Cambiamenti Climatici: la sfida delle città resilienti

Esperienze di Bologna in materia di adattamento urbano

Giovanni Fini – Settore Ambiente ed Energia - Comune di Bologna

Comune di Bologna

Sostenibilità è Bologna

Bologna città resiliente

LIFE11 ENV/IT/119
With the contribution of the LIFE financial instrument of the European Community

The BLUEAP project
(LIFE11 ENV/IT/119)

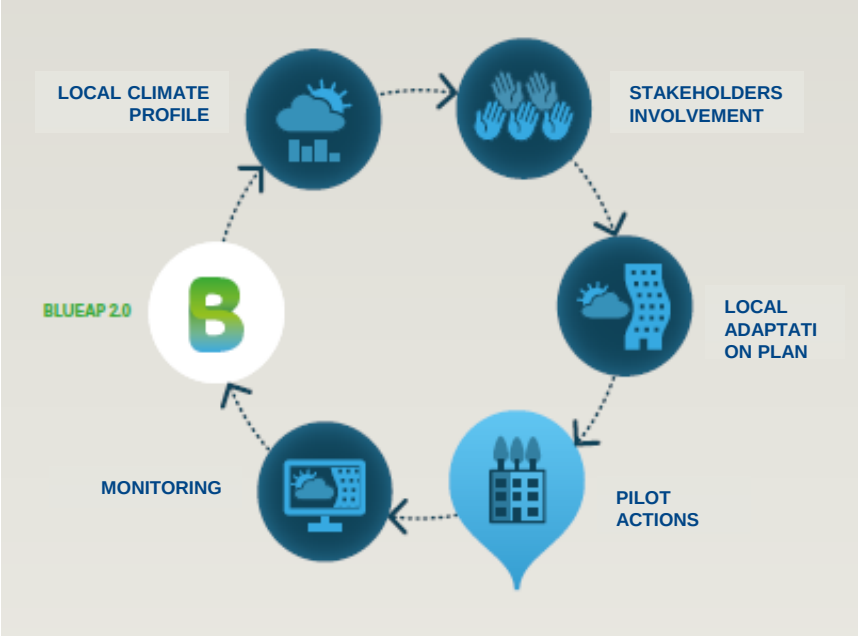
In october 2012 Bologna started **BlueAp LIFE project** for the definition of a Local Adaptation Plan.

On 4th June 2014 the City Council approved the **signing of "Mayors Adapt":** Bologna was the first Italian city to join the initiative.

In october 2015 the City Council approved the **Local Adaptation Plan**.

The Plan contains the actions to make Bologna resilient at the **reference year of 2025**.

The Plan has considered the international and **UNFCC reference documents on local adaptation actions** and valued the support of an international scientific commitee coordinated by CMCC in order to fix benchmarks and references for the work.



In August 2015 a delegation of France Senate visited Bologna for a workshop on BlueAp project experience.

Main vulnerabilities

HEAT WAVES

Exposure: HIGH
Sensitivity: HIGH (population, tourism, air quality)

WATER SCARCITY

Exposure: MEDIUM/HIGH
Sensitivity: HIGH (population, mobility, economy)

EXTREME RAINFALL EVENTS

Exposure: MEDIUM/HIGH
Sensitivity: HIGH (population, hydrology)

Vulnerability	Strategies
Drought and water scarcity	• Reduce the use of natural water resources • Eliminate parasiting waters and the mixing of black and white waters • Regulate the flow of Reno River • Protect gricoltural production

Main objectives				
Withdrawals from groundwater < 45 million m3 / year	Minimum water flow in Reno river 1.87 m3 / s	Network losses < 18%	Domestic water consumption < 130 l / inhabitant / day	Consumption of drinking water for other uses < 5 Mil m3 / year
				

Vulnerability	Strateges
Heath waves in urban areas	• Increase urban greening; protect and enhance urban green areas and urban agricolture. • Increase insulation and greening in public and private buildings. • Reduce vulnerability of population exposed to health risks linked to temperature increase.

Main objectives				
+ 5000 trees 	+ 5 hectars urban vegetable gardens 	Greening interventions on 10 public buildings 	Greening of 4 public spaces in historical center 	Prevention of heath waves effects 

Vulnerability	Strategies
Extreme rain events and hydrogeological risks	• Improve city hydrogeological response • Make the territory more “resistant” to intense rain. • Reduce water pollution carries by rain. • Increase resilience of population and property at risk.

Main objectives

Limit increase of new waterproofed territory from 3500 to 3700 hectares.	new drainage systems on impermeable surfaces > 11,5 ha	Pollution load due to spillways < 50%	Increase the resilience of infrastructures	Adequate maintenance of cultural heritage
				

Financing climate actions in Bologna

Bologna Carbon Market

I crediti di riduzione volontaria di CO_2 del Comune di Bologna a disposizione della città

Il Comune di Bologna negli ultimi anni ha attivato diversi progetti per la sostenibilità ambientale che hanno contribuito a ridurre le emissioni di CO_2 e possono essere trasformati in crediti volontari di riduzione.

Grazie a questo meccanismo virtuoso il Comune potrà implementare nuovi progetti di riduzione di CO_2.

Le imprese possono collaborare al benessere dei cittadini e dell'ambiente e aggiudicarsi crediti volontari di riduzione.

I crediti volontari del Comune sono infatti a disposizione di quelle imprese che si vogliono impegnare per la tutela dell'ambiente e contribuire alla realizzazione di nuovi progetti ambientali sul territorio.

eit Climate-KIC

Life RainBo

LIFE15/CCA/IT/000035
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RAINBO

OBJECTIVES & SCOPE:

The **RainBo** project aims to **improvement** of knowledge, methods and tools to respond to **extreme weather** events.
Particulary on the potential impacts of the catastrophic rains in river basins (the so-called **flash flooding**).
On medium term project objective is to build a possible **response system** (forecasting models, warning protocols) to emergencies caused by sudden and destructive weather events.

PARTNERS Lepida (coordinator), Agenzia Regionale Prevenzione e l'Ambiente dell'Emilia-Romagna (ArpaE), Comune di Bologna
Meteorological and Environmental Earth Observation (MEEO)
NIER Ingegneria SpA

Project duration:31/07/2016 - 31/07/2019

Comune di Bologna lepidaspa arpae emilia-romagna NIER INGEGNERIA MEEO Meteorological Environmental Earth Observation

Urban flooding in Bologna

LIFE15/CCA/IT/000035
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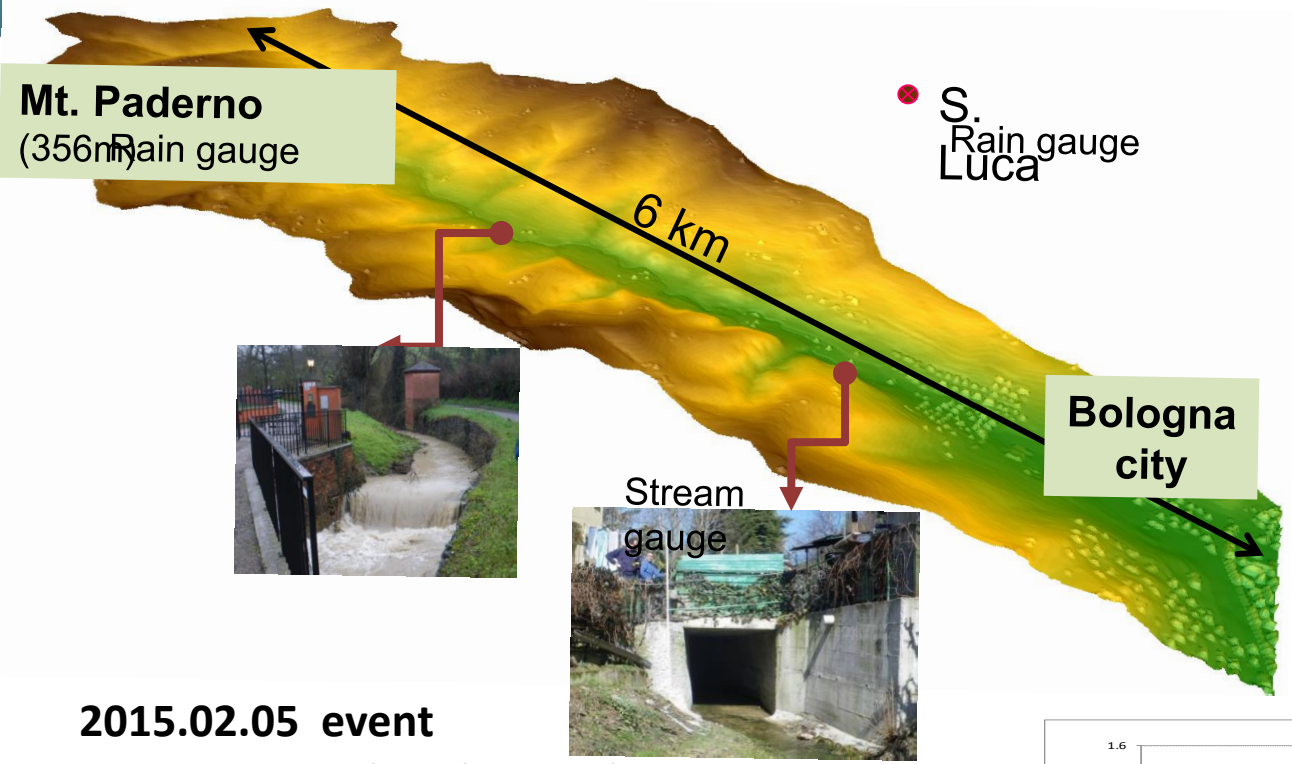
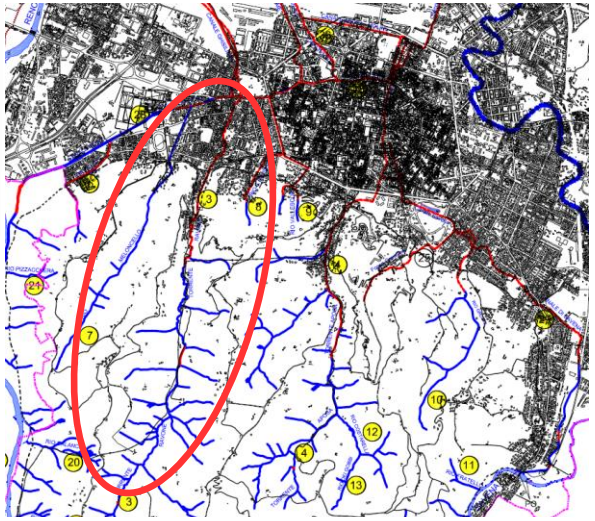
RAINBO



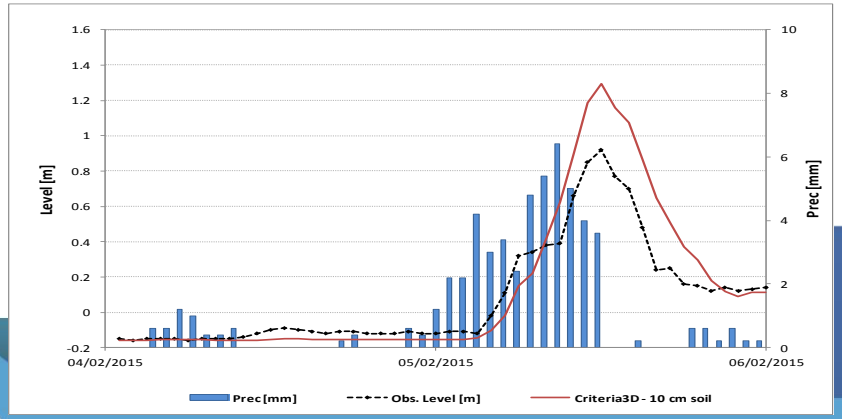


Bologna - hydrographic network

2015.02.05 event

Measurements and simulation with CRITERIA3D

Physically based, 3D model of surface and subsurface water flows



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Investing on infrastructures

The European Investment Bank (EIB) is supporting initiatives to adapt to climate change

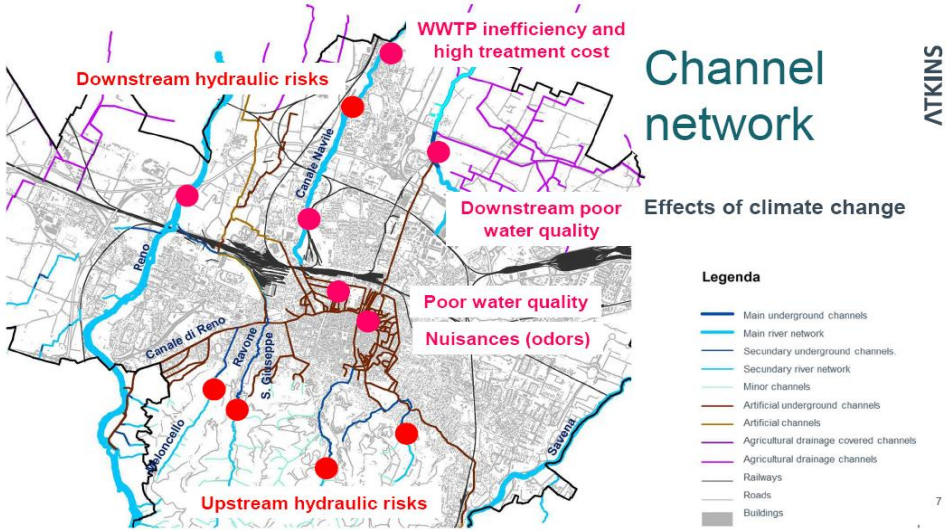
ATKINS

Climate Change Adaptation and Resilient Cities

Inception Report

European Investment Bank

24 February 2017



European Investment Bank

Newcastle City Council

Comune di Bologna

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