



# Bosnia and Herzegovina Floods in May 2014

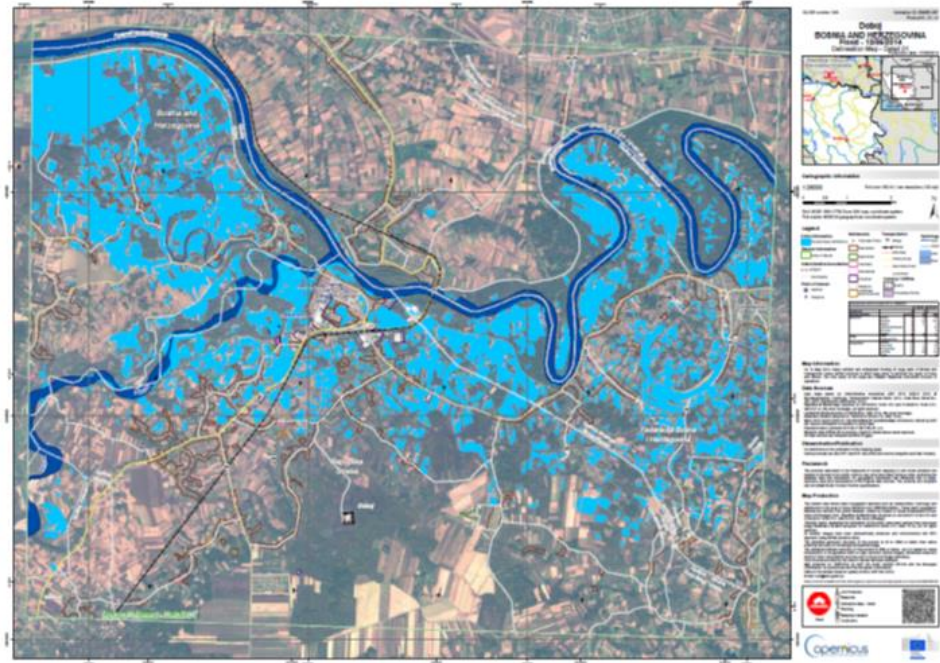
## **Recovery Needs Assessment**





# The methodology

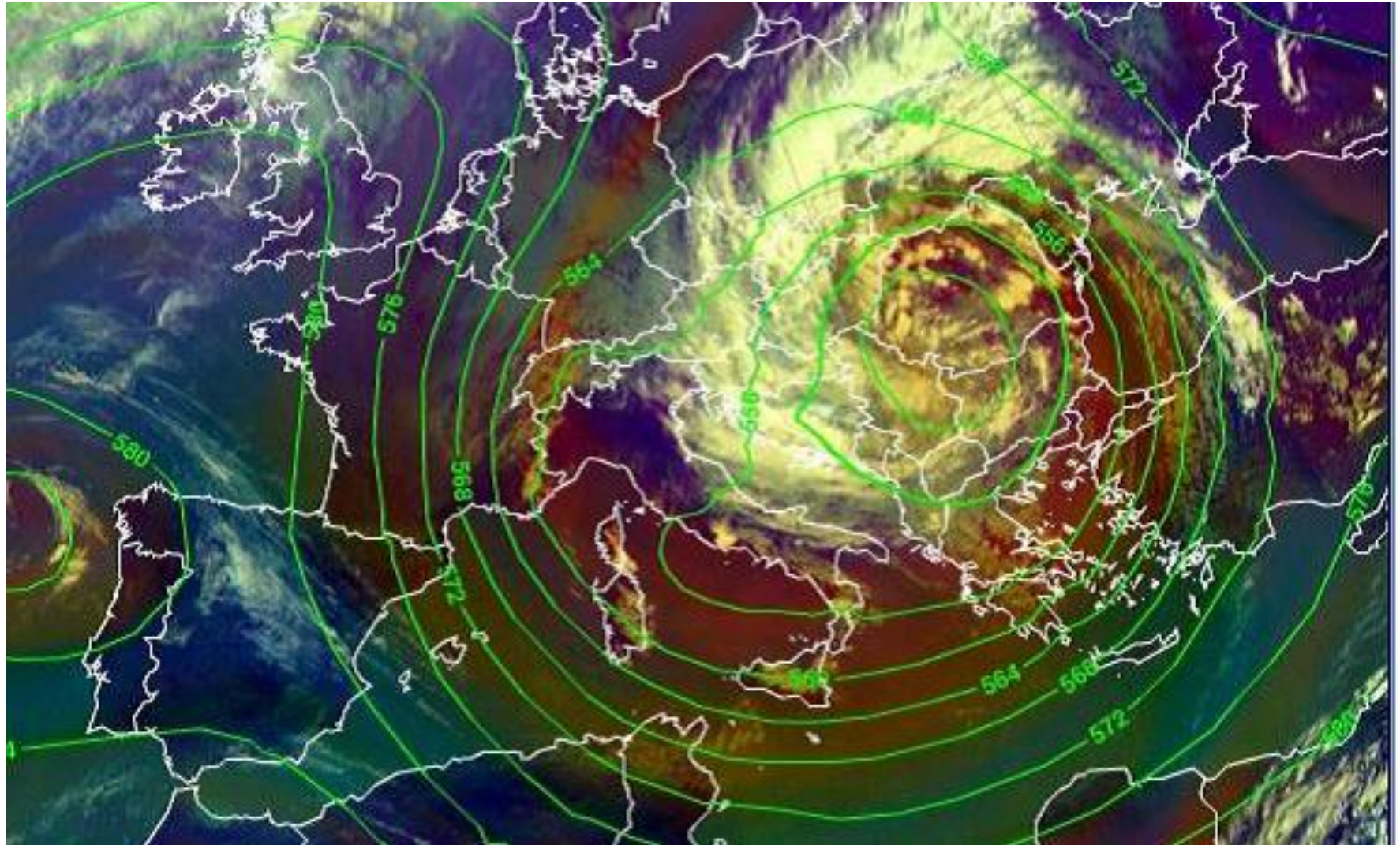
- Based on an internationally recognized methodology used in large disasters worldwide;
- Distinguish damages, losses and needs
- Provides a sound basis for recovery strategic planning;
  - ✓ To prioritize;
  - ✓ To sequence;
  - ✓ To mobilize resources;
  - ✓ To respond to the needs of the affected population coming out of the emergency response.





# What was the event?

Satellite image of the storm covering the Balkans (15 May 2014)

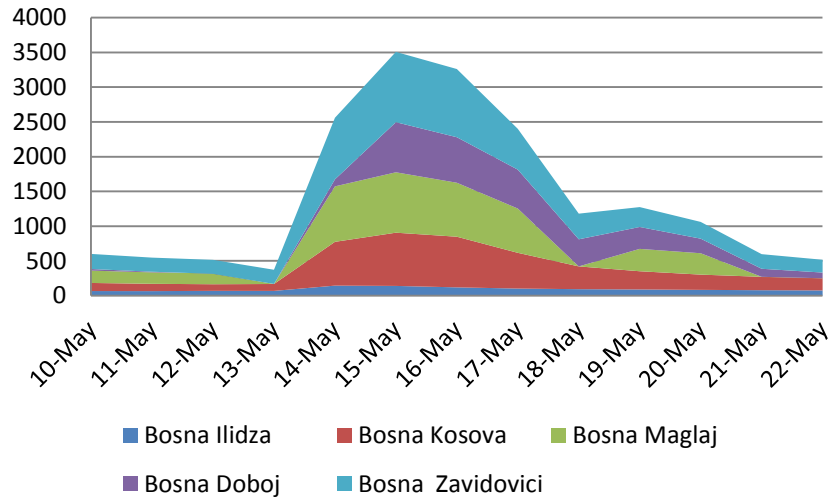


Altitudinal flow at 500 hpa on 15 May at 00 o'clock UTC time (for us +2 hours) and satellite images

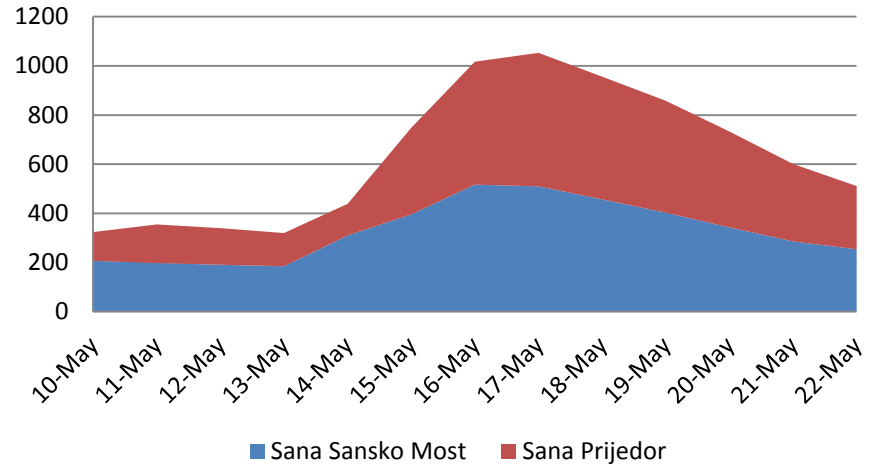
Source: EUMETSAT RGB abundance, the associated cloudiness and atmospheric physics

# Evolution of water level

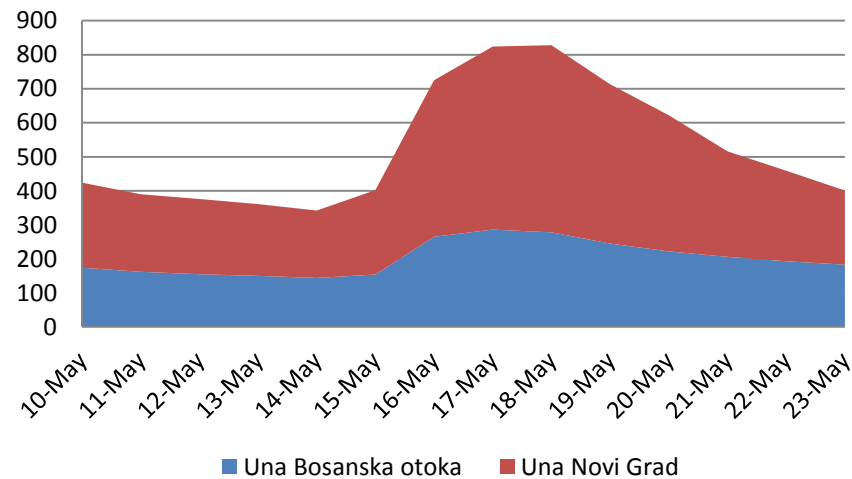
## River Bosna



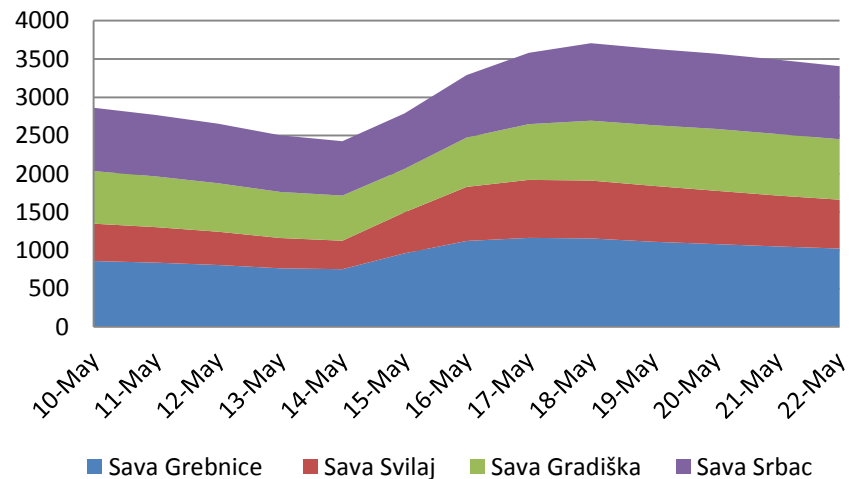
## River Sana



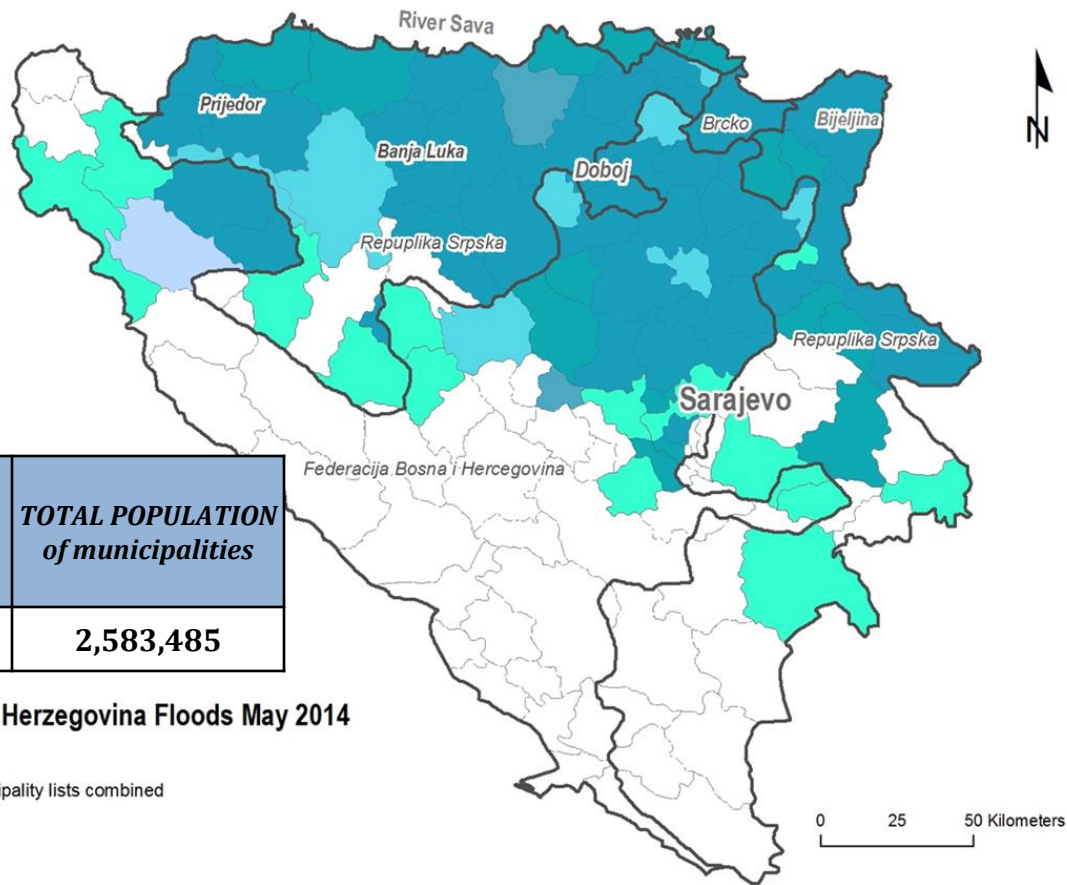
## River Una



## River Sava



# Maximum number of municipalities affected



	<b>TOTAL DISPLACED PEOPLE</b>	<b>TOTAL POPULATION of municipalities</b>
<b>TOTAL</b>	<b>89,981</b>	<b>2,583,485</b>

**Bosnia Herzegovina Floods May 2014**

All municipality lists combined

Municipalities that declared state of emergency (darker blue colour)

Municipalities recorded by UN as of 5 June 2014 (light blue colour)

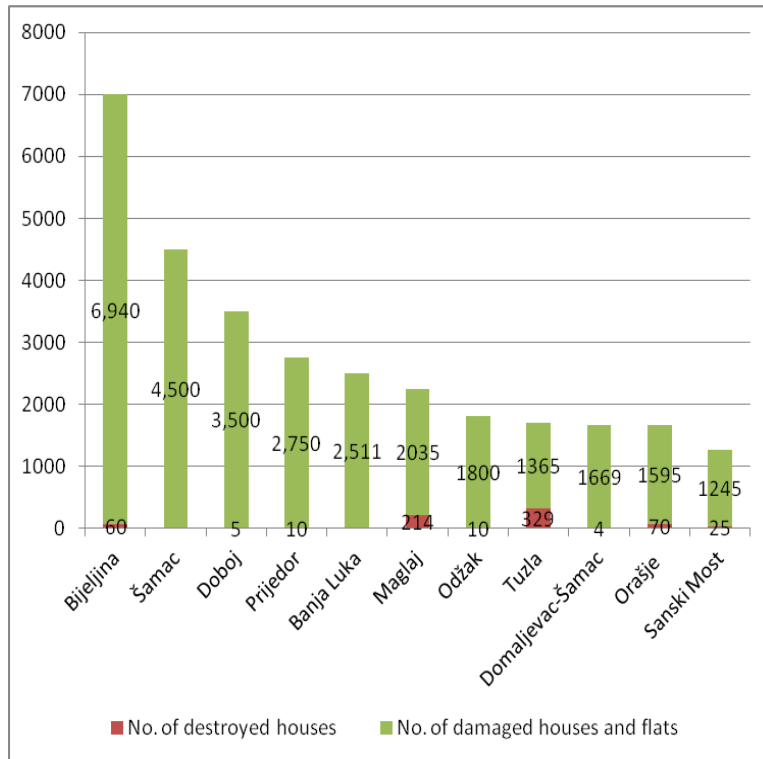
Municipalities communicated to the European Union Delegation as of 2 June (previous ones plus light green colour ones)



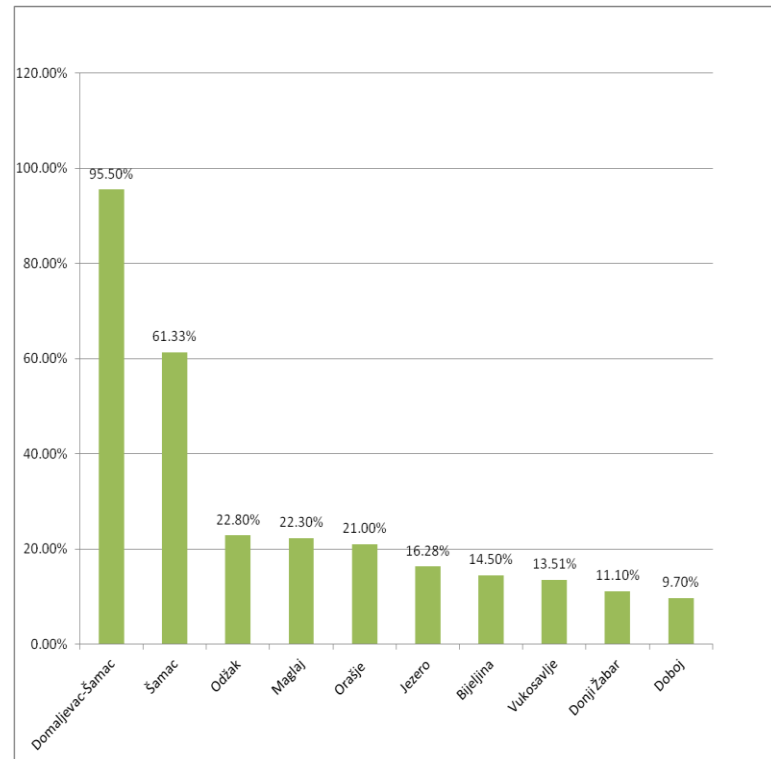


# Absolute and relative impact on housing

Municipalities with more than 1,000 houses damaged or destroyed



Municipalities that suffered damage to more than 9% of their houses





# Summary of disaster effects

Sectors	Damages	Losses	BiH TOTAL	Public	Private
Agriculture, livestock, fisheries, and forestry,	204.090.000	162.070.000	366.160.000	10.640.000	355.520.000
Education	15.720.000	1.300.000	17.020.000	17.020.000	-
Energy, electricity	97.140.000	102.280.000	199.420.000	198.190.000	1.230.000
Flood protection	96.300.000	-	96.300.000	96.300.000	-
Gender	-	16.550.000	16.550.000	-	16.550.000
Health	11.330.000	92.180.000	103.510.000	103.510.000	-
Housing and household items	830.800.000	55.600.000	886.400.000	18.200.000	868.200.000
Livelihoods and employment in relevant productive sectors and commerce	677.800.000	873.260.000	1.551.060.000	-	1.551.060.000
Public Facilities and services (municipal and higher)	35.920.000	17.700.000	53.620.000	53.620.000	-
Transport and communications,	511.960.000	168.080.000	680.040.000	511.960.000	168.080.000
Water and sanitation	10.640.000	4.050.000	14.690.000	14.690.000	-
<b>TOTAL</b>	<b>2.491.700.000</b>	<b>1.493.070.000</b>	<b>3.984.770.000</b>	<b>1.024.130.000</b>	<b>2.960.640.000</b>

# Who was more affected?

In Euro	
Damage	1.274,0 €
Losses	763,4 €

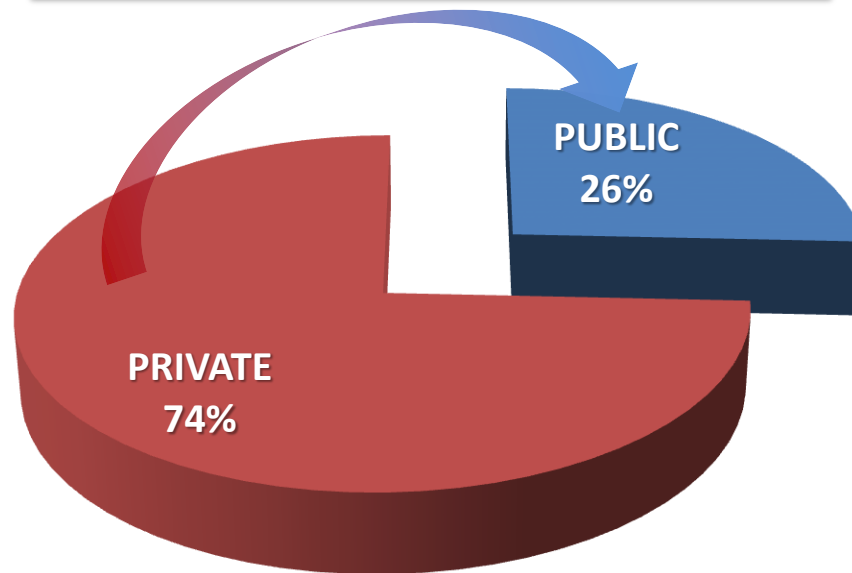
Citizens, businesses,  
households;

The more vulnerable;

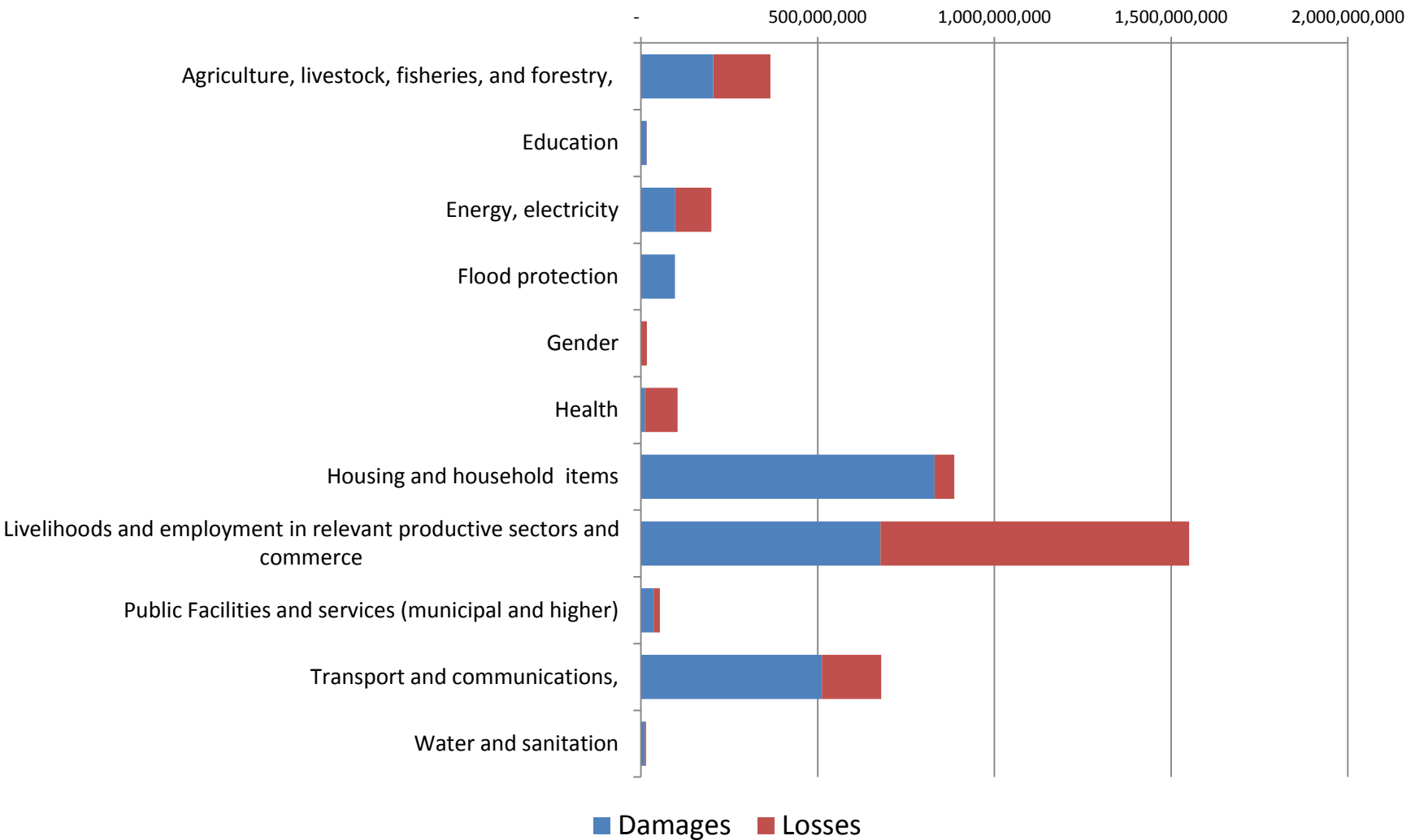
With the less capacity to  
recuperate on their own;

Requiring support from  
governments;

Where the international  
community may cooperate.



# Unequal distribution of effects by sector



# Damages led to losses and losses lead to needs

Destruction of property and physical damages

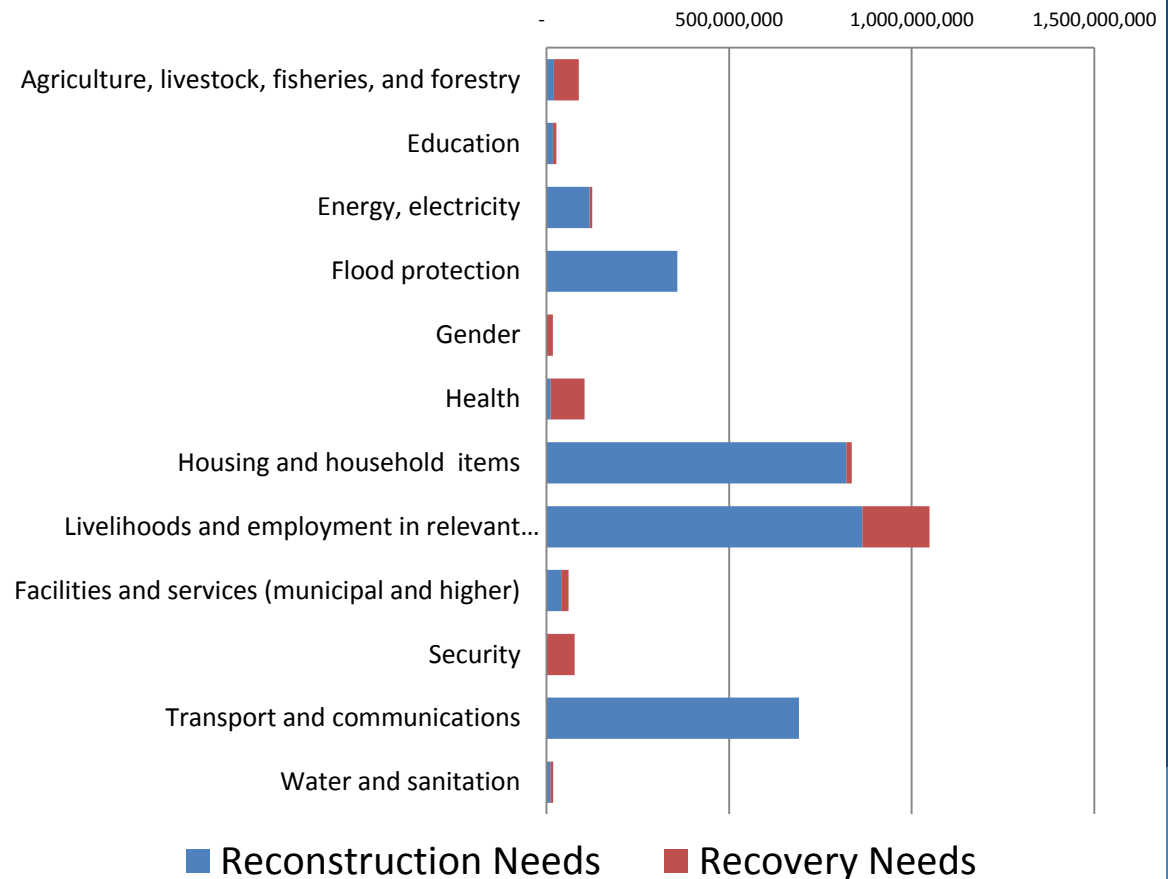
Dynamic effects in terms of:

- Losses
- Reduced access to services and goods
- Increased risk and vulnerability

Require changes that increase resilience

Require direct actions to support vulnerable population

## Recovery and Reconstruction Needs by sector





# Sectors analyzed

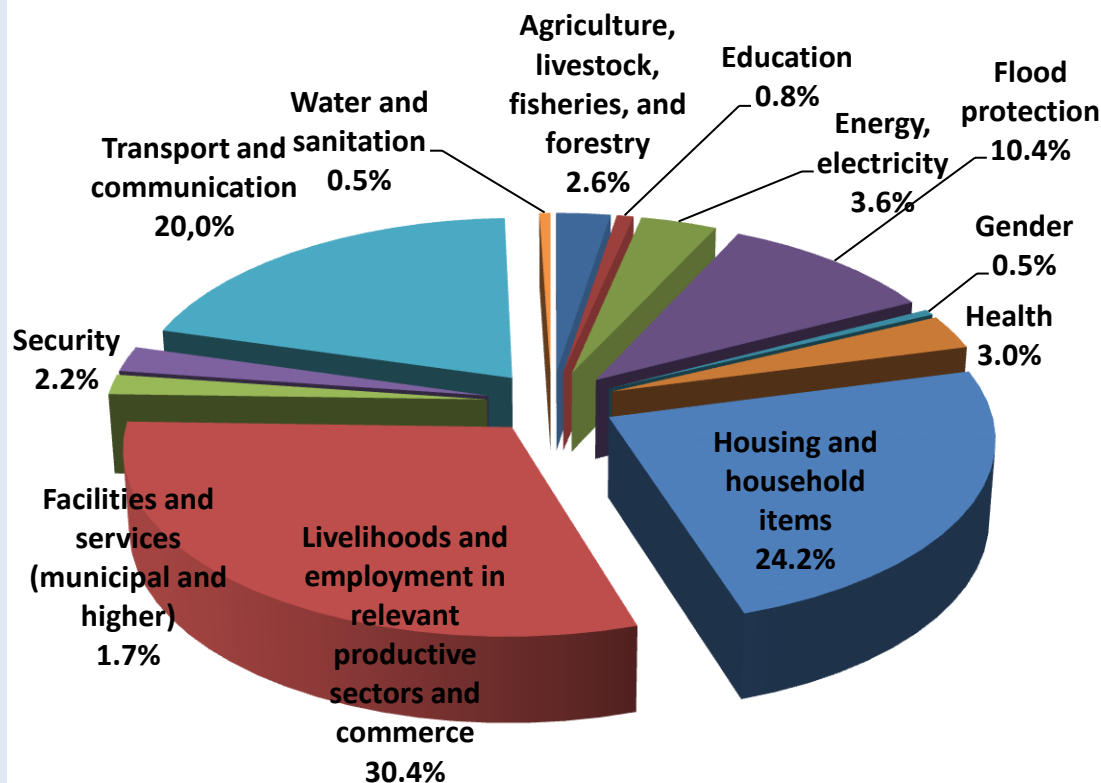
## *Recovery priorities:*

- Agricultural production and animal stock
- Livelihoods and employment
- Housing and shelter

## *Reconstruction priorities:*

- Roads and lifelines more resilient
- Integrated watershed management
- Regional flood protection and control

Sector / thematic distribution of needs



# Infrastructure



- Transport
- Energy (Electricity)
- Water and sanitation
- Flood protection

*All tables expressed in million BAM*

# Transport

	Damages	Losses	Total
<b>TOTAL</b>	<b>512.0</b>	<b>168.1</b>	<b>680.1</b>

	Reconstruction Needs	Recovery Needs	Total Needs
<b>TOTAL</b>	<b>691.1</b>	<b>Repairs to reopen done</b>	<b>691.1</b>

## Top Priorities

1. Remove debris, landslip material etc. from the roads and railways.
2. Repair minor damage (main, regional, then local roads).
3. Undertake surveys on all landslip areas affecting transport assets
4. Survey and analyse the damage to the tunnels
5. Survey and analyse the damage to the bridges and culverts
6. Undertake design of the proposed new/replacement rail or highway and the associated landslides

## Key Recommendations

1. Raise and widen embankments to give them more mass to resist flows.
2. Lessen the gradient of the embankments to make them less prone to damage
3. Construct embankments using geogrid reinforcement and use rocks to protect toes and sides
4. Make use of balancing culverts where the embankments cross the flood plains
5. Install wider culverts where streams pass through the embankments

# Flood Protection

	Damages	Losses	Total
<b>TOTAL</b>	<b>96.3</b>	<b>Losses reflected in other sectors</b>	<b>96.3</b>

	Reconstruction Needs
<b>TOTAL</b>	<b>358.8</b>

## Top Priorities for Recovery & Reconstruction

1. Dyke and dam reconstruction
2. Reinstatement of river and canal profiles and repair of erosion protection
3. Torrent open profiles and sediment management
4. Reconstruct torrent banks and dams
5. Stabilize landslides
6. Repair pumps
7. Reconstruct/repair gauging stations

## Key Medium-Long Term Recommendations

1. Survey of dykes
2. River and canal survey
3. Create landslide database
4. Measures for improved planning (hydraulic/torrent modeling; Sava Flood Risk Management Plan)



# Sectors with social implications

- Housing
- Agriculture
- Livelihoods
- Small and micro-enterprises
- Public facilities



# Housing and Household Items

	Damages	Losses	Total
<b>TOTAL</b>	<b>830.8</b>	<b>55.6</b>	<b>886.4</b>

	Reconstruction Needs	Recovery Needs	Total Needs
<b>TOTAL</b>	<b>820.9</b>	<b>15.1</b>	<b>836.0</b>

## Top Priorities

1. Identification of hazardous buildings and structures which 1) risk collapsing; and 2) are in areas at risk of landslides
2. Detailed identification and consolidation of information on all damages and related losses to the housing, prepared by the BiH authorities
3. Establishment of a state managed coordination mechanism to assure that donations are allocated to the priority areas
4. Development of specific subprojects for the repair of houses
5. Approval by donors and/or the State and/or the Entities
6. Implementation of subprojects
7. Monitoring at State, Entity and/or Municipal levels

*The figure is inclusive of both damages to the dwelling itself but also the damage or destruction to household items in the dwelling.  
Cost of houses to be rebuilt to the same standard as housing provided to war displaced population*

# Agriculture

	Damages	Losses	Total
<b>TOTAL</b>	<b>204.1</b>	<b>162.1</b>	<b>366.2</b>

	Reconstruction Needs	Recovery Needs	Total Needs
<b>TOTAL</b>	<b>20.7</b>	<b>68.2</b>	<b>88.9</b>

## Top Priorities

1. Address urgent needs to maintain and restore productivity and income
2. Transition from relief to development interventions
3. Interventions focused on disaster risk reduction and climate change adaptation
4. Mainstream build-back-better in the medium-long term
5. Direct support with in-kind
6. Address indebtedness for farmers and agrobusiness
7. Subsidize loans for low-interest rates for medium-term development

# Livelihoods and Employment

	Damages	Losses	Total
<b>TOTAL</b>	<b>677,8</b>	<b>873,3</b>	<b>1.551,1</b>

	Reconstruction Needs	Recovery Needs	Total Needs
<b>TOTAL</b>	<b>865,0</b>	<b>183,6</b>	<b>1.048,6</b>

## Top Priorities

1. Short cycle skills training and kits for recovery and construction-related skills
2. Rapid launching of a finance programme for enterprises
3. Temporary employment creation
4. Enhance access to innovative employment services
5. Enhance the capacity (software and hardware) of public and private local business service providers as well as financial service providers
6. Capacity building of local institutions and entrepreneurs including a Training of Trainers on “Multi-hazard Business Continuity Management

*The losses in this sector will likely be offset and partially absorbed through the investment-intensive recovery process.*



# Facilities and Services (municipal and higher)

	Damages	Losses	Total
<b>TOTAL</b>	<b>36.0</b>	<b>17.7</b>	<b>53.6</b>

## Top Priorities

1. substantial reconstruction of physical Infrastructure and the full or partial replacement of assets,
2. Reestablishment of full capacities of the administration to provide basic public service,
3. Reconstruction of welfare centers,
4. Training of municipal staff on basic Disaster risk Management

	Reconstruction Needs	Recovery Needs	Total Needs
<b>TOTAL</b>	<b>40.4</b>	<b>19.9</b>	<b>60.3</b>

*Cultural, artistic and monuments not included here were preliminary assessed by UNESCO to an amount equivalent to no less that 4 million. Full assessments are required*

# Disaster Risk Management

## Key priorities and recommendations

### **Key recommendations:**

1. Avoid the recreation of risk
2. Identify systemic weaknesses
3. Ensure infrastructure, businesses and services are resilient to potential future natural hazards
4. Mainstream DRR in all development projects and sectors

### **Top Priorities:**

1. Participatory approach to strengthen disaster risk reduction
2. Improving risk identification and assessment
3. Prioritization of Risk mitigation (structural and non-structural measures)
4. Strengthen emergency preparedness and response (Early Warning Systems)
5. Developing risk financing strategies

# Gender Equity

## Key findings and recommendations

	Damages	Losses	Total
<b>TOTAL</b>	Damage to women's partially assets included in housing	16,6	16,6

	Reconstruction Needs	Recovery Needs	Total Needs
<b>TOTAL</b>		17.6	17.6

### Top Priorities (financial)

1. Compensation for women's unpaid labour
2. Cash compensation for home garden losses
3. Grant fund to re-start women's small business
4. Housing Land & Property rights campaign
5. Expanded SOS telephone help lines
6. Gender & disasters training for police , civil defense, women's CSO, municipal governments

### Key Recommendations

1. Equal and meaningful participation of women from all groups in all recovery decision-making forums;
2. Equitable and transparent land, housing and property restitution for men and women, with well-publicized criteria and procedures;
3. Default joint titling/ joint registration of recovery-assisted land and housing for couples;
4. Replacement costs of household goods and furnishings directed to women as these are linked to women's work and home-based income (Check: recovery cash to men = recovery cash to women);
5. Gender-sensitive disaster preparedness, response and recovery planning.

# Security: Case Study 2: Kovacica Village

## Municipality Tuzla , Canton Tuzla



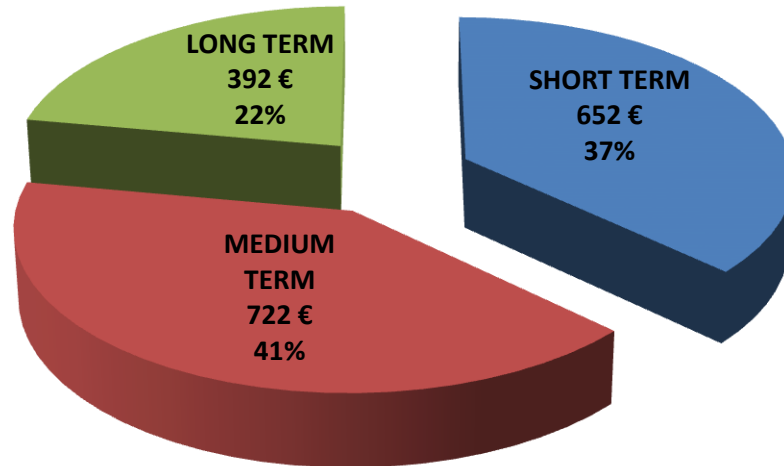
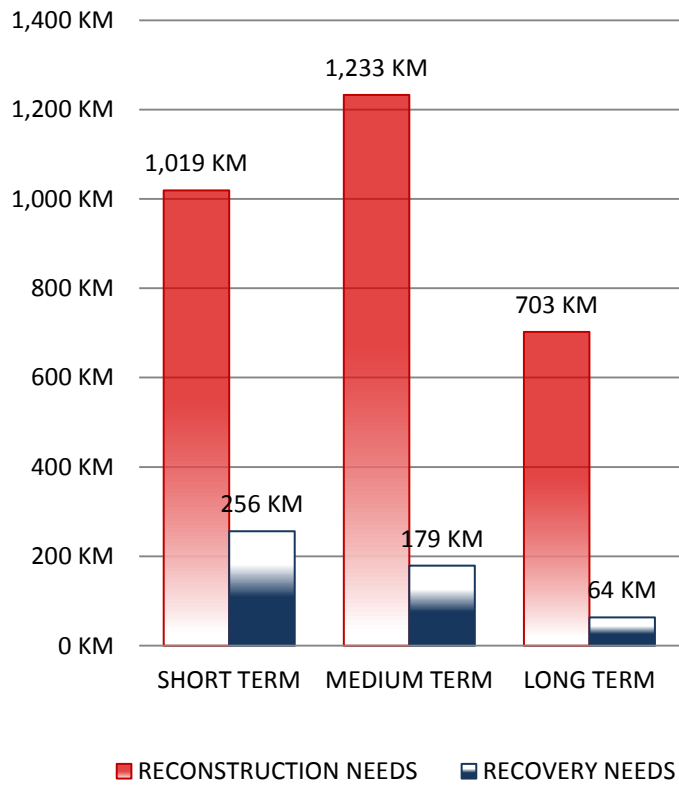
In the village of Kovacica on the property Stojan Stojanovic, four landslides appeared right next to the house and garden that have disabled the local water supply used by other households in the village. The landslide has shifted mines from the known minefield. According to Mr. Stojan Stojanovic there are 4 mines visible on the location of landslides. The presence of mines is preventing the reconstruction of the water supply and the recovery of the landslides.

*BHMAC RO Tuzla survey teams marked the area.*

	Recovery Needs	Total Needs
<b>TOTAL</b>	<b>77,7</b>	<b>77,7</b>

# Recovery Needs summary

## Recovery and Reconstruction Needs sequencing



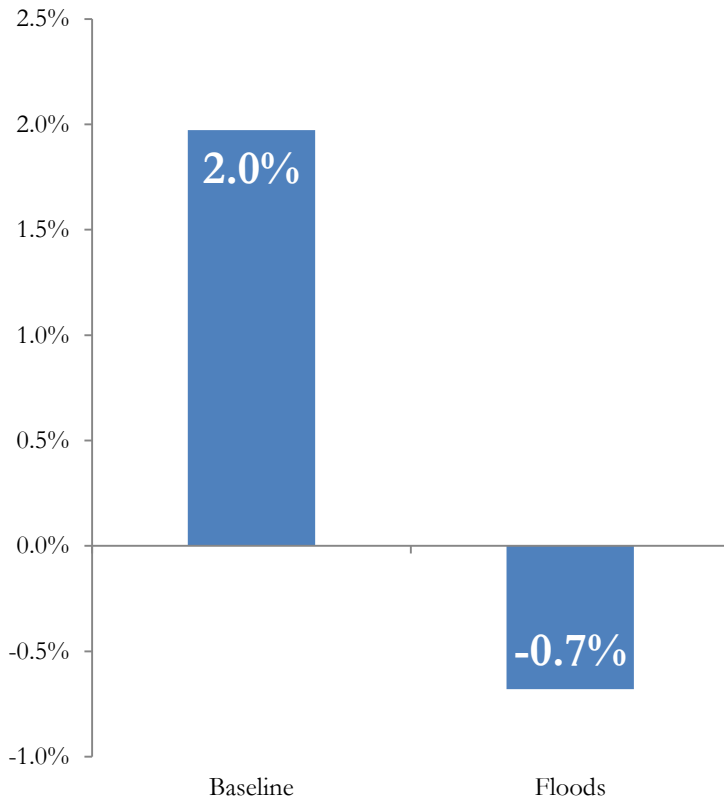
# What are the Economic Implications?

Based on the pre disaster trend, the flood will have undesirable impacts

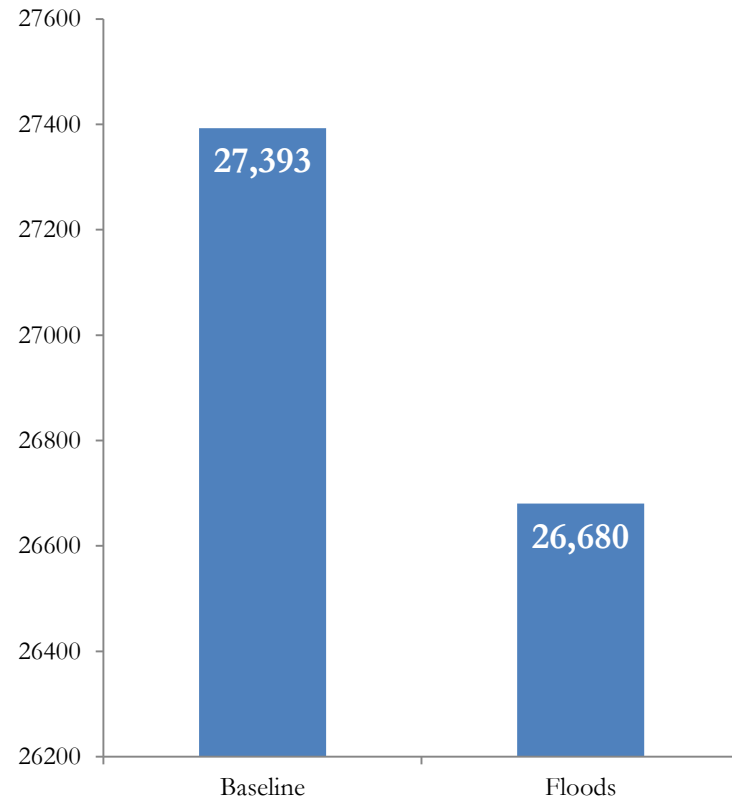


# Real GDP growth expected to turn negative

Projected GDP growth in 2014

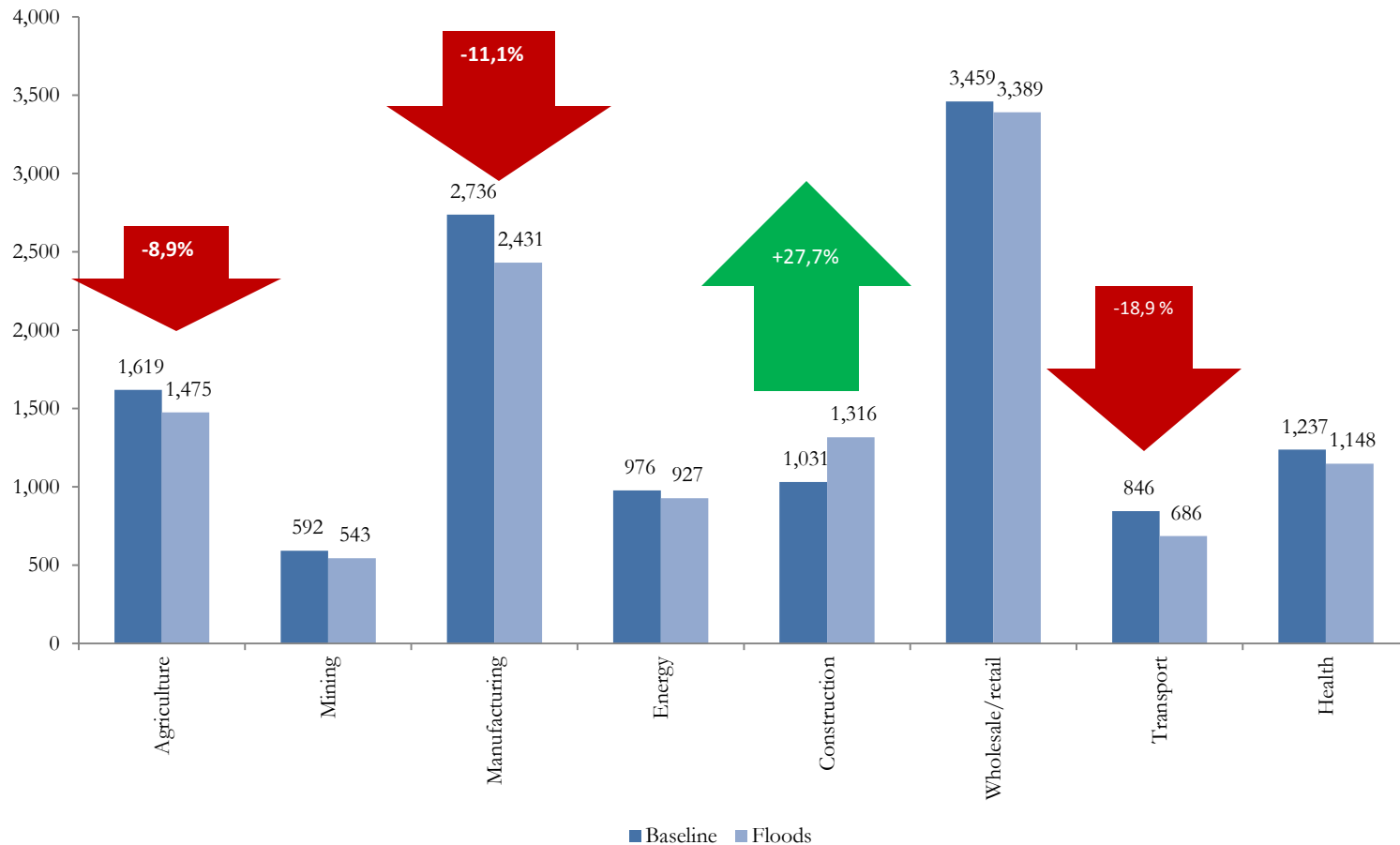


Nominal GDP (BAM Mil.)  
projected to shrink, harming  
other indicators



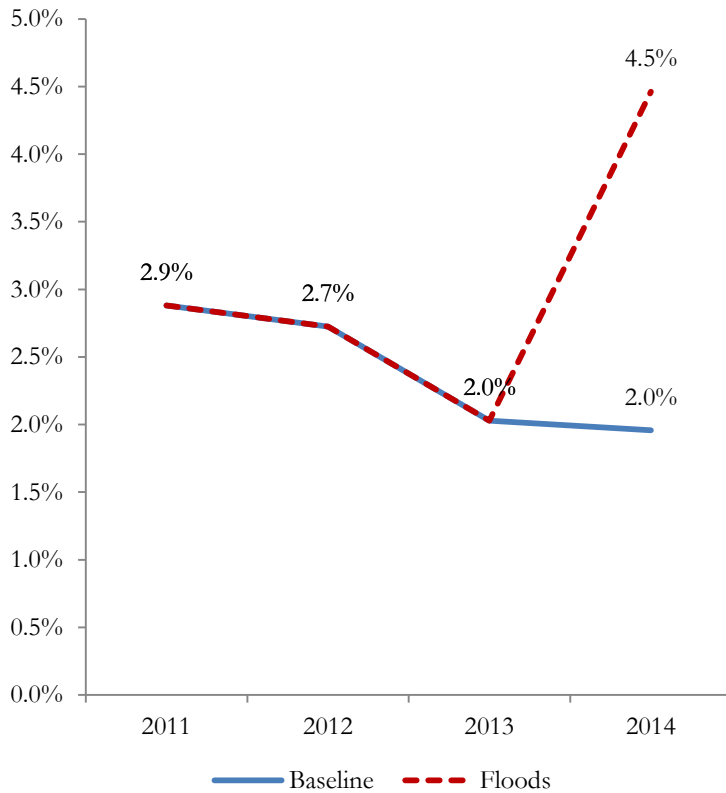
# Some sectors very badly hit but some will also benefit thanks to reconstruction efforts

Projected output in 2014 for selected sectors, baseline and after floods, (BAM Mil.)

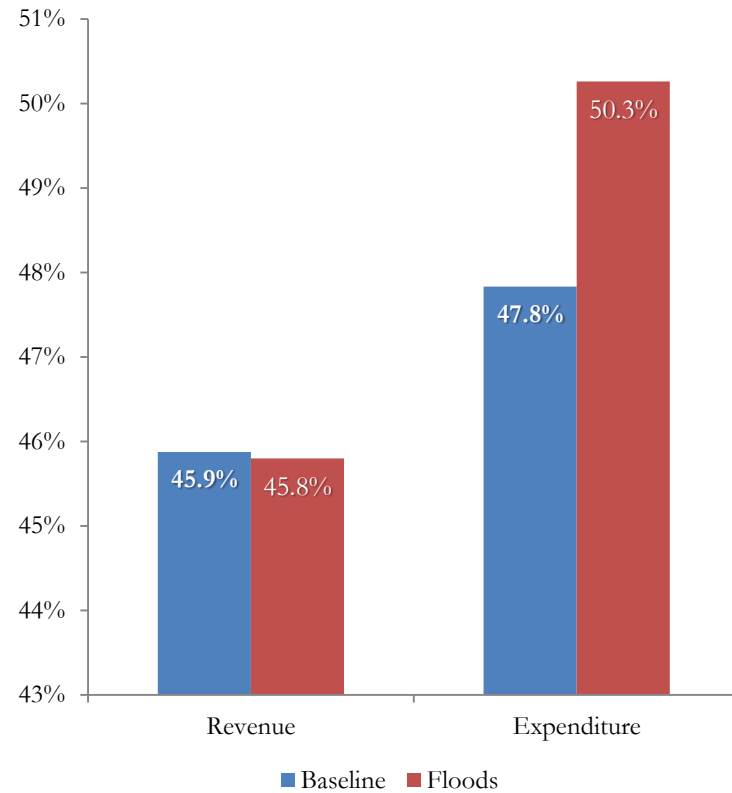


# The fiscal situation will worsen

## Projected fiscal deficit, % GDP



## Revenue and expenditure, % GDP



# But there is a large unidentified fiscal financing gap

	Baseline (pre-floods)	Post-floods		
	KM Mil.	KM Mil.	EUR Mil.	USD Mil.
Financing gap	526	1196	610	854
Identified financing	526	755	386	540
IMF	452	639	326	457
WB	73	101	52	72
Other		15	8	11
<b>Unidentified financing</b>		<b>441</b>	<b>225</b>	<b>315</b>

Deficit (% GDP)

-2,0%

-4,5%

**Unidentified financing (% GDP)**

**0,0%**

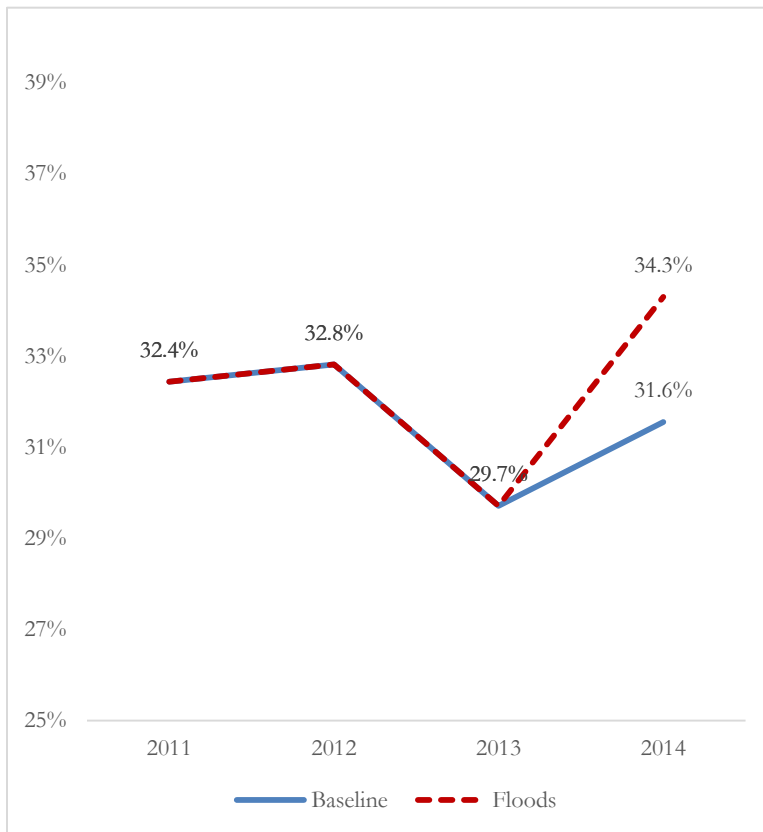
**1,7%**

External financing needs as % GDP:

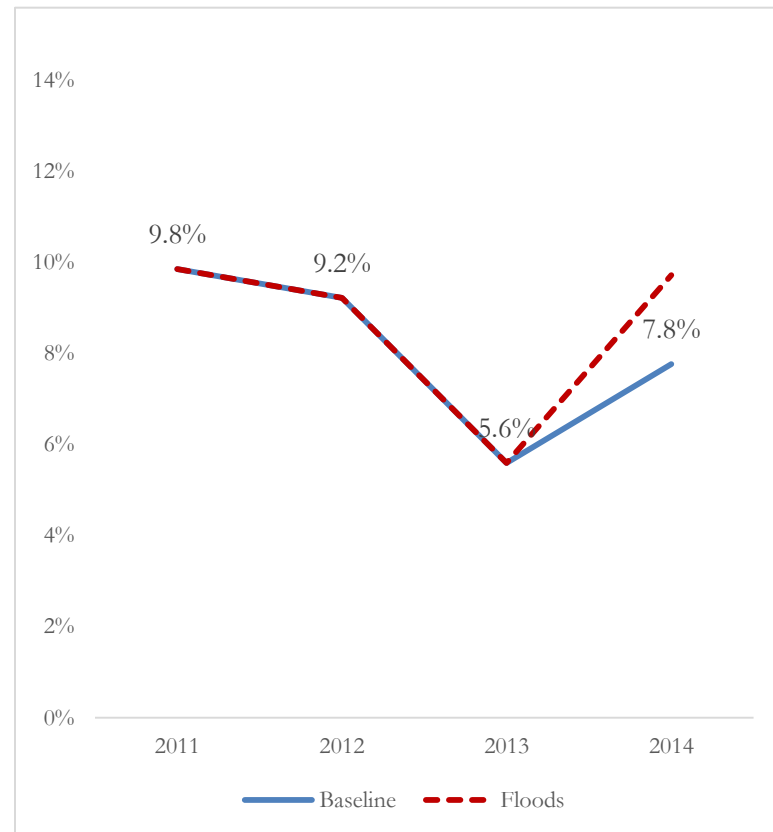
4,6%

# External balances are projected to worsen

## Trade deficit, % GDP



## Current account deficit, % GDP



# Impact on poverty: an estimation for agriculture households

Estimated impact on poverty level in BIH		
	High case	Low case
Baseline	18.7	18.7
Simulations	20.5	19.1

	Poverty incidence by households with any income from agriculture				Poverty incidence by households with any member working in agriculture			
	Household not self-employed in agriculture		Household self-employed in agriculture		Household not self-employed in agriculture		Household self-employed in agriculture	
	High case	Low case	High case	Low case	High case	Low case	High case	Low case
Baseline	17,6	17,6	26,4	26,4	17,2	17,2	29,8	29,8
Simulations	19,2	17,7	29,3	28,8	18,9	17,4	32,4	31,9



# Recovery Strategy

- Recovery Strategy to address long-term risks in regular programmes.
- Identify links to plans and other documents for incorporating DRR and resilience building, as new vulnerabilities and fragilities will have been created by the disaster.
- Previous priorities to be contextualized with disaster's opportunities
  - Prosperity and job creation may be jumpstarted by recovery process and reconstruction investment
  - Integrated perspective on security and risk reduction to be seen as factors of competitiveness
  - Adaptation to climatic variations and climate change generate resilience and are a risk reducing factor as well.
  - Energy efficiency, clean production, green development not only mitigate climate change, they generate competitiveness.

# Issues to address that the disaster brings

- Incentives and support to revitalize economic activity in affected depressed locations to generate demand and income and refocus on development goals, given pre disaster challenges and slow economic performance
- higher reconstruction investment costs,
- risk reduction considerations that lead to more sustainable development,
- increase resilience and reduce vulnerabilities and risks exacerbated by the disaster such as:
  - Better protection against floods and integrated watershed management and control
  - Integrated early warning systems
  - Stabilize slopes and protect areas where landslides pose new threats

# Main priorities to underscore

- Rapidly restore economic activity to jumpstart income and compensate for livelihoods affected and preserve jobs for both men and women and segments with higher unemployment
- Increase efficiency in financial procedures to reduce time lapse for approval of investments and execution of programmes / projects
- Harmonize financial and legal frameworks that may delay rapid utilization of available resources
- More efficient, transparent and monitored utilization of foreign resources from donor community and IFIs
- Utilize as much as possible local capacities in the reconstruction process, providing new employment opportunities
- Competitive national enterprises need to be supported in their technological and operational capacities within the objective of increasing prosperity and creating jobs

# Thank you

Recover  
soon



Rebuild  
together

