



LIFE09 ENV/IT/000092 (2010-2013)

## Operational Procedure for Emission Reduction Assessment

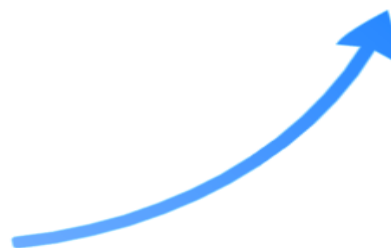
An integrated assessment methodology to plan local cost-effective air quality policies harmonized with national and European actions

Eriberto de'Munari - Project Manager Opera





420.000 premature deaths  
from air pollution in the EU  
in 2010



EEB Conference “Clean Air Everywhere: Blowing  
the winds of change into European air policy”  
Brussels, 8 January 2013

SCENARIO



European Commission  
**Joint Research Centre**  
 Institute for Environment and Sustainability

Regione Lombardia

# RIAT

## Regional Integrated Assessment Tool

A DSS for air quality planning developed by

Università di Brescia (I) and TerraAria srl (II)

# NINFA-E<sub>xtended</sub>

agenzia regionale prevenzione e ambiente dell'emilia-romagna

*Estensione del sistema modellistico NINFA per fornire supporto alla Regione Emilia-Romagna nello svolgimento delle attività per la valutazione e gestione della qualità dell'aria.*





Air Pollution remains one of the most important environmental issue in Europe as confirmed with the adoption by the European Parliament of the resolution on the Thematic Strategy on Air Pollution which aims to attain levels of air quality that do not give rise to significant negative impacts on, and risks to human health and environment. Even thou some regions in Europe got high levels of pollutants.

In the Po-Valley the combination of high population densities, high emission densities and poor meteorological dispersion lead to high atmospheric pollutant concentrations.

In Alsace high population density in the Upper Rhine valley, important traffic fluxes across three countries (France, Germany and Switzerland), important industrial areas (Ruhr region in the north east and the Basel area in the south) generate a deterioration of the air quality too.

**Different situations lead both to the importance of a combination of local, national and international measures to reduce adverse effects of poor air quality in these two regions.**



At the present more than 30 persons were involved in the project:



Two stake holder:

- Regione Emilia-Romagna - "Air, acoustic and electromagnetic pollution management area"  
dr. Eugenio Lanzi/dr.ssa Katia Raffaelli
- Association pour la Surveillance et l'étude de la Pollution atmosphérique en Alsace (ASPA).  
dr. Emanuel Riviere  
dr. Gilles Perron



with the collaboration of:

- Joint Research Centre - Institute for Environment and Sustainability (JRC-IES).  
dr. Philippe Thunis





PEOPLE



Operational Procedure for Emission Reduction Assessment  
LIFE08 ENV/IT/000082 (2010-2013)

**PANEL EXPERT FIRST RESULTS ANALISYS**

Eriberto de'Munari  Arpa Emilia-Romagna



November 15<sup>th</sup>, 2012  2<sup>nd</sup> ANNUAL CONFERENCE  1

16<sup>th</sup> Sept. 2013

FINAL CONFERENCE





BUDGET

2 301 010 €

BUDGET

47%



35%

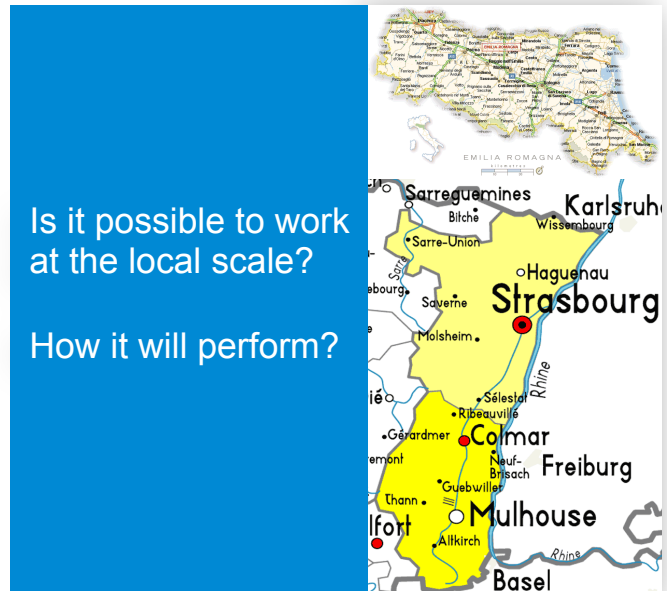
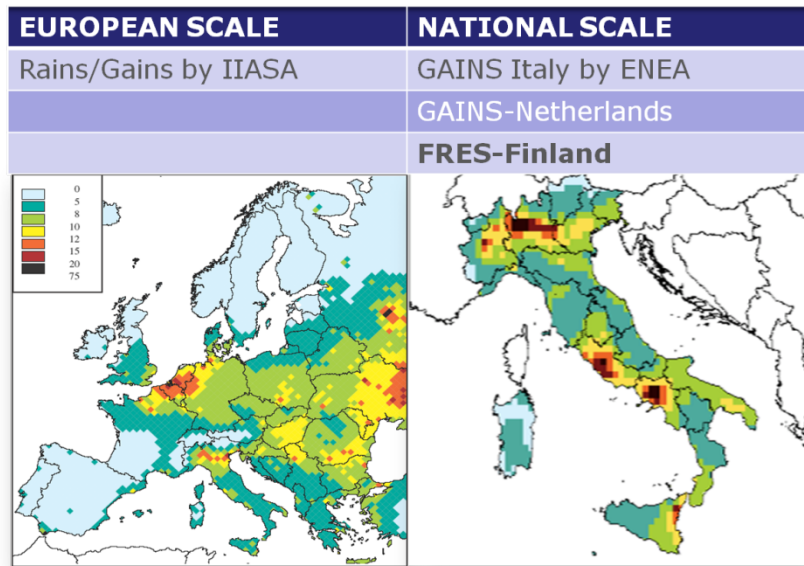


18%





Develop a methodology to assess the efficiency of locally planned abatement measures, which remain coherent with national and international frameworks.







**Evaluate each action in Air Quality Plan both in terms of pollutants reduction and in terms of costs maximizing the environmental benefits at fixed costs, or minimize costs at fixed environmental benefits.**



**GOALS**



Harmonization with EU/national and local/regional decision problems

Upgradable and free database for non-technical measures

Integrated evaluation between Air Quality Policies and GHGs policies

Simplified approach in case of scarce data availability

Quick preview of the actions pool effectiveness

Easy software, freely integrable with existing regional tools

Integrated budget constraints

GOALS

## Input databases

- emission inventories and projections
- emission reduction measures:
  - ✓ Technical
  - ✓ Non-technical (Energy Measures)
- CTM simulations

## Decision model

- multi-objective analysis
- Source-receptor models

## Deliverables

- efficient policies
- objective values
- post-processing

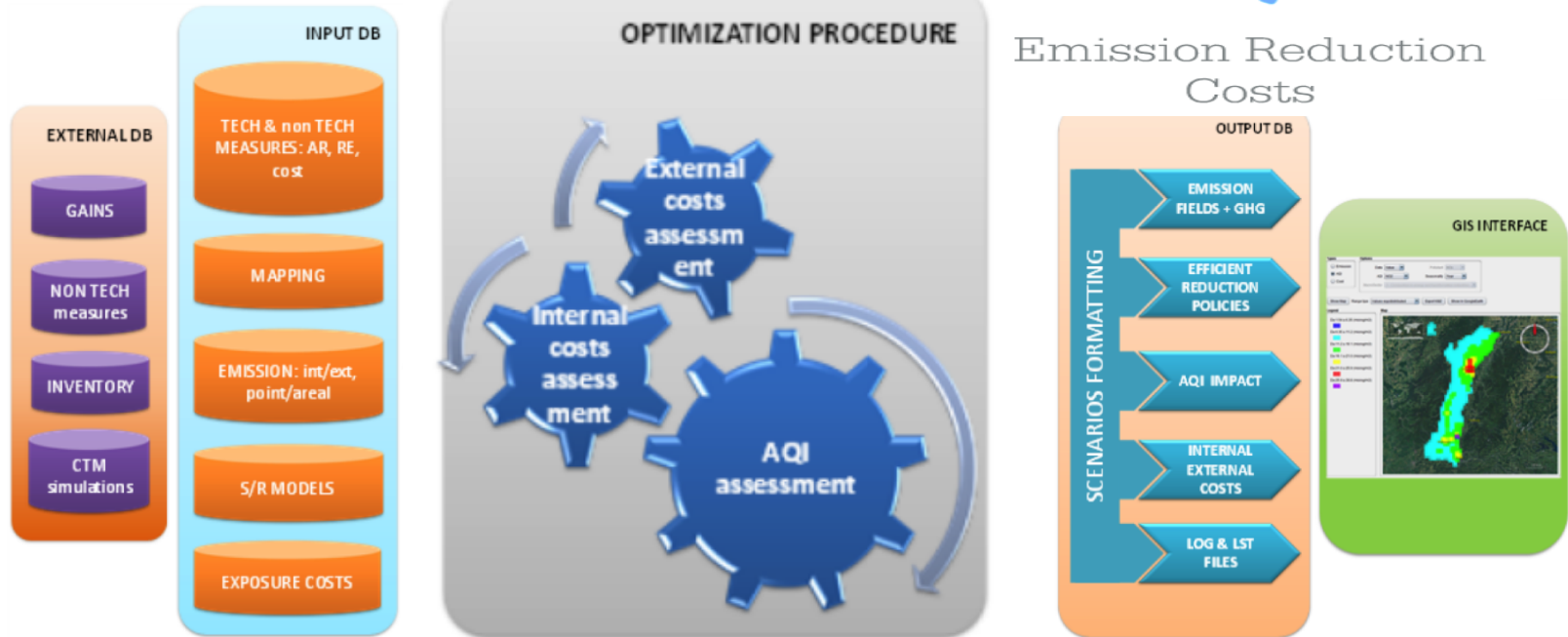


$$\min_X J(E(X)) = \min_X [AQI_n(E(X)) \quad inC(E(X))]$$

Air Quality Indexes

Technical and energy measures

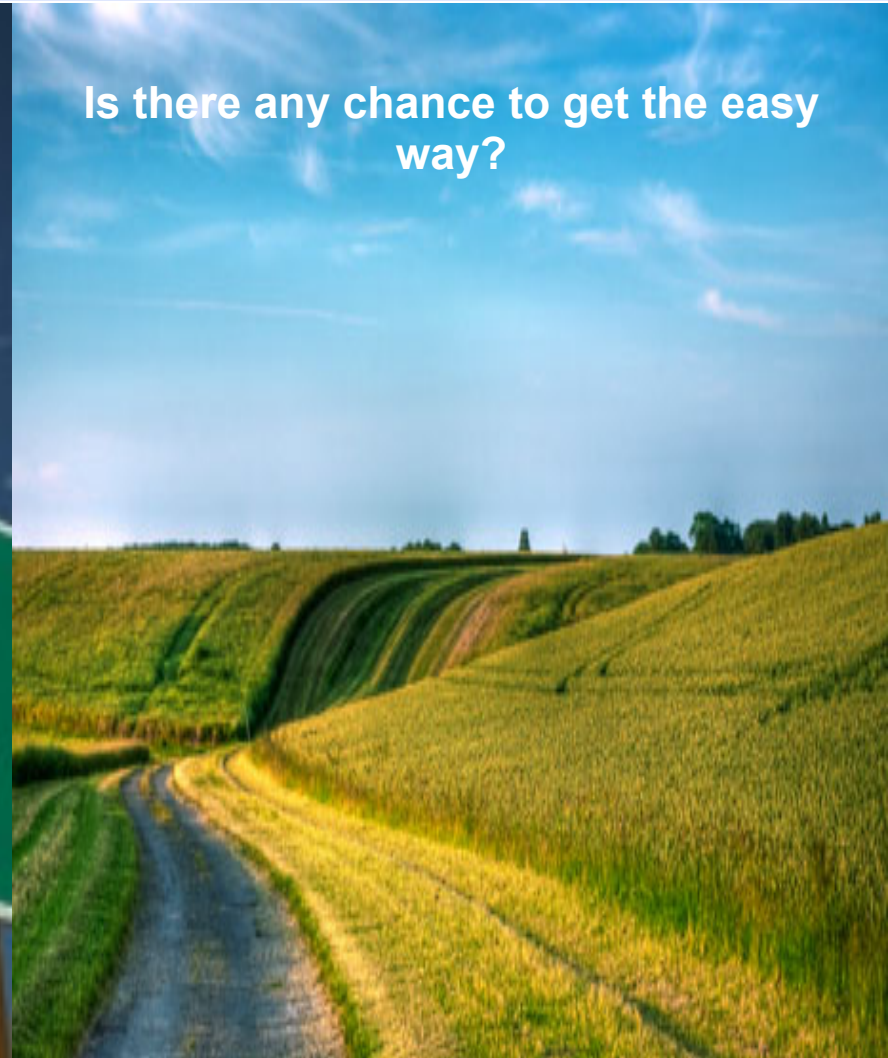
Emission Reduction Costs



THE CORE

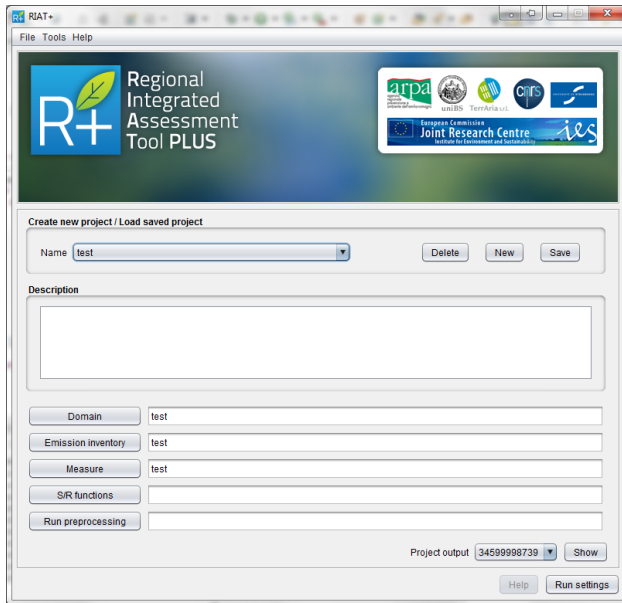


THE CORE



Is there any chance to get the easy way?



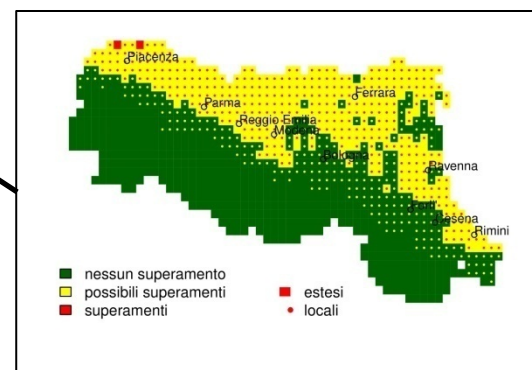
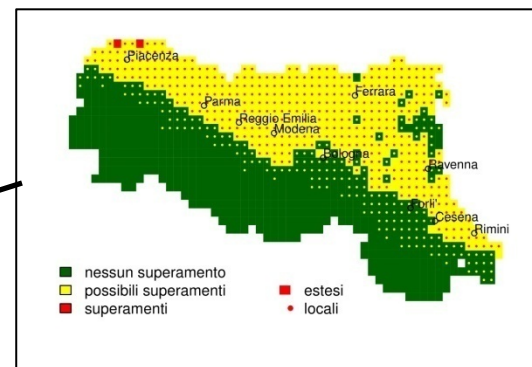
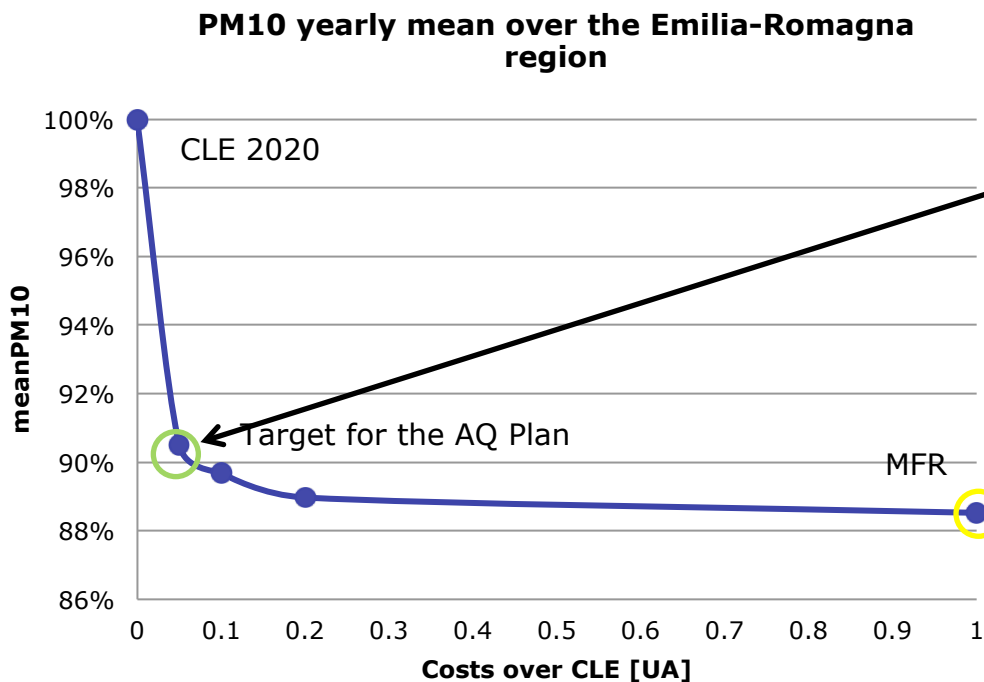


RIAT+ whole system has been developed with open-source approach and without the need of any external sw license. RIAT+ main features are:

- Capability to manage different kind of input data (e.g. gridded or polygonal, annual or seasonal, SNAP detailed or aggregated emissions);
- Various policies efficiency could be evaluated with RIAT+: emission abatement, energy efficiency and aggregated measures
- Multiple run options: multi objective and cost effectiveness optimization, detailed and aggregated scenarios analysis
- User friendly GUI with tables, charts, maps
- Easy ex-post analysis exporting dataset
- Green Gases evaluation for the selected scenarios

RIAT+ (and previous versions) are distributed and used in Lombardy and Emilia Romagna (IT) and in Alsace (FR); 2/3 more EU Regions will use it in Appraisal (EU FP7 project).

# COSTS – EFFECTIVENESS (PARETO CURVE)







- RIAT+, a software tool free and downloadable
- Full documentation, workshops and courses to support new users implementing the methodology to other European regions.
- RIAT+ testing in Emilia Romagna (IT) and Alsace (FR) and assessment of air quality plans in these two regions.
- Guidelines for local administrations and environmental agencies to integrate local planning to national and European air quality policies.
- A register, collecting non-technical (energy) emission reduction measures.



[www.operatool.eu](http://www.operatool.eu)

THANK YOU

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## Operational Procedure for Emission Reduction Assessment

An integrated assessment methodology to plan local cost-effective air quality policies harmonized with national and European actions.

*The goal of the project is to develop a methodology, a software (RIAT+) and the relative guidelines to support local authorities for the planning of regional policies integrated with national and European actions in order to comply with National and EU air quality standards, considering potential synergies with actions to reduce GHG emissions. This project will be performed in the context of existing agreements between national and regional administrations to reach a common goal in a consistent and efficient way.*



Visitors from:



[Click here to download the project summary \(pdf\).](#)

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