Influence of waste co-incineration in a cement plant on cancer burden

PARC 6.2.4 case study follow-up

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CANCER REGISTRY
REGISTER RAKA
SLOVENIJA

T6.2.4 Health impact assessment

PARC 6.2.4 Case study 6

Title	Influence of waste co-incineration in a cement plant on cancer burden			
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	Mojca Juričič	juricicmojca@gmail.com	NIJZ	Slovenia	Exposure modelling

Part 1: Geographical analysis (OI)

Part 2: Risk assessment for carcinogenic effects (NIJZ)

Influence of waste co-incineration in a cement plant on cancer burden

PARTNERS

PARC 6.2.4 Case study 6

The main objective is to investigate the impact of waste co-incineration at the Salonit Anhovo cement plant (Western Slovenia region) on cancer by assessing the environmental pollutants in the modelled areas and their association with the cancer burden in the population.

Part 1: Geographical analysis (OI)

Part 2: Risk assessment for carcinogenic effects (NIJZ)

Influence of waste co-incineration in a cement plant on cancer burden

ANHOVO cement plant

Increasing amount of waste produced worldwide…

- ***EUROPE'S BEATING CANCER PLAN***
- *European direction on reducing the cancer burden and sustaining healthy environment*

A new EU approach to cancer prevention, treatment and care with new technologies, research and innovation as the starting point.

Influence of waste co-incineration in a cement plant on cancer burden

POLICY RELEVANCE

Part 1: Geographical analysis

- ENVIRONMENTAL DATA GATHERING: 10/23
  national research project in course
- ENVIRONMENTAL DATA CLEANING: 12/23
  national research project in course
- CANCER SELECTION: 9/23
  Literature review
- CANCER DATA EXTRACTION AND CLEANING: 11/23
  Population-based cancer registry
- ANALYSIS: 6/24
  Data linkage in GIS
  Bayesian hierarchical modelling: risk/PAF
  Small area mapping - CanMapTool
- CanMapTool ADAPTATION FOR ROUTINE USE: 6/24
  in touch with the Portuguese colleagues that are performing the waste incineration-cancer mortality case study
- RESULTS INTERPRETATION: 12/24
- ARTICLE: 6/25

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OI:

GEOGRAPHICAL ANALYSIS

Part 1: Geographical analysis

ENVIORNMENTAL DATA

National research project in course (Aris V3-2236):

- AIR: PM10, PAH
- SOIL: metals

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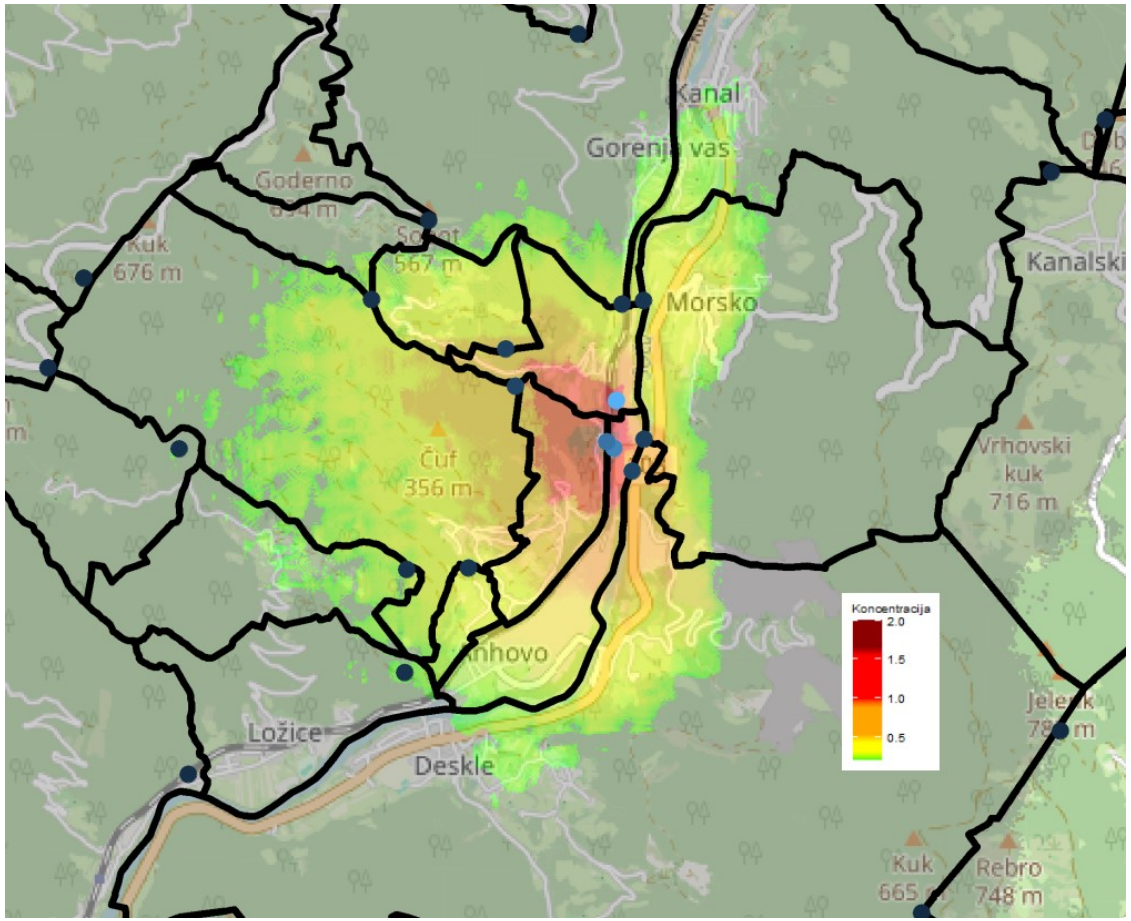
Geographical analysis

ENVIRONMENTAL DATA

Part 1: Geographical analysis

ENVIORNMENTAL DATA – PM10



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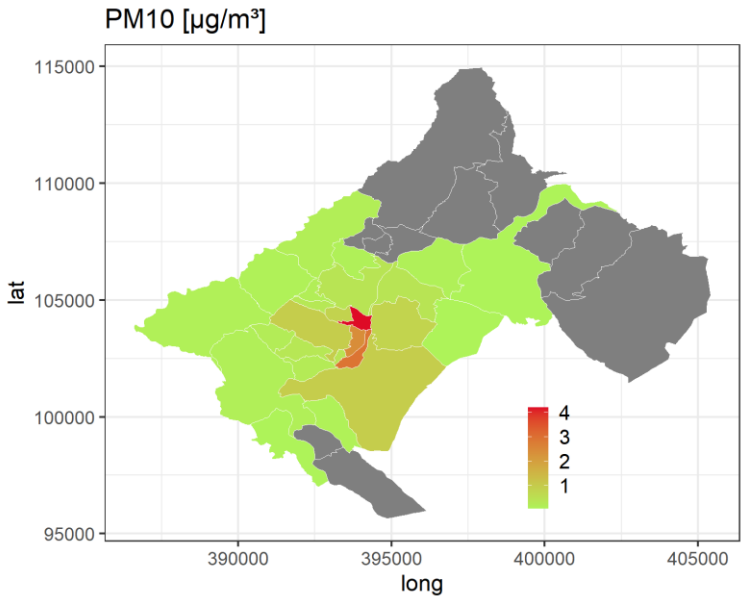
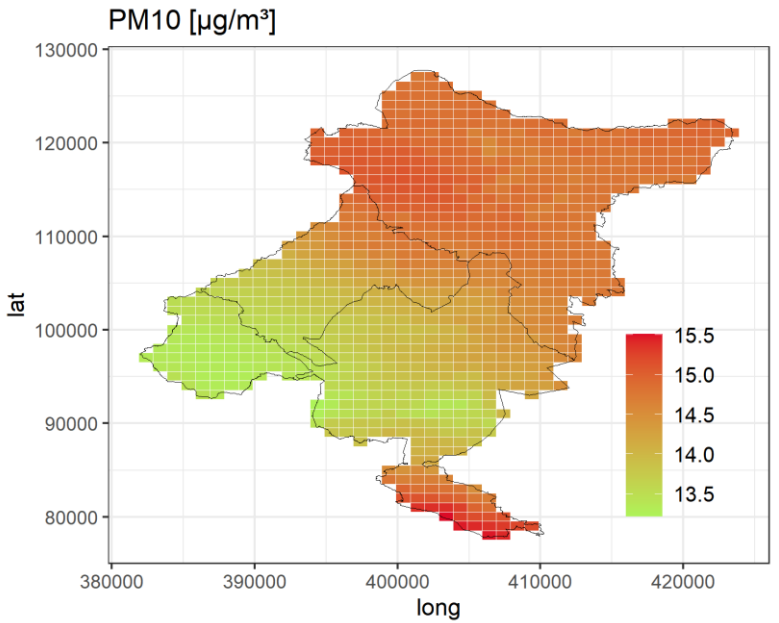
Geographical analysis

ENVIRONMENTAL DATA

Part 1: Geographical analysis

ENVIORNMENTAL DATA – PM10





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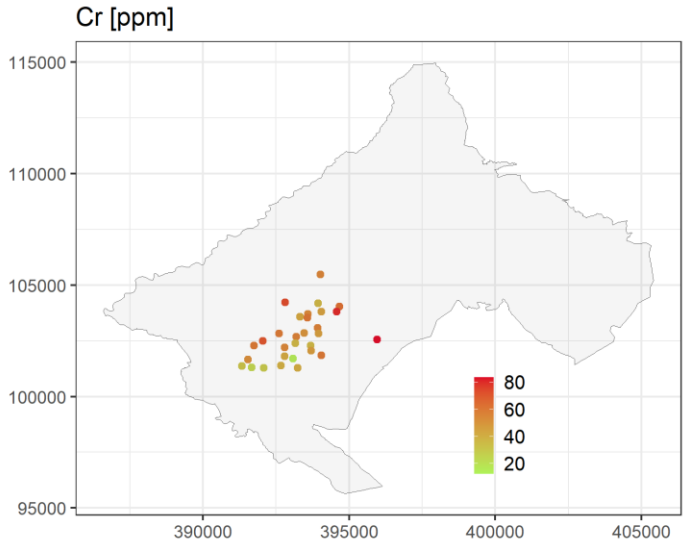
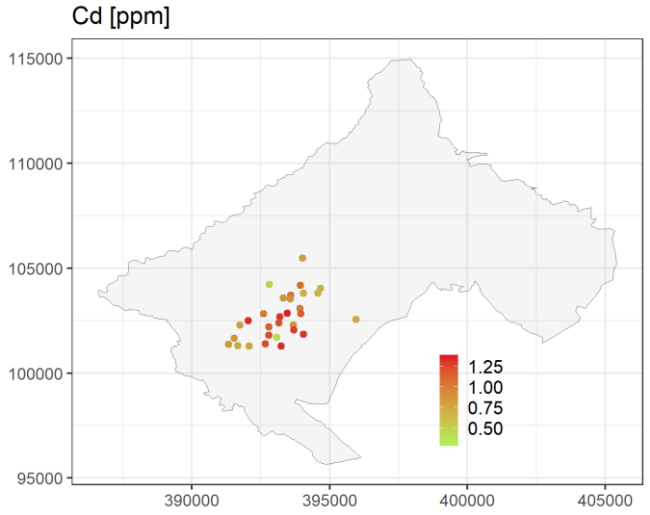
Geographical analysis

ENVIRONMENTAL DATA

Part 1: Geographical analysis

ENVIORNMENTAL DATA – METALS





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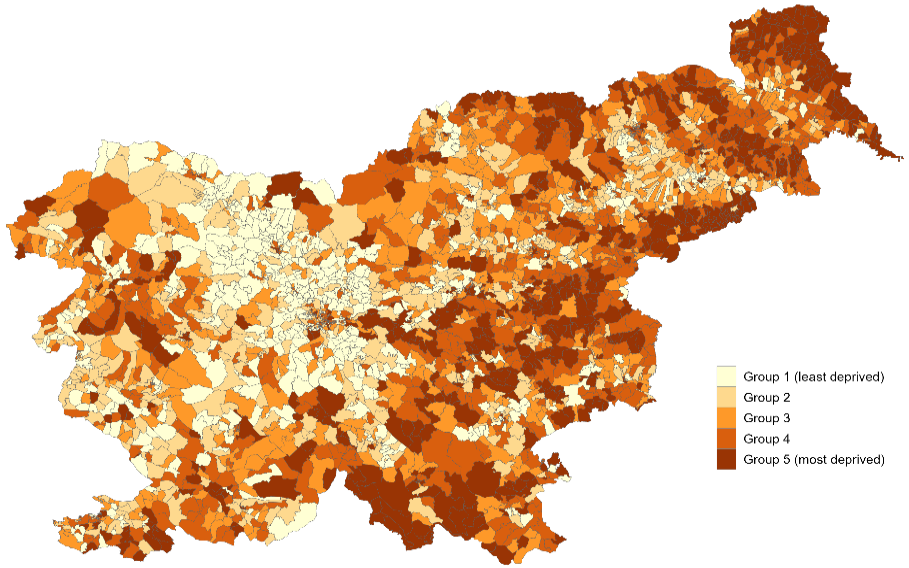
Geographical analysis

ENVIRONMENTAL DATA

HEALTH – CANCER – DATA

Population-based cancer registry - detailed information accessible:

- age, gender,
- place of living (x,y coordinates),
- socio-economic status,
- cancer type.



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Geographical analysis

HEALTH - CANCER DATA

Part 1: Geographical analysis

HEALTH – CANCER – DATA

Cancer selection – literature review: *doi:10.25670/oi2023-007on*

- all cancers but non-melanoma skin:
  - geographical vicinity, PM10, PAH, Cr,
- lung cancer:
  - geographical vicinity, PM10, Cr,
- non-Hodgkin lymphoma and sarcoma:
  - geographical vicinity, PAH.

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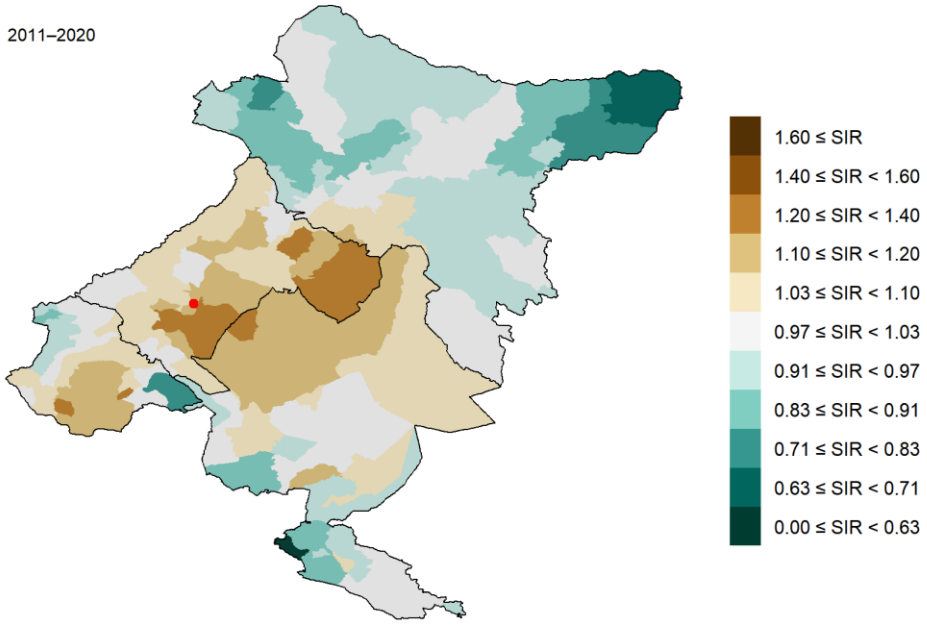
Geographical analysis

HEALTH - CANCER DATA

HEALTH – CANCER – DATA

SIRs: Bayesian smoothing: all cancers, but skin



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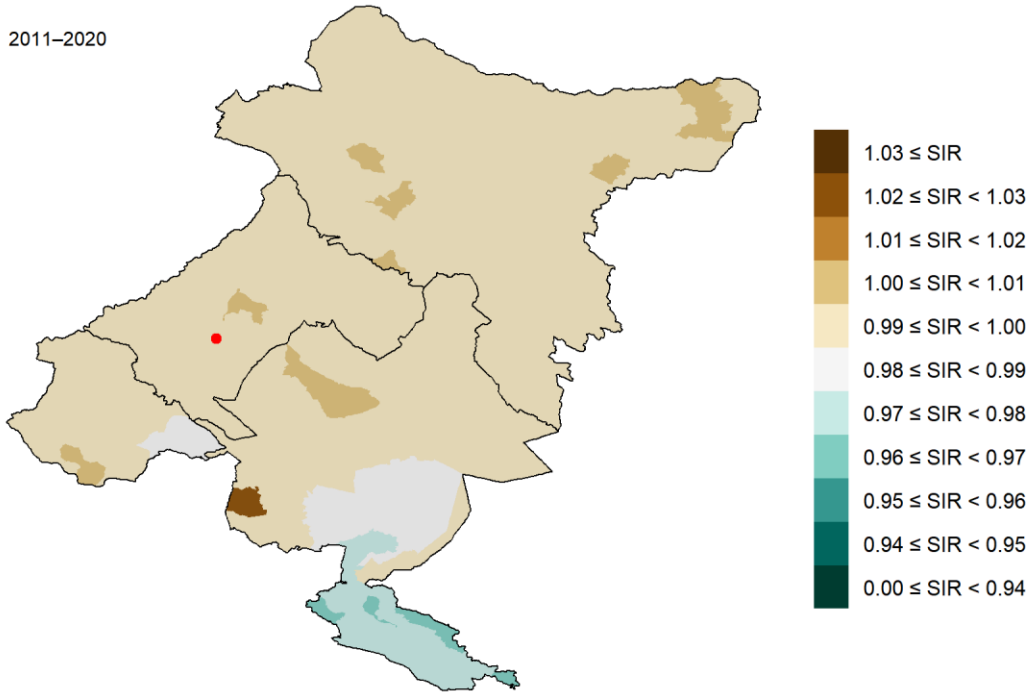
Geographical analysis

HEALTH - CANCER DATA

HEALTH – CANCER – DATA

SIRs: Bayesian smoothing: lung cancer



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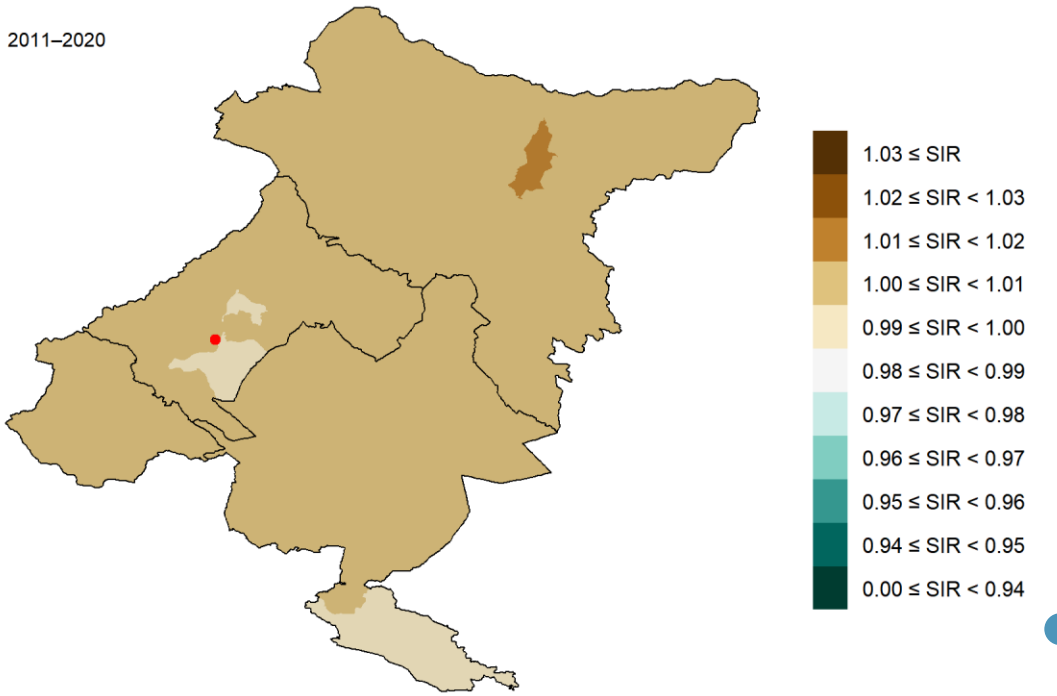
Geographical analysis

HEALTH - CANCER DATA

HEALTH – CANCER – DATA

SIRs: Bayesian smoothing: NHL



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Geographical analysis

HEALTH - CANCER DATA

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OI:

GEOGRAPHICAL ANALYSIS

Part 1: Geographical analysis

STRENGHTS & LIMITATIONS

STRENGHTS

- *REAL-WORLD STUDY*

LIMITATIONS

- *ECOLOGICAL FALACY: no individual level exposure data is available in this case study.*
- *LATENCY PERIOD: the exposure data and the cancer cases relate to the same period.*

Part 2: Risk assessment for carcinogenic effects

- HBM and HBM-GVs CHECKING AND SELECTING: 10/23
  HBM4EU: heavy metals, PCB, PBDE, PAHs
- ANALYSIS: 3/24
- RESULTS INTERPRETATION: 6/24
- RESULTS PUBLISHING: 6/25

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NIJZ:

RISK ASSESSMENT