



Operational Procedure for Emission Reduction Assessment

LIFE09 ENV/IT/000092 (2010-2013)

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

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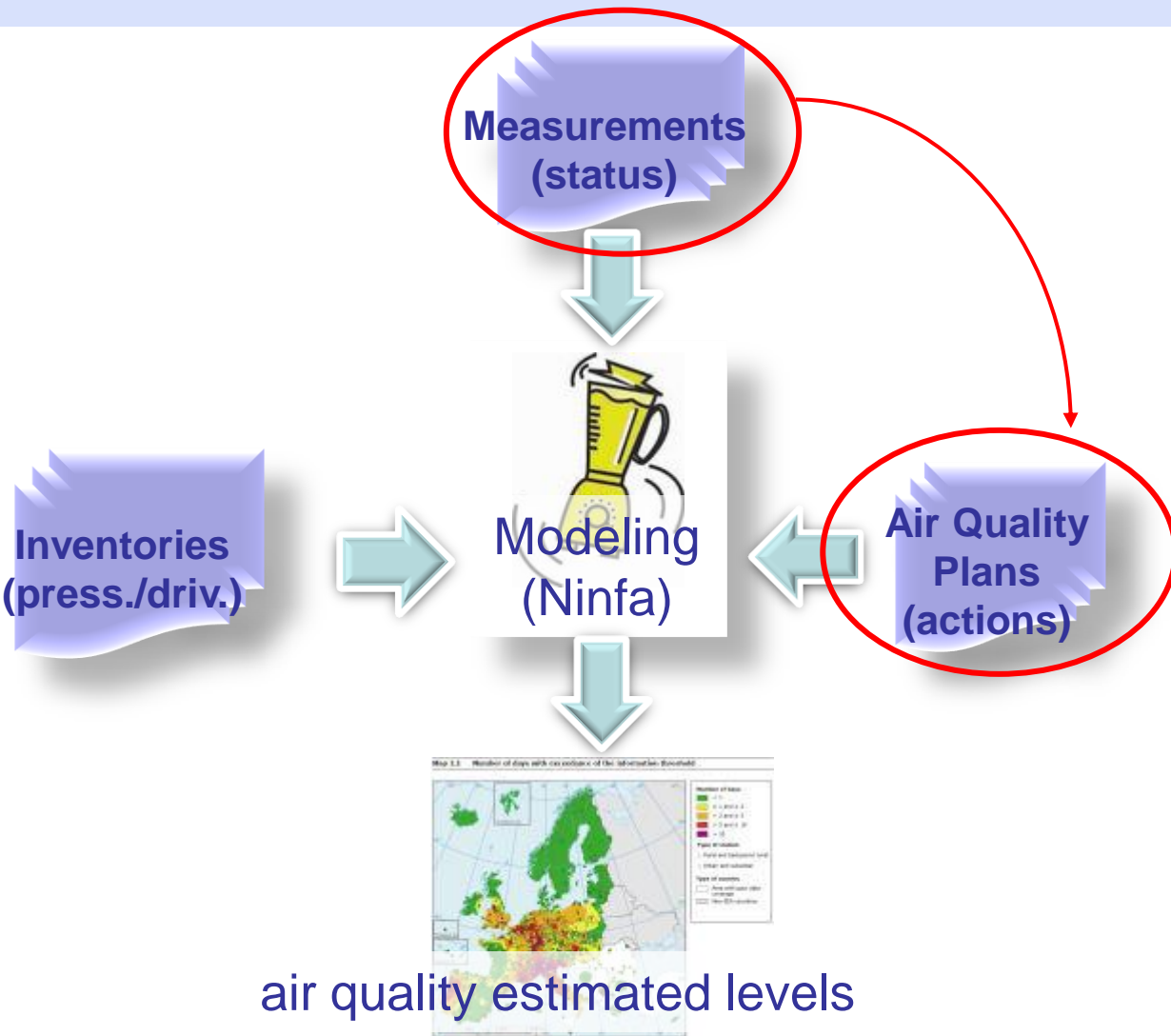


SCENARIO

EU Thematic Strategy for air quality (COM(2005) 446) and the DIRECTIVE 2008/50/EC on ambient air quality and cleaner air for Europe

GOALS

- Preparing, implementing and monitoring air quality plans to reduce population exposure to PM10, NOx and O3 pollution and ecosystems exposure to NOx and O3;
- Developing effective local and regional air quality plans integrated with national and European plans;
- Finding the best cost/effectiveness strategy to address air quality problems.
- Assessing the synergies between actions to reduce the burden of poor air quality and actions to limit climate change impacts.



- Best cost/effectiveness actions?
- What is the best mix to reach the proposed target?
- What is the best actions pool for my budget?
- How could I reduce costs and get the maximum result?

air quality estimated levels



EUROPEAN SCALE

NATIONAL SCALE

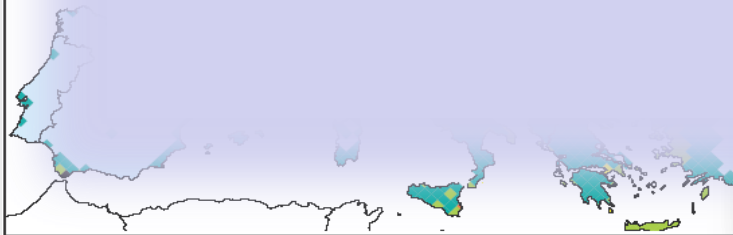
Rain (CM) - ILLICA

CAINC (M) - ENEA



IS IT POSSIBLE TO DEVELOP SUCH A TOOL
ALSO AT
LOCAL AND REGIONAL SCALE?

HOW SHOULD IT PERFORM?





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

DII, Università di Brescia (I) and TerrAria srl (I)

with consultancy of DEI - Politecnico di Milano (I) - and Les White Associates Ltd (EN)

NINFA-Extended

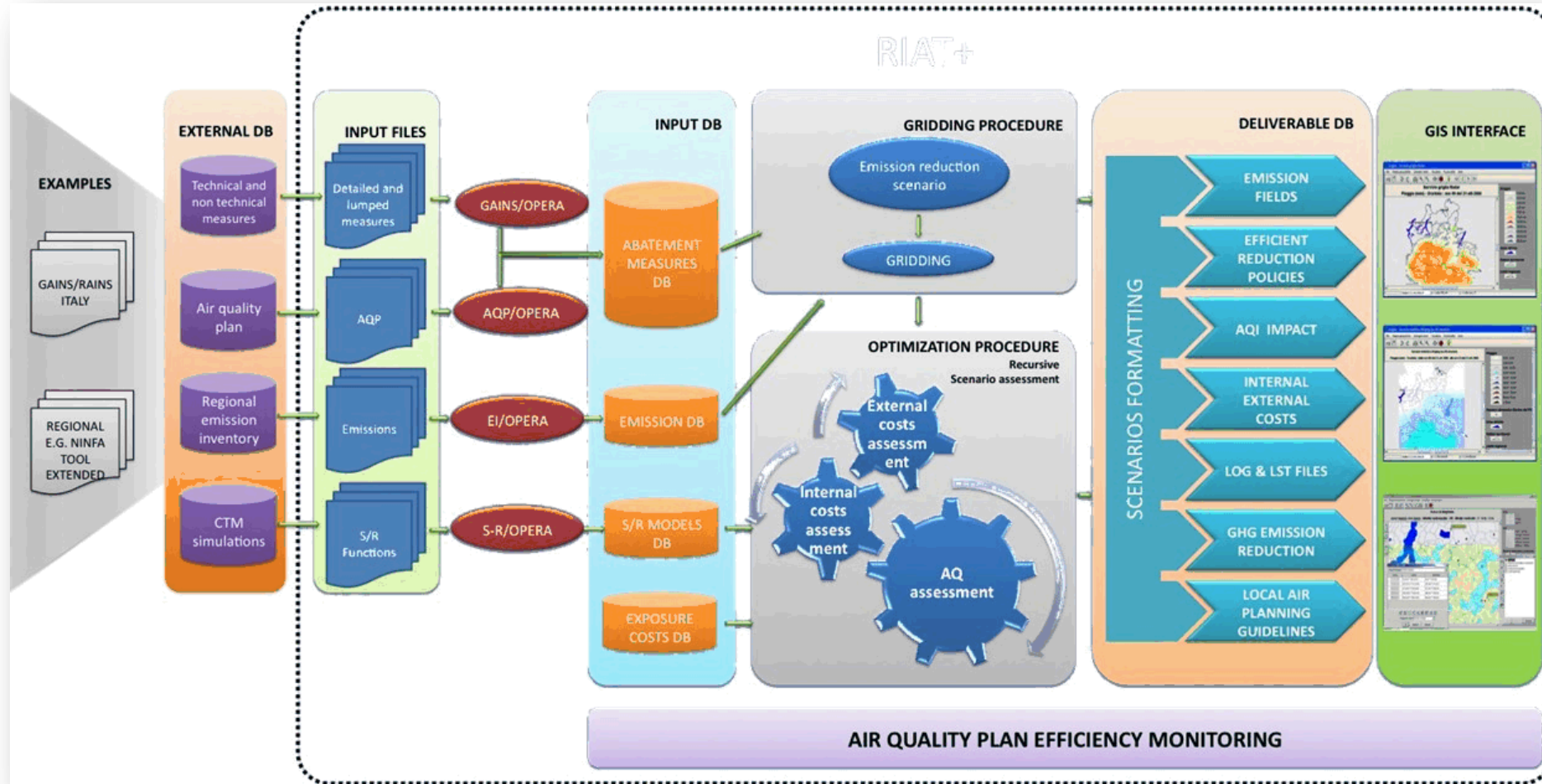
agenzia regionale prevenzione e ambiente dell'emilia-romagna

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.



Operational Procedure for Emission Reduction Assessment

THE OPERA PROJECT CORE – THE RIAT+



ARCHITECTURE

Input databases

- emission inventories and projections
- emission reduction measures:
 - ✓ Technical
 - ✓ Non-technical
- CTM simulations



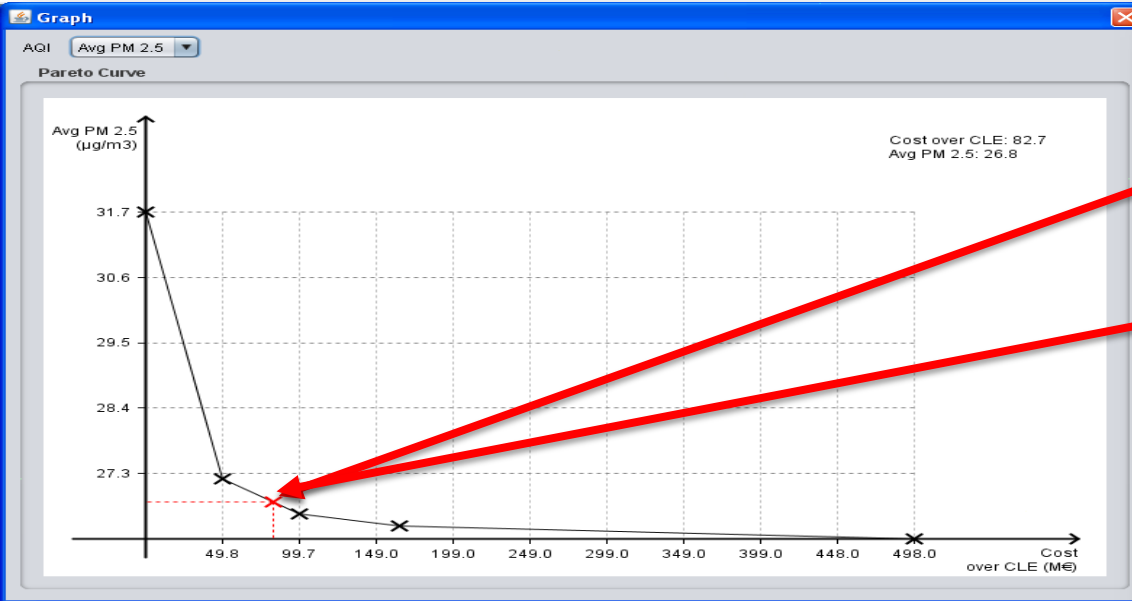
Decision model

- multi-objective analysis
- Source-receptor models



Deliverables

- efficient policies
- objective values
- post-processing



Output

Result

Regional cost over CLE

costOverCle[Meuro] = 49.83

Spatial details

Activity details

SNAP1 details

Regional average AQI

aqi_pm10[microg/m3] = 30.148
aqi_pm25[microg/m3] = 27.232
aqi_aot[ppb*h] = 32659.0
aqi_somo[ppb*d] = 3183.6

Emission reduction (respect CLE)

redOptNox[ton] = 84900.0
redOptVoc = 167000.0
redOptNh3 = 8640.0
redOptPm10 = 66300.0
redOptPm25 = 37600.0
redOptSO2 = 113000.0
remNox[ton] = 80400.0

Result Table

Result table

ms	sec	act	tec	lo...	Application rate (-1+0+1)	C
1	Agriculture: Livest...	No fuel use	Feed modification (all ...	1		0
1	Agriculture: Livest...	No fuel use	Hay-silage for cattle	1		0
1	Agriculture: Livest...	Other cattle - li...	Covered outdoor stora...	1		0
1	Agriculture: Livest...	Other cattle - li...	Combination of CS_L...	1		0
1	Agriculture: Livest...	Other cattle - li...	Covered outdoor stora...	1		0
1	Agriculture: Livest...	Other cattle - li...	Low ammonia applica...	1		0
1	Agriculture: Livest...	Other cattle - li...	Low ammonia applica...	1		0
1	Agriculture: Livest...	Other cattle - li...	Animal house adaption	1		0
1	Agriculture: Livest...	Other cattle - li...	Combination of SA_LNA	1		0
1	Agriculture: Livest...	Other cattle - s...	Low ammonia applica...	1		5
1	Agriculture: Livest...	Other cattle - s...	Low ammonia applica...	1		1
1	Agriculture: Livest...	Dairy cows - liq...	Covered outdoor stora...	1		2
1	Agriculture: Livest...	Dairy cows - liq...	Combination of CS_L...	1		5

Export Excel

With "Pareto Graph" we find the most effective actions pool for maximum pollution reduction at minimum expenses.



COORDINATING BENEFICIARY

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Centre National de la Recherche Scientifique

Only after the approval of the amendments to the Grant Agreement submitted on 31st January 2011 PGDG/2011/480 by the Lead Partner to the European Commission

Université de Strasbourg

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Ville, Environnement**



Steering Committee - Stakeholders



**in cooperation with
JRC (EC)**



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

Project objectives:

In agreement with the national priorities for Italy (4. Air), with the EU Thematic Strategy for air quality (COM(2005) 446) and the DIRECTIVE 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe.

Goals:

Set-up a methodology to assist local (sub-national) authorities in:

1. preparing, implementing and monitoring air quality plans to reduce population exposure to PM10, NOx and O3 pollution and ecosystems exposure to NOx and O3.
2. integrating regional air quality plans with national and European plans
3. assessing the synergies between actions to reduce the burden of poor air quality and actions to limit climate change impacts

Strategy:

- Develop an integrated assessment tool (RIAT+) to support the proposed methodology
- Apply this integrated tool on the Emilia-Romagna (Italy) and Alsace (France) regions
- Define guidelines for regional authorities to apply the methodology and tool
- Disseminate the guidelines and tool to local authorities, technical organizations and to the public at national and European levels

Contribution Breakdown	€	% Total	% Eligible Costs
Requested Community	1 089 544	47.38%	47.67%
Coordinating Beneficiary's	405 831	17.64%	
Associated Beneficiaries	805 635	35.01%	
CO-financers	0	0.00%	
TOTAL	2 301 010	100.00%	



EXPECTED RESULTS

RIAT+, a software tool to support local authorities in designing and assessing efficient air quality plans.

RIAT+ testing in Emilia Romagna (IT) and Alsace (FR) and assessment of air quality plans in these two regions.

A register, collecting non-technical emission reduction measures.

Full documentation, workshops and courses to support new users implementing the methodology to other European regions.

A standardized set of quantitative indicators to monitor action plans effectiveness.

Guidelines for local administrations and environmental agencies to integrate local planning to national and European air quality policies.



Preparatory Tasks

P1: Review of existing plans and methodologies, identification of RIAT+ requirement

P2: Data collection in Emilia-Romagna

P3: Data collection in Alsace

Implementation Tasks

I1: RIAT+ methods and design

I2: RIAT+ software development

I3: Testing in Emilia-Romagna (I) region

I4: Testing in the Alsace (F) region

Management Tasks

Communication Tasks



Innovative aspects of OPERA Project vs RIAT/Ninfa-E

Standard Decision Support System for sub-national air quality planning compatible all over the EU and linked with GAIN/RAINS (National/EU)

Harmonization with EU/national and local/regional decision problems

Upgradable and free database for non-technical measures

Population exposure assessment

Integrated evaluation between Air Quality Policies and GHGs policies

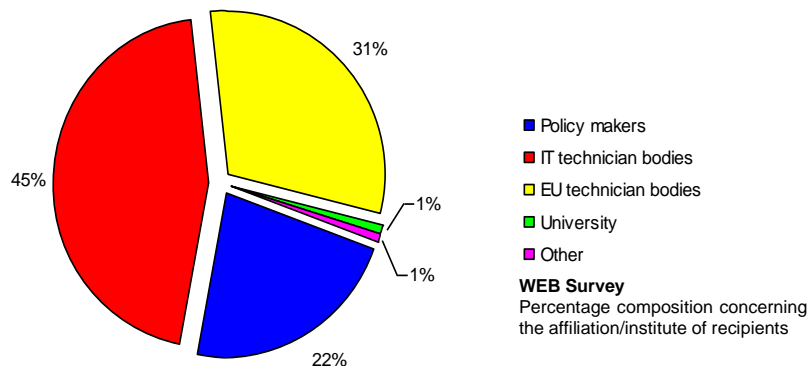
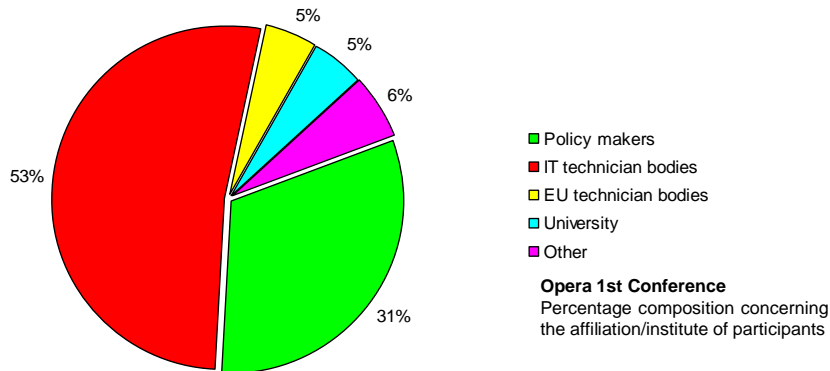
Simplified approach in case of scarce data availability

Quick preview of the actions pool effectiveness

Easy software, freely integrable with existing regional tools

Integrated budget constraints

End users requirements/suggestions /hints 1st Conference and WEB Survey Result



The expected results from OPERA project in order of importance:

1. a methodology and tool to support local authorities in designing and assessing efficient air quality plans;
2. a register including existing and new emission reduction measures (technical and non-technical) applied in the areas of the proposal. (Each action will be defined by its abatement efficiency and cost and will be linked to site specific implementation strategies);
3. RIAT+ should provide guidelines for local administrations and environmental agencies (this is a national priority for Italy) to integrate local planning to national and European air quality policies;
4. RIAT+ should provide a full documentation, workshop and courses to support new users implementing the methodology to other European regions.

**WE GOT THEM?
TODAY IS THE DAY FOR CHECKING ALL THAT!!!**



www.operatool.eu

THANK YOU
THANK YOU

- Home
- Background
- OPERAProject
- Tasks/ Actions
- Opera tool
- Results
- References
- Dissemination
- News

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.

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