

Partner Search for HORIZON 2020 project

1. Call Information

Call for proposal	SC1-BHC-28-2019
Topic	The Human Exposome Project: a toolbox for assessing and addressing the impact of environment on health
Funding Scheme	Research & Innovation Action / single stage
Deadline	16 April 2019
Internal Deadline	28 th February 2019

2. Project Information

Project Title:

Mitigating the effects of manifold man-made and natural environmental risk factors on lung cancer

Abstract of the project (max. 500 characters):

The problem:

Non-communicable diseases (NCDs) are chronic, not directly transmissible diseases. According to WHO (World Health Organisation) there are four main types: cardiovascular diseases (like heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. Non-communicable diseases are by far the leading cause of death in the world, representing 63% of all annual deaths killing more than 36 million people each year.

This project idea refers to cancer, in particular lung cancer. Today the most relevant risk factors that trigger lung cancer have been identified and verified by respective clinical studies and research results. Apart from the main cause of excessive tobacco consumption, radon exposure is known as the second most common cause for lung cancer in Europe and the US. It occurs naturally in the ground as an interim decay product of uranium. In basements and ground floor rooms with limited air circulation, radon can accumulate to harmful concentrations.

These radon concentrations in the ground and in basements have been mapped in Europe, but these maps are incomplete and there are no defined technical standards for measuring the radon concentrations. Therefore, the identified epidemiological correlations between radon exposure and lung cancer so far are inaccurate.

Since the beginning of 2018 the "EU Directive 2013/59/Euratom - protection against ionising radiation" has been implemented into national law. With regard to human exposure to radon these new regulations require respective measures and responsibilities for recording and monitoring of radon concentrations in buildings.

Objectives of the project:

Within the scope of the HORIZON 2020 Call SC1-BHC-28-2019 the proposing research institute would like to address this problem by a comprehensive epidemiological study regarding the impact of multiple stressors on lung cancer, including passive and active smoking, radon exposure and exposure to dust. Synergistic effects of the risk factors for lung cancer will be considered. The main focus will be placed on

radon exposure and its strength which depends on the local geological subsurface, on the leakproofness of basement rooms and the materials used at respective workplaces or residential rooms.

In order to generate accurate, sound and comparable radon measurements, it is necessary to develop advanced, standardised technical methods for indoor and outdoor radon measurements within this project. This task will be addressed by the German research institute through the development of a novel cylindrical semiconductor measurement tool for accurate capture and analysis of the radon concentration in soils and buildings. In view of the implementation of the "EU Directive 2013/59/Euratom - protection against ionising radiation" this will not only allow to update, correct and complete existing data, but also provide respective radiation exposure data for the multi-level epidemiological research of the whole project consortium.

All data which has been already gathered from European radon studies has to be evaluated according to the newly defined method resulting in an estimation of the difference between obsolete radon measurement values and a hypothetical value that the newly defined value would have yielded.

A cylindrical measurement tool for measuring the radon concentration in soils is developed within this project. It has the advantage of a better exploitation of the bore-hole volume than the already established tools.

The old and new data have to be collected and managed in a database system which has to include all risk factors for lung cancer which can be used as toolbox by researchers and policy makers.

In order to cover the entire scope of this call, all risk factors and multiple stressors for lung cancer need to be included (smoking, exposure to car fumes or industrial emissions) and examined in correlation to each other and with regard to their interdepending carcinogenic impact. Based on these research results appropriate measures for prevention, risk management and mitigation need to be developed. Thus, it is necessary to define further research fields and tasks for the project.

The initiator of this project idea / partner search is a German research institute specialised in developing micro sensors and manufacturing different kinds of silicon based sensors, such as alpha particle sensors.

Total budget: 10 Mio €; envisaged part of the German research institute: 0,5 Mio

3. Target Partner

Target Partner:

(Type: SMEs, Research Institute, University ... and respective Profile: expertise/research field ...)

The German institute seeks companies, research institutes, medical clinics and other organisations in the fields of epidemiological research and trials, medical data capture and analysis for lung cancer, medical policy development, health insurance etc.

Role of the partner within the project:

(expected activities/responsibilities of each partner)

The institute would like to be involved as project partner for the task of radon localisation, measurement and data capture. The institute is looking for a project coordinator / manager as well as project partners for the various research tasks regarding further risk factors, data assessment and management, clinical trials or provider of respective study results, exploitation of the project findings and results, recommendations for implementation of preventative or therapeutic measures, ...

Partners already involved: ...

Preferred countries:

Italy, Spain, Eastern Europe, ...