Con il contributo di

La scienza dei dati e l’impatto delle attività agro-zootecniche: il progetto AgriAir

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Fondazione COGEME
Roccafranca, 20 giugno 2022

AQ&CC

20 febbraio 2022

Legenda PM2.5 - (µg/m³)

0-10	10-20	20-25	25-50	> 50

https://www.arpalombardia.it/Pages/Aria/qualita-aria.aspx

1 dicembre 2021

Rinnovabili.it

Calo delle emissioni, il metano dagli allevamenti è ancora un punto cieco

2 giorni fa

Foto di Harald Willingshofer da Pixabay

Il metano dagli allevamenti è il 44% delle emissioni antropiche globali di CH4

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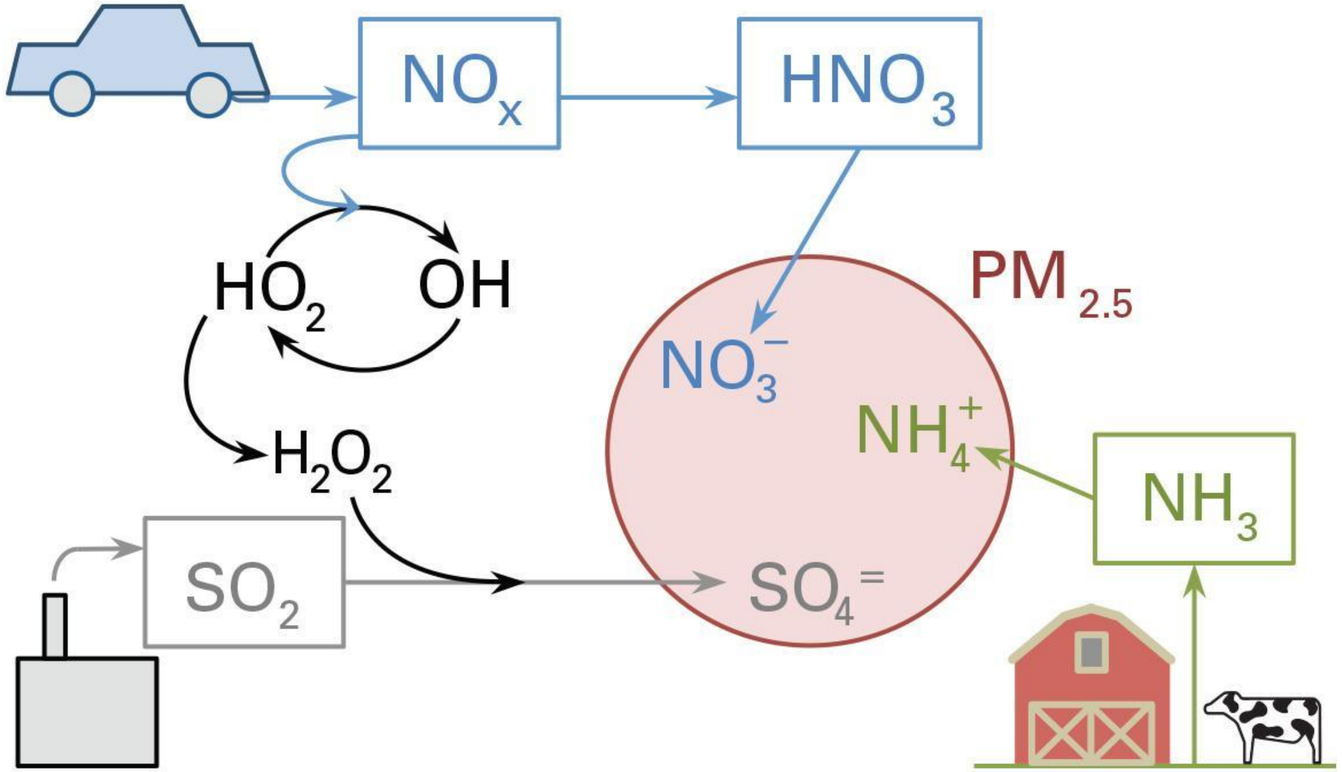
Il particolato secondario



Carnevale, C., Pisoni, E., Volta, M. A non-linear analysis to detect the origin of PM10 concentrations in Northern Italy (2010) Science of the Total Environment, 409 (1), pp. 182-191.

J Holt, N E. Selin, S Solomon, Changes in Inorganic Fine Particulate Matter Sensitivities to Precursors Due to Large-Scale US Emissions Reductions (2015). Environ. Sci. Technol. 49, 4834−4841

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Feature

ILLUSTRATION BY PAWEŁ JONCA

HEALTHY DIETS FOR PEOPLE AND THE PLANET

The ideal diet should be nutritious without threatening natural resources. Researchers are trying to decide what's best for countries from Kenya to Sweden. **By Gayathri Vaidyanathan**

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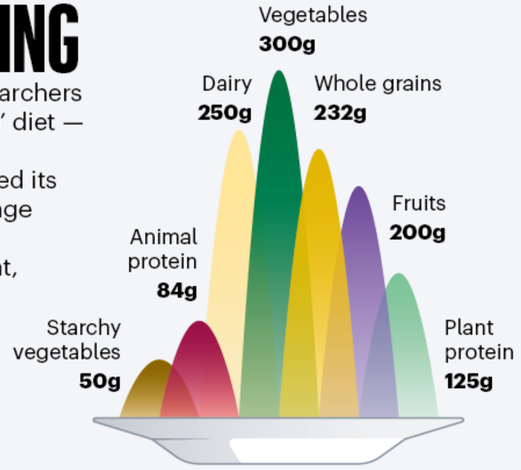
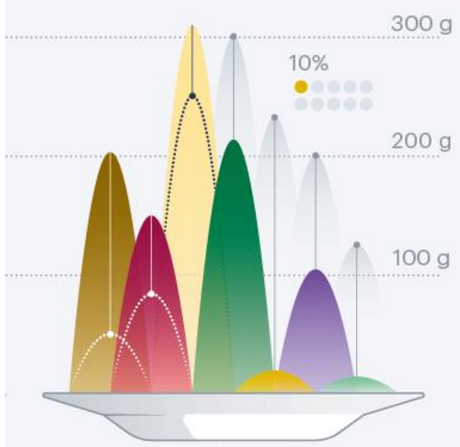
HEALTHY EATING

A commission of food researchers devised a 'planetary health' diet — meant to be nutritious and sustainable — and compared its composition with the average diets in different regions. Further studies showed that, in many regions, following the proposed diet would be prohibitively expensive.

By Kerri Smith
Design by Jasiek Krzysztofiak



Planetary health diet
grams per day

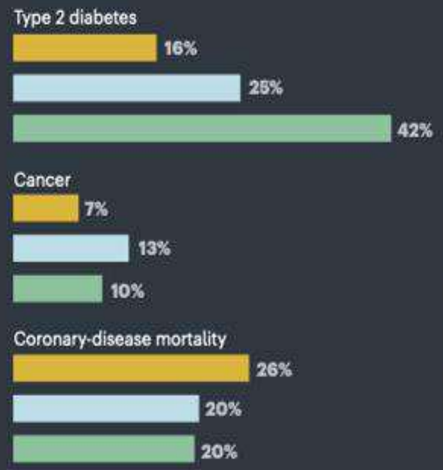


Europe and Central Asia

Health risks

The planetary health diet could save around 11 million lives, according to its designers. Similarly, a 2014 analysis showed that diets that are lower in fat, meat and sugar reduce the relative risk of several health conditions when compared with an omnivorous diet such as the global average (above).

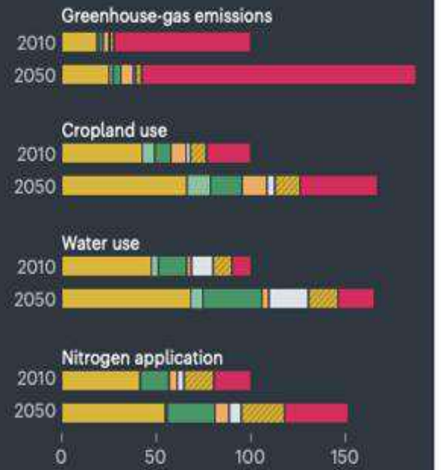
- Mediterranean
- Pescatarian
- Vegetarian



Environmental costs

Between 2010 and 2050, predicted growth in population and income could drive a 50–90% increase in environmental pressures exerted by food systems, such as climate impacts and freshwater use.

- Staple crops
- Plant proteins
- Fruits and vegetables
- Vegetable oils
- Sugars
- Other crops
- Animal products



SOURCES: RISKS, REF. 6; ENVIRONMENTAL COSTS, M. SPRINGMANN ET AL. NATURE 562, 519–525 (2018)

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Gli obiettivi del progetto

Raccolta e analisi di dati ambientali, economici e sociali

Emissioni prepAIR
Po Regions Engaged to Policies of Air

Sistema di modellistica integrata AgriAir

Supporto ai decisori:

Misure efficienti di riduzione delle emissioni da agricoltura e zootecnia,

soluzioni tecnologiche, energetiche e comportamentali

in termini di costi e i benefici, impatti sulla salute, risparmio di energia e di combustibili fossili.

strumenti di comunicazione, citizen engagement e citizen science:

Consultazione stakeholder
Airclip
Coinvolgimento degli studenti
Questionario

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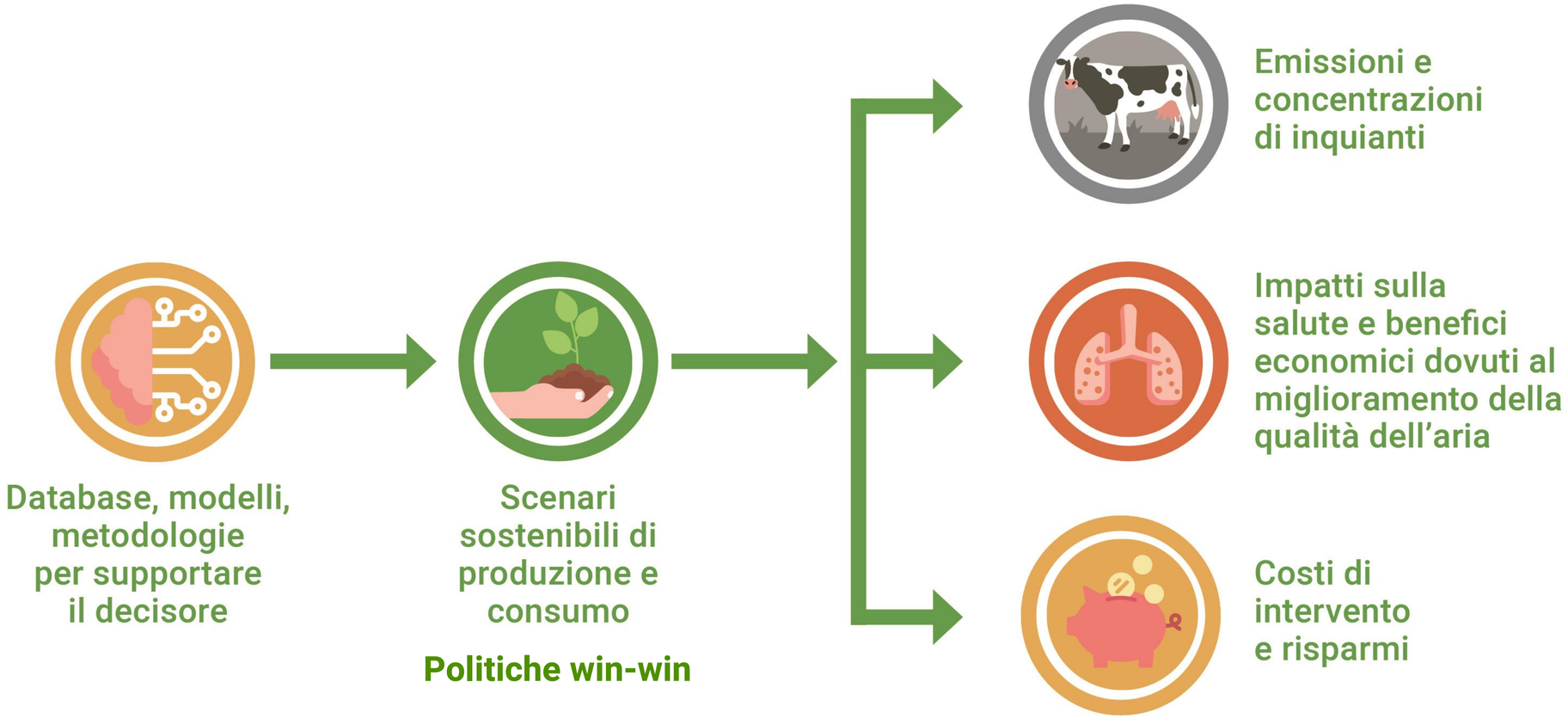
Il sistema AgriAir



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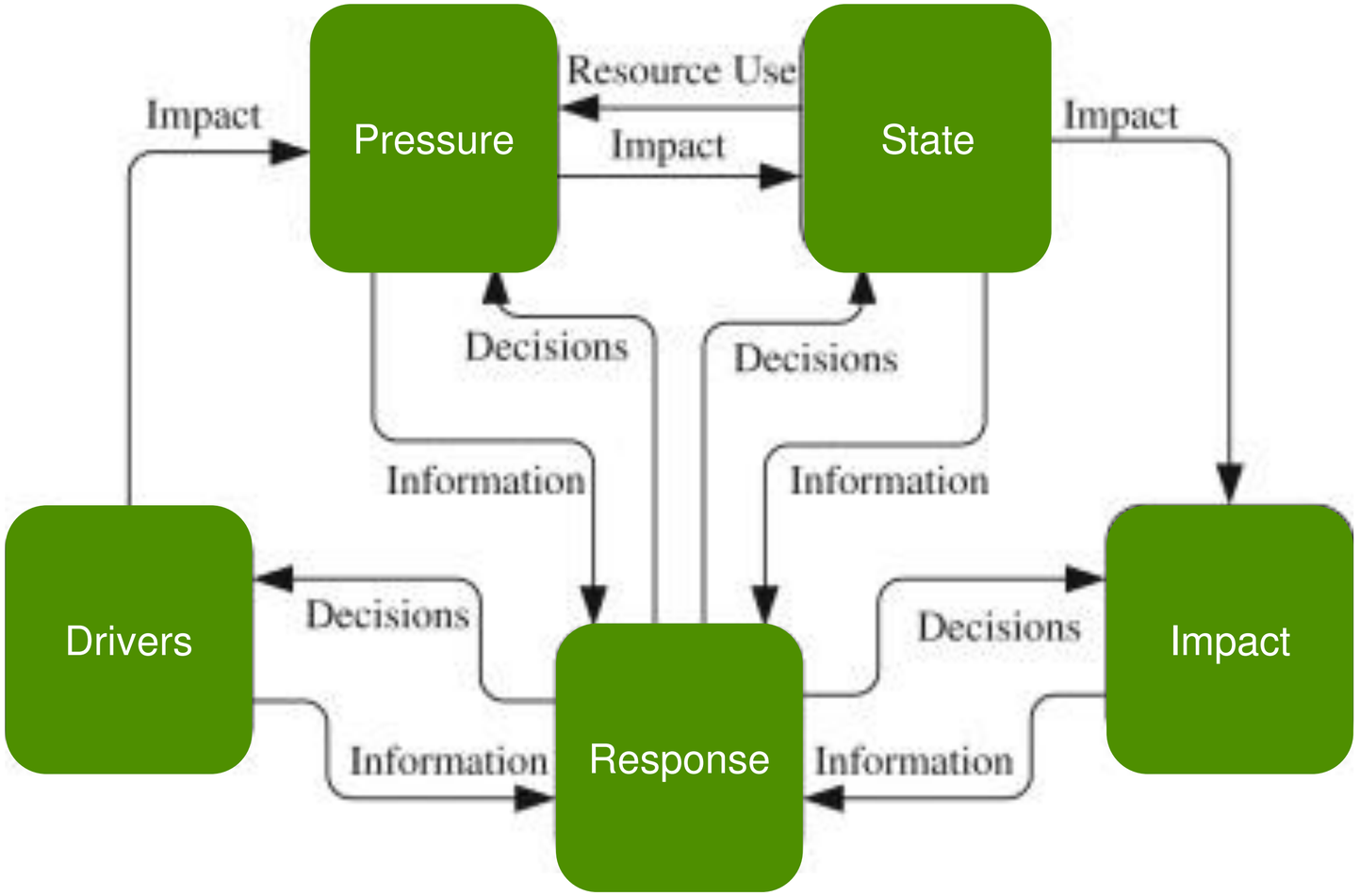
Integrated Assessment Modeling



EEA DPSIR framework (1999)

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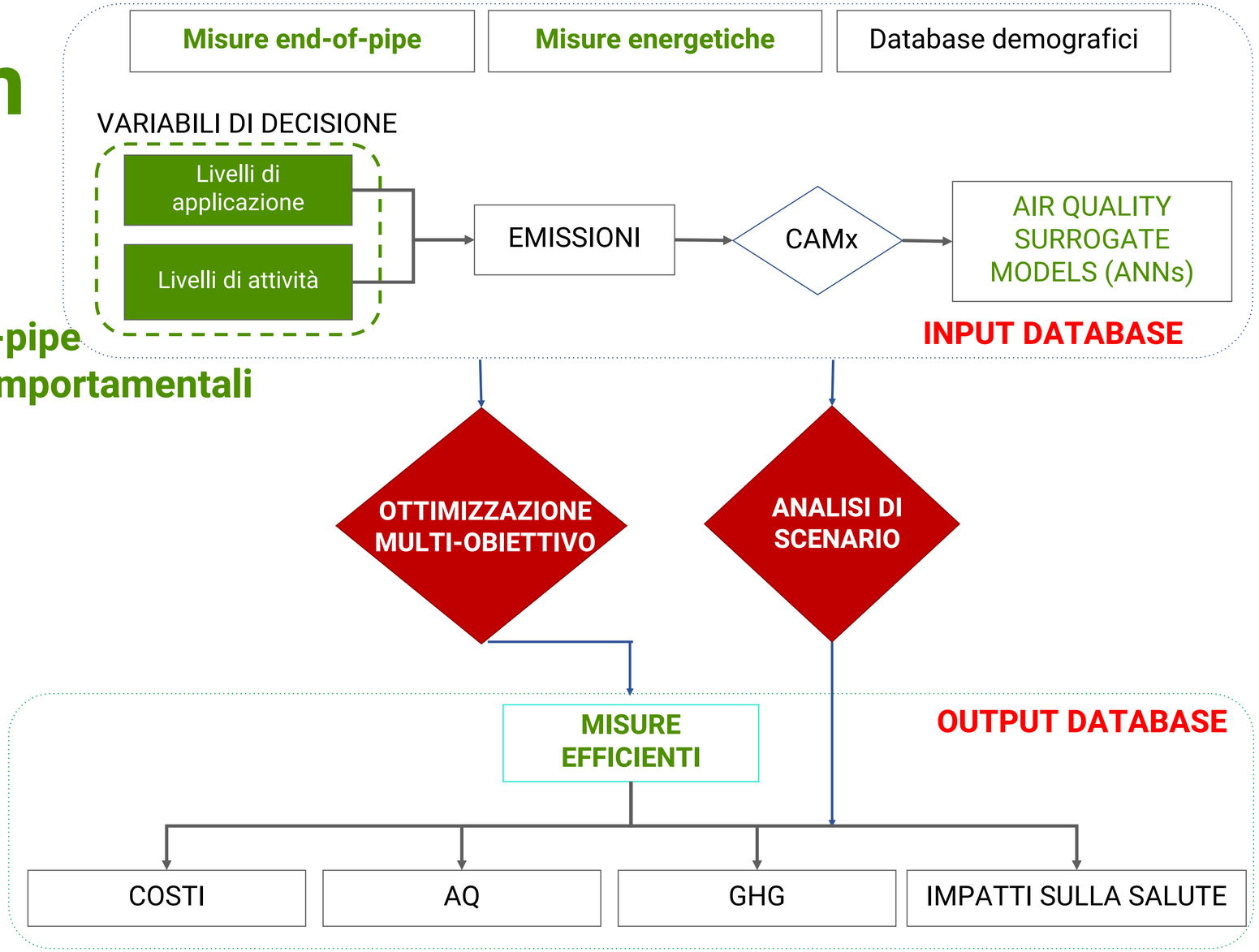
MAQ IAM system



Misure end-of-pipe
Misure energetiche e comportamentali

Regional Integrated Assessment Tool PLUS

OPERA EU LIFE09ENV/IT/092 (2010-2013)

E. Turrini, C. Carnevale, G. Finzi, M. Volta. A non-linear optimization programming model for air quality planning including co-benefits for GHG emissions, Sci. Total Environ., 621 (2018), pp. 980-989

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Misure comportamentali

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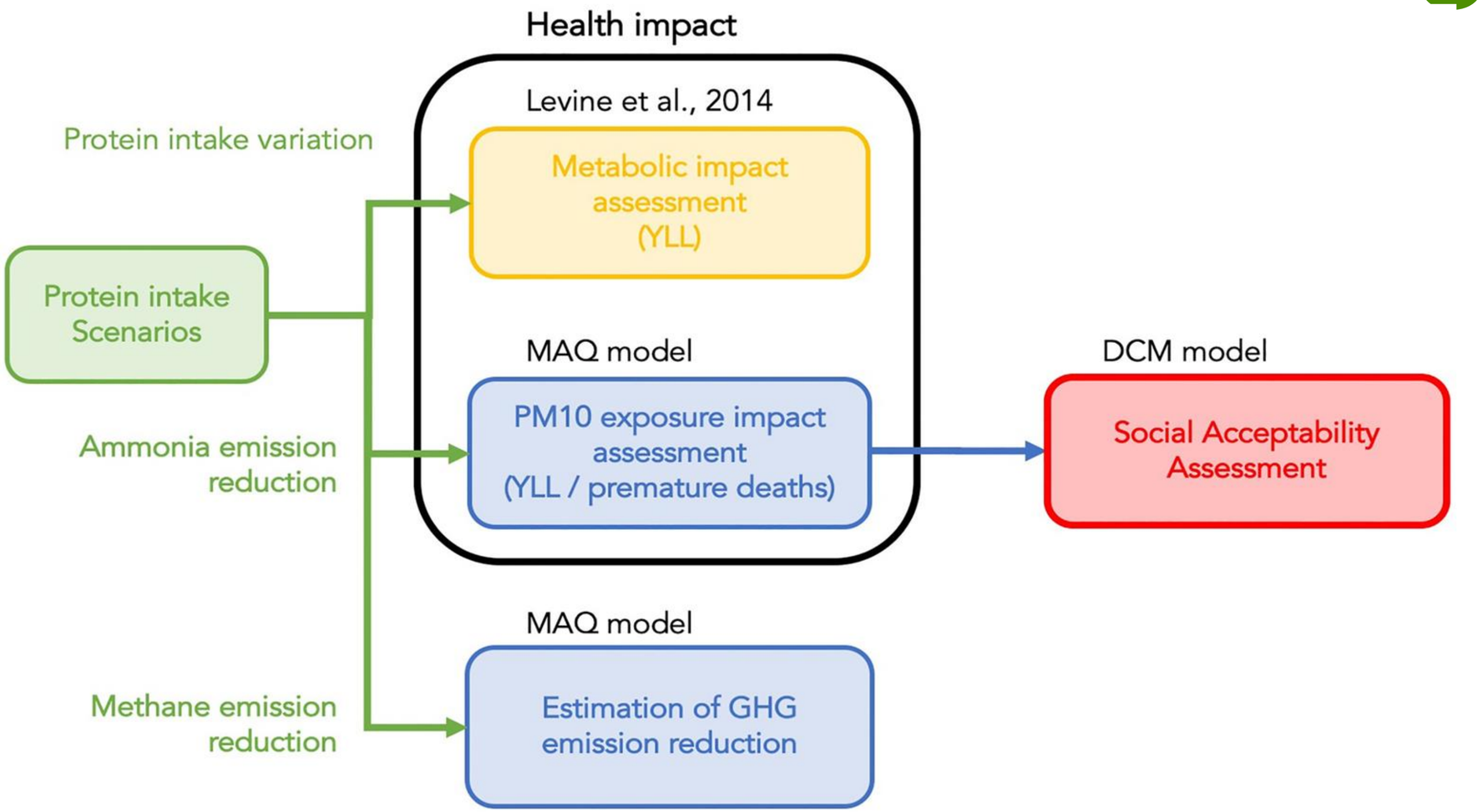
Sistema modellistico AgriAir



Volta, M., Turrini, E., Carnevale, C., Valeri, E., Gatta, V., Polidori, P., Maione, M. Co-benefits of changing diet. A modelling assessment at the regional scale integrating social acceptability, environmental and health impacts (2021) Science of the Total Environment, 756, art. no. 143708

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Agricoltura e energia

BIOMASSHUB
biometano per una società sostenibile

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Scenario	NOX	VOC	NH3	PPM10	PPM2.5	SO2
D	-44,0%	1,0%	-0,1%	-4,3%	-5,4%	-14,3%
E	-50,5%	-0,7%	-0,2%	-5,7%	-6,9%	-20,5%
F	-53,6%	-0,7%	-0,2%	-5,8%	-7,0%	-21,0%

Scenario	ΔPM2.5	ΔNO2	ΔCO2
D	-4,4%	-33,1%	-21,1%
E	-5,3%	-40,0%	-30,7%
F	-5,7%	-43,3%	-30,7%

Scenario	NOX	VOC	NH3	PPM10	PPM2.5	SO2
G	-44,0%	1,0%	-10,8%	-4,3%	-5,4%	-14,3%
H	-50,5%	-0,7%	-10,9%	-5,7%	-6,9%	-20,5%
I	-53,6%	-0,7%	-7,0%	-5,8%	-7,0%	-21,0%

Scenario	ΔPM2.5	ΔNO2	ΔCO2
G	-6,1%	-33,1%	-21,1%
H	-7,1%	-40,0%	-30,7%
I	-6,8%	-43,3%	-30,7%

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una agricoltura sostenibile per noi e il pianeta

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