



Italian National Agency for New Technologies,
Energy and Sustainable Economic Development

Vegetation and air quality in urban areas

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Vegetation and climate adaptation plans for urban areas



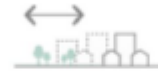
Green facades



Green roofs (extensi



Green roofs (intensive)



Reduced paved surfaces



Use of native species



Adding green in streetscape



Green shores and riverbanks



Green ventilation grids



Select drought and/or salt-resistant plants

<http://www.climateapp.org/>

<https://climate-adapt.eea.europa.eu/eu-adaptation-policy/sector-policies/urban>

H2020: Nature-Based Solutions

Providing viable solutions of natural ecosystems

[PROJECT] ThinkNature - Development of a multi-stakeholder dialogue platform and Think tank to pr...

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[PROJECT] Nature4Cities - Nature Based Solutions for re-naturing cities: knowledge diffusion and ...

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[PROJECT] RENATURE - promoting Research Excellence in NAture-based soluTions for innovation, sUst...

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[PROJECT] CONNECTING Nature - COproductionN with NaturE for City Transitioning, INnovation and Gov...

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[PROJECT] URBAN GreenUP - New Strategy for Re-Naturing Cities through Nature-Based Solutions

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[PROJECT] NBS2017 - Nature-based Solutions: From Innovation to Common-use

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[PROJECT] CLEVER Cities - CLEVER Cities - Co-designing Locally tailored Ecological solutions for ...

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<https://cordis.europa.eu/t>



20th TFMM Meeting, 7-9 May 2019, Madrid, Spain

URBAN GREEN UP

ABOUT | CHALLENGES | SOLUTIONS | CITIES | INSIGHTS | NEWS & EVENTS | CONTACT US

Home » Solutions

Arboreal interventions

Arboreal Areas around urban areas

Re-naturing urbanization

The urban heat island effect will be abated by the green arboreal canopies. The added implementation trees around urban and peri-urban areas will enhance the HIE abatement function. This NBS will also provide for a neighbourhood-park effect.

Challenges

- Climate change mitigation & adaptation
- Water management
- Green space management
- Air quality
- Urban regeneration
- Participatory planning and governance
- Social justice and social cohesion
- Public Health and Well-being
- Potential of economic opportunities and green jobs

IMPLANTATION: Soft/Medium/Hard
The NBS don't create important modifications in the environment.

AMORTISATION: Short term/Medium term/Long term/No amortization
The arboreal interventions get the recovery of the investment in about 5 years.

Want to know more?

Ask the expert

Download the complete NBS catalogue

Air quality plans for urban areas

Regione Emilia Romagna

Ampliamento aree verdi: ...aumentare del 20% i m² di aree verdi per abitante residente nell'area comunale o di raggiungere la quota di 50 m² per abitante residente al 2020...

... ai fini della riduzione della concentrazione di inquinanti in atmosfera e di una migliore termoregolazione degli insediamenti urbani...

(Piano Aria Integrato Regionale 2020 - PAIR2020)

Regione Lombardia

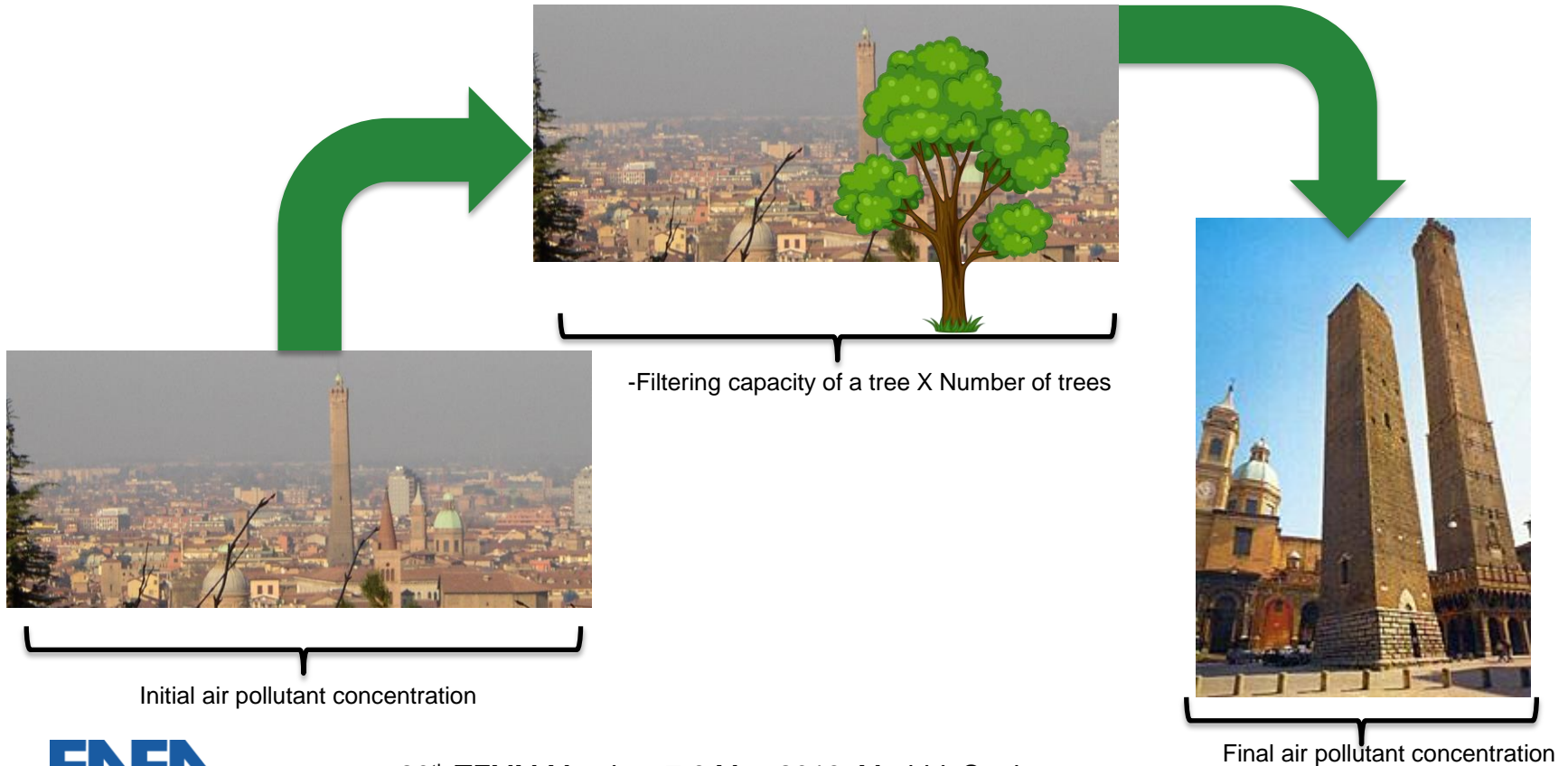
Sistemi verdi: "Realizzazione e mantenimento di strutture vegetali lineari" si pone l'obiettivo di promuovere la realizzazione di strutture lineari vegetali (siepi e filari, fasce tampone boscate), che contribuiscono alla riduzione in atmosfera degli inquinanti e delle polveri.

(Piano Regionale degli Interventi per la qualità dell'aria-PRIA, Documento di piano 2013)

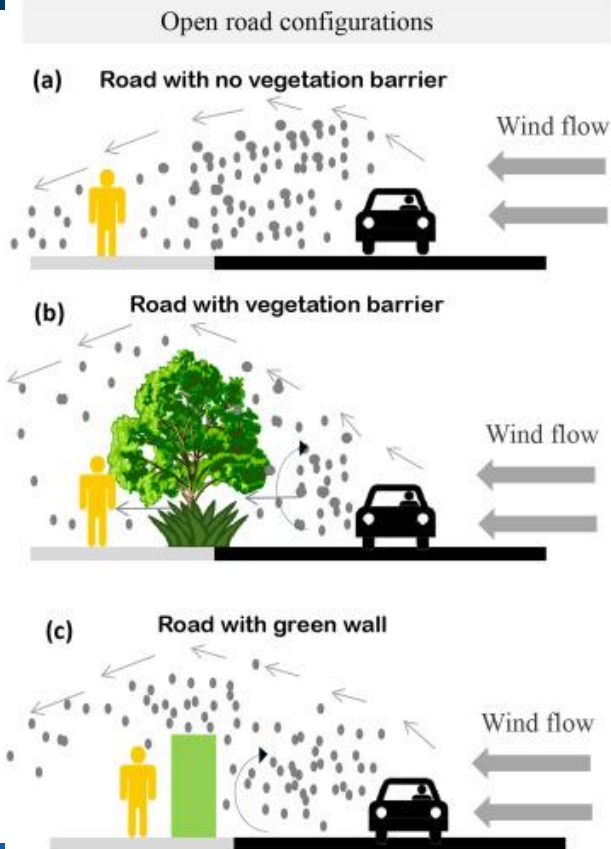
Air Quality Plan for Berlin 2011-2017 |

M 1.1	Land-use planning with due allowance for urban climatology and air exchange
M 1.2	Avoid new pollution hotspots
M 1.3	Greening of streets

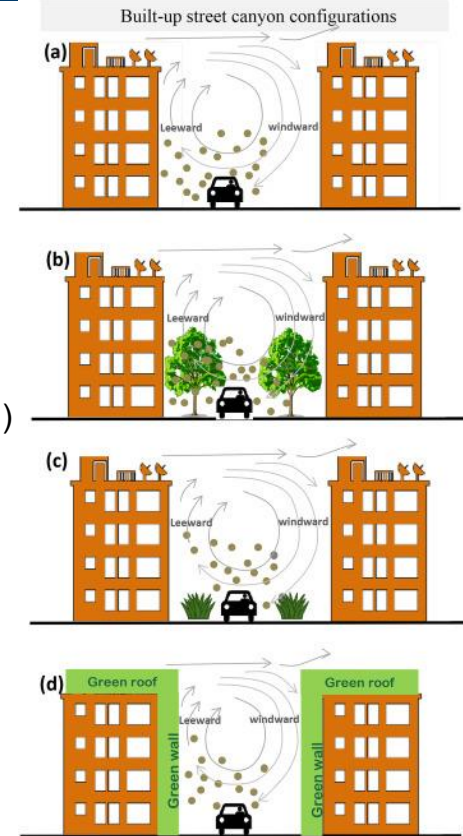
Trees and air quality: ecophysiological approach



Trees and air quality: local dispersion & deposition and street level studies



(Abhijith et al, 2017, Atm. Env.)





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Vegetation for
Urban Green Air
Quality Plans

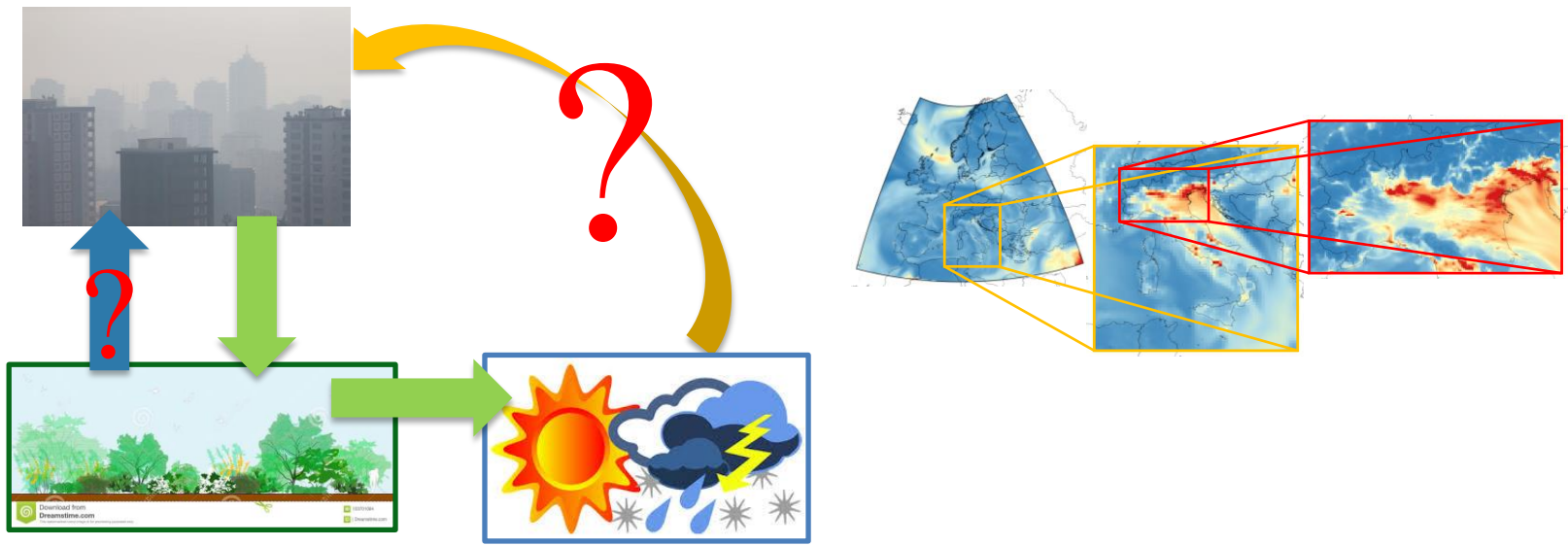


LIFE18-PRE IT 003 THE VEG-GAP PROJECT HAS
RECEIVED FUNDING FROM THE LIFE PROGRAMME OF
THE EUROPEAN UNION.

Associated beneficiaries:



Comprehensive assessment of air quality-vegetation interactions





LIFE18-PRE IT 003.

VEG-GAP main objective



Develop a strategy for providing new reliable information in support of designing urban Air Quality Plans (AQPs) considering the urban ecosystems/vegetation characteristics.

At present, the local governance authorities and policy makers lack of relevant information on the amount of vegetation, which species/type to use and how to distribute them in order to maintain or improve air quality in urban areas.



LIFE18-PRE IT 003.

New information



-the contribution of vegetation ecosystems both as source and sink of air pollution in urban areas

-the effect of urban vegetation ecosystems on air temperature (urban heating and cooling patterns) and its impact on air quality



LIFE18-PRE IT 003.

VEG-GAP cities



Bologna

- had a population of 390,294
- an area of about 140,8 square kilometres



Madrid

- had a population of 3 141 991
- an area of about 604,3 square kilometres



Milano

- had a population of 1,372,810
- an area of about 181,7 square kilometres





LIFE18-PRE IT 003.

Other objectives

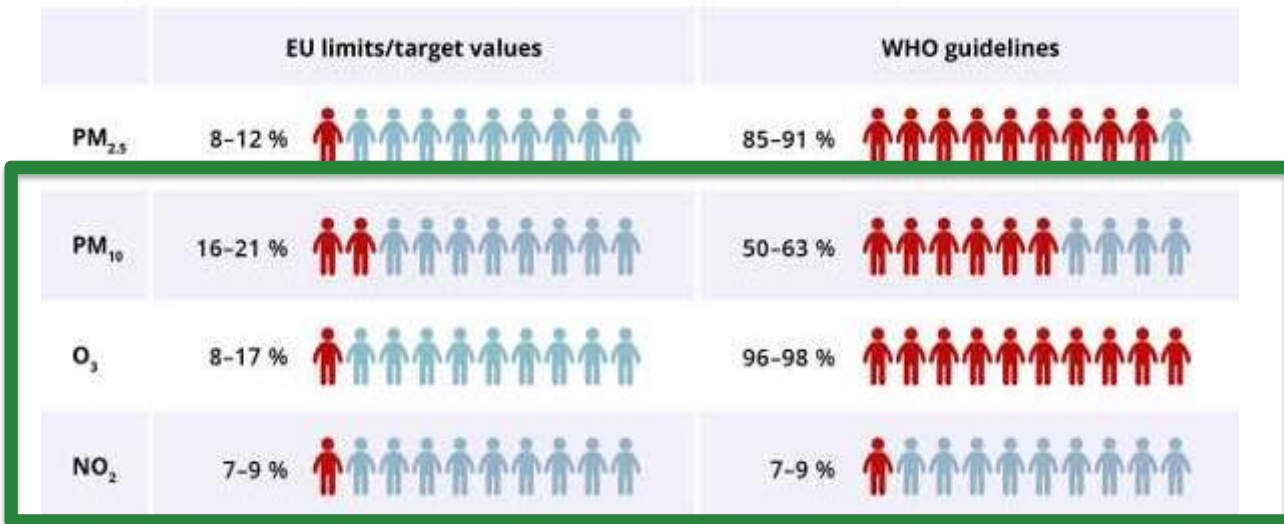


- **develop and implement for the first time a framework of instruments (guidelines, support tools and information platform)** that consistently consider the linkages between air pollution and vegetation characteristics in the development of effective control strategies and, consequently, in recommendations to improve the legislation aimed to maintain and improve air quality in Europe.
- **foster the consideration of the role of urban vegetation ecosystem to attain compliance with the national and EU environmental legislation on Air Quality.** Therefore, the project will provide recommendations and indications for the possible revision of air quality legislation .

Outcomes will provide bases for testing environmental solutions such as green infrastructures, urban agriculture, urban green belts fostering an integrated view in space and time of pollution and urban vegetation capable to support local authorities' decisions, considering present and future environmental, social and economic needs at local, regional and European scales

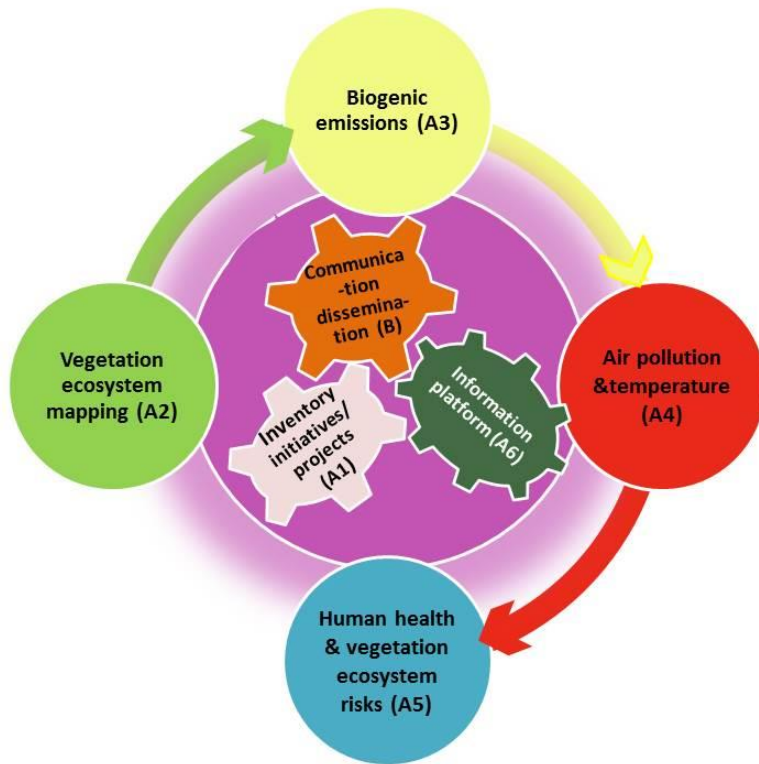
Specific objectives

Provide a better understanding and evaluation of the possible risks and benefits for human health and ecosystems themselves associated with air pollution changes induced by vegetation/ecosystems changes.



(EEA, 2016)

VEG-GAP actions





LIFE18-PRE IT 003.

Future events



1 day Conferences&Networking events:

Bologna 27 February 2019

Madrid 2020

Milano 2021

1.5 days Demonstrative VEG-GAP days (2020-2021):

Bologna

Madrid

Milano

Roma