement of awareness raising and publicity	Continuing advancement of awareness raising and publicity by allocation of digital and analog information (e.g. also by local visualization of expected water levels), as well as organization of symposia, workshops and advanced trainings.	Water Authorities, Municipalities, Organizations
Alignment or optimization of alert and operation schedules	. Examination and actualization of existing alert and operation schedules among other things by allocation of flood risk and flood hazard maps as well as further information material and an eventually meaningful adoption of working foreign systems.	Municipalities, Civil Protection and Emergency Services



## Overview of works and measures of river management and flood protection

No	Watercourse	Part of the course	Required works
1	Bojana River	Embankment on the lines: St.Đorđe-Sutjel and Reč- St.Nikola	Upgrading and reconstruction of embankment , regulation
2.	Skadar Lake	Ceklinska kaseta	complex works Requires special analysis
3	Skadar Lake	Donjozetska kaseta	complex works
4	Vladimirska river, Rastiški creek	lower stream	Regulation of the planning flows in the river Bojana
5	Međuriječje	Upper stream	Construction of reservoirs (acumulation)

# Flood Risk Management Planning

## Catalogue of measures

Measures	Description	Competences
Civil Protection	. Examination and improvement of existing resource plans and crisis management systems by conduction of flood exercises, advanced training, definition of organization structures, setup of irrigation dams and local warning systems for the population and allocation of infrastructure and material.	Municipalities, Civil Protection and Emergency Services



# CURRENT AND FUTURE ACTIVITIES

## What can be recommended:

- Initiate better cooperation and coordination between all FRM actors across the river basin and Scadar lake;
- Use public media for all prevention activities;
- Update all Plans FRM with new informations about potentially structures,object and inhabitants;
- Make fact sheets risk situation for each municipality;
- Identification of priority measures and determine responsibility for the planning and implementation of measures;
- Organized workshops, trainings, seminars, exercises, studies visits....
- Suggest some pilot measures for mitigation and reduction of flood risk; regional flood protection unit
- Provide the necessary equipment,





THANK YOU FOR YOUR  
ATTENTION!  
HVALA NA PAŽNJI!  
Faleminderit per vemendje!

**QUESTIONS?**

**Conclusion:” We depend on  
one another! We depend on  
you! Do not forget that!”**