

23RD OSCE ECONOMIC AND DEVELOPMENT FORUM
 „Water governance in the OSCE area – increasing security and stability through co-operation, Prague, 14-16.09.2015

osce Organization for Security and Co-operation in Europe



Governing waters for effective disaster risk reduction Integrated Flood Risk Management

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UPRAVA REPUBLIKE SLOVENIJE ZA ZAŠČITO IN REŠEVANJE Hidrotehnik 1

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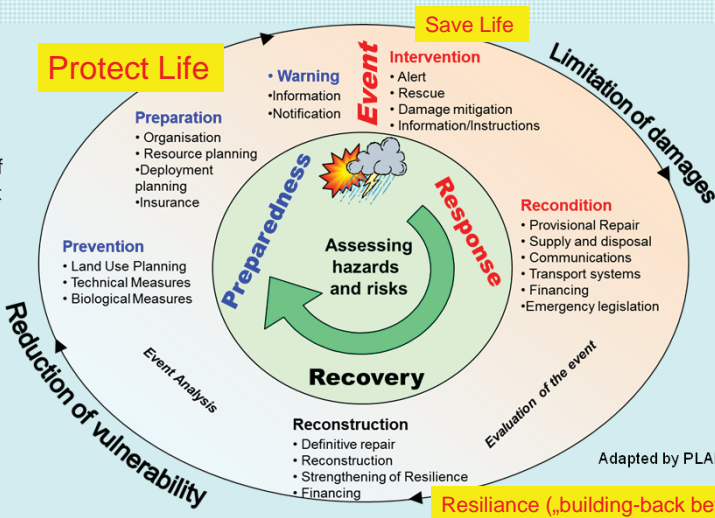
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WAYS FORWARD – Implementation of Integral Risk Management

Use (on coordinate way) all possibilities to influence risks! From “words” to “actions”!

By investing in prevention and preparedness we achieve **several goals at once** - not only the greater security of the population but this including job opportunities, enhancing their competitive advantages, professional growth of local experts ...

Decision makers has „to believe“ in this and find and defend the funds.



Adapted by PLANALP

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Flood damages in Slovenia

- direct damages after larger floods in the last 25 years:
 - 1990 → cca 580 mio EUR,
 - 1998 → cca 180 mio EUR,
 - 2007 → cca 187 mio EUR,
 - 2009 → cca 25 mio EUR,
 - 2010 → cca 188 mio EUR and
 - 2012 → cca 311 mio EUR.
- last 25 years → cca 1500 mio EUR (cca 1800 mio EUR);
- last 10 years → cca 730 mio EUR (cca 900 mio EUR);
- only direct damages included!
- quick estimation – **100 do 150 mio EUR per year!**

from 2007 to 2014
 15 casualties
 we can not replace

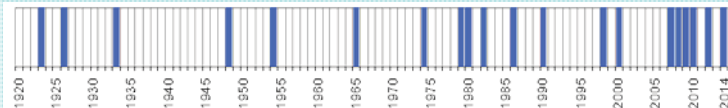


Source: MKO, 2014

- **SLEET & FLOODS in 2014:**
 - February 2014: Sleet → cca 214 mio EUR
 - damage by sleet and floods (Sep, Oct, Nov) was estimated at **657** million EUR
 - intervention costs were additional 45.5 million EUR
 - Slovenia received 18.3 million EUR from the European Union Solidarity Fund

DO WE FACE WITH (CLIMATE) CHANGE?

8 major
 flood in the
 period 1920
 -1979
 (60 let)



13 big floods
 in the last 35
 years, 2014,
 3-times



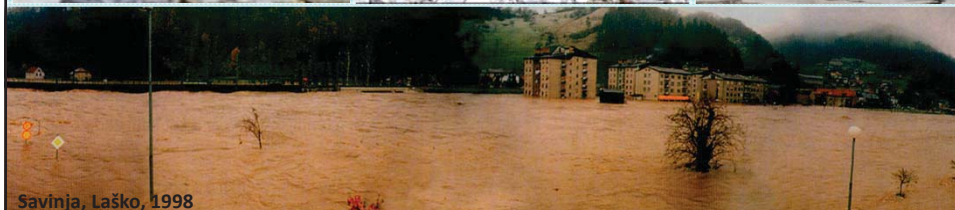
Drava, Duplek, 2012



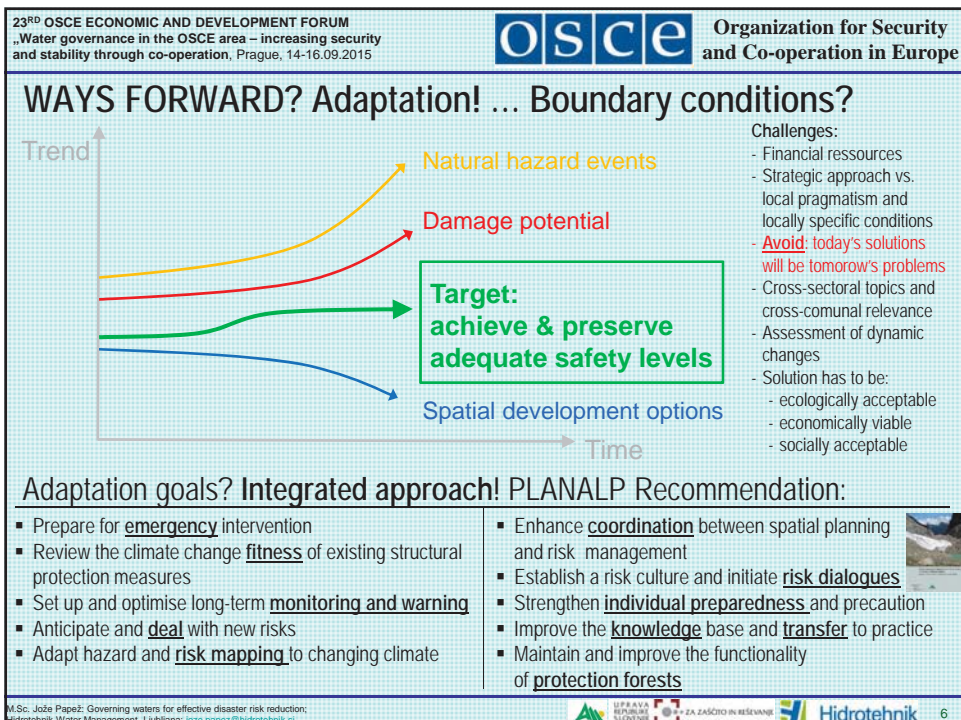
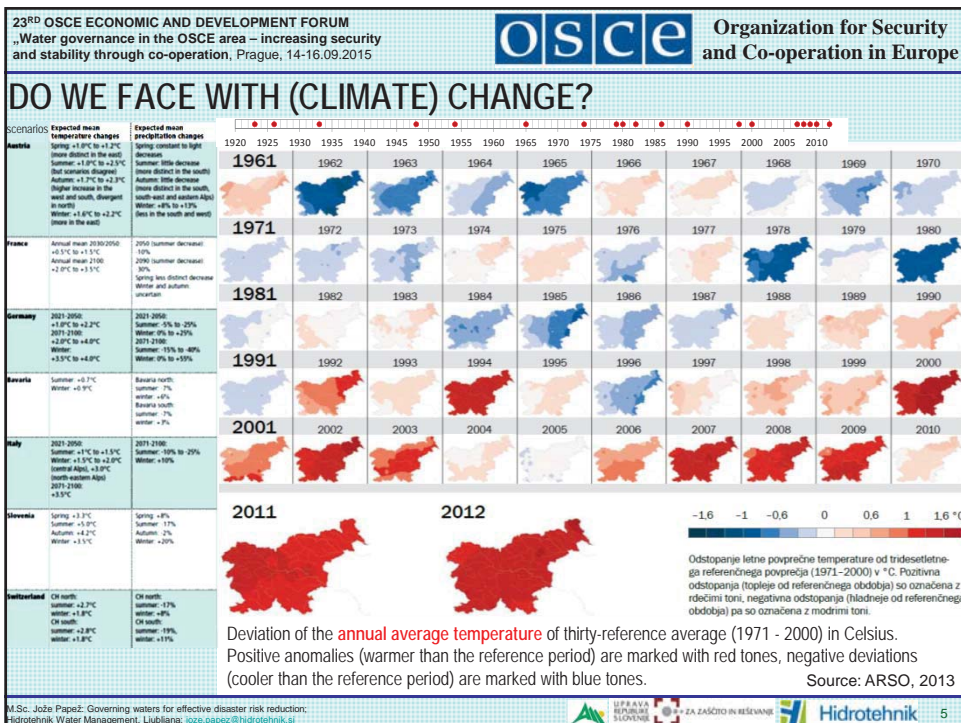
Sora, Železniki, 2007



Savinja, Celje, 1990



Savinja, Laško, 1998

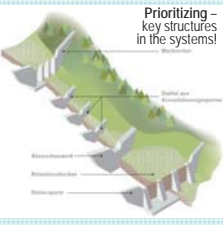


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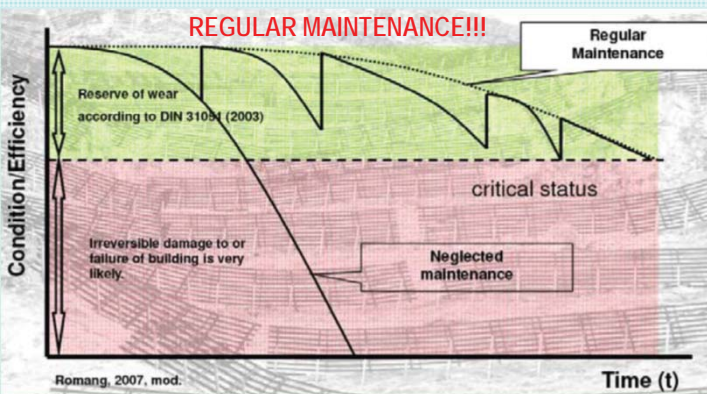
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WAYS FORWARD – CONSISTENT LIFE CYCLE MANAGEMENT

Prioritizing – key structures in the systems!



Damaged structures and structures that are not maintained regularly do not protect but offer a **false sense of security**.



REGULAR MAINTENANCE!!!

Reserve of wear according to DIN 31051 (2003)

critical status

Irreversible damage to or failure of building is very likely

Neglected maintenance

Regular Maintenance

Romang, 2007, mod.

Time (t)

PLANALP assessment (2014): „At present approximately **2 Mio. Structural protection facilities** related to alpine natural hazards (torrent, avalanche, rockfall, landslide) have been counted in the alpine parts of Austria, Germany, Italy, Liechtenstein, Slovenia and Switzerland, **representing a replacement value of about 50 billion Euros** (this figures are based on expert opinion ...“

(Source: Life cycle management brochure, PLANALP, 2014: „Persistence of Alpine natural hazard protection“)

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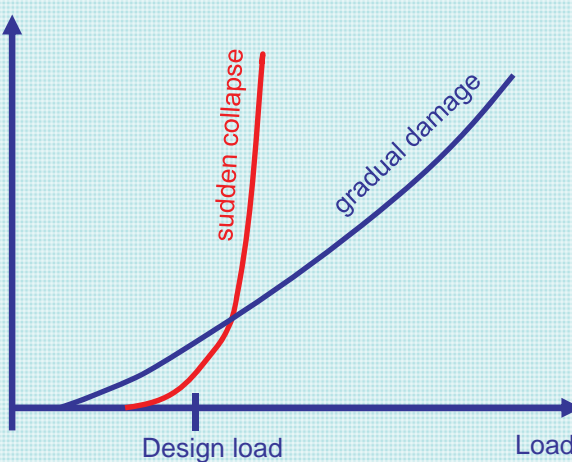
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WAYS FORWARD – Concepts **insensitive to excessive load** & ... predict (redirect) impacts of extreme event on areas with less damage potential

RESIDUAL RISK!

Considering the possible increasing frequency and intensity of events, it is vital that existing and planned protective measures be reviewed in terms of the conceivable overloading of protective structures.

(„**think unthinkable**“?)



Damage

sudden collapse

gradual damage

Design load

Load

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The Action Plan 2014 of intervention activities due to flooding

Government of Slovenia in 2014 adopted The Action Plan of intervention activities due to flooding

SECTION 1 - **SHORT-TERM ACTIVITIES** (deadline: 6 months)

A set of critical intervention construction work („maintenance“) on the Slovenian rivers and water infrastructure, which must be carried out within 6 months with a view to prevent further damage in case of recurrence of floods.

The estimated value of - **11.9 million €** (0.84 mio € in 2014 and 11.1 mio € in 2015).

SECTION 2 - **SHORT-TERM ACTIVITIES**

Program public utility service of water management: this is the maintenance of watercourses, water infrastructure and water and coastal land for the year 2015.

The estimated needed value of - **25.0 million €** ... (increasing from 7,5 mio/year!)



Important Explanation: „Lot 1+2 will not significantly contribute to the reduction of flood risk in Slovenia – BUT in the case of recurrence of flood events of similar intensity and extent, will prevent further damage.“

implementation monitored by the public via the Internet.
 185 location with intervention measures.
 WORKS 100% REALIZED.

Attachment Infos (Feature ID: 60)

attachments: 3

IMG_20141124_074720.jpg
 ID: 12
 Content Type: image/jpeg
 Size: 172631

IMG_20141124_094842.jpg
 ID: 13
 Content Type: image/jpeg
 Size: 181034

IMG_20141124_094917.jpg
 ID: 14
 Content Type: image/jpeg
 Size: 179057

Photos before, during & after ...

Attributes

Šifra: 3815, n.c.m.c.

Intervencijska dela ARSO

Opisnik: LJ

Intervencija: Očistnje prod. zadrževalnika

Vodotok: Ščitca (Istria) (Istria)

Občina: Starja

Ubrav: Očistnje prodnega zadrževalnika

Tipa dela: Očistnje (pri pravljenju sprostnosti predvalov)

Število stavil v pasu 50 m: 1

Število stavil v pasu 100 m: 105

Začetek del: 15.11.2014

Skupna dolžina: 18.44 m

The Action Plan 2014 of intervention activities due to flooding

SECTION 3 - LONG-TERM ACTIVITIES

Long-term measures in the field of flood risk and water management in general - a set of systemic, organizational, regulatory and other measures that are key to the field of water management with a focus on long-term water management arrangements. Some of them:

- The reorganization of the areas of water management in the Republic of Slovenia with the aim for the more active implementation of construction and non-construction flood protection measures (from September 2015 Slovenia has established a new body within the ministry: **Directorate for Water**)
- The increase in funds regular maintenance of watercourses, water infrastructure and water and waterside land of approximately 6-8 million per year to at least 25 million per year
- Redefinition of the Water Fund in a more appropriate format that will be more suitable for efficient (co-) funding for flood mitigation
- ...

SECTION 4 – intervention for protection traffic infrastructure

intervention maintenance work on the road and other transport infrastructure, which was damaged in the framework of flood

Slovenian „eWater Portal“ (2015)

The Ministry in cooperation with the Environmental Agency has established eVode (<http://evode.arso.gov.si/>) - public and free of charge information and communication platform in the field of water management (an important non-structural preventive measure - Information and awareness), which includes inter alia (also link to neighboring countries data):

REPUBLICA SLOVENIJA
MINISTRSTVO ZA OKOLJE IN PROSTOR
eVode

Trenutni podatki o celinskih vodah

SLOVENIJA

Trenutni podatki samodajnih hidroloških postaj površinskih voda (pretok, vodostaj, temperatura):

Trenutni podatki samodajnih hidroloških postaj podzemnih voda (nivo, temperatura):

Trenutni podatki o pretokih na HE na reki Dravi:

SOSEDNJE DRŽAVE

eVode

- Domov
- Arhiv Novic
- Dogodki
- Atlas voda
- GIS storitve
- Trenutni podatki o celinskih vodah
- Arhiv podatkov o celinskih vodah
- Trenutni podatki o morju
- LJDAAR
- Strokovne podlage in drugi dokumenti
- Predpisi
- Povezave

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Slovenian „eWater Portal“ – GIS based services

Information & data should be accessible to the public
 = already one of the main PREVENTION MEASURE

eVode

Home
 News Archive
 Events
 Water Atlas
 GIS services
 Current information on the Water
 Archive data on Water
LIDAR (e.g. free for whole Slovenia)
 Expert bases and other documents
 Regulations
 Likns

Atlas voda:
 Atlas okolja:
 Pregledovalnik NUV:
 Prenos prostorskih podatkov:
 Kakovost površinskih voda (GIS pregledovalnik):
 Kakovost podzemnih voda (GIS pregledovalnik):

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Slovenian „eWater Portal“ - Water Management Atlas

AGENCIJA RS ZA OKOLJE
ATLAS VODA

European Flood Directive 2007/60/EC

1. step: Preliminary Flood Risk Assessment (PFRA) for potential risk of flooding

Identified Areas with Potential Significant Flood Risk (APsFR)

- 61 APsFRs („areas“ approach): (130000 inhabitants, 90000 working places, approx. 50% of all potential flood damages)
- 600 mio EUR = 4-5 years of damages

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Slovenian „eWater Portal“ - Water Management Atlas

1.4. OKOLJE
 S OKOLJA http://gis.arso.gov.si/atlasokolja/profile.aspx?id=Atlas_Okolja_AXL@Arso

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Slovenian „eWater Portal“ - Water Management Atlas

AGENCIJA RS ZA OKOLJE
 ATLAS VODA

European Flood Directive 2007/60/EC

2. step: FHM and FRM
 The Flood Hazard Maps
 The Flood Risk Maps

HQ10 for floods with a high probability
 HQ100 for floods with a medium probability and
 HQ500 for floods with a low probability

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Slovenian „eWater Portal“ - Water Management Atlas

ACENCIJA RS ZA OKOLJE
ATLAS VODA

European Floods Directive 2007/60/EC

2. step: FHM and FRM
 The Flood Hazard Maps
 The Flood Risk Maps

Decree on conditions and limitations for constructions and activities on flood risk areas (2008) = mandatory effect!

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Flood Risk Management Plans in Slovenia Measures in all risk phases!

3. step: Flood Risk Management Plans (FRMP) including objectives and appropriate measures:

constant flow, exchange of data & information, dialogue (listening, formal & informal), personal approach, cooperation, coordination & learning from each other, Synergy effect!

Prevention

- Land Use Planning
- Technical Measures
- Biological Measures

Preparedness

- Warning
- Information
- Notification

Event

- Alert
- Rescue
- Damage mitigation
- Information/Instructions

Response

- Provisional Repair
- Supply and disposal
- Communications
- Transport systems
- Financing
- Emergency legislation

Recovery

- Reconstruction
- Definitive repair
- Reconstruction
- Strengthening of Resilience
- Financing

Limitation of damages

Reduction of vulnerability

Table of monitoring the elements

Integration in...
 ...MP – there are in...
 ... (45 Mio EUR)
 ... phase (25 Mio EUR)

Source: L. Stravs, MKO, 2014

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Implementation of European Flood Directive 2007/60/EC is also great opportunity for enhancing communication and cooperation among the institutions dealing with floods prevention, preparedness and response:

e.g. the national **authorities responsible for floods prevention** in the countries and the **civil protection authorities**, if the two are different institutions.

... what is in focus also in actual IPA project for prevention, preparedness and response against floods in Western Balkans and Turkey (**IPA FLOODS 2015 - 2016**) which aims to increase the capabilities of the participating beneficiary countries in ensuring an efficient flood risk management on a national, regional and EU levels.

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UPRAVA REPUBLIKE SLOVENIJE ZA ZAŠČITO IN REŠEVANJE Hidrotehnik 20

WAYS FORWARD

The appropriate legal framework and arrangements are mainly already in place and so ... our activities should be focused in further support of developing **efficient national systems** of protection against disasters, strengthening of **bilateral** and **regional** cooperation; e.g. DPPI SEE initiative, integration of countries into the EU Civil Protection Mechanism, implementation of the EU floods directive ...

= co-operation = ways forward to security and stability!
(OSCE international cohesive role and active support on local level!)

In order to ensure the aforementioned goals there is a need for: practical activities, **financial as well as personnel resources** on respective country levels as well as the **commitment for common cooperation and assistance on the regional level** and last but not least the application of EU projects in order to support implementation of EU legislation within the national legal framework of respective countries.

THANK YOU FOR YOUR ATTENTION

Additional informations:
**Uprava Republike Slovenije
za zaščito in reševanje
(Administration of the Republic
of Slovenia for Civil Protection
and Disaster Relief)**

www.sos112.si

Additional informations:
**Hidrotehnika,
Joze.Papez@hidrotehnik.si**

www.hidrotehnik.si



Herewith I would like to invite you to the international conference:

“Protection Systems against Natural Hazards - Durability through Systems Engineering?”

of the Natural Hazards Platform (PLANALP) of the Alpine Convention

13th/14th October 2015, Literaturhaus Munich (Salvatorplatz 1).

Info: http://www.alpconv.org/en/organization/groups/WGHazards/Documents/PLANALP_LCM_brochure_final.pdf

Sharing best/good practise (french effective visualizof ation water governance) : <https://www.youtube.com/watch?v=IzrwF4XKUBk>