



**Training Workshop on  
Flood Loss Assessment for building resilience to disasters  
in Western Balkans and Turkey  
Sarajevo, Bosnia-Herzegovina, 12-14 May 2014**



**MEETING REPORT**

## TABLE OF CONTENTS

DESCRIPTION	PAGE
<p style="text-align: center;"><b>I. Introduction</b></p> <p>I.1. Background            I.2. Date and Venue            I.3. Participants            I.4. Agenda &amp; Programme</p>	<b>3</b>
<p style="text-align: center;"><b>II. Description of the meeting</b></p> <p>II.1. Working arrangements            II.1.1. Meeting concept &amp; format            II.1.2. Chairmanship            II.2. Session 1 - Opening            II.3. Session 2- Flood Loss Assessment in Integrated Flood Management            II.4. Session 3- DesInventar - Disaster Information Management System            II.5. Session 4- The KALYPSO-FLORETO platform            II.6. Session 5- Multi-scale resilience assessment            II.7. Session 6- Recommendations and closure</p>	<b>4</b>
<p style="text-align: center;"><b>III. Conclusions and recommendations</b></p> <p>III.1. Conclusions            III.2. Recommendations</p>	<b>8</b>
<p style="text-align: center;"><b>IV. Attachments &amp; Annexes</b></p> <p>Annex I: List of Participants            Annex II: Programme            Attachment: Poster</p>	<b>8</b>  9 12 15

# I. Introduction

## I.1. Background

The IPA/2012/290552 Multi-beneficiary Project: “Building Resilience to Disasters in Western Balkans and Turkey” has been approved by the European Commission Directorate General for Enlargement for joint implementation by UNISDR and WMO, for a period of 24 months (May 2012 – May 2014). Its overall objective is to reduce vulnerability of IPA Project beneficiary countries to disasters caused by natural hazards in line with the Hyogo Framework for Action and to increase their resilience to climate change. More information about the Project is available on the project web site: [www.preventionweb.net/ipadrr](http://www.preventionweb.net/ipadrr).

The *Training on the use of flood losses assessment tool* has been scheduled within the Project Task 3 aiming to enhance the regional risk assessment and mapping capacities through improved capacity of beneficiaries in hazard analysis and mapping.

The workshop was co-supported by the joint WMO/Global Water Partnership Associated Programme on Flood Management, in the framework of the activities of its HelpDesk for Integrated Flood Management.

This training workshop is complementary to the *Regional Training workshop on integrated flood management and flood forecasting* (Project Task 4.2.1), held in April 2013, in Antalya, Turkey, which meeting report is available on the WMO project-dedicated web site:

[http://www.wmo.int/pages/prog/dra/eur/IPA2012/documents/WorkshoponIntegratedFloodManagement\\_report\\_FINAL.pdf](http://www.wmo.int/pages/prog/dra/eur/IPA2012/documents/WorkshoponIntegratedFloodManagement_report_FINAL.pdf)

## I.2. Date and Venue

The Training-workshop was held from **12 to 14 May 2014**, at the premises of **Hotel Hecco** (address: Medrese 1, Sarajevo 71000), in Sarajevo, Bosnia and Herzegovina.

## I.3. Participants

There were 21 participants in the meeting: 16 participants from the 6 IPA Project countries and 5 resource persons from WMO, CIMA Research Foundation (Italy), Technical University Hamburg-Harburg (Germany), and University of Nice (France). The list of participants is attached as **Annex I**.

## I.4. Agenda & Programme

The agenda accommodated 6 sessions as follows:

SESSION 1 – Opening

SESSION 2 – Flood Loss Assessment in Integrated Flood Management

SESSION 3 – DesInventar - Disaster Information Management System

SESSION 4 – The KALYPSO-FLORETO platform  
SESSION 5 – Multi-scale resilience assessment  
SESSION 6 – Recommendations and closure

It was a two and half days meeting. The Programme of the first two meeting days was from 9:00 to 17:00 with two coffee breaks and a lunch break; the programme of the last third meeting day was from 9:00 to 13:00 with a coffee break.

The Programmed Agenda is attached in **Annex II** to this Report.

## **II. Description of the meeting**

### **II.1. Working arrangements**

#### **II.1.1. Meeting concept & format**

##### **Meeting concept**

The “Conducting Flood Loss Assessments” tool, developed by WMO within the Associated Programme on Flood Management (APFM) and its Support Base Partners, provides methodologies for the assessment both during or in the immediate aftermath of an event, and, not in emergency period, as an instrument for planning and development policies.

The Training-workshop has been conceived for the top- and medium-level national/local officers and has focused on the assessment of the extent of flooding, flood losses and resultant needs of the affected communities. Loss Assessment is an essential component for flood relief coordination, and often has to be carried out during the event itself under the extraordinary circumstances: these involve varying degrees of chaotic conditions, contingencies and time pressure. Moreover, preliminary flood loss assessment, established in expeditious manner, would later on provide the basis for reconstruction planning and for decisions on flood management policy reform. Certain basic principles should be observed to avoid unrealistic estimates and resulting repercussions in future policies.

In this connection, the workshop has been organized in such a way to describe the overall rationale of flood loss assessment in the framework of Integrated Flood Management, and then presenting three different tools and methodologies for flood loss assessment.

The overall objectives of the Workshop were:

- I To introduce the methodologies proposed in the APFM tool on flood loss assessment, in accordance with the Integrated Flood Management concept, to the top and medium level managers in charge of water, disaster, and land use management as well as to all other stakeholders involved in flood management.
- II To present a series of software and methodologies developed by the APFM Support Base Partners, and reference the current trends in the European Commission’ Working Group on flood loss assessment.
- III To set up linkages and network to optimize the information exchange in flood losses assessment practices.

## **Meeting format**

The Workshop has been designed as a three day capacity building event. It encompassed the topic of flood loss assessment in the framework of integrated flood management (IFM) concept. This translated into a brief introduction about IFM, to highlight the need for considering flood losses not only from the economical point of view, but considering also the social and environmental impacts of floods; and in the presentation of three methodologies for flood loss assessment, as well as the EC Working Group' recommendations on flood loss assessment, as follows:

- A) The UNISDR DesInventar Disaster Information Management System, a software for the systematic collection, documentation and analysis of data about losses caused by disasters associated to natural hazards (supported by CIMA Foundation, Italy)
- B) The recommendations of the EC Working Group on flood loss assessment, currently trying to wrap up the current different initiatives, methodologies and standards on this topic, and in which both WMO and CIMA are participating
- C) Multi-scale damage assessment -methodology and lessons learned (experience from the EU FP7 projects SMARTeST, CORFU and PEARL) utilizing the KALYPSO-FLORETO platform (developed by TUHH – Hamburg University of Technology, Germany), a tool to perform multi scale flood loss assessment
- D) The experience of the CORFU (Collaborative Research on Flood Resilience in Urban areas) project, and the method to assess flood impacts in urban areas (developed by Euroaquae Consortium/University of Sophie Antipolis, France).

The workshop consisted in a series of lectures illustrating the above mentioned methodologies (a brief introduction to the OECD methodology for the Seine River was also included) and recommendations from the EC Working Group on flood loss assessment. Moreover, an overlook on the IFM Tool on Flood Loss Assessment was provided, together with examples from Australia.

Lecturers were from APFM, and from institutions composing its Support Base Partners network, notably TUHH (Germany), Euroaquae Consortium (France) and CIMA Foundation (Italy).

### **II.1.2. Chairmanship**

Even though an official chairman was not designated, the Meeting was facilitated by Mr Giacomo Teruggi, Project Officer of the WMO Climate and Water Department, and co-facilitated by Mr Jan Moritz Krüger, Junior Professional Officer of the Associated Programme on Flood Management.

## **II.2. Session 1 - Opening**

The Meeting was opened by Mr Almir Bijedic, Director of the Federal Hydrometeorological Institute, Sarajevo and Mr Giacomo Teruggi, Representative of the WMO Secretariat.

Mr. Bijedic among other things said: "It is an honour to greet you in the name of your host,

Federal Hydro meteorological Institute Sarajevo. At the same time, I would like to convey greetings from Assistant Minister of Security BiH, Mr Samir Agic, who could not be present at the opening due to his other commitments. Together, we actively participated in the realization of this important project - Building resilience to disasters in Western Balkans and Turkey. The co-operation among the countries participating in the Project will increase cross-border exchange of information and warnings and will continue efforts for the integration of the Western Balkans and Turkey to the European meteorological infrastructure. It will boost technical capacity to assess the risk of flooding and droughts and to promote integrated flood management as well as their forecasting”.

On behalf of WMO Secretary General, Mr Giacomo Teruggi welcomed the participants and conveyed his appreciation to the Federal Hydrometeorological Institute for hosting the meeting, stressing the importance of loss assessment in flood management practices.

The Opening session continued with a round-table introduction of participants, the description of working arrangements and the adoption of the Programme. On behalf of the local organizers, Mr Muhamed Muminovic of the Federal Hydrometeorological Institute provided Information on local arrangements.

### **II.3. Session 2- Flood Loss Assessment in Integrated Flood Management**

Mr Giacomo Teruggi and Mr Moritz Krüger provided an Introduction of the workshop objectives and purpose, as well as the structure of the sessions and the expected outcomes. Assessment of flood losses was, then, described in the framework of Integrated Flood Management by Mr Giacomo Teruggi. The concept, finalities and conceptual steps to follow in Flood Loss Assessment were introduced to the participants by Mr Moritz Krüger. The information on the Australian loss assessment process was shared by Mr Krüger and the OECD review of Risk management policies in the Seine river Basin was presented by Mr Teruggi to the participants as two examples of direct application of flood loss assessment.

The afternoon session was followed by the Country presentations on current methodologies of flood loss assessment, delivered by the participants.

### **II.4. Session 3- DesInventar - Disaster Information Management System**

Dr Marco Massabò from CIMA Research Foundation (Italy) presented in the morning of Tuesday, 13 May, the DesInventar methodology. Developed by UNISDR and implemented by CIMA in several SEE countries, DesInventar is a methodology for systematic collection of loss data. It essentially proposes the collection of homogeneous data about disasters of all scales. The information compiled and processed is entered in a scale of time and referenced to a relatively small geographic unit.

DesInventar is a systematic methodology for collecting data on disaster damages and impacts, and it proposes a homogeneous data collection at all scales, with information being compiled and registered in a relatively small geographic scale. Dr Massabò also reported on EU recommendations for recording loss database. Developed by the Joint Research Centre of the European Commission, the report on *Recommendations of technical requirements for recording disaster losses at EU level* provide a technical framework of the conceptual model, specifying the different levels at which a standard can

be developed. It also provides guidance to Member states for implementation, harmonisation of the loss data at international level, and sharing principles.

## **II.5. Session 4- The KALYPSO-FLORETO platform**

The Multi-scale damage assessment methodology, and lessons learned utilising the KALYPSO-FLORETO platform, were introduced by Dr Natasa Manojlovic from the Technical University of Hamburg-Harburg (TUHH) in the afternoon of Tuesday, 13 May. This methodology has been developed by TUHH – Hamburg University of Technology Germany, and applied in the context of the EU FP7 projects SMARTeST, CORFU and PEARL.

The FLORETO platform is a tool to perform multi scale flood loss assessment, going from large/medium scale damage assessment to the micro, property scale damage assessment. Presentation of the methodology and data needs behind this platform were followed by a hands on session on the multi scale tool KALYPSO-FLORETO, focusing both on the property and on the medium/large scales.

## **II.6. Session 5- Multi-scale resilience assessment**

On the morning of Wednesday, 14 May, Dr Jelena Batica from University of Nice presented the methodology and lessons learnt on the Multi-scale resilience assessment. This methodology has been developed in the framework of the EU FP7 project CORFU, applying the Flood Resilience Index on urban areas.

The Flood Resilience Index has been developed jointly by UNSA – University of Nice-Sophia Antipolis, Polytechnic of Nice-Sophia Antipolis, and Innovative City lab URE 005, France. Besides an introduction and overview of the resilience concept, the session covered the purpose, data requirements and expertise needed to implement the methodology, focusing on different scales of resilience assessment (from single property level to city and district level).

It was followed by a one hour hands-on session on methodology application.

## **II.7. Session 6- Recommendations and closure**

Each participant received a CD containing all presentations and supporting documents delivered or referenced in the meeting, as well as copies of the IFM Tool on Flood Loss Assessment and relevant publications of the APFM (in electronic format).

The participants appreciated the methodologies presented, and recognized the need for a well-established procedure to perform flood loss assessment, as well as the importance of networking within colleagues from the region.

The meeting closed around 13:00 on Wednesday, 14 May.

## **III. Conclusions and recommendations**

### **III.1. Conclusions**

- Flood loss assessment is an essential component of flood management, being necessary to deliver a proper set of actions in terms of response, recovery and also planning for preparedness before the next event.
- Significant sets of methodologies for flood loss assessment already exist, and guidelines will be produced at the EC level to identify opportunities for standardization of flood losses databases.

### **III.2. Recommendations**

- Participants expressed the need to keep the regional network active, to share expertise, know-how and best practices with the support of WMO.
- Better coordination between WMO, the IPA Project Management Unit and the local organizers is envisaged to avoid logistical problems in the organization of meetings.

## **IV. Attachments & Annexes**

The Report has two annexes and one attachment as listed below:

Annex I: List of Participants

Annex II: Programme

Attachment: Poster





Building Resilience to Disasters in  
Western Balkans and Turkey

## TRAINING WORKSHOP ON FLOOD LOSS ASSESSMENT IN THE FRAMEWORK OF INTEGRATED FLOOD MANAGEMENT

SARAJEVO, BOSNIA AND HERZEGOVINA  
12-14 MAY 2014

ANNEX I

### LIST OF PARTICIPANTS

COUNTRY	PARTICIPANT & CONTACT DETAILS
ALBANIA	<p><b>Ms Fatjona Xhaferi</b> Planning and Coordinating Civil Emergencies Ministry of Internal Affairs Street "Aleksander Moisiu", Tirana Email: <a href="mailto:fatjona.xhaferi@punetebrendshme.gov.al">fatjona.xhaferi@punetebrendshme.gov.al</a> Mobile: +355 69 41 33 473</p>
BOSNIA AND HERZEGOVINA	<p><b>Mr Darko Borojevic</b> Hydrologist Republic Hydrometeorological Service Banja Luka Email: <a href="mailto:d.borojevic@rhmrzrs.com">d.borojevic@rhmrzrs.com</a> Tel: +387 63 79 03 95</p>
	<p><b>Mr Nino Rimac</b> Head of Division for hydrological study and forecast Hydrology Department Federal Hydrometeorological Service Sarajevo, Bardakcije 12 Email: <a href="mailto:rimacnino@yahoo.com">rimacnino@yahoo.com</a> Tel: +387 33 276 733</p>
	<p><b>Ms Esena Kupusović</b> Assistant Director Hydrology Department Federal Hydrometeorological Service Sarajevo, Bardakcije 12 Email: <a href="mailto:kupusovic.e@fhmzbih.gov.ba">kupusovic.e@fhmzbih.gov.ba</a> Tel: +387 33 276 710</p>
	<p><b>Ms Azra Babić</b> Hydrological Technician Hydrology Department Federal Hydrometeorological Service Sarajevo, Bardakcije 12 Email: <a href="mailto:azrababic@yahoo.com">azrababic@yahoo.com</a> Tel: +387 33 276 733</p>

	<p><b>Mr Mirsad Šiljak</b> Hydrological Technician Hydrology Department Federal Hydrometeorological Service Sarajevo, Bardakcije 12 Email: <a href="mailto:siljak.m@fhmzbih.gov.ba">siljak.m@fhmzbih.gov.ba</a> Tel: +387 33 276 734</p>
	<p><b>Ms Jovana Anđelić</b> Ministry of Security of Bosnia-Herzegovina Sarajevo, Trg BiH 1 Email: <a href="mailto:Jovana.Andjelic@msb.gov.ba">Jovana.Andjelic@msb.gov.ba</a> Tel: +387 33 492 733; Mob: + 387 65 999 291</p>
	<p><b>Mr Almir Bijedić</b> Director Federal Hydrometeorological Service Sarajevo, Bardakcije 12 Email: <a href="mailto:meteobih@bih.net.ba">meteobih@bih.net.ba</a></p>
	<p><b>Mr Muhamed Muminovic</b> Coordinator for International co-operation Federal Hydrometeorological Service Sarajevo, Bardakcije 12 Email: <a href="mailto:meteobih@bih.net.ba">meteobih@bih.net.ba</a></p>
CROATIA	<p><b>Mr Terek Borijov</b> State Hydrometeorological Service Gric 3, Zagreb 10000-HR Email: <a href="mailto:terek@cirus.dhz.hr">terek@cirus.dhz.hr</a> Tel: +385 1 4851 520, Fax: +385 1 4851 520</p>
	<p><b>Ms Tatjana Vujnovic</b> State Hydrometeorological Service Gric 3, Zagreb 10000-HR Tel: +385 1 4851 520, Fax: +385 1 4851 520</p>
MONTENEGRO	<p><b>Mr Ljuban Tmusic</b> Head of Direction for Civil Protection and Humanitarian Aid Ilije Plamenca bb, 81000, Podgorica Email: <a href="mailto:ljuban.tmusic@mup.gov.me">ljuban.tmusic@mup.gov.me</a> Tel. +382 20 481 816, Fax. +382 20 481 833</p>
	<p><b>Mr Darko Novakovic</b> Head of the Sector of Hydrological Stations Network IV Proleterske 19, Podgorica Email: <a href="mailto:darko.novakovic@meteo.co.me">darko.novakovic@meteo.co.me</a> Tel. +382 20 655 183, Fax. +382 20 655 197</p>
Former Yugoslav Republic of MACEDONIA	<p><b>Mr Vasko Stojov</b> Head of Division of Surface Water Monitoring ul. Skupi 28, Skopje E-mail: <a href="mailto:vasko@meteo.gov.mk">vasko@meteo.gov.mk</a> Tel: +389 2 309 70 04 Fax: +389 2 30 97 118</p>

	<p><b>Mr Urim Vejseli</b>  Crisis Management Center  Head of Department for International Cooperation  Str. Dimce Mircev No.9, 1000 Skopje  Email: <a href="mailto:urim.vejseli@cuk.gov.mk">urim.vejseli@cuk.gov.mk</a>  Tel: +389 2 324 92 00  Fax: +389 2 324 920 13</p>
TURKEY	<p><b>Ms Ceren Deveci</b>  Geological Engineer  AFAD, Ankara  Email: <a href="mailto:ceren.deveci@afad.gov.tr">ceren.deveci@afad.gov.tr</a>  Tel: +90 258 23 23  Fax: +90 287 38 51</p>
<b>Resource persons</b>	
FRANCE	<p><b>Ms Jelena Batica</b>  UNSA/Euroaquae Consortium  Avenue Fremont, 25, Nice  Email: <a href="mailto:jelenabatica@gmail.com">jelenabatica@gmail.com</a>  Mobile : +33 64 85 27 665</p>
GERMANY	<p><b>Ms Natasa Manojlovic</b>  TUHH  Am Exerzierplatz, 2, Hamburg  Email: <a href="mailto:natasa.manojlovic@tuhh.de">natasa.manojlovic@tuhh.de</a>  Mobile : +49 179 11 46 866  Tel : +49 40 428 782 802  Fax : +49 40 428 783 090</p>
ITALY	<p><b>Ms Marco Massabò</b>  CIMA Research Foundation  Piazza Aprosio 3, Genoa  Email: <a href="mailto:marco.massabo@cimafoundation.org">marco.massabo@cimafoundation.org</a>  Mobile : +393487747016  Tel : +39019230271  Fax : +39019230271</p>
WMO Secretariat	<p><b>Mr Giacomo Teruggi</b>  Project Officer  Climate and Water Department  Email: <a href="mailto:gteruggi@wmo.int">gteruggi@wmo.int</a>  Tel: +41 22 730 83 54</p>
	<p><b>Mr Jan Moritz Kruger</b>  Junior Professional Officer  Climate and Water Department  Email: <a href="mailto:jkruger@wmo.int">jkruger@wmo.int</a>  Tel: +41 22 730 83 54</p>



Building Resilience to Disasters in  
Western Balkans and Turkey

## Training Workshop on

### Flood Loss Assessment for building resilience to disasters in Western Balkans and Turkey

Sarajevo, Bosnia-Herzegovina, 12-14 May 2014

Annex II

#### PROGRAMME

<b>09:00 - 17:00</b>	<b>Day 1, Mon 12 May</b>
09:00	<i>Registration</i>
<b>09:30 - 11:00</b>	<b><i>Session 1 Opening</i></b>
09:30 - 11:00	<i>Welcoming speeches:</i> <b>Mr Almir Bijedic, FHMI</b> <b>Mr Giacomo Teruggi, WMO</b>  <i>Group photo</i>
<b>11:00 - 11:30</b>	<b><i>Tea/Coffee Break</i></b>
<b>11:30 – 17:00</b>	<b><i>Session 2 Flood Loss Assessment in Integrated Flood Management</i></b>
11:30 - 12:00	<i>Introduction of workshop contents, objectives, scope and purpose, structure of sessions and expected outcomes</i> <b>WMO – Giacomo Teruggi and Moritz Krüger</b>
12:00 – 12:30	<i>Flood losses in the framework of Integrated Flood Management</i> <b>WMO – Giacomo Teruggi</b>
<b>12:30 - 13:30</b>	<b><i>Lunch Break</i></b>
13:30 - 14:00	<i>Flood Loss Assessment: concept and methods</i> <b>WMO – Moritz Krüger</b>
14:00 - 14:30	<i>The Australian loss assessment process</i> <b>WMO –Moritz Krüger</b>
14:30 – 15:00	<i>OECD reviews of Risk management policies in the Seine river Basin</i> <b>WMO – Giacomo Teruggi</b>
<b>15:00 - 15:30</b>	<b><i>Tea/Coffee Break</i></b>
15:30 – 17:00	<i>Country presentations on current methodologies of flood loss assessment</i>
18:00 – 20:00	<i>Social event: Walking tour in Old city (Baščaršija)</i>

<b>09:00 - 17:00</b>	<b>Day 2, Tue 13 May</b>
09:00 – 13:00	<b>Session 5 DesInventar - Disaster Information Management System</b>
9:00 - 10:30	<i>Hands-on presentation of the UNISDR DesInventar - Disaster Information Management System</i> <b>CIMA Research Foundation – Marco Massabò</b>
10:30 - 11:00	<b>Tea/Coffee Break</b>
11:00 - 12:30	<i>Informative session: recommendations of the EC Working group on flood loss assessment</i> <b>CIMA Research Foundation – Marco Massabò</b>
12:30 - 13:30	<b>Lunch Break</b>
13:30 – 17:00	<b>Session 3 the KALYPSO-FLORETO platform</b>
13:30 - 15:00	<i>Multi-scale damage assessment: methodology and lessons learnt utilizing the KALYPSO-FLORETO platform - experience from the EU projects SMARTeST, CORFU and PEARL</i> <b>TUHH – Natasa Manojlovic</b>
15:00 - 15:30	<b>Tea/Coffee Break</b>
15:30 – 16:00	<i>From theory to practice: Hands on session on the multi scale tool KALYPSO-FLORETO – Part 1 focusing on the property scale</i> <b>TUHH – Natasa Manojlovic</b>
16:00 – 16:30	<i>From theory to practice: Hands on session on the multi scale tool KALYPSO-FLORETO – Part 2 focusing on the medium/large scale</i> <b>TUHH – Natasa Manojlovic</b>
16:30 – 17:00	<i>Discussion, conclusion and outlook on the KALYPSO-FLORETO platform</i> <b>TUHH – Natasa Manojlovic</b>
19:00 – 22:00	<i>Social event: Buffet dinner with music in Federal Hydrometeorological Institute</i>

<b>09:00 - 13:00</b>	<b>Day 3, Wed 14 May</b>
09:00 – 11:00	<b>Session 4 Multi-scale resilience assessment</b>
09:00 - 10:30	<i>Multi-scale resilience assessment -methodology and lessons learnt and application of FRI index on urban areas - experience from EU project CORFU</i> <b>UNSA/Euroaquae Consortium – Jelena Batca</b>
10:30 – 11:00	<b>Tea/Coffee Break</b>
11:00 – 12:00	<i>From theory to practice: Hands on session on the methodology application</i> <b>UNSA/Euroaquae Consortium – Jelena Batca</b>
12:00 - 12:30	<i>Discussion on the methodology and way forward</i> <b>UNSA/Euroaquae Consortium – Jelena Batca</b>
12:30 – 13:00	<b>Session 6 Recommendations and closure</b>

12:30 – 13:00	<i>Wrap up and conclusion of the workshop</i> <b>WMO – Giacomo Teruggi</b>
---------------	---

12-14 May, Sarajevo, Bosnia-Herzegovina

  

Building Resilience to Disasters in Western Balkans and Turkey

TRAINING WORKSHOP ON FLOOD LOSS ASSESSMENT IN THE FRAMEWORK OF INTEGRATED FLOOD MANAGEMENT

una sava drina ...

1896. Drina, Vitegrad, during PMM  
About 10,400 m<sup>3</sup> - flow determination based on the hydraulic head in laboratory in Belgrade (original photo is in FFM)

10400 m<sup>3</sup>

l = 179,44m

h = 15,40m

1896. Drina, Vitegrad, reconstruction time PMM  
(original photo is in FFM)

1896

... vrbas bosna neretva

WORKSHOP HOSTED BY FEDERAL HYDROMETEOROLOGICAL INSTITUTE SARAJEVO