

# COMPILING EMISSION PROJECTIONS AND PREPARING FOR THE INITIAL NAPCP IN CROATIA

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# OUTLINE

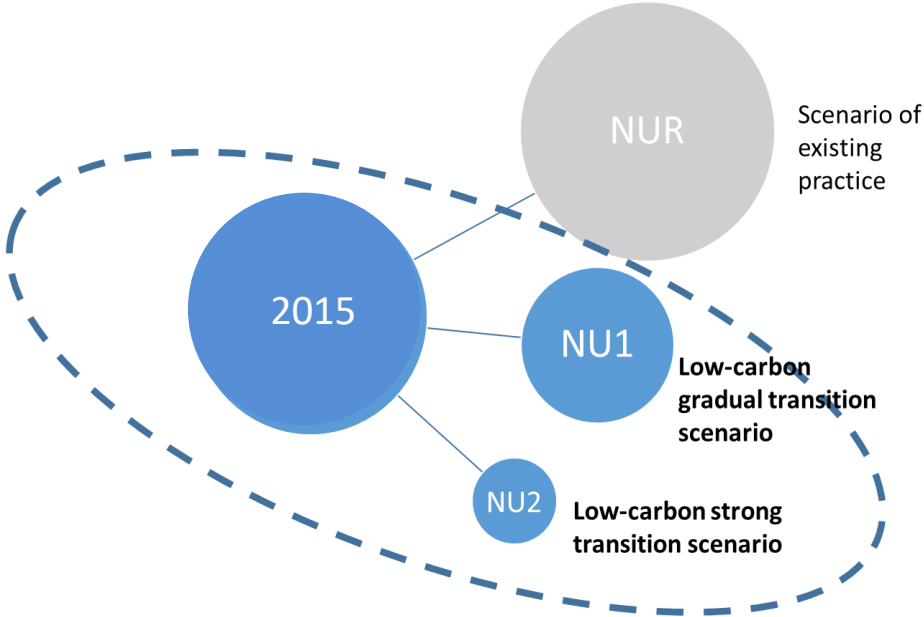
- What is done
  - Recent projections
  - Spatial Distribution Portal
  - Air Quality Portal
  - Air Quality Assessment
- What needs to be done for NAPCP preparation
  - Challenges

# What is done - Recent projections

- GENERAL
  - Client: Ministry of environment and energy
  - Financed by Environmental Protection and Energy Efficiency Fund
  - Contract with Ekonerg
  - Prepared in 2015 (reference year: 2000, last historic year: 2012)
- KEY ELEMENTS
  - Includes synergies between different policies (air pollution, energy and climate policy);
  - Activity data and basic assumptions for development of AQ projections are coherent with GHG emission projections;
  - Passed the consultation between stakeholders (ministries, agencies, local authorities, official data providers, etc.);
  - Passed the public consultation;
  - Status: ongoing political consensus, due to the new „Energy Strategy of Croatia until 2030” is under development (to be adopted in 2019).

# What is done - Recent projections

- SCENARIOS



# What is done - Recent projections

- NUSPCRO MODEL – model for Low Carbon Strategic Planning of Croatia
  - Comprehensive multi-sectoral model for projections
  - Provides integration of GHG projections under UNFCCC and air pollutant projection under UNECE/CLRTAP and NECD
  - Provides cohesion of activity data, assumptions and parameters
  - Provides an assessment of the impact of measures on different indicators:

## Economy

- BDP, productivity, prices, import, security , ...

## Society

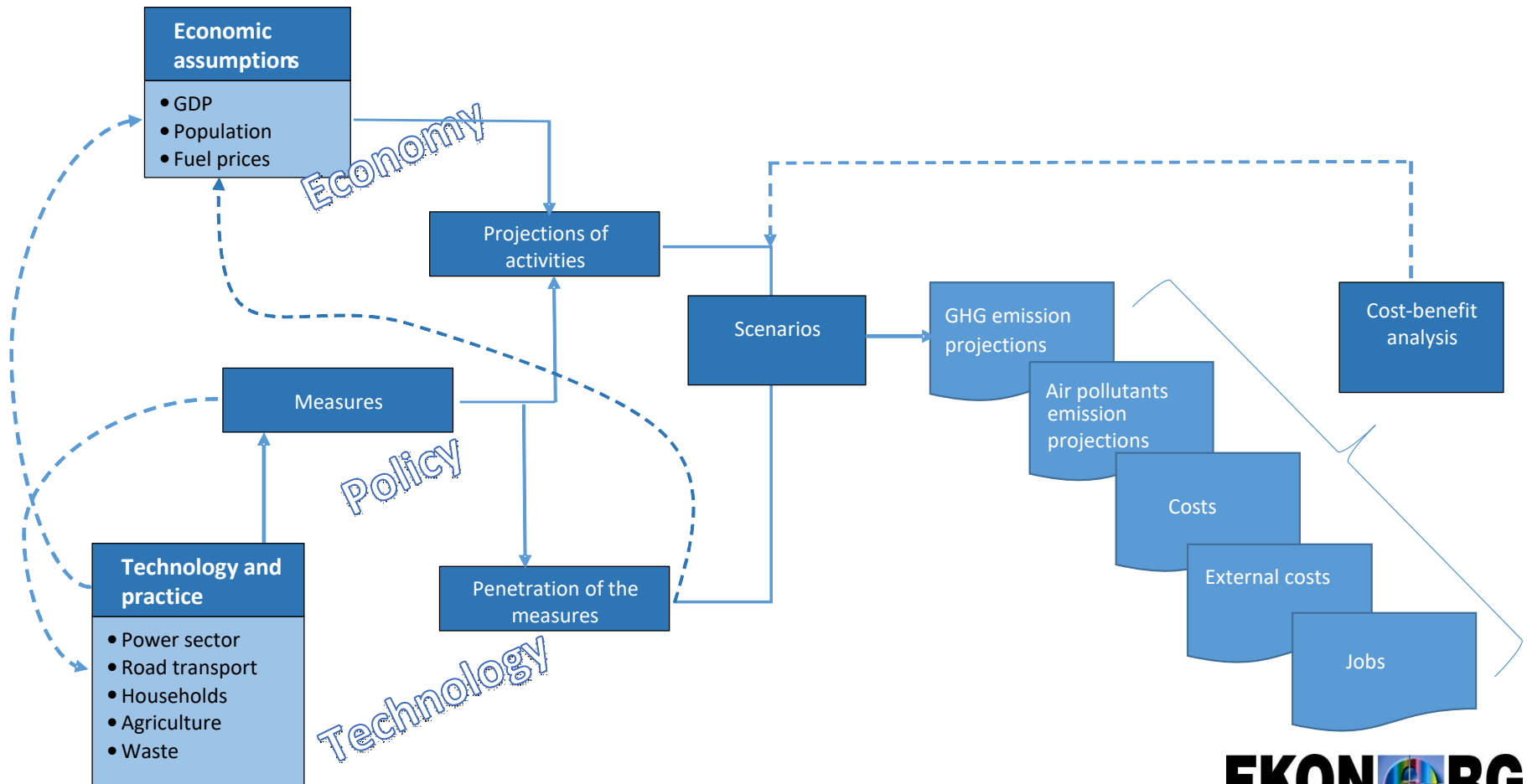
- Employment, health, home budget, regional development, ...

## Environment

- Air quality, Natura 2000, waste management, impact on land use, landscape, noise, other

# What is done - Recent projections

- The iterative process of creating scenarios and analysis of results with NUSPCRO model



# What is done - Spatial Distribution Portal

**HAOP**  
Hrvatska agencija za okoliš i prirodu

## Portal prostorne raspodjele emisija

Hrvatska agencija za okoliš i prirodu

Portal prostorne raspodjele emisija napravljen je u sklopu projekta izrada registra emisija onečišćujućih tvari s prostornom raspodjelom emisija u EMEP mreži visoke rezolucije. Projekt izrada registra emisija onečišćujućih tvari s prostornom raspodjelom emisija u EMEP mreži visoke rezolucije proveden je sredstvima Fonda za zaštitu okoliša i energetsku učinkovitost.

[O projektu](#) [Povratak](#)

### Podaci o emisijama

Emisije onečišćujućih tvari u Republici Hrvatskoj po zonama i aglomeracijama

[Pogledaj](#)

### Raspodjela emisija

Prostorna raspodjela emisija onečišćujućih tvari po zonama i aglomeracijama

[Pogledaj](#)

### Konačni podaci GNFR

GNFR format za izještavanje i modeliranje emisija onečišćujućih tvari

[Pogledaj](#)

### Konačni podaci SNAP

SNAP format za potrebe modeliranja emisija onečišćujućih tvari

[Pogledaj](#)

**O NAMA**

Hrvatska agencija za okoliš i prirodu je javna ustanova za poslovne priključnjara i objedinjavanja podataka i informacija o okolišu i prirodi radi osiguravanja i praćenja provedbe politike zaštite okoliša i prirode i održivog razvika te ostale stručne poslove s tim u vezi.

**KONTAKT**

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**NOVOSTI / AKTIVNOSTI**

- Službeni podnesak nacionalnih podataka o emisijama
- Podaci o emisijama iz velikih točlastih izvora, RCO baza
- Emisije onečišćujućih tvari u zrak na području Republike Hrvatske

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Broj posjeta: 134

# What is done - Spatial Distribution Portal

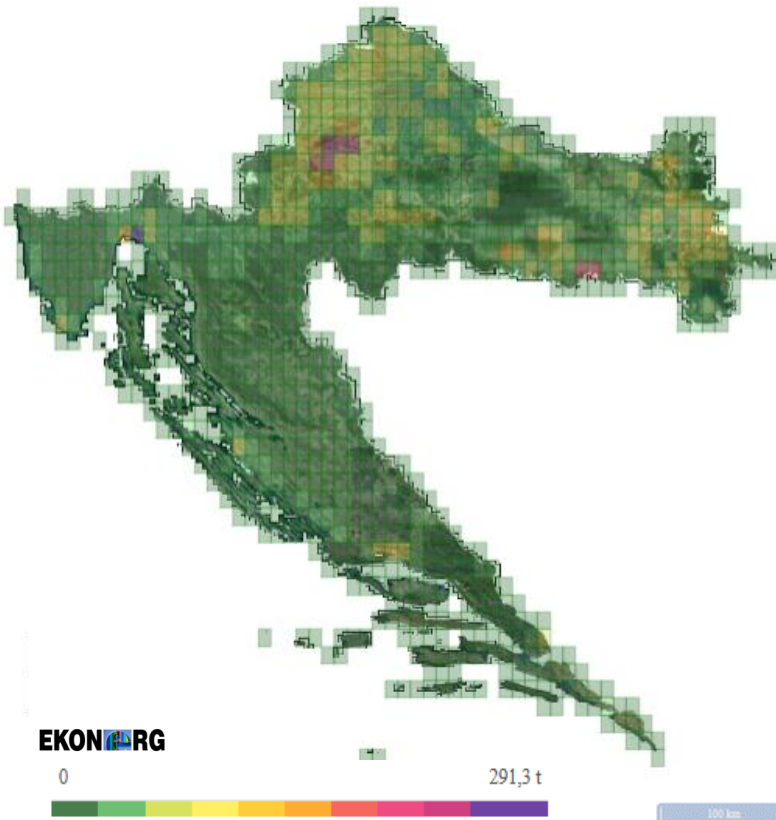
- GENERAL
  - Link: <https://emep.haop.hr>
  - Client: Croatian agency for environment and nature
  - Financed by Environmental Protection and Energy Efficiency Fund
  - Contract with Ekoneg
- KEY ELEMENTS
  - Emissions by GNFR, NFR, SNAP sectors for 1990, 1995, 2000, 2005, 2010, 2014 and 2015
  - Spatial gridding of emissions in new EMEP grid  $0.1^{\circ} \times 0.1^{\circ}$ 
    - Help in detection of zones, that are prioritized for emission reduction
    - Provides quantitative and visual achievements of historical emission reduction per sectors
  - Spatial gridding of emissions for AQ agglomerations in grid  $0.5 \text{ km} \times 0.5 \text{ km}$ 
    - Help in detection of AQ agglomerations, that are prioritized for emission reduction
    - Provides quantitative and visual achievements of historical emission reduction per sectors
  - Format for reporting of national gridded data by GNFR sectors
    - Facilitate reporting to the CLRTAP and NECD
  - Format for modellers: gridded data by SNAP sectors
    - Facilitate modelling (emissions with ambient AQ data)



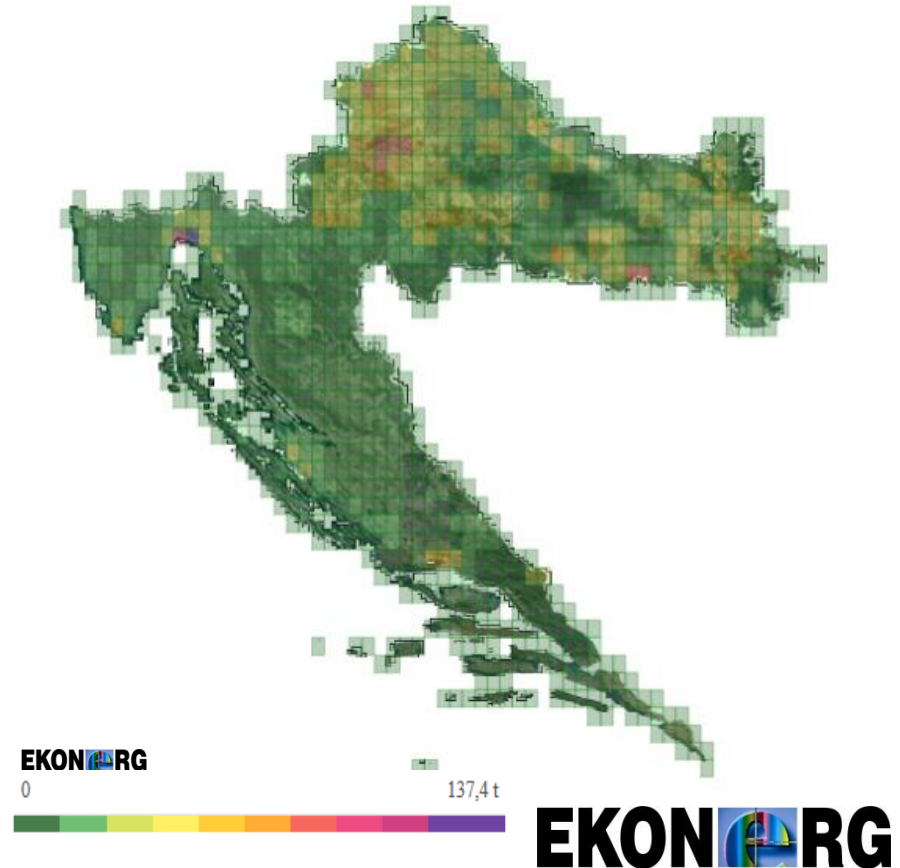
# What is done - Spatial Distribution Portal

- Spatial gridding of national emissions in EMEP grid  $0.1^\circ \times 0.1^\circ$

Small combustion, PM<sub>2.5</sub> emissions, 1990



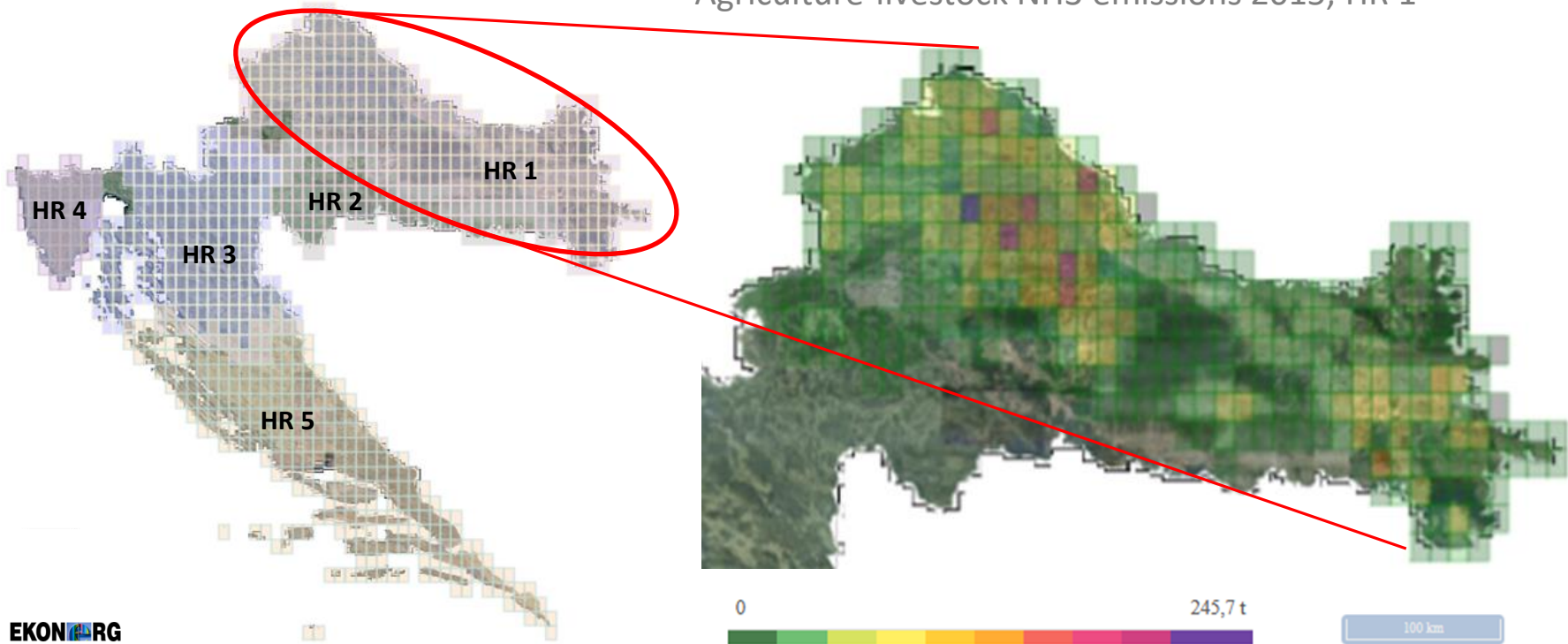
Small combustion, PM<sub>2.5</sub> emissions, 2015



# What is done - Spatial Distribution Portal

- Spatial gridding of emissions for 5 AQ zones in EMEP grid  $0.1^\circ \times 0.1^\circ$

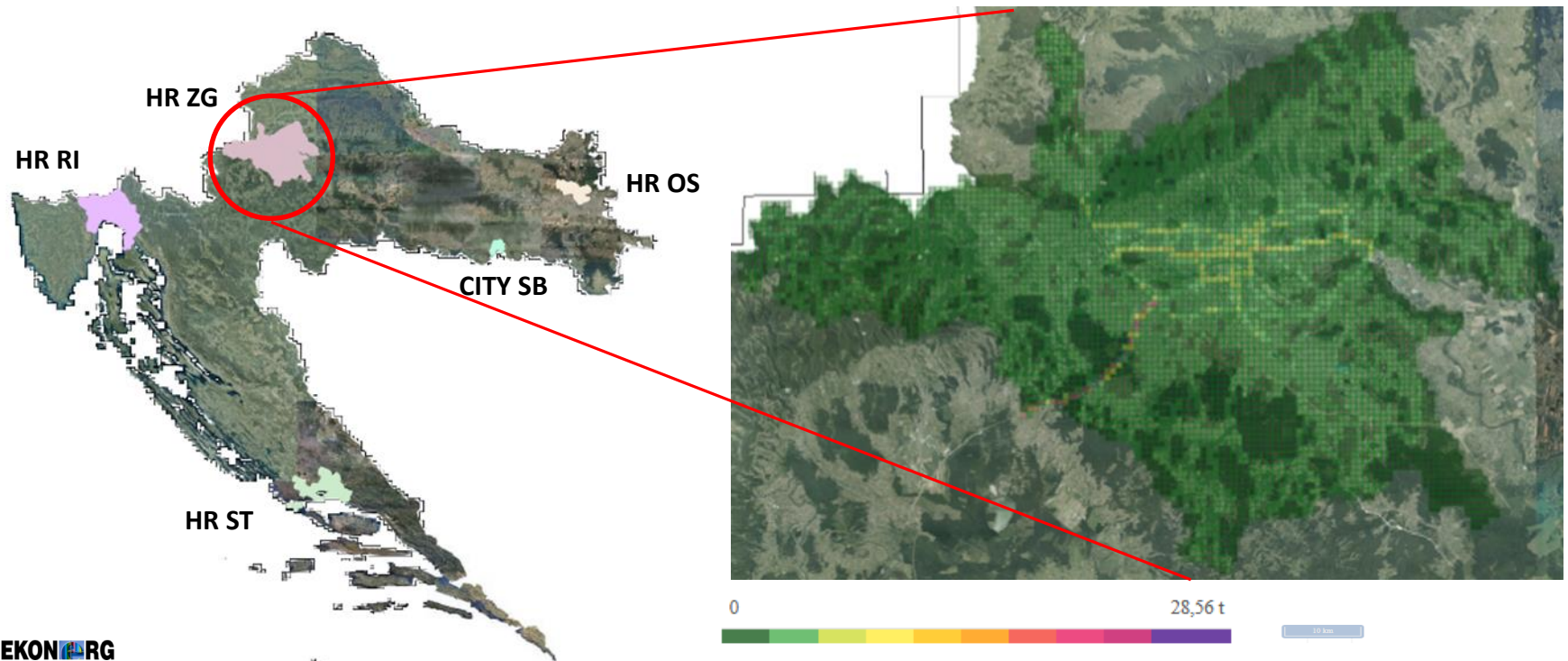
Agriculture-livestock NH<sub>3</sub> emissions 2015, HR 1



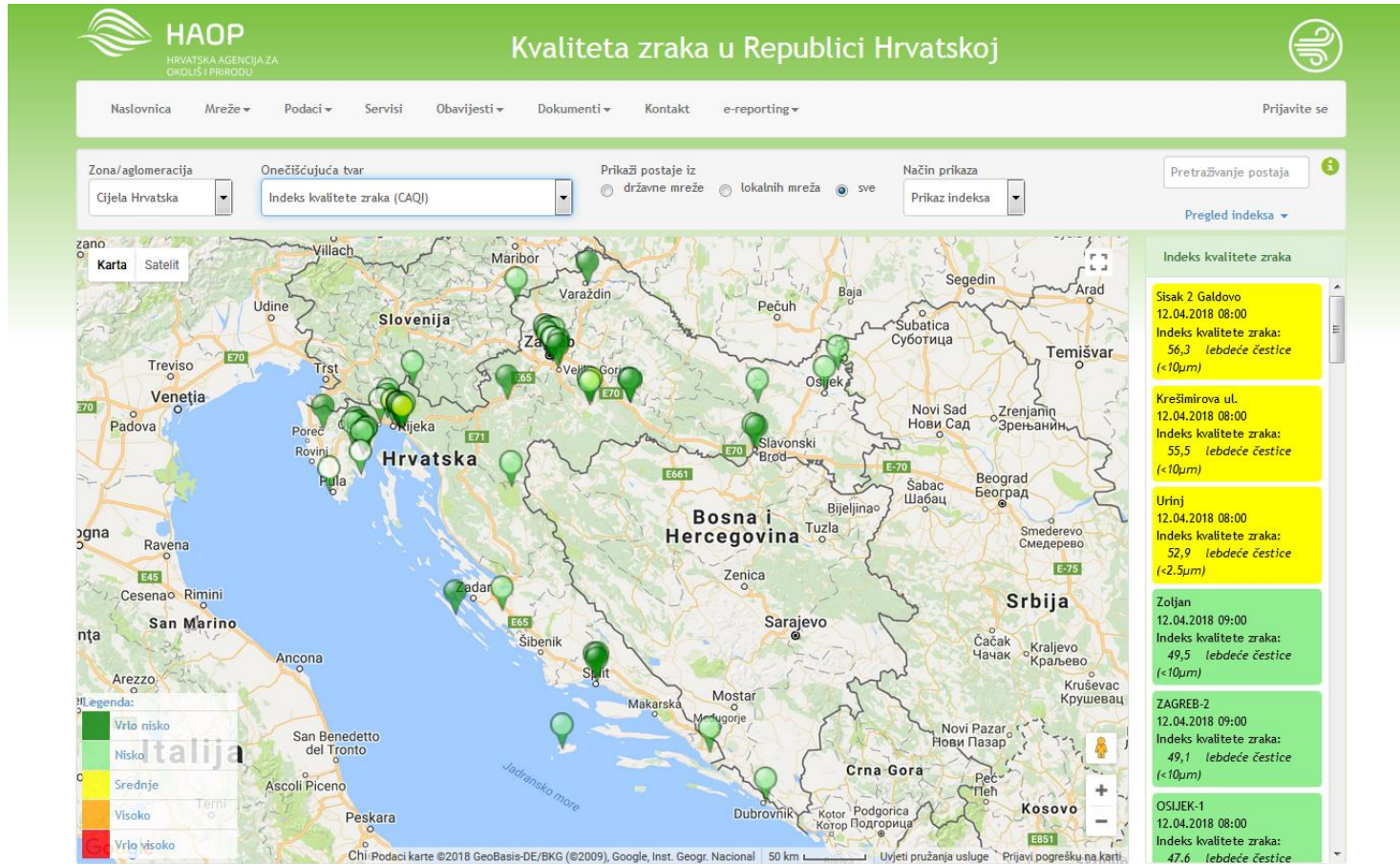
# What is done - Spatial Distribution Portal

- Spatial gridding of emissions for 4 AQ agglomerations and 1 city in grid resolution 0.5 km x 0.5 km

Road transport NO<sub>x</sub> emissions 2015, HR ZG



# What is done - Air Quality Portal



# What is done - Air Quality Portal

- GENERAL
  - link: <http://iszz.azo.hr/iskzl/index.html>
  - Client: Croatian agency for environment and nature
  - Contract with Ekoneg for database development and IT support
- KEY ELEMENTS
  - Up to Date AQ data from 52 automatic measurement stations (22 national and 30 local) with AQ Index view
  - Validated Air Quality Data
  - Statistics (e.g. exceedances, annual mean, maximum, percentile)
  - Croatia AQ zones and agglomerations in spatial distribution
  - Information about Assessment regime and methods (Meta data)
  - Information on the attainment of environmental objectives
  - Air quality annual reports – from the state and local networks
    - facilitate reporting to the Croatian legislation

# What is done, ongoing activities – Air Quality Assessment

- GENERAL
  - Regulation determining zones and agglomerations according to levels of air pollution on Croatian territory (O.G. 1/2014)
  - New AQ assessment 2011-2015, obligation under CAFE Directive
  - AQ modelling system under development
    - ongoing structural funds project
  - National AQ Protection and Improvement Plan for 2018-2022
    - the third one, under development
- STATUS
  - Air quality zones in non-compliant with PM10, PM2.5, O3:
    - 2 agglomerations, 5 cities and 4 zones
  - 6 Action plans are prepared (obligation under Article 23, CAFE Directive)

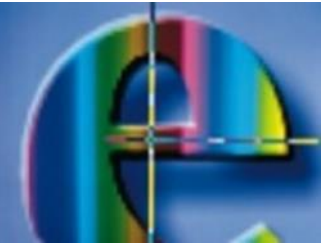
# What needs to be done for NAPCP preparation

- Update WM and WAM scenarios:
  - Update of methodology to be in line with the latest submission of air pollutants inventory:
    - update EFs,
    - update AD (Energy sector, biomass consumption in small combustion),
    - change of categories (IPPU and Agriculture sector)
    - new categories (Waste sector)
  - update the PaMs
  - update the Annex IV: Projections reporting template.xls of the Revised 2014 guidelines (ECE/EB.AIR.125)
- Prepare the projected improvement in air quality

# What needs to be done for NAPCP preparation - Challenges

- Development of the platform for dialogue across ministries and local authorities;
- Further analysis of PM emissions from residential biomass combustion;
- Giving accent to PaMs for NH<sub>3</sub> emissions reduction from agriculture;
- Straightening the improvement of measures for emission reduction of NO<sub>2</sub> and PM at agglomerations / cities;
- Dealing with e.g. illegal agricultural burning, illegal wood cutting for heating;
- Implementation of national Principles of Good Agricultural Practice (Ministry of Agriculture, 2009).





**Thank you for your attention!**