

Cross-Mediterranean Environment and Health Network

CROME-LIFE

The CROME project

Prof. Denis Sarigiannis^{1,2,3} (Project coordinator),
Dr. Spyros Karakitsios^{1,2}

¹ Aristotle University of Thessaloniki, Department of Chemical Engineering, Environmental Engineering Laboratory, University Campus, Thessaloniki 54124, Greece

² HERACLES Research Center on the Exposome and Health, Center for Interdisciplinary Research and Innovation, Balkan Center, Bldg. B, 10th km Thessaloniki-Thermi Road, 57001, Greece

³ School for Advanced Study (IUSS), Science, Technology and Society Department, Environmental Health Engineering, Piazza della Vittoria 15, Pavia 27100, Italy





CROME – the concept

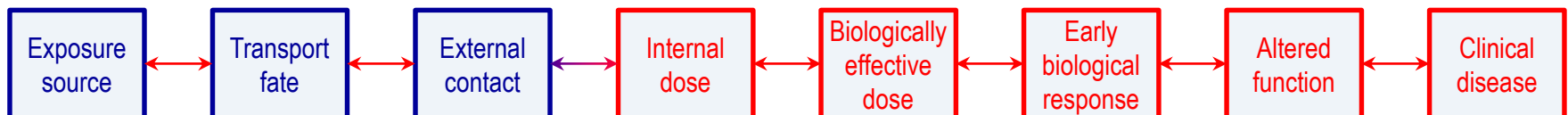
CROME facilitated the new E & H paradigm, proposing targeted innovation steps that include:

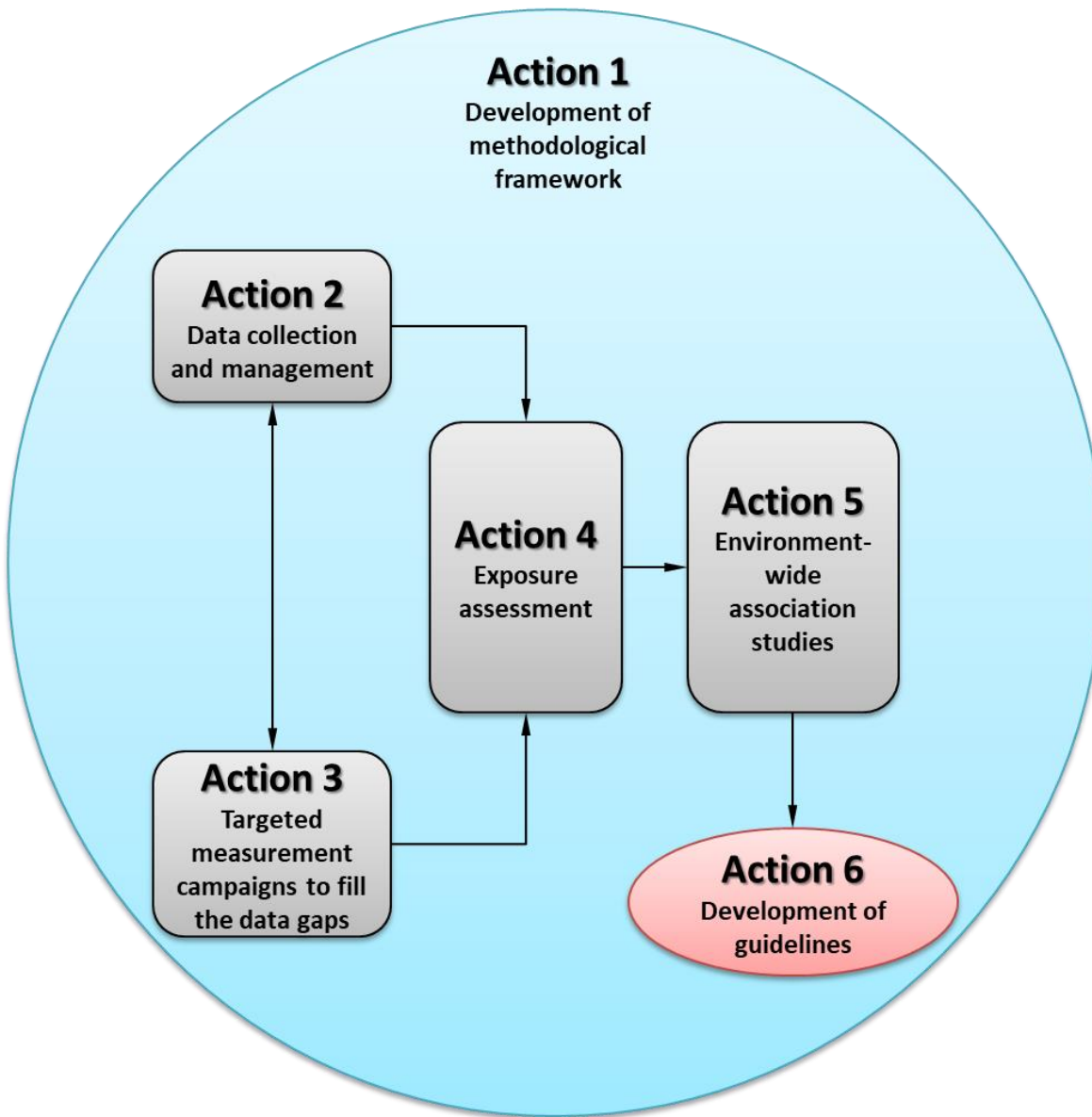
1. the **operational use** and **demonstration** of the validity of **biology-based modeling tools** that allow to mechanistically link **environmental exposure** to **biomonitoring** and **epidemiological data**. This will be done by:

- (a) linking **environmental exposure** to the **biologically effective dose (BED)** of xenobiotics at the main target tissues;
- (b) linking **biomarker levels** in biological fluids to the **BED at target tissues**; and
- (c) linking **target tissue BED** with **health outcomes**. In this way, environment-wide associations with adverse health effects or physiological perturbations will be established and mechanistic hypotheses regarding the mode and/or mechanism of action can be investigated.

2. the operational use of an integrated approach to biomonitoring that combines the use of state-of-the-art biomarkers with reverse dosimetry and environmental data **to reconstruct the effective dose human population is exposed to**. The results will allow moving towards an improved environmental health risk assessment in the EU and the world.

3. **development of new** and **validation of existing biomarkers** for environmental health risk assessment and environmental human biomonitoring





Partnership

AUTH



ISS



JSI

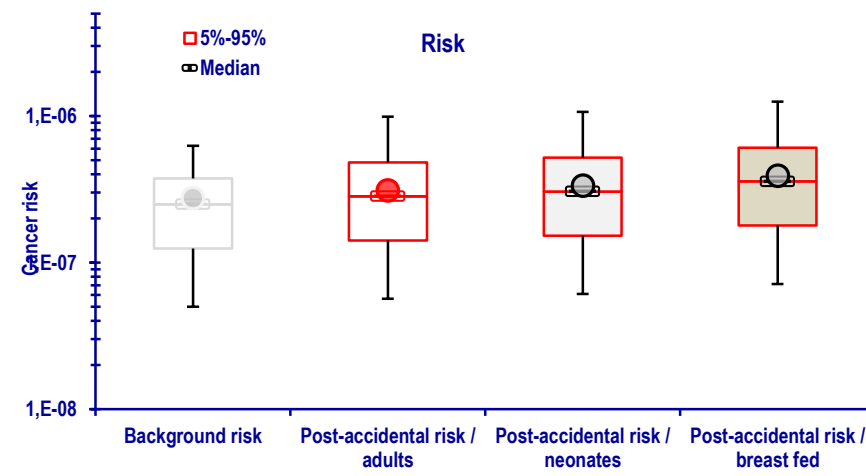
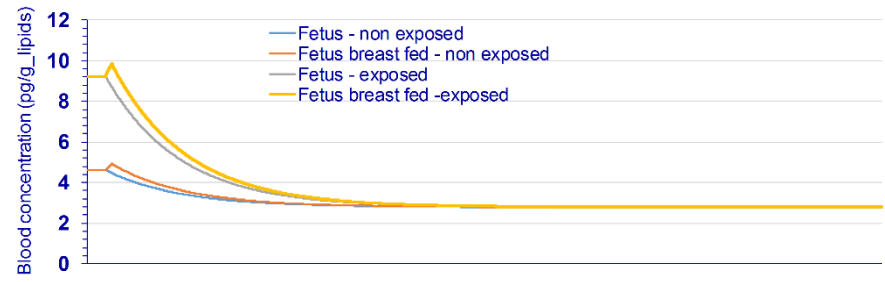
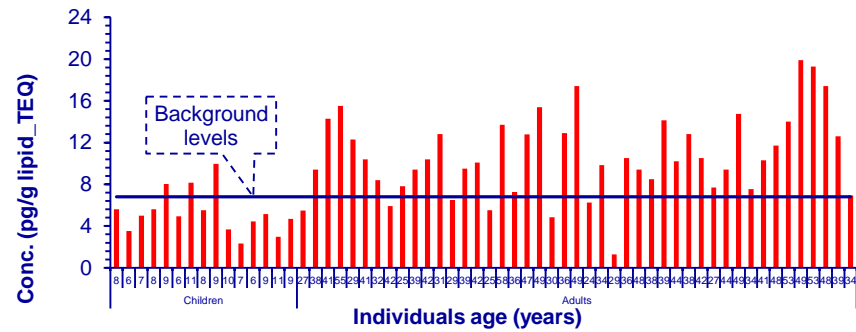
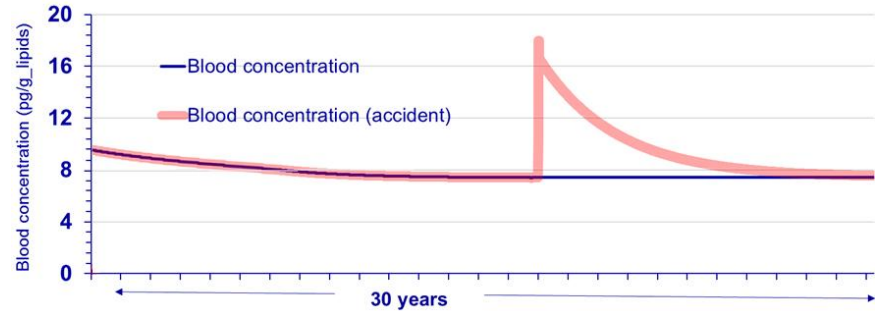
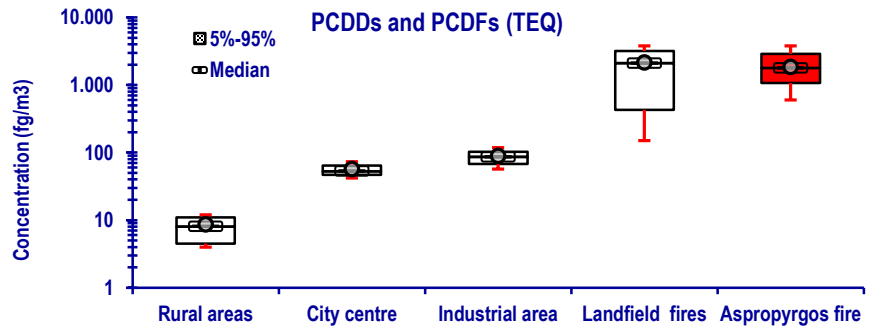


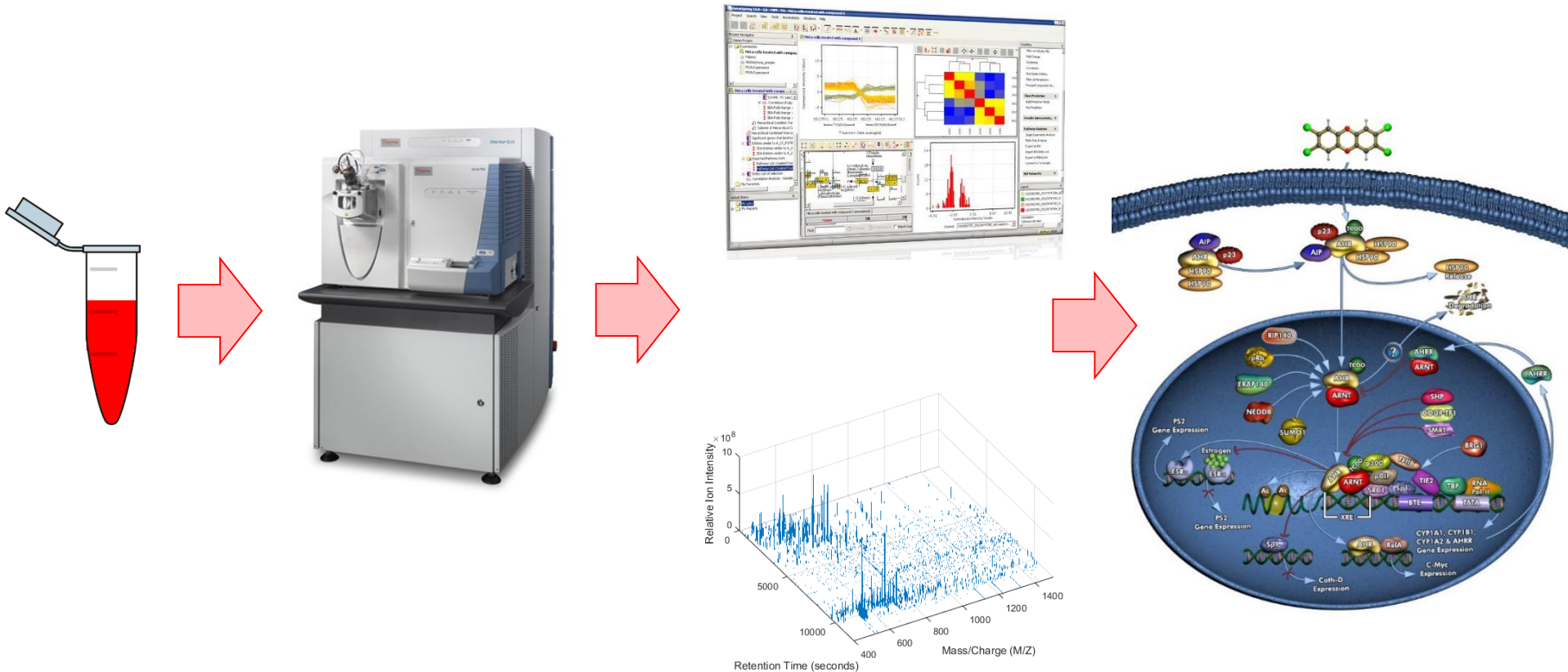
CSIC



Key findings regarding health impact in the study regions - Greece

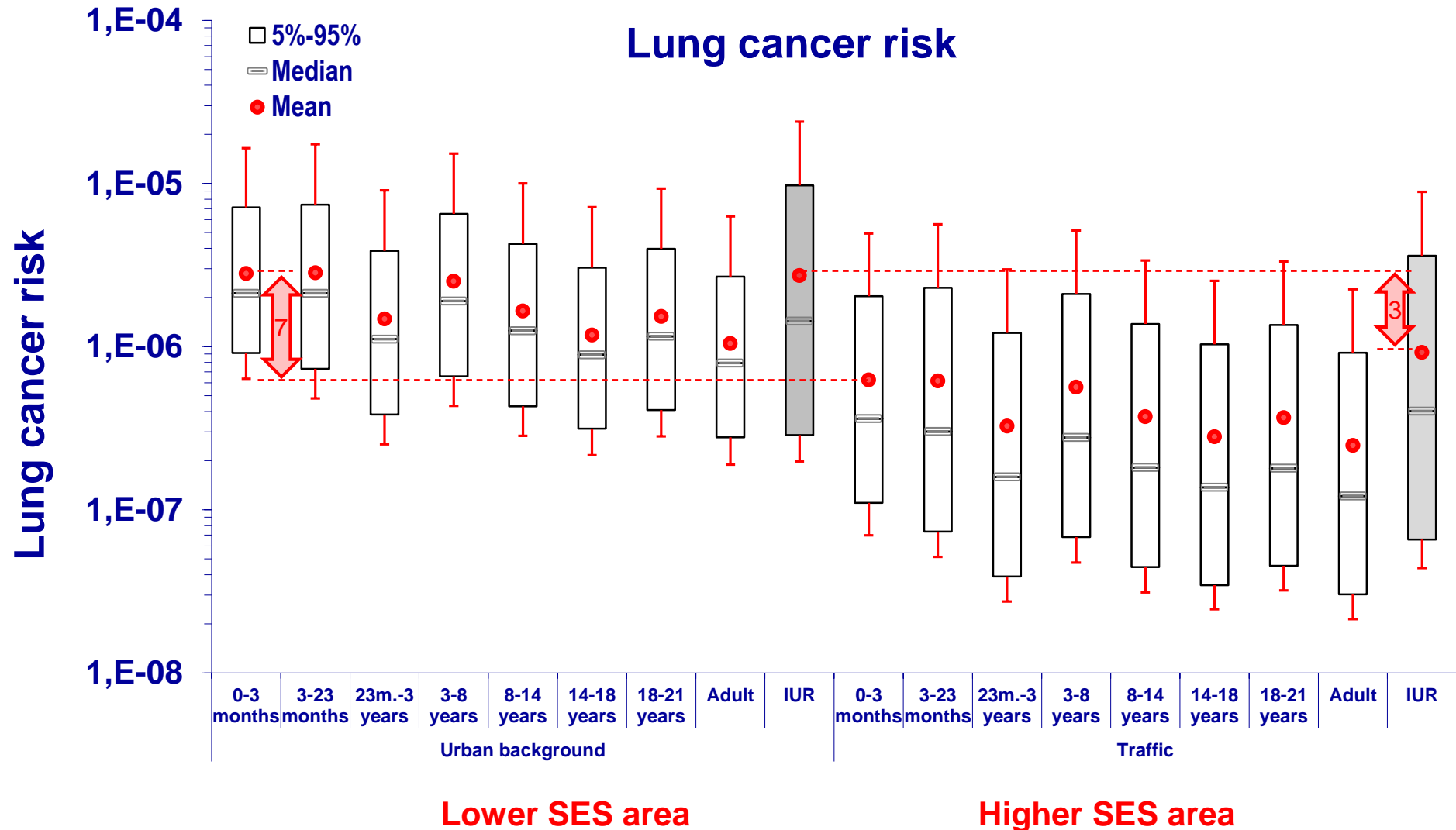
Recycling plant accidental event





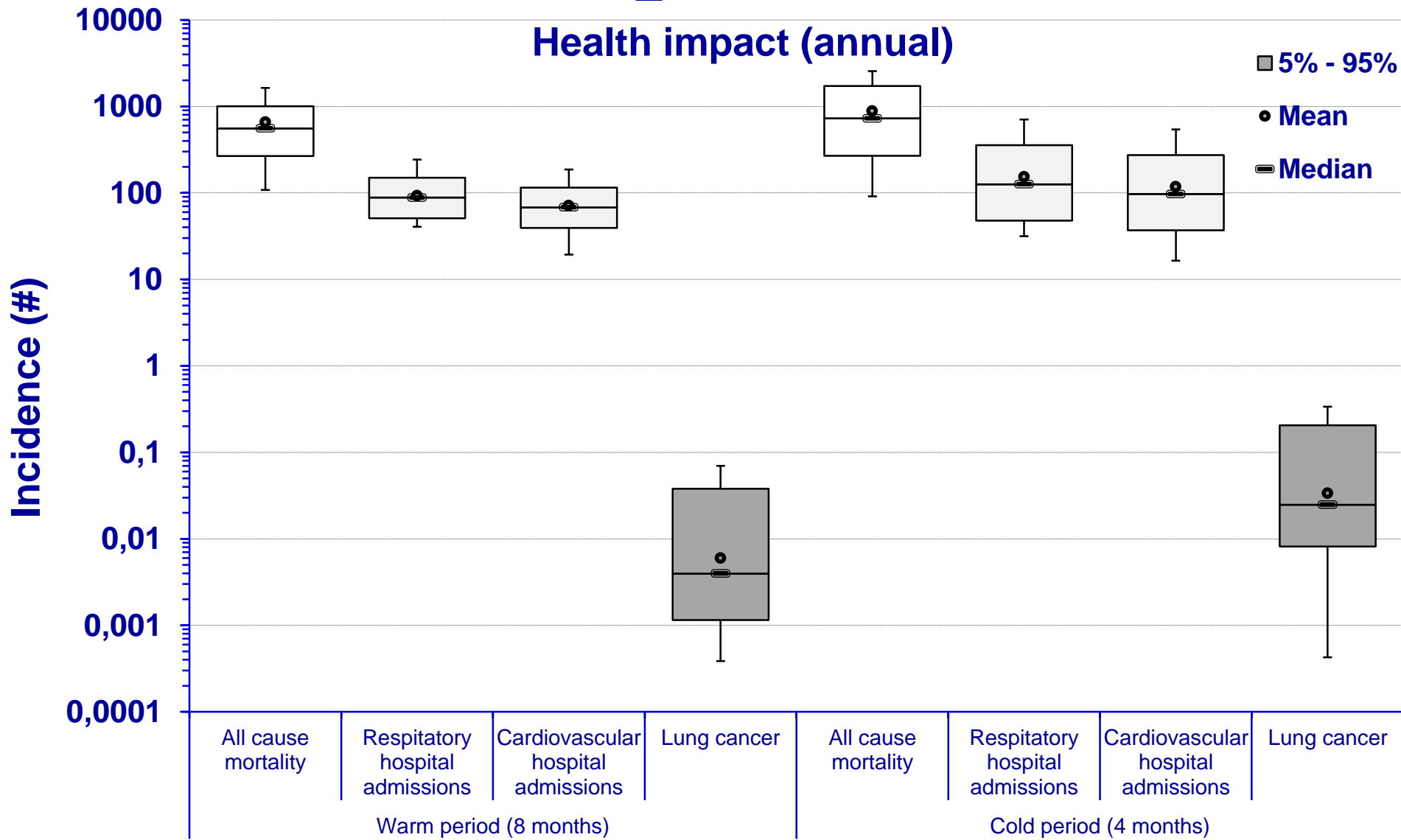
Increased levels of unsaturated vs saturated fatty acids, compared to controls → cholesterol homeostasis perturbation → **AhR deregulation**

The effect of biomass burning in Greece



The effect of biomass burning in Greece

Health impact (annual)

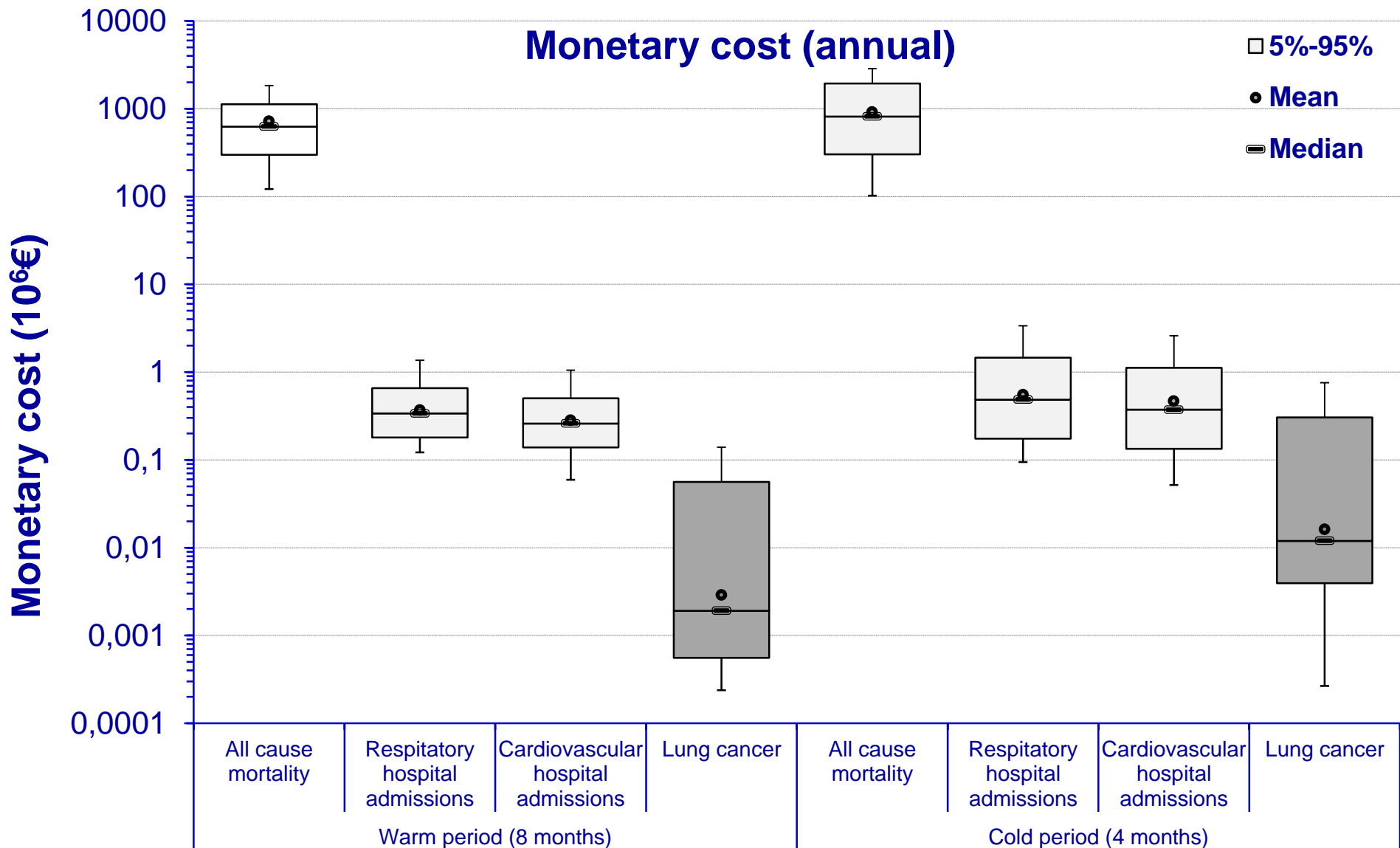


Monetary impact of health effects

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Monetary benefits from CROME interventions

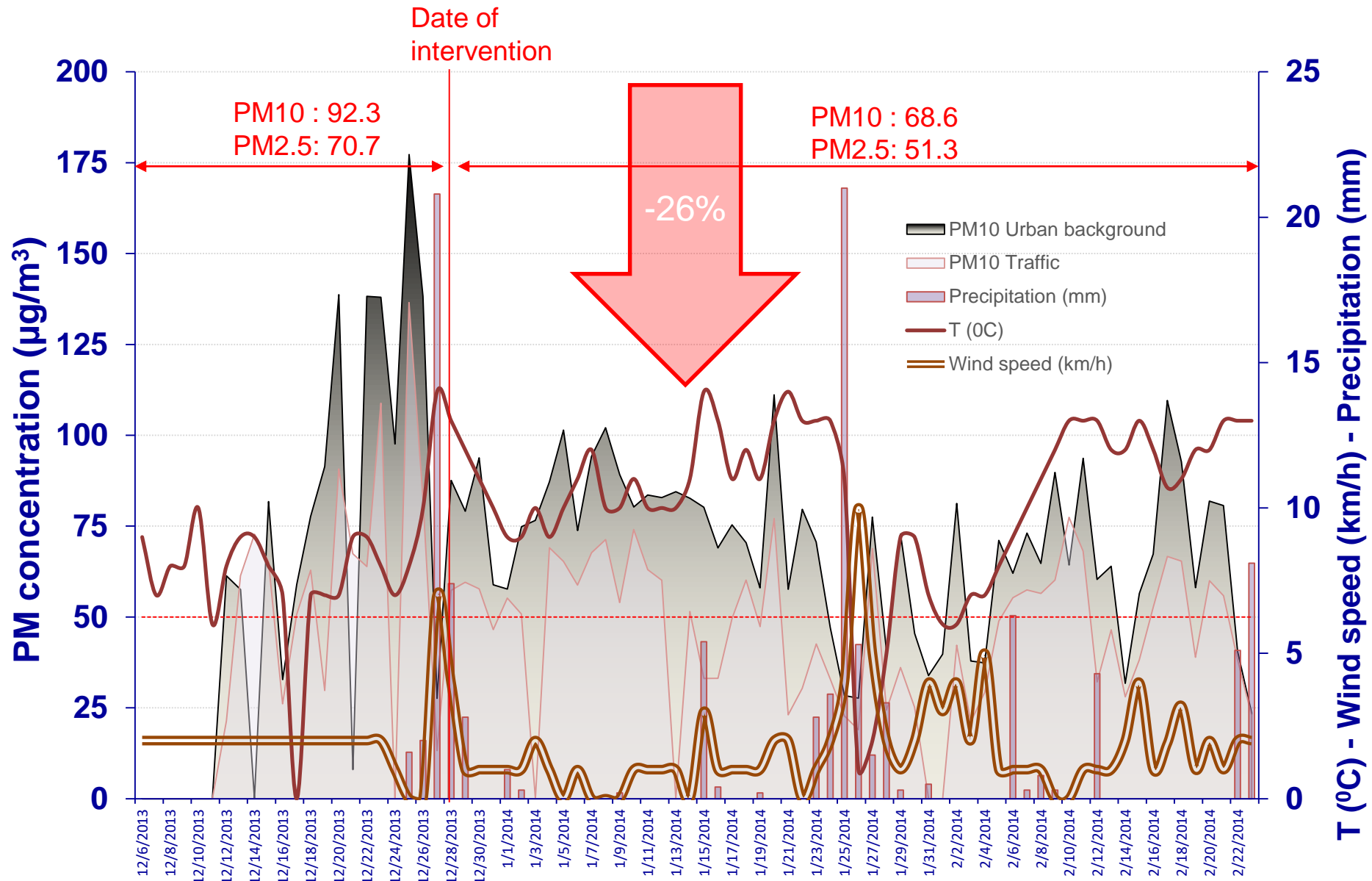
The effect of biomass burning in Greece



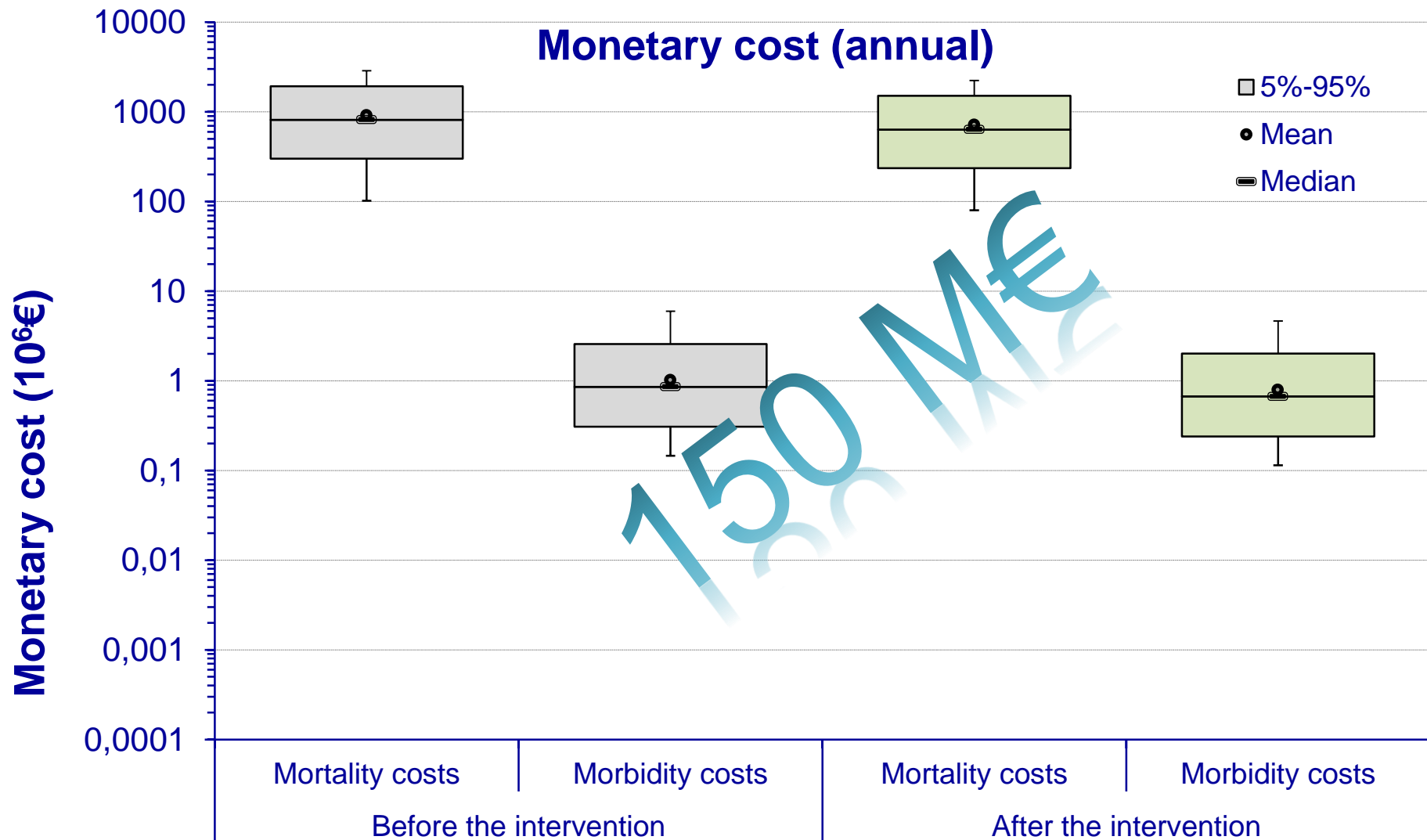
A tiered measure strategy was proposed and adopted by the Hellenic government in the form of a Joint Ministerial Decree (**KYA 3272, 23/12/2013**) under the title “**Short-term action plans to address air pollution by particulate matter**” among Ministries of Health, Financial, Internal Affairs, Development And Competitiveness, Education And Religious, Administrative Reform And Government - Wellness - Infrastructure, Transport And Networks - Environment, Energy And Climate Change - Public Order And Protection Citizen - Shipping And Islands

- Information of the public
 - Reducing exposure of susceptible groups
 - Avoiding intensive exercise
 - Avoiding effort.....

- Actions for restricting emissions
 - Reducing traffic emissions
 - Use of telematics systems – routes optimization
 - Speed limits
 - More passengers per vehicles
 - Restricted zones.....
 - Reducing industrial emissions
 - Shifting into less polluting activities
 - Use of alternative fuels
 - Reducing activity and electricity production
 - Reducing household emissions
 - Reducing energy consumption
 - Use of cleaner energy

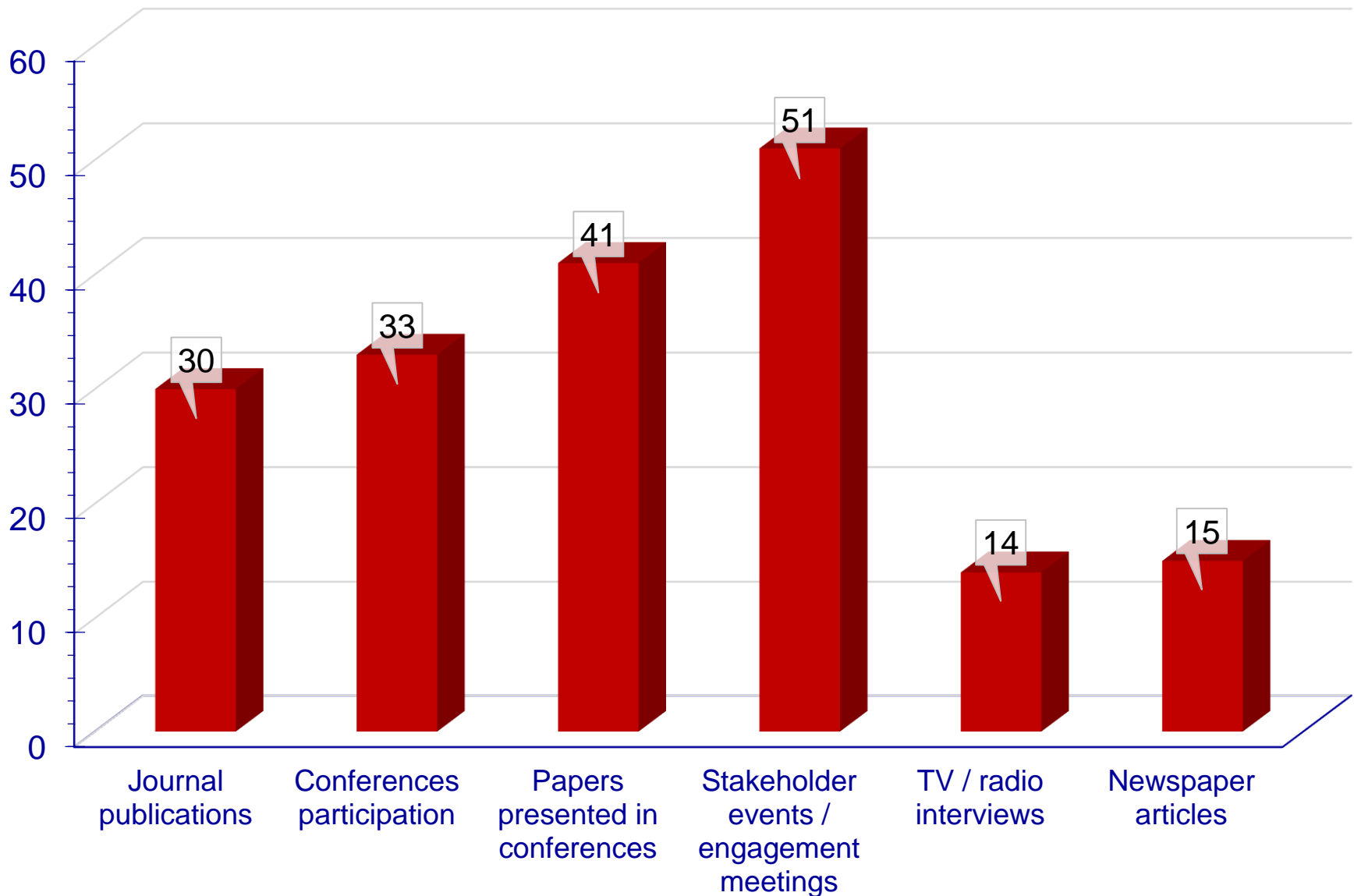


through the CROME intervention





Publications and other dissemination events



TV interviews and press releases



22 November 2016 at PONTOS TV where the CROME-LIFE results on the impacts of air pollution in human health and the detrimental effects of biomass burning were illustrated and discussed



On 7 November, 2016 Prof. Milena Horvat (JSI), Slovenian National TV programme, health effect of exposure to mercury in the framework of the CROME-LIFE project



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Key global stakeholder events

Policy impact



On October 5-6, 2016 Prof. D. Sarigiannis (AUTH) presented an invited talk at the workshop: “Waste, health, sustainability: what way forward” in Bonn (Germany) organized by **WHO** European Center for Environment and Health.



Prof. D. Sarigiannis, based on the outcomes of CROME-LIFE, made clear proposals on waste management policy actions in Europe to ensure health and sustainability in his capacity as WHO advisor on integrated health impact assessment.

This will be used as input to the forthcoming Ministerial Conference of the WHO (13-15 June 2017 @Ostrava, Czech Republic).

Thank you for your attention



www.enve-lab.eu

A new perspective to environment-health interactions