ERA-ENVHEALTH Second call
Announcement of Opportunity

Five European organisations in the ERA-ENVHEALTH network have joined efforts to organise and fund a

Second call for Transnational Research Projects on

Air pollution in urban areas – health impacts on vulnerable groups under changing conditions

Deadline for Letters of intent applications:
16:00 Paris, France time on Friday 30 March 2012

1. Introduction

1.1 Mobilising European science for environment and health research, policy and practice

European Union level research has significantly improved knowledge about the links between the environment and health. However, understanding the complex interactions is still in an early stage. The diversity of the environment and health theme and the diversity of approaches and associated funding arrangements stem from the wide scope of the research which could be conducted. As a consequence, it is difficult to have a clear understanding of organisational arrangements and governance of the research programmes of each country in this field. The assessment of health impacts is based mostly on scarce exposure data and limited information on the relationship between exposure and health. There is, therefore, a need to strengthen research in this area and to develop methods and tools that will improve the comparability of data. The scientific boundaries created by the remits of different funding organisations have frequently acted as a disincentive to collaborative work. Although research programmes aim towards relevance and efficiency, the results remain dispersed and of limited support for policy-making. In order to tackle the broad and complex issues encompassed in environment and health, both the environmental science and the public health communities need to be mobilised.

1.2 The ERA-ENVHEALTH Network

ERA-ENVHEALTH is a network of 16 public research funding organisations from 10 European countries supporting the coordination of European research programmes in the field of environment and health. ERA-ENVHEALTH is funded as an ERA-NET project under the European Union's 7th Framework Programme for Research and Development.
ERA-ENVHEALTH aims to network its partner organisations to develop a sustainable collaboration in research funding, policy and practice, thereby creating added value in high quality environment and health research across national boundaries.

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One of the activities of ERA-ENVHEALTH is examining the funding of trans-national research and the organisation of targeted calls for trans-national research in the field of Environment and Health.

1.3 A new funding opportunity

Due to the diversity of its partner organisations, ERA-ENVHEALTH brings together different types of national funding organisations: for science-driven, blue skies research and for strategic, policy-oriented research. As such, ERA-ENVHEALTH's joint programme and calls will allow the best researchers across Europe to link up with their peers in ways different from those currently possible within the available European and national funding schemes to:

- address present and future challenges in environment and health;
- help identify and forecast problems;
- network local research, knowledge and management expertise and share research facilities throughout Europe;
- coordinate related activities at national and European levels (e.g. to compare case studies);
- promote trans-disciplinary design of research questions and responses to environment and health challenges;
- increase the efficiency in use of resources for environment and health research.

With its programme and calls, the partner organisations in ERA-ENVHEALTH aim to:

- solve environment and health issues of European and national concern by mobilising and supporting scientifically excellent research;
- promote transnational, collaborative research projects of international excellence at European scale and scope;
- create new funding opportunities in Europe for excellent environment and health science, complementing existing schemes at the European and national levels;
- disseminate research findings and encourage their use and application; and
- contribute to effective and lasting linkages between relevant actors in European E&H science and policy-based organisations in support of evidence-based policy and practice.

A first call about "Health vulnerability resulting from future climate change impacts on soil-water ecosystems, land use and water resources at regional scale" was launched on 3rd march 2008. It led to the selection of two projects, funded by French, Dutch and UK partners. The ERA-ENVHEALTH partners: ANSES, ADEME, BelSPO, Swedish EPA and UBA are now launching a second call:

ERA-ENVHEALTH partner organisations funding this second call		
ANSES	Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail	France
ADEME	Agence de l'Environnement et de la Maîtrise de l'Energie	France
BelSPO	Belgian federal Science Policy Office	Belgium
Swedish EPA	Swedish Environmental Protection Agency	Sweden
UBA	Umweltbundesamt	Germany

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2. Aims of the call

With this call, the partner organisations in ERA-ENVHEALTH aim to:

- solve environment and health issues of European and national concern by mobilising and supporting scientifically excellent research;
- promote transnational, collaborative research projects of international excellence at European scale and scope;
- create new funding opportunities in Europe for excellent environment and health science, complementing existing schemes at the European and national levels;
- disseminate research findings and encourage their use and application; and
- contribute to effective and lasting linkages between relevant actors in European environment and health science and policy-based organisations in support of evidence-based policy and practice;
- support policy implementation.

3. Scope and themes

The call is open to proposals for transnational scientific research projects that:

- link scientific advancement to challenges in environment and health research, policy and practice,
- generate new knowledge and insights,
- generate added value by linking expertise and efforts across national borders, leading to research projects designed at the appropriate scale and scope.
- provide a transnational vision to support policy-making.

3.1 Introduction - Research themes

Research questions must be of a more applied nature and must meet internationally high standards of scientific quality. **All applications must link the environmental sciences with clearly defined and significant problems in human health.** We are looking to encourage multi- and inter- disciplinary teams combining environmental scientists with researchers from other disciplines, in particular medical and related fields (e.g. biomedical, public health). Proposals from teams that also include, depending of the nature of the project, biological, mathematical, social physical and engineering sciences are strongly encouraged. Projects involving policy-makers would be appreciated.

3.2 Theme of the call

The theme for this call is as follows: **Air pollution in urban areas – health impacts on vulnerable groups under changing conditions.**

The text below explains in detail the study framework.

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Air pollution in urban areas – health impacts on vulnerable groups under changing conditions

Health effects of air pollution, both for indoor and outdoor air, and climate change are considered an important local, national and global public concern.

The need for further reduction of short-term and long-term exposures to air pollution, both indoors and outdoors, to further limit the public health burden remains an important issue. Climate change is expected to form an additional contribution to certain risks and future vulnerability of regions and populations will be influenced by implementation of both mitigation and adaptation measures.

Urbanisation is steadily increasing in Europe, causing land use stresses and social inequalities, and by 2020 almost 80% of Europeans will live in urban areas[1].

Larger cities offering favourable overall conditions tend to grow, sprawl but also densify due to everyone claiming more space for living. This can lead to a reinforcement of the urban heat island effect. This densification of cities and the development of cooling technologies may have impacts on air pollution and then on health. Furthermore, due to other climate change adaptation and mitigation measures such as the strong emphasis on thermal insulation of houses, multiple new health burdens can be expected, in winter as well as during heat waves.

Context

At the 5th WHO-Ministerial Conference on Environment and Health in March 2010 in Parma (Italy), European governments pledged to ensure that all current and future mitigation and adaptation climate change measures, policies and strategies integrate health issues at all levels. The Regional Framework for Action "Protecting health in an environment challenged by climate change" was welcomed by all 53 WHO European Member States in the Declaration's Commitment to Act. Governments also vowed to reduce social and gender inequalities in exposure to risk.

Air pollution is a complex mixture of both particulate and gaseous pollutants originating from both local and distant sources. Short-term and long-term exposure to air pollution is associated with premature mortality and a range of cardiovascular and respiratory illnesses.

Although, emissions of most outdoor air pollutants have fallen substantially since 1990, resulting in improved air quality and health, many urban populations still live in zones where EU air quality limits are exceeded[2]. Policies and measures increasingly seek to maximise co-benefits. For example, integrating clean air and climate change objectives within urban planning and community design, like clean (zero emission) and healthy mobility and public transport programmes, energy neutral (or energy producing) buildings, energy efficiency and conservation programmes, climate proofing cities, green spaces, and health promotion planning.

[1] EEA – European Environment Agency (2006): Urban sprawl in Europe: the ignored challenge. EEA report No10. Copenhagen.
UN - United Nations (2008): World urbanization prospects – the 2007 revision. New York.
[2] EEA – European Environment Agency (2011): Air quality in Europe 2011 report.

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Studies on air quality there traditionally focus more on outdoor air which insufficiently accounts for the human habit of staying indoors. People nowadays spend on average 80 to 90% of their time indoors[3]. Outdoor air pollutants can infiltrate indoor air and combine or react with other air pollutants and particles. Over 50% of the particles present in the indoor environment come from outside and for reduction measures it is important to know the sources[4].

First, renovated houses with improved insulation (but also low-energy houses) often lack adequate ventilation. As a result an elevated exposure to mixed chemicals, or biological agents coming from emission sources in the indoor environment can be expected. Moreover, during cold spells in winter, people are inclined to save energy costs by drastically limiting the influx of fresh air.

Second, other energy costs saving methods are becoming more and more popular. Climate "neutral" fuel such as pellets[5] (zibrokamin) or fire wood but also other domestic fuel products (candles, oil lamps...) are more frequently used.

Third, a higher exposure to pollutants (e.g. formaldehyde, terpenes, other VOCs and particles but also bacteria and fungi) is also likely in hotter summers. During heat spells, when no significant temperature gradient between the inside and outside can be expected, there is no explicit use to intentionally aerate because of the insufficient air exchange rate. Incoming air would even deteriorate the indoor air quality. 'Urban heat islands' aggravate this effect. In normal situations, indoor air quality is predominantly determined by product emissions used inside (including cooling technologies) and ventilation. At the moment evidence for no-adverse health effects of construction product emissions has to be adduced by the producing company. The reference conditions for emission measurements are set in chambers at standardised conditions which do not necessarily reflect the reality[6,7]. Moreover, real life conditions and future climate change scenarios will require more demanding tests. This is due to insufficient ventilation, habits of limited aerating, different forms of heating and cooling, and longer periods of higher indoor temperatures.

Finally, additional effects due to climate change are expected. Since the most discussed effects of exposure to indoor and outdoor air pollution are the increased prevalence of respiratory symptoms, allergies and asthma as well as the disturbance of the immune system[8], it is vital to analyse potentially further aggravating factors for health, such as the impact of biogenic allergens on the urban population. So far, no comprehensive studies that specifically depict differences of pollen distribution of natural and planted vegetation along the urban-suburban-rural-gradient are known. Even though climate change scenarios are uncertain about the future prevalence of additional stressors like allergens[9], it is essential to

[3] Federal Environment Agency Germany (2005): Healthier living but how? Practical advices. Berlin.
[4] EnVIE final publishable report (2008): Coordination action on indoor air quality and health effects
[5] Sales numbers in Germany: circa 300.000 pellet heating systems per year.
[6] Chamber emission testing standards: a temperature of 23°C, 50 % humidity and an air exchange rate of 1/2 per hour. www.eurofins.com (12.12.2011).
[7] Formaldehyde (VOC) testing: air exchange rate of 1 per hour and only 45% humidity (EN 717-1), in Asia tests at 25°C/28°C.
[8] WHO Collaborating Centre for Air Quality Management and Air Pollution Control at the Federal Environment Agency Germany (June 2011) –
WHO Newsletter : Krzyzanowski, Michal : New guidance for healthy indoor air. Berlin.
[9] Prevention and promotion of health (August 2011): climate change. Berlin.

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establish a reliable baseline in order to calculate potential future health impacts and describe likely trends in the development of allergies, in particular to provide advice in the context of "greening policies" aiming to improve the general quality of life of citizens and to cool urban areas.

Concerns are higher with regards to vulnerable groups and projects should put the accent on those populations that are most affected. For instance:

- Since the age pattern of European population is shifting and an estimated one third of the population will be older than 65 in 2050[10] in the EU 25 States, the applying project(s) should also lay an emphasis on that vulnerable group. Besides a potential lifelong exposure to pollutants and a likely simultaneous intake of drugs, elderly people also show special physiological characteristics. Increasing body fat, a decreased body heat regulation and naturally lower sensation of thirst all contribute to their higher vulnerability status[11]. In addition, constrained by limited mobility these age groups spend even more time indoors and they are traditionally underrepresented in studies.
- Foetuses, children and adolescents are particularly vulnerable to environmental pollutants, which can lead to irreversible health impairments, such as decreased vital capacity and allergies, among others.
- Depending on policies, on technological and economical constraints, on building location, the burden could be unequally shared depending on social status of people. Already existing inequalities may be amplified by additional constraints due to climate change.

Possible outcomes of applying projects:

It is expected that projects provide a global view allowing policy recommendations looking at indoor or outdoor air quality on the basis of data evidence, showing off public policy alternatives, best practices, and concepts on how those health issues could be tackled. The projects should also provide data type "Cost / benefit" useful for policy makers to give them a better argument in different folders (eco-design, product safety, stem the rising costs associated with substantial treatment of diseases resulting from these phenomena, encouraging behavior change address these phenomena, ...). They should encompass several of the following points:

- Better understanding of health risks associated with indoor air pollution under differing conditions and circumstances related to energy saving and adaptation responses: insufficient ventilation, habits of limited aerating, better insulation associated with low air infiltration, different forms of heating and cooling, longer periods of higher indoor temperatures, and potentially higher humidity.
- Impacts of changes (temperature, humidity, UV, CO_2 concentration …) on:
  - emissions, in particular pollen emissions (faster growth of plants, invasive species, changes in the allergenic potential of pollens)
  - the exposure, relations and interactions between pollutants, pollens and

[10] RWTH Aachen University (2011): Demographic and climatic challenges in cities. Conference Abstracts. Aachen.
[11] Steffens, I./ Fehrmann, S. (2004): Bericht zu einer Stellungnahme der Kommission „Hitzetote" der Arbeitsgemeinschaft der wissenschaftlich medizinischen Fachgesellschaften (AWMF). In: Robert Koch-Institut (Hrsg): Epidemiologisches Bulletin. 24/2004.von Wichert 2004.

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moulds (including during ozone peaks)
  - behaviour and consequences on exposure
- Knowledge of (vulnerable) groups and size of populations exposed to chemicals in the indoor and outdoor environment and the associated burden of disease.
- Better understanding of factors modifying air quality:
  - Differences in urban, suburban and rural indoor air quality during more frequently occurring heat waves and cold spells.
  - Pollutants in houses with low energy consumption in comparison to those with higher energy consumption (quite the actual situation) during heat waves and cold spells (summer and winter periods).
  - Spatial distribution and interaction of additional stressors, such as pollen, in urban, suburban and rural areas.
- Indicators that reflect negative as well as beneficial health impacts of buildings and/or of urban infrastructures/design, including vegetalisation of buildings and public spaces. Health indicators on chemical, biological contaminants and allergies in the context of changes (urban changes, climate changes, increase of inhabitants etc.)
- Perception of the risk, and public health awareness on indoor air pollution, concept for risk communication to provide suitable information for different target groups.

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4. Procedures and criteria

4.1 Eligibility

The call is open to proposals that meet the following criteria:

- The proposals should be within the scope of the call.
- The language of the call and applications is English.
- The transnational, scientific research projects are performed by eligible research organisations (national eligibility criteria may apply).
- **The project consortia must involve groups from two funding countries and may involve groups from other European member states, if self-funded or as subcontractors to one of the research teams from a funding country (subcontracting must be marginal and justified).**
- The co-applicants entering the same proposal must designate a Project Coordinator among them.
- The coordinator will manage each project and be the contact point for the project, including for the scientific reporting.
- The scope or scale of the proposed research exceeds a single country.
- The main applicant is employed by an organisation in one of the countries represented by the ERA-ENVHEALTH partners funding the call.
- Proposals must have well-identified collaboration vectors demonstrating clearly the added-value of transnational collaboration (e.g. common post-docs, sample sharing …).
- Maximum duration of the projects is 3 years and they must start in December 2012 at the latest.
- Co-applicants from the same laboratory cannot enter the same proposal and an applicant can enter only one proposal.
- Dissemination is the responsibility of the funded projects. Plans for dissemination of the results are to be covered in the proposals and will be included in the evaluation procedure.

Policy-oriented, integrated, applied research is requested.

4.2 General procedure

The following procedure will be applied:

1. Letters of intent are submitted to the call secretariat. Submission of a letter of intent is mandatory; it is not possible to enter the procedure at a later stage.
2. The letters of intent are screened for eligibility and for the appropriate format by the call secretariat.
3. An independent, international Evaluation Committee (see below) evaluates and ranks the letters of intent. Based on the recommendations of this Committee, authors of top-ranked letters of intent are invited to submit full proposals.
4. Full proposals are submitted to the call secretariat.
5. Full proposals are sent for international peer review.
6. The Evaluation Committee moderates the assessments provided by the peer review procedure (review reports) and ranks the full proposals. The Evaluation Committee recommends the top-ranked proposals for funding, indicating a cut-off point below which

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proposals are considered of insufficient quality given the purpose of the call and the selection criteria.

7. The funding partners decide jointly on funding of the top-ranked proposals based on the ranked list and the recommendations of the Evaluation Committee.

The Evaluation Committee will consist of international experts in the natural, medical and other relevant sciences. It will also include relevant policy-makers. Once defined, the composition of the Evaluation Committee will be posted on the ERA-ENVHEALTH website.

The call secretariat consists of delegated staff from those partners in the ERA-ENVHEALTH network funding the call. The secretariat is responsible for organising the procedure and for all communication with applicants.
During the entire procedure, strict confidentiality is maintained with respect to the identities of applicants and the contents of the proposals. Upon the final decision by the funding partners, a list of funded projects will be published.

4.3 Evaluation and selection

Potential applicants are advised to take careful notice of the aims and scope of the call as described above.

The following criteria will be applied to assess the quality of proposals:

1. Letter of intent stage

Criteria for the selection of letters of intent will be:
- Scientific Aspects (as below)
- Added value and policy-relevance (as below)

2. Full proposal stage

Criteria for the selection of full proposals will be:
- Scientific Aspects

Scientific aspects will be assessed by means of the following criteria:
- Scientific quality of the proposed research
- Novelty / Originality and innovation
- Clarity of the hypothesis and quality of methodology
- Quality and suitability of the consortium
- Level of interdisciplinarity
- Suitability of resources
- Fit to thematic priorities

- Added Value and policy-relevance

Added value and policy-relevance will be assessed by means of the following criteria:
- Importance of the research for solving pressing concerns/issues related to E&H
- Manner in which stakeholders and end users will be involved
- Arrangements for knowledge transfer
- Benefits at the European level

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- Policy-relevance and policy recommendations

- Project management

Project management will be assessed by means of the following criteria:

- Feasibility and risk
- Level of integration and collaboration
- Suitability of budget requirements
- Quality of project governance
- Nature of links with other programmes (Note: other relevant sources of funding and links with related programmes and must be disclosed)

No additional criteria will be used for evaluation and selection.

5. Funding

5.1 Funding available

For this call a total amount of 1 350 000 € has been provisionally reserved by the participating partner organisations. Indicative budgets for each organisation are given below. In principle, each participant in a funded project will be funded by his or her national organisation(s) participating in the call. The funding partners will attempt to ensure that the top-ranked proposals are funded to the maximum extent possible.

Country	Funding Partners	Indicative budget
France	ANSES ADEME	400 000 € 150 000 €
Belgium	BelSPO	400 000 €
Sweden	Swedish EPA	300 000 €
Germany	UBA	100 000 €

5.2 Eligible budget items

Eligible costs are governed by national regulations. Specific questions should be addressed to the national contact people (Annex 8).

6. Project management and reporting

Funded projects will be required to report annually on research progress and financial aspects.
For the financial aspects, the administrative rules of the relevant funding organisation apply.
For the scientific aspects, the coordinator of the project must report annually using the common reporting template.

By submitting a proposal, all applicants acknowledge the obligation for one representative of each project (in general the project coordinator) to attend the review meetings that the funding partners will

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organise jointly for the follow-up of the funded projects. Researchers involved in funded projects will not claim any additional financial contribution from the funding partners to attend the review meetings. The projects are requested to include travel and subsistence costs for these meetings into their proposals.

7. Further information

7.1 National contact points

Potential applicants are advised to consult the general funding requirements of the national organisations participating in the call. In case of specific questions, please contact the national contact people (Annex 8), especially with regard to eligible costs and other country-specific aspects of the call.

7.2 Call secretariat

The call secretariat is located at:
ANSES - Agence française de sécurité sanitaire de l'alimentation, de l'environnement et du travail
27-31 avenue du général Leclerc
94700 Maisons-Alfort
FRANCE

Tel: +33 1 49 77 13 50
Fax: +33 1 49 77 26 26
Email: envhealthcall@anses.fr

8. Submission of proposals and deadlines

8.1 Project coordinators

Each letter of intent and proposal is submitted by its Project Coordinator on behalf of all the applicants. By submitting an application, the Project Coordinator certifies that each co-applicant has received the official approval to submit from the person authorised to legally commit this co-applicant's institution and that no co-applicant participates in another proposal within the call.

8.2 Applications

Applications will be submitted both in a signed paper version to the secretariat and in electronic form.

The application process has two stages:

1. **Letters of intent:**

The letters of intent must be submitted in English using the application form that can be downloaded from the ERA-ENVHEALTH website, at www.era-envhealth.eu. Use of the form is mandatory; deviation from the designated format will result in rejection.
Letters of intent should be submitted electronically via email to the call secretariat at **email address: envhealthcall@anses.fr before 16:00 Paris, France time on Friday 30 March 2012**.

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Applications received after the deadline will not be considered. In case of technical questions, please contact the call secretariat.

2. **Full proposals:**

Applicants with successful letters of intent will be notified following an Evaluation Committee meeting at the end of April.

The deadline for reception of full proposals will be at end of June; applicants will be informed of the precise deadline for reception of full proposals at the time of notification.

Full proposals must be submitted in English and should be submitted electronically via email to the call secretariat at **email address: envhealthcall@anses.fr.**

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