BOHN

BALKAN ONE HEALTH NETWORK

One Health challenges in the Western Balkan

Rusmir Goletić DVM,

Chairman - Balkan One Health Network

One Health definition

- ”**One Health** is a collaborative, multi-sectoral, and trans-disciplinary approach, working locally, regionally, nationally, and globally, to achieve optimal health and well-being of all people, animals, plants and their shared environment, recognizing their inextricable interconnections.”

- ”**One Health** is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent. The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.” (OHHLEP – Quadripartite(WHO, WOAH-OIE, FAO, UNEP) definition)

One Health definition

- One Health = teamwork

anthropocentric ⟹ **ecocentric**

“ONE HEALTH – ONE PLANET – ONE FUTURE“

- Why One Health?

World today

- Human populations are growing and expanding into new geographic areas. As a result, more people live in close contact with wild and domestic animals, both livestock and pets. Animals play an important role in our lives, whether for food, fiber, livelihoods, travel, sport, education, or companionship. Close contact with animals and their environments provides more opportunities for diseases to pass between animals and people.

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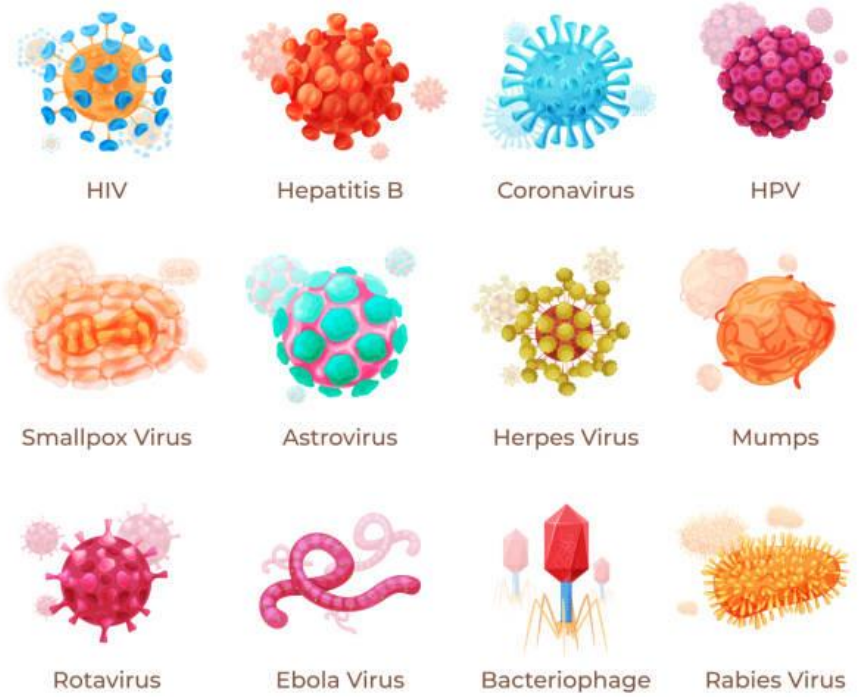
- The earth has experienced changes in climate and land use, such as deforestation and intensive farming practices. Disruptions in environmental conditions and habitats can provide new opportunities for diseases to pass to animals.

- The movement of people, animals, and animal products has increased from international travel and trade. As a result, diseases can spread quickly across borders and around the globe.

These changes have led to the spread of existing or known (endemic) and new or emerging zoonotic diseases, which are diseases that can spread between animals and people. Every year, millions of people and animals around the world are affected by zoonotic diseases. Examples of zoonotic diseases include:

- Rabies
- Salmonella infection
- West Nile virus infection
- Q Fever (*Coxiella burnetii*)
- Anthrax
- Brucellosis
- Lyme disease
- Crimean-Congo haemorrhagic fever (CCHF)
- Listeriosis



Similar to humans, animals are also at risk of getting sick from some diseases and environmental hazards. Because of this, they can sometimes serve as early warning signs of potential human illness. For example, birds often die of West Nile virus before people in the same area get sick with West Nile virus infection.

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Common One Health issues

One Health issues include emerging, re-emerging, and endemic zoonotic diseases, neglected tropical diseases, vector-borne diseases, antimicrobial resistance, food safety and food security, environmental contamination, climate change and other health threats shared by people, animals, and the environment.

For example:

- Antimicrobial-resistant pathogens can quickly spread through communities, the food supply, healthcare facilities, and the environment (soil, water), making it harder to treat certain infections in animals and people.
- Vector-borne diseases are on the rise with warmer temperatures and expanded mosquito and tick habitats.
- Diseases in food animals can threaten supplies, livelihoods, and economies.
- The human-animal bond can help improve mental well-being.
- Contamination of water used for drinking, recreation, and more can make people and animals sick.

- Successful public health interventions require the cooperation of human, animal, and environmental health partners. Professionals in **human health** (doctors, nurses, public health practitioners, epidemiologists), **animal health** (veterinarians, paraprofessionals, agricultural workers), **environment** (ecologists, wildlife experts), and **other areas of expertise** need to communicate, collaborate on, and coordinate activities. Other relevant players in the One Health approach could include law enforcement, policymakers, agriculture, communities, and even pet owners. No one person, organization, or sector can address issues at the animal-human-environment interface alone.
- The One Health approach can:

a) Prevent outbreaks of zoonotic disease in animals and people.

b) Improve food safety and security.

c) Reduce antimicrobial-resistant infections and improve human and animal health.

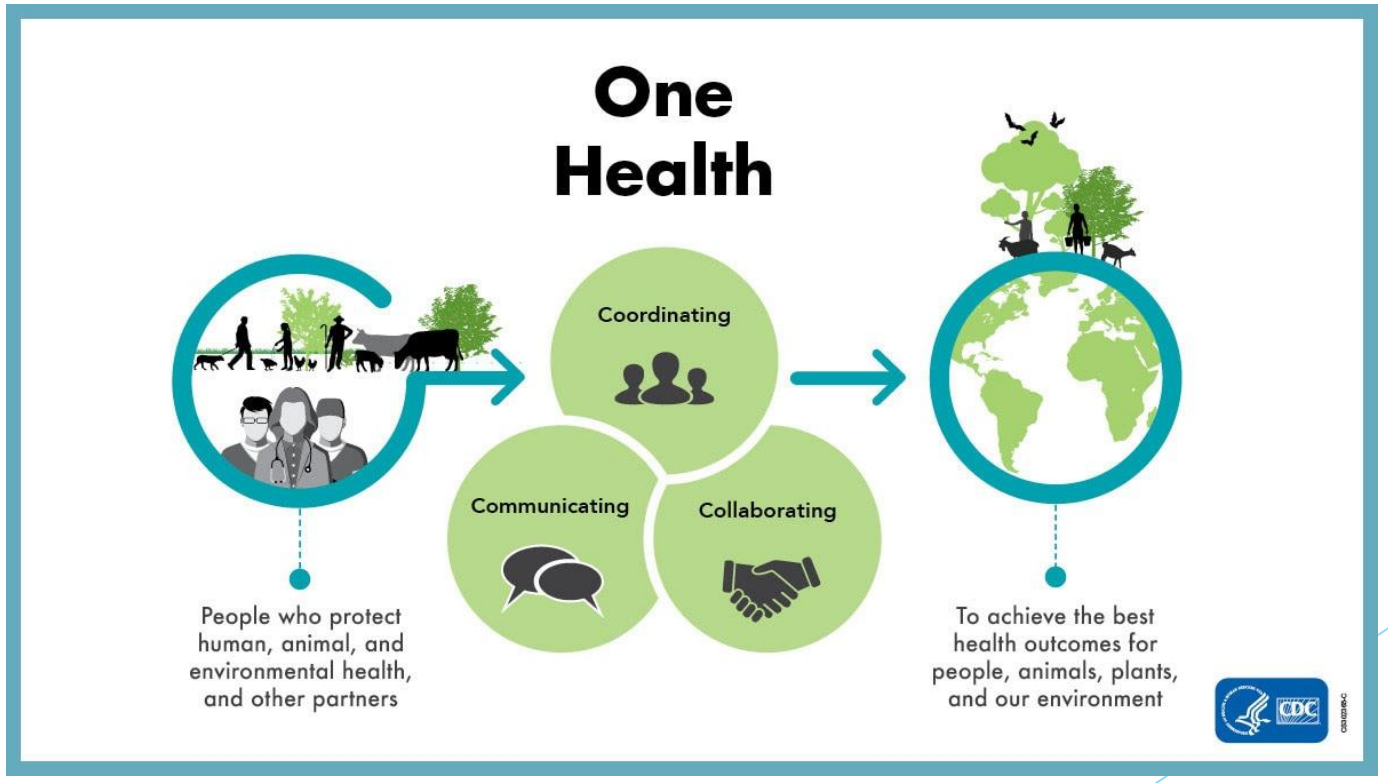
d) Protect global health security.

e) Protect biodiversity and conservation.

f) By promoting collaboration across all sectors, the One Health approach can achieve the best health outcomes for people, animals, and plants in a shared environment.

One Health Challenges

- To implement One Health, major structural changes are required to integrate the human, animal and environmental health fields and support multi-sectoral communication, collaboration, coordination, and capacity strengthening.



One Health Challenges

Critical gaps in One Health implementation include:

- databases and resources to support information sharing and action in line with a One Health approach;
- identification and showcasing of best practice examples for One Health implementation;
- mapping of existing initiatives and capacities for One Health research and building the next generation One Health workforce;
- a model for an integrated One Health surveillance system;
- mechanisms for routine and emergency coordination with relevant stakeholders;

One Health Challenges

- a more complete understanding of the drivers of spillover of zoonotic diseases (transmitted between animals and humans). This includes animal trade, agriculture, livestock farming, urbanization and habitat fragmentation;
- a standardized approach for assessing risks of spillover of pathogens between different animal populations and humans, and emergence of zoonotic diseases, including those arising in food systems; and
- methods for identifying and reducing spillover risks and spread of zoonotic diseases in ways that minimize trade-offs and maximize co-benefits with other health and sustainable development objectives.
- Special challenge today: risk communication and media communication.

VIRAL INFECTIONS – 1HOPE - discussion about the emergence of a new pathogen in China (Wuhan),December 2019 – January 2020

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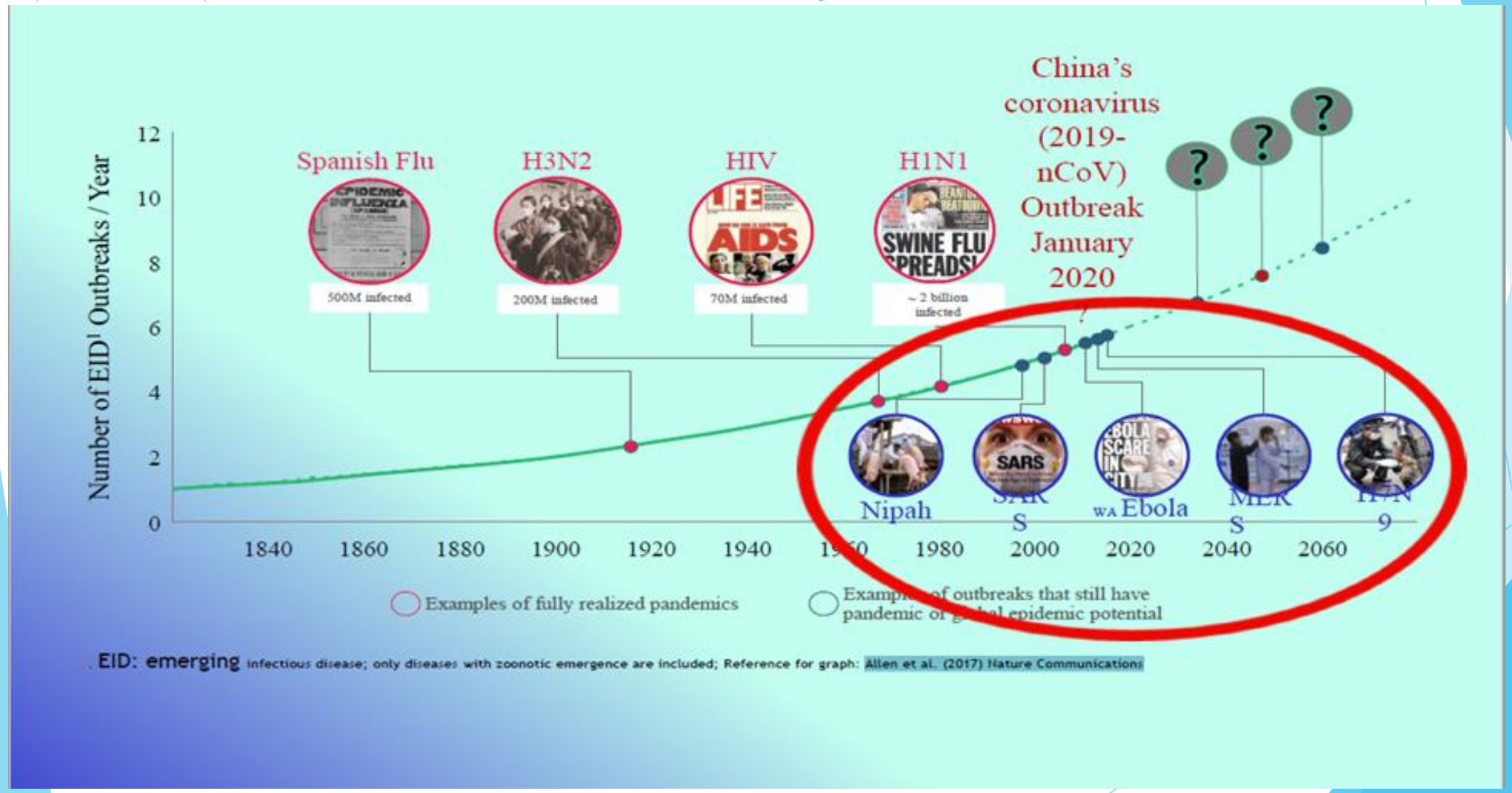


Alert from Wuhan: the urgent need to introduce a One Health approach – January 28. 2020

BALKAN ONE HEALTH NETWORK

Ponedjeljak, 9 Septembra, 2024

nojezdravlje.ba

POČETNA | O NAMA | VIJESTI IZ ZDRAVSTVA | ZDRAVLJE | SIGURNOST HRANE | BOLESTI | STRUČNJACI PIŠU... | VI PITATE | ZNAČAJNI DATUMI

Uzbuna iz Wuhana: Hitna potreba za uvođenjem pristupa "Jednog zdravlja"

Posljednjih dana svjedoci smo najnovije krize po javno zdravlje koja nam dolazi iz grada Wuhan, Republika Kina, grada u kojem se svijet suočava sa sa najnovijim mutiranim sojem korona virusa, smrtonosnim za ljude.

28. Januara 2020. in **Stručnjaci pišu...**

Najnoviji članci

Naučnici objašnjavaju: Mogu li vakcine protiv koronavirusa mijenjati DNK i učiniti muškarce i žene neplodnim?

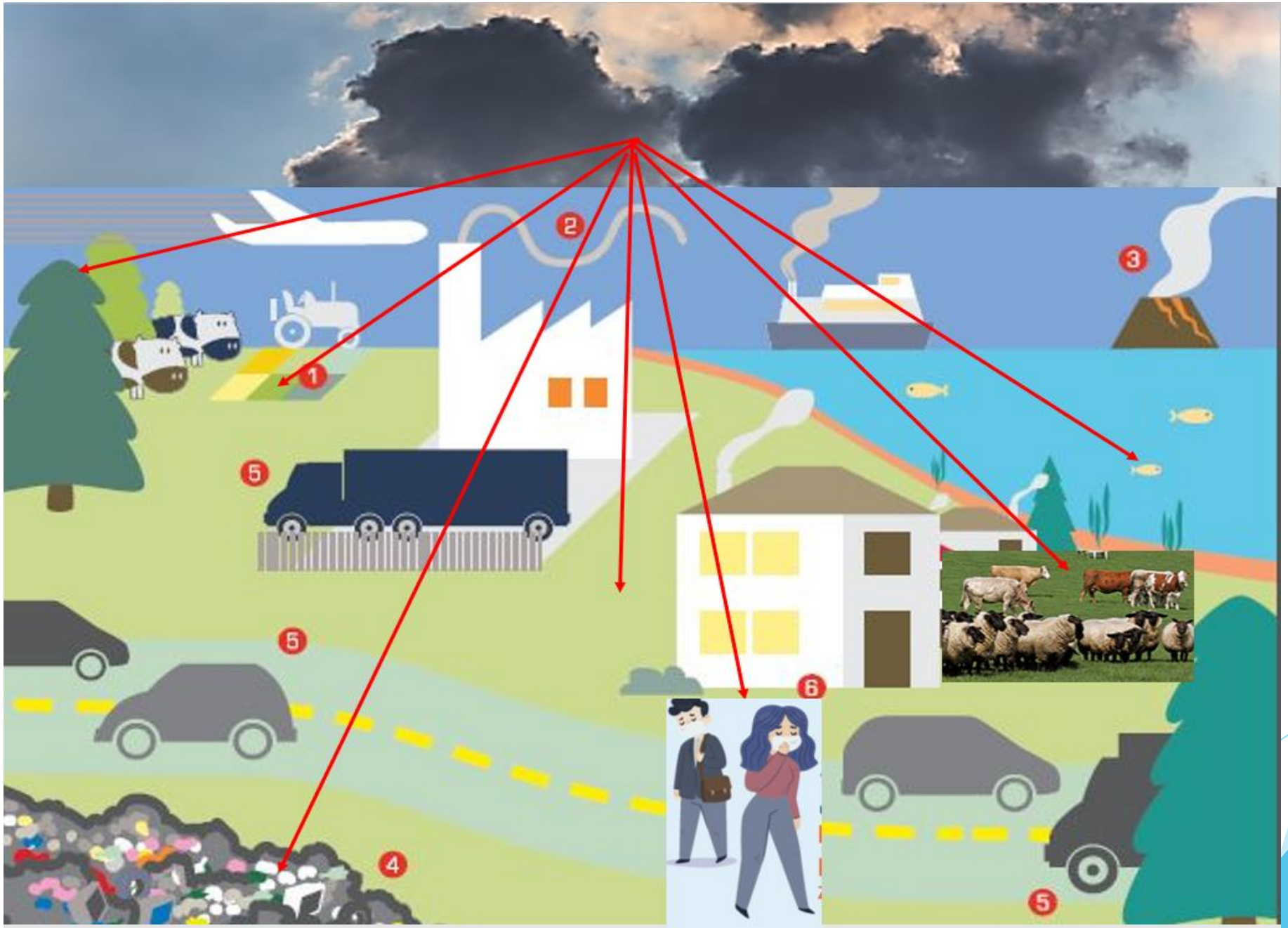
Ugovor INZ-a i "Korpa.ba": Kupcima još bolja usluga i sigurnija hrana

Za sve škole i fakultete u BiH: Plakati, leci i brošure INZ-a za sigurniji početak školske godine

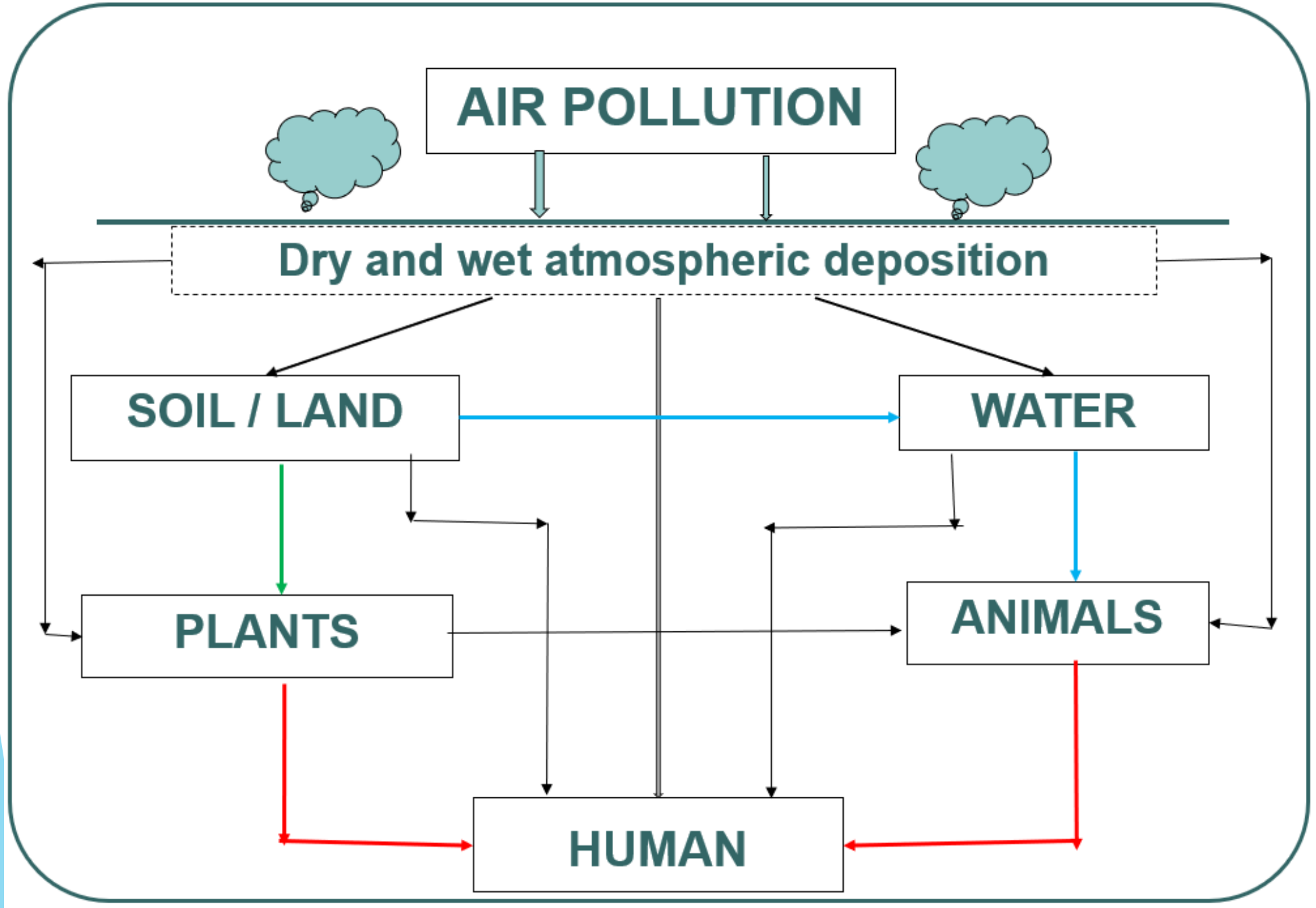
INZ proizvođačima ponudio besplatni Vodič za unaprijeđenje sigurnosti hrane – Zdrava hrana preduvjet za uspješno društvo

Svim obrazovnim institucijama u BiH na raspolaganju INZ-ova elektronska brošura "Škole i COVID-19"

AIR POLLUTION



BALKAN ONE HEALTH NETWORK


AIR POLLUTION
Dry and wet atmospheric deposition
SOIL / LAND
WATER
PLANTS
ANIMALS
HUMAN

What can we do?

Main goals:

- Prevention
- Preparedness
- Response
- Implementation of the One Health approach in cases of natural disasters (earthquakes, floods, fires, landslides, etc.)
- Implementation of the One Health approach in cases of epidemics / pandemics
- Implementation of the One Health approach in dealing with climate change
- Implementation SDG's (the 17 goals)
- "to achieve optimal health and well-being of all people, animals, plants and their shared environment"

OUR RESPONSE

The emergence of the **Balkan One Health Network / BOHN**

- Connecting institutions in the region
- From December 2, 2019, we have started institutional cooperation through the One Health approach - it is a joint application for grants for projects based on the One Health approach.
- During 2020 (the time of the start of the COVID-19 pandemic), about 25 working meetings were held online.
- The first official meeting related to the building of the BOHN network was held on December 24, 2020.
- This date is considered the founding day of the BOHN regional network.

BOHN Founders

- Institute for Health and Food Safety Zenica, Bosnia and Herzegovina
- Institute of Public Health of Vojvodina, Republic of Serbia
- Institute of Public Health of Republic of North Macedonia
- Institute of Public Health of Montenegro, Podgorica, Montenegro
- Scientific Veterinary Institute ‘Novi Sad’, Republic of Serbia
- Specialist Veterinary Laboratory, Podgorica, Montenegro
- Faculty of Veterinary Medicine, Skopje, Republic of North Macedonia

BOHN Steering Committee:

Chairman:

- Rusmir Goletić (chairman) - Institute for Health and Food Safety Zenica

Committee members:

- Snežana Medić - Institute of Public Health of Vojvodina;
- Sara Savić - Scientific Veterinary Institute ‘Novi Sad’;
- Gordana Ristovska - Institute of Public Health of the Republic of North Macedonia
- Dean Jankuloski (Kiril Krstevski) - Faculty of Veterinary Medicine Skopje;
- Sanja Medenica - Institute of Public Health of Montenegro;
- Bojan Adžić - Specialist Veterinary Laboratory Podgorica;

BOHN goals and activities

- Improving the health and well-being of humans, animals, plants and their common environment through the implementation of the collaborative One Health approach;
- Professional and scientific research cooperation and exchange of experiences and opinions between network members using the One Health approach;
- Development of a resilient and competent workforce based on the One Health approach, using education, research, and training provided by organizations/institutions in the Balkan region;
- Expanding the network and connecting with all stakeholders in the field of One Health in the Balkan region;
- Building strategic partnerships in the field of One Health at the international level;
- Educating the public about the importance of the One Health approach and the Sustainable Development Goals (SDG Agenda 2030);
- Promoting the One Health approach and the Sustainable Development Goals (SDG Agenda 2030).

BALKAN ONE HEALTH NETWORK

BOHN
BALKAN ONE HEALTH NETWORK

WEBINAR

"ALL FOR ONE HEALTH"

Thursday, May 20. 2021.
Time: 12:00 – 13:30 CET
Online - **Free** access

One Health approach today and in the future
Some of the best experts will talk about the introduction, practical application, collaboration, education, and difficulties in applying the One Health approach.

The Scope of One Health: Many Global Challenges Begging for this Trans-disciplinary Approach

Cheryl M. Stroud, DVM, PhD
One Health Commission - Executive Director
North Carolina, USA

The Learning Module on Continuing Environmental Education (CEE)

Prof. Dr. med. Ulrich Laaser DTM&H, MPH
Faculty of Health Sciences, Bielefeld University, Bielefeld, Germany

Can "One Health" Concept Strengthen Our Understanding and Prevention of Biological Hazards and Manage the Risks of Such Threats?

Prof. Dr. Nihad Fejzic, DVM, PhD
Center for Interdisciplinary Studies, University of Sarajevo ,Sarajevo, Bosnia and Herzegovina

Introduction and Presentation of Balkan One Health Network

Rusmir Goletic DVM
Balkan One Health Network
Institute for Health and Food Safety Zenica,
Zenica, Bosnia and Herzegovina

Online Webinar: May 20. 2021.
Time: 12:00 pm CET / Duration: 1h 30min.

Free registration
Register now for your favorite time!

The number of participants on the Zoom app is limited.

ZOOM:

FACEBOOK:

#OneHealth

BOHN BALKAN ONE HEALTH NETWORK

1. REGIONALNA KONFERENCIJA O JEDNOM ZDRAVLJU

"Perspektive pristupa Jednog Zdravlja u regiji zapadnog Balkana"

15. juni 2022. / Zenica / Bosna i Hercegovina

INSTITUT ZA ZDRAVLJE I SIGURNOST HRANE

AGENDA

The First Regional One Health Conference

"One Health Approach Perspectives in the Western Balkans Region"

Location: Hotel Zenica, Zenica, Bosnia and Herzegovina
Date and time: 15.06.2022., 10:00 am (CEST)

10:00 – 10:40	**Introductory speeches and welcome speech** Moderators: Elma Kuduzovic and Rusmir Goletic
10:40 – 11:00	**The One Health approach perspectives** Rusmir Goletic – Institute for Health and Food Safety Zenica
11:00 – 11:30	**The Global One Health Environment – a Learning Module on Continuing Environmental Education (CEE) for postgraduate scholars** Ulrich Laaser – Faculty of Public Health, University of Bielefeld
11:30 – 12:00	**Tackling the Root Causes of Global Risks: Optimising Planet Sustainability through One Health & Wellbeing** George Lueddeke – International Education Initiative One Health for One Planet (1HOPE)
12:00 – 12:30	**Coffee break**
12:30 – 12:50	**Costs and benefits in the prevention and treatment of zoonoses** Nihad Fejzic – Center for Interdisciplinary Studies UNSA
12:50 – 13:10	**Hemorrhagic fever with renal syndrome in Southeast Europe - epidemiological characteristics and implications for public health** Snezana Medic, DM – Institute of Public Health of Vojvodina

2. REGIONALNA KONFERENCIJA O JEDNOM ZDRAVLJU

AGENDA

9:30 - 10:00h	**Registracija učesnika**		
10:00 - 10:05h	Uvodna obraćanja i pozdravni govori	Vladimir Obradović	Ministarstvo zdravlja
10:05 - 10:10h	Uvodna obraćanja i pozdravni govori	dr sci. med. Mina Brajović	Šefica SZO kancelarije u Crnoj Gori
10:10 - 10:15h	Uvodna obraćanja i pozdravni govori	dr Igor Galić	Institut za javno zdravlje Crne Gore
10:15 - 10:30h	**Grupna fotografija**		
10:30 - 10:40h	Predstavljanje instituta za javno zdravlje Crne Gore	dr Igor Galić	Institut za javno zdravlje Crne Gore
10:40 - 10:50h	Predstavljanje Balkan One Health mreže	Rusmir Goletić, dvm	Institut za zdravlje i sigurnost hrane Zenica
10:50 - 11:00h	BOHN web site - prezentacija	Branko Dujović	Institut za javno zdravlje Crne Gore
11:00 - 11:10h	Predstavljanje Agencije za zaštitu životne sredine	Aleksandar Božović	Agencija za zaštitu životne sredine
11:10 - 11:20h	Predstavljanje Uprave za bezbjednost hrane	Vladimir Đaković	Uprava za bezbjednost hrane
11:20 - 11:30h	The One Health MediLabSecure Situation Analysis in Montenegro	Dente Maria Gracia	Instituto Superiore di Sanita, Mediaš
11:30 - 11:45h	**Kafe pauza**		
11:45 -12:00h	Rezultati istraživanja sprovedenih nad vektorima/komarcima na određenom području tokom 2021. i 2022. godine	dr Nebojša Sekulić	Institut za javno zdravlje Crne Gore
12:00 - 12:15h	Epidemiološko-ekološke karakteristike lajšmanioze u Crnoj Gori	Prim. dr sci. med. Sanja Medenica	Institut za javno zdravlje Crne Gore
12:15 - 12:30h	Hemoragijska groznica sa bubrežnim sindromom u jugoistočnoj Evropi - epidemiološke karakteristike i implikacije po javno zdravlje	Prim. dr sci. med. Snežana Medić	Institut za javno zdravlje Vojvodine
12:30 - 12:45h	Jedan zdravstveni pristup u upravljanju zoonozama u Sjevernoj Makedoniji	Prof. dr Gordana Ristovska	Institut za javno zdravlje Republike Sjeverne Makedonije
12:45 - 13:30h	**Panel diskusija - VEKTORSKE BOLESTI I ZOONOZE KROZ KONCEPT JEDNOG ZDRAVLJA**		
13:30 - 14:30h	**Ručak**		
14:30 - 14:45h	Pregled veterinarskih aktivnosti u okviru koncepta jednog zdravlja u Makedoniji	mr Zagorka Popova-Hristovska	Fakultet veterinarske medicine u Skoplju
14:45 - 15:00h	Pristup jednom zdravlju - iskustva omogućnog veterinarskog sektora"	dr sci. vet. Bojan Aščić, dvm	Specijalistička veterinarska laboratorija, Crna Gora
15:00 - 15:15h	Hrana kao morbogeni faktor	Doc. dr Snežana Barjaktarović Labović	Institut za javno zdravlje Crne Gore
15:15 - 15:30h	Javnozdravstveni značaj vode za piće	dr Ivana Joksimović	Institut za javno zdravlje Crne Gore
15:30 - 15:45h	Pristup Jednog Zdravlja u prosjeni uticaja primarne animalne proizvodnje na okolišt i stanovništvo	Rusmir Goletić, dvm	Institut za zdravlje i sigurnost hrane Zenica
15:45 - 16:00h	Uticaj na životnu sredinu tokom životnog ciklusa plastike kroz pristup jednog zdravlja	dr Elma Kuduzović	Institut za zdravlje i sigurnost hrane Zenica
16:00 - 16:45h	**Panel diskusija - HRANA I ŽIVOTNA SREDINA KROZ KONCEPT JEDNOG ZDRAVLJA**		
16:45 - 17:00h	**Završna riječ**	dr Igor Galić	Institut za javno zdravlje Crne Gore
19:00 - 21:00h	**Svečana večera**		

Treća regionalna konferencija o Jednom zdravlju
„Izazovi Jednog zdravlja u zemljama zapadnog Balkana"

BOHN

INSTITUT ZA JAVNO ZDRAVLJE VOJVODINE

AGENDA

07.06.2024. godine, Novi Sad, Hotel *„Sheraton"*

9:00 - 09:30h	**REGISTRACIJA UČESNIKA**		
09:30 - 09:45h	**UVODNA OBRAĆANJA** **OTVARANJE KONFERENCIJE**	**Prof. dr Vladimir Petrović – IZIJZ Vojvodine** **Predstavnik osnivača BOHN** **Mr Miljan Rančić- Kancelarija SZO u Srbiji** **Pokrajinski sekretarijat za zdravstvo**	
09:45 - 09:55h	**GRUPNO FOTOGRAFISANJE I IZJAVE ZA MEDIJE**		
09:55 - 10:05h	*From Approach to Action: Operationalizing One Health for a Healthier Future*	Simona Saravesi	*One Health Office, WHO*
10:05 - 10:15h	Predstavljanje Instituta za javno zdravlje Vojvodine	Prof. dr Vladimir Petrović	Institut za javno zdravlje Vojvodine
10:15 - 10:25h	Predstavljanje Naučnog Instituta za veterinarstvo Novi Sad	Dr sci. vet. med. Tamaš Petrović Dr sci. vet. med. Sara Savić	Naučni institut za veterinarstvo „Novi Sad"
10:25 - 10:35h	Centar za vektorske bolesti i efekte klimatskih promena u okviru koncepta sveobuhvatno zdravlje (CEOH) - objedinjenim kapacitetima ka istom cilju	Prof. dr Aleksandra Ignjatović Ćupina	Poljoprivredni fakultet Univerziteta u Novom Sadu
10:35 - 11:05h	Operacionalizacija pristupa Jedno zdravlje u Evropi	Prof. dr Dušan Petrić	Ekspert SZO za implementaciju Jednog zdravlja u Evropi
11:05 - 11:35h	Jedno zdravlje u nastavnim programima visokog obrazovanja u Srbiji	Prof. dr Bojana Matejić	Medicinski fakultet Univerziteta u Beogradu
11:35 - 11:50h	**KAFE PAUZA**		
11:50 -12:05h	Inicijativa Jednog zdravlja u Srbiji	Dr sci. vet. med. Sara Savić	Naučni institut za veterinarstvo „Novi Sad"
12:05 - 12:20h	Epidemiološke karakteristike groznice zapadnog Nila u AP Vojvodini, 2012-2023. godine	Doc. dr Snežana Medić	Institut za javno zdravlje Vojvodine
12:20 - 12:35h	Retrospektiva cirkulacije virusa avijarne influence u Srbiji i svetu	Dr sci. vet. med. Tamaš Petrović	Naučni institut za veterinarstvo „Novi Sad"
12:35 - 12:50h	Primena tehnike sterilnih insekata u suzbijanju azijskog tigrastog komarca -	Doc. dr Mihaela Kavran	Poljoprivredni fakultet Univerziteta u Novom Sadu

Future BOHN activities

- Unified epidemiological, epizootiological and entomological surveillance of West Nile fever is a model recommended for this and other vector-borne infectious diseases as a prerequisite for the prevention and control of these diseases in the countries of the region.
- The inclusion of the Sterile Insect Technique (SIT), as an ecologically acceptable technique, in combination with prevention (education and involvement of citizens) and conventional mosquito control methods is recommended in the countries of the region.
- Unified educational campaigns among health workers, veterinarians and other professionals, and campaigns among the population on transmission routes and protection measures against zoonoses and vector-borne infectious diseases. This especially applies to animal keepers, livestock farmers and other at-risk population groups.

BALKAN ONE HEALTH NETWORK

THANK YOU FOR YOUR ATTENTION

Web: www.bohnetwork.org

E-mail: info@bohnetwork.org

United Nations
Office on Drugs and Crime

INTERPOL

World Customs Organization
Organisation mondiale des douanes

AIRCOP CONTAINER CONTROL PROGRAMME

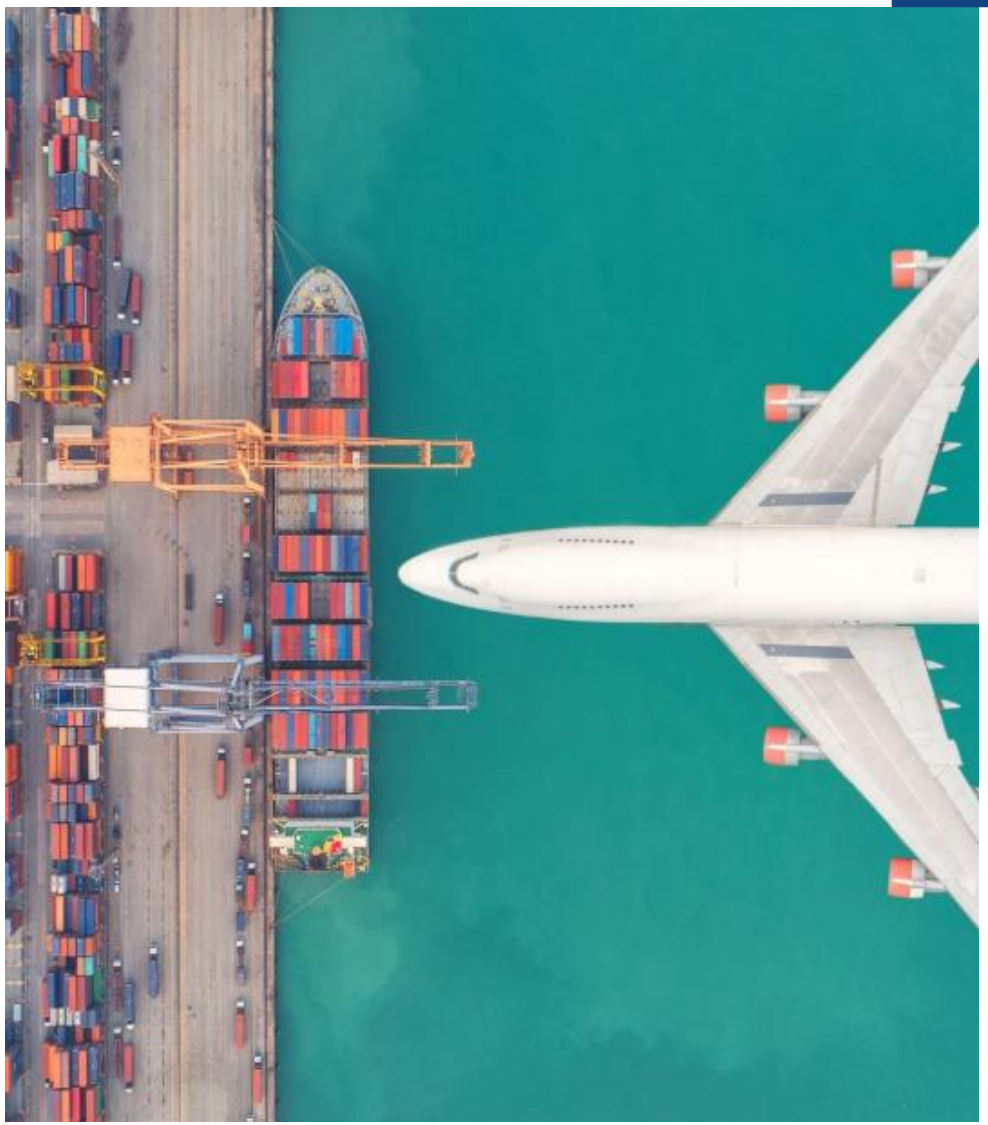
Regional meeting on Collaborative Approaches to Environmental Pollution and One Health in the Western Balkans, 4-5 December 2024

Tackling Illegal Waste Trafficking

Kajetan Pradetto, Programme Officer, Passenger and Cargo Control Programme, UNODC

AIRCOP CONTAINER CONTROL PROGRAMME

PASSENGER AND CARGO CONTROL PROGRAMME (PCCP)



United Nations
Office on Drugs and Crime

INTERPOL

World Customs Organization
Organisation mondiale des douanes

History of the

PASSENGER AND CARGO CONTROL PROGRAMME

2004
Creation of the CCP

2010
Creation of AIRCOP

2023
Establishment of the PCBT

2024
Development of PCCP

United Nations
Office on Drugs and Crime

WHO?

PCCP contributes to building the capacity of units comprised, as relevant, of customs, national police, anti-narcotics forces, and other law enforcement agencies. These units are located at seaports, airports, dry ports, rail terminals and land border crossings and work to identify and inspect high-risk containers, cargo, mail and passengers. These efforts are assisted by enhanced inter-agency cooperation nationally and regionally – all with minimum disruption to legitimate trade and the movement of passengers.

United Nations
Office on Drugs and Crime

INTERPOL

World Customs Organization
Organisation mondiale des douanes

OUR DONORS

United Nations
Office on Drugs and Crime

INTERPOL

World Customs Organization
Organisation mondiale des douanes

AIRCOP CONTAINER CONTROL PROGRAMME

WHAT?

Improved capacity of Member States and their law enforcement agencies active at air, sea and land borders, to safeguard security, health, economy and environment through the protection and facilitation of the international trade supply chain and the movement of passengers.

1 Inter-agency (when relevant) units

2 Building of technical and substantive skills

3 Fostering a network of communication and cooperation

PARTICIPATING COUNTRIES, DONORS AND CONTRIBUTORS

AIRCOP CONTAINER CONTROL PROGRAMME

Canada

United States of America

France, Germany, Netherlands, Poland, Romania, Spain, European Union

Norway

South-Eastern Europe
Albania, Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia, Serbia

Black Sea and South Caucasus
Armenia, Azerbaijan, Georgia, Moldova, Ukraine

Central Asia
Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

Türkiye

Japan

Pakistan

West and Central Africa
Benin, Burkina Faso, Cabo Verde, Cameroon Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Mali, Niger, Nigeria, Senegal, Togo

Middle East and North Africa
Algeria, Egypt, Iraq, Jordan, Lebanon, Libya, Morocco, Tunisia

Oman

Southeast Asia and the Pacific
Cambodia, Fiji, Indonesia, Lao PDR, Malaysia, Papua New Guinea, Philippines, Thailand, Viet Nam

South Asia
Bangladesh, Maldives, Nepal, Sri Lanka

Latin America and the Caribbean
Argentina, Bahamas, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay

Australia

Eastern and Southern Africa
Angola, Ethiopia, Kenya, Madagascar, Mauritius, Mozambique, Namibia, South Africa, Uganda, Tanzania

86 Participating Countries

37 Donors and Contributors

** All references to Kosovo in the present report should be understood in the context of United Nations Security Council resolution 1244 (1999).*
Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

SPECIALIZED AREAS

Strategic Trade & Export Control

Trafficking of Minerals

Illicit Timber

Plastic & Hazardous Waste

Terrorist Travel

Trafficking in Persons & Smuggling of Migrants

Cultural Property

Drugs & Precursors

Crimes in the Fisheries Sector

Gender

Falsified Medical Products

Trafficking of Wildlife

2023 RESULTS AND SUCCESSES: SEIZURES

AIRCOP CONTAINER CONTROL PROGRAMME

2013 251
2014 332
2015 252
2016 345
2017 384
2018 765
2019 800
2020 961
2021 1,416
2022 1,426
2023 2,238*

Total in 2023
2,238
SEIZURES

212,189,243 pieces
Cigarettes

513,957 pieces
Strategic goods, weapons and explosives

$1,139,528
Currency

210 tonnes
Hazardous waste

514
Intercepted people

339.5 tonnes
Precursor chemicals

103 pieces
Fraudulent or stolen documents

29 tonnes
CITES

21,328,435 pieces
Tax and duty evasion

19,437,082 pieces
Medicine

DRUGS

4 tonnes
Cannabis

250 tonnes
Cocaine

61.2 tonnes
Other opioids

905 kg
Heroin

732 pieces
Hallucinogens

17 kg
MDMA

1.5 tonnes
Amphetamine

107 kg
Synthetics

8 tonnes
New psychoactive substances

** 2013-2022 concerns CCP data only. 2023 includes both AIRCOP and CCP data.*

PCCP
Annual Report 2023

SCAN CODE TO ACCESS REPORT

United Nations
Office on Drugs and Crime

INTERPOL

World Customs Organization
Organisation mondiale des douanes

PCCP - Plastic and Hazardous Waste Project

Participants of PCCP interagency plastic & hazardous waste training inspect a 42 tonne abandoned shipment of illegal plastic waste in Bangkok, 2024

The Head of Sihanoukville PCU, a PCU member and PCCP trainer inspecting an abandoned container during a mentorship in Cambodia – 16 tonnes used lead acid batteries discovered

United Nations
Office on Drugs and Crime

World Customs Organization
Organisation mondiale des douanes

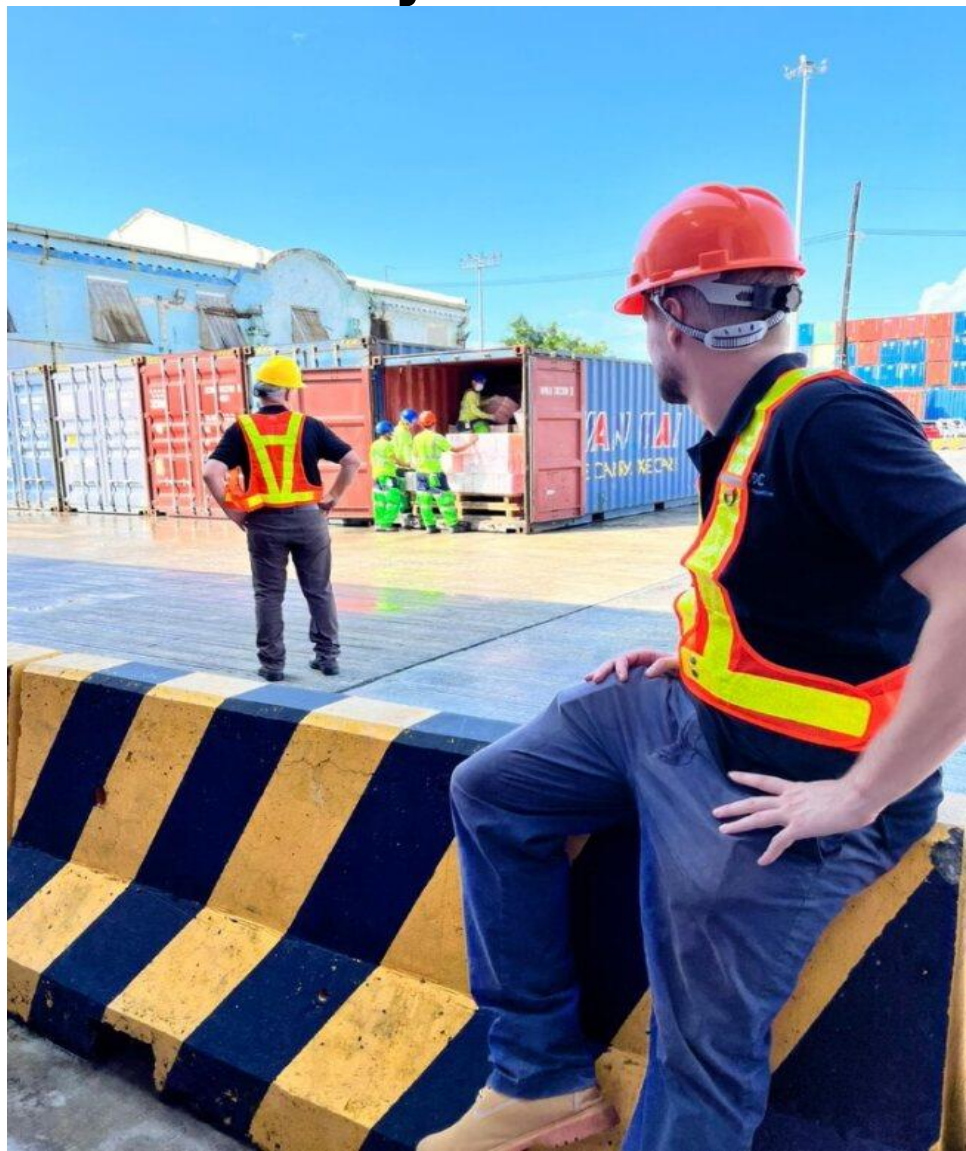
AIRCOP CONTAINER CONTROL PROGRAMME

Norway

PCCP - Plastic and Hazardous Waste Project

Key data:

- **Project countries**: Cambodia, Malaysia, Philippines, Thailand, Viet Nam
- **Objective**: Improved capacity of project countries to detect and suppress illicit trade in hazardous waste
- **Implementation period**: 2020-2025
- **Project activities**: Technical assessments, national workshops, mentorships, regional meetings, study visits, private sector engagement
- Close **cooperation** within UNODC and i.a. BRS Secretariat, WCO, UNEP



United Nations
Office on Drugs and Crime

World Customs Organization
Organisation mondiale des douanes

AIRCOP CONTAINER CONTROL PROGRAMME

Norway

PCCP - Plastic and Hazardous Waste Project

Training topics:

- Plastic Waste Trade
- Transboundary Movement of Waste (under the Basel Convention)
- Targeting
- Inspection
- National Situation
- Abandoned Containers
- Repatriation
- Gender and Human Rights

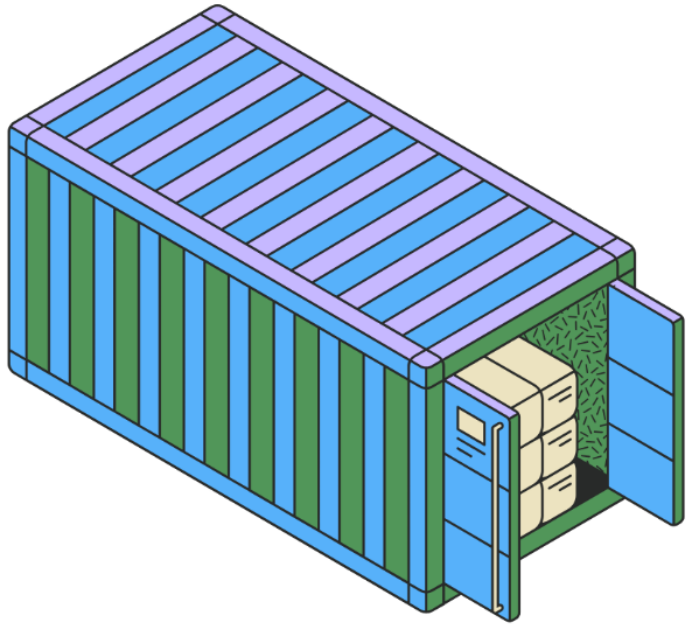
United Nations
Office on Drugs and Crime

World Customs Organization
Organisation mondiale des douanes

AIRCOP CONTAINER CONTROL PROGRAMME

Norway

PCCP - Plastic and Hazardous Waste Project



- Over 100,000 tonnes of plastic and other hazardous waste has been seized or identified during the course of this project
- 50,000 tonnes of dumped hazardous waste, predominantly plastic, has been identified in abandoned containers during waste mentorships
- 16 tonnes of used lead acid batteries found during a waste mentorship in Cambodia
- 16.5 tonnes of used tires identified during a waste mentorship in the Philippines
- Coordination with source countries, such as Australia, to deter waste trafficking

Firm told to repatriate illegal waste

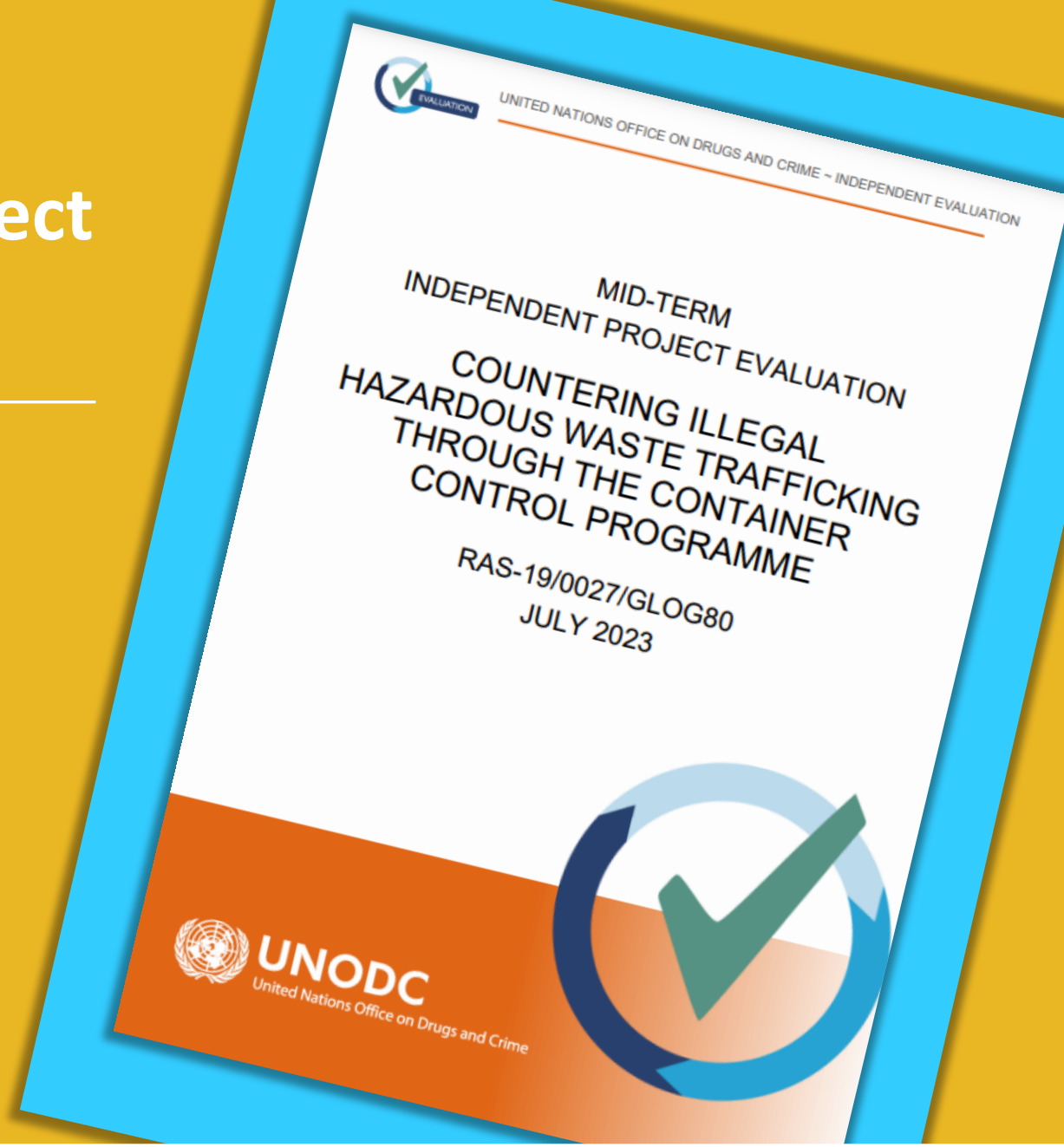
130 tonnes of trash came from Australia

PUBLISHED : 29 JUL 2022 AT 04:50
NEWSPAPER SECTION: NEWS WRITER: APINYA WIPATAYOTIN

40 12

PCCP
Plastic and Hazardous Waste Project
Independent Project Evaluation

SCAN CODE TO ACCESS REPORT



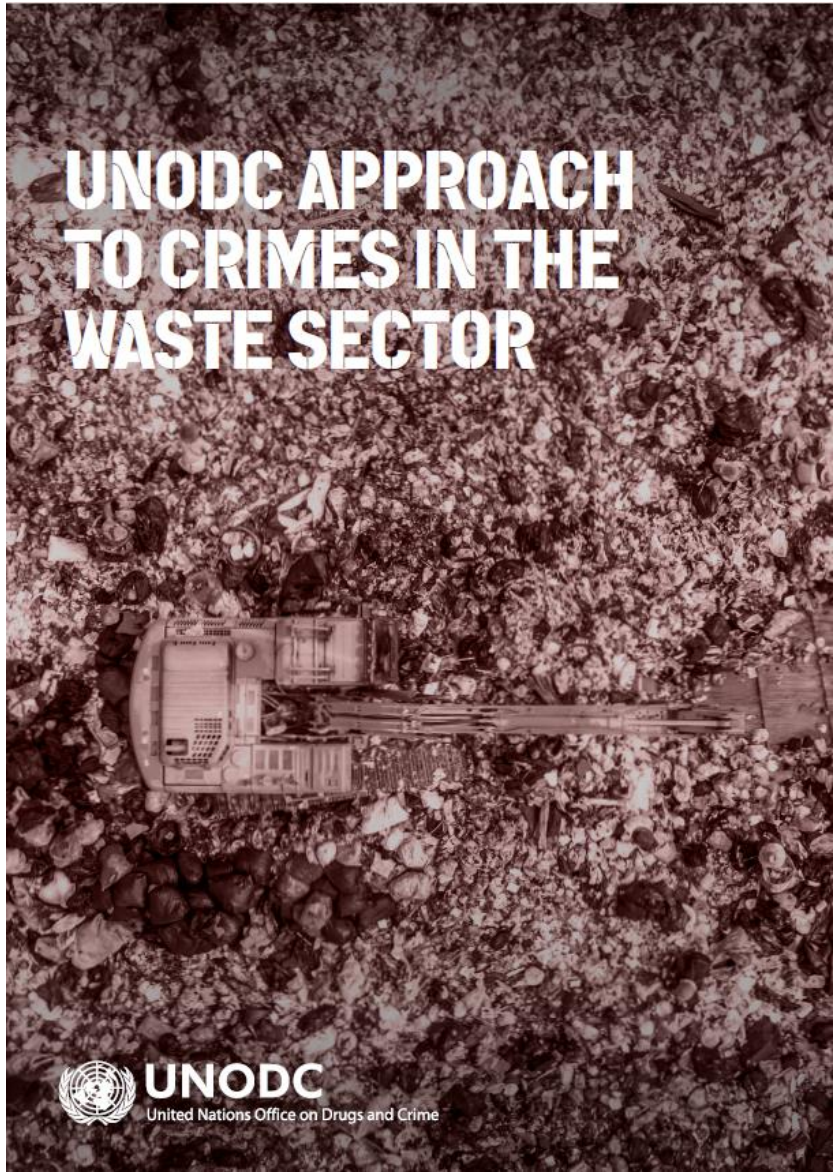
United Nations
Office on Drugs and Crime

World Customs Organization
Organisation mondiale des douanes

Norway

UNODC Approach to Crimes in the Waste Sector

- Published in October 2023
- Overview of crimes in the waste sector
- Overview of UNODC's menu of services in this area:
  - Passenger and Cargo Control
  - Environment
  - Maritime crime
  - Criminal network disruption
  - Organized crime
  - Corruption
  - Money laundering, proceeds of crime and financing of terrorism
  - Research and trend analysis



Passenger and Cargo Control Programme

CONTACT US

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Programme Officer
Passenger and Cargo Control Programme
Border Management Branch
United Nations Office On Drugs And Crime

United Nations
Office on Drugs and Crime

INTERPOL

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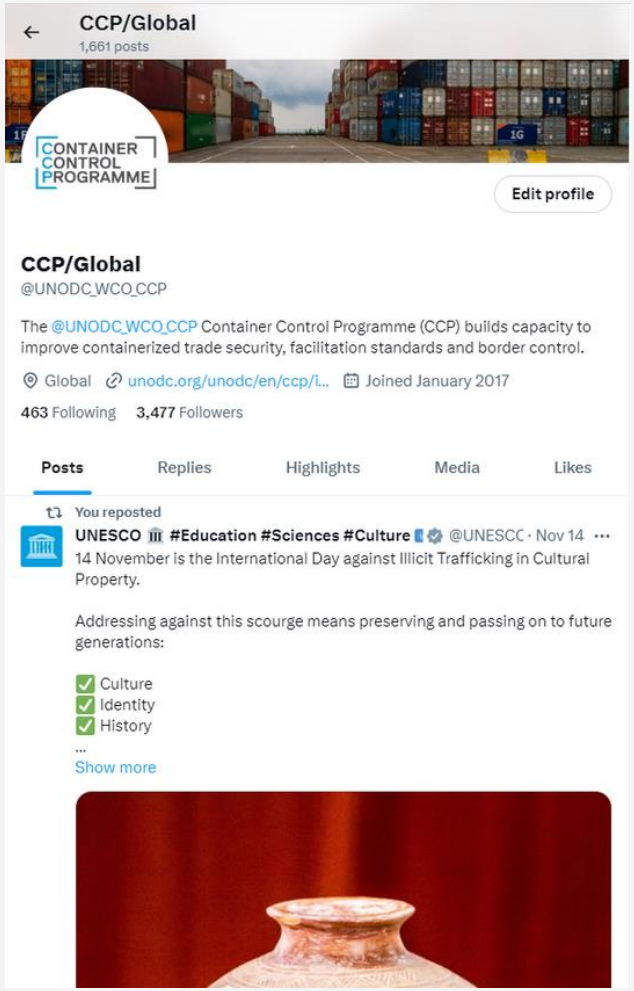
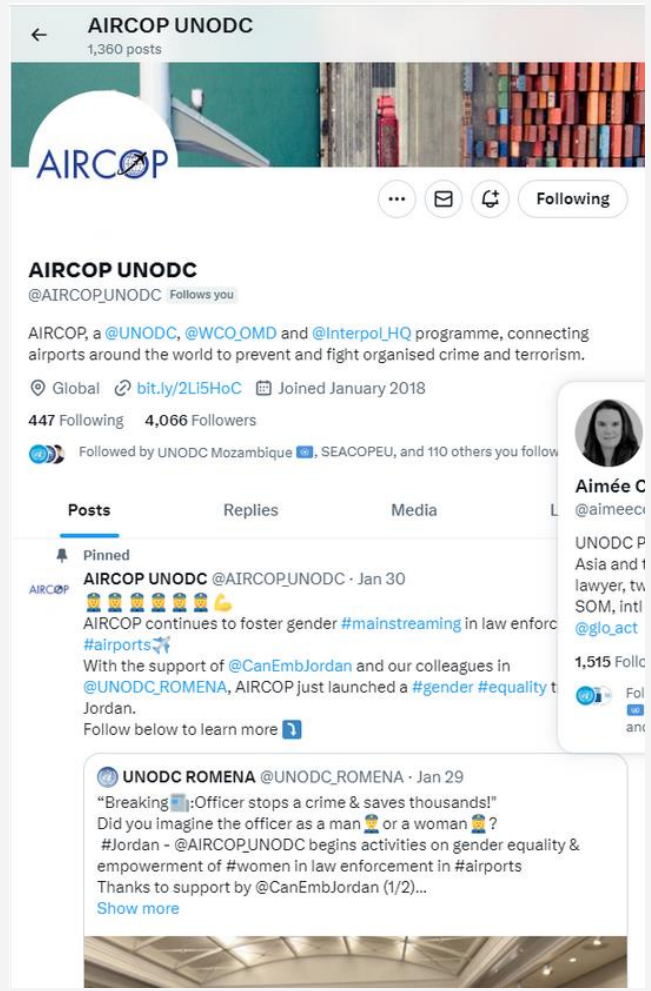
Organisation mondiale des douanes



@UNODC_WCO_CCP
@AIRCOP_UNODC



United Nations
Office on Drugs and Crime

INTERPOL

World Customs Organization
Organisation mondiale des douanes

European Commission

2019

AIR QUALITY IN WESTERN BALKANS CITIES

SOURCES, IMPACT ON HEALTH AND COSTS

Claudio A. Belis, Project leader, Unit Clean Air and Climate

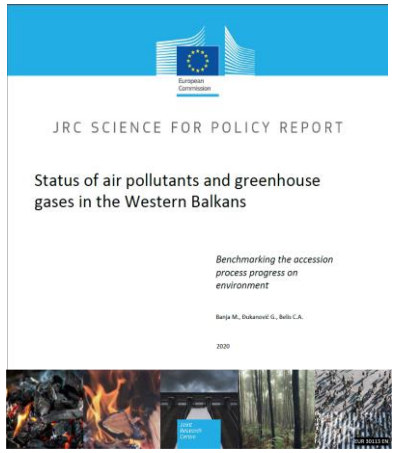
Regional meeting on Collaborative Approaches to Environmental Pollution and One Health in the Western Balkans

Sarajevo 4-5 December 2024

Joint Research Centre

ACC_ENV: Accession to the EU and Environment -> SCENARIO

Science for policy reports



Contribution to High Level WB meetings on Research

Sofia Summit 2020

Tirana Ministerial Meeting 2022

Skopje Ministerial Meeting 2024

Peer-reviewed publications

Urban pollution in the Danube and Western Balkans regions: The impact of major $PM_{2.5}$ sources

Claudio A. Belis[a,*], Enrico Pisoni[a], Bart Degraeuwe[a], Emanuela Peduzzi[a], Philippe Thunis[a], Fabio Monforti-Ferrario[a], Diego Guizzardi[b]

[a] European Commission, Joint Research Centre, via Fermi, 2749, 21027 Ispra, Italy
[b] Deltek Informatica, Verbania, Italy

Research article

Scenario analysis of $PM_{2.5}$ and ozone impacts on health, crops and climate with TM5-FASST: A case study in the Western Balkans

Claudio A. Belis[a,*], Rita Van Dingenen[a], Zbigniew Klimont[b], Frank Dentener[a]

Full length article

Assessment of health impacts and costs attributable to air pollution in urban areas using two different approaches. A case study in the Western Balkans

Claudio A. Belis[a,*], Vlatka Matkovic[b,f], Marta Ballocci[a,g,h], Marija Jevtic[c,i], Giovanni Millo[d], Elida Mata[e], Rita Van Dingenen[a]

Capacity building

Training

Emissions inventory compilation: air pollutants, toxic pollutants and GHGs

2020

5-6 November, 2020
Location: virtual (WebEx)
Muntean, M. et al.

Training

Emissions distribution methodology and introduction to EDGAR WEB-based gridding tool

2022

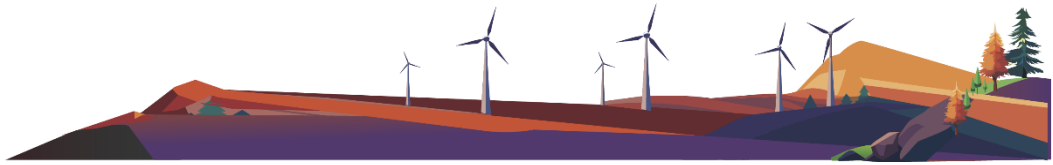
15-16-17 June, 2022
Location: virtual (WebEx)
Muntean, M. et al.

Summer school. The evaluation of air, soil and water pollution in support to the European Green Deal: a holistic approach
Novi Sad, September 2023

https://joint-research-centre.ec.europa.eu/events/jrc-summer-school-evaluation-air-soil-and-water-pollution-2023-09-04_en

European Commission

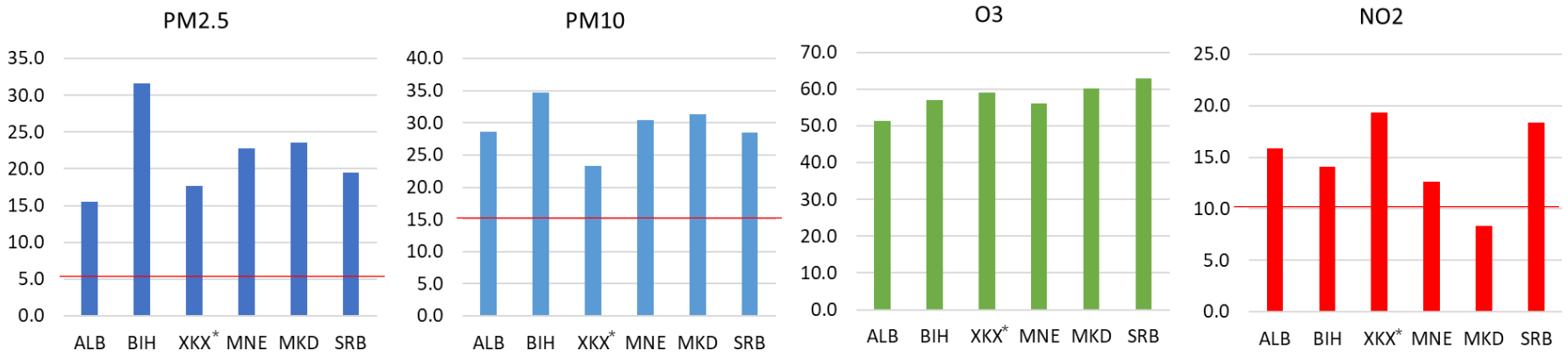
Introduction



- In 2021, air pollution was the second highest death risk factor globally
- It caused 8.1 million deaths worldwide
- Populations from low- and middle income countries are exposed to 1.3 to 4 times higher levels of ambient $PM_{2.5}$.
- In Europe air pollution has decreased in the latest decades, however levels still exceed WHO guidelines
- The Western Balkans is one of the air pollution hot spots in Europe

Source: HEI, 2024

Annual mean concentrations 2019 in background monitoring stations were often above WHO Guidelines 2021



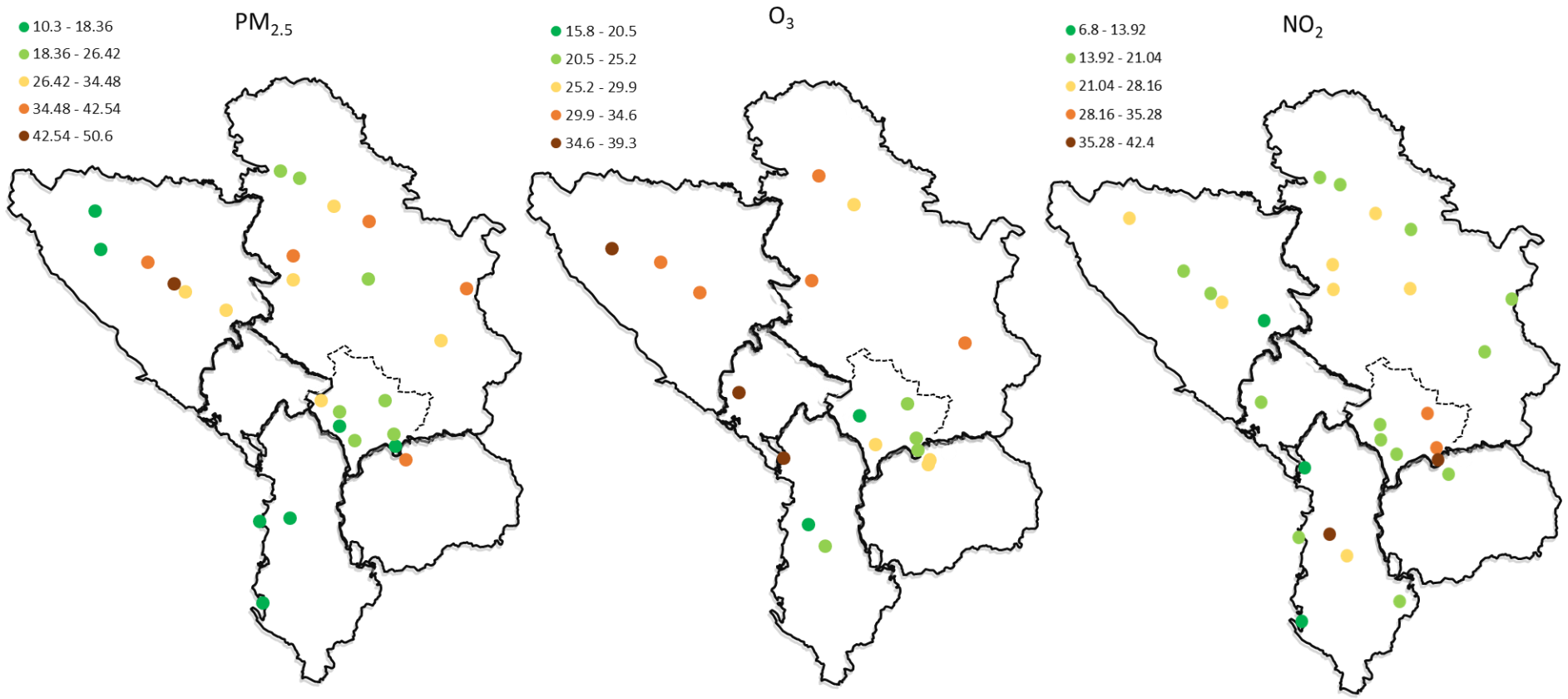
----- WHO Air quality Guidelines

Source:
-JRC, 2022
-EEA, Air quality portal

*This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence, as on the official website of the European Union.

European Commission

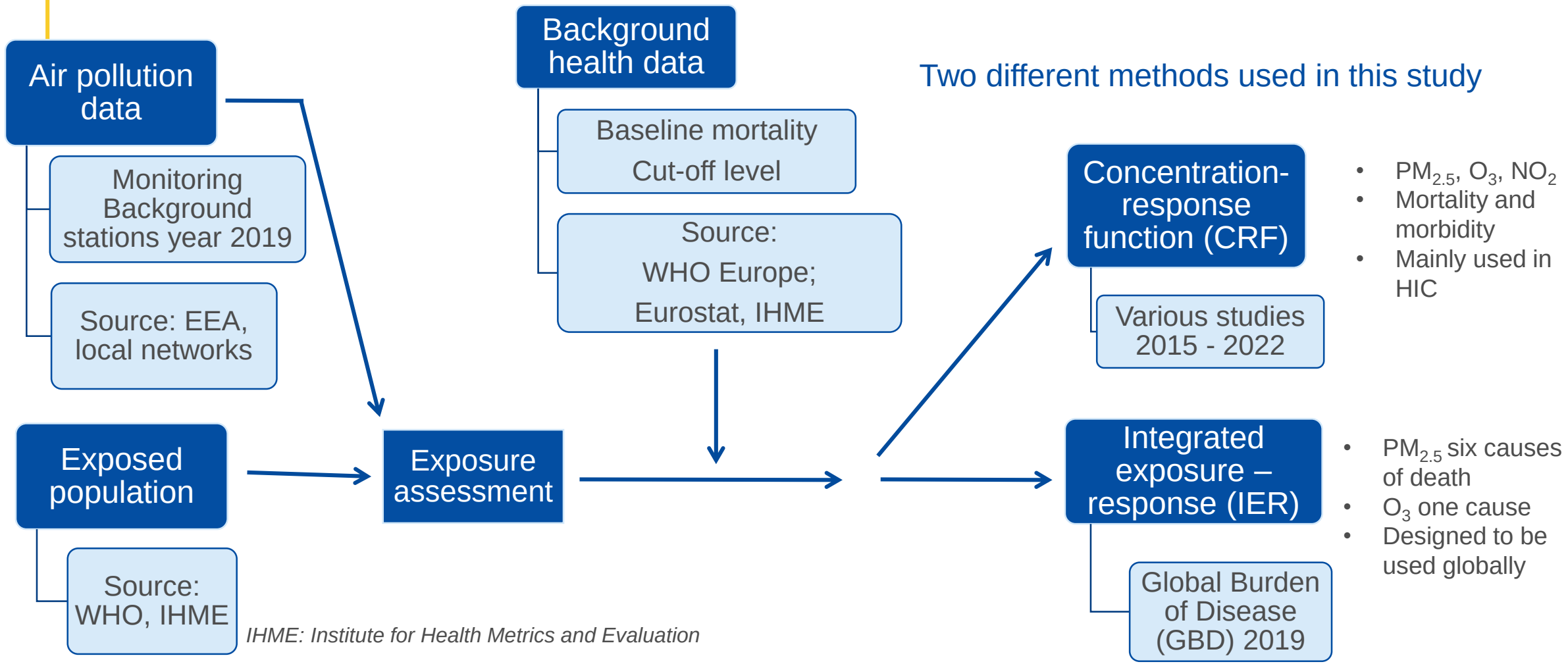
Monitoring sites and pollutants in 2019



- The analysis includes local networks in addition to those reported to EEA.
- Only urban background stations with **> 75%** data capture
- The health impact of air pollution was assessed in **30** cities with population ranging from 6,000 to 600,000 inhabitants.
- The population captured in this study represents **37%** of the region urban population.

European Commission

Health Impact Assessment (FASST* approach)



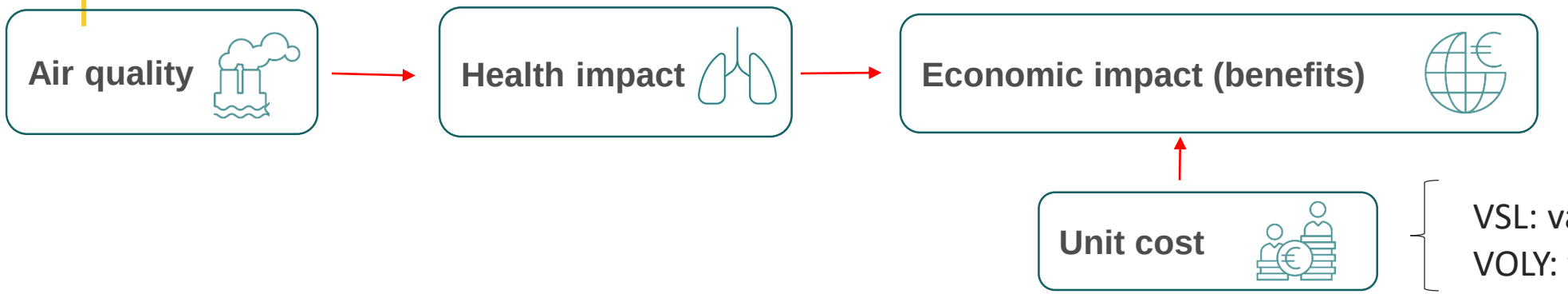
IHME: Institute for Health Metrics and Evaluation

* FASST is the JRC FAst Scenario Screening Tool (https://tm5-fasst.jrc.ec.europa.eu)

European Commission

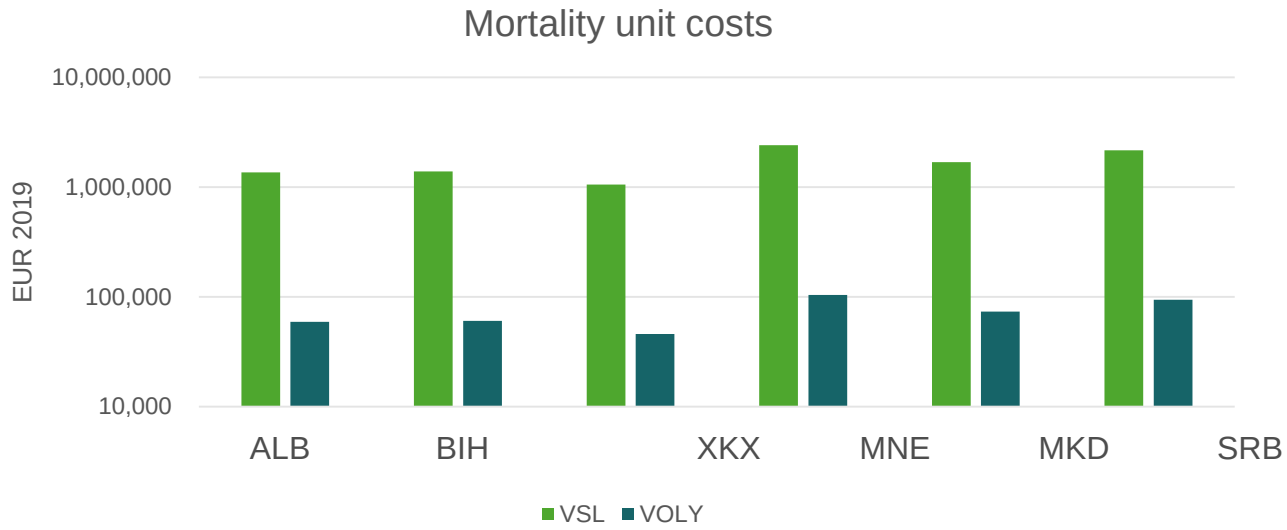
Health cost (=benefit) estimation

Quantification of costs (benefits) is one the elements needed to support policy decisions.

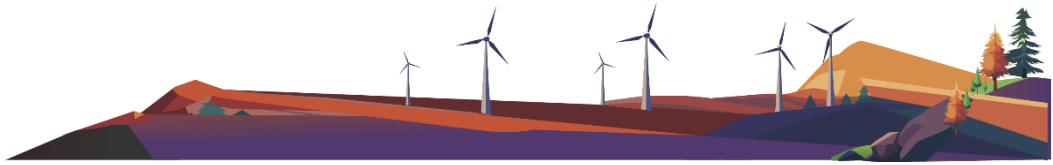


Unit cost

VSL estimated by
Willingness to Pay method (OECD, 2012)
Derived by value transfer based on GDP per capita
VOLY was derived from VSL



Unit cost



Unit cost

VSL estimated by Willingness to Pay method from OECD average (OECD, 2012)

Derived by value transfer based on GDP per capita

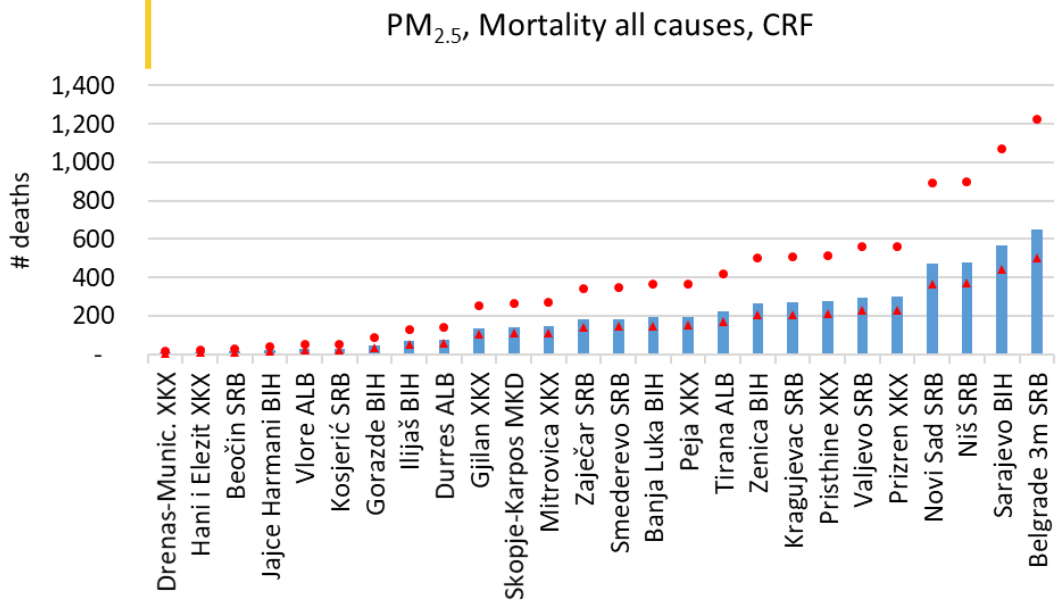
$$VSL_{c,2019} = VSL_{ref,year} \times \left(\frac{Y_{c,year}}{Y_{ref,year}}\right)^{b} \times (1 + \%\Delta P + \%\Delta Y)^{b}$$

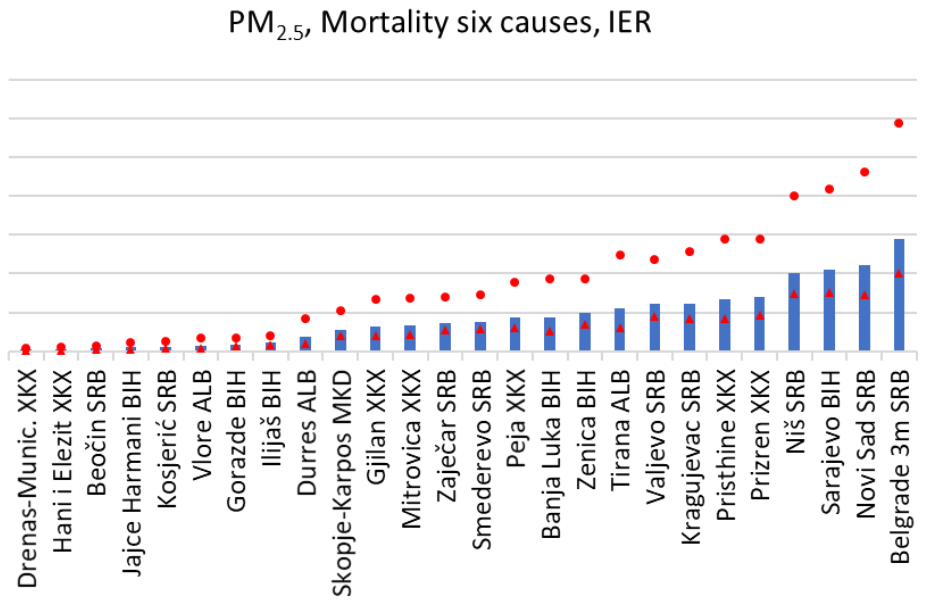
Y = GDP per capita (in PPP terms); *b* =income elasticity (1.2) , *ΔP* = price inflation, and *%ΔY* = income growth between the reference year and 2019 (Narain and Sall, 2016).

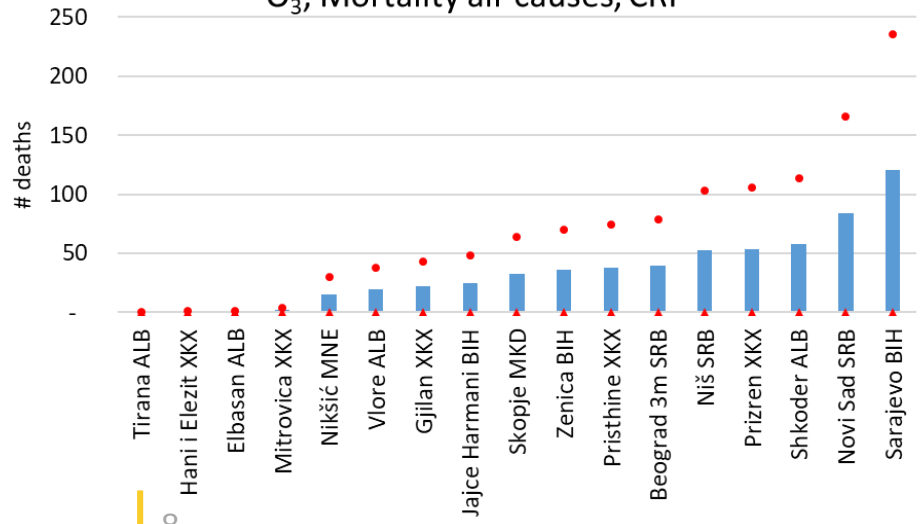
$$VOLY = \frac{VSL}{\left(1 - \frac{(1+r)^{-n}}{r}\right)}$$

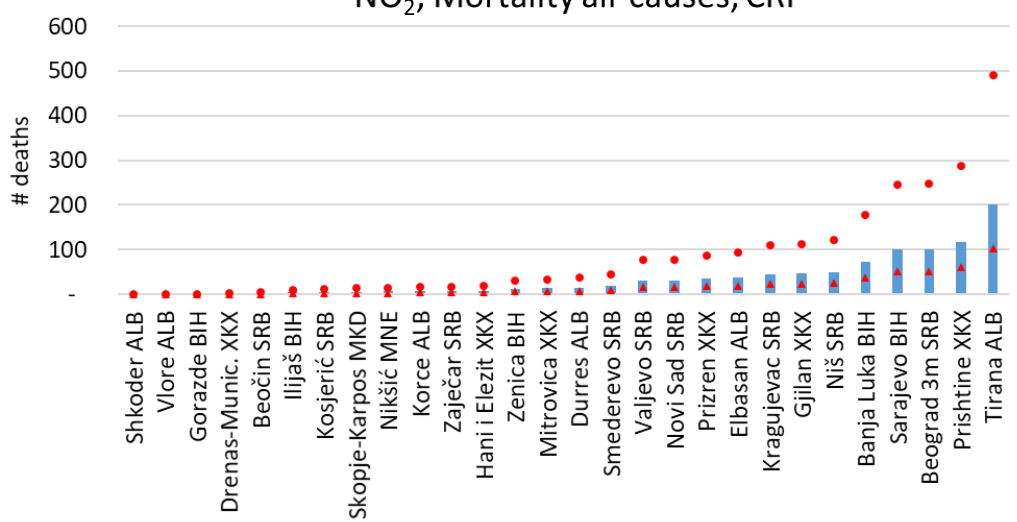
n is the discount period (remaining expected life year), and r is the discount rate (Ananthapavan et al., 2021).

Mortality attributable to air pollution







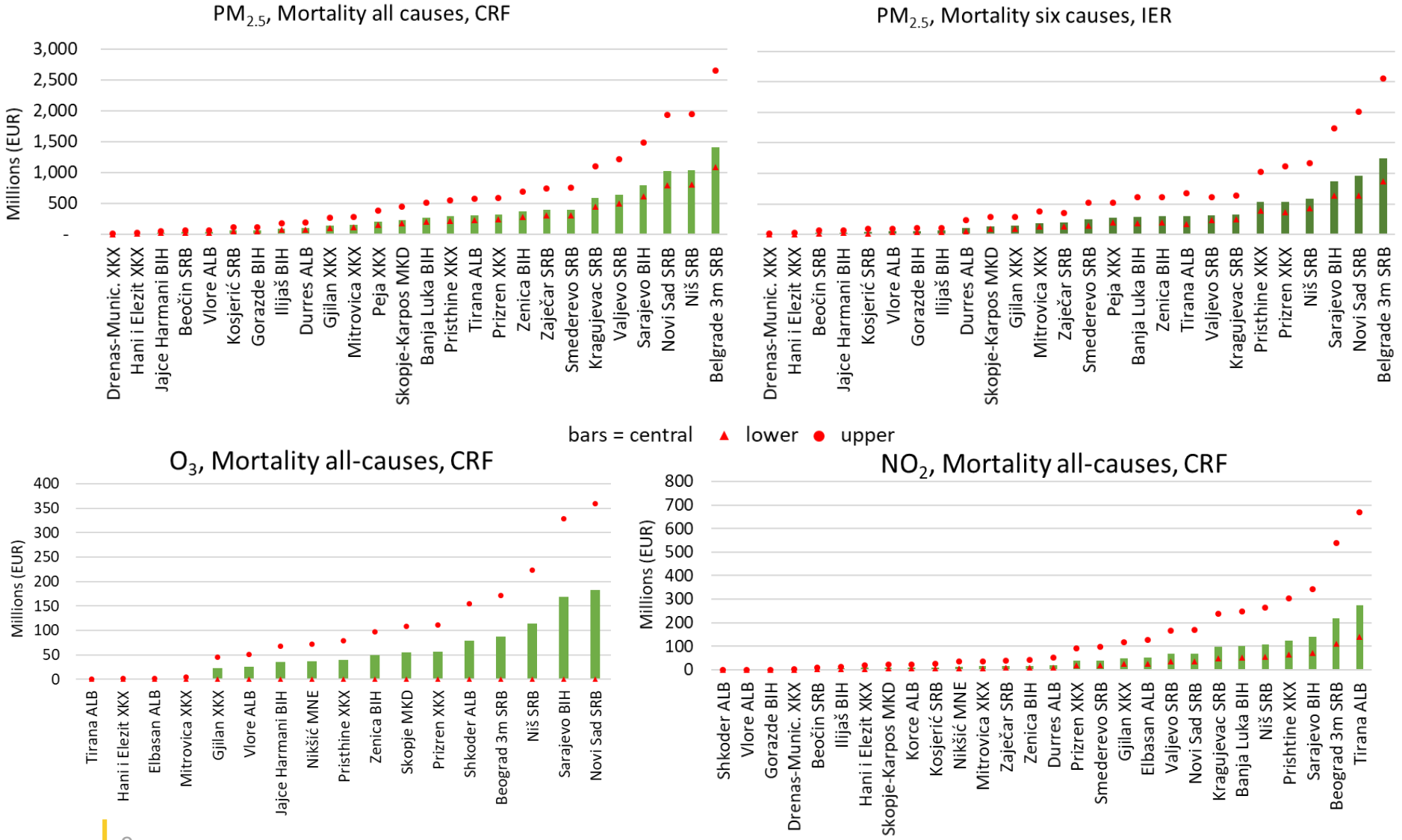


PREMATURE MORTALITY ATTRIBUTABLE TO:
$PM_{2.5}$: 4,600 – 5,300
OZONE: 600
NO_2: 970

YEARS OF LIFE LOST ATTRIBUTABLE TO:
$PM_{2.5}$: 75,100 - 86,000
OZONE: 9,700
NO_2: 15,500

European Commission

Costs (benefits) attributable to air pollution



Cost of Mortality Attributable to:

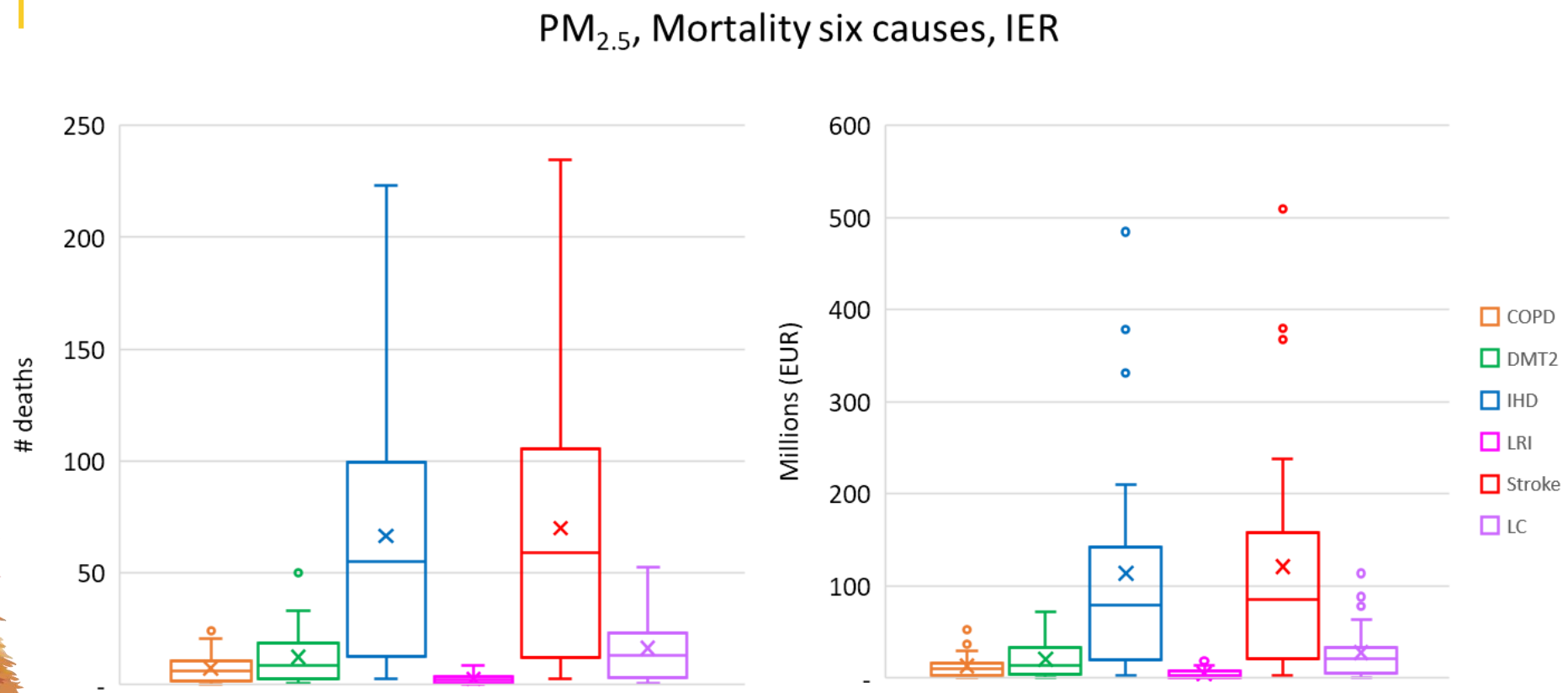
$PM_{2.5}$
€ 7.8 - 9.0 BN
Urban areas: 26

O_3
€ 1.0 BN
Urban areas: 17

NO_2
€ 1.5 BN
Urban areas: 28

European Commission

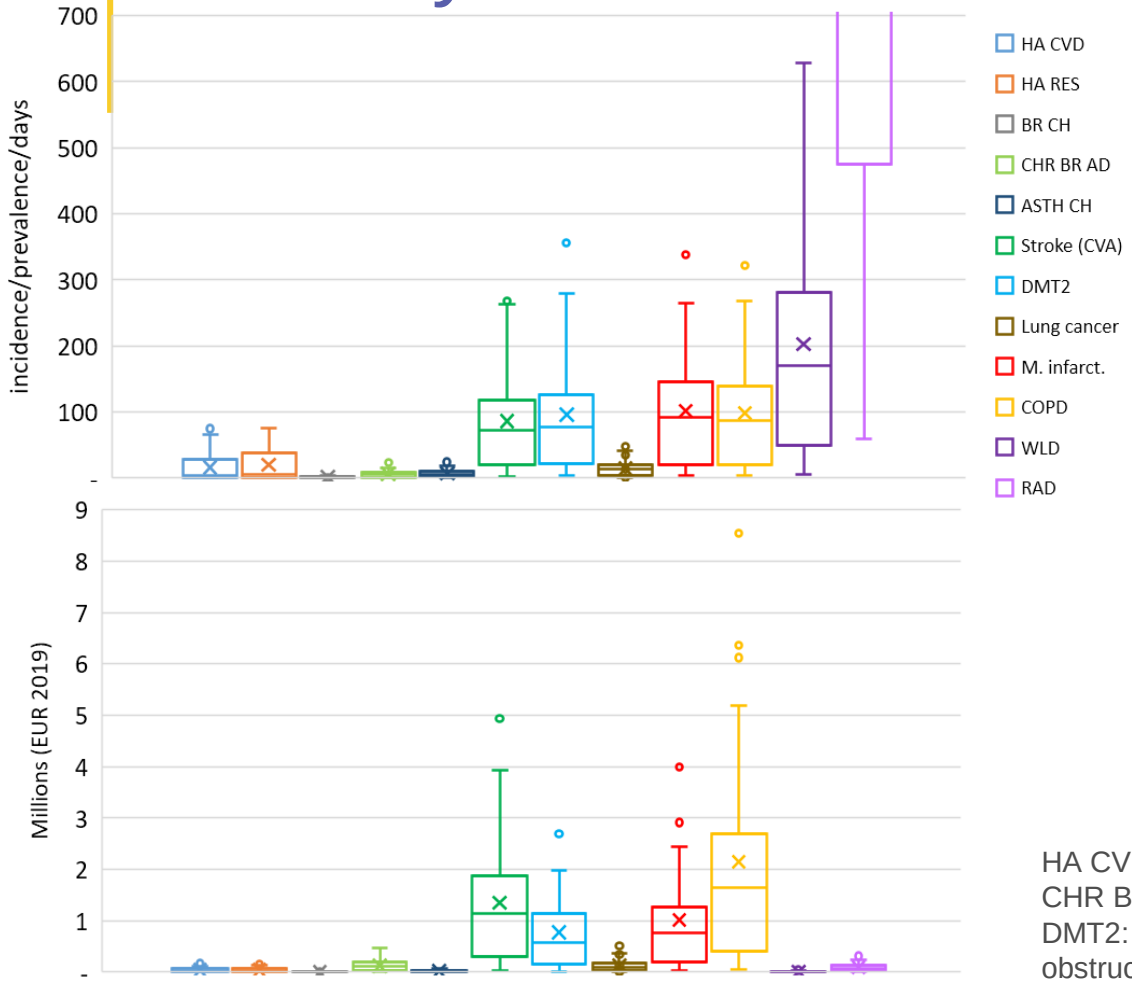
Mortality and costs attributable to $PM_{2.5}$



- COPD: Chronic obstructive pulmonary disease,
- DMT2: Diabetes mellitus type 2,
- IHD: Ischemic heart disease
- LRI: Low respiratory infections,
- Stroke,
- LC: Tracheal, bronchus and lung cancer

European Commission

Morbidity and costs attributable to $PM_{2.5}$



Cost of Morbidity Attributable to $PM_{2.5}$ – PM_{10}

26 cities

Total Costs

€150 mln

Per Capita **€45**

Per City **€5.7** mln

HA CVD: Hospital admissions cardio-vascular diseases, HA RD: hospital admissions respiratory diseases, CHR BR AD : chronic bronchitis in adults, ASTH CHI: asthma in children, CVAD: cardiovascular disease, DMT2: diabetes mellitus 2, BR CHI: bronchitis in children, MI: myocardial infarction, COPD: chronic obstructive pulmonary disease, RAD: reduced activity days, WLD: working lost days.

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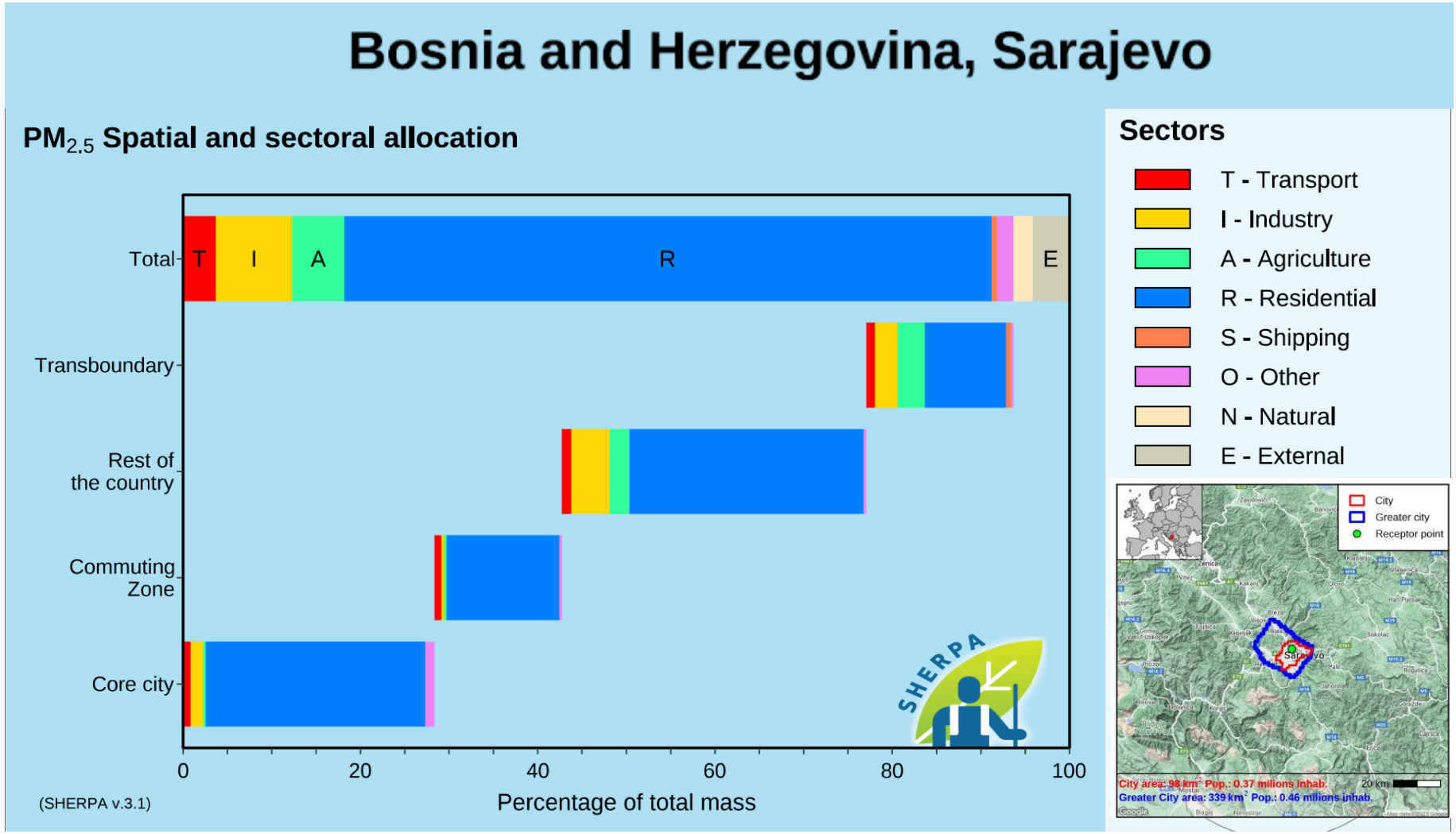
$PM_{2.5}$ sources in 2019 in 38 WB cities

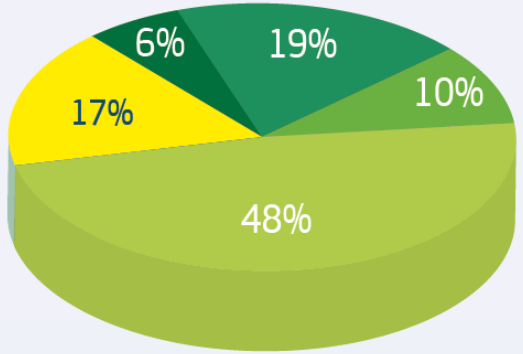


In collaboration with: S. Zauli and E. Pisoni

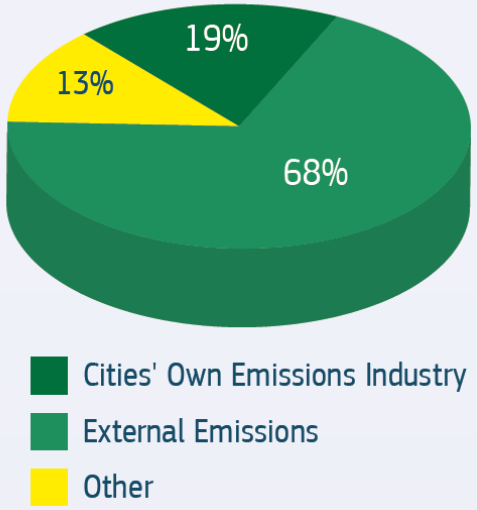
European Commission

Sources of $PM_{2.5}$

Sources of urban $PM_{2.5}$

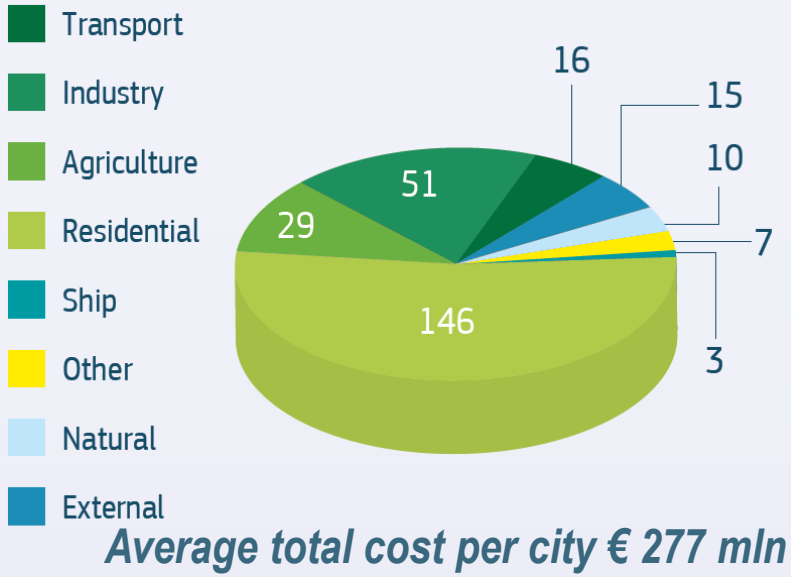


Distribution of $PM_{2.5}$ Contributions



Benefits attributed to $PM_{2.5}$ Sources

(Avg. 17 cities, € mln)

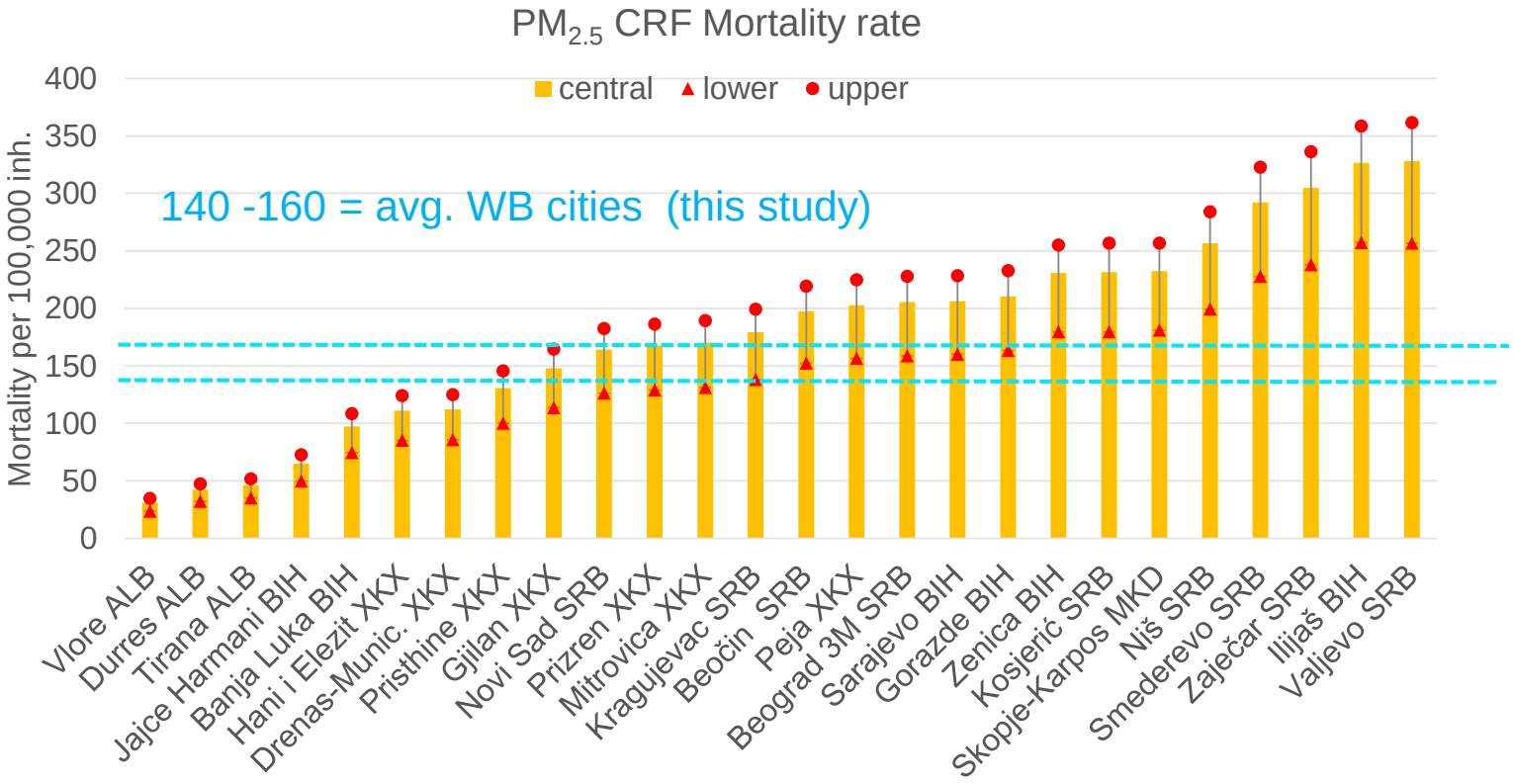


Average total cost per city € 277 mln

The source identification presented in this slide is an update of the data used in Belis et al., 2023

European Commission

$PM_{2.5}$: mortality rate compared with EU27



Economic Burden on GDP (%)

3x higher than EU27

Western Balkans

Represents only one third of the urban population

EU27

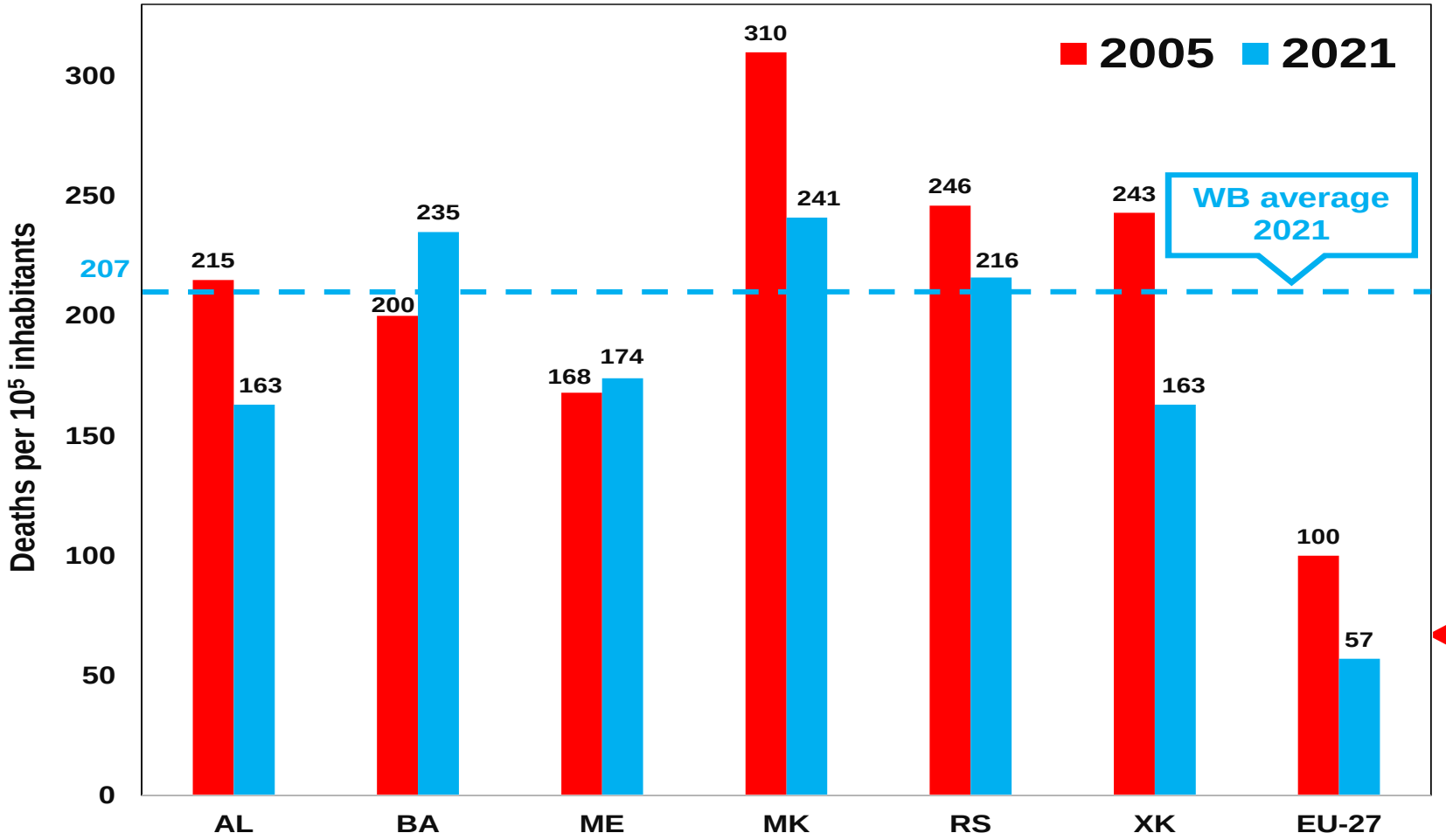
full Member State

full country

Relative mortality in WB cities in this study (2019) comparable to highest 1% of the European cities in 2015 (Khomenko et al., 2021)

European Commission

$PM_{2.5}$: mortality rate compared with EU27 (national level)



69 = Average EU27 at Member State level in 2019

Source: EEA (JRC elaboration).

European Commission

Conclusions

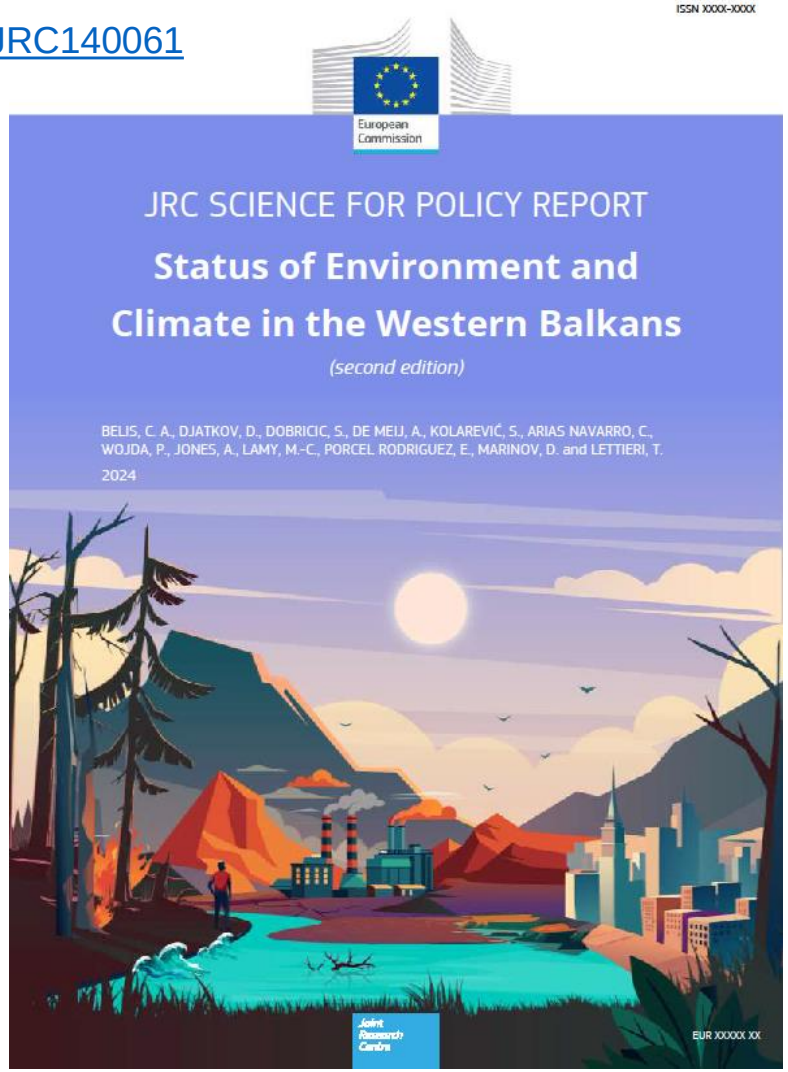
- The external cost (VSL) due to air quality ($PM_{2.5}$) in the 26 studied cities could be as high as 8-9 billion Euro with an average cost per city above 300 Million Euro.
- The highest impacts (absolute values) are observed in the northern part of the Western Balkans
- In 2019, the average mortality rate in the studied cities was comparable to the 1% highest values observed in EU27 cities in 2015 and twice the average value in EU27 at country level in the same year.
- This preliminary comparison suggests a higher economic burden (share of GDP) of air pollution in Western Balkans cities compared with EU27.
- **The analysis of sources highlight the need to promote the transition to renewable energy, enhance building energy performance and adopt Best available technologies for industrial facilities**
- CRF and IER (GBD) outcomes are different but coherent and their combined use makes it possible to cover a wider range of health outcomes

Report on Environment and Climate in the Western Balkans (second edition)

https://publications.jrc.ec.europa.eu/repository/handle/JRC140061

Topics:

- **Alignment** with EU *acquis* and implementation
- **Air pollution**: emissions, trends, impacts on health
- **GHG** emissions
- Impacts of **climate change** on: precipitations, droughts, heat waves, forest fires, surface and ground water bodies
- **Soil** health, contaminated sites, monitoring data and gaps
- **Water** Framework Directive, urban wastewater treatment, chemical and faecal contaminants, antimicrobial resistance



Citation: Belis, C.A., Djatkov, D., Dobricic, S., De Meij, A., Kolarević, S., Arias Navarro, C., Wojda, P., Jones, A., Lamy, M.-C., Porcel Rodriguez, E., Marinov, D. and Lettieri, T., Status of Environment and Climate in the Western Balkans, Publications Office of the European Union, Luxembourg, 2024, https://data.europa.eu/doi/10.2760/1865356, JRC140061.

Training/knowledge sharing

Summer school. The evaluation of air, soil and water pollution in support to the European Green Deal: a holistic approach

Novi Sad, September 2023

Objective: to enhance green skills in the Western Balkans for a more sustainable and resource-efficient society.

A collaboration between JRC and University of Novi Sad

Attended by 23 young scientists and advanced students from WB

15 trainers/speakers/contributors from: JRC, University of Novi Sad and University of Belgrade

First summer school organised by JRC in the region

Successful experience that could be extended to other sites/institutions (listed among JRC highlights in 2023)

https://joint-research-centre.ec.europa.eu/events/jrc-summer-school-evaluation-air-soil-and-water-pollution-2023-09-04_en

European Commission

Thank you

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journal homepage: www.elsevier.com/locate/envint

Full length article

Assessment of health impacts and costs attributable to air pollution in urban areas using two different approaches. A case study in the Western Balkans

Claudio A. Belis [a,*], Vlatka Matkovic [b,f], Marta Ballocci [a,g,h], Marija Jevtic [c,i], Giovanni Millo [d], Elida Mata [e], Rita Van Dingenen [a]

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More info:

https://doi.org/10.1016/j.envint.2023.108347

EU Science Hub
joint-research-centre.ec.europa.eu

European Commission

Regional meeting on Collaborative Approaches to Environmental Pollution and One Health in the Western Balkans

UN environment
United Nations Environment Programme

xEco Air
software/app

Dejan Lekic, MSc
eXtreme ECOlogy

https://xeco.info

Eco

xEco – MISSION

EVERYTHING THAT HAS ALREADY BEEN MEASURED BUT HAS NOT REACHED YOU...

DOZENS OF STATE INSTITUTIONS CONTINUOUSLY COLLECT DATA ON THE STATE OF ENVIRONMENTAL COMPONENTS, RANGING FROM TEMPERATURES AND PRECIPITATION TO RADIATION AND NOISE, AS WELL AS THE QUALITY OF AIR, WATER, AND SOIL.

THIS DATA MOST OFTEN BECOMES AN INTEGRAL PART OF REPORTS PUBLISHED AS DOCUMENTS CONTAINING DATASETS IN MACHINE-UNREADABLE FORMATS. DATA ON EXTREMELY POOR CONDITIONS ARE THUS EMBEDDED WITHIN LARGE COLLECTIONS OF RELATIVELY ROUTINE AND INSIGNIFICANT MEASUREMENTS, REMAINING HIDDEN THERE FOREVER.

xEco – MOTIVATION

- The lack of tools for real-time and short-term assessment of air quality, along with simultaneous comparison to legally defined limits and World Health Organization recommendations
- A populist, non-scientific approach to the issue of air quality on both polarized sides - sensationalism in negative assessments and a quasi-affirmative approach in positive assessments of air quality.

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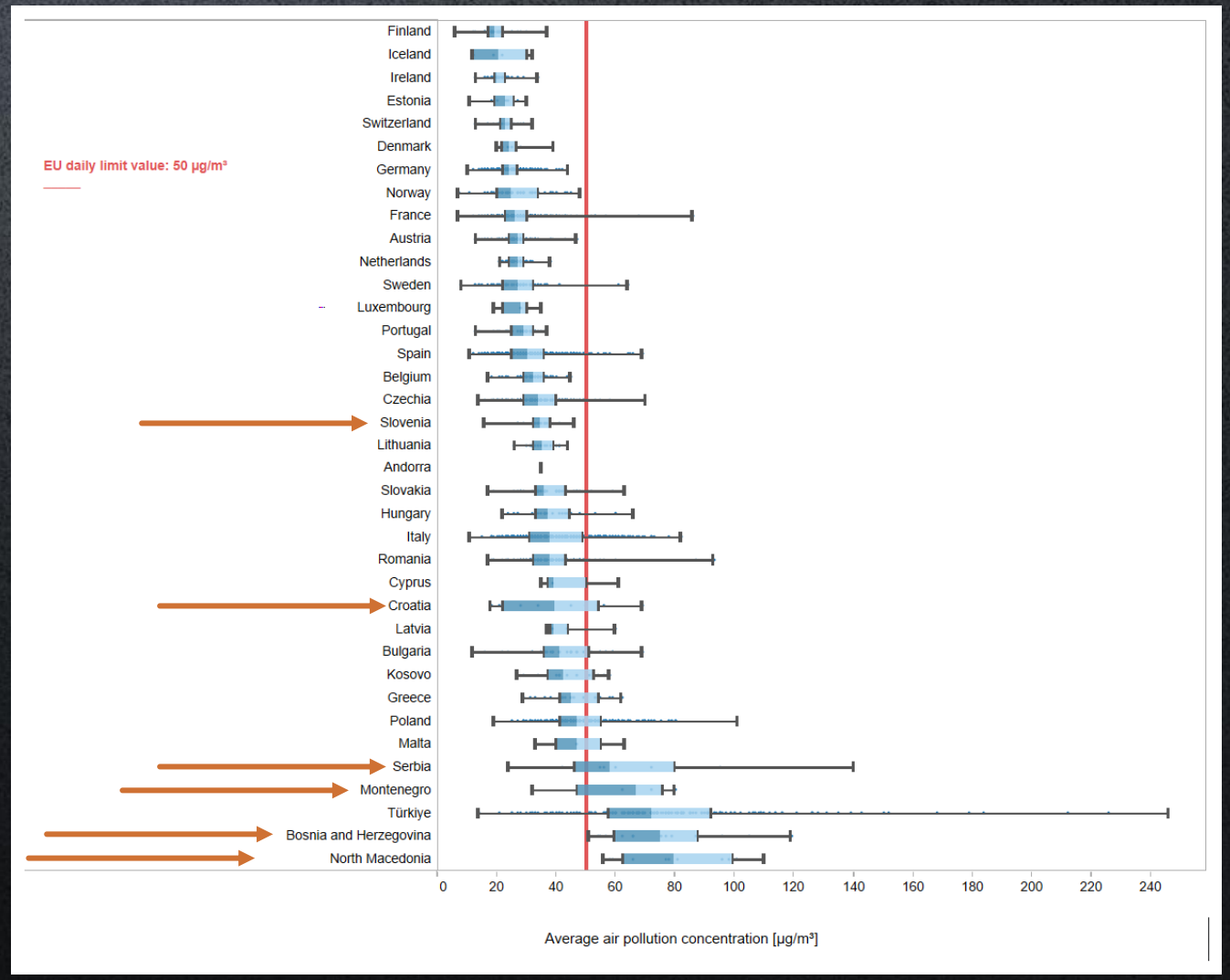
xEco – WHERE WE ARE?

Country	YLL/100,000 due PM2.5
Denmark	223
Austria	362
…	
Slovenia	543
EU27 average	584
Croatia	921
…	
Montenegro	1,549
Serbia	1,938
Bosnia and Herzegovina	2,107
N. Macedonia	2,115

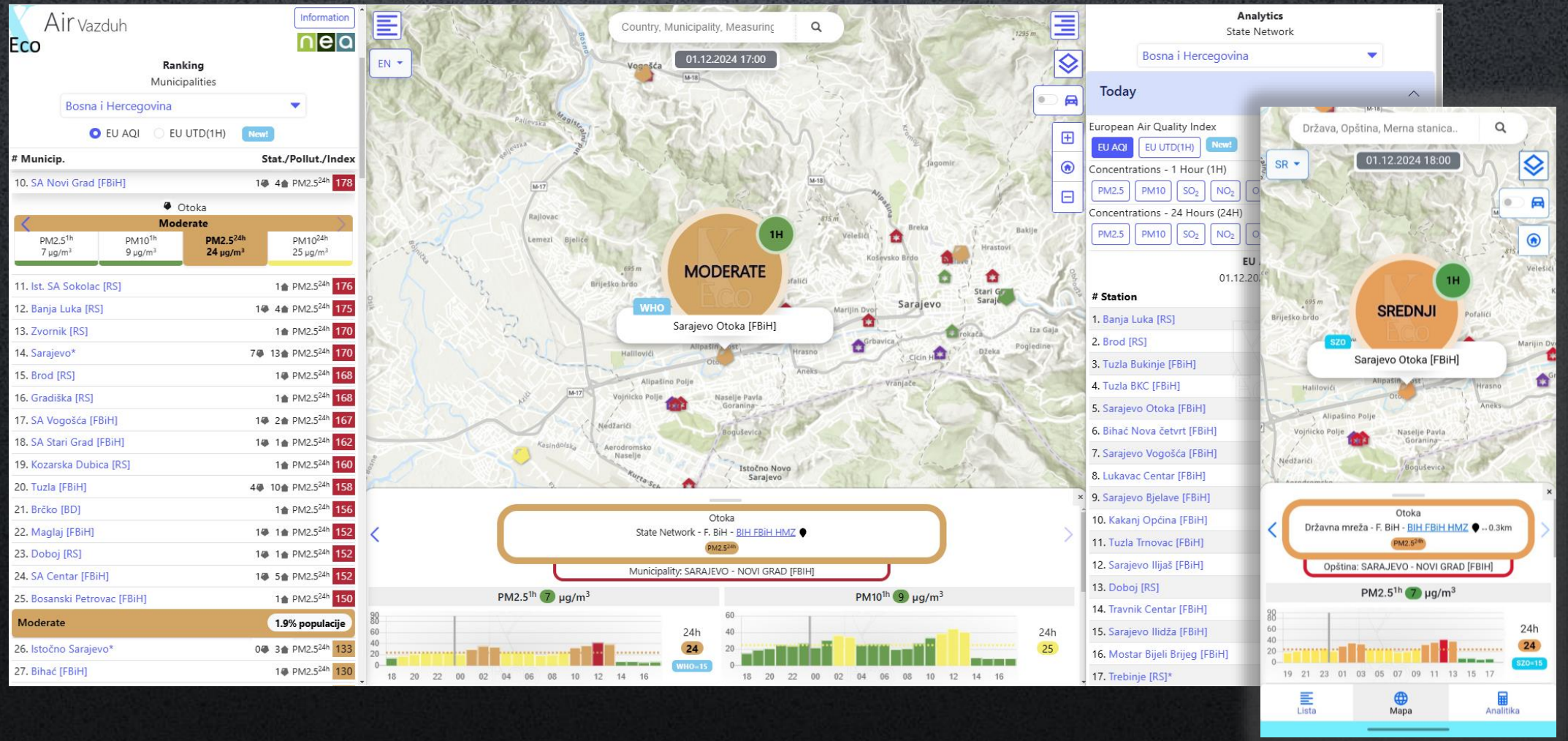


xEco Air

- Accurate real-time air quality data from all relevant sources, processed spatially and statistically, on hourly, daily, monthly, and yearly levels.
- More than 750 locations of state and citizen science air quality monitoring networks in: SLO, CRO, BIH, MNE, NMK and SRB.

- European Air Quality Index for short-term air quality assessment
- EEA Up-To-Date Index for real-time air quality assessment
- Aggregation and ranking at the municipality/city level (incl. population covered)
- Comparison with legal limit values and WHO recommendations

xEco Air


Air Vazduh
Eco
Information
nea
Ranking
Municipalities
Bosna i Hercegovina
EU AQI
EU UTD(1H)
New!
Municip.
Stat./Pollut./Index
10. SA Novi Grad [FBiH]
Otoka
Moderate
PM2.5 1h 7 µg/m³
PM10 1h 9 µg/m³
PM2.5 24h 24 µg/m³
PM10 24h 25 µg/m³
11. Ist. SA Sokolac [RS]
12. Banja Luka [RS]
13. Zvornik [RS]
14. Sarajevo*
15. Brod [RS]
16. Gradiška [RS]
17. SA Vogošća [FBiH]
18. SA Stari Grad [FBiH]
19. Kozarska Dubica [RS]
20. Tuzla [FBiH]
21. Brčko [BD]
22. Maglaj [FBiH]
23. Doboj [RS]
24. SA Centar [FBiH]
25. Bosanski Petrovac [FBiH]
Moderate
1.9% populacije
26. Istočno Sarajevo*
27. Bihać [FBiH]
Country, Municipality, Measuring
EN
01.12.2024 17:00
1H
MODERATE
WHO
Sarajevo Otoka [FBiH]
Otoka
State Network - F. BiH - BIH FBiH HMZ
Municipality: SARAJEVO - NOVI GRAD [FBiH]
PM2.5 1h 7 µg/m³
PM10 1h 9 µg/m³
24h
24
25
WHO=15
Analytics
State Network
Bosna i Hercegovina
Today
European Air Quality Index
EU AQI
EU UTD(1H)
New!
Concentrations - 1 Hour (1H)
PM2.5
PM10
SO2
NO2
Concentrations - 24 Hours (24H)
Station
1. Banja Luka [RS]
2. Brod [RS]
3. Tuzla Bukinje [FBiH]
4. Tuzla BKC [FBiH]
5. Sarajevo Otoka [FBiH]
6. Bihać Nova četvrt [FBiH]
7. Sarajevo Vogošća [FBiH]
8. Lukavac Centar [FBiH]
9. Sarajevo Bjelave [FBiH]
10. Kakanj Općina [FBiH]
11. Tuzla Trnovac [FBiH]
12. Sarajevo Ilijaš [FBiH]
13. Doboj [RS]
14. Travnik Centar [FBiH]
15. Sarajevo Ilidža [FBiH]
16. Mostar Bijeli Brijeg [FBiH]
17. Trebinje [RS]*
Država, Opština, Merna stanica..
SR
01.12.2024 18:00
1H
SREDNJI
SZO
Sarajevo Otoka [FBiH]
Otoka
Državna mreža - F. BiH - BIH FBiH HMZ 0.3km
Opština: SARAJEVO - NOVI GRAD [FBiH]
PM2.5 1h 7 µg/m³
24h
24
SZO=15
Lista
Mapa
Analitika

Eco

xEco Air - AQI

Averaging period: Concentrations - 1 Hour (1H)

Category	PM2.5	PM10	SO_2	NO_2	O_3
			>750	>340	>380
	>90	>180	500-750	230-340	240-380
	40-90	90-180	350-500	120-230	130-240
	30-40	60-90	200-350	90-120	100-130
	15-30	35-60	100-200	40-90	50-100
	0-15	0-35	0-100	0-40	0-50

Averaging period: Concentrations - 24 Hours (24H)

Category	PM2.5	PM10	SO_2	NO_2	O_3
	>75	>150			
	50-75	100-150	>500	>230	>240
	25-50	50-100	350-500	120-230	130-240
	20-25	40-50	200-350	90-120	100-130
	10-20	20-40	100-200	40-90	50-100
	0-10	0-20	0-100	0-40	0-50

Eco

xEco Air – Limit Values & WHO

		PM2.5	PM10	SO_2	NO_2	O_3
1 Hour	LV	-	-	350 [24]	150 [18]	180*
	WHO	-	-	-	-	-
1 Day	LV	-	50 [35]	125 [3]	85	120**
	WHO	15	45	40	25	100***
1 Year	LV	25(20)****	40	50	40	-
	WHO	5	15	-	10	-

* Given as a limit concentration for obligatory public notification under the Regulation.

** Given as the maximum daily eight-hour mean value in 24 hours in order to protect health according to the Regulation.

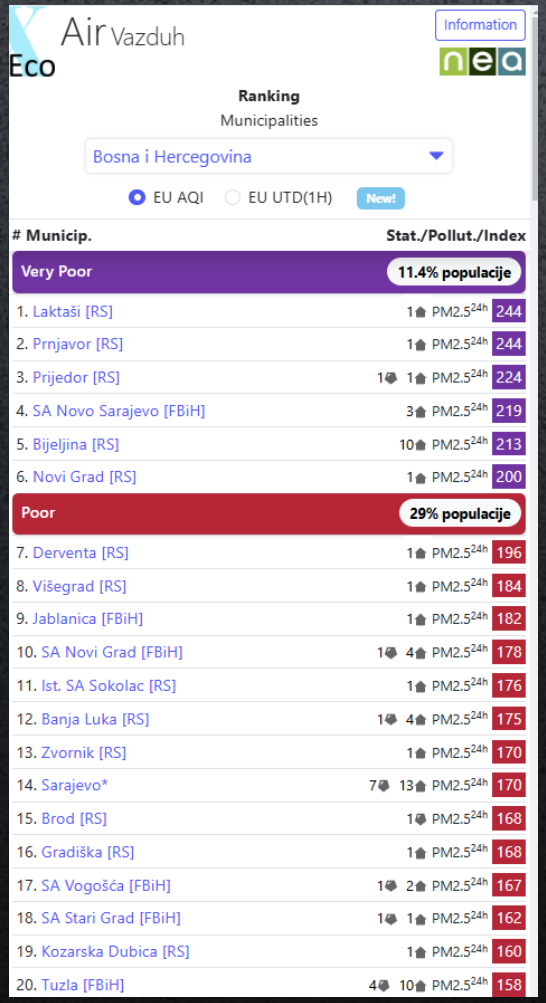
*** The recommendation is valid for a maximum 8-hour mean value in 24 hours.

xEco Air - Networks

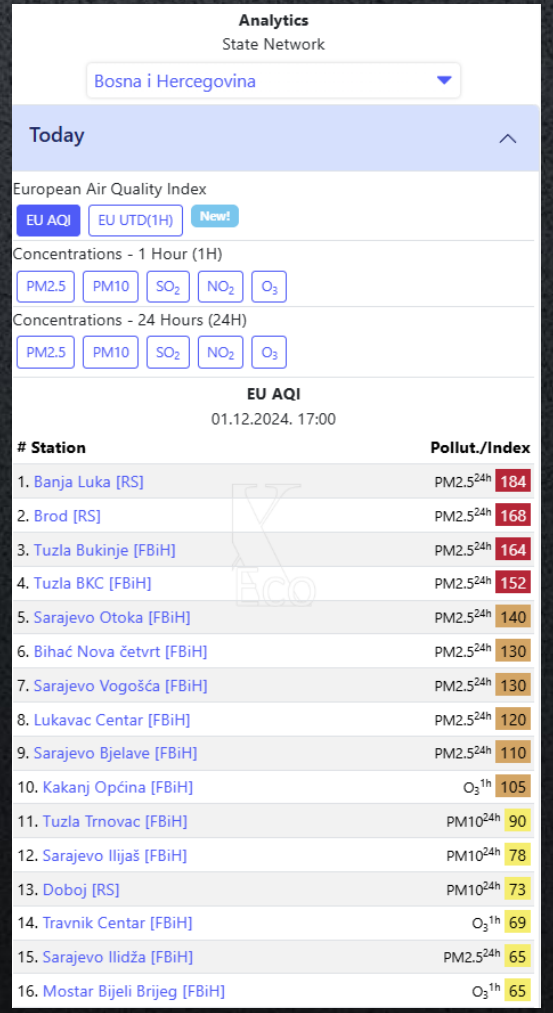
Country	State Monitoring	Citizen Science Monitoring	Total
Slovenia	21	20	41
Croatia	54	10	64
Bosnia & Herzegovina	32 (FBiH) + 7 (RS)	68	107
Montenegro	8	2	10
N. Macedonia	19	74	93
Serbia	83	376	459
			774

xEco Air - Features

- Ranking of municipalities using EU AQI & EU UTD (all measuring points)



- Ranking of locations using EU AQI/UTD & 5 polluting substances on 1h/24h averaging period (state network)



xEco Air - Features

- Yearly summary – averages, number of days with exceedances

2024. godina (do 12.04.2024)

Statistika - 1 godina

PM2.5 | PM10 | SO_2 | NO_2 | O_3

Statistika - 1 dan

PM10 | SO_2 | NO_2 | O_3

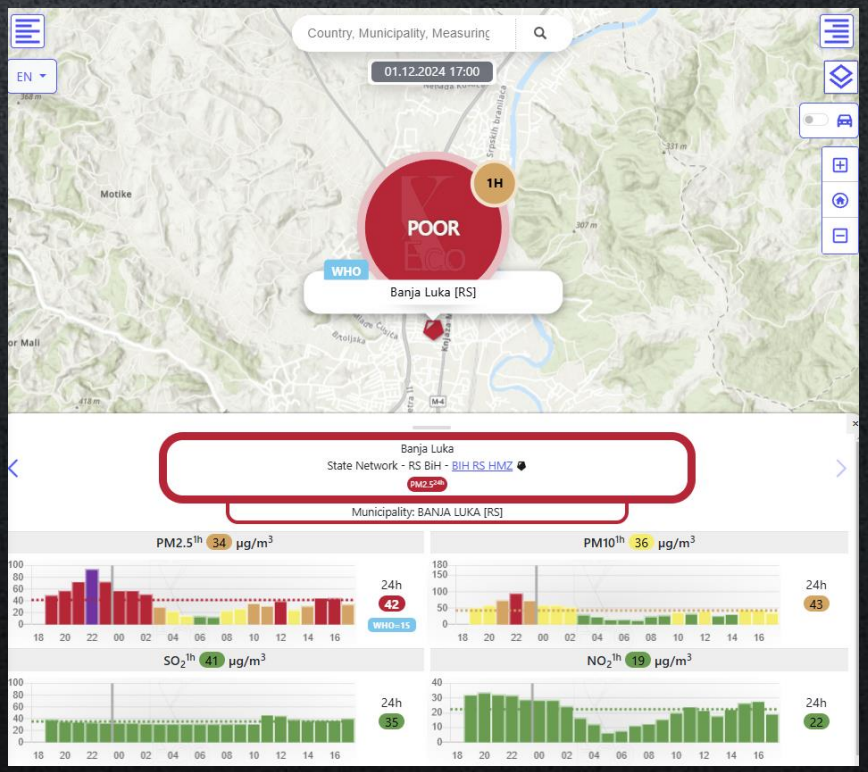
Statistika - 1 čas

SO_2 | NO_2 | O_3

Broj prekoračenja (dozvoljeno 35) srednje dnevne granične vrednosti 50µg/m^3

# Stanica	Broj dana
1. Zenica Tetovo [FBiH]	54 GV
2. Zenica Radakovo [FBiH]	53 GV
3. Sarajevo Ilijaš [FBiH]	49 GV
4. Maglaj [FBiH]	41 GV
5. Sarajevo Otoka [FBiH]	38 GV
6. Visoko Centar [FBiH]	37 GV
7. Zenica Centar [FBiH]	33
8. Kakanj Općina [FBiH]	31
9. Sarajevo Vogošća [FBiH]	28
10. Sarajevo Hadžići [FBiH]	28
11. Bihać Nova četvrt [FBiH]	25
12. Sarajevo Ilidža [FBiH]	24
13. Brod [RS]	24

- Air Quality ranked using EU AQI/UTD & LV & WHO RV



xEco Air - Outputs

- PM2.5 exYu hourly average Ranking (19.11.2024)

#	Merno mesto	PM2.5 [µg/m3]
1	Bijelo Polje	418
2	Banja Luka [RS]	301
3	Negotin	231
4	Strumica	205
5	Niš IZJZ Niš	201
6	Valjevo	196
7	Novi Pazar	173
8	Kičevo	170
9	Slavonski Brod 1	163
10	Sarajevo Otoka [FBiH]	159
11	Niš O.š. Sveti Sava	157
12	Kumanovo	153
13	Bitola 2	146
14	Ohrid	140
15	Užice	136
16	Kragujevac	133
17	Lisiče	131
18	Kosjerić	124
19	Kavadarci	124
20	Gostivar	114
21	Sarajevo Vogošća [FBiH]	111
22	Tetovo	111
23	Čačak	104
24	Tuzla BKC [FBiH]	102
25	Skoplje Karpoš	98
26	M.Sobota Cankarjeva	98
27	Slavonski Brod 2	97
28	Brod [RS]	95
29	Sarajevo Ilidža [FBiH]	94
30	Beograd Leštane	88

Number of days with PM10 daily exceedances (april 2024)

R.br.	Stanica	Broj dana PM10>50
1	Kičevo	66
2	Novi Pazar	63
3	Valjevo	62
4	Doboj [RS]	58
5	Užice	56
6	Beograd Leštane	56
7	Zenica Tetovo [FBiH]	52
8	Kosjerić	51
9	Zenica Radakovo [FBiH]	50
10	Kavadarci	50
11	Šabac	49
12	Strumica	49
13	Tetovo	49
14	Sarajevo Ilijaš [FBiH]	47
15	Popovac	46
16	Pljevlja	44
17	Bijelo Polje	43
18	Obrenovac Centar	42
19	Beograd Mladenovac	42
20	Skoplje Rektorat	42

xEco Air – Data Sources

Portal otvorenih podataka Republike Srbije

SENSOR.COMMUNITY

Sensor Community

Klimerko

Ministarstvo životne sredine i prostornog planiranja, Severna Makedonija • Agencija za zaštitu životne sredine, Crna Gora • Federalni hidrometeorološki zavod – Federacija BiH, Bosna i Hercegovina • Republički hidrometeorološki zavod – Republika Srpska, Bosna i Hercegovina • Ministarstvo privrede i održivog razvoja, Hrvatska • Agencija za životnu sredinu, Slovenija

WeatherLink • PurpleAir • WAQI • IQAir

xEco

xEco Air – Partners/Customers

Eco

Regional meeting on Collaborative Approaches to Environmental Pollution and One Health in the Western Balkans

UN environment
United Nations Environment Programme

xEco Air

xeco.info

BOSNIA AND HERZEGOVINA

AIR QUALITY IMPROVEMENT PROJECT

November 2024

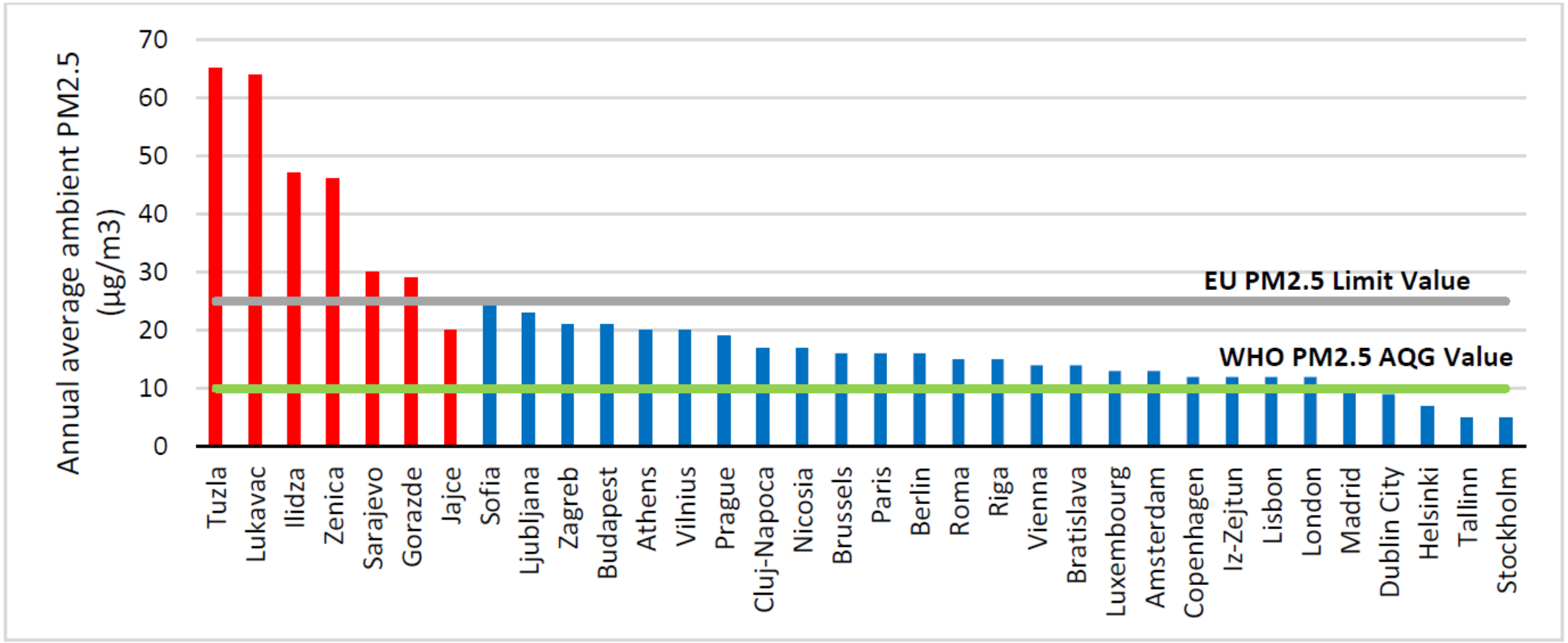
Esma Kreso
Senior Environmental Specialist

WORLD BANK GROUP
Energy & Extractives

Air Pollution Ambient air pollution is a major concern in urban areas in Bosnia and Herzegovina

Annual ambient $PM_{2.5}$ concentrations are several times the WHO Air Quality Guideline level in several BiH cities

Annual average air pollution levels in BiH cities (red) compared to other European cities



Source: WHO 2018.

WORLD BANK GROUP
Energy & Extractives

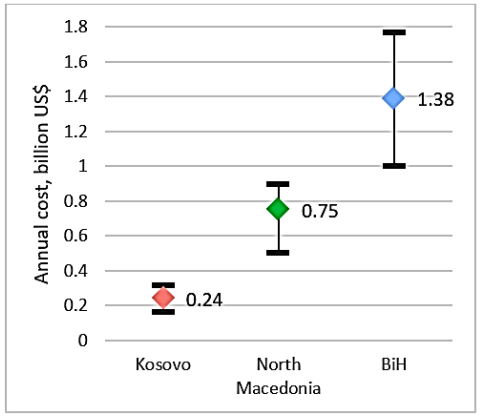
Air Pollution Ambient air pollution (AAP) causes large welfare losses in BiH and the wider region

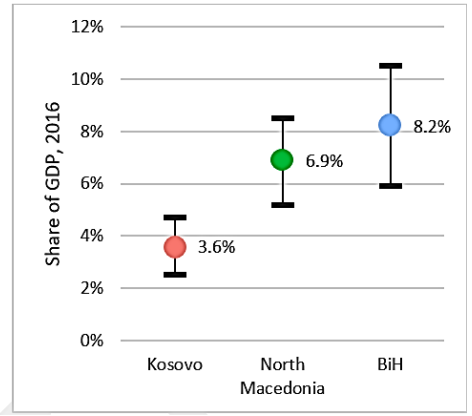
Annual costs between US$1.0-1.8 bn (5.9-10.5% of GDP), and 3,300 deaths annually from diseases associated with AAP

Air pollution in Sarajevo in winter

Heating and air pollution in BiH

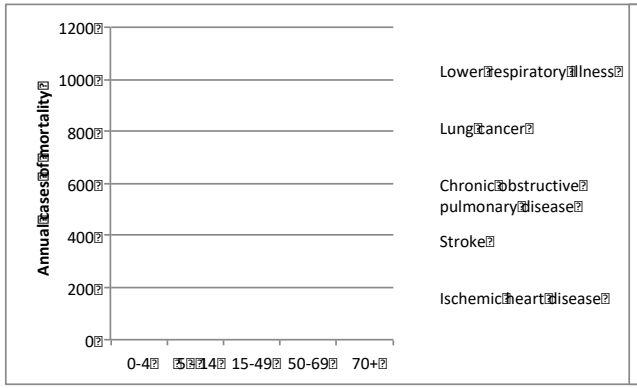
Annual economic costs from ambient air pollution (absolute and as % of GDP)



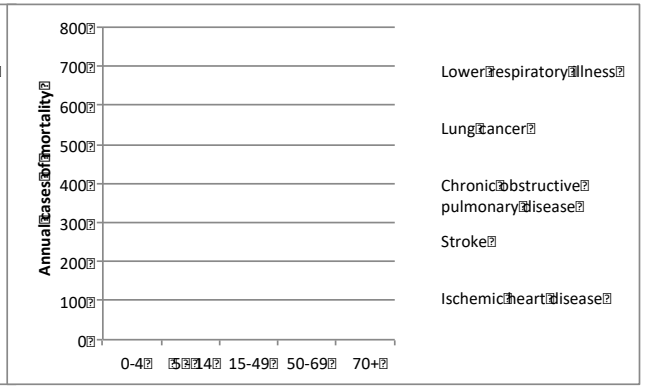


Annual deaths from disease associated with AAP by age group in FBiH and RS

Federation of BiH



Republika Srpska



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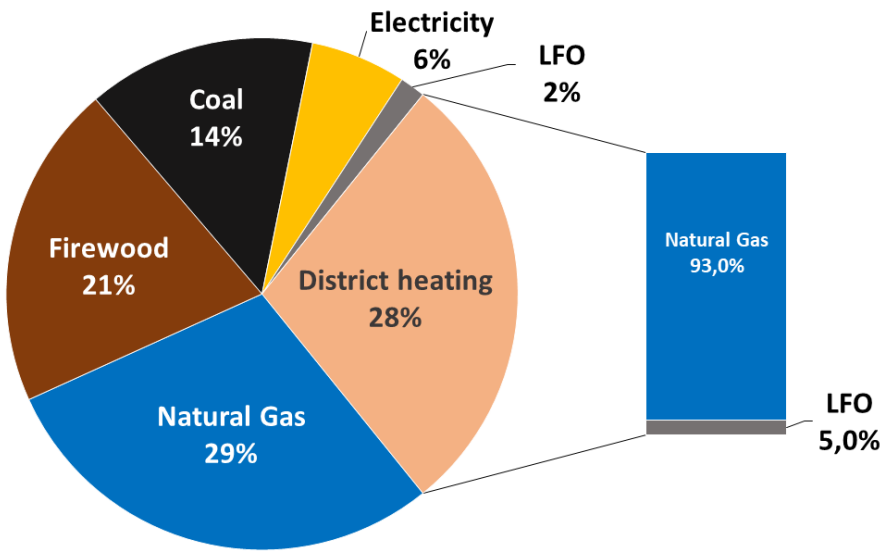
Energy & Extractives

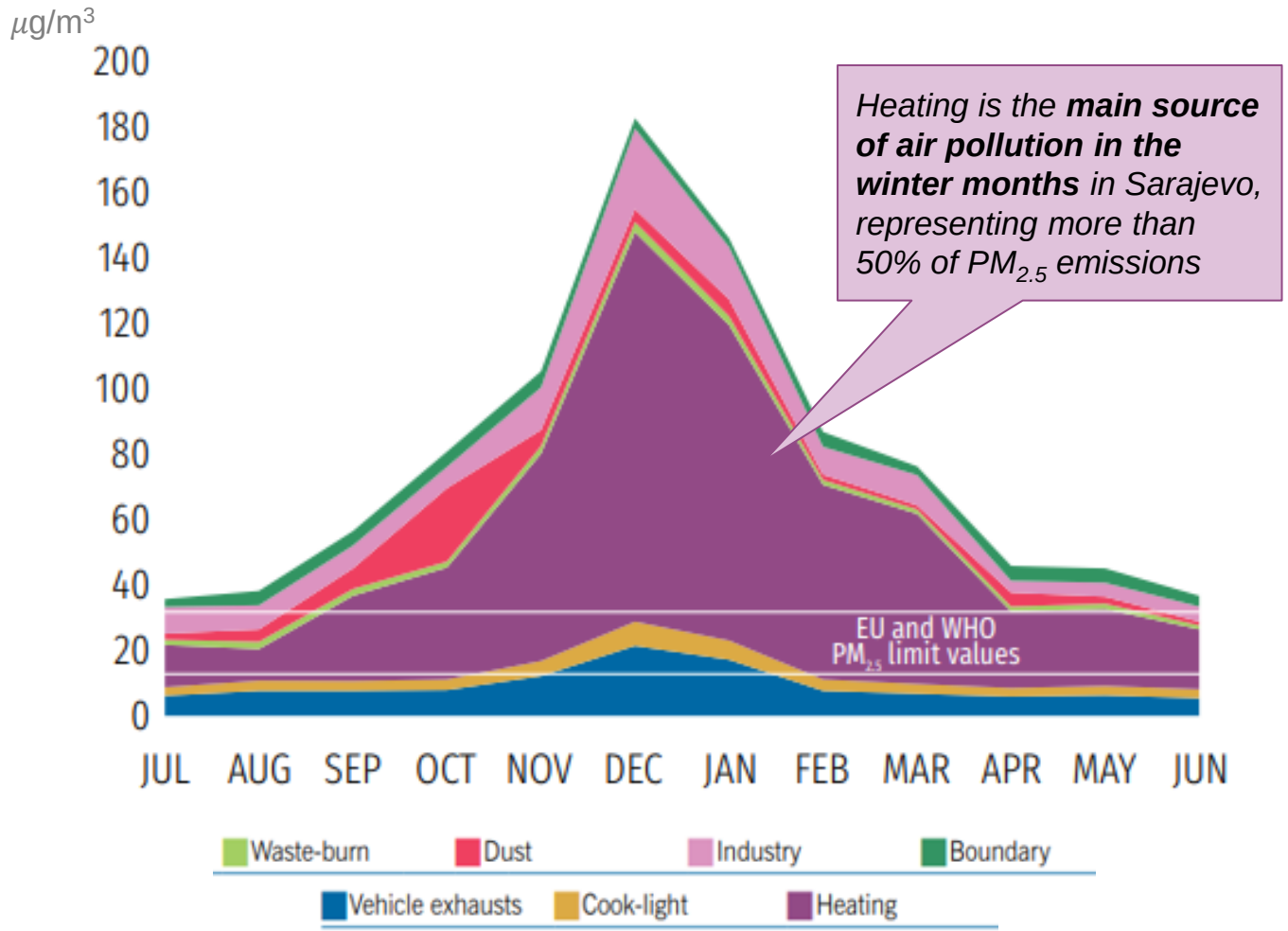
Air Pollution Heating is the main source of air pollution in Sarajevo and other BiH cities

Solid fuels (coal and firewood) supply 35% of heat demand and represent a major source of $PM_{2.5}$ emissions

Energy fuel mix for heating in the Sarajevo Canton



Source apportionment of $PM_{2.5}$ emissions in the Sarajevo Canton



WORLD BANK GROUP
Energy & Extractives

WB Support The World Bank is seeking to develop a comprehensive, multi-sectoral air quality program

The World Bank's value-add stems from the comprehensiveness and cross-cutting nature of its support

Air Quality Improvement

Reduced PM2.5 / PM10 levels Welfare improvements for citizens

Comprehensive Sectoral Interventions Addressing the Main Sources of Air Pollution

Air Quality Monitoring and Management

- Air quality monitoring, pollution-source apportionment, and reporting
- Regulation and compliance
- Capacity building

Reducing Air Pollution from Residential Heating

- Fuel switching from solid fuels to cleaner heating fuels/options
- Enabling infrastructure
- Regulation and protection of vulnerable consumers

Reducing Air Pollution from Transport Sector

- Low-carbon public transport corridors and operations
- Safe, inclusive and healthy walking and cycling
- Smart mobility management

Cross-cutting Interventions *that Improve the Effectiveness of Sectoral Interventions*

Cross-cutting Interventions

Technical Advisory on Program Design

Advisory on Policy and Regulatory Framework

Stakeholder Engagement and Communication

Behavioral Interventions

Social Protection Interventions

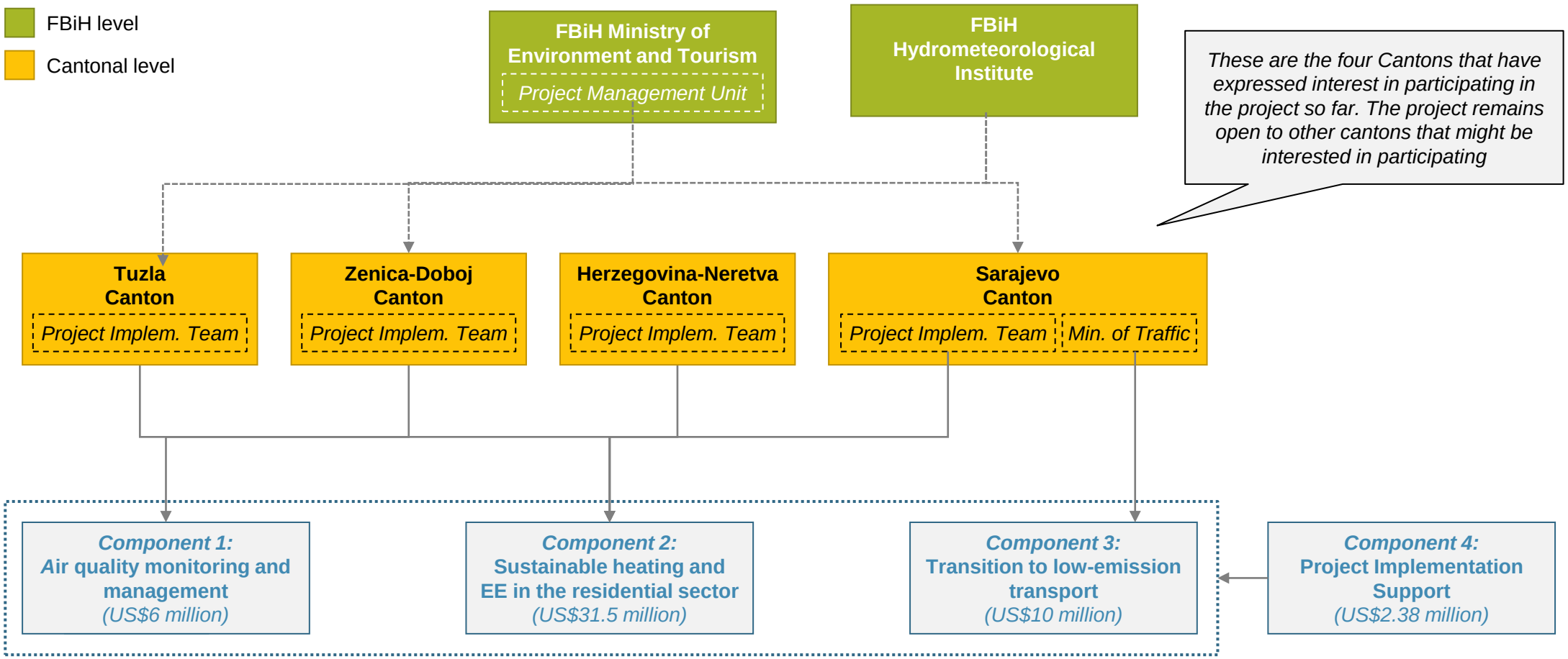
Targeted World Bank financing and Technical Assistance

WORLD BANK GROUP

FBiH Project Components of the FBiH Air Quality Improvement Project

	Component description	Allocation, US$ mln
1 Strengthening air quality monitoring and management	• Improving the **operation of the air quality monitoring network** in select cantons of the FBiH and the sectoral capacity to estimate pollution levels and use collected data to improve planning of AQM	6
2 Scaling up sustainable heating and energy efficiency in residential houses	• Partial grants for **investments in the replacement of boilers and stoves relying on solid fuels** (firewood and coal) in residential buildings in select cantons of the FBiH • Partial grants for **investments in energy efficiency improvements** (e.g., building envelope, windows and doors replacement) in residential buildings in select cantons of the FBiH	31.5
3 Supporting the transition to low-emission transport	• Developing **cycling infrastructure**, acquiring low-emission **public transport vehicles**, and providing technical assistance on the development of **low-emission measures** in **Sarajevo Canton**	10
4 Project implementation support	• Support for **activities related to project implementation**, e.g., procurement of equipment, logistics, M&E, and key project consultant salaries	2.5
	Project total	**50**

FBiH Project Implementation Arrangements



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Foreseen Outcomes

1 Ensuring sustainability of continued process

- Air Quality Management and AQ itself cannot be improved overnight. This Project aims to establish sustainable mechanisms that would continue the process.

2 Enabling wider coverage and replication

- The Project, as of November 2024, covers only 4 cantons in the FBIH. It is anticipated that the PMU being housed in FMOIT would allow for further replication to remaining 6 cantons.
- Project activities could also be replicated in Republika Srpska and District Brcko.

3 Fostering cooperation

- Cooperation between different development partners, government bodies and agencies and regions, cantons, entities, etc.

GETTING TO KNOW THE WHO ARQ+ TOOL

WHERE, WHAT, HOW, WHY?

WHAT IS THIS FOR?

THE AUTHOR

M.Sc. Srđan Mančević

WHAT IS IT, WHAT IS IT FOR AND SINCE WHEN AND WHERE IS IT USED?

AirQ+ is a software tool for quantifying the health burden and impact of air pollution.

AirQ+ includes methodologies to assess the impacts of short- and long-term exposure to ambient air pollution. The main methodologies use evidence generated by epidemiological cohort studies showing a relationship between average long-term air pollution concentration levels and the mortality risks in exposed populations. Assessing the impact of air pollution is suggested when evaluating the consequences of policies and interventions or of hypothetical scenarios.

AirQ+ should always be used with the support of an epidemiologist or air pollution impact assessment expert. To facilitate users in their analyses, AirQ+ comes with manuals that require increasing levels of expertise.

AirQ+ is available in English, French, German, Russian and Spanish. Since its launch in 2016, more than 1000 users from 112 countries have downloaded the software, which has been used in over 300 cities.

TOOL DOWNLOAD PATHS:AirQ+

LITERATURE THAT SHOULD BE STUDYED TO KNOW WHAT AND HOW TO DO IT

DOWNLOAD DIRECTIONS ARE ON EVERY PICTURE!

WHAT IS NEEDED FOR WORK?

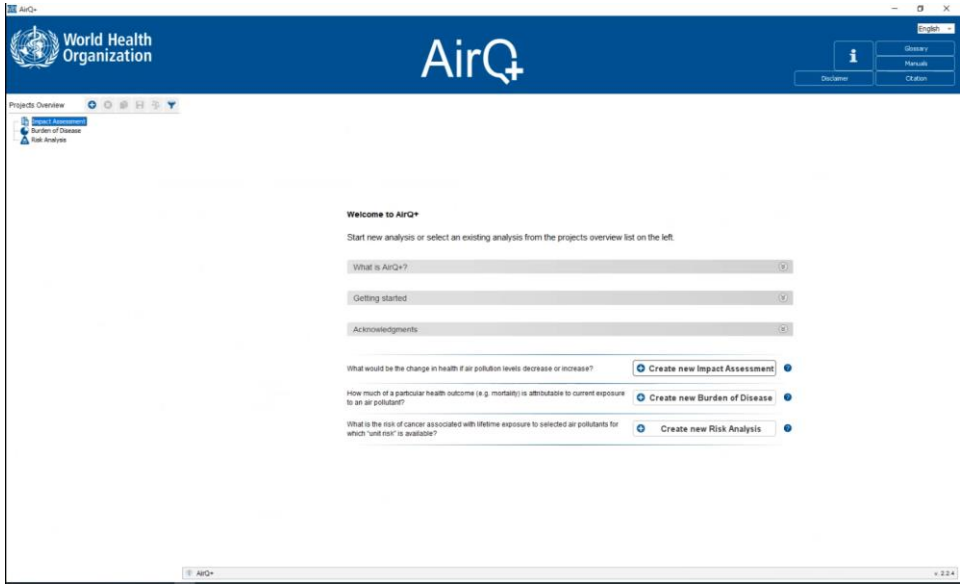
1. TOOL
2. DATA ON POLLUTANTS CONCENTRATIONS DIVIDED BY YEAR (SEPA)
3. DATA ON THE ESTIMATED POPULATION NUMBER, POPULATION AT RISK AND THE NUMBER OF DEAD DIVIDED BY YEARS (DEPARTMENT OF STATISTICS)
4. EPIDEMIOLOGY
5. IT
6. GOOD WILL AND FAITH

Grad	PM2.5					
	2018	2019	2020	2021	2022	2023
Valjevo		42.3	45	37	35	32.6
Novi Pazar			41	48	43	40.1
Leskovac						
Leskovac (građanski monitoring)						38.8
Leskovac (Copernicus)				20.6		

Grad	PM10 u PM2.5					
	2018	2019	2020	2021	2022	2023
Valjevo	45.83	39.72	40.76	32.89	33.09	29.32
Novi Pazar			33.67	36.01	31.53	29.38
Leskovac					50.05	
Leskovac (građanski monitoring)						29.77
Leskovac (Copernicus)				19.76		

Grad	PM2.5					
	2018	2019	2020	2021	2022	2023
Valjevo	45.83	42.3	45	37	35	32.6
Novi Pazar			41	48	43	40.1
Leskovac				20.6	50.05	38.8

SEPA



WHO

MORTALITY	TOTAL NUMBER OF CASES	POPULATION	POPULATION at risk
All, natural causes -adults, 30+	1269	85962	61087
Circulatory, 30+	718	85962	61087
Respiratory, 30+	77	85962	61087
Lung cancer, 25+	60	85962	66105
Acute lower respiratory infection (ALRI), 0-5	0	85962	3762
Chronic obstructive pulmonary disease (COPD), 25	0	85962	66105
Ishaemic heart disease (IHD), 25-29	0	85962	5018
Stroke, 25-29	0	85962	5018
Nonaccidental diseases, 25+	1235	85962	66105

2018

01 LF	from	to	male	male deat	female	fem deat	P	D
	0	4	1937	3	1825	1	3762	4
	5	9	1934	0	1817	0	3751	0
	10	14	1975	0	1858	0	3833	0
	15	19	2002	0	1932	0	3934	0
	20	24	2334	2	2243	1	4577	3
	25	29	2581	4	2437	1	5018	5
	30	34	2893	3	2673	2	5566	5
	35	39	2962	6	2773	0	5735	6
	40	44	3023	6	2975	3	5998	9
	45	49	2721	9	2965	4	5686	13
	50	54	2952	20	3148	13	6100	33
	55	59	3432	36	3688	22	7120	58
	60	64	3388	59	3745	42	7133	101
	65	69	2973	85	3329	66	6302	151
	70	74	1781	78	2190	52	3971	130
	75	79	1324	84	1849	81	3173	165
	80	84	1090	115	1547	167	2637	282
	85	95	662	113	1004	203	1666	316

```
1  from;to;POPULACIJA;UMRLI;02 LF;03 LF;
2  0;4;7520;0;0;0;0;0;0;0
3  5;9;7443;0;0;0;0;0;0;0
4  10;14;7637;1;0;1;0;0;0;0
5  15;19;7922;2;1;0;0;0;0;1
6  20;24;8924;1;0;1;0;0;0;0
7  25;29;9873;0;0;0;0;0;0;0
8  30;34;11023;1;0;1;0;0;0;0
9  35;39;11480;4;3;0;0;0;0;1
10 40;44;11960;3;2;1;0;0;0;0
11 45;49;11357;19;8;3;3;0;0;3;2
12 50;54;12046;29;16;1;4;0;0;4;4
13 55;59;14099;73;35;5;14;0;1;14;4
14 60;64;14033;164;80;7;26;0;5;30;16
15 65;69;12834;253;134;14;33;0;7;47;18
16 70;74;8223;249;134;21;23;0;10;40;21
17 75;79;6274;343;205;24;10;1;10;70;23
18 80;84;5178;624;395;47;5;0;8;123;46
19 85;95;3452;746;486;29;0;0;7;164;60
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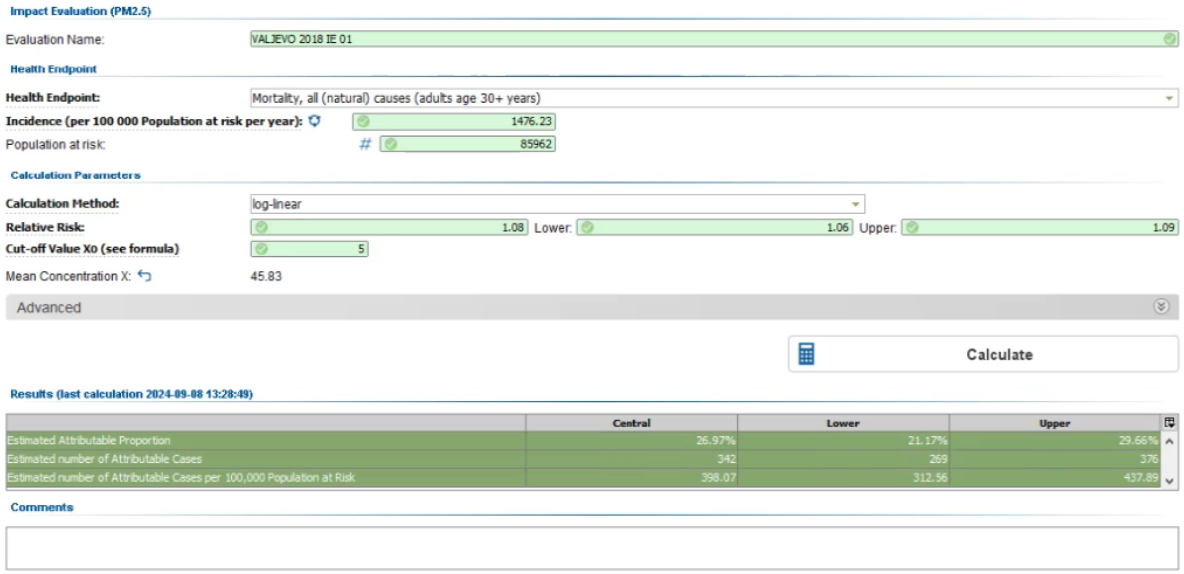
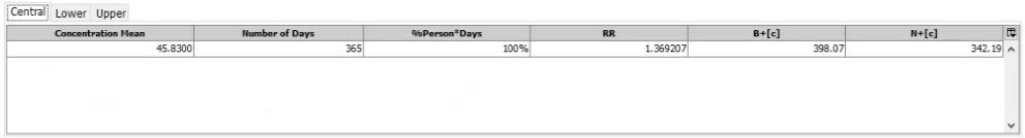
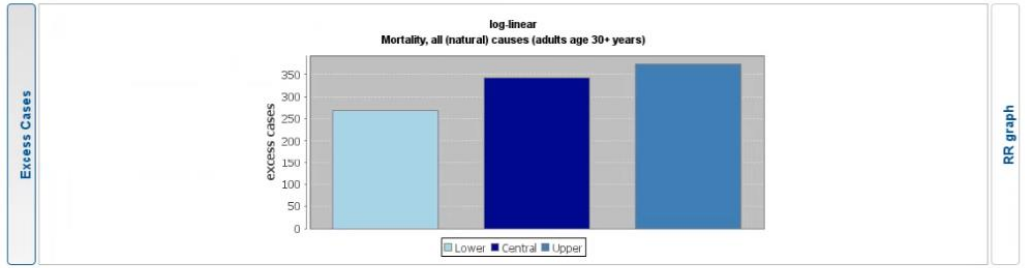
DEPARTMENT OF STATISTICS

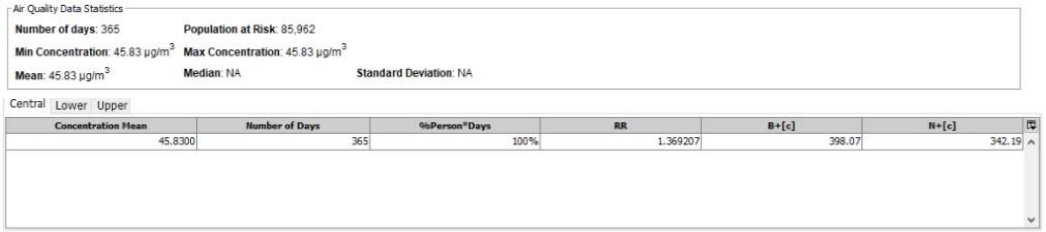
WHAT IS THE PRODUCT?

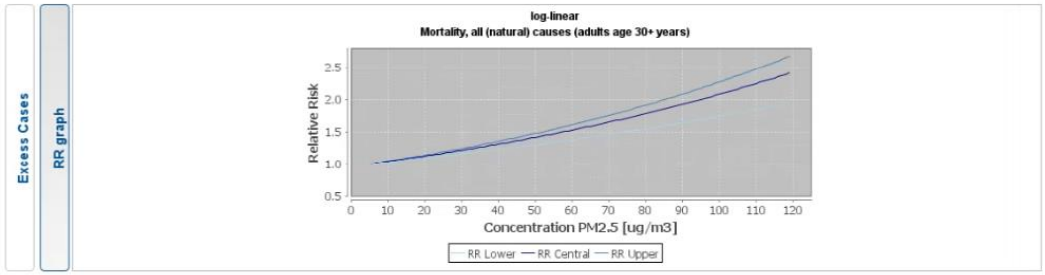
1. FOR ***IMPACT***:





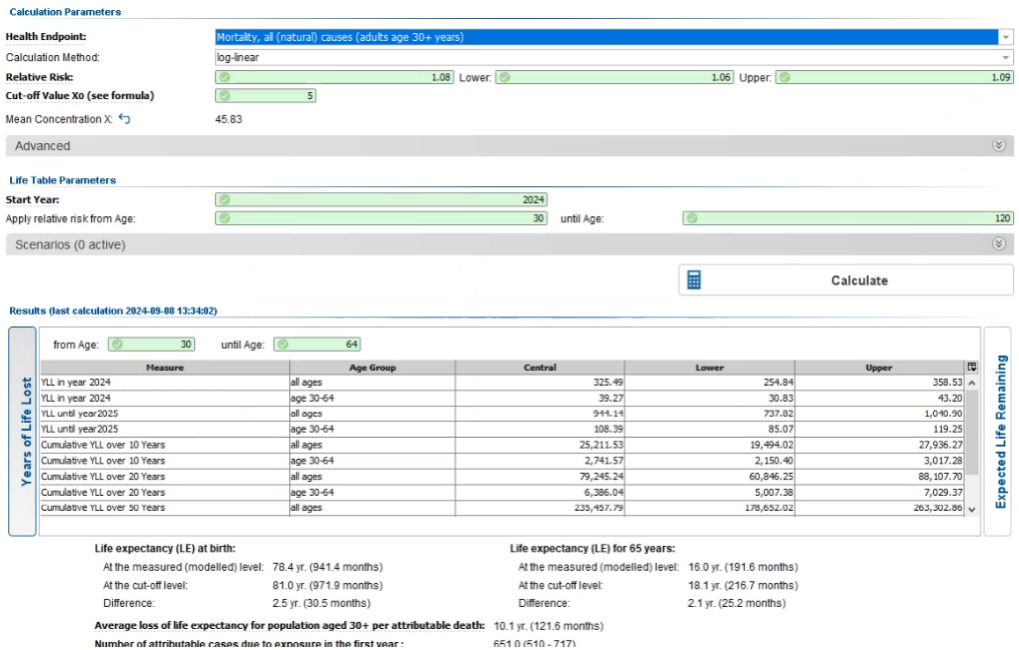


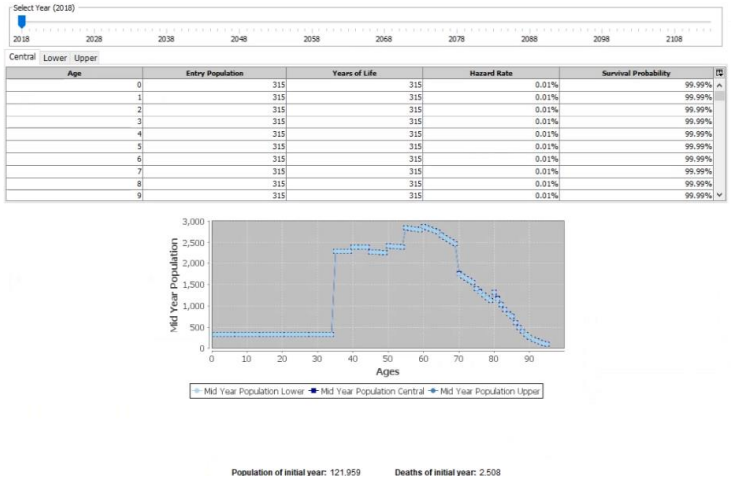


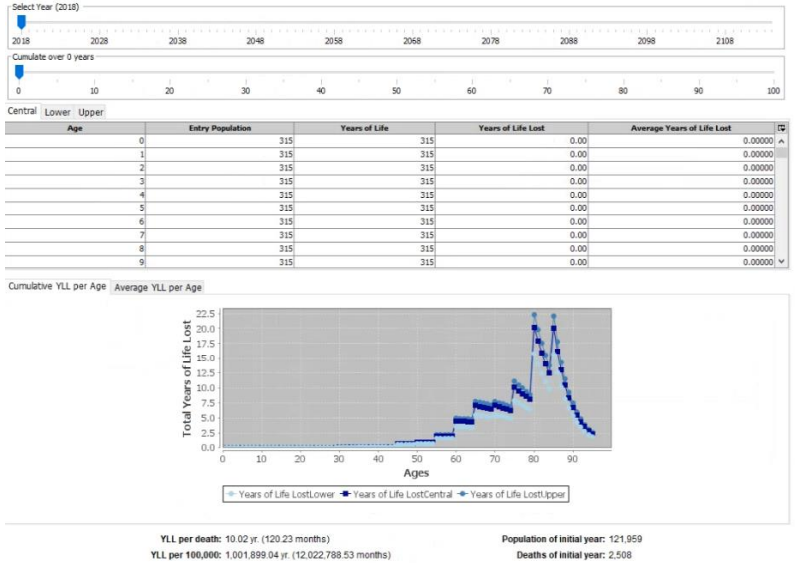


WHAT IS THE PRODUCT?

1. FOR ***LONG-TERM***:







CAN DATA BE COMPARED?

1. YES IT CAN!

Choose evaluations for comparison

Analysis: LESKOVAC 2023 (građanski monitoring)

Evaluation: 01 LESKOVAC 2023

Add to comparison

Analysis

☑ Analysis Properties ☑ Pollution Concentration

Evaluation

☑ Evaluation Parameters ☑ Evaluation Results

Category	01VALJEVO 2023	01NOVI PAZAR 2023	01 LESKOVAC 2023
Analysis Name	VALJEVO 2023	NOVI PAZAR 2023	LESKOVAC 2023 (građanski monitoring)
Type	Impact Assessment - Long-term Effect...	Impact Assessment - Long-term Effect...	Impact Assessment - Long-term Effect...
Pollutant	PM2.5	PM2.5	PM2.5
Location	VALJEVO	NOVI PAZAR	LESKOVAC 2023
Total Population	81628	107610	123173
Year	2023	2023	2023
Area Size	905	742	1025
Latitude	44.2763	43.1407	42.9963
Longitude	19.7802	20.5181	21.9430
Mean Concentration	32.6	48	38.8
Evaluation Name	01VALJEVO 2023	01NOVI PAZAR 2023	01 LESKOVAC 2023
Evaluation Type	Impact Evaluation	Impact Evaluation	Impact Evaluation
Health Endpoint	Mortality, all (natural) causes (adults a...	Mortality, all (natural) causes (adults a...	Mortality, all (natural) causes (adults a...
Incidents (per 100 000 per year)	2380.71	1263.95	1602.62
Population at risk	58596	61553	86704
Calculation Method	log-linear	log-linear	log-linear

Export

5	Type:	Impact A	Impact A	Impact A	Impact A	Impact A	Impact Assessment - Long-term Effects (Ambient)
6							
7	Pollutan	PM2.5	PM2.5	PM2.5	PM2.5	PM2.5	PM2.5
8							
9	Location	VALJEV	NOVI PA	LESKOV	VALJEV	NOVI PA	LESKOVAC AVERAGE
10							
11	Total Po	81628	107610	123173	84669	106743	132030
12							
13	Year:	2023	2023	2023	2016-20	2016-20	2016-2023
14							
15	Area Siz	905	742	1025	905	742	1025
16							
17	Latitude	44.276	43.141	42.996	44.276	43.141	42.996
18							
19	Longituc	19.78	20.518	21.943	19.78	20.518	21.943
20							
21							
22							
23	POLLUTION CONCENTRATION						
24							
25	Mean Cc	32.6	48	38.8	32.6	43.025	33.19
26							
27							
28							
29	EVALUATION PARAMETERS						
30							
31	Evaluatic	09VALJI	09NOVI	09 LESK	09VALJI	09NOVI	09 LESKOVAC AVERAGE
32							
33	Evaluatic	Impact E	Impact E	Impact E	Impact E	Impact E	Impact Evaluation
34							
35	Health E	Mortality	Mortality	Mortality	Mortality	Mortality	Mortality nonaccidental deaths (NCDs+ALRI), adults age 25+
36							
37	Incident:	2184.4	1108.2	28400	2126.1	1313.8	27162
38							
39	Populati	62764	68940	93528	65143	66905	99256
40							
41	Calculat	Global E	Global E	Global E	Global E	Global E	Global Exposure Mortality Model - GEMM (2018)
42							
43							
44							
45	EVALUATION RESULTS						
46							
47	Estimat	22.58%	28.52%	25.11%	22.58%	26.72%	22.83%
48	Estimat	17.51%	22.32%	19.55%	17.51%	20.86%	17.71%
49	Estimat	27.33%	34.23%	30.28%	27.33%	32.16%	27.62%
50	Estimat	310	218	6,669	313	235	6,154
51	Estimat	240	171	5,192	243	183	4,775
52	Estimat	375	261	8,044	379	283	7,447
53	Estimat	493	316	7,131	480	351	6,200
54	Estimat	383	247	5,552	372	274	4,811
55	Estimat	597	379	8,600	581	422	7,503

WHAT IS THE TOOL MADE OF, WHERE IS THE DATA STORED AND CAN IT BE MANIPULATED WITH OTHER TOOLS?

1. TOOL WAS MADE IN *JAVA*
2. DATA IS STORED IN XML FORMAT IN FILE project.xml
   IN THE FOLDER **\AirQPlus_v22_Windows\AirQ+ - v.2.2 Windows01\resources
3. GIVEN THAT THE DATA IN XML THE FORMAT WITH THEM CAN BE FURTHER MANIPULATED IN OTHER TOOLS
4. YOU DOWNLOAD THE TOOL IN THE ZIP FORMAT
5. UNPACK IT WHERE YOU WANT ON YOUR COMPUTER
6. **PATHS ON THE COMPUTER WHERE YOU UNPACKED THE TOOL

QUESTIONS

?

УПОЗНАВАЊЕ СА *ARQ+* АЛАТОМ СЗО

ОДАКЛЕ, ШТА, КАКО, ЗАШТО?

ЧЕМУ ОВО СЛУЖИ?

АУТОР

Срђан Манчевић дипл. инж.

ШТА ЈЕ,ЧЕМУ СЛУЖИ И ОД КАД И ГДЕ СЕ КОРИСТИ ?

1. Софтверски алат за процену здравственог ризика од загађења ваздуха
2. Укључује методологије за процену утицаја краткорочне и дугорочне изложености загађењу амбијенталног ваздуха.
   Главне методологије користе доказе прикупљене епидемиолошким кохортним студијама који показују везу између просечних дугорочних нивоа концентрације загађења ваздуха и ризика од смртности у изложеним популацијама.
3. Доступан је на енглеском, француском, немачком, руском и шпанском.
   Од његовог покретања 2016. године, више од 1000 корисника из 112 земаља преузело је софтвер који се користи у преко 300 градова.

ПУТАЊА ЗА ПРЕУЗИМАЊЕ АЛАТА: AirQ+

ЛИТЕРАТУРА КОЈУ ТРЕБА ПРОУЧИТИ ДА БИ СЕ ЗНАЛО ШТА И КАКО ДА СЕ РАДИ

ПУТАЊА ЗА ПРЕУЗИМАЊЕ ЈЕ НА СВАКОЈ СЛИЦИ!

ШТА ЈЕ ПОТРЕБНО ЗА РАД ?

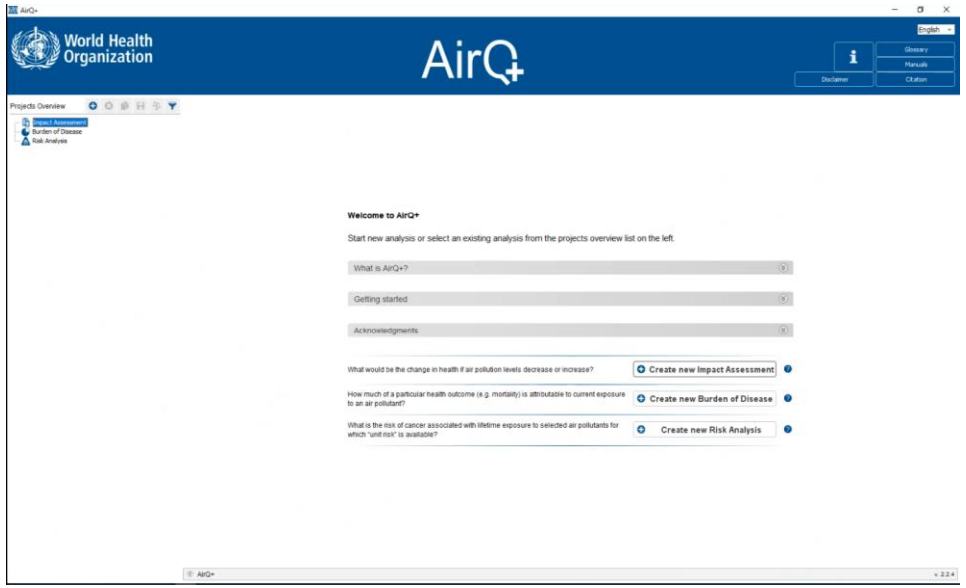
1. АЛАТ
2. ПОДАЦИ О КОНЦЕНТРАЦИЈАМА ЗАГАЂИВАЧА ПОДЕЉЕНИ НА ГОДИНЕ (СЕПА)
3. ПОДАЦИ О ПРОЦЕЊЕНОМ БРОЈУ ПОПУЛАЦИЈЕ, ПОПУЛАЦИЈЕ У РИЗИКУ И БРОЈА УМРЛИХ ПОДЕЉЕН ПО ГОДИНАМА (БАТУТ)
4. ЕПИДЕМИОЛОГ
5. ИТ
6. ДОБРА ВОЉА И ВЕРА

Grad	PM2.5					
	2018	2019	2020	2021	2022	2023
Valjevo		42.3	45	37	35	32.6
Novi Pazar			41	48	43	40.1
Leskovac						
Leskovac (građanski monitoring)						38.8
Leskovac (Copernicus)				20.6		

Grad	PM10 u PM2.5					
	2018	2019	2020	2021	2022	2023
Valjevo	45.83	39.72	40.76	32.89	33.09	29.32
Novi Pazar			33.67	36.01	31.53	29.38
Leskovac					50.05	
Leskovac (građanski monitoring)						29.77
Leskovac (Copernicus)				19.76		

Grad	PM2.5					
	2018	2019	2020	2021	2022	2023
Valjevo	45.83	42.3	45	37	35	32.6
Novi Pazar			41	48	43	40.1
Leskovac				20.6	50.05	38.8

СЕПА



СЗО

MORTALITY	TOTAL NUMBER OF CASES	POPULATION	POPULATION at risk
All, natural causes -adults, 30+	1269	85962	61087
Circulatory, 30+	718	85962	61087
Respiratory, 30+	77	85962	61087
Lung cancer, 25+	60	85962	66105
Acute lower respiratory infection (ALRI), 0-5	0	85962	3762
Chronic obstructive pulmonary disease (COPD), 25	0	85962	66105
Ishaemic heart disease (IHD), 25-29	0	85962	5018
Stroke, 25-29	0	85962	5018
Nonaccidental diseases, 25+	1235	85962	66105

2018

01 LF	from	to	male	male deat	female	fem deat	P	D
	0	4	1937	3	1825	1	3762	4
	5	9	1934	0	1817	0	3751	0
	10	14	1975	0	1858	0	3833	0
	15	19	2002	0	1932	0	3934	0
	20	24	2334	2	2243	1	4577	3
	25	29	2581	4	2437	1	5018	5
	30	34	2893	3	2673	2	5566	5
	35	39	2962	6	2773	0	5735	6
	40	44	3023	6	2975	3	5998	9
	45	49	2721	9	2965	4	5686	13
	50	54	2952	20	3148	13	6100	33
	55	59	3432	36	3688	22	7120	58
	60	64	3388	59	3745	42	7133	101
	65	69	2973	85	3329	66	6302	151
	70	74	1781	78	2190	52	3971	130
	75	79	1324	84	1849	81	3173	165
	80	84	1090	115	1547	167	2637	282
	85	95	662	113	1004	203	1666	316

```
1  from;to;POPULACIJA;UMRLI;02 LF;03 LF;
2  0;4;7520;0;0;0;0;0;0;0
3  5;9;7443;0;0;0;0;0;0;0
4  10;14;7637;1;0;1;0;0;0;0
5  15;19;7922;2;1;0;0;0;0;1
6  20;24;8924;1;0;1;0;0;0;0
7  25;29;9873;0;0;0;0;0;0;0
8  30;34;11023;1;0;1;0;0;0;0
9  35;39;11480;4;3;0;0;0;0;1
10 40;44;11960;3;2;1;0;0;0;0
11 45;49;11357;19;8;3;3;0;0;3;2
12 50;54;12046;29;16;1;4;0;0;4;4
13 55;59;14099;73;35;5;14;0;1;14;4
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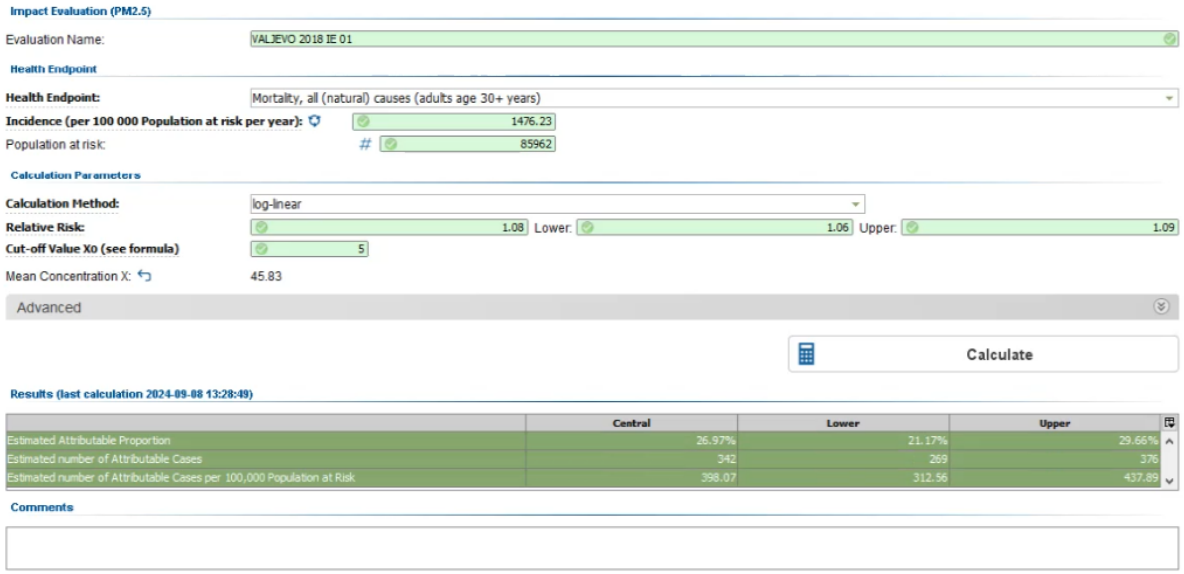
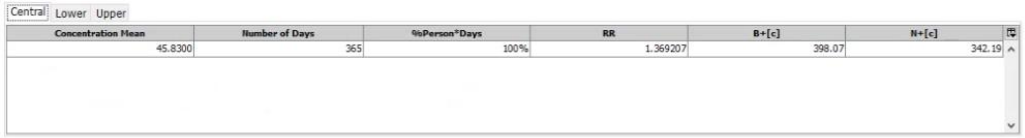
15 65;69;12834;253;134;14;33;0;7;47;18
16 70;74;8223;249;134;21;23;0;10;40;21
17 75;79;6274;343;205;24;10;1;10;70;23
18 80;84;5178;624;395;47;5;0;8;123;46
19 85;95;3452;746;486;29;0;0;7;164;60
```

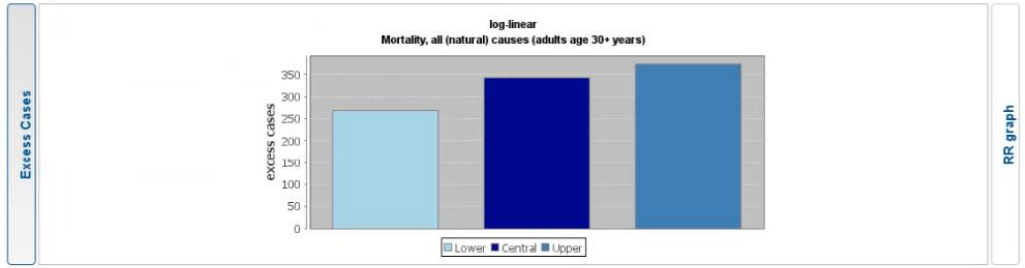
БАТУТ

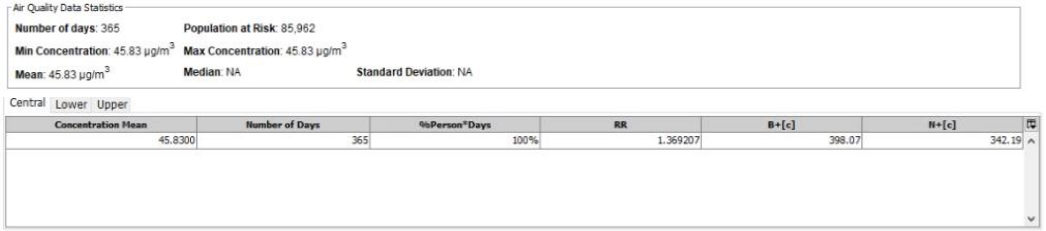
ШТА ЈЕ ПРОИЗВОД ?

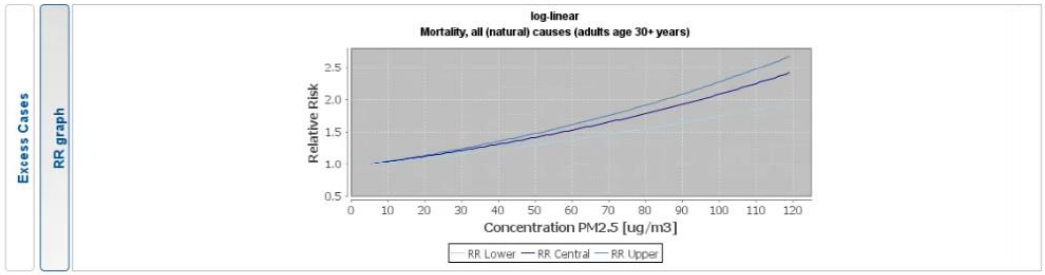
1. ЗА *IMPACT*:





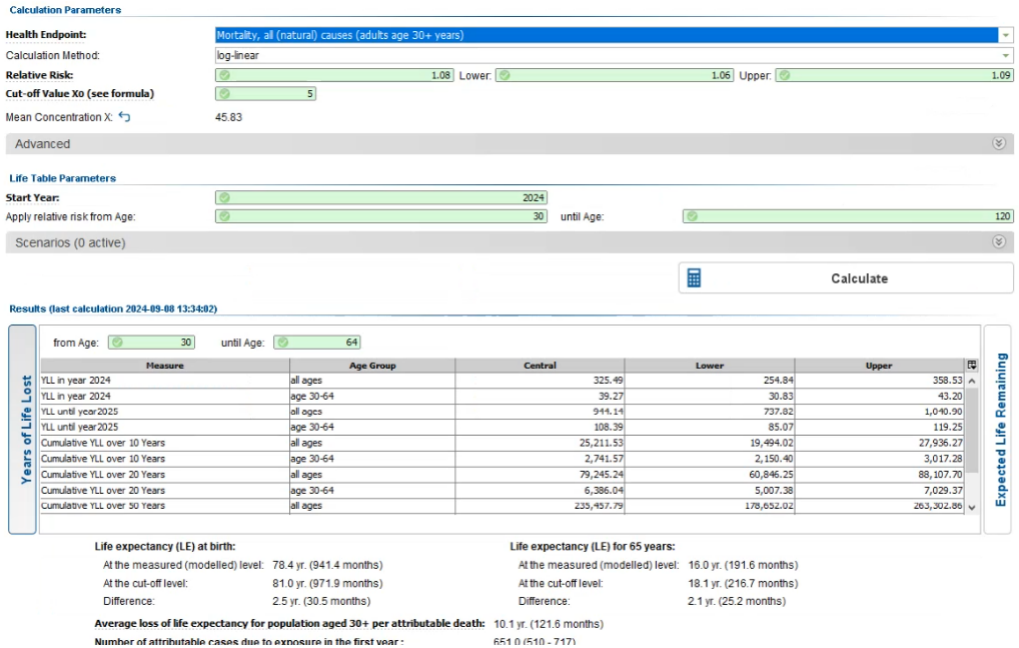


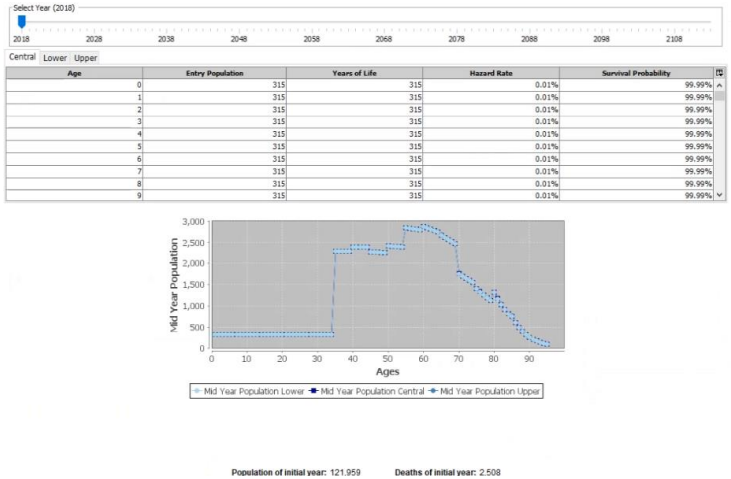


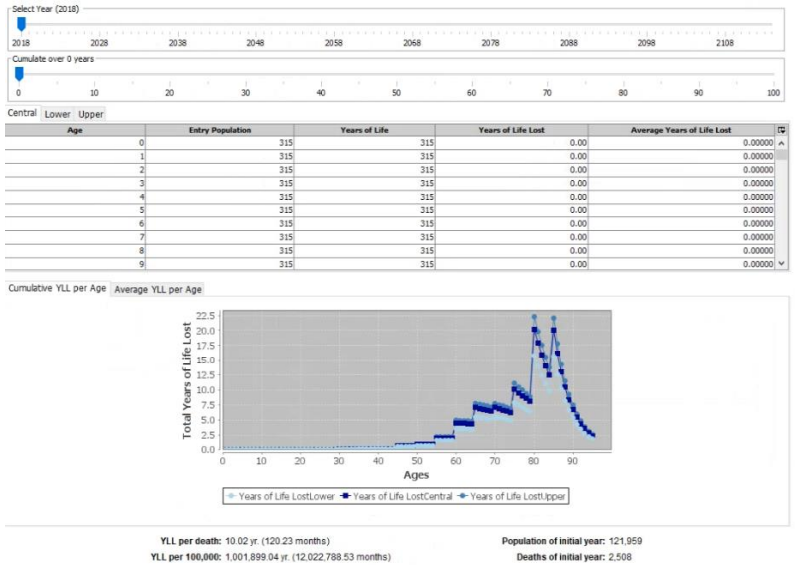


ШТА ЈЕ ПРОИЗВОД ?

1. ЗА ***LONG-TERM***:







МОГУ ЛИ ДА СЕ ПОРЕДЕ ПОДАЦИ ?

1. МОГУ!

Choose evaluations for comparison

Analysis: LESKOVAC 2023 (građanski monitoring)

Evaluation: 01 LESKOVAC 2023

Add to comparison

Analysis

☑ Analysis Properties ☑ Pollution Concentration

Evaluation

☑ Evaluation Parameters ☑ Evaluation Results

Category	01VALJEVO 2023	01NOVI PAZAR 2023	01 LESKOVAC 2023
Analysis Name	VALJEVO 2023	NOVI PAZAR 2023	LESKOVAC 2023 (građanski monitoring)
Type	Impact Assessment - Long-term Effect...	Impact Assessment - Long-term Effect...	Impact Assessment - Long-term Effect...
Pollutant	PM2.5	PM2.5	PM2.5
Location	VALJEVO	NOVI PAZAR	LESKOVAC 2023
Total Population	81628	107610	123173
Year	2023	2023	2023
Area Size	905	742	1025
Latitude	44.2763	43.1407	42.9963
Longitude	19.7802	20.5181	21.9430
Mean Concentration	32.6	48	38.8
Evaluation Name	01VALJEVO 2023	01NOVI PAZAR 2023	01 LESKOVAC 2023
Evaluation Type	Impact Evaluation	Impact Evaluation	Impact Evaluation
Health Endpoint	Mortality, all (natural) causes (adults a...	Mortality, all (natural) causes (adults a...	Mortality, all (natural) causes (adults a...
Incidents (per 100 000 per year)	2380.71	1263.95	1602.62
Population at risk	58596	61553	86704
Calculation Method	log-linear	log-linear	log-linear

Export

5	Type:	Impact A	Impact A	Impact A	Impact A	Impact A	Impact Assessment - Long-term Effects (Ambient)
6							
7	Pollutan	PM2.5	PM2.5	PM2.5	PM2.5	PM2.5	PM2.5
8							
9	Location	VALJEV	NOVI PA	LESKOV	VALJEV	NOVI PA	LESKOVAC AVERAGE
10							
11	Total Po	81628	107610	123173	84669	106743	132030
12							
13	Year:	2023	2023	2023	2016-20	2016-20	2016-2023
14							
15	Area Siz	905	742	1025	905	742	1025
16							
17	Latitude	44.276	43.141	42.996	44.276	43.141	42.996
18							
19	Longituc	19.78	20.518	21.943	19.78	20.518	21.943
20							
21							
22							
23	POLLUTION CONCENTRATION						
24							
25	Mean Cc	32.6	48	38.8	32.6	43.025	33.19
26							
27							
28							
29	EVALUATION PARAMETERS						
30							
31	Evaluatic	09VALJI	09NOVI	09 LESK	09VALJI	09NOVI	09 LESKOVAC AVERAGE
32							
33	Evaluatic	Impact E	Impact E	Impact E	Impact E	Impact E	Impact Evaluation
34							
35	Health E	Mortality	Mortality	Mortality	Mortality	Mortality	Mortality nonaccidental deaths (NCDs+ALRI), adults age 25+
36							
37	Incident:	2184.4	1108.2	28400	2126.1	1313.8	27162
38							
39	Populati	62764	68940	93528	65143	66905	99256
40							
41	Calculat	Global E	Global E	Global E	Global E	Global E	Global Exposure Mortality Model - GEMM (2018)
42							
43							
44							
45	EVALUATION RESULTS						
46							
47	Estimat	22.58%	28.52%	25.11%	22.58%	26.72%	22.83%
48	Estimat	17.51%	22.32%	19.55%	17.51%	20.86%	17.71%
49	Estimat	27.33%	34.23%	30.28%	27.33%	32.16%	27.62%
50	Estimat	310	218	6,669	313	235	6,154
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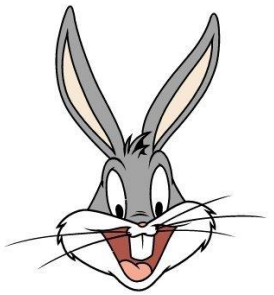
52	Estimat	375	261	8,044	379	283	7,447
53	Estimat	493	316	7,131	480	351	6,200
54	Estimat	383	247	5,552	372	274	4,811
55	Estimat	597	379	8,600	581	422	7,503

У ЧЕМУ ЈЕ УРАЂЕН АЛАТ, ГДЕ СЕ СКЛАДИСТЕ ПОДАЦИ И МОЖЕ ЛИ СЕ СА ЊИМА МАНИПУЛИСАТИ ДРУГИМ АЛАТИМА ?

1. АЛТАТ ЈЕ ИЗРАЂЕН У *ЈАВИ*
2. ПОДАЦИ СЕ СКЛАДИШТЕ У XML ФОРМАТУ У ФАЈЛУ project.xml
   У ФОЛДЕРУ **\AirQPlus_v22_Windows\AirQ+ - v.2.2 Windows01\resources
3. С ОБЗИРОМ ДА СУ ПОДАЦИ У XML ФОРМАТУ СА ЊИМА СЕ МОЖЕ ДАЉЕ МАНИПУЛИСАТИ У ДРУГИМ АЛАТИМА
4. АЛАТ СКИДАТЕ У ФОРМАТУ ZIP
5. РАСПАКУЈЕТЕ ГА ГДЕ ЖЕЛИТЕ НА СВОМ РАЧУНАРУ
6. ** ПУТАЊА НА РАЧУНАРУ ГДЕ СТЕ РАСПАКОВАЛИ АЛАТ

ПИТАЊА ?



NOVI PAZAR
43.02 µg/m³

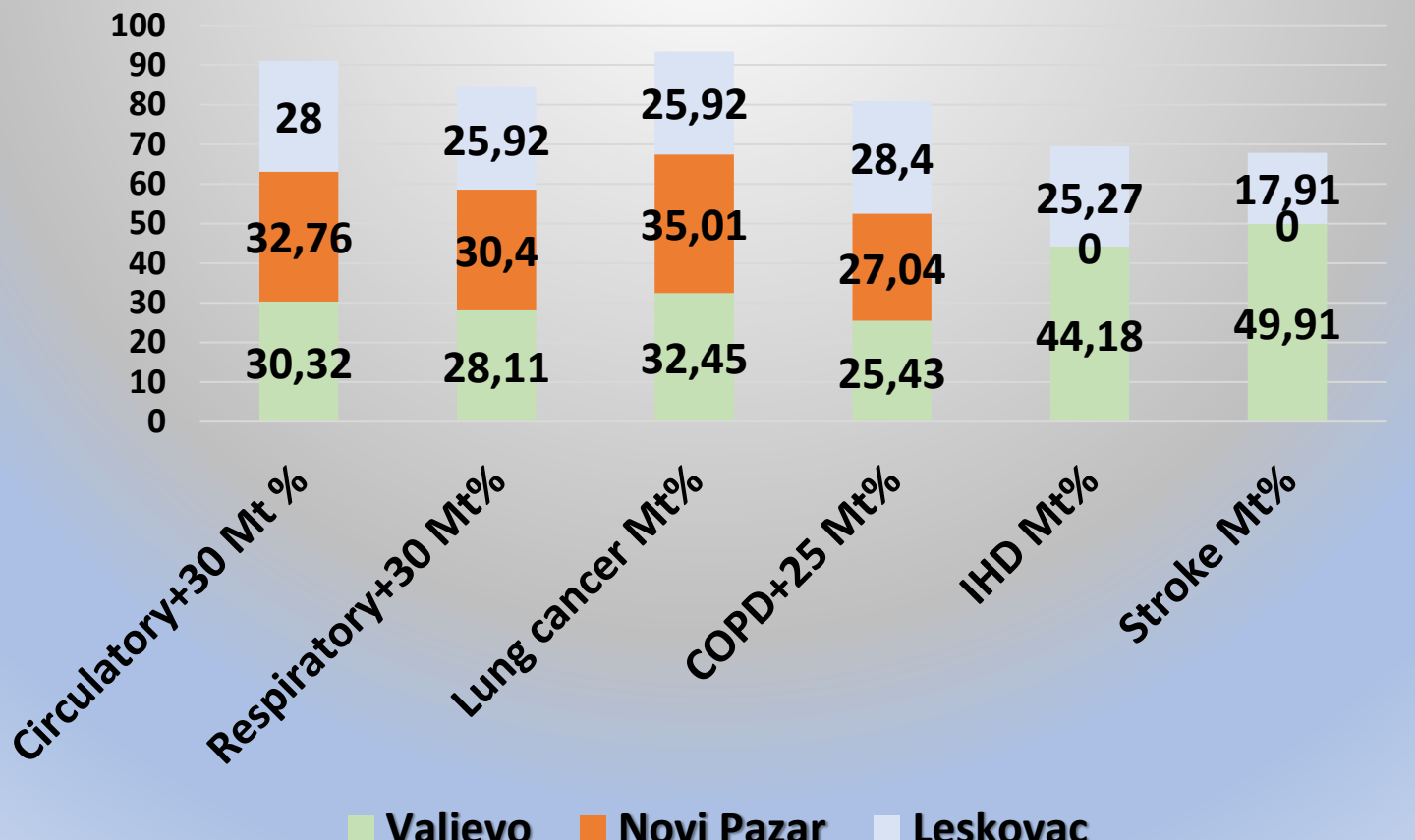
VALJEVO
39.62 µg/m³

LESKOVAC
36.48 µg/m³

PM2.5

AirQ+ procena

% smrtnosti po dijagnozama



NOVI PAZAR
40.1 µg/m³

VALJEVO
32.6 µg/m³

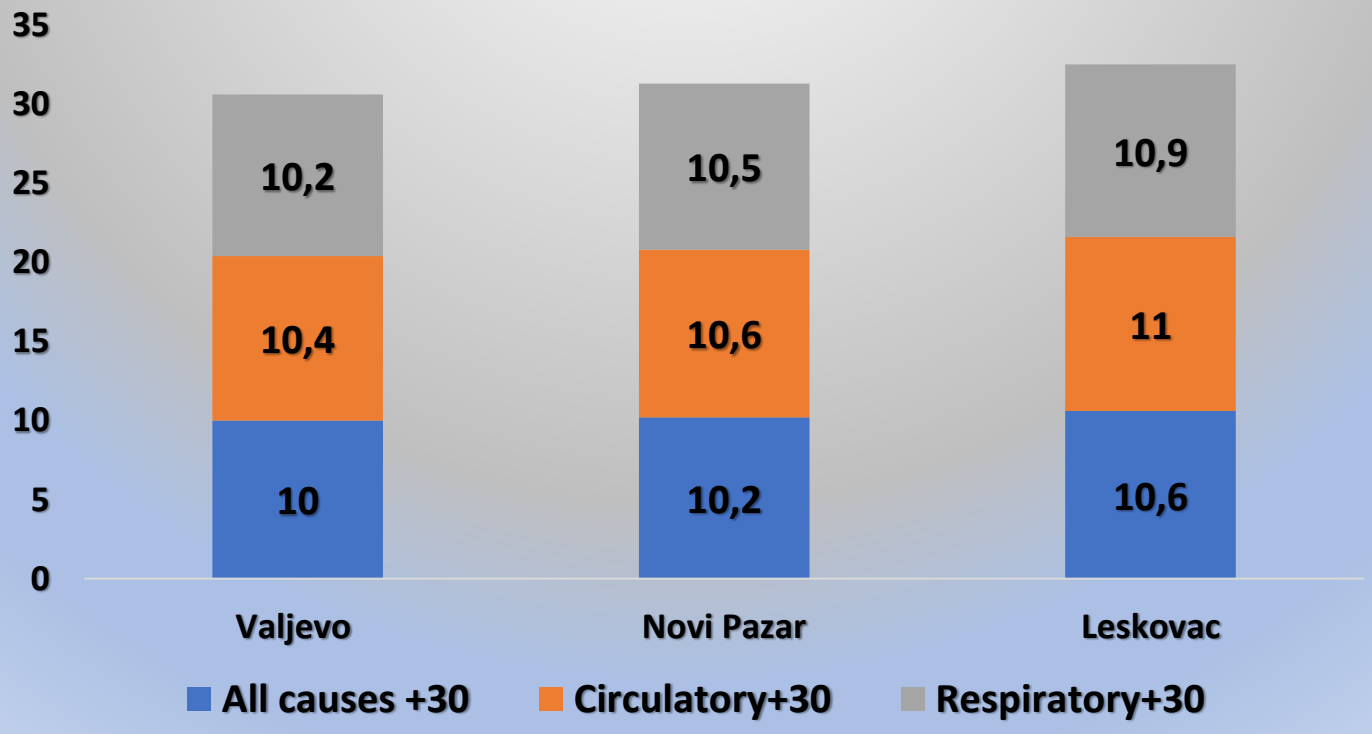
LESKOVAC
38.8 µg/m³

PM2.5

AirQ+ procena

YLL - godine života izgubljene zbog izloženosti

zagađenju vazduha 2023.godina



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UNEP SP/UNDP Projekat

Dalje jačanje kapaciteta za procenu rizika opasnih supstanci kroz njihov ceo životni ciklus

SONJA ROGLIC

Head of Department for Chemicals

Ministry of Env. Protection of the Republic of Serbia

SADRŽAJ

- ✓Glavna komponenta projekta i ključni cilj
- ✓Budžet projekta
- ✓Struktura upravljanja projektima
- ✓Rezultati projekta
- ✓Projektne aktivnosti i plan projekta
- ✓Trenutno realizovane aktivnosti i nacrti publikacija

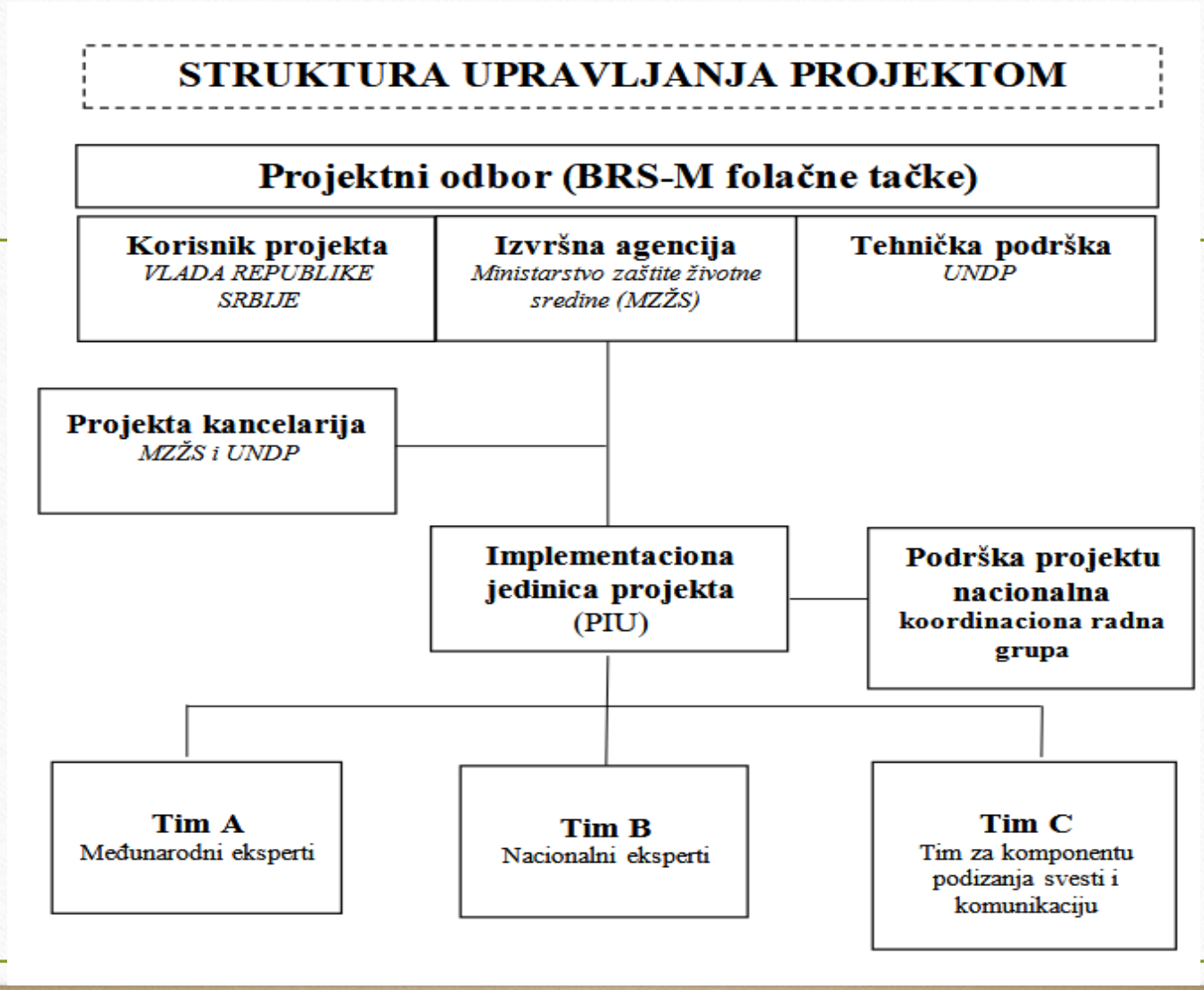
NASLOV PROJEKTA	Dalje jačanje nacionalnih kapaciteta i upravljanje rizikom od opasnih supstanci tokom njihovog životnog ciklusa
VLADA(E) PODNOSIOCA ZAHTJEVA	Vlada Republike Srbije
DRŽAVNA INSTITUCIJA PODNOSILAC ZAHTJEVA	Ministarstvo zaštite životne sredine (MEP)
UKUPAN PREDLOŽENI BUDŽET	250.000 USD
TRAJANJE	36 meseci
STATUS DRŽAVE	**Status države:** Zemlja u razvoju ☐ Najnerazvijena zemlja☐ SIDS ☐ CEITs☒ **Vaša zemlja je Strana za:** Basel ☒. Rotterdam☒ Stockholm☒ Minamata☐ **Vaša zemlja planira ratificirati:** Basel ☐Rotterdam☐ Stockholm☐ Minamata☒
SAŽETAK PROJEKTA / CILJ OPISATI OBRAZLOŽENJE PROJEKTA I NAMJERAVANI CILJ ILI ISHOD PROJEKTA	Projekat će pomoći Vladi Srbije u daljem razvoju potrebnog regulatornog okvira i izgradnji institucionalnih kapaciteta u oblasti hemikalija i otpada, što će rezultirati unapređenjem bezbednog upravljanja hemikalijama i otpadom. Projekat će postići ovaj cilj kroz sljedeće komponente projekta: 1. Jačanje političkog okvira i implementacije regulatornog okvira za bezbedno upravljanje hemikalijama i otpadom u skladu sa Bazelskom, Roterdamskom i Štokholmskom konvencijom i Minamata konvencijom; 2. Izgradnja kapaciteta industrije i podizanje svesti šire javnosti o hemikalijama i upravljanju otpadom; 3. Identifikacija nacionalnih prioriteta u pogledu upravljanja rizicima po zdravlje i životnu sredinu proizvoda koji sadrže nanomaterijale (NM) i namjerno dodanu mikroplastiku (MP).

BUDŽET PROJEKTA

SAŽETAK BUDŽETA I FINANSIRANJA

	Zatraženo od SPTF-a u USD	Doprinos korisnika (u novcu i/ili u naturi) – u USD
Predložena mera 1	$ **102,730**	$ **50,000**
Predložena mera 2	$ **101,700**	$ **40,000**
Predložena mera 3	$ **17,225**	$ **5,000**
Predložena mera 4: Monitoring, evaluacija i finansijska revizija	$ **15,0000**	$ **5,000**
Podzbir	$ **236,655**	$ **100,000 (in-kind)**
Administrativni troškovi (max 5%)	$ **13,332.75**	$ Enter amount in USD
Ukupni budžet projekta	**350,000** dolara	

STRUKTURA UPRAVLJANJA PROJEKTOM



Rezultati projekta / mere

- **Mera 1 :** Ojačani politički okvir i implementacija regulatornog okvira za bezbedno upravljanje hemikalijama i otpadom, u skladu sa BRS-M konvencijama
- **Mera 2:** Povećanje kapaciteta industrije i podizanje svesti šire javnosti o hemikalijama i upravljanju otpadom
- **Mera 3:** Identifikovani proizvodi koji sadrže NM i namenski dodatu MP koji predstavljaju neprihvatljiv zdravstveni i ekološki rizik u našoj zemlji
- **Mera 4:** Sproveden Plan monitoringa i evaluacije projekta i izvršena finansijska revizija projekta

Projektne aktivnosti komponente i sa planom rada projekta

Projektne aktivnosti		Vodeća odgovornost	Vremenski okvir (po kvartalu – svaka 3 mjeseca)											
			Godina 1				Godina 2				Godina 3			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Predložena mjera 1														
1.1	Ažuriranje Nacionalnog profila upravljanja hemikalijama (NCMP) (2009-2021)	MEP												
1.2	Poboljšanje terminologije za pesticide, hemikalije, biocide, humane i veterinarske lekove i graničnih slučajeva medicinskih proizvoda, kozmetičkih proizvoda i graničnih proizvoda u nacionalnom zakonodavstvu	MEP												
1.3	Izrada izmena i dopuna nacionalnog regulatornog okvira za primenu zabrana i ograničenja proizvoda koji sadrže NM ili MP i zabrane upotrebe živinih amalgama u stomatološkim primenama	MEP												

Projektne aktivnosti komponente II sa planom rada projekta

Predložena mera 2															
2.1	Organizacija Uvodne konferencije	UNDP													
2.2	Obuka industrije o bezbednijim alternativama opasnim supstancama koje su predmet SAICM -a	MEP													
2.3a	Pilot praktično XRF testiranje na PBDE, olovo i kadmijum plastičnog sirovog materijala (plastični granulati)	MEP													
2.3b	Obuka za korištenje XRF detektora namenjenog proizvođačima i uvoznicima plastičnih proizvoda (dečije igračke i ostali plastični proizvodi za opštu upotrebu)														
2.	Podizanje svesti potrošača, nastavnika i školske dece o piktogramima opasnosti hemikalija i bezbednom rukovanju opasnim hemikalijama za opštu upotrebu (deterdženti, boje, biocidi, uključujući proizvode koji sadrže NM i MP, itd.) i recikliranje, ponovnu upotrebu i smanjenje plastičnog otpada	MEP													

Projektne aktivnosti komponente III sa planom rada projekta

Predložena mera 3															
3.1	Izrada Vodiča za izradu nacionalnog inventara potrošačkih proizvoda koji sadrži NM i namenski dodatu MP	MEP													
3.2	Izrada Nacionalnog inventara proizvoda široke potrošnje koji sadrže NM i MP i njihovog ambalažnog otpada koji se plasira na tržište Srbije	MEP													
3.3	Izrada Studije o identifikovanim proizvodima široke potrošnje koji sadrže NM i MP	MEP													
3.4	Izrada Studije o rodnoj izloženosti identifikovanih proizvoda široke potrošnje koji sadrže NM i MP sa tržišta Srbije	MEP													

Projektne aktivnosti komponente IV sa planom rada projekta

Predložena mjera 4														
4.1	**Aktivnost 4.1:** Priprema plana izlazne strategije	MEP												
4.2	Izrada plana evaluacije i plana finansijske revizije od strane angažovanog stručnjaka	MEP												
4.3	Priprema izvještaja o nezavisnoj evaluaciji i revizije	MEP												

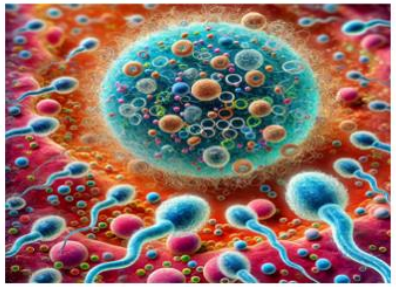
TRENUTNI NACRTI PUBLIKACIJA

ПУБЛИКАЦИЈЕ

МИНИСТАРСТВО ЗАШТИТЕ ЖИВОТНЕ СРЕДИНЕ

Студија о родној изложености микропластици и наноматеријалима садржаним у идентификованим потрошачким производима и њихов амбалажни отпад

НАЦРТ



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В О Д И Ч

ЗА ИЗРАДУ ИНВЕНТАРА ПРОИЗВОДА КОЈИ САДРЖЕ НАМЕНСКИ ДОДАТУ МИКРОПЛАСТИКУ И ПРОИЗВОДА КОЈИ САДРЖЕ НАНОМАТЕРИЈАЛЕ

НАЦРТ

МИНИСТАРСТВО ЗАШТИТЕ ЖИВОТНЕ СРЕДИНЕ |

НАЦРТ

Листа приоритетних производа који садрже нано материјале и микропластику којима су изложене жене и трудница у Србији

Неограничен асортиман козметичких производа који примарно користе жене, а самим тим и трудница, основни су извор изложености микропластици и наночестицама.

НАЦРТ

На основу члана 49. ст. 1. и 3. Закона о хемикалијама („Службени гласник РС”, бр. 36/09, 88/10, 92/11, 93/12 и 25/15),

Министарка заштите животне средине доноси:

ПРАВИЛНИК

О ИЗМЕНАМА И ДОПУНАМА ПРАВИЛНИКА О ОГРАНИЧЕЊИМА И ЗАБРАНАМА ПРОИЗВОДЊЕ, СТАВЉАЊА У ПРОМЕТ И КОРИШЋЕЊА ХЕМИКАЛИЈА

Члан 1.

У Правилнику о ограничењима и забранама производње, стављања у промет и коришћења хемикалија („Службени гласник РС”, бр. 90/13, 25/15, 2/16, 44/17, 36/18 9/20 57/22, и 29/24), у члану 7. после става 1, додаје се нови став 2. који гласи:

„Прилог 1. садржи и Део 3. Посебни захтеви за испитивање наменски додате микропластике, којим се уређују дозвољене методе испитивања и прописани критеријуми за разградљивост полимера, као и дозвољене методе испитивања и услове за доказивање растворљивости полимера.

Постојећи став 2. постаје став 3.“

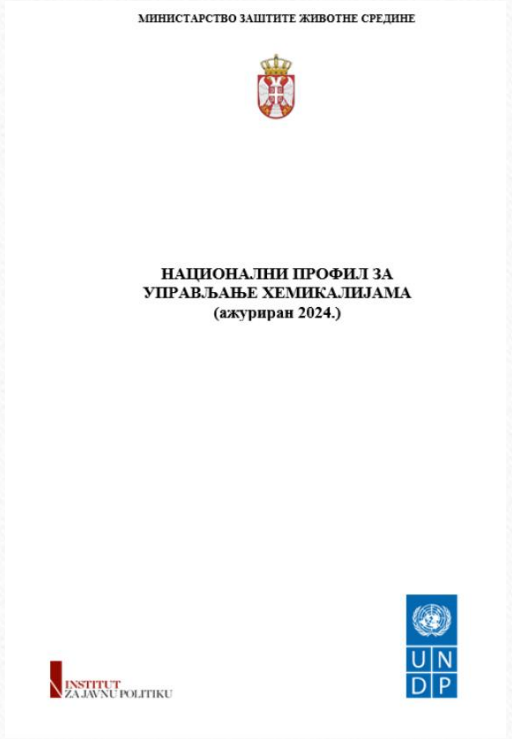
Члан 2.

У Прилогу 1, Делу 1.- Листа ограничења и забрана производње, стављања у промет и коришћења одређених опасних супстанци, смеша или производа, после редног броја ограничења и забране 77, додаје се нови редни број ограничења и забране 78, који гласи:

„78.	Микрочестице синтетичких полимера су чврсти полимери који испуњавају следеће услове: (а) садржане су у честицама и чине најмање 1% масеног удела ових честица или чине непрекидну површину премаза на честицама; (б) најмање 1% масеног удела честица из тачке (а) је испуњава било који од следећих услова: - димензија честица није већа од 5mm; - дужина честица (влакна) није дужа од 15 mm, а однос дужине и пречника је већи од 3.	1. Забрањено је стављање у промет супстанце као такве или смеша ако су микрочестице синтетичких полимера наменски додате у њих ради добијања жељених карактеристика у концентрацији једнакој или већој од 0,01% масеног удела. 2. За потребе адекватне примене ограничења и забрана под редним бројем 78, потребно је користити следеће дефинисаане појмове: (а) „честица“ означава мали део супстанце, осим појединачних молекула, са дефинисаним физичким границама; (б) „чврста супстанца“ означава супстанцу или смешу која није течност или гас; (в) „гас“ означава супстанцу или смешу која има притисак паре већи од 300 kPa на 50 °C (апсолутно) или је потпуно гасовита

Nacionalni profil upravljanja hemikalijama u procesu ažuriranja

Prvi nacrt NCMP je pripremljen



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HVALA NA PAŽNJI

Regional meeting on Collaborative Approaches to Environmental Pollution and One Health in the Western Balkans

Session II - One Health and Chemicals & Waste

Sarajevo, Bosnia and Herzegovina, 5 December 2024

UN environment programme

South-Eastern Europe (de)Pollution Platform (SEEPP) *2024 - 2025*

- Western Balkans Regional Waste Conference (26-27 March 2024)
- Regional E-waste Monitor for the Western Balkans

Towards Zero Waste

- **Innovative circular economy approaches to agricultural and municipal waste management for better air quality in Asia Pacific and the Western Balkans**

Circularity in Sectors

- Contaminated Sites in BiH-SRB
- Nature-based solutions for enhanced resilience to COVID-19 and urban air pollution
- Sustainable and resilient transport and urban mobility
- Policy action for mitigating health impacts of air pollution from high-impact sectors

Pollution and Health

Agenda 2030 Multilateral Environmental Agreements (MEAs)

UN environment programme

Waste Management and Air Pollution

Case study – Vinca landfill, August 2021

© Dejan Lekic, 8 August 2021

- Started on 7 August 2021, causing great public distress
- Pollutant emissions were monitored at three locations from the state network, sixteen stations of the local network and citizen network. Exceedances of PM
- Mobile Ecotoxicological Unit of the City Institute conducted on-site measurements of pollutants during several visits to the area
- No monitoring of PCDD/PCDFs and dioxin-like PCBs is carried out in ambient air within state or local networks, but only in air/waste gas from stationary sources

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Waste Management and Air Pollution

Sanitary landfill “Duboko", May 2024

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UN environment programme

Waste Management and Air Pollution

Study: Impact of Landfill Fires on Air Pollution and Health

Challenges:

- Trend of increase in recorded fires at landfills (Ministry of Interior database).

Year	2016	2017	2018	2019	2020	2021	2022
Number of fires	**584**	**1,296**	**950**	**1,244**	**1,205**	**1,715**	**1,760**

- Limited coverage of municipal waste collection system (86.4%/2020, of which only 20% ends up in sanitary landfills)
- High content of biodegradable waste (48%/2020)
- Limited capacities and funding for the operation of mobile ecotoxicological units.
- There is no dedicated ambient air quality monitoring within national or local ambient air networks close to landfills, except in Belgrade (close to the largest municipal unsanitary landfill in Europe - Vinca) which does not monitor uPOPs – PCDD/PCDFs and dioxin-like PCBs.
- There are no Standard Operative Procedures.

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UNEP Working Paper

Air Quality – Waste Management

Available at: https://wedocs.unep.org/20.500.11822/45428

Conclusions and recommendations:

- ❑ 01 - Prevent landfill fires
- ❑ 02 - Minimize the consequences of Landfill fires
- ❑ 03 - Improve the monitoring system in order to assess the Impact of Landfill Fires on Air pollution in Serbia
- ❑ 04 - Reduce the risk to public health during and after fire occurrences

UN environment programme

New initiative on

Innovative circular economy approaches to agricultural and municipal waste management for better air quality in Asia-Pacific and the Western Balkans

- **Source of funding:** UN Development Account 16 Tranche
- **Implementation timeframe**: 2024 –2027
- **Budget:** 560 thousand USD
- **Target countries**: Serbia, Bosnia and Herzegovina, and India

Objective

➢ To promote policy solutions for circularity and sound agricultural and municipal waste management for improved urban air quality and resilience to health, economic and social shocks in selected beneficiary countries in Asia-Pacific and the Western Balkans

UN environment programme

New initiative on

Innovative circular economy approaches to agricultural and municipal waste management for better air quality in Asia-Pacific and the Western Balkans (cont.)

Outcome 1: Strengthened capacities to detect and reduce the air pollution

- Potential for introducing incentives and policy solutions for re-use and recycling
- Rapid fire detection, joint early action and occupational safety
- Diversion of the agriculture residue from the fields and biowaste from the landfills
- Operational plans and protocols for monitoring and communication

Outcome 2: Enhanced capacity of the target countries for evidence-based policy making

- Access to information, incl. through available platforms
- Hotspots mapped and preventive measures
- Environment and health risk assessment tools
- Pre-feasibility study for AQM network expansion

UN environment programme

Thank you

UN environment programme

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