Recommendations
Component 3, Preliminary Air
Quality Assessment

Final Meeting
Ohrid May 13, 2008

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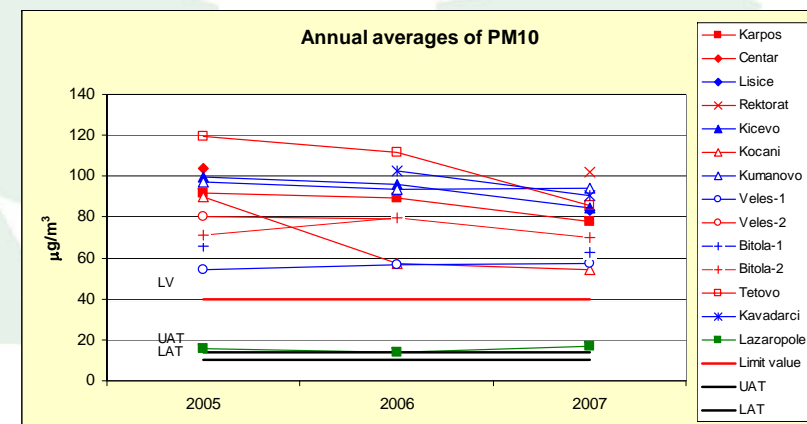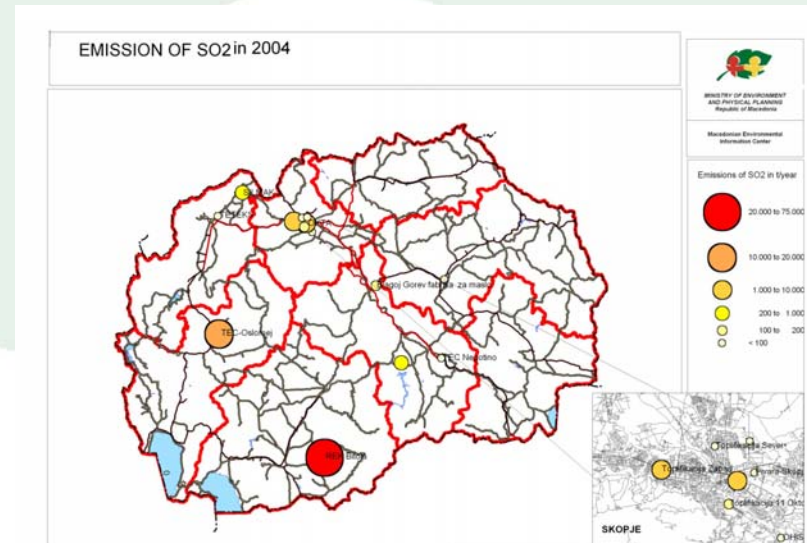
Twinning project - Air Quality Improvement

An EU-funded project managed by the European Agency for Reconstruction

Mandatory results

1. Improvement of methodology for preliminary assessment
2. Revised agglomeration and non-agglomeration zones, established with CARDS 2004 Projects
3. A preliminary assessment of ambient air quality has been worked out and reported
4. Awareness raised on the importance of the air quality monitoring system

Activities

3.1.1 Analyses and review the outcome of CARDS 2004 Projects

3.1.2. Improvement of methodology for preliminary assessment taking into account CARDS 2004 Projects output

3.1.3. Integrate emission inventory data and dispersion modeling within preliminary assessment

3.2.1. Revision of agglomeration and non agglomeration zones

3.3.1. Reporting and visualization of the assessment results

3.4.1. Perform campaign to promote results for public

EMISSION OF SO2 in 2004

Annual averages of PM10

Zoning proposals by twinning project

- Air quality situation and emission distribution in different areas also taken into account
- Measurement and reporting obligations are less costly and thus easier to fulfill
- Air Quality Management, i.e. designation of responsible authorities has to be ensured
- Action plans have to cover bigger areas
- Co-operation between authorities in all levels needed
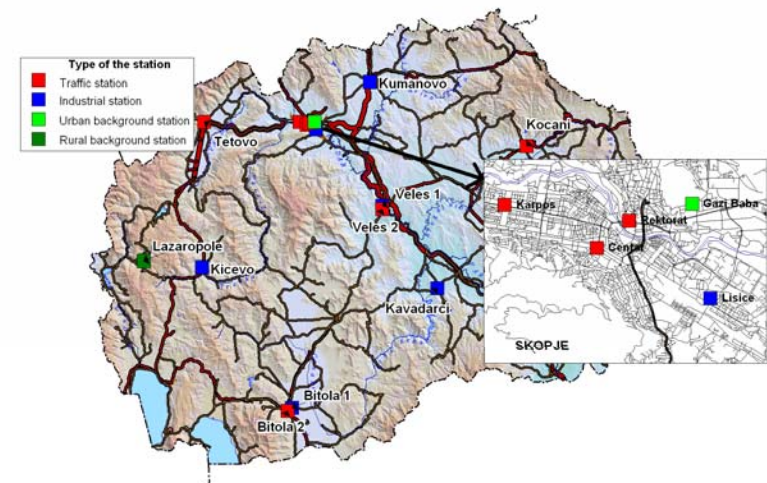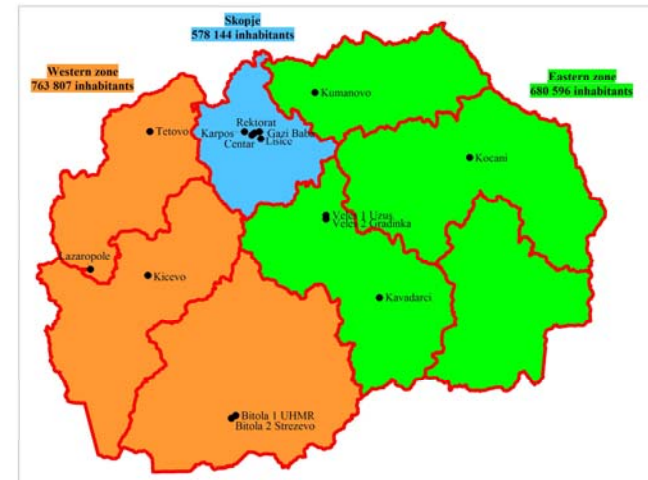
Minimum number of stations : two zones

Zone	Inhabitants	SO_2 health	SO_2 ecosystem	NO_2 health	NOx ecosystem	PM_{10}	CO	Ozone
Skopje	578 144	2	0	2	0	2	2	2
Eastern	680 596	2	1	2	1	2	2	2
Western	763 807	3		3		3	3	2
Total		**7**	**1**	**7**	**1**	**7**	**7**	**6**

Recommendations – short term (1-2 years)

- Further improvement of quality of measurement data
  - New software for data validation, management and dissemination
  - Quality Chain: calibration laboratory, field calibration, data validation
  - Ensure proper maintenance and funding for spare parts etc.
  - Ensure human resources: calibration laboratory, field work, data management
  - Detailed recommendation given by component 4
- Quality and coverage of emission data should be improved
  - Traffic, small scale wood burning, Industry and energy production
  - GIS information, technical information (stack height, etc.)
  - Time variation
  - Detailed recommendation given by component 2
- Improve reporting and dissemination of AQ data

Recommendations – medium term (2-5 years)

- Extent the use of dispersion modelling

    - Traffic, small scale wood burning

    - Comprehensive city modelling (Skopje)

    - Regional scale modelling

- Additional measurement campaigns should be performed to assess air quality

    - Different environments (i.e. urban background areas near residential areas, rural residential areas, traffic influenced areas outside cities (along motorways), rural background areas)

    - Cities not having fixed stations (Prilep, Ohrid, Kriva Palanka, Stip/Kratovo, Strumica, Berovo/Delcevo)

    - Lead, HMs, PAH, Bz, $PM_{2,5}$

    - Use of mobile station

    - Passive sampling

Recommendations – long term (3-10 years)

- Revise the preliminary assessment after reliable data available for five years period (after 3 – 5 years)

- Modernize the meteorological measurement network and data management system to provide more reliable information for air quality management

- Upgrade the Air Quality Monitoring network

  - At least one urban background and one traffic stations in every zone (2-3 urban background stations need to be established or relocation of existing stations)

  - Check siting criteria's of existing and new stations (possible relocation of stations)

  - Upgrade the measurement programme per station (ozone measurements in Skopje, $PM_{2,5}$, etc.)

- Use the Air quality data to initiate the work to prepare plans and programs to improve air quality