TRAP

"Transboundary Air Pollution Health Index Development and Implementation"

TRAP

6.3. Air Quality and Health Sensitization Campaign

Action 1. Experts Workshop

"Air pollution and health impact: new perspectives and solutions within a cross-border framework"

Minutes

Organised by: European Regional Framework for Co-operation

Place: Thessaloniki, Greece

Date: 11th of December 2018

The project is co-funded by the European Union and by National Funds of the participating countries

Brief description of the project

Real-time air pollution monitoring is now more necessary than ever before. Air pollution is one of the most significant factors posing threat to the health of people worldwide. It is associated with a range of diseases, symptoms and conditions that impact quality of human life. According to WHO, outdoor air pollution was responsible for the deaths of some 3,7 million people under the age of 60 around the world in 2012, representing 6.7% of the global disease burden while indoor and outdoor air pollution combined are among the largest risks to health worldwide. Apart from population air quality has negative impacts on natural environment and biodiversity.

The main sources of air pollution at participants countries are caused by industrial activities, transportation and heating systems.

Air quality problems from industrial sources mainly concern areas with thermo-electrical power stations and industrial units located close to residential areas.

Other sources (e.g. transport and dust from deserts) and natural conditions (e.g. local topography and climatic conditions) also worsen urban air quality. Local meteorological conditions and topography have a major impact on air quality and contribute to the generation of air pollution episodes. Air quality is also strongly influenced by pollutants trapped due to thermal inversions caused from sea/land breezes and thermal internal boundary layers.

Strategic objective of TRAP project is the creation of an ICT application integrating air quality monitoring with health impact indexes in the participating countries and Cross Border area.

The project aims to evaluate current situation regarding air quality in partners' areas, install air quality monitoring stations and create public health indexes for assessing air quality impact on human health and natural environment.

TRAP will extend the already established network of air quality to both countries and cross-border area by establishing 4 new monitoring stations (2 per country).

Moreover, health indicators based on the effects of air pollution on human health, will be displayed on the project's website.

TRAP is expected to go a step beyond the current state of the art in air quality by correlating air quality and health and providing an integrated air quality – health index ICT tool which will be accessible by stakeholders and general public (vulnerable target groups).

More information about the project is available at:

http://www.ipa-cbc-programme.eu/approved-project/75/

Minutes of Experts Workshop

DOCUMENT PRODUCED BY

Responsible Partner	Author(s)
European Regional Framework for Co-operation	European Regional Framework for Co-operation

Partners of the project

1. Environmental Centre of Western Macedonia
2. Municipality of Florina
3. European Regional Framework for Cooperation
4. Centre for Climate Change
5. Ministry of Environment and Physical Planning

Contents

1. Introduction

1.1 Project Identification

Air Pollution has been recognized as one of the most pressing problems in both Greece and the Former Yugoslav Republic of Macedonia, following the economic and social development of the two countries, the sources of air pollution are mainly industrial activities, transport and central heating. The major challenges of transport in urban areas are the rising number of vehicles, their increased average age, and traffic congestion. Air quality problems from industrial sources mainly concern areas with thermo-electrical power stations and industrial units located close to residential areas. Natural sources (e.g. transport of dust from deserts) and conditions (e.g. local topography and climatic conditions) also worsen urban air quality. Local meteorological conditions and topography have a major impact on air quality in CB cities and contribute to the generation of air pollution episodes. Air quality is then strongly influenced by pollutants trapped due to thermal inversions caused from land local breezes and thermal internal boundary layers. Exceedances of the mean hourly concentrations of nitrogen oxides and (8 hours limit) ozone target have been recorded mainly in major cities as Thessaloniki, while particulate matter and sulfur dioxide seems to be a problem at Western Macedonia and Bitola due to thermal power production. TRAP developed on the necessity for developing ICT applications in environmental protection, monitoring and management of the eligible areas. Environmental initiatives is a privileged field for developing cooperation in the cross-border area, contributing significantly to economic and social development of the population and public health, therefore, the opportunity for mutual cooperation and understanding between public authorities, scientific institutions and residents of the area. The major challenge is the development of an integrated approach including air quality monitoring, with providing health indicator for vulnerable groups of the population. Through TRAP project a series of issues will be addressed: a) Identification of the emission sources and development of regional and CB emission inventory, b) Assessment of each emission source, c) Development of air quality plans, d) Monitoring data, validation and analysis e) Basic demographic, health and public health profile, f) Air quality and Health Indicators g) Joint CB comparative analyses h) Capacity building at user level (health and authority stakeholders), i) Air quality and health sensitization campaigns, j) Protection of human health, k) Citizen involvement, l) Implementation of Air quality directives.

TRAP consortium has been constructed to ensure balance and complementarities between highly competent and experienced partners. The adequate choice of key actors with complementary types of knowledge (administrative, scientific, and practical) is reflected in the consortium and will be utilised in order to bridge the gap between research results and policy planning. TRAP comprises a total of 5 partners from both countries (Ministry, Municipality, Environment Enterprise and NGO), the composition is based on the multi-actor approach through the genuine and sufficient involvement all along the project from participation in the planning of

work, execution, until dissemination of results, covering the whole chain. The intervention areas are urban areas that have major pollution problems from all kind of types (industry, transport, heating). Furthermore, they face harsh and long winter periods that increase the heating needs of the households. The crisis led to less sustainable heating ways (wood burning), which also led to the increase of air pollutants during winter period. This situation creates the need for more adequate air quality monitoring and sensitization of general population to more sustainable transport and heating ways. The following target groups were identified and already added as the main communication addressees: Industry, local authorities, technology providers, research institutions, NGO's, athletic clubs, health providers.

1.2 Objectives

Through TRAP project partners will improve management and protection of areas at both countries by establishing air quality monitoring networks. The measurements of all stations in areas involved in this project will create a system that will display real-time measurements through the internet. Moreover, epidemiological indicators and indicators of air quality, based on the effects of air pollution on human health, will be calculated and displayed on the web. The best way for someone to use an Air Pollution Health Indicator (APHI) is to regularly check the current index value, to pay attention to personal symptoms and self-calibrate to the reported current APHI value.
Strategic objective of TRAP project is the creation of an ICT application integrating

Air Quality Monitoring with Air Pollution Health Indicator (APHI) in CB area.
The specific sub-objectives of the project are to:
• Develop and evaluate emission inventories at partners areas
• Assess the health risk related to air quality measurements
• Create integrated ICT tool including air quality information correlated to possible health impacts and providing emergency mechanism to policy makers and vulnerable groups.
• Evaluate the CB conditions regarding air quality and transported pollution in CB area
• Engage relevant stakeholders in order to inform them on the created tool operation and indexes
• Disseminate and communicate the project results to key stakeholders as well as to the general public and vulnerable groups.

1.3 Project Methodology

The project runs a methodological approach that ensures the link between individual and joint cross-border action. There is a clear distinction of roles focusing on establishment of good cooperation; achieving joint objectives and sharing the knowledge and skills between partners. The methodology approach consists of 3 stages:

(1) Preparatory Stage: Partners will appoint team members to ensure smooth implementation, agreements between relevant bodies will be signed,

communication identity will be prepared, and procurement procedures will be lunched.

(2) Implementation Stage: Project team will coordinate in order the core stage of the project to begin. It is crucial the equipment purchase and externals to be determined on time in order monitoring stations to be operational and provide data for 12-18 months. Each of the WP's is planned to be coordinated by the most relevant partner according to competences in order to ensure scientific integrity of the deliverables.

(3) Closing Stage: Partners will prepare closing reports and expenditure verifications. They will boost their communication actions towards all target groups. Communication campaign with the organization of 2 final conferences will be the pick of the partnership activities.

2. Agenda and Venue of the Meeting

Interreg - IPA CBC
Greece - The former Yugoslav Republic of Macedonia
TRAP

ERFC

Sensitization Campaign of TRAP Project
Action 1. Experts Workshop.
"Air Pollution and Health Impact: New Perspectives and Solutions within a Cross-Border Framework"

Agenda

Tuesday 11 December 2018 –Thessaloniki, Farm School of AUTh, 57001, Thermi
https://goo.gl/maps/758RouoY4iv

09.00-09.30	**Registration**
09.30-10.00	**Opening session**

- *Mr. Petropoulos Nikolaos, President of ERFC*
- *Ms. Tsikoti Nikoleta, Head of Directorate of Environment and Culture - Ministry of Macedonia-Thrace*
- **TRAP Project / Interreg Greece – The former Yugoslav Republic of Macedonia**
  Professor Zoras Stamatis and Mr. Stavrakas Theodoros, Environmental Centre of Western Macedonia, Project Leader of TRAP Project

10.00-11.15	**Section 1. Health**

Air quality and health effects / Legislation framework / Environmental Communication

- ***Connection of Atmospheric Pollution with Human diseases***
  Associate Professor Loupa Glykeria, Laboratory of Atmospheric Pollution & Pollution Control Engineering, Department of Environmental Engineering, Democritus University of Thrace
- **Air pollution and thomboebolic disease**
  Professor Makris Pantelis, Professor of Hematology and Haemostasis
- **Legal framework on industrial air pollution**
  Ms. Lovassa Alexandra, Lawyer – Democritus University of Thrace
- ***Analysis, modelling and sensing of environmental factors for the customized and predictive self-management of Asthma***
  Mr. Votis Konstantinos, Researcher Grade C' & Director of Visual Analytics Lab at CERTH/ITI
- ***Environmental communication serving as a protective shield in issues of air pollution***
  Professor Skanavis Constantina, University of Aegean

11.15-11.30	**Coffee Break**
11.30-13.00	**Section 2. Environment**

Air pollution indexes – Scientific evidence – Research in Thessaloniki and Northern Greece

- **Atmospheric Dispersion of Pollutants from Large Industrial Units**
  Professor Rapsomanikis Spyridon, Laboratory of Atmospheric Pollution & Pollution Control Engineering, Department of Environmental Engineering, Democritus University of Thrace
- **Carbon Capture and Storage (CO_2): The Case of Mineral Carbon Storage in Greece**
  Dr Kelektsoglou Kiriaki, Laboratory of Atmospheric Pollution & Pollution Control Engineering, Department of Environmental Engineering, Democritus University of Thrace

The project is co-funded by the European Union and by National Funds of the Countries participating in the Interreg IPA CBC Programme "Greece – The former Yugoslav Republic of Macedonia 2014-2020"

Interreg - IPA CBC
Greece - The former Yugoslav Republic of Macedonia
TRAP

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11.30-13.00	• **Combatting urban air pollution and climate change: the ICARUS paradigm** *Professor Sarigiannis Dimosthenis, Department of Chemical Engineering, AUTh* • **Atmospheric Pollutants from Industrial Fire at a Batteries Production Factory** *Dr Karali Dimitra, Laboratory of Atmospheric Pollution & Pollution Control Engineering* • **LIFE Index-Air – Development of an Integrated Exposure – Dose Management Tool for Reduction of Particulate Matter** *Dr Kalogridi Athina, Postdoctoral Research Associate, Institute of Nuclear & Radiological Sciences & Technology, Energy & Safety, NCSR Demokritos* • **AIRTHINGS Project / Interreg Balkan-Mediterranean** *Mr. Tsegas George – Research Associate – Laboratory of Heat Transfer and Environmental Engineering, Aristotle University of Thessaloniki*
13.00-13.30	**Light Lunch**
13.30-15.00	**Section 3. Solutions / Mitigation strategies** *Industry - Air related companies / enterprises* • **Alternative Use of Lignite** *Mr. Drougos Konstantinos – Agro Marketing International Inc. – Managing Director* • **Emissions of air pollutants and greenhouse gases from the road transport sector** *Dr. Mellios Giorgos, Managing Director of EMISIA SA.* • **Bioasphalt: from microalgae to "green roads"** *Professor Zalidis Georgios – Scientific Director of Interbalkan Environment Center* • **AID – Air Pollution Intelligent Defense** *Mr. Karteris Marinos, kartECO / Partner of Icarus Project / Horizon 2020 research and innovation programme* • **Mitigating urban air pollution by innovative design** *Mr. Vartholomaios Aris, Postdoctoral Researcher, School of Architecture / AUTh*
15.00-15:30	**Networking Session - Closing Remarks** • *Mr. Mavromatidis Demitrios, Director of Regional Development Fund of Western Macedonia*
15:30-16:00	**Cocktail Refreshment**

In collaboration with:

eit Climate-KIC

I-BEC ΔΙΒΑΛΚΑΝΙΚΟ ΚΕΝΤΡΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ

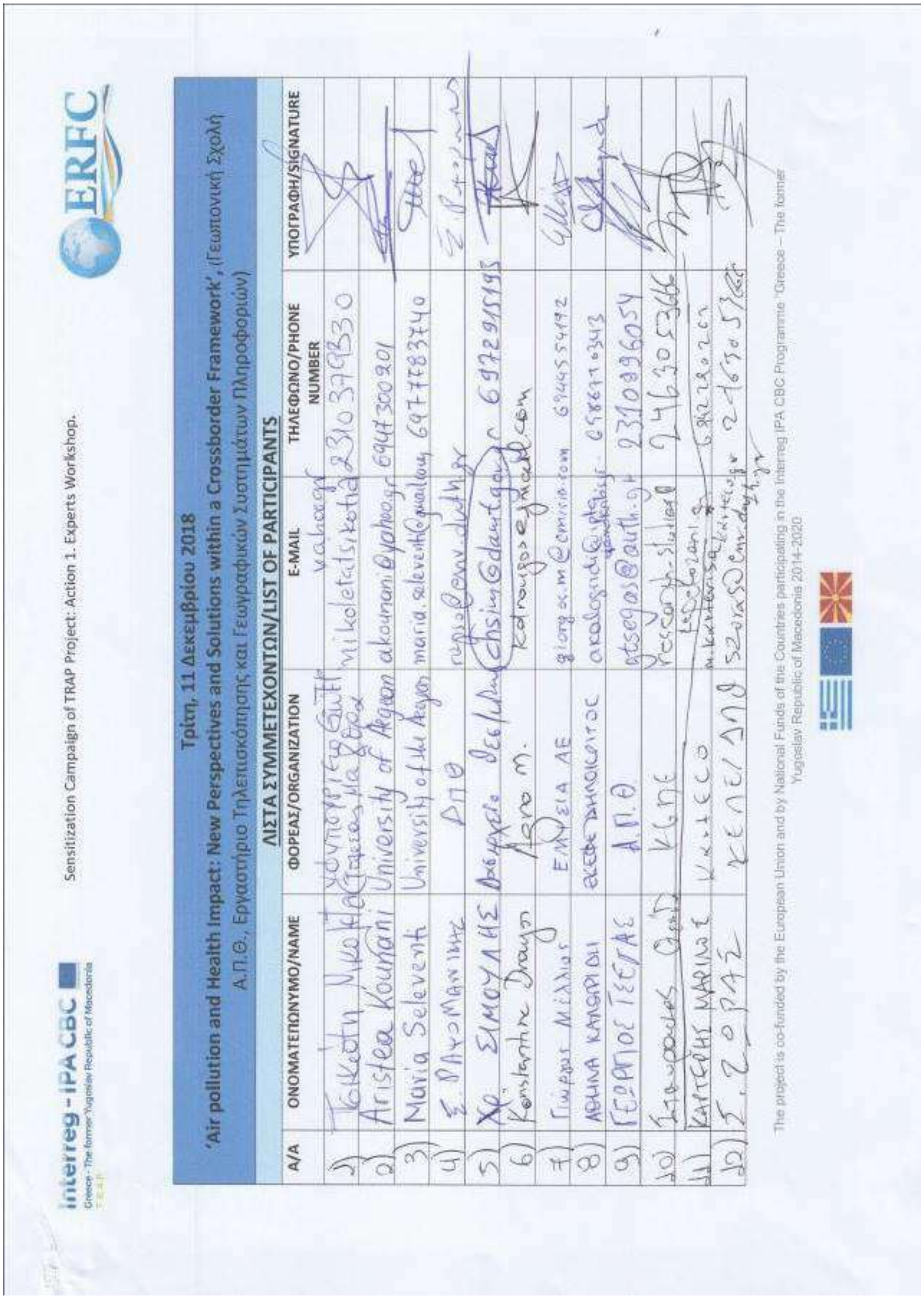
ΣΕΒΕ

The views expressed in this Experts Workshop do not necessarily reflect the views of the European Union, the participating countries and the Managing Authority

The project is co-funded by the European Union and by National Funds of the Countries participating in the Interreg IPA CBC Programme "Greece – The former Yugoslav Republic of Macedonia 2014-2020

3. Participants

Experts Workshop was attended by 26 participants representing two project partners (ERFC and KEPE), regional authorities, stakeholders, academic institutions and universities and environmental organizations from the areas of intervention.



Interreg - IPA CBC
Greece - The former Yugoslav Republic of Macedonia
TRAP

Sensitization Campaign of TRAP Project: Action 1. Experts Workshop.

ERFC

Τρίτη, 11 Δεκεμβρίου 2018
'Air pollution and Health Impact: New Perspectives and Solutions within a Crossborder Framework', (Γεωπονική Σχολή Α.Π.Θ., Εργαστήριο Τηλεπισκόπησης και Γεωγραφικών Συστημάτων Πληροφοριών)

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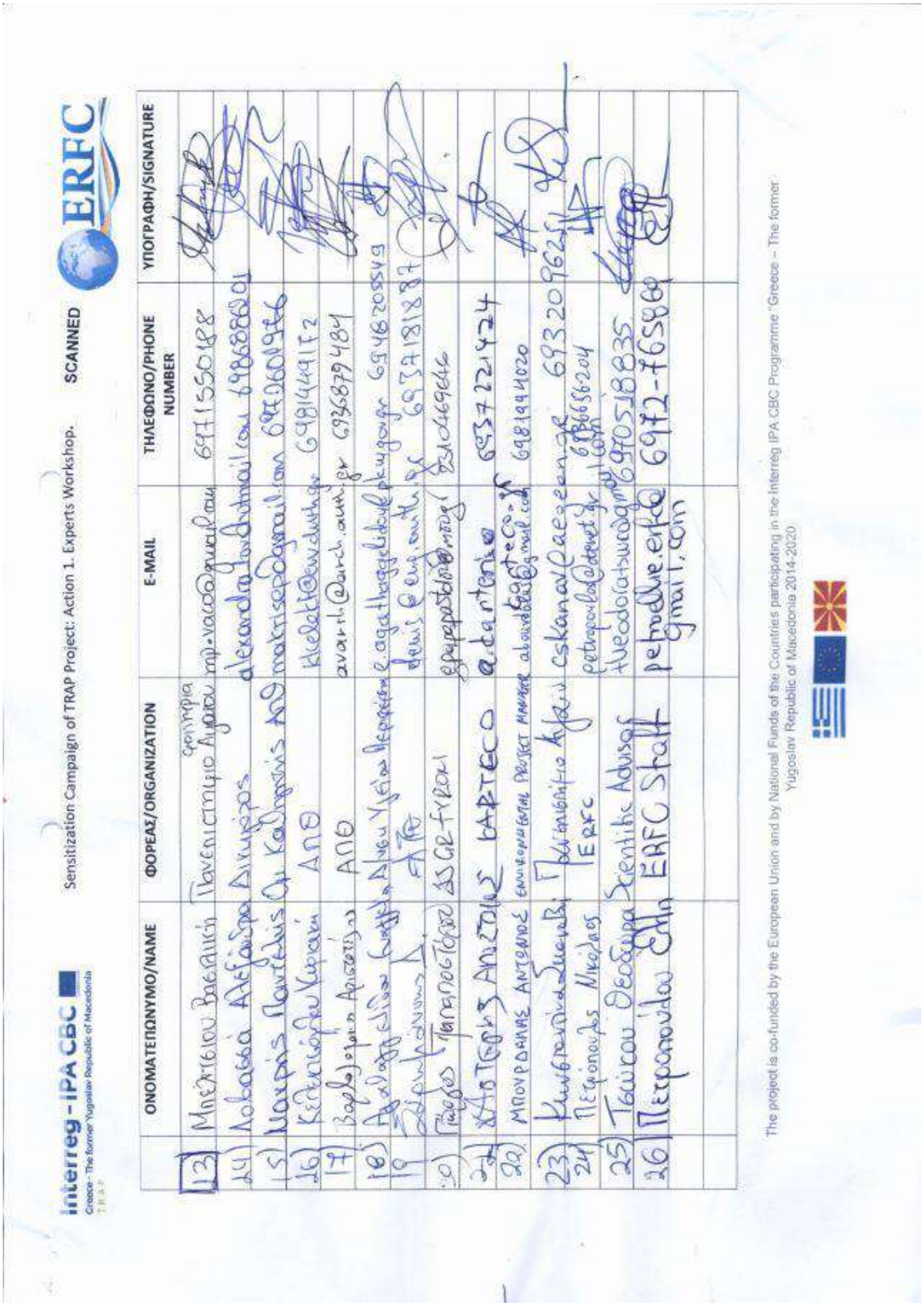

Interreg - IPA CBC Greece - The former Yugoslav Republic of Macedonia TRAP

Sensitization Campaign of TRAP Project: Action 1. Experts Workshop. SCANNED ERFC

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4. Experts Workshop

Opening Session

Mr. Petropoulos Nikolaos, President of E.R.F.C.
Introduction to the experts' workshop

Introduction of experts' workshop. Reference to the problems of air pollution. Reference to the speakers of the event. Interreg IPA CBC Greece – The former Yugoslav Republic of Macedonia 2014-2020.

Ms Tsikoti Nikoleta, Head of Directorate of Environment and Culture – Ministry of Interior
Short Greeting

Represented Ministry of Interior (Macedonia-Thrace) (Head of Environment and Culture Directorate) and Mr. Emmanouil Georgios (Head of General Directorate). Reference to the Directorate of Regional Policy and its responsibilities:

- Co-financing programmes
- Acceleration of cooperation with other countries in environmental issues
- Regional development

Speaker: Mr. Theodoros Stavrakas, Environmental Centre of Region of Western Macedonia
Title: *Interreg IPA CBC Greece-The former Yugoslav Republic of Macedonia*

References to

- Interreg IPA CBC Greece – The former Yugoslav Republic of Macedonia 2014-2020
- Transboundary Air Pollution and Health Index development and implementation (TRAP Project)
- Budget of the TRAP Project
- Scope of the TRAP Project
- Partners of the TRAP Project
- Details about the Work Packages

Speaker: Professor Zoras – Environmental Centre of Region of Western Macedonia
Title: *Environmental Center of Region of Western Macedonia*

- Presentation of Environmental Centre of Western Macedonia.
- KEPE is located at Ptolemaida and its actions related to air pollution started on 2006.
- It has contributed to crisis environmental situations.
- It has installed 14 air pollution monitoring stations from 2006 until today.
- Measurements are updated every hour and they give a good image of the air pollution situation.

- The whole air pollution monitoring system gives very important information which is very useful both for PPC and public.
- Reference to the monitoring stations which will be installed within the TRAP Project

Section 1. Health. Air quality and health effects / Legislation framework / Environmental Communication

Speaker: ***Professor Makris Pantelis, ΑΧΕΠΑ Α' Prop. Pathol. Clinic, Hemostasis Unit***
Title: ***Air pollution and thromboembolic diseases***

- Explanation of the methodology of health data investigation
- 110,000 medical folders of patients were examined
- The total number of hospitalized patients from 1963 up to 2002 has increased at 8,34 times, while the total number of THEN has been increased at 59,20 times in the same time interval
- The effect of environmental changes in deaths due to cancer and TED's
- Thessaloniki is divided to the clean air area (eastern area) and the polluted one (western area - industrial)
- TED's increased from 13,5% in 1953 to 35,3% in 2003

Speaker: ***Ms. Lovassa Alexandra, Lawyer***
Title: ***Legal Framework on industrial air pollution***

- Presentation of the air Legislation of Greece
- Industrial companies should monitor the air pollution that may create and report the results to the responsible environmental authorities
- It is essential to be developed a harmonious coexistence between industries, environment and society
- Compliance with the current applicable law for the protection of the environment and the decrease of pollution by the industries
- More frequent controls from the authorities and immediate action in the event of derogation

Speaker: ***Professor Loupa Glykeria, Laboratory of Atmospheric Pollution & Pollution Control Engineering, Department of Environmental Engineering, Democritus University of Thrace***
Title: ***Connection of atmospheric pollution with human diseases***

- Limited air pollution values between European Union and World Health Organization
- Air pollution shows a reduction, but the particulate matter and the NOx are responsible for many health problems
- Presentation of academic papers:
- Global burden of disease study 2016 (GBD) Data Resources

- Outdoor particulate matter exposure and lung cancer risk in the EAGLE study, Consomi et al., 2018
- Particulate matter air pollution components and incidence of cancers of the stomach and the upper aerodigestive tract in the European Study of Cohorts of Air Pollution Effects (ESCAPE), Weinmayr et al., 2018

Speaker: ***Professor Skanavis Constantina and PhD Candidate Maria Seleventi, University of Aegean, Department of Environment, Research Center of Environmental Communication and Education***
Title: ***Environmental communication serving as a protective shield in issues of air pollution***

- Air pollution: A Silent killer without borders
- Air pollution and health
- Particulate matter air pollution: The greatest current threat to human health globally
- Stations of the national Air Pollution Monitoring Network
- Lack of online information
- Responsible Environmental Behavior. Knowledge, Awareness, Action

Comments
Professor Rapsomanikis Spyridon: Any citizen has the right to get into environmental information

Section 2. Environment. Air pollution indexes – Scientific evidence – Research in Thessaloniki and Northern Greece

Speaker: ***Professor Zalidis Georgios, Scientific Director of Interbalkan Environment Center***
Title: ***Bioasphalt: From Microalgae to "Green Roads"***

- Greeting to Ms Tsikoti Nikoleta (Head of Directorate of Environment and Culture – Ministry of Interior) and Ms. Agathagelidou Evagelia (Head of Department of Environmental Hygiene and Health Control, Region of Central Macedonia).
- Bioasphalt: An asphalt alternative made from non-petroleum based on renewable resources. Type of sources. Microalgae.
- The primary objectives of the BioRoad project.
- The avoidance of the negative consequences on health, safety and environmental issues occurring using conventional crude oil bitumen.

Comments: **Mr. Ignatiadis Spiros, President of SEVE / Greek Exporters Association**.

- SEVE is aware of environmental issues.
- The smaller the environmental footprint is, the more competitive is the business.

- Greetings to Ms. Tsikoti Nikoleta (Head of Directorate of Environment and Culture – Ministry of Interior) and Mr. Papapostolou George (Financial Officer. Interreg IPA CBC "Greece – The former Yugoslav Republic of Macedonia 2014-2020")
- SEVE is willing to contribute wherever it can help.

Speaker: ***Professor Rapsomanikis Spyridon, Laboratory of Atmospheric Pollution & Pollution Control Engineering, Department of Environmental Engineering, Democritus University of Thrace***
Title: ***Atmospheric dispersion of pollutants from large industrial units***

- Results of air pollutants samples after the fire of battery industry (Olvio Xanthi)
- Plumes dispersion, air pollution measurement stations
- Air pollution legislation (particulate matter, nitrogen dioxide, ozone, carbon monoxide, benzene, arsenic, cadmium, nickel)
- Processes from the field to the laboratory (DFS, XRF)
- Presentation of Photo album from the laboratory.
- The main issues were the possibilities of emissions of dioxins, lead or other harmful chemical compounds

Speaker: Dr. Kelektsoglou Kiriaki, ***Laboratory of Atmospheric Pollution & Pollution Control Engineering, Department of Environmental Engineering, Democritus University of Thrace***
Title: ***Carbon Capture and Storage (CO2): The Case of Mineral Carbon Storage in Greece***

- CO2 Capture Technology. Mineral carbonation.
- Composition of mineral and their CO2 sequestration characteristics.
- CCS Technologies in Europe.
- The Case of CarbFix (Iceland). Carbfix is a project in Iceland that is injecting solutions of mixed CO2 and H2S into basaltic rocks.
- The appropriate geological forms.

Speaker: ***Professor Sarigiannis Dimosthenis, Department of Chemical Engineering, AUTh***
Title: ***Combatting urban air pollution and climate change: the ICARUS paradigm***

- Icarus specific objectives.
- Icarus Methodology.
- Policies and measures selection process.
- Specific policies measures/options selected for Thessaloniki.
- Basic sectors and policies considered.
- Data used. Health impact in the city. ICARUS methodology.
- Identification of the contribution to the health effects of biomass burning in Greece.
- Advantages of the refinement. Pro-active engagement of stakeholders.

- Next one in Athens (Workshop/stakeholders) 2/2019 – Technical newsletter available on the web site (icarus2020.eu) Policy Brief available on the web site.

Speaker: ***Dr. Kalogridi Athina, Postdoctoral Research Associate, Institute of Nuclear & Radiological Sciences & Technology, Energy & Safety, NCSR Demokritos***
Title: ***LIFE Index-Air – Development of an Integrated Exposure – Dose Management Tool for Reduction of Particulate Matter***

- LIFE Programme, LIFE15 ENV / PT / 000674
- Project's Partners
- Assessment of human exposure to air pollutants
- Operational tool design
- 1st module: AIR QUALITY MODULE
- 2nd module: EXPOSURE MODULE
- 3rd module: DOSIMETRY MODULE
- 4th module: BURDEN OF DISEASE MODULE
- Modules coupling: Development of a versatile and long-term, decision-making tool
- Dissemination: Helping citizens to get involved

Speaker: ***Mr. Tsegas George – Research Associate – Laboratory of Heat Transfer and Environmental Engineering, Aristotle University of Thessaloniki***
Title: ***AIRTHINGS Project / Interreg Balkan-Mediterranean***

- Project aims, objectives and LHTEE contribution
- The data provided by sensors must be air quality data in compliance with the EU AQ Directives
- Preparatory actions

Discussion on: *open air quality data, data providers, fragmentation of air pollution measurement networks*

Section 3. Solutions / Mitigation strategies. Industry – Air related companies / enterprises

Speaker: ***Mr. Drougos Konstantinos – Agro Marketing International Inc. – Managing Director***
Title: ***Alternative Use of Lignite***

- CTC's Coal Conversion Process
- Industrial Applications of CTC's Carbon Char
- CTC's Patented Clean Coal Conversion Process
- CTC's Mild Gasification Reactor converting coal Continuously into High Value Carbon Char at VA Plant in Norton, VA
- CTC Unique Features

- Why in Greece: New uses for Greek lignite, the only national strategic fuel, through a new and proven technological solution, Low risk investment with high returns, Modular plants provide new jobs in a multiple locations, Contributes to more Greek exports, Generates low carbon footprint and low sulfur fuels, Greek industrial manufacturers can have access to low cost domestic materials, Agriculture benefits, promotes high value in cultivating organic fruit and produce and provides solutions to the critical desertification and soil remediation issues
- Future of the coal industry: Converting coal cleanly into new value-added markets (Coal into high value carbon char for the alloy and steel industry, coal into coke, coal into gasoline, char to high material such as graphene)

Speaker: ***Dr Mellios Giorgos - Managing Director of EMISIA SA.***
Title: ***Emissions of air pollutants and greenhouse gases from the road transport sector***

- Contribution of transport to air pollutant emissions.
- Evolution of air pollutant emissions from transport.
- Average CO2 emissions and targets for cars and vans.
- Real-world diesel PC NOx emissions.
- Air policy in Europe.
- Transport targets up to 2050. The SIBYL tool.
- Carbon intensity for electricity.
- Well to Wheel emissions of different powertrains.

Speaker: ***Dr Vartholomaios Aris, Postdoctoral Researcher, School of Architecture / AUTh***
Title: Mitigating urban air pollution by innovative design

1. Three ways to mitigate urban air pollution:

- Improve Technology (e.g.: transportation, construction, mass consumed products)
- Change human behavior (reduce car dependency, change consumption habits, engage in citizen science and community-related projects)
- Improve indoor/outdoor air quality by design (nature-based solutions, urban ventilation, bioclimatic buildings)

2. Seven key design goals for urban air quality

- Urban Ventilation Corridors [city]
- Smart and sustainable transport [city]
- Urban green networks [city/neighborhood]
- Climate-responsive urban blocks [neighborhood/plot]
- Bioclimatic buildings [building]
- Clean construction technologies [buildings]
- Biomimicry [details]

Speaker: *Mr. Karteris Marinos / kartECO*
Title: AID – Air Pollution Intelligent Defense

- The need for air quality monitoring
- AID. Objective. Where can it be applied (urban environment, building facilities, industrial sector, quarries and mines, highly polluted regions)
- Target audience (Public authorities, environmental departments of large companies, scientists, citizens)
- AID structure
- What services are provided to the users
- Advantages
- Plans

Closing Remarks

Speaker: *Mr. Petropoulos Nikolaos, President of ERFC*

- Discussion on energy transition to clean forms of energy production.

5. Outcomes of Experts Workshop

During the Experts Workshop, the main objectives of the project were presented.

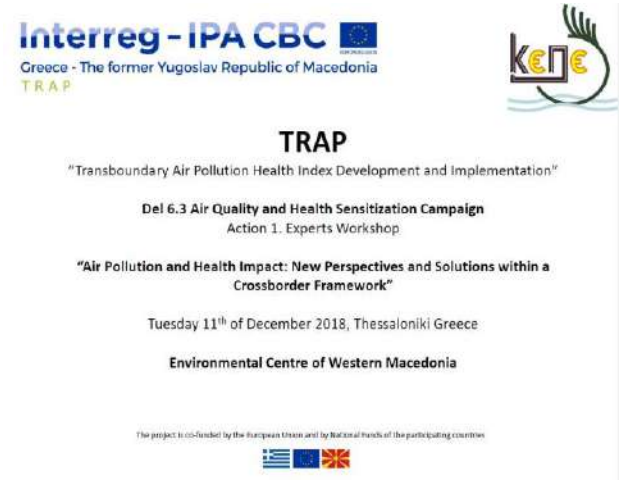
Also, some basic points that were presented and discussed were:

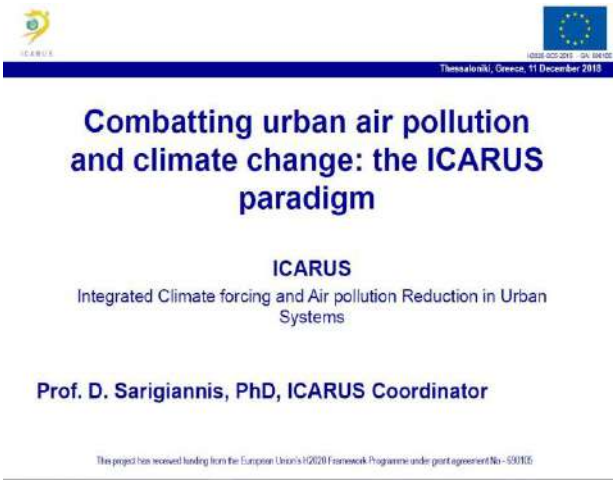
- The impact of air pollution on health
- The need of the coordination of infrastructure in order citizens to have direct access to air quality (at specific location and time)
- Good practices and strategies for the mitigation of the atmospheric pollution (e.g. Carbon Capture and Storage, Alternative Use of Lignite).

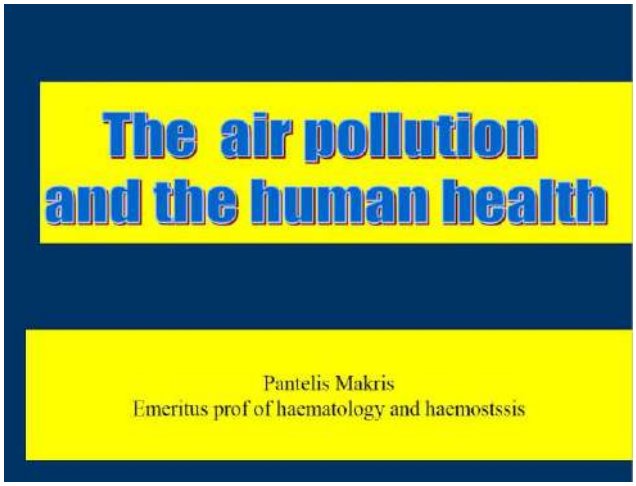
Many other relevant projects had the opportunity to publicize their results and to find ways for cooperation and exploitation of their data. The expert's workshop was supported by the Greek Exporters Association (SEVE), the Inter-Balkan Environmental Center and by the participation of companies related to air pollution projects. Good practices were presented that could feed into strategies for eliminating anthropogenic air pollution, with a win-win perspective for business and human health.

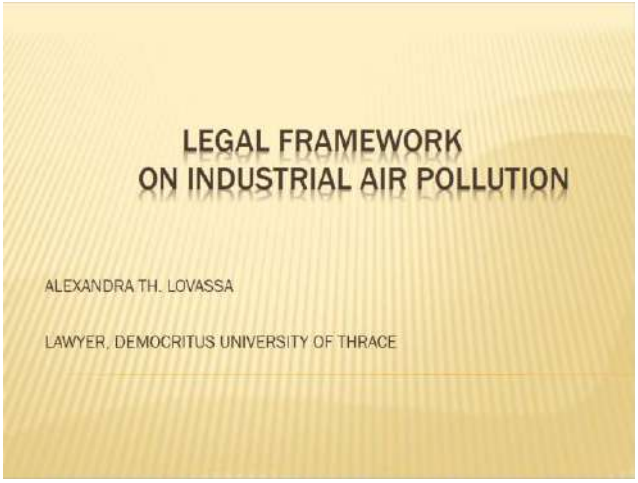
6. Annexes

6.1 Presentations





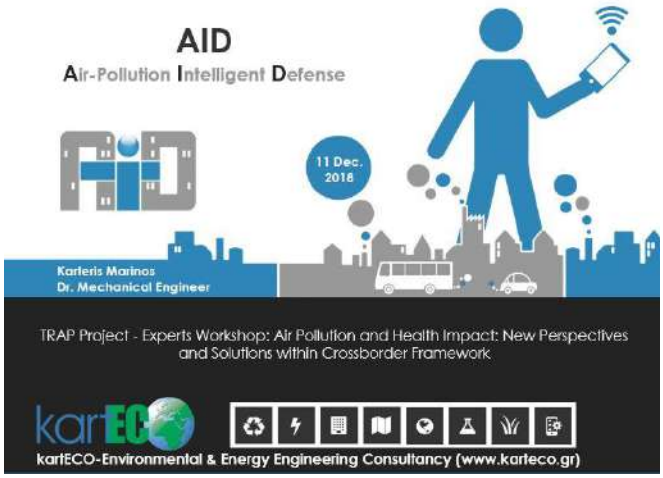





University of the Aegean
Department of Environment
Research Center of Environmental Communication and Education
Environmental communication serving as a protective shield in issues of air pollution
Professor Constantina Skanavis
PhD Candidate Maria Seleventi
Sensitization Campaign of TRAP Project
Experts Workshop "Air Pollution and Health Impact: New Perspectives and Solutions within a Cross-Border Framework"
Thessaloniki, 11 December 2018


Interreg - IPA CBC
TRAP
Transboundary Air Pollution Health Index Development and Implementation (TRAP) Experts Workshop
Air pollution and health impact. New Perspectives and Solutions in a crossborder framework
Mitigating urban air pollution by innovative design
Aristotelis Vartholomaios
Postdoctoral Researcher of the School of Architecture, AUTh
Collaborator of the interBalkan Environmental Centre (i-BEC)
Thessaloniki, 11 December 2018


BioRoad
Bioasphalt: From Microalgae to «Green Roads»
Prof. George Zalidis
Aristotle University of Thessaloniki, School of Agriculture
Director of the Laboratory of Remote Sensing and GIS
Scientific Coordinator of i-BEC
i-BEC
INTERBALKAN ENVIRONMENT CENTER



Presentations can be found at: http://www.erfc.gr/projects-news/item/298-trap-sensitization-campaign-action-1-experts-workshop.html

6.2 Photos


Health is not a privilege,
it is a human right!
Clean air, too!


CCS Technologies in Europe


ICARUS methodology


ERFC


ERFC


Real-world diesel PC NOx emissions
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