

SUA·FEM Faculty of Economics and Management
SUA Slovak University of Agriculture in Nitra

Erasmus+ Cooperation Partnerships

Increasing the Visibility and Knowledge Base on Air Quality with Big Data and Its Impact on the Population Health (VISIONAIR)

2023-1-SK01-KA220-HED-000158470

OVERVIEW

TRAINING ACTIVITY 3.5

at UCT Prague, Czechia

03 December 2024

VISIONAIR

Co-funded by the European Union

Task distribution



VISIONAIR

- WP1 Project management
- WP2 Summary of available and new knowledge (big data)
- WP3 Identification of health impacts due to air pollution
- WP4 Development of a system/solutions/concepts on improving air quality)

VISIONAIR
Co-funded by the European Union

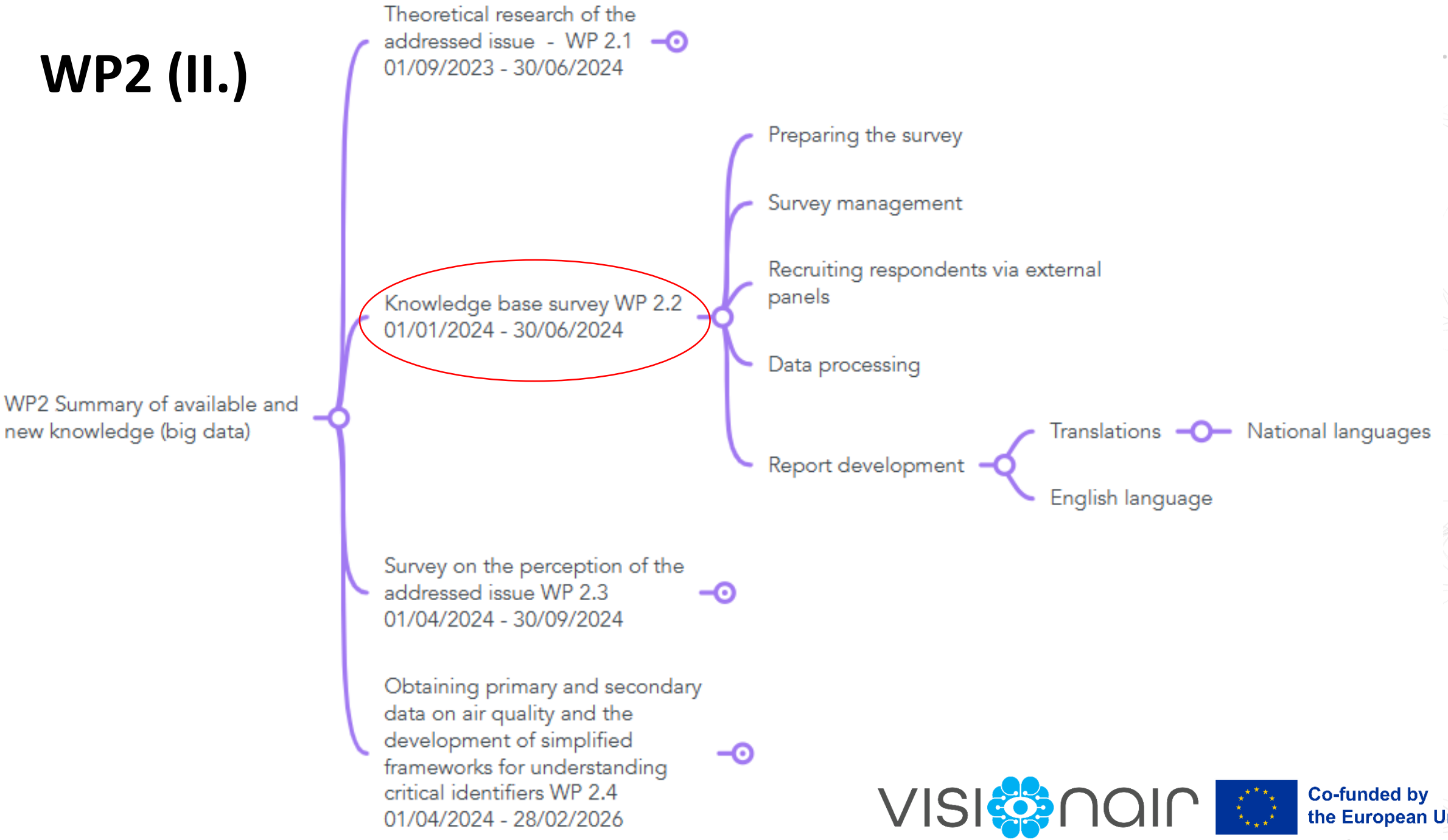
WP2 (I.)



VISIONAIR
Co-funded by the European Union



WP2 (II.)



VISIONAIR
Co-funded by the European Union

WP2 (III.)

WP2 Summary of available and new knowledge (big data)

- Theoretical research of the addressed issue - WP 2.1
  01/09/2023 - 30/06/2024
- Knowledge base survey WP 2.2
  01/01/2024 - 30/06/2024
- Survey on the perception of the addressed issue WP 2.3
  01/04/2024 - 30/09/2024
- Obtaining primary and secondary data on air quality and the development of simplified frameworks for understanding critical identifiers WP 2.4
  01/04/2024 - 28/02/2026

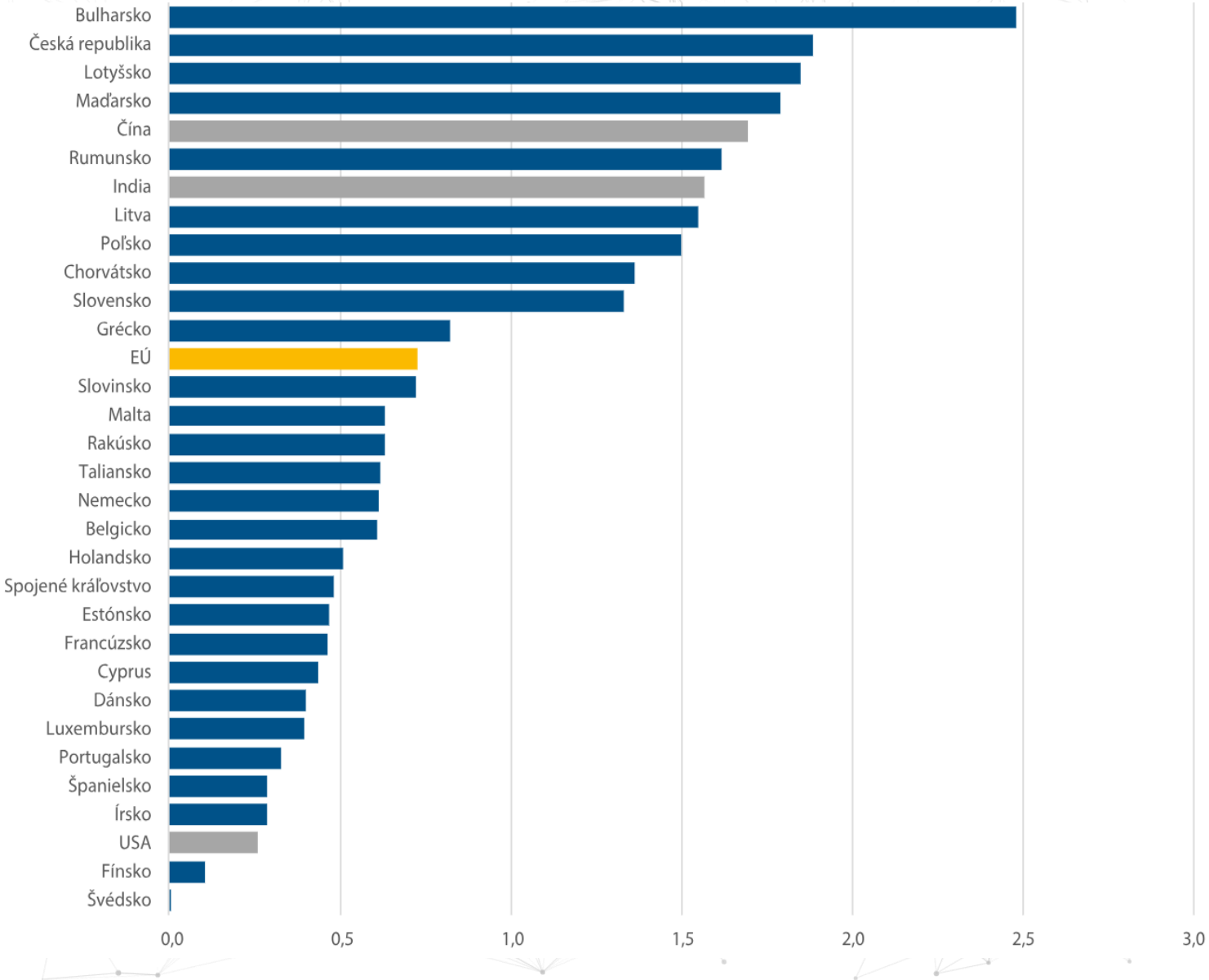
- External databases
  - Addressing SHMI
  - Data processing
  - Database development
  - Report development + documents
- Internal measurement
  - 4 existing measuring stations in Slovakia
    - Nitra
    - Bratislava
    - Martin
    - Brezno
  - 4 new measuring devices
    - Slovakia
    - Croatia
    - Spain
    - Czech Republic
  - Data processing
  - Database development
  - Report development + documents
- Development of simplified frameworks for understanding and visualizing critical identifiers
  - Identification of key parameters
  - Creation of graphical display frameworks

VISIONAIR
Co-funded by the European Union

Example of using data from WP2 during workshop



Air pollution in the EU



- Every year, around **400,000 people die** prematurely as a result of excessive levels of **air pollutants** such as particulate matter, nitrogen dioxide and ozone.
- In the EU, **air pollution** causes on average more than **1,000 premature deaths** a day, ten times more than the number of people killed in road accidents
- **Dispersion conditions** of ambient air pollution that are attributable to ambient air pollution.

#ERASMUS+ DAYS 14 > 19 of October 2024

VISIONAIR

Co-funded by the European Union

HEALTH EFFECTS OF AIR POLLUTION

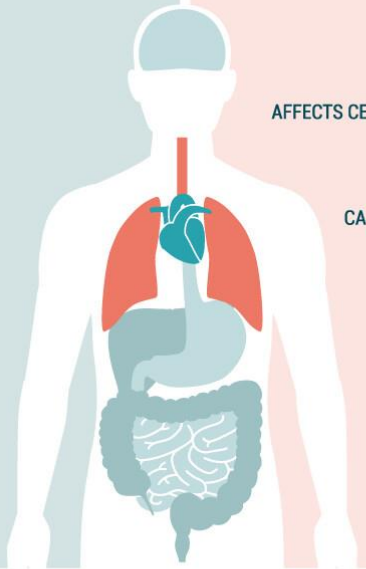


WHO IS MORE AFFECTED

- PEOPLE WITH CHRONIC LUNG/HEART DISEASE, DIABETES
- SENIORS
- CHILDREN
- PREGNANT WOMEN
- PEOPLE WHO EXERCISE OUTDOORS

SHORT TERM EFFECTS

- HEADACHE
- NOSE, THROAT, EYES INFLAMMATION
- COUGHING, PAINFUL BREATHING
- PNEUMONIA, BRONCHITIS
- SKIN IRRITATION



LONG TERM EFFECTS

- AFFECTS CENTRAL NERVOUS SYSTEM (HEADACHE, ANXIETY)
- CARDIOVASCULAR DISEASES
- RESPIRATORY DISEASES (ASTHMA, CANCER)
- IMPACTS ON LIVER, SPLEEN, BLOOD
- IMPACTS ON REPRODUCTIVE SYSTEM

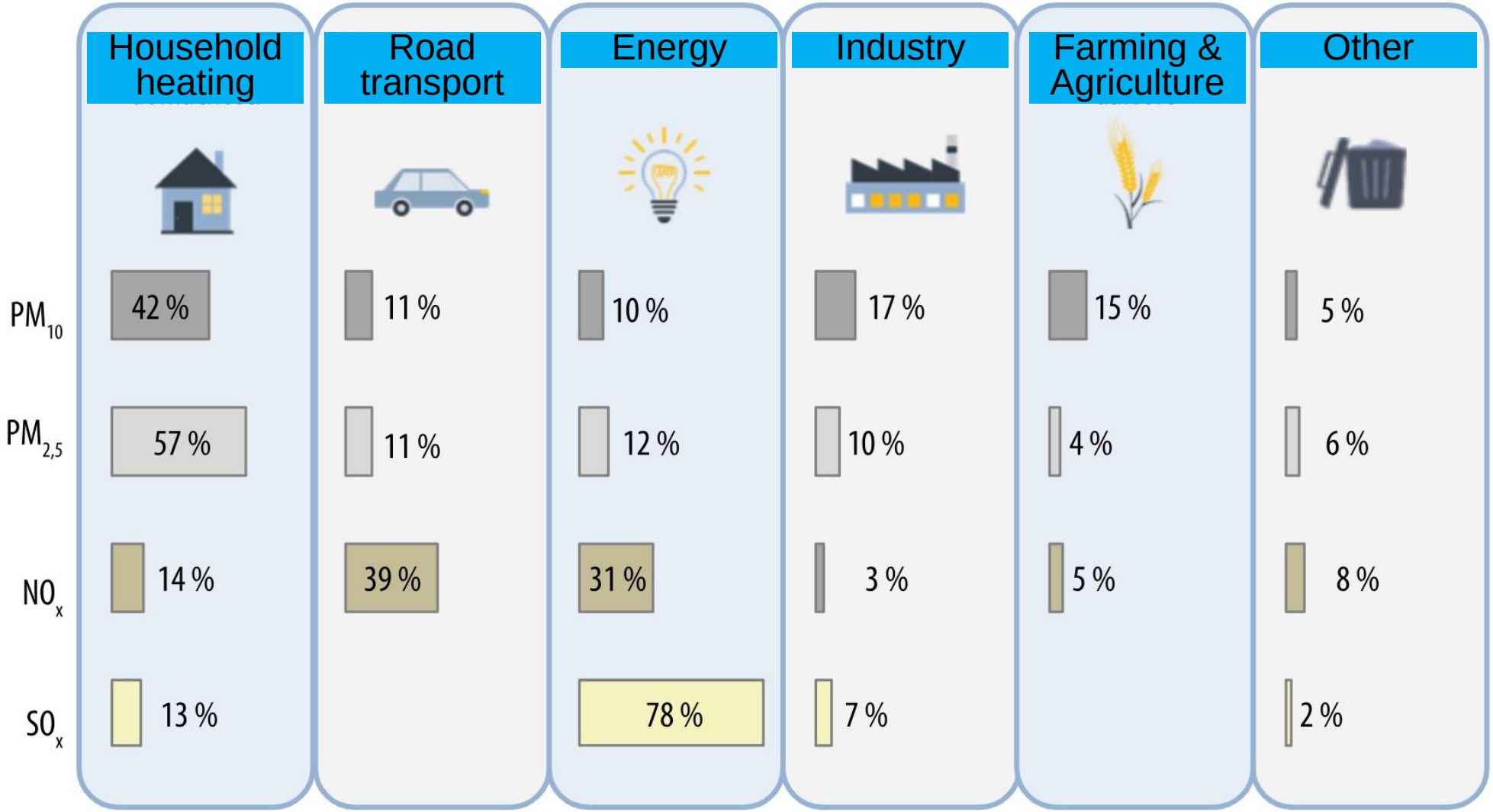
HOW TO PROTECT YOURSELF

- CHECK AIR QUALITY INDEX IN YOUR AREA
- USE A FACE MASK
- KEEP WINDOWS AND DOORS CLOSED
- AVOID CONGESTED AREAS



VISINAIR
Co-funded by the European Union

Sources of air pollution



VISIONAIR
Co-funded by the European Union

Air quality

Slovakia, as an EU member, also has a number of problems with air quality:

3 out of 10

people in Slovakia suffer from **allergic rhinitis**

5,000

people die prematurely each year because of air pollution

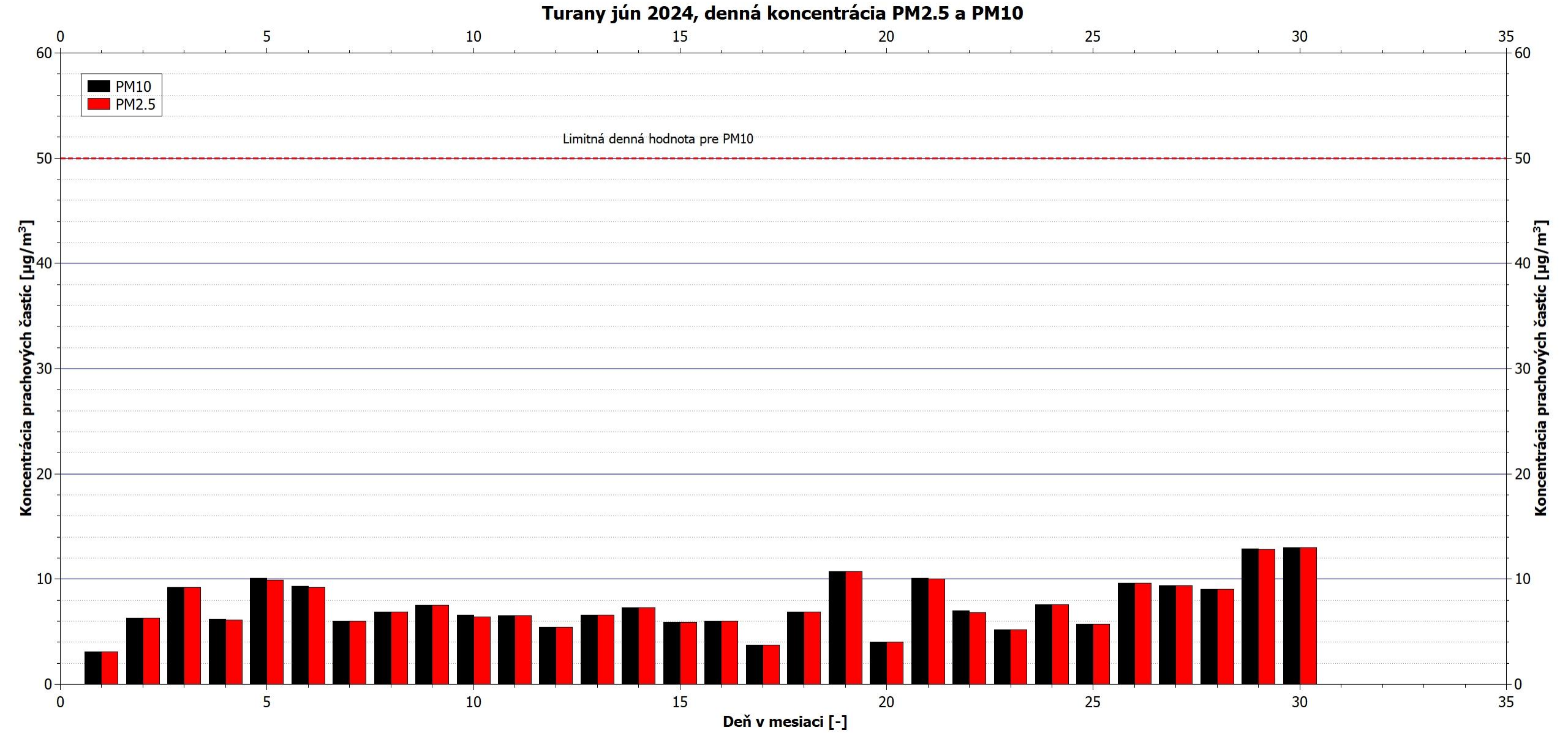
1 out of 10

people in Slovakia suffer from **asthma**

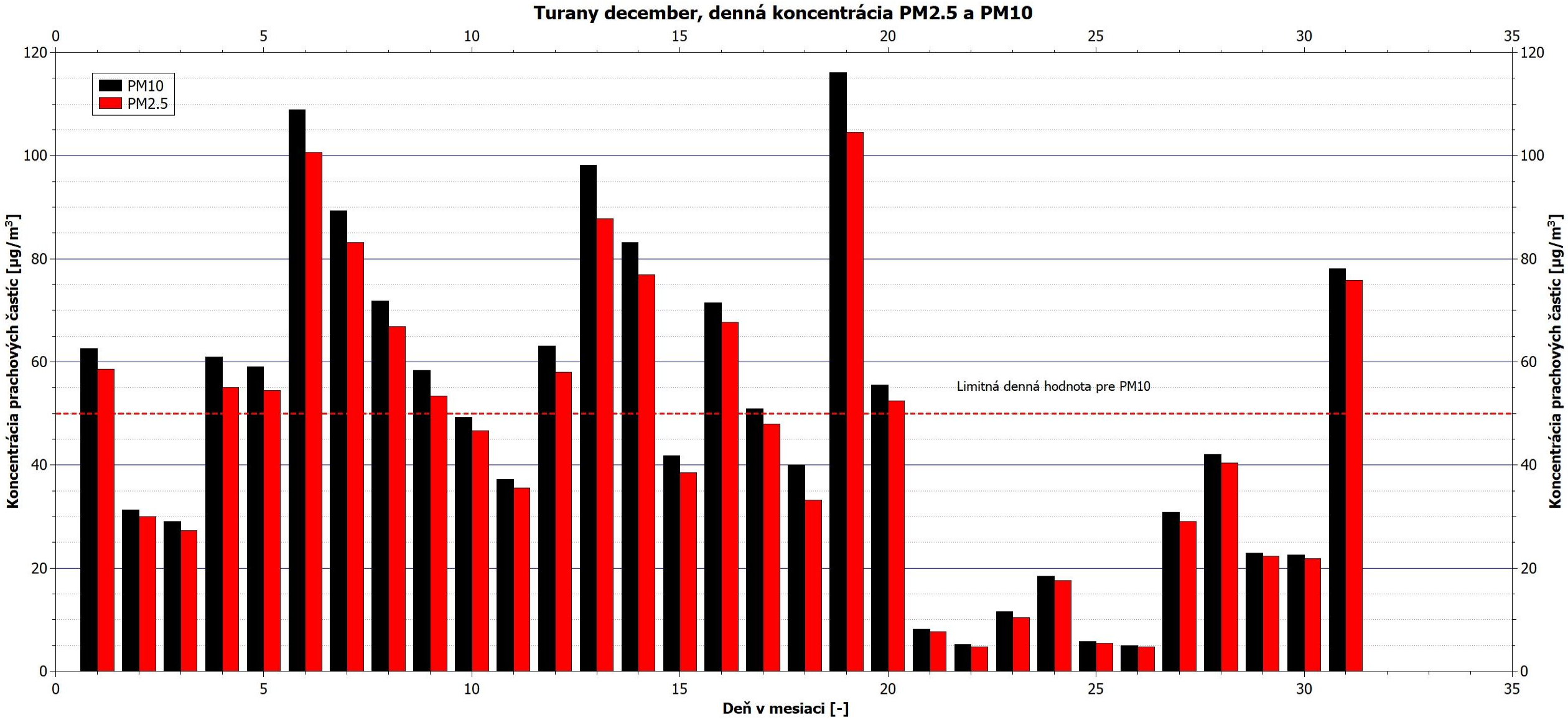
VISIONAIR

Co-funded by the European Union

Pollution in the selected municipality – June



Pollution in the selected municipality – June



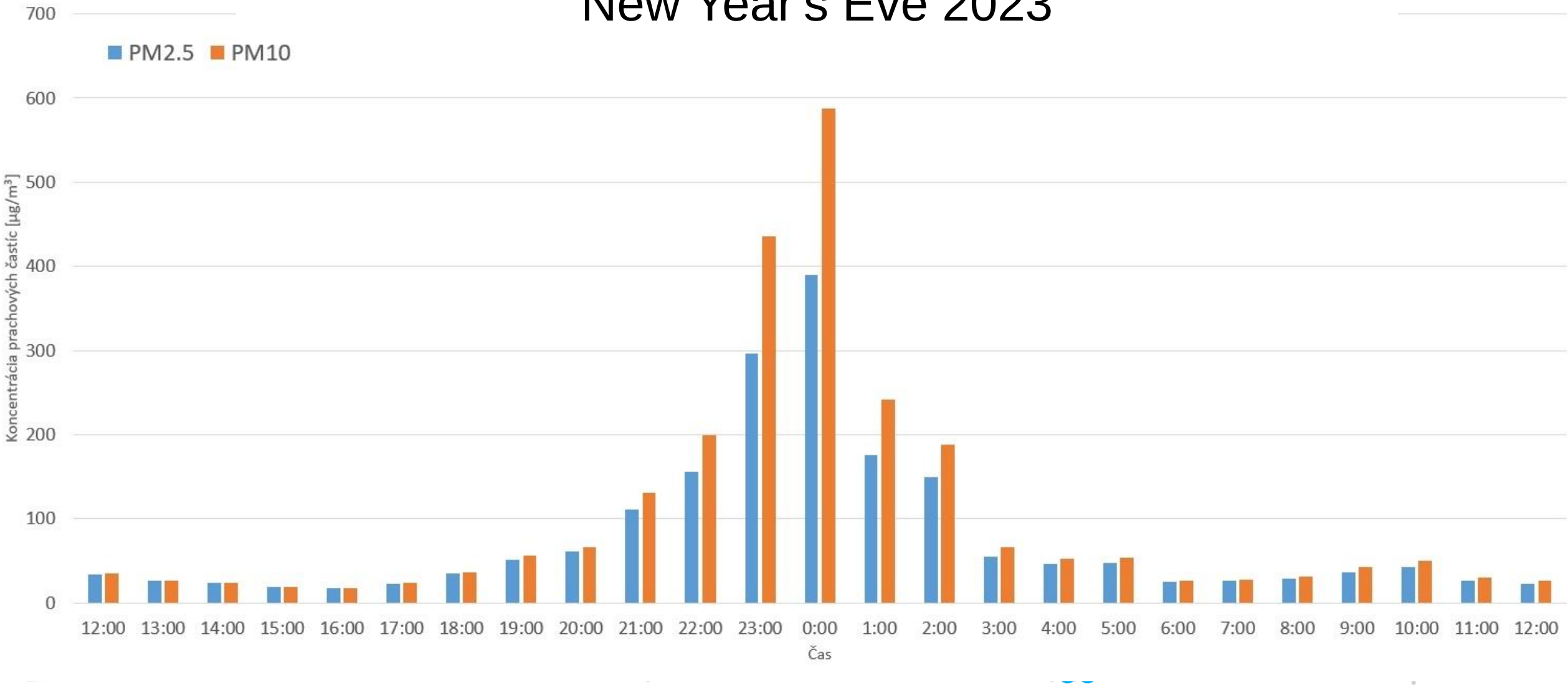
Measuring stations – hourly course



VISIONAIR
Co-funded by the European Union

New Year's Eve in Bratislava

Hourly concentration of dust particles Bratislava New Year's Eve 2023



WP3 Activities

WP3 Identification of health impacts due to air pollution

- Certified detailed content analyses WP 3.1 01/07/2024 - 28/02/2025
- Statistical verification of the relationship between respiratory diseases and air pollution level WP 3.2 01/10/2024 - 28/02/2026
- Activities related to education in the field of big data processing WP 3.3 01/10/2024 - 31/05/2026
- Practical workshops, activities related to the use of innovative approaches and modern methods WP 3.4 01/01/2025 - 31/05/2026
- Training activity in Czech Republic WP 3.5 01/11/2024 - 31/12/2025

VISIONAIR
Co-funded by the European Union

WP3 – Certified detailed content analyses

Certified detailed content analyses
WP 3.1 01/07/2024 - 28/02/2025

- Sample collection (selected locations)
- Analyses
- Information gathering in a comprehensive .pdf document published on the project website

VISINAIR
Co-funded by the European Union

WP3 – Statistical verification of the relationship between respiratory diseases and air pollution

Statistical verification of the relationship between respiratory diseases and air pollution level WP 3.2 01/10/2024 - 28/02/2026

- Data collection
- Information gathering in a comprehensive .pdf document published on the project website
- Part of curriculum design for selected subjects (e.g. European consumer and consumer behaviour)

VISIONAIR
Co-funded by the European Union

WP3 – Practical workshops, activities related to the use of innovative approaches and modern methods

Practical workshops, activities related to the use of innovative approaches and modern methods
WP 3.4 01/01/2025 - 31/05/2026

- Creation of design concepts of simplified data presentation about air quality
- Definition of key air quality indicators
- Local workshops using modern forms of presentation

VISIONAIR
Co-funded by the European Union

WP3 – Activities related to education in the field of big data processing



VISIONAIR
Co-funded by the European Union

Interim report & next meeting in January 2025



VISIONAIR
Co-funded by the European Union

Questions and Discussion



Co-funded by the European Union

THANK YOU FOR YOUR ATTENTION

IMTSS FEM SUA in Nitra
Trieda A. Hlinku 2
949 76 Nitra, Slovakia

www.visionairproject.eu



Co-funded by the European Union