DCMR Milieudienst Rijnmond

Scale issues in air quality assessment and the development of an air quality assessment tool within the CLARA project

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CLARA project

→ Climate Forecast Enabled Knowledge services

→ Developing climate services based upon C3S

→ Water management and air quality

→ http://www.clara-project.eu/

  → AirvCloud service (SMHI) built upon CAMS info of 1x1 km resolution enhance with high resolution assessment on local/street scale level

  → Practical test of the service DCMR & SMHI
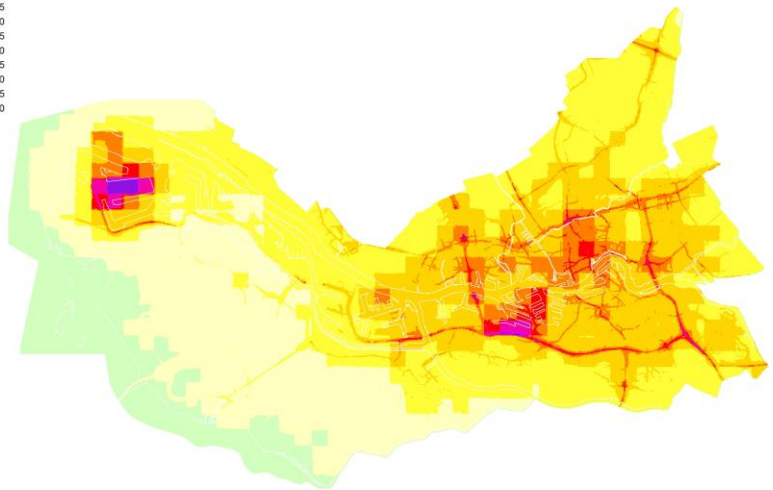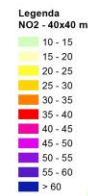
Air quality assessment – scale issue

→ Up until recently (NL): limit value exceedances and very high resolution modelling (100x100m or less) needed for formal assessment → CAMS information hardly useful (scale)

→ Currently: hardly any limit value exceedances left in NL:
  → Do we still need these high resolution assessments?
  → Are other scales not as / even more appropriate for (local policy making)?
  → Is CAMS information becoming more useful for local air quality assessment?

→ Question: What scale is appropriate for local policy making? For public health advisors, for urban planning?
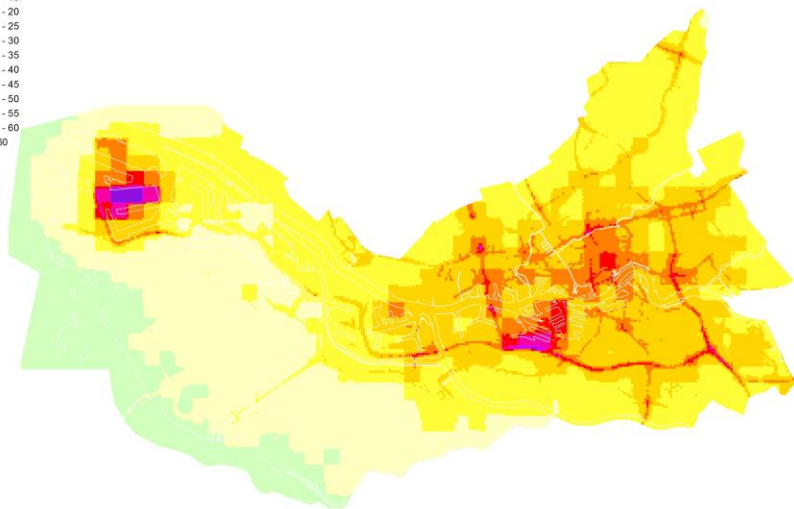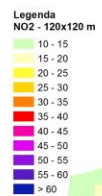
Approach

→ Produce various AQ, temperature and health indicators at different resolution (from 40x40m, up to 1x1km and 5x5km)

→ See how 'the message' changes when the scale changes

→ Compare how exposure assessment changes (in collaboration with public health authorities/exposure scientists)

→ Is spatial or temporal resolution more important?

→ Are simple 'tricks' (adding spatial information - e.g. roads and their increment) sufficient to improve assessments based on 5x5 km maps?
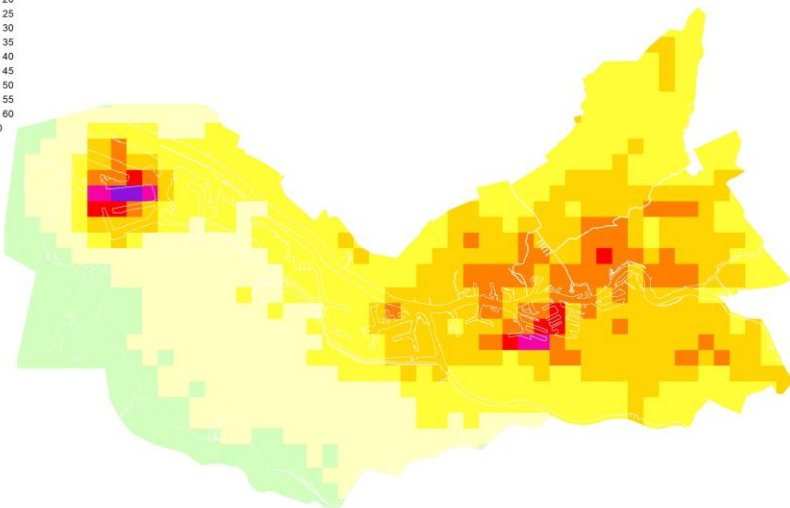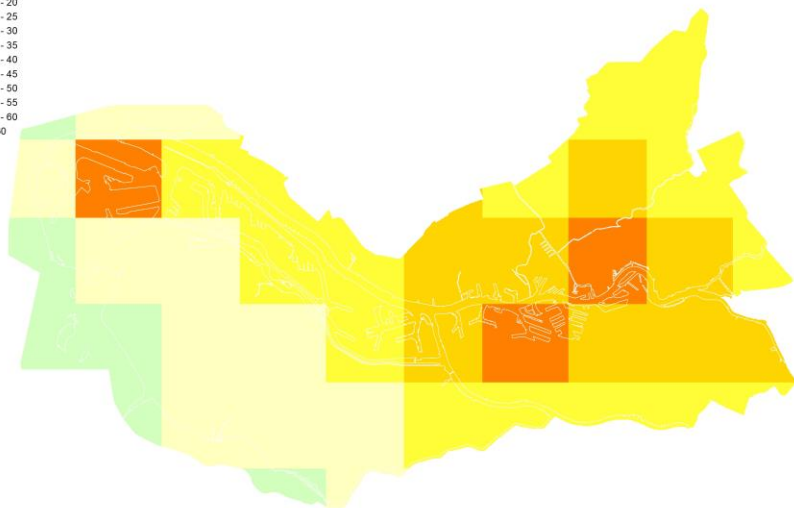
Legenda
NO2 - 40x40 m
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- > 60

0   2,5   5 Km

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Legenda
NO2 - 120x120 m
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- > 60

0   2,5   5 Km

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Legenda
NO2 1x1 km
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- > 60

0   2,5   5 Km

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Legenda
NO2 - 5x5 km
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- > 60

0   2,5   5 Km

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Summary

→ CLARA will provide a modelling tool with CAMS based data as background concentrations. Local sources (mainly roads) will add resolution. Developer: SMHI

→ DCMR is interested in scale (spatial, temporal) what is desirable for urban planners, public health specialists, etc.

  Hypotheses:
- The detailed scale we used to work with in the Netherlands might no longer be the best scale for professionals.
- For public communication high resolution is absolutely essential.

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