

Investing in Climate Resilient Road Infrastructure

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2017 Forum of the UNFCCC Standing Committee on Finance

“Mobilising Finance for Climate-Resilient Infrastructure”

Rabat, 6-7 September 2017



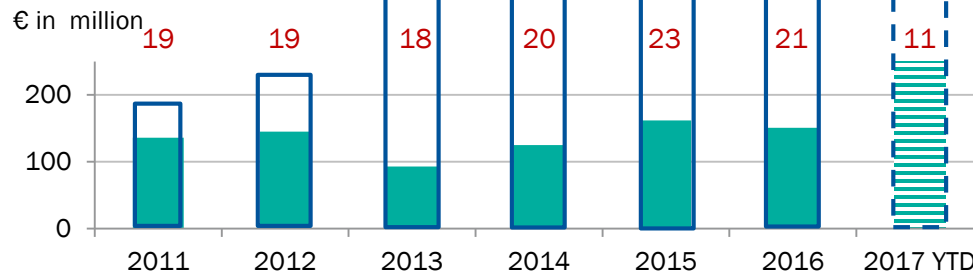
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EBRD adaptation finance for infrastructure



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Adaptation Finance
Total business volume
adaptation projects

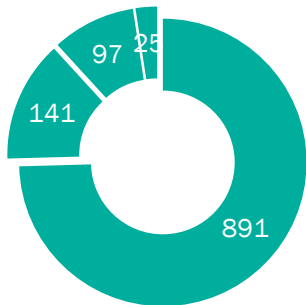


€1.1 billion since 2011 of dedicated adaptation finance for infrastructure.

130 projects signed

€3.1 billion of total ABI

Infrastructure GET adaptation finance: by business area (€m)

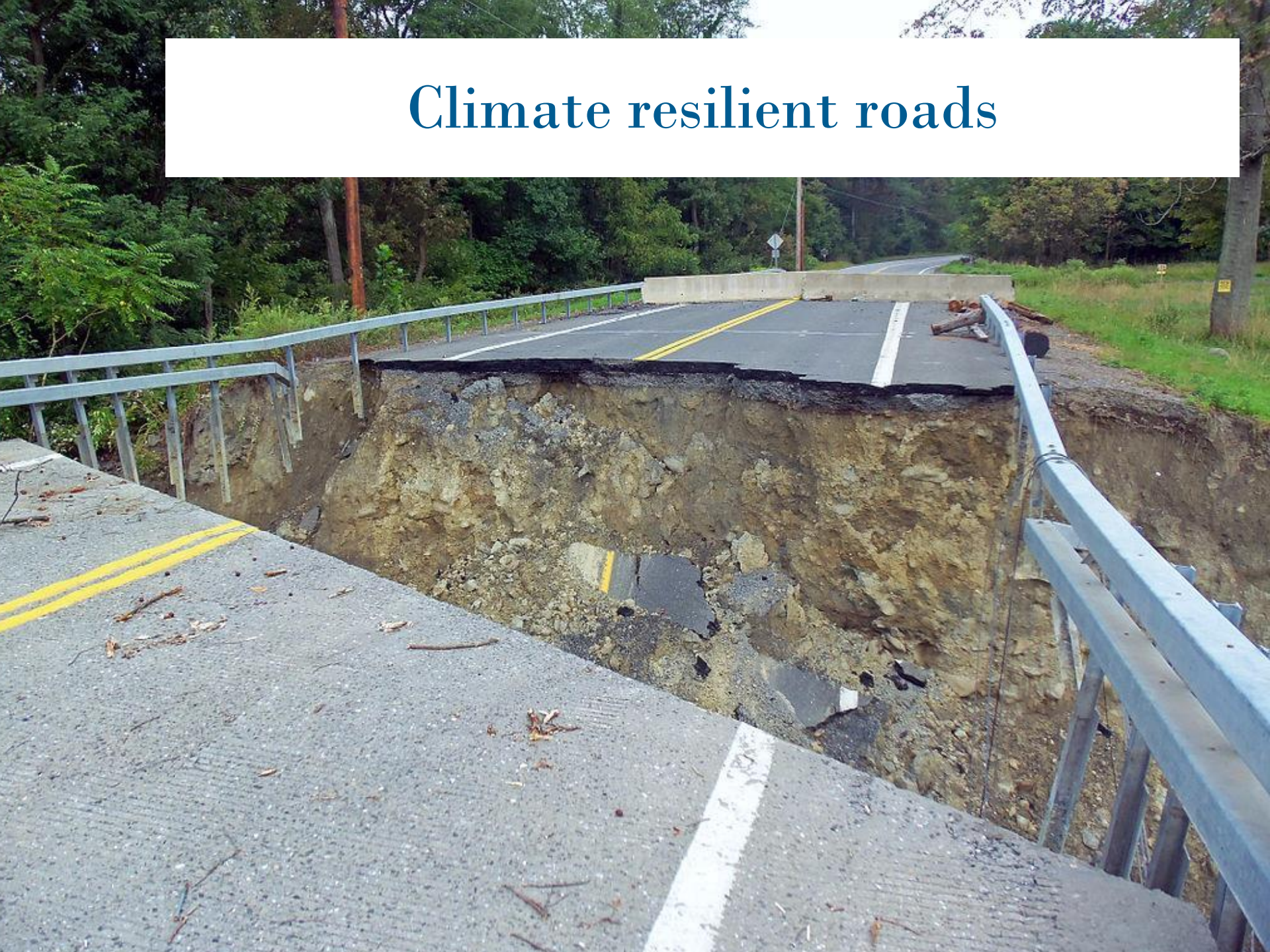


Municipal & environmental Infrastructure	891
Power and Energy	141
Transport	97
Property and Tourism	25
Total	1,154

Infrastructure GET adaptation finance: by region (€m)

Central Asia	280
Central Europe and the Baltic states	39
Eastern Europe and the Caucasus	34
Russia	32
South and Eastern Mediterranean (SEMED)	326
South-Eastern Europe	314
Turkey	128
Total	1,154

Climate resilient roads



Bosnia & Herzegovina Roads: Flood Repair and Upgrade



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CLIENT AND PROJECT

A €65 million loan provided to the Bosnian Roads Company for the repair and upgrade of 34 road sections that were heavily damaged by the unprecedented floods of 2014.

CLIMATE RESILIENCE INVESTMENT MEASURES

The feasibility and design work for the EBRD investment project incorporated climate change projections on vulnerable road sections.

INSTITUTIONAL CAPACITY AND READINESS

Supported with funds from the Central European Initiative, experts from the Swedish Transport Agency to work with the Road Company to build institutional capacity.



FINANCIAL STRUCTURE

EBRD loan	€65 million
<i>Of which Adaptation Finance</i>	<i>€35 million</i>
World Bank loan	€50 million
EIB loan	€50 million

Climate resilience investment measures under EBRD loan to Roads Company

- Pre-signing technical assessment.
- Climate projections for temperature, precipitation, cold events, and storms and wind using two global climate models (SINTEX-G and ECHAM5). E.g.

Climate variable	Projection	Comment
Precipitation	Reduced average rainfall and increased drought periods	Most models show a decrease in overall precipitation rates Largest precipitation deficit likely to be in the summer months
	More extreme rainfall events	IPCC reports supports likelihood for change in rainfall patterns to lower annual rates, but with an increase in heavy precipitation events, with longer drought periods between.

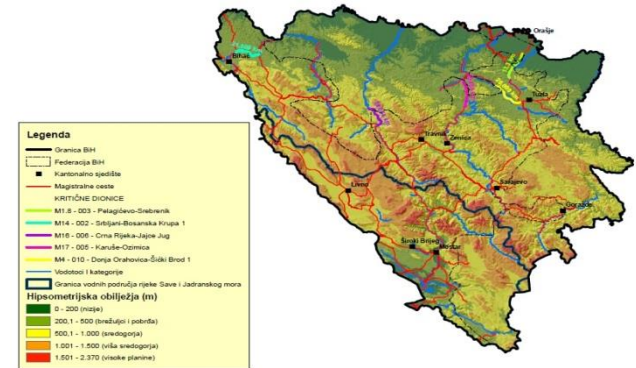
- Assessment of impacts on the road network of anticipated climate change, taking into account existing national guidelines.
- The following climate resilience measures were recommended:
 - the enhancement of drainage systems
 - strengthening of vulnerable slopes, bridges and tunnels and deepening bridge abutments
 - the installation of rock mattresses and other practices to reduce long-term erosion risks
 - widening and improving bypass roads

Building institutional capacity to undertake vulnerability and risk assessments



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- Post-signing technical cooperation implemented by Swedish Roads Agency (SweRoad):
 - Strengthening collaboration and analysis of climate data with the Hydromet Institute & Sava River Basin agency.
 - Assessment of major climate risks and mapping out vulnerabilities in the road network.
 - Analysis of road design and best international practice.
- Second component involves piloting a ‘QuickScan’ approach to risk assessment - a methodology developed by CEDR (Conference of European Directors of Roads)
- Approach involves mobilizing a multi-disciplinary group of stakeholders in a workshop, and going through three analytical steps using available maps, data, information and local knowledge:
 - Risk identification
 - Risk analysis
 - Risk evaluation





Thank you for your attention!

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