

Policy Department
Economic and Scientific Policy

**ASSESSMENT OF THE MID-TERM
ACHIEVEMENTS OF
THE EUROPEAN ENVIRONMENT AND HEALTH
ACTION PLAN (2004–2010)**

This study was requested by the European Parliament's Committee on the Environment, Public Health and Food Safety. (Ref. to IP/A/ALL /FWC/2006-105/LOT 2/C1/SC2)

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Executive Summary

In June 2003, the European Commission launched a European Environment and Health Strategy, often referred to as SCALE - for Science, Children, Awareness, Legislation and Evaluation, which are the five main features of the strategy. As a follow-up to this strategy, the European Commission presented “The European Environment and Health Action Plan 2004-2010” in June 2004 in order to provide the scientifically grounded information to reduce negative health impacts of certain environmental factors. Consisting of 13 action points, the Action Plan focuses on three main areas: improving the information chain; filling the knowledge gap; reviewing policies and improving communication. In June 2007, the European Commission issued a Communication on the Mid-term Review of the European Environment and Health Action Plan 2004-2010 in order to present progress achieved.

The objectives of the present study are to provide an independent assessment of the achievements of the Action Plan in order to give balanced views and, subsequently, to provide information and recommendations which may improve and strengthen the European approach to integration of environment and health issues.

The Action Plan aims at a better health from a better environment through a strengthened cooperation between the respective research fields at European and Member States levels. The rationale is that a cross-disciplinary knowledge base must be established so that integrated information and analyses can provide concrete measures, by which European environment and health research results will be fed into policy-making. The Action Plan’s ultimate goal is to develop a ‘cause-effect framework’ by measuring and analysing environment and health cocktail effects, combined exposures, and cumulative effects.

The assessment of the Action Plan concludes that the **overall approach is well constructed** to ensure that risk management decisions by public policy makers are taken on the basis of appropriate information. On the implementation side, however, the Action Plan has **a number of deficiencies as regards funding, timeline, specifications of mechanisms and setting up of targets**. Thus, several actions are planned for the first few years (2004-2007) whereas the last period of the first cycle (2008-2010) is for the main part left empty or without any precise proposals or initiatives. Another issue of potential concern is the occurrence of unspecified actions where no concrete targets have been put forward, and no timeline or benchmarking activities described neither for Community or national activities.

The overall objective of the **Mid-Term Review** of the Action Plan 2004-2010 is to review the Action Plan, present progress achieved at the Mid-Term of the Action Plan, describe developments in the different policy areas and highlight areas that need special attention in the remaining period. The review offers a **careful investigation of the developments in the different policy areas but largely fails to address potential means for improvement and relevant follow-ups** with regard to both the remaining 3-year period and discussion of priorities relating to the second cycle.

Regarding actions to improve the information chain, it was still not clear whether a decision regarding indicators had been made or whether these indicators had been incorporated at the EU-level and will be used by Member States in their collection of information. As for actions to fill the knowledge gap (research) a large number of research projects had been initiated but without or with a vague connection to the policy level and no recommendations on how to link the two levels. Finally, regarding the responses to the research initiated and information gathered, very few projects related to awareness raising were found. Almost no legislative reviews have been initiated and the ones which have been launched, i.e. Action 12 on indoor air quality, had been poorly coordinated.

Overall, the Mid-Term Review can present **progress in terms of setting up research and information systems, but very little in terms of taking measures to reduce risks**, at least not beyond actions deriving from other channels and sources of funding.

There is also a lack of a clear framework for funding of activities. This means that the Action Plan depends on other sources and EU-initiatives, primarily funding from research programmes, which is not always constructive. Finally, a **lack of human resources** within the European Commission services for implementation of the Action Plan is perhaps the gravest problem. It prevents the proper use of the information and research obtained which means that there is a very small or no chance at all to connect the results to actual policy. It also means that it is difficult for MS to act as there is no clear delegation of authority and responsibility.

Finally, a number of important issues may not have received enough attention in the Action Plan, including the connection between the Action Plan and REACH, the health aspects of climate change, and the policy options on indoor air quality.

As regards the health aspects of **climate change**, there are a number of recent and planned Commission initiatives, including the recent publication of the Green Paper “Adapting to climate change in Europe – options for EU action” in which health is a focus area, and a number of initiatives are planned for 2008. Thus, there seems to be no lack of initiative. However, the task of designing and enforcing an integrated policy addressing climate change is associated with a high degree of fragmentation of expertise and of responsible authorities. Climate change needs to be integrated into the Action Plan in order to safeguard commitment as well as strengthen the coordination of the policy area.

On **indoor air quality**, the conclusion is that little progress has been achieved in terms of turning the already plentiful evidence into practice. This may be a result of the difficulties to assess progress in the lack of any performance indicators, but it is also clear that policy-making within the area is met with a number of barriers, including subsidiarity, fragmentation of expertise and stakeholder interests, differences in climatic and social conditions across the EU, the difficulties of making policy for the private sphere, the clash with energy efficiency requirements, and difficulties of monitoring.

REACH has been, and still is, a controversial piece of legislation, and there is not much agreement on what – if anything - can be done to strengthen the link between REACH and the Action Plan. However, it is clear that there is, as a minimum, a need for more resources for co-ordination and exchange of knowledge between the two initiatives, preferably in the form of a dedicated co-ordination unit set up by the European Commission. It has also been proposed that a “trigger mechanism” could be developed under the auspices of the Action Plan whereby new evidence of links between substance exposure and damage to human health would trigger control under the relevant legal instrument.

Finally, it has been discussed how the link between research and policy making could be improved in order to achieve the ultimate goal of the Action Plan. It will be necessary to revise the prevention policies of EU and its MS, in order for them to reflect the latest scientific knowledge and fully incorporate the Precautionary Principle in such a way that it would become an “**Evidence for Action**” approach. This means that decisions should not be based on an assumed certainty of the scientific information available but rather on an estimate of the *uncertainty*.

The key recommendations of the study are as follows:

1. To push for the next cycle of the Action Plan to include more concrete action, such as legal instruments.
2. The establishment of a Coordinating Unit to ensure that the necessary financial and human resources are devoted to environment and health issues.
3. A financial plan to secure proper financing for the implementation of the priority actions of the Action Plan; especially an ensured funding of the Bio-monitoring pilot project is urgent.
4. A conference involving all relevant actors, to set the agenda for the continued work and setting up priorities for the second cycle. Annual meetings (Councils) of European Health and Environment Ministers.
5. The course taken towards more extensive adaptation strategies concerning climate change and health should be withheld and safeguarded.
6. A green paper on policy options on indoor air quality as the first step towards further EU legislation.
7. A conference specifically addressing action 12 on the Action Plan to be held in order to strengthen the dialogue between institutions and co-ordination among researchers, stakeholders and policymakers.
8. Strengthening the co-ordination and interaction with REACH.
9. Full incorporation of the Precautionary Principle in a strengthened European Prevention Policy in such a way that it would become an “Evidence for Action” approach.
10. A full assessment of the Action Plan at the end of 2010.

1. Introduction

In June 2003, the European Commission launched a European Environment and Health Strategy¹, often referred to as SCALE - for Science, Children, Awareness, Legislation and Evaluation, which are the five main features of the strategy:

- it is based on **science** and looks at the complex interactions between different pollutants and the human body;
- it focuses on **children**: the European Commission launching pilot actions on pollutants with specific relevance to children, such as dioxins, heavy metals and endocrine disruptors;
- it aims to raise **awareness** from stakeholders and the general public;
- EU **legislation** will complement national laws and be reviewed to reflect children's special situation and needs;
- actions taken will undergo constant **evaluation** procedures.

The Strategy was jointly designed by three Directorate-Generals Environment, Research, and Health, and the Joint Research Centre (JRC), and had as purpose to build a closer co-operation between these three areas. The long-term vision was to address the links between poor health and environmental problems, and to reduce diseases linked to environmental factors².

As a follow-up to this strategy, the European Commission presented “The European Environment and Health Action Plan 2004-2010”³ in June 2004 in order to provide the scientifically grounded information to reduce negative health impacts of certain environmental factors. Its added value is the development of Community System integrating information on the state of the environment, the ecosystem and human health to render the assessment of the environmental impact on human health more efficient⁴. Consisting of 13 action points, it focuses on three main areas:

- improving the information chain;
- filling the knowledge gap;
- reviewing policies and improving communication.

The Action Plan reflects a joint commitment of DG Environment, DG Research, and DG SANCO and provides an important benchmark against which to evaluate the evolution of different policies and point at viable pathway forward.

In June 2007, the European Commission issued a Communication on the Mid-term Review of the European Environment and Health Action Plan 2004-2010⁵ in order to present progress achieved.

This study on “Assessment of the achievements of the European Environment and Health Action Plan (2004 – 2010), in the context of its Mid-term Review” was requested by the Committee on Environment, Public Health and Food Safety (ENVI) of the European Parliament.

¹ Communication from the Commission on a European Environment and Health Strategy COM(2003) 338 final

² <http://ec.europa.eu/environment/health/strategy.htm>

³ Hereafter referred to as the Action Plan

⁴ Communication from the Commission on a European Environment and Health Action Plan 2004-2010 (COM(2004) 416 Final)

⁵ Communication from the Commission on Mid-Term Review of the European Environment and Health Action Plan 2004-10 (COM(2007)314 final)

The objectives of this study are: to provide an independent assessment of the achievements of the Action Plan in order to give balanced views; and, subsequently, to provide information and recommendations which may improve and strengthen the European approach to integration of environment and health issues.

In particular, this study should provide more recent information on issues such as:

1. How to turn the “**Gold Mine**” of environment and health research results into **coherent EU policy** (in particular link “Health in All Policies” to a more primary preventive policy that has EU added value)?
2. How to ensure that all actors are involved in a more **holistic approach, particularly to climate change mitigation and adaptation** (for example linking air pollution abatement policy to climate change policy)?
3. How to create an efficient EU policy related to **indoor air quality and health outcomes**, particularly considering that citizens spent about 90% of their time in indoor environments: Is it now time to call for concrete action at EU level?
4. Now that **REACH** has entered into force, how to ensure that the Environment and Health Action Plan provides the mechanism by which information from REACH implementation can be used to strengthen our understanding on impact of hazardous chemicals on public health?
5. Look at how the EU **prevention policy** can be strengthened in the relation with anti-drugs actions, mental health, and civilization diseases, and in order to support a healthier life style (including improving health and safety at work).

1.1 Scope of the study

It was chosen to concentrate on certain priority areas such as climate change, REACH, and indoor air quality where the interaction of health and environmental concerns is of particular importance in order to strengthen a future European approach to both environment and health issues. Therefore, the assessment cannot and should not claim to be a comprehensive assessment covering all aspects of the above-mentioned areas but only addresses aspects related to the Action Plan. The nature of this assessment is one of overview, discussion and policy recommendations more than an in-depth analysis of detailed technicalities.

At the same time, the scope is confined to evaluating the implementation at EU level and will only address national implementation to the extent that it contributes to and affects the understanding and actions at the European level. While recognizing that the Action Plan also calls for action at Member States level, national implementation of the Action Plan in itself is beyond the scope of this study. Similarly, the study primarily addresses implementation within the geographical limits of the EU and does not addressing external actions as such although, admittedly, environmental impact on health is also of relevance for e.g. Accession Countries.

1.2 Outline of the assessment

Chapter 2 provides an overview of the key elements and content of the Environment and Health Action Plan, and presents different views and positions on the Action Plan. This is followed by a discussion of the EC Mid-Term Review in chapter 3, which also goes into more detail regarding the status and progress on each of the 13 actions of the Action Plan.

In chapter 4, focus is on a number of key issues which are not (or not sufficiently) addressed by the Action Plan in its current forms. These include the effects of climate change on health, the indoor air quality policy, and the possible linkages between the REACH legislation and the Action Plan. Furthermore, the broader implications of the study as regards the link between research and policy, a more holistic approach, and the structure and basis of a European Prevention Policy will be discussed.

Finally, chapters 5 and 6 summarise the conclusions and recommendations made on the basis of this study.

2. The Environment and Health Action Plan

This chapter discusses the wording of the Action Plan, its key elements and content before turning to the Mid-Term Review and the actual progress made. Firstly, the strategy and key elements of the Action Plan are outlined. Subsequently, the rationale, relevance and implementation schedule of the Plan are analysed and, finally, different stakeholder positions and views on the Action Plan are presented.

2.1 Strategy and key elements

At the heart of the European effort to address the links between poor health and environmental problems is the European Environment and Health Strategy (SCALE)¹. The implementation of the strategy is meant to occur in successive cycles and the present Action Plan covers the first cycle (2004-2010). During the initial period of the Action Plan, the general focus has been on setting up targeted research actions in order to improve and refine knowledge of the causal links between the environment and our health.

As mentioned, it is structured in three main themes which could be headed: **information, research, and response** (review of policies and improvement of communication).

The Action Plan is summarized into 13 actions divided into the three categories above.

The first four actions deal with improving the information chain by developing integrated environment and health information to understand the links between sources of pollutants and health effects. Specifically:

- (1) environmental health indicators are developed;
- (2) integrated monitoring of the environment, including food, to allow the determination of relevant human exposure is developed;
- (3) a coherent approach to bio-monitoring in Europe is developed, and
- (4) coordination and joint activities are enhanced.

The following four actions are intended to fill the knowledge gap by strengthening research on environment and health and identify emerging issues. The actions are:

- (5) to integrate and strengthen European environment and health research;
- (6) to target research on diseases, disorders and exposures;
- (7) to develop methodological systems to analyse interactions between environment and health;
- (8) to ensure that potential hazards on environment and health are identified and addressed.

Finally, the last five actions are meant to be a response to the previous actions outlined. They should together review policies and improve communications by developing awareness raising, risk communication, training, and education – “to give citizens the information they need to make better health choices, and to make sure that professionals in each field are alert to environment and health interactions”. These responses are:

- (9) development of public health activities and networking on environmental health determinants through the public health programme;
- (10) promote training of professionals and improve organisational capacity in environment and health;
- (11) coordinate ongoing risk reduction measures and focus on the priority diseases;
- (12) improve indoor air quality;
- (13) follow developments regarding electromagnetic fields.

¹ Jointly published by the Directorates-General of Environment, Health, and Research and the Joint Research Centre in June 2003

2.2 Relevance and rationale

The Action Plan aims at a better health from a better environment through a strengthened cooperation between the respective research fields at European and Member States levels.

The Action Plan begins with the intrinsic and instrumental primary reasons for improving our health; it is a source of better quality of life and plays a major role in long term economic growth and sustainable development: *“It is not so much the cost of health that is high, but rather the cost of ill-health”*¹. Hence, the aim of the Plan is undeniably relevant.

Furthermore, it is argued that the EC has an obligation towards public concern and the Treaty to shed light on the connections between our health and the environment so that this interdisciplinary challenge can be addressed more efficiently.

It is mentioned that we are as individuals to a large extent responsible for the lifestyles that we choose (except children and vulnerable groups on which the Action Plan especially focuses) and that some influences are beyond our control. However, the Action Plan aims at providing us with reliable information so that our decisions are made on an informed basis.

The rationale is that a cross-disciplinary knowledge base must be established so that integrated information and analyses can provide concrete measures “by which European environment and health research results will be fed into policy-making”². The Action Plan’s ultimate goal is to develop a ‘cause-effect framework’ by measuring and analysing environment and health cocktail effects, combined exposures, and cumulative effects. This would undoubtedly be helpful for European politicians and legislators. This approach also means that the strategy is long-term, gradually expanding, and implemented in cycles. Only when sufficiently clear evidence is available can appropriate policy be developed. This seems a reasonable attitude in initial cycle strategies.

Furthermore, the Action Plan has been developed in close cooperation with leading experts from the Member States, NGO’s and representatives of the main stakeholders. This development process ensures political commitment from each Member State and enables coherence of the overall strategy commonly agreed upon. The complementarity of individual state ownership and European strategic harmonization is a constructive beginning and lives up to the research agenda of rethinking independent areas and levels of information and action.

2.3 Implementation

The actual implementation of the Action Plan has been further developed and described in the technical annexes to the Action Plan. Several actions are planned for the first few years (2004-2007) whereas the last period of the first cycle (2008-2010) is for the main part left empty or without any precise proposals or initiatives. This applies to Action 1 and Action 2 where no real action is foreseen after 2005 and for Actions 6 and 7 where it says that the results of the research will be “fed into policy” as it emerges³ but does not specify how and when this is envisaged to happen. This goes also for Actions 8, 9 and 10 where the relevant cells in Annex III (*Time-lines for implementation of the main Action groups*) have been left entirely blank for the last period except for the ongoing activities of promoting networks between stakeholders to improve capacities on environment and health.

¹ The European Environment and Health Action Plan 2004-2010 (SEC(2004) 729) p. 3

² The European Environment and Health Action Plan 2004-2010 (SEC(2004) 729) p. 4

³ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010 p. 20

The Technical Annex does state, however, that it will be up to the Mid-Term review to identify the appropriate follow-up to the initial actions¹ but does not specify whether this concerns the second cycle or the latter part of the first cycle.

Another issue of potential concern is the occurrence of unspecified actions where no concrete targets have been put forward, and no timeline or benchmarking activities described neither for Community or national activities. This shortcoming is a general concern throughout the Action Plan (cf. above), but is particularly relevant to Actions 4, 11 and 13. On Action 4 about enhancing coordination and joint activities on environment and health, it says that the European Commission “will work to promote continued exchanges” and that the Commission, where appropriate, “will support exchanges [...], for example by promoting best practices”². But how will this coordination be done? Who will be responsible for it? Similar wording and even more vague descriptions are found regarding Action 11 and 13.

Of the 13 Actions, in fact only a few involve concrete measures, i.e. Action 3 on bio monitoring, Action 5 on integrating European environment and health research and Action 12 on indoor air quality but none of these sets up specific and definite targets.

Finally, another issue to be mentioned under the heading of implementation is the lack of a clear framework for funding of activities. As stated in the Technical Annexes, the financial commitments for 2007 are dependent on their coherence with the new financial perspective and all financial commitments post-2008 must await a decision on a new public health action programme³. It must be acknowledged that fiscal limits to a certain extent are externally given but, at the same time, it could be expected that an Action Plan engage itself in the most basic considerations of potential sources of funding for the period in question.

2.4 Positions on the Action Plan

Viewpoints of different stakeholders, researchers and Member State representatives on the Action Plan have been collected for this study through in-depth interviews with a wide range of stakeholders. Their purpose is to elaborate, guide and expand upon the analysis and available knowledge. A lot of respondents raised the same issues that were just highlighted above, thus this section will only discuss the issues not yet touched upon.

First of all, the majority of the stakeholders emphasize that the Action Plan finds its strength in integrating and linking health and environmental issues and manages to put the issue of environment and health relations on the political agenda. The SCALE strategy and the Action Plan constitute the first serious attempt to integrate these issues at a European Level and this must be acknowledged. An MS representative points to the fact that this Action Plan is also the first of its kind to be jointly designed and created by different DGs⁴ which shows an institutional effort of integration and collaboration at EU-level.

However, several stakeholders⁵ mention that a lot of the ideas and policy recommendations laid out in the SCALE Strategy were left out in the wording of the Action Plan. Both the “L” for Legislation and the “E” for Evaluation are almost non-existing which means that no legislation is proposed and no real evaluations have been planned as foreseen in the Action

¹ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010, p. 21

² Ibid., p. 7

³ Ibid., p.19, The current Community Public Health action programme runs 2003-2008, http://ec.europa.eu/health/ph_programme/programme_en.htm

⁴ Interview with Pierre Biot, Federal Public Service (FPS) Health, Food Supply Chain and Environment, Belgium; February 25th 2008

⁵ Interview with Marc Pallemmaerts (IEEP), January 17th 2008; Christian Puppincx (CEEP), February 7th 2008; Christian Farrar-Hockley (HEAL), January 21st 2008 and Maureen Butter (Dutch Platform Health and Environment), January 29th 2008

Plan, except the Mid-Term Review itself. Furthermore, the significant contributions from the consultative group and the SCALE working groups have to a large extent been disregarded¹.

Regarding the lack of legislative action, the opinions of the stakeholders are deeply divided on the appropriate approach. Some say that legislative action is necessary in order to get the Member States to comply and to set up coherent frameworks for action² which can ensure appropriate control and standard setting³. Others say that legislation is not the way forward since although you can force the national level to comply with standardisation measures, you are better off by asking them⁴. They all agree, however, that a review of existing legislation could be fruitful but is currently lacking in the Action Plan. Dr. Catherine Ganzleben from the European Environmental Bureau (EEB) explains that it would be useful to identify measures in *existing legislation* that generate information and data that can then be drawn into this process to avoid duplication. The problem is, as mentioned before, that the Action Plan is currently at a “very strategic level” and it lacks “concrete detail of through which specific mechanisms the key goals can be achieved”⁵. The Health and Environment Alliance, HEAL, agrees and argues that technically, the Action Plan is not even an Action Plan as it contains major shortcomings in all areas and no mechanism specified for change to happen⁶.

Lack of several elements such as appropriate targets and a thorough implementation timeline has the unfortunate side effect that there is a lack of clear delegation of authority. As there is no clear timetable, is it also not clear what is up to Member States and what is for the European Commission to do. The Institute for European Environmental Policy (IEEP) highlights the fact that public health in general is an area where the EU doesn’t have a lot of competencies. Member States have been quite keen on subsidiarity so a lot of things mentioned in the Action Plan will depend on Member States’ willingness and voluntary participation, i.e. monitoring and information⁷. This makes a clear strategy for implementation of activities even more urgent.

Most interviewees have put forward the opinion that there is too much focus on research in the Action Plan. As HEAL stresses, information is a tool for action to protect health but is not an end in itself⁸. Others, like Cefic, find that research on specific areas is a fruitful and needed basis as it can provide guidance on a number of concerns. Action however is needed in the areas where there is already robust knowledge about the real benefit for health⁹. Research needs to be targeted, ensured adequate funding and later published via the right channels.

2.5 Conclusions on the Action Plan

On the one hand, the three-step approach is well constructed to ensure that risk management decisions by public policy makers are taken on the basis of appropriate information. Thus, awareness-raising in the broad sense to the public as well as in the narrow sense to the decision makers are practised through communication and coordination of integrated research. The ‘expanding cycle’ rationale seems logical and realistically reasonable, but it is important that it can not be read as a way for politicians to delay the legislative and implementation part of the constructive process.

¹ HEAL Response to Action Plan, http://www.env-health.org/IMG/pdf/EEEN_response_to_EU_Action_Plan_final.pdf, Interview with Maureen Butter, Dutch Platform Health and Environment, January 29th 2008 & Christian Puppincx, CEEP, February 7th 2008

² Interview with Christian Farrar-Hockley, HEAL, January 21st 2008

³ Interview with Maureen Butter, Dutch Platform Health and Environment, January 28th 2008

⁴ Interview with Christian Puppincx, CEEP, February 7th 2008 and Loredana Ghinea & Gernot Klotz, Cefic, February 4th 2008

⁵ Response to questionnaire, Dr. Catherine Ganzleben, EEB, January 21st 2008

⁶ Interview with Christian Farrar-Hockley, HEAL, January 21st 2008

⁷ Interview with Marc Pallemarts, IEEP, January 17th 2008

⁸ HEAL Response to Action Plan; http://www.env-health.org/IMG/pdf/EEEN_response_to_EU_Action_Plan_final.pdf

⁹ Interview with Loredana Ghinea & Gernot Klotz, Cefic, February 4th 2008 and interview with Maureen Butter, Dutch Platform Health and Environment, January 29th 2008

The objective and aims of the Action Plan are reasonable and promising. On the implementation side, however, it has some serious downsides as regards funding, timeline, specifications of mechanisms and setting up of targets. These deficiencies will be further discussed in the next chapter on the assessment of the Mid-Term Review.

3. The EC Mid-Term Review

In June 2007, the European Commission published a Mid-Term Review of the European Environment and Health Action Plan 2004-2010. The Mid-Term Review was structured around the three main focus areas of the Action Plan:

- Information/monitoring (improving the information chain);
- Research (filling the knowledge gap), and
- Response: Review and communication (reviewing and adjusting risk reduction policies and improving communication).

According to the Mid-Term Review, “*the strengthened cooperation between the environment, health and research fields at Community and Member States levels is a true achievement*”¹.

The present assessment of the Mid-Term Review will analyse the approach taken by the European Commission and simultaneously outline what is currently being done in the different areas of actions. Consequently, this chapter will provide an assessment of the Mid-Term Review and of the status of the activities based on the most recent and updated information on existing initiatives within the field.

3.1 Objective

The overall objective of the EC Mid-Term Review of the European Environment and Health Action Plan 2004-2010 is to review the Action Plan, present progress achieved at the mid-term of the Action Plan, describe developments in the different policy areas and highlight areas that need special attention in the remaining period². In general, the review offers a careful investigation of the developments in the different policy areas but largely fails to address potential means for improvement and relevant follow-ups.

These shortcomings may of course be due to at least two factors: The vagueness of the Mid-Term Review on these matters may reflect the fact that the Action Plan itself is not very concise and detailed, as discussed at length in the previous chapter. As appropriate indicators have not been set up in the Action Plan from the outset, it is difficult to evaluate progress. At the same time, the causality between environment and health is extremely complex and no straightforward “black-and-white” answers are given; thus, assessing developments in this area is problematic simply because of the nature of the subject.

3.2 Achievements and results

3.2.1 Improving the information chain

Actions 1 and 2 – actions on environment and health information

Action 1 had as its purpose to develop appropriate environmental health indicators whereas Action 2 was to develop an integrated monitoring system.

The indicators were to be developed by the EU-supported WHO European Community Health and Environment Information System (ECOHEIS) project which should then be evaluated with a view to their application at EU-level³. Action 2 is foreseen to be implemented through preparation of an inventory of existing monitoring exercises which will then “be examined to identify” whether sufficient information is available.

¹ Mid-Term Review of the European Environment and Health Action Plan 2004-2010 (SEC 2007/777)

² Mid-Term Review of the European Environment and Health Action Plan 2004-2010 (SEC 2007/777)

³ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010, p4

The European Commission undertook an analysis of the information base in 2006 - the Review of Health and Environment Information¹ - which says that the European Environment and Health Information System (ENHIS 2) project has developed an extended set of indicators of where information at EU-level is still missing, but desirable. The ENHIS 2 aims at starting the operation of a comprehensive information and knowledge system (EHIS) that will help to identify and prioritize wide-spread environmental health problems in the Member States. A decision on which indicators to include on a short-list was to be made in 2007. However, it is still not clear whether this decision has been made or whether the indicators have been incorporated at the EU-level and will be used by Member States in their collection of information.

Regarding the integration of health and environment information, it is explained that the links between sources of pollution and health impacts are essential in order to prioritize action, track development and identify emerging issues. However *“information currently available from monitoring programs may not be apt for this, since it is not always easily accessible, comparable across countries, complete and easy to link”*².

The main conclusion from the Review is that a number of EU-wide environment and health monitoring and information systems exist and assessment strategies to evaluate the environmental impact on health are in place³.

At least two issues arise from this conclusion: How to improve, collect and compare the information gathered and how to ensure that the information is then actually used to influence future policy decisions? In the Mid-Term Review, the European Commission points to the fact that they have initiated several calls and launched tenders for various actions related to the improvement of information systems which is of course welcomed⁴. But at the same time, the Mid-Term Review does not point to solutions to whether and how the results from the studies will be evaluated and how they are supposed to influence policy, which would be a natural next step to consider.

Many stakeholders have reported that more attention needs to be given to the question of whether the right information is gathered⁵ and whether the information is used systematically in an integrated way⁶. Several argue that it is important to remember that information is a means, not an end in itself⁷. Therefore, it is urgent that the development of the Action Plan is carried further and new steps are discussed, including the priorities of the second cycle.

Action 3: Development of a coherent approach to Human Bio-monitoring (HBM)⁸

A substantial number of HBM-projects are already being carried out in the Member States. The main issue for the European Commission will thus consist in the coordination of harmonisation of approaches and strategies. This is to be accomplished by the establishment of a Working Group⁹ to develop a coordinated approach and by the launching of a European Pilot Project to test the approach developed in collaboration with MS¹⁰.

¹ Commission Staff Working Document: Environment and Health Information – Review and Implementation Plan in the context of the European Action Plan on Environment and Health 2004-2010, p 20

² Commission Staff Working Document: Environment and Health Information – Review and Implementation Plan in the context of the European Action Plan on Environment and Health 2004-2010, p.11

⁴ http://cordis.europa.eu/fp7/cooperation/environment_en.html.

⁵ Interview with Loredana Ghinea & Gernot Klotz, Cefic, February 4th 2008 and interview with Maureen Butter, Dutch Platform Health and Environment, January 29th 2008

⁶ Interview with Peter Pärt, JRC, February 21st 2008

⁷ HEAL Response to Action Plan (p.3); http://www.env-health.org/IMG/pdf/EEN_response_to_EU_Action_Plan_final.pdf

⁸ Hereafter HBM

⁹ Hereafter WG

¹⁰ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010, p. 7

Two projects, ESBIO (Expert team to Support Bio-monitoring in Europe)¹ and BiPRO², have been initiated to provide the technical framework for a European coordinated approach to HBM. ESBIO – the scientific support - consisted of experts and researchers (22 institutes from 17 MS³) who have developed a protocol, guidelines and a structure for the pilot project. Subsequently, a consortium has been established, “COPHES”, with 55 Institutions from 24 MS, which has applied for the first call under FP7 for an EU network on HBM to test out the harmonised approach. At the same time, MS have committed themselves to contributing more than 50% of the calculated budget in terms of cash, manpower and existing infrastructures. Talking to various members of the implementation group under ESBIO, it is clear that the support and feed-back from the MS has been very positive, which is underlined by the fact that national funding is in place in most countries. From the EU side, the funding for the pilot project hasn't been ensured, however, as it was not selected for funding under the first call of FP7. The COPHES proposal was ranked first under the HBM proposals, but nine proposals related to other environment and health topics received higher scores and since ranking of the proposals within the first FP 7 call is done per sub-activity, and not per topic under this sub-activity, COPHES was not nominated for support. Lisbeth E. Knudsen, professor at the Public Health Institute at the University of Copenhagen and member of the implementation group, pointed to the fact that the nature of HBM is in the cross-field between research and monitoring/surveillance which is not conducive to pure research financing⁴.

As the main part of the Member State funding is dependent on actual disbursement in 2008, it is imperative for continued progress in this field that the European Commission finds a solution to the issue of funding as fast as possible. HBM can provide a valuable link between environmental stressors and the health outcome as it can measure the actual exposure. HBM can thus potentially guide in the development of targeted strategies for prevention and exposure reduction and that is why it is essential to strengthen and expand research in this area. As a Member State representative points out, the results from the pilot project would also be able to tell us more about the possible connection between the Action Plan and REACH⁵. The possible connection between the Action Plan and REACH will be further elaborated elsewhere in this assessment.

Summing up the challenges within the field of HBM, it is first of all important to emphasize the urgency of ensuring the funding of the pilot project. At the same time, it is essential that the Commission now – in consultation with the widest range of stakeholders possible – begin to discuss the future elaboration of the HBM approach and the post-pilot phase. This means discussing priorities for the second cycle. It is recommended that the Commission arrange a conference to discuss the value of HBM in relation to other emerging environmental issues, like climate change or hazardous chemicals. Finally, it is also necessary to begin discussions as to how data from HBM can be integrated with the wider health and environment information system.

¹ <http://www.eu-humanbiomonitoring.org/sub/esbio.htm>

² Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final) p. 5. The acronym is not specified.

³ http://es.epa.gov/ncer/publications/meetings/09_25_07/sepa_iccai_092507.pdf

⁴ Interview Lisbeth E. Knudsen, Public Health Institute at University of Copenhagen, January 31st 2008

⁵ Registration, Evaluation, Authorisation and Restriction of Chemical substances; Interview Pierre Biot, Federal Public Service (FPS) Health, Food Supply Chain and Environment, Belgium, February 25th 2008

Action 4: Enhancing of coordination and joint activities on environment and health

The improvement of coordination between health and environment authorities will from the Commission's side be carried out by promoting "continued exchanges [...], for example by promoting best practices"¹.

This type of declaration of intent is not easily assessed which perhaps is the reason why the Mid-Term Review has chosen to disregard a review of Action 4.

Some of the stakeholders stress, however, that a strengthened co-operation and integration of health and environment sectors is probably one of the budding but real achievements of the Action Plan. The representative from Dutch Platform Environment and Health explains that there has been a communication gap between the two areas because of a huge difference in culture between health and environment sectors². Where DG Environment is used to working with a wide range of stakeholders demanding a great deal of transparency, DG SANCO works more in closed, scientific groups³. Cefic adds that one of the benefits of the Action Plan is bringing together different disciplines in the Environment and Health area and also the different ministries (e.g. environment ministries and health ministries) into a dialogue and cooperation mood⁴.

This coordination is, however, still at an early stage and has yet to be intensified in order to make a real impact. For the remainder of the first cycle, The European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest (CEEP) suggests that one could imagine regular (annual) conferences with all European health and environment ministers to strengthen this integration. At the same time, one could "kill two birds with one stone" and invite researchers and various stakeholders in order to facilitate knowledge sharing – the aim of Action 5⁵.

3.2.2 Filling the knowledge gap

Action 5: Integrating and strengthening European environment and health research

The activities here aim to strengthen networking between researchers, policy makers, and stakeholders in order to improve the transfer of research results into policy making. This is to be achieved by firstly, reviewing and analysing final results of existing research, including relevant national initiatives, to ensure that these are taken into account; secondly, by consolidating ongoing research in priority areas and, thirdly, by the organising of European conferences with the Member States in order to exchange scientific knowledge⁶.

While there is no doubt that extensive research is carried out in the area of health and environment research, it still remains as an open question whether research results are systematically collected and fed into policy making. All Framework programme 5 (FP5) projects with relevance for health and environment have been gathered in a 236-page publication highlighting the main outcomes and pinpointing relevance and contributions to EU policy⁷. DG Research is preparing a portal for projects as well⁸. As several stakeholders have complained about old research results being forgotten and not used, one could question whether this transfer of research results is in fact happening.

¹ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010, p. 7

² Interview with Maureen Butter, Dutch Platform Health and Environment, January 31st 2008

³ Interview Pierre Biot, Federal Public Service (FPS) Health, Food Supply Chain and Environment, Belgium, February 25th 2008

⁴ Interview with Loredana Ghinea & Gernot Klotz, Cefic, February 4th 2008

⁵ Interview with Christian Puppincx, CEEP, February 7th 2008

⁶ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010

⁷ http://ec.europa.eu/research/environment/pdf/env_health_projects/env_health_brochure.pdf

⁸ Technical Annexes "Mid-Term Review of the European Environment and Health Action Plan 2004-2010" (COM(2007)314 final) p. 8

Our interviewees represent a wide range of stakeholders which have been involved in consulting forums and technical working groups. Cefic, for example, says that “*there is a tendency to initiate yet more research with new research questions instead of answering some of the old questions first. What is needed from a consumer and industry point of view is clarity. This means publication also of “non-findings” – areas with no effect or no harm to health [...]. While recognizing that the Action Plan is a first, however very important, phase where we clarify the science bases, we should now move away from a description of problems into enabling a good health status through innovative and sustainable technologies and products.*”¹. Interviews with JRC, HEAL and Dutch Platform Environment and Health confirm that the research is there but results are simply not used².

The main part of conferences and workshops aimed to discuss i.e. future priorities of the research programmes, future research collaborations, presenting results of various projects and exchange information³. Furthermore, far from all of the workshops have been attended by the DG’s responsible (DG research, DG SANCO, DG Environment and JRC). While networking can be a valuable tool, the impact on policy making of these conferences must by the same token be characterized as weak – at best.

Finally, the way forward will be a continuation of the existing method which means analysis of interim and final results, more workshops and yet more identification of research needs. However, this method has yet to prove its impact on policy and needs rethinking and elaboration. This discussion which revolves around the linking between research and policy will be further developed in chapter 4.

Action 6: Targeting research on diseases, disorders and exposures

The aim of this Action is to improve the knowledge of the links between environmental exposures and the four priority diseases⁴ and again to strengthen the transfer of research results into policy initiatives. The aim is to be fulfilled by addressing the causes of asthma and allergy, neuro-immune disorders, developing European networks to promote research in uncommon cancers and analysing the effects of exposure to metals.

In light of the discussion above, one must first question to which extent the initiation of yet more research will produce an outcome on the transfer of research results into policy making. The means are perhaps not appropriate and may need rethinking.

That said, research has been carried out as regards asthma, allergy, neuro-immune disorders, exposure to metals, and two projects on environmental cancer risks were introduced in 2005 and 2006⁵. With these activities, the Commission has actually initiated what they set out to do. But as Cefic points out, in the area of asthma and allergy, we actually have a decent amount of knowledge and should act accordingly. Their opinion is that the Commission should focus, in the short and medium term, on the known causes / environmental stressors while, in parallel, clarify the evidence for the still-to-be-validated hypotheses⁶.

¹ Interview with Loredana Ghinea & Gernot Klotz, Cefic, February 4th 2008

² Interviews with Peter Pärt, JRC, February 21st 2008; Christian Farrar-Hockley, HEAL, January 21st 2008 & Maureen Butter, Dutch Platform Environment and Health, January 29th 2008

³ Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final), annex 3, table 4

⁴ Respiratory diseases, neuro-developmental disorders, cancers and endocrine disrupting effect

⁵ Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final) p. 9-10

⁶ Interview with Loredana Ghinea & Gernot Klotz, Cefic, February 4th 2008

The aims for 2007-2010 are to study the causes of environmental diseases and to investigate long term health effects in order to enhance the scientific basis of understanding of associations between exposures¹. Based on our review and our interviews with stakeholders, we find this aim unambitious in light of the knowledge available. What is needed is rather a review of existing legislation, recommendations and measures taken, to evaluate whether these are in accordance with the most recent and available research.

Action 7: Developing methodological systems to analyse interactions between environment and health

This Action will focus amongst others, on the development of systems to develop risk assessment methodologies which include externalities, developing models to address complexity in interactions, methodological systems for harmonisation and validation of methods, forcing European networks to foster co-operation and data exchange and to disseminate best practices².

The Novel methods for integrated risk assessment of cumulative stressors in Europe, NOMIRACLE, project is considering new methods for assessing cumulative risks³. OSIRIS aims at the development of intelligent assessment strategies for chemicals⁴. An integrated risk assessment framework is examined by INTARESE⁵. The objective of ENVIRISK⁶ is to develop protocols for exposure assessment⁷.

Projects concerning the possible inclusion of externalities in the risk assessment framework are also being implemented, such as Health and Environment integrated methodology and toolbox for scenario assessment (HEIMTSA); 2-FUN, two integrated projects aimed at improving methodologies for health impacts and cost/benefit analysis⁸, and METHODEX⁹, aimed at advancing best practices in external costs assessment.

A representative from JRC explains that JRC research activities concerning the Environmental Burden of Disease and economic valuation are still not able to produce concrete results to implement¹⁰. At the same time, it is not clear to which extent the results from all the abovementioned projects will be systematically collected and used by the responsible DG's. No mechanism or system for this purpose has been set up or proposed in the Action Plan. A focal point for information gathering and systematization, not only regarding this Action but also at a more general level was proposed by JRC¹¹.

Action 8: Ensuring that potential hazards on environment and health are identified and addressed

This Action is to be addressed by working with other international organisations, particularly World Health Organisation (WHO), to explore the improvement of health planning, facilitate rapid assessment of emerging threats and by addressing topics such as climate change and health, water pollution and the possible health impact of nano-particles. It was not described, however, how this should be done.

¹ Mid-Term Review of the European Environment and Health Action Plan 2004-2010 (SEC(2007) 777) p. 5

² Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010, p. 9-10

³ Novel methods for integrated risk assessment of cumulative stressors in Europe - <http://viso.jrc.it/nomiracle>

⁴ Optimized strategies for risk assessment of industrial chemicals through integration of non-test and test information, <http://www.osiris.ufz.de/>

⁵ Integrated assessment of health risks from environmental stressors in Europe - www.intarese.org

⁶ Assessing the risks of environmental stressors: Contribution to the development of integrating methodology

⁷ Assessing the risks of environmental stressors: Contribution to the development of integrating methodology, <http://envirisk.nilu.no/>

⁸ Health and environment integrated methodology and toolbox for scenario assessment <http://www.heimtsa.eu/> and full-chain and uncertainty approaches for assessing health risks in future environmental scenarios, http://www.2-fun.org/download/newsletter_en.pdf

⁹ Methods and data on environmental and health externalities: harmonising and sharing of operational estimates. www.methodex.org

¹⁰ Interview Peter Pärt, JRC, February 21st 2008

¹¹ Interview Peter Pärt, JRC, February 21st 2008

A lot of isolated projects have been initiated in this area, such as the European Distance and E-learning Network (EDEN) on climate change-related impacts, MICRODIS on extreme weather events, the Integrated Mentor Program in Addictions Research Training (IMPART) and NANOTOX on nanoparticles¹. For the next period, the effects of climate change and the potential risks of nanoparticles will be investigated, it says in the Mid-Term review, without further specification.

JRC, EEA², the European Centre for Disease Control and others should of course continue and enhance the research activities and the monitoring and surveillance activities. However, as pointed out by several stakeholders³, many research activities are isolated and largely inadequate if not collected and evaluated in an integrated fashion. As mentioned above, the Commission has an important obligation to ensure the coordination of activities as well as harmonisation of the strategies of MS. If this it not possible to ensure by the DG's responsible at the moment (most importantly DG Environment as lead), one could consider creating a coordinating unit with responsibility for the implementation of health and environment issues in order to compare existing research and legislation and propose new measures, initiatives and legislation⁴. A more comprehensive, ambitious and not least systematic approach for, how to deal with the effects of i.e. the impact of climate change on health is needed. As climate change is high on the political agenda at the moment, using the momentum and integrating health issues from the outset is critical.

3.2.3 Response: Review policies and improve communication

Action 9: Developing public health activities and networking on environmental health determinants

In order to support this Action, the Commission intends to launch calls for tenders related to awareness raising on indoor air pollution and electromagnetic fields and will develop actions on awareness raising and risk communication.

Very few, sporadic activities have been carried out within the area of awareness raising. There have been some activities to reduce active and passive smoking and a network on electromagnetic fields (EMF) and health impacts has been established⁵. Furthermore, environment and health is a priority of the Public Health Programme under DG SANCO⁶. Proposals for future activities for the remaining period of the first cycle haven't been addressed.

Several of the interviewed stakeholders emphasize the importance of communication as a lot of the issues dealt with in this Action Plan are difficult to legislate about and rely on recommendations to Member States and individuals. As an example, the JRC representative explains: *"People are willing to endure quite large amounts of tobacco and you can't prohibit people to smoke in their own home. Therefore, it is difficult to touch upon. It is within the domestic area"*⁷. *"We are dealing with sensitive issues so the main word is really communication"*, he continues.

¹ Improving the understanding of the impact of nanoparticles on human health and the environment and Investigative support for the elucidation of the toxicological impact of nanoparticles on human health and the environment - www.impart-nanotox.org

² European Environmental Agency

³ Interviews with Loredana Ghinea & Gernot Klotz, Cefic, February 4th 2008; Peter Pärt, JRC, February 21st 2008 & Christian Farrar-Hockley, HEAL, January 21st 2008

⁴ Interview with Peter Pärt, JRC, February 21st 2008

⁵ Technical Annexes "Mid-Term Review of the European Environment and Health Action Plan 2004-2010" (COM(2007)314 final) p. 15

⁶ Technical Annexes "Mid-Term Review of the European Environment and Health Action Plan 2004-2010" (COM(2007)314 final) p. 15

⁷ Interview with Peter Pärt, JRC, January 21st 2008

These recommendations must be communicated in the right way. IEEP criticizes the Action Plan for its lack of a clear strategy for communication. JRC acknowledges that there is a need for systematisation of the communication but adds that it is also about finding the right people: “We need to find good communicators – as we need to create a balance and not fear”¹.

Furthermore, it is important that the communication regarding minimizing of exposures is targeted, not to individuals but to vulnerable groups, i.e. pregnant women or children from economically deprived areas.

Action 10: Promoting training of professionals and improving organisational capacity

This activity is to be promoted by the Commission by the launching of pilot projects to train professionals and enhance organisational capacity and promote networking among stakeholders. The Action Plan emphasizes, however, that education is the responsibility of the Member States and calls on MS to take initiatives².

The Mid-Term Review itself mentions only one project aimed at improving the knowledge of professionals on the relationships between children’s health and environmental factors, namely the CHEST project³. Furthermore, it claims that the majority of FP6 projects under Action 5, 6 and 7 have developed extensive training programmes⁴. However, nothing is mentioned with regards to the improvement of organisational capacity or the networking between relevant stakeholders. Instead, the Action Plan mentions the EU health portal as a major dissemination tool and the fact that the Joint Research Centre (JRC) together with the EEA co-authored a sub-report on environment and health⁵. How this is directly relevant for the overall aim of this Action is unclear.

Even though education lies within the area of subsidiarity and thus is the obligation of MS, one could have expected the Commission to point to relevant measures and initiatives to be proposed by MS in order to ensure coordination of activities. Another relevant action could have been the organisation of conferences targeted the possibilities for training of professionals with relevant research institutions in order to build a network and exchange best practices. IEEP suggests, admitting that education is surely an area for MS, that the Commission could still have set up programmes to encourage best practice, perhaps under the LIFE programme (the Financial Instrument for the Environment)⁶. LIFE contains no binding measures but has a fair amount of resources⁷.

It seems that this Action has either suffered from a lack of prioritization or that the responsible DG’s have experienced a set-back in terms of available human resources since the actual funding of the activities would not have been overwhelming. These activities could easily be initiated for the remaining period.

Action 11: Coordinating ongoing risk reduction measures and focusing on priority diseases

The Commission will fulfil this Action by ensuring coordination between current and forthcoming initiatives and ensure that the recommendations made by the Technical Working Groups (TWG) for risk reduction measures are considered. Risk reduction will focus on measures of direct relevance to the four priority diseases: respiratory diseases, neuro-developmental disorders, cancers and endocrine disrupting effect⁸.

¹ Interview with Peter Pärt, JRC, January 21st 2008

² Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010,

³ Children’s health, environmental and safety training -http://ec.europa.eu/health/ph_projects/2003/action3/action3_2003_09_en.htm

⁴ Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final) p. 15

⁵ EEA Technical report no 13/2007, “Climate change: the cost of inaction and the cost of adaptation”

⁶ Interview with Marc Pallemarts, IEEP, January 17th 2008

⁷ <http://ec.europa.eu/environment/life/index.htm>

⁸ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010, p. 16

Several initiatives have been launched under other EU-headings, described in the Mid-Term Review. This includes the CAFÈ-analysis, which deals with the relationship between indoor and outdoor air quality¹. In general, the collaboration and coordination of various risk assessment regimes is handled through the scientific committees of DG SANCO². The Mid-Term Review states, however, that for diseases such as cancer and the causation of asthma, “a clearer view of the extent to which the environment is a driving force of the trends of disease is needed before reduction measures can be put into place”³. As to neuro-developmental disorders and endocrine disrupters, the Review states that there are no clear diagnostic criteria⁴, which is why additional research is proposed.

First of all, it is not clear to which extent the environmental influence on the priority diseases has been covered adequately by the scientific committees of DG SANCO. Secondly, a call for yet more research can hardly be said to be sufficient as policy option, cf. the above-mentioned criticism from the stakeholders. The issue of scientific certainty will be further addressed in section 4.4 of this study.

Action 12: Improving indoor air quality

This area has been chosen as a priority area for the present study and will be discussed in-depth elsewhere (section 4.2). For now, only the main findings and issues directly related to the Mid-Term Review will be touched upon.

Improved indoor air quality (IAQ) is to be achieved by encouraging the restriction of smoking in all work places, by exploring legal mechanisms and health promotion initiatives, as well as working with Member States to ensure full implementation and enforcement of existing legislation and develop networks and guidelines on other factors affecting indoor air quality⁵. The work in this area has led to the adoption of a Green Paper: “Towards a Europe free from tobacco smoke: policy options at EU level”⁶.

In relation to indoor air quality problems other than environmental tobacco smoke, the Commission has mandated the Scientific Committee on Health and Environmental Risks (SCHER) to deliver an opinion on strategies for risk assessment of various pollutants which will underpin policy making in the area of IAQ. The opinion of SCHER will be followed up by an expert group, established in 2006, for the purpose of giving advice to the Commission in relation to taking actions on relevant pollutants. Within the 6th Framework Programme (FP6), there are two ongoing projects within the area of indoor air quality: EnVie⁷ and PRONET⁸.

Generally, the inclusion of IAQ as a specific action in the Action Plan is much appreciated as it strengthens the commitment to action within the area. At the same time, the lack of detail makes it difficult to assess progress in relation to this action⁹.

¹ <http://ec.europa.eu/environment/air/cafè/index.htm>

² Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final) p. 16

³ Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final) p. 16

⁴ Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final) p. 16

⁵ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010

⁶ http://ec.europa.eu/health/ph_determinants/life_style/Tobacco/Documents/gp_smoke_en.pdf

⁷ <http://indoorairenvie.sctb.fr>

⁸ <http://www.Proneteurope.eu>

⁹ Interview with Lars Gunnarsen, SBI, January 11th 2008

Action 13: Following developments regarding electromagnetic fields

The activities under this Action consist in following the development of scientific evidence on electromagnetic fields¹.

This aim, while not overly ambitious, has been accomplished. The SCENIHR (the Scientific Committee on Emerging and Newly Identified Health Risks) has adopted an opinion on EMF which deals with the possible effects on human health of EMF². The main conclusion is that a lot of the evidence is still uncertain as data is scarce³. No health effect has been demonstrated for radio frequency fields. No connection between breast cancer, cardiovascular diseases or self-reported symptoms and extremely low frequency fields has been demonstrated. The Commission counts on EMF-NET – a network of scientists and experts who review and evaluate emerging science in the area. However, as this FP6-funded project is to end in March 2008, it may be necessary to rethink the support for this Action.

3.3 Conclusions on the Mid-Term Review

The Mid-Term Review stated that the Commission together with the Member States will ‘continue to implement the Actions foreseen’ in the Action Plan. In the same way, it was stated in the Action Plan that the Mid-Term Review would ‘identify the appropriate follow-up of the actions originally set out in the Action Plan’. However, as demonstrated above, the Mid-Term Review to a large extent fails to set up new priorities with regard to both the remaining 3-year period and discussion of priorities relating to the second cycle.

Two recurring conclusions arise from our assessment of the various actions of the Action Plan; first of all, there is too much focus on the two first sections within the Action Plan, namely information and research while the responses (reviewing of policies and improving communication) to these are underdeveloped and largely inadequate. Secondly, there seems to be a lack of resources allocated, as regards both the financial and human resources to ensure the proper implementation of the Action Plan.

Regarding the first conclusion, it is perhaps not so much a matter of too much information or too much research but rather a question of lack of clear focus, targeting and making sure that the data gathered is relevant and subsequently used properly. In Action 1 and 2, we found that it was still not clear whether a decision regarding appropriate indicators had been made or whether these indicators had been incorporated at an EU-level and will be used by Member States in their collection of information. Regarding both Action 5, 6, 7 and 8, our assessment showed that a large number of research projects had been initiated but without or with a vague connection to the policy level and no potential recommendations or suggestions on how to link the two levels. Finally, regarding the responses to the research initiated and information gathered, we found very few projects related to awareness raising. Almost no legislative reviews have been initiated and the ones which have been launched, i.e. Action 12 on indoor air quality, had been poorly coordinated. Overall, the Mid-Term Review can present progress in terms of setting up research and information systems, but very little has been done in terms of taking measures to reduce risks, at least not beyond actions deriving from other channels and sources of funding.

¹ Technical annexes to the Communication on the European Environment and Health Action Plan 2004-2010

² http://ec.europa.eu/health/ph_risk/committees/04_scenihhr/scenihhr_opinions_en.htm

³ Technical Annexes “Mid-Term Review of the European Environment and Health Action Plan 2004-2010” (COM(2007)314 final)

As to the second conclusion, it was clear from the outset that the issue of funding was not thought through and sufficient. For Action 3 on bio-monitoring, the lack of financing can be critical. This means also that the Action Plan depends on other sources and EU-initiatives, primarily funding from research programmes which is not always constructive, cf. information/monitoring and awareness objectives in the Action Plan.

The lack of human resources is perhaps the gravest problems as it underlies and obstructs the whole implementation as such of the Action Plan. It prevents the proper use of the information and research obtained which means that there is a very small or no chance at all to connect the results to actual policy. Furthermore, even if there were enough resources to gather results from monitoring there would not be sufficient means left to evaluate, discuss and map how this Action Plan should be carried forward. Finally, the lack of human resources allocated means that it is difficult for MS to act as there is no clear delegation of authority and responsibility. What is needed seems to be a clear focal point – a coordination unit - that can coordinate research and monitoring, analyse information gathered, initiate the review of existing legislation and propose potential new legislation. Furthermore, a revision and rethinking of the implementation schedule is necessary in order to achieve the goals set out.

Finally, a number of important issues may not have received enough attention in the Action Plan in general and the Mid-Term Review in particular. These issues will be discussed in the remaining part of this assessment. This goes for areas such as the connection between the Action Plan and REACH, the health aspects of Climate Change and the policy options on indoor air quality. After that follows a more general discussion of some of the issues and challenges which have arisen on the basis of our assessment, i.e. how to link research and policy, how to involve all actors in a more holistic approach and how to provide a prevention policy with EU-added value.

4. Crucial issues and the way forward

4.1 Climate change and health

In this section, various pathways through which climate change may affect health are described and an overview of what is currently being done in this policy area at EU-level is provided. Finally, policy recommendations that may be relevant at EU-level are outlined on the situation and the needs of Europe. An overall conclusion of the cCASHh project, a Commission-funded project with the purpose of mapping health risks related to climate change and policy responses in Europe, was that “current policies, measures and settings are probably not enough to prevent some of the health impacts of climate change¹”.

4.1.1 Impact of Climate Change on Health

In the literature, there are generally four categories of suggested pathways through which climate change is assumed to affect health: thermal stress, extreme weather events, infectious diseases and water and food related impacts. Given the complexity of the area and that there is a great deal of research on various linkages, we are bound to present an overview of the most common suggestions as to how climate change is linked to health, leaving out varying opinions on the robustness of these relations.

- Temperature related health impacts

Climate change will not only manifest itself by a gradual rise in temperature over time, but also through an increased intensity of extreme climatic events, for example heat waves. There are several examples of heat waves in Europe which have had severe impacts on the health situation of individuals, particularly among elderly people. The heat wave of the summer of 2003, being one of the most recent and severe examples, caused more than 2,000 excess deaths in England and approximately 15,000 excess deaths in France for that time of the year². A somewhat different take on the issue of heat waves is put forward by Peter Pärt, researcher at JRC, who states that the human body in general has a good capacity to deal with heat. The fact that death rates increase during heat waves is more a consequence of socio-economic conditions³ than by the direct impact of the heat. A slight increase in temperature will not have dramatic effects on health provided there is proper housing and proper health care/social services to support the vulnerable groups (see also paragraph 4.1.3). Without choosing one or the other perspective, it is safe to say that health impacts on a population linked to climate change most certainly interacts with other factors, such as socio-economic conditions.

Another pathway linking heat waves to health outcomes is that heat waves affect intermediate factors which in turn affect health outcomes. For example, exposure to air pollutants becomes more concentrated during heat waves⁴. Another intermediate factor affected by heat is the concentration of pollen. The pollen season, affecting the health of many, is anticipated to last longer in the future due to the gradual changes in temperature⁵.

- Extreme weather-related impacts

¹ Menne et al, Climate change and adaptation strategies for human health, p. 308

² Haines et al., Climate change and human health, Lancet 2006, p. 2103

³ Interview with Peter Pärt, JRC, February 21st 2008

⁴ Kovats et al, Climate change and health in Europe, BMJ volume 318, p. 1683

⁵ WHO Europe (2005): Health and Climate change: the “now and how”, A policy action guide, p.7

Floods, droughts and storms are expected to occur more frequently in future. There are several ways through which floods can have an impact on health. The most immediate impact is an increased risk of drowning and injuries inflicted by the flood. Another potential threat to health caused by floods is the mobilisation of dangerous chemicals from storage or remobilisation of chemicals already in the environment, such as pesticides. From the perspective of mental health, increases in mental disorders such as anxiety and depression are common at the occurrence of floods. As an example of these impacts, studies on river floods in central Europe which took place in July 1997 suggests that 200 000 people were left homeless, 100 people were killed and 50 people committed suicide due to the extreme weather events¹. As above, it can always be disputed whether such outcomes should be addressed as health related climatic events. The interpretation being promoted by Peter Pärt from JRC, is, as in the discussion on heat waves, that such outcomes, even though they certainly have an impact on health, should be perceived and addressed as structural problems rather than health problems².

- Infectious diseases

Weather conditions have an impact on the transmission patterns of infectious diseases due to changes in the geographical distribution of vector species, such as cold blooded insects and ticks³. There is evidence supporting the hypothesis that changes in the geographical vector distribution in Sweden between 1980 and 1994 correlate with changes in the climatic conditions.

A threat to Europe is that infectious diseases, particularly diseases carried by hosts such as ticks, mosquitoes, flies etc. (vector-borne diseases) will spread at a faster pace due to rising temperatures, and into new geographical areas. Another area of economically important diseases which may increase in severeness, is veterinary diseases (blue tongue)⁴

In relation to changing spatial patterns of vector borne diseases, Menne *et al* mention that “climate change may increase the risk of reintroduction of malaria in eastern Europe unless programmes to control vectors are maintained and increased”⁵. The issue of animal vector-borne diseases is recognized in the Green Paper on adaptation.

- Water and food related impacts

Food borne diseases will spread more easily if the climate becomes warmer⁶. Research has shown that cases of salmonellosis correlate positively with increases in temperature⁷. In relation to risks associated to water, Peter Pärt mentions reuse of waste water in areas becoming more arid as a factor increasing the risk of spreading diseases.

Not only does the heterogeneity of pathways induce the need of various policy responses, but the distribution of impacts is also unevenly distributed between various groups and geographical regions. Depending on which specific health impact of climate change being referred to, various groups of individuals or populations will be particularly vulnerable.

¹ Kovats et al, Climat change and health in Europe, BMJ volume 318, p. 1683

² Interview with Peter Pärt, JRC, February 21st 2008

³ Kovats et al, Climat change and health in Europe, BMJ volume 318, p. 1684

⁴ Interview with Peter Pärt, JRC, February 21st 2008

⁵ Kovats et al, Climate change and health in Europe, BMJ volume 318, p. 1684

⁶ Interview, Peter Pärt, JRC, February 21st 2008

⁷ WHO Europe (2005): Health and Climate change: the “now and how”, A policy action guide, p.7

The degree of vulnerability to the various impacts is affected by factors such as “population density, food availability, level of economic development, food availability, income level and distribution, local environmental conditions, pre-existing health status and the quality and availability of public health care”¹.

The impact of climate change on the health situation of various populations – defined geographically, socio-economically or in other ways, in Europe is, therefore, likely to be rather heterogeneous, both in relation to severity and the type of impact. Dividing Europe geographically, the rate of warming will be higher in the north whereas the south will suffer from higher absolute temperatures, up to 40-50 degrees, and scarcity of water². In relation to heat waves, the severity of the health impact is often worse in urban centres.

Not only are the impacts heterogeneous geographically, but the impact is also unevenly distributed within countries. Dividing Europe socio-economically, it is certainly the case that poor individuals, such as city-dwellers, are more vulnerable. From a demographic perspective, the elderly constitutes a particularly vulnerable group. The heat wave which occurred in Paris in August 2003 demonstrated that, even in high income countries, extreme weather events may result in large number of deaths among the elderly³. Apart from the elderly and the poor, the IPCC identifies the disabled, children, women and the ethnic minorities as particularly vulnerable groups. Following the EPPC, people who exercise outdoors, people with cardiovascular diseases and respiratory problems, and people who are extra sensitive to ozone exposure are potentially more vulnerable than others⁴.

4.1.2 EU policy in the Climate Change/Health Nexus

The EU policy agenda has for a long time been focusing on mitigation strategies, i.e. pollution reduction aimed strategies, rather than adaptation strategies. An example of the EU mitigation strategy, which has a long history, is the commitment to the Kyoto protocol. In 2005, however, the European Commission issued a communication titled “Winning the battle against climate change” in which attention was turned towards the need for adaptation strategies: “Scientific evidence that even meeting the 2 degrees Celsius target will require significant preventive and remedial adaptation strategies. As yet, few member states have examined the need to reduce vulnerability and to increase their resilience to the effects of the climate change⁵”.

Another important step in the direction towards a European adaptation policy related to climate change and health is the European Climate Change Program (ECCP) working group II document “Human health sectoral report”. This report sought to identify examples of good practise within the area of adaptation for the purpose of exploring a potential EU adaptation policy (ECCP Human health sectoral report).

Keeping the focus on adaptation issues, the Commission recently produced a Green Paper “Adapting to climate change in Europe – options for EU action” in which health is highlighted as a specific focus area⁶. Reading the Green Paper, it is clear that feeding in from research findings on various pathways, mentioned above, has taken place.

¹ Patz et al, The potential health impacts of climate variability and change for the united states: Executive summary of the report of the health sector of the U.S. national assessment, Environmental health perspectives, 2000, vol 108, nr 4, p. 368

² EurActiv interview with Sari Kovats available at <http://www.euractiv.com/en/health/health-expert-impact-climate-change-needs-considered-broadly/article-167327>

³ Haines et al., Climate change and human health: impacts, vulnerability and mitigation, The Lancet, 2006 vol 367, p. 2103

⁴ <http://ec.europa.eu/environment/climat/pdf/eccp/impactsadaptation/health.pdf>, p. 8

⁵ http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0035en01.pdf

⁶ http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0354en01.pdf

The uneven distribution of climate change related health impacts, and the policy implications thereof, are recognized in the Green Paper on adaptation: “The poorer segments of society will be more vulnerable to the changes. Attention therefore must be paid to the social aspects of adaptation¹”. Despite the relevance for the climate change and health area of the Action Plan, there is no mentioning of the Green Paper on adaptation policy in the Mid-Term Review of the Action Plan. In the Green Paper it is stated that the Mid-Term Review of the Action Plan “includes recommendations for appropriate actions²”. When reading the Mid-Term Review there are, however, no such recommendations for actions.

In 2008, several initiatives in the cross field of climate change and health are due to take place. The development department of the Commission (DG AIDCO, DG RELEX and DG ECHO) intends to investigate possible ways to support developing countries in their management of disaster prevention. DG environment will produce a communication on an integrated strategy on disaster prevention which will be followed by a white paper on adaptation to climate change and health. Furthermore, DG SANCO intends to produce a communication addressing EU actions against the health consequences of climate change³.

4.1.3 Policy Responses

Before discussing different types of policy responses to the impact of climate change on health, it is appropriate to have a principle discussion on the definition of the policy area itself, the organizational boundaries of the policy area, what kind of authorities are to be involved in the policy making process as well as the implementation and monitoring process. Peter Pärt, researcher at JRC, makes two statements related to the boundaries of the policy area. Firstly, heat waves are causing death because vulnerable groups do not get the necessary support because of limitations in social and health care networks.⁴ Secondly, according to Pärt, “if the climate change is creating flooding then it is more of a structural problem involving rebuilding of houses etc”. In other words, policy measures addressing these problems are certainly relevant but not as a part of an integrated climate change/health policy.

A critique towards this mode of thinking, being put forward by Dr. Sari Kotsas, is that the span of policy options perceived to be related to health is too narrowly defined, focusing mainly on infectious diseases and surveillance. Rather, the policy response must encompass elements as diverse as “flood defence and preparedness, building regulations, housing quality – all houses are designed for the wrong climate – urban environment and food security...⁵”.

Similar to the policy area addressing indoor air quality, it is certainly the case that the task of designing and enforcing an integrated policy addressing climate change is associated with a high degree of fragmentation of expertise and responsible authorities. Having incorporated the appeal from Kotsas to “*think out of the health-box*”, a set of policy options will be outlined below.

A general recommendation is that the focus area climate change and health should be integrated in the Action Plan to a higher degree, thereby safeguarding the commitment to this area as well as strengthening the coordination of the policy area. The need for a strengthened coordination mechanism within this area is emphasized by Peter Pärt of the JRC. One might also conclude that if the policy area is to be defined broadly, as promoted by Kotsas above, this will put large strains on co-ordination.

¹ http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0354en01.pdf, p 11

² http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0354en01.pdf, p16

³ <http://www.who.org/a/2840>

⁴ Interview Peter Pärt, JRC, February 21st 2008

⁵ EurActiv interview with Sari Kovats available at <http://www.euractiv.com/en/health/health-expert-impact-climate-change-needs-considered-broadly/article-167327>

A recent study, presented by EEA, on the cost of initiating adaptation strategies versus the cost of not doing it concludes that “adaptation has an extremely important role in reducing the economic costs of climate change across Europe”¹ In the light of that conclusion, it seems that the gradual expansion of adoption policy within the EU climate change policy framework is relevant and needed.

Despite the large current activity on climate change, HEAL criticizes the European Union for not addressing environment and health related aspects of climate change. As an example the HEAL report mentions a new target which will increase dependence on nuclear power standing in conflict with health concerns².

One suggestion, being put forward by the Climate Change Adaptation Strategies for Human Health in Europe, cCASHs, study, is that heat event warning systems, which are relatively inexpensive, should be implemented in regions where heat waves seldom have occurred. A commitment to installing heat warning systems is also mentioned by Lars Fock, The Danish Environmental Protection Agency, as an initiative that could have been integrated in the Action Plan³ - not least since there is some evidence indicating that warning systems may reduce the mortality caused by thermal stress events⁴.

4.2 Efficient EU policy on Indoor Air Quality (IAQ)

On average, 15 hours of a regular day is spent in our home and 8 hours on our job. That means that on a working-day the typical adult citizen spends 23 of 24 hours indoors. These numbers are a clear indication of the importance of mapping how the indoor environment affects our health, both for personal reasons (to heighten the quality of life) and for developmental reasons (to improve our performance and efficiency)⁵. Not only do we spend considerably more time indoors but the concentrations of air pollutants in homes and public buildings are often considerably higher than those found outdoors, occasionally 100 times higher than outdoor levels⁶. As a result of this, undertaking measures improving indoor air quality is often very cost-efficient: “Even small improvements in IAQ will reduce labour costs through reducing morbidity and improving occupants' wellbeing”⁷. Indoor air pollutants mainly consist of chemicals released from, for example, cleaning products and pesticides as well as emissions from furniture and construction materials. Indoor air pollutants can also be ascribed to activities such as cooking and heating. Additionally, outdoor air pollutants may leak in into indoor environments. Another high-priority source of indoor air pollutants is environmental tobacco smoke.

In a policy context, strategies addressing indoor air pollution have received much less attention than those aimed at outdoor air⁸. Therefore, the attention given to indoor air in the Action Plan, under Action 12, is well received⁹. Lars Gunnarsen is an expert within the field and welcomes the political focus, aware of his partial subjectivity, he continues by crediting that the area is specifically stressed in the Action Plan. However, he does also regret that the Action Plan is not very comprehensive; “It does not go into detail with what can be done and how the strategy prioritises between available options¹⁰”.

¹ EEA Technical report no 13/2007: Climate change: the cost of inaction and the cost of adaptation, p. 7

² http://www.epha.org/IMG/pdf/Background_document_final_draft_.pdf, p. 8

³ Interview with Lars Fock, The Danish Environmental Protection Agency, February 25th 2008

⁴ WHO Europe (2005): Health and Climate change: the “now and how”, A policy action guide, p. 7

⁵ Interview with Lars Gunnarsen, SBI, January 11th 2008

⁶ Towards Healty Air Dwellings in Europe, THADE, p. 17

⁷ WHO (1999): Strategic approaches to indoor air policy making, p. 5

⁸ Sharpe, Mike, Safe as houses?, Indoor air pollution and health, Journal of environmental monitoring, 2004, 6, p 48

⁹ Interviews with Lars Gunnarsen, SBI, January 11th 2008 & Paul Harrison, IEH, February 7th 2008

¹⁰ Interview with Lars Gunnarsen, SBI, January 11th 2008

Given that the Action Plan is lacking in detail, it is difficult to assess how it is designed or what progress that has been achieved in the area of indoor air quality. Rather, this review will try to (1) assess the current status of this policy area at EU-level including the Action Plan, (2) highlight some areas that might affect the policy making process negatively and (3) present policy recommendations.

Basically the question of how to create an efficient EU policy on indoor air quality can be sub-divided into two questions. Firstly, policies have to be derived from sound scientific evidence enabling a prioritisation among various pollutants, based on severity and levels of exposures among various groups of individuals, as well as providing the most efficient measures for reduction of these pollutants. Secondly, strategies concerning the implementation and monitoring of these policies have to be developed. In order to enforce an efficient EU policy on indoor air quality both of these questions has to be addressed during the policy making process.

4.2.1 Overview of the status of indoor air research and policy at EU-level

In terms of research activities, there are several projects, both ongoing and finished, which have studied various aspects of indoor air quality. Currently, there are two FP6 projects working on the issue: EnVie (Coordination action on indoor air quality and health effects)¹ and PronetEurope (Pollution Reduction Options Network)². Both of these projects mainly serve the purpose of mapping research and other types of activities within the area of IAQ throughout Europe. Apart from the FP6 projects, there have been several EU co-funded research projects, such as Scientific Committee on Health and Environmental Risks (SCHER), Critical Appraisal of the Setting and Implementation of Indoor Air Exposure Limits in the EU (INDEX) (Prepared by DG JRC), Policy Interpretation Network on Children's Health and Environment (PINCHE), Towards Healthy Air in Dwellings in Europe (THADE) (co-funded by DG SANCO), VITO. Generally, these studies belong to the category risk and impact assessments assembling existing evidence with the aim of ranking pollutants and risks which may underpin policymaking.

In terms of policy making, there is currently no integrated indoor air quality policy framework on EU level. However, the following directives address indoor air quality directly or indirectly³:

- The construction products directive 89/106/EEC Essential requirement Nr 3 "Hygiene, Health and the Environment";
- The energy performance of buildings directive 2002/91/EC;
- The gas appliances directive 1990/396/EEC;
- The heating appliances directive 1992/42/CEE;
- The eco-design directive 2005/32/EC;
- The dangerous substances directive 1976/646/EEC;
- The general product safety directive 2001/95/EC;
- The REACH regulation 2006/121/EEC.

¹ <http://indoorairenvie.cstb.fr>

² <http://www.proneteurope.eu>

³ VITO (2007): discussion text, indoor air health priorities, Brussels 29-30 March, 2007

One of the areas where most progress has been accomplished, in relation to IAQ policy making, is achieved in the area of controlling environmental tobacco smoke. In this area, a Green Paper “Towards a Europe free from tobacco smoke: policy options at EU level¹” has been produced by the European Commission. Given the large impact of Environmental Tobacco Smoke (ETS) on health, the progress in this policy area is certainly very much welcome.

4.2.2 Barriers and contextual factors affecting IAQ policy making

A parallel assessment of the Action Plan concludes that in relation to Action 12 on indoor air quality “no progress has been achieved²”. As much as this conclusion might be a result of the difficulties to assess progress in the lack of any performance indicators, it leads up to the question of why so little progress has been made. The authors of the THADE report express the same concern: “Although there is a large body of scientific information on healthy buildings, very little has been translated into practice.³” It is, furthermore, stated that “Unless policies are developed and implemented nationally and internationally, advances made in the indoor air sciences will not be exploited in real life and will have a limited impact on community.⁴” The same concerns are aired by Christian Farrar-Hockley, policy advisor of HEAL, who is disappointed with the progress within the field of indoor air quality in the Action Plan and finds that there is indeed enough knowledge to initiate action on a policy level.⁵

Without attempting to answer the question of why so little action is seen, a number of factors will be presented that make the policy making in the field of indoor air quality difficult. Despite the fact that much research has been done on indoor air pollutants, policy making within the area might be difficult because of the very specific context in which it takes place. Five barriers related to the context of policy making deserve to be highlighted:

- The subsidiarity principle

This principle states that policy action will be taken at EU level only when it would be more efficient than action taken at national, regional or local level. In the area of indoor air policy, the Member States possess relevant competences of their own which according to the subsidiarity principle means decentralisation of this very policy area. This makes it increasingly difficult for the EU to intervene and provide guidance in member states where such policies do not exist⁶. The VITO report recommends that, in order to develop an integrated EU indoor air legislation, it has to be established to what degree the subsidiarity principle is applicable to indoor air quality⁷. The relevance of the subsidiarity principle for indoor air policy making is, ironically, reflected by the fact that the antagonists of legislation have been lobbying in favour of it. In the Philip Morris 3-year EU strategy it is stated that one should seek to “Push the principle of subsidiarity for smoking legislation issues...⁸”

- Fragmentation of expertise, stakeholder interests and legislative responsibilities

¹ COM (2007) Final, http://ec.europa.eu/health/ph_determinants/life_style/Tobacco/Documents/gp_smoke_en.pdf

² European Parliament, Policy Department, Economic and Scientific Policy (2007): Assessment of the achievements of the 6th environmental program, p 42

³ THADE: Towards Healthy Air Dwellings in Europe, p10, <http://www.efanet.org/activities/documents/THADEReport.pdf>

⁴ Ibid, p.10

⁵ Interview with Christian Farrar-Hockley, HEAL, January 21st 2008

⁶ Adan et al., In search of a common European approach to a health indoor environment, *Environmental Health Perspectives Volume 115, Number 6, June 2007*, p 985

⁷ VITO (2007): Ranking indoor air health problems using health impact assessment, p. 26

⁸ Presentation, Fiona Godfrey, European Respiratory Society, NGO Strategy Workshop, Taking the environment and health agenda forward in Europe, organized by HEAL, December 1, 2004, available at: www.env-health.org/IMG/ppt/Indoor_air_NL.ppt

The slow progress in the area may, furthermore, be associated with the high degree of fragmentation within the field. Fragmentation related to indoor air policy can be subdivided into three categories. Firstly, there is a high degree of fragmentation of the expertise needed to construct efficient policies addressing indoor air quality which makes it more difficult to create the knowledge base needed for policy making. Secondly, there is also a great deal of fragmentation of stakeholders, ranging from builders and architects to owners and occupants. Thirdly, there is a fragmentation of responsible authorities on both EU-level and MS-level, encompassing the departments of housing, public health, environment, and trade, which may lead to a large degree of co-ordination and deliberation in order to set a policy-agenda¹.

- Diversity of climates and social factors within the EU

As an example of this barrier the 25 member states of the EU span a variety of climates, from polar to almost subtropical and from dry to very wet. This variety can have an important effect on the type of environmental contaminants that are relevant to different member states. As an example, Wu *et al* mention that the health effects of, for example, mold may be larger in humid regions of the EU than in dryer regions which may have an impact on the policy response to this specific problem².

- Policy making in the private sphere

Most exposure to indoor air pollutants takes place in the private home. The fact that many of the relevant legislative measures would need to be directed at the private environment makes policy making in this area difficult³. The belief that “a man’s home is his castle” is a significant barrier to the creation of policies addressing household behaviour, such as cooking and cleaning habits, known to have an impact on indoor air quality and health⁴.

- Problematic interaction with energy efficiency requirements

According to Sharpe, many of the current IAQ problems “arise from the improved design standards to meet energy efficiency requirements⁵”; for instance, improved insulation of buildings (e.g. replacement of draughty windows) to reduce energy consumption for heating may have an adverse effect on indoor air quality, as the intake and circulation of fresh air is reduced. This example highlights the need to consider the interaction between various policy areas when seeking to establish new policies.

- Difficulties related to monitoring

As VITO states: “Legislation is only useful when implemented, when enforced, e.g. when accompanied by an operating monitoring schema⁶”. In this sense, the more restricted possibilities of monitoring makes up a relevant difference between the endorsement of indoor and outdoor standards which might be taken into account in the policy making process. As COMEAP puts it “*Monitoring each and every home is, of course, impracticable; restricting people’s activities in their own homes is not possible and thus the concept of a standard that can be monitored and enforced is less applicable indoors than outdoors*⁷”. For the very same reason, policy measures have to be designed differently depending on whether they address public or private indoor spaces.

¹ Adan et al., In search of a common European approach to a health indoor environment, [Environmental Health Perspectives Volume 115, Number 6, June 2007](#), p. 985-986

² Adan et al., In search of a common European approach to a health indoor environment, [Environmental Health Perspectives Volume 115, Number 6, June 2007](#), p. 986

³ Interview with Paul Harrison, IEH, February 7th 2008

⁴ Wu et Al, Improving Indoor Environmental Quality for Public Health: Impediments and Policy Recommendations, [Environmental Health Perspectives Volume 115, Number 6, June 2007](#), p. 955

⁵ Sharpe, Mike, Safe as houses?, Indoor air pollution and health, Journal of environmental monitoring, 2004, 6, p 47

⁶ VITO (2007): Ranking indoor air health problems using health impact assessment, p.

⁷ Committee on the medical effects of air pollutants (COMEAP)(2004): Guidance on the effects on health on indoor air pollutants, p

Provided that the contextual factors highlighted above can be viewed as bottlenecks in the policy making process, there might be a need to address those instead of only focusing on the knowledge related side of the policy process. These factors also enable us to reformulate the question of how to create an efficient EU policy on indoor air quality. Although it is beyond our reach to answer that question, we may conclude that in order to answer it, it may have to be put differently. For example, one might want to ask how to enforce an efficient EU policy on indoor air, in the context of the subsidiarity principle or in the context of limited monitoring possibilities etc.

4.2.3 Policy recommendations

Overall there seem to be two strategic options available; either to gather and implement the knowledge already out there, or to create new knowledge with the aim of better long term implementation. It appears obvious that the Action Plan reflects the latter strategic choice (cf. the discussion of the precautionary principle in section 4.4). However, the knowledge base will at no point in time be complete, meaning that action will always be taken while new knowledge is being formed.¹ Even with the loosest definition of the precautionary principle, some degree of action could be taken.² Given the lack of concrete action on indoor air quality in the Action Plan, the use of the precautionary principle as a guideline for action within the area of indoor air pollutants seems to have been limited.

Action is perhaps delayed by the fact that reviews of studies on indoor air quality are undertaken over and over again within different projects³. In order to cope with this problem it is suggested that measures aimed at co-ordination of research activities are strengthened⁴. The need for strong co-ordination mechanisms seems relevant in a field with a high degree of fragmentation of expertise. One suggestion, put forward by Dr. Harrison, is the arrangement of a conference on indoor air quality where researchers and policymakers could meet to discuss current activities and future options. The need for co-ordination and policy development is recognised by the EnVie project. How to deal with the precautionary principle will be further discussed in section 4.4.

Although the limitations of monitoring possibilities should not be used as an argument for not taking action, it certainly may affect what policy options that are considered as viable. For example, the VITO report suggests that policies directed at private indoor spaces, to a large degree, should consist of awareness raising and educational measures aiming at strengthening the incentives to voluntary action⁵. Another way forward might be increased research activity towards the development of more affordable monitoring equipment, which can be popularised for use at home or work, in order to efficiently implement regulations on indoor air limit values⁶. In a more general sense, this discussion implies that there might be an imbalance between the attention devoted to issues related to development of standards and the attention addressing the endeavour of monitoring those standards. In this context, it is relevant that the Action Plan has accentuated monitoring as a priority area. However, we do not know how this priority area will be applied, or is applied, to the field of indoor air quality.

¹ Interview with Paul Harrison, IEH, February 7th 2008 and EEN, Response to ‘The European Environment & Health Action Plan 2004-2010’, p. 3

² Interview with Paul Harrison, IEH, February 7th 2008

³ Interviews with Paul Harrison, IEH, February 7th 2008 & Marc Pallemarts, IEEP, February 17th 2008

⁴ Interview with Paul Harrison, IEH, February 7th 2008

⁵ VITO (2007): Ranking indoor air health problems using health impact assessment, p 27

⁶ Sharpe, Mike, Safe as houses?, Indoor air pollution and health, Journal of environmental monitoring, 2004, 6, p 49

A policy recommendation is to utilise the WHO indoor air quality guidelines as the basis for EU indoor air limit values¹. THADE, as well as SCHER, also suggests that European guidelines should be developed². It is somewhat peculiar that so many EU funded projects reach this conclusion and yet the Action Plan does not express any progress in relation to the development of European guidelines, even at its mid-term review. Already in 2003 the Technical Working Group of the consultative forum which preceded the Action Plan expressed the need for “guidelines, recommendations and regulations for improvement of the indoor environment”³.

One policy recommendation is that a green paper on the policy options for indoor air quality, other than ETS related problems, should be produced which takes into account the already available research in the area. The VITO report also suggests that a green paper should be produced as a step towards the development of integrated indoor air legislation⁴. This suggestion was also put forward by HEAL.⁵

As earlier mentioned, an average person spends approximately 90 % of his/her time indoors. For young people, as well as elderly and sick, however, the proportion of time spent indoor is even higher meaning that these two groups are more vulnerable and will suffer more from a higher degree of exposure to indoor air pollution. Individuals belonging to any of these three groups are also potentially more vulnerable to health stressors than the average person⁶. The uneven distribution of exposure of pollutants between groups should be taken into account in the design of efficient policies. Dr. Harrison, involved in the EnVie project and therefore updated on the research activities around Europe, mentioned that whereas children have received much attention, both in research projects and in the policy area, not so many research projects address the situation of the elderly⁷.

One research area that seems to be underrepresented concerns economic impact of diseases and loss of productivity associated with poor indoor environments. In the context of policy making, the lack of this very type of studies might delay action since it, without such statistics, is more difficult to present incentive schemes on which the policy makers could react. Compared to clinical studies on the health impact of poor indoor air, other type of studies, such as cost benefit analyses, might be more successful in pushing the issue on the political agenda: “in both the scientific and regulatory dimensions, more information is needed to make IAQ recognized as a politically important problem, although in many cases there is sufficient knowledge to compel action”⁸.

On a more theoretical level, there is a need for a new general definition of ‘housing’. “We need common standards for what constitutes good indoor climate, appropriate temperature, and proper isolation. Minimal quality requirements are necessary to conduct focused research”⁹. Apparently legislation can in some ways also lead to better aimed research. Professor Kummer¹⁰, however, also stresses the need for country specific solutions, which does not speed up the process of turning research into law.

¹ VITO (2007): Ranking indoor air health problems using health impact assessment, p 226

² SCHER (2007): Preliminary report on risk assessment on indoor air quality, p 20

³ Technical Working Group on priority diseases, subgroup Respiratory Health, Final Report Recommendations, p. 4

⁴ VITO (2007): Ranking indoor air health problems using health impact assessment, p 27

⁵ Interview with Christian Farrar Hockley, HEAL, January 21st 2008

⁶ Aylward C, Harris RS & HARRISON PTC (2005). Analysis of topics and trends in indoor environment research in Europe: Studies in indoor monitoring. *Indoor Built Environ*, 14, p 197

⁷ Interview with Paul Harrison, IEH, February 7th 2008 & HARRISON PTC, Aylward C, Holmes, P & Harris RS (2005). Indoor environment research in Europe: Beware the gaps! *Indoor Built Environ*, 14, p 342

⁸ Wu et al, Improving Indoor Environmental Quality for Public Health: Impediments and Policy Recommendations, [Environmental Health Perspectives Volume 115, Number 6, June 2007](#), p 955

⁹ Interview with Jacques Kummer, Université Libre de Bruxelles, January 11th 2008

¹⁰ Interview with Jacques Kummer, Université Libre de Bruxelles, January 11th 2008

It is nevertheless an essential point when reflecting on whether research should go before legislation or the other way around, that they are in a constant dialectic relation and therefore needs to stay in an open dialogue. It should therefore be concluded that it is not constructive for the process of the Action Plan if the legal aspect of the research and communication part of the initial cycle is left out. Furthermore, the contrary (dialogue) does not necessarily implicate direct premature legislative action.

4.3 REACH and a complementary Action Plan

The REACH Regulation on chemicals was finally approved by the European Parliament in December 2006 after the Parliament, Council, and Commission came to a compromise agreement on the draft regulation in November 2006. This marked the conclusion of a lengthy political process involving heavy lobbying on the part of the chemicals industry on the one side, and other interest organisations on the other. Since REACH only came into being after the Environment and Health Action Plan was implemented, it is not directly addressed by the Action Plan. The question is whether the time has come to seek a closer co-ordination between the Action Plan and REACH.

In this section we first provide a brief overview over the aim and scope of REACH and highlight some of the criticisms that have been directed at REACH. We then outline different positions on whether an integration of REACH and the Action Plan is feasible, and finally describe various pathways through which an integration of REACH and the Action Plan could take place.

4.3.1 Aim and scope of REACH

The new chemical policy REACH (Registration, Evaluation and Authorisation of Chemicals) was put into force in June 2007 through a Regulation EC 1907/2006. The aims of the policy are to improve the protection of human health and the environment from the risk of chemicals while maintaining the competitiveness and stimulating the innovative capability of the chemical industry in the EU. In practice this means that the policy is intended to reduce the pollution in air, soil and water, by improving the control of the chemicals used in various substances¹. This will be done by registration and evaluation of chemical substances and their effects, and an authorization of chemical substances of very high concern before the substances can be put into the market.

A central database at ECHA (European Chemical Agency) in Helsinki, Finland will contain this information. ECHA manages the database, registration, evaluation, authorisation and restriction processes for chemical substances to ensure consistency across the EU. From June 2008, it will be possible make registrations, and the registration process is to be completed over an 11-year period.

One of the key aspects of REACH is the reversal of the burden from the Member States national authorities to the industry sectors to prove that the chemicals they manufacture and place on the EU market do not negatively affect human health or the environment. REACH requires all businesses that manufacture or import more than one ton of a chemical substance per year to be registered in the central (technical) database under ECHA. This will provide the users in the supply chain with safe information on the substances. In addition, for dangerous substances with a quantity over 10 tons per year, a special chemical safety report must be prepared.

¹ European Commission, Environment Directorate General, "REACH in brief", October 2007

4.3.2 Concern areas prior to REACH agreement

REACH has been much disputed and debated among the involved parties. Some of the most disputed areas are the registration of chemical substances and authorisation of high concern chemical substances.

As regards the registration of chemical substances, a key point of contention relates to the different rules pertaining to different quantities. The ETUC (the European trade union confederation) welcomes the shift of the burden of proof from the authorities to the businesses, and so do environmental organisations such as Greenpeace and WWF (World Wildlife Foundation). However, they criticize that "no meaningful safety data" will be required for substances imported in low volumes (below ten tonnes per year)¹.

In relation to this, EEB also considers the requirements for substances imported or produced at quantities between 1-10 tons to be too limited and not enough to determine whether a substance is toxic², and questions why there are different rules for different quantities, in particular the fact that no registration is needed for chemical substances with a quantity under 1 ton per year. A representative from the Dutch Platform Health and Environment is also concerned that there are only limitations to the use of large quantities of chemical substances.³

Further, according to Greenpeace and WWF, there is a loophole in that REACH allows high concern chemicals to be allowed onto the market if the producers can prove that they can be "adequately controlled" when a "safe threshold" can be defined where their detection is considered as posing no threat to human health.⁴

4.3.3 The link between REACH and the Action Plan

In order to sustain and accentuate the importance of the European Environment and Health Action Plan on the political agenda, it is necessary to highlight the areas where the Action Plan can link to other EU initiatives and in that way bring the integration of health and environment developments forward. REACH is one of the most contentious and important pieces of EU legislation ever to go through EU⁵, and therefore the linking between REACH and the Action Plan may be considered of high importance.

However, there are different views on whether and to what extent there should be a closer integration or co-ordination between REACH and the Action Plan, at least in the short to medium term.

One could argue that REACH covers the initiatives that would otherwise have been the role of the Action Plan in this area. However, among the stakeholders interviewed for this study, representatives from HEAL⁶ and from JRC⁷ explain that REACH and the Action Plan, while not mutually exclusive, must be seen as two completely separate entities (policies) with different objectives and aims. The implementation of REACH in itself will not help improve the general understanding of chemicals on the market, as the basic role of REACH is to set limits for emissions.

¹ www.euractiv.com; "Chemical Policy review (REACH)", published Tuesday 17 August 2004/updated Monday 24 September 2007.

² Response to questionnaire by Catherine Ganzleben, EEB, January 21st 2008

³ Interview with Maureen Butter, Dutch Platform Health and Environment, January 29th 2008

⁴ www.euractiv.com; "Chemical Policy review (REACH)", published Tuesday 17 August 2004/updated Monday 24 September 2007.

⁵ According to CHEMTrust; <http://www.chemtrust.org.uk/>

⁶ Interview with Christian Farrar-Hockley, HEAL, January 21st 2008

⁷ Interview with Peter Pärt, JRC, February 21st 2008

REACH does not contain anything about multiple exposures and cocktail effects, which is exactly what would be the role for the Action Plan: to use and combine the knowledge from REACH information and monitoring, creating structures of communication between scientific communities, stakeholders and the responsible policymakers.

CEEP¹ argues that it is too early to mix the Action Plan and REACH; one should wait until REACH has been fully implemented but, on the other hand, health should be included in REACH from the beginning. In relation to this, a representative from Eurometaux² states that it would be a good idea to co-ordinate the two policies, but for the moment it is difficult to see how this could be done.

The arguments in favour of integrating the two policies closer mainly relate to the fact that the data contained in the REACH database could feed into the research and information activities carried out under the auspices of the Action Plan and, conversely, that this research could provide the basis for developing more sophisticated responses through REACH to new research results on the impact of human health of chemicals, in particular cocktail effects and multiple exposures.

According to a Member State representative³, it is possible to link REACH and the Action Plan. One way to do this would be in the area of Human Bio-monitoring (HBM) and the pilot project as proposed by 24 Member States on the basis of ESBIO results and Implementation Group recommendations. HBM is very developed on single substances, but not on multiple exposures and cocktail effects. In the long term, it can be expected that the research will improve our knowledge of links between different substances, according to a representative from the Institute of Public Health, University of Copenhagen⁴. Linking REACH with the pilot project would provide a basis for integrating the knowledge contained in the REACH database (description of various chemical substances) and the knowledge about human bio-monitoring (level of chemicals in humans) to determine which chemical substances particularly affect human health. According to the representative from the Institute of Public Health, University of Copenhagen⁵, it is important to use the knowledge which is gained from REACH in order to gain more knowledge on public health.

An area where the integration of REACH and the Action Plan would be highly relevant would be the initiatives under the Action Plan directed at understanding the relationship between environmental factors and the four priority diseases: respiratory diseases, neuro-developmental diseases, cancer and endocrine disruption effects can have on human health. Endocrine disruption effects can be caused by various factors such as man-made chemicals with unintentional hormone-like activity (for example pesticides such as DDT, endosulfan, toxaphene and DBCP), industrial chemicals and byproducts such as polychlorinated biphenyls (PCBs), dioxins, and phenols. In relation to this, neuro-developmental diseases can be caused by chemical elements such as lead and mercury (quicksilver).

One observer, points that REACH has taken up a lot of resources in the European Commission and consequently other regulatory and implementing projects have been neglected in recent years⁶. IEEP adds that it is the Commission who should take the initiative to get the experts behind the Action Plan and REACH to work together in order to coordinate some of their actions; however, an apparent lack of resources internally in the Commission seems to stand in the way of this.

¹ Interview with Christian Puppincck, CEEP, February 7th 2008

² Interview with Violaine V., Eurometaux, February 25th 2008

³ Interview with Pierre Biot, Federal Public Service (FPS) Health, Food Chain Supply and Environment in Belgium, February 25th 2008

⁴ Interview with Lisbeth E. Knudsen, the Institute of Public Health, University of Copenhagen, January 31st 2008

⁵ Interview with Lisbeth E. Knudsen, the Institute of Public Health, University of Copenhagen, January 31st 2008

⁶ Interview with Marc Pallemmaerts, IEEP, January 17th 2008

4.3.4 Policy recommendations

Although it is clear, as pointed out by several stakeholders, that integration between REACH and the Action Plan may be difficult, in particularly considering the time-scale for the implementation of REACH (the registration of chemical substances is planned to take place over an 11-year period, as mentioned above), there seems to be a basis for some degree of co-ordination between the two initiatives.

In practice, this would mean either integrating actions relating to how chemical substances affect human health as a part of REACH, or including elements in the Action Plan about chemical substances, or both – the latter through establishing some kind of co-ordination mechanism.

An interesting proposal was put forward by The European Environmental Bureau (EEB)¹ for the Action Plan to support the development of “trigger” mechanisms, whereby evidence of links between substance exposure and damage to human health triggers control under the relevant legal instrument. Thus, under REACH it is important to ensure that evidence of links between substance exposure and damage to human health feeds rapidly into the REACH process and prompts addition of the substance to the list of chemicals at the ECHA. This would require the establishment of information channels between researchers under the Action Plan and competent authorities responsible for implementing REACH, since it is the Member States who propose substances to be added to the Candidate List for substances of very high concern that go for registration.

The most important and immediate policy recommendation thus relates to the obvious need for coordination and exchange of information between the actors involved in the two initiatives. It is therefore recommended that a coordination unit be established by the Commission to ensure the prioritization of health issues, promote the transfer knowledge, exchange of information etc., and to determine in more detail how the implementation of the Action Plan and REACH could be linked.

4.4. The way forward²

Many aspects must be discussed when developing a coordinated and coherent EU regime. A conceptual analysis of coherence may clarify what is meant by it, thus ensuring that all stakeholders are talking about the same thing. Furthermore, the exercise necessitates that sub-hierarchical concepts are structured around the concept of coherence - for instance coordination, alignment, complementarity, synergy, compromise, etc. Such concepts may also help to elucidate on which strategic policy levels and hierarchical political level research results can be transformed into policies.

This section will touch upon three aspects of coherence at EU-level which arise from our assessment of the Action Plan and its Mid-Term Review. Addressing and dealing with these aspects will provide the means to initiate a change in the decision-making procedure within the health and environment fields which will place the ultimate goal of SCALE within reach. The ultimate goal as stated in the Action Plan is “to develop an environment and health ‘cause-effect framework’ that will provide the necessary information for the development of Community policy dealing with sources and the impact pathway of health stressors”³. Thus, this section represents the real “added value” of the present study.

¹ Response to questionnaire by Catherine Ganzleben, EEB, January 21st 2008

² The authors thank the EEA (The European Environment Agency) for valuable contributions to this chapter.

³ The European Environment and Health Action Plan 2004-2010 (SEC(2004) 729) p. 4

The first aspect discussed in this chapter is how to improve the link between research and policy processes. The second part will deal with the question of a more holistic approach enhancing a better integration – both as regards integration of health and environment sectors and better integration of various actors. Finally, we will discuss the implication of the conclusions of this present study for an improved European approach to prevention.

4.4.1 Turning interdisciplinary research into coherent EU policy

The interdisciplinary research endeavour of this Action Plan is one thing – turning the new research results into coherent EU policy is quite another. As discovered in the assessment of the Action Plan and its Mid-Term Review, the question is not so much about carrying out research but rather how to ensure that results are being used. It is widely acknowledged that research is indeed needed to develop a cause-effect framework for environment and health issues. However, in our assessment we have discovered various obstacles as to why research is not always carried forward and fed into policy making. The obstacles can be grouped under three different headings, the first one about difficulties relating to policy makers, the second related to researchers themselves and the third is related to the gap between information/monitoring and research. These three types of challenges will be discussed separately, although they are evidently interconnected. Finally, potential solutions will be discussed.

One could argue that it is possible to detect when policy is not reflecting “sound” science if a consensus is stated by the scientists themselves that the policy is wrong. This can be exemplified by three major areas which are all related to the Action Plan. These include the case regarding REACH and whether it will provide sufficient information regarding endocrine disruptors¹, the case of air pollution limit values where Europe's leading air pollution scientists and respiratory doctors urged the European Union institutions to take account of the latest scientific evidence available in their negotiations on EU air pollution legislation and to do more to protect public health² and, thirdly, the neuro-developmental scientists who have been discussing human health effects of developmental exposure to chemicals³.

The first type of obstacles identified has been the question of how policy makers deal with research results. Results may be too difficult for policy-makers to turn into policy because of the financial and structural constraints which policy-makers operate under. Instead of dealing with the results available, they may thus resort to initiating yet more research instead of taking action based on the existing evidence. Also, the amount of research can be so overwhelming that policy makers can't make sense of it, lose track and feel compelled to call for more research in order to get an overview. Both explanations to a certain extent do seem plausible here. The considerable voluntary contributions of many stakeholders, including scientists, to the SCALE process were not subsequently matched by actions and resource commitments from the Commission commensurate with those early stakeholder and even Commission efforts. Nor were they of an equivalent scale to that of the USA which, with the Presidential order of 1997, initiated the focus on children's environmental health that Europe later picked up. Since the EU Action Plan was produced there has been a further reduction in resources for environment and health within DG Environment which, together with its consequences, was discussed in section 3.2.1 of the present study.

¹ <http://www.cascadenet.org/projectweb/portalproject/Index.html>

² For more info, see European Respiratory Society website: <http://dev.ersnet.org/333-air-quality.htm>

³ For example, see the “*Faroes Statement*” in *Basic & Clinical Pharmacology & Toxicology*, Vol. 102, no.2, p.97, February 2008

In order to secure the proper use of the research available, the lack of and constraints on especially the human (and financial) resources must be rectified. It is widely recognised that progress with environment and health is hampered by its very importance i.e. its relevance to all economic, most political, and much scientific activity. In this regard, it is very similar to sustainable development itself. As a consequence, unless there is a strong **co-ordinating unit** that can embrace the differing interests, traditions and actions of Public Health (DG SANCO), Environmental Health (DG Environment), and the health-related actions of DG Research, there will be little focused progress.

Similar coordinating institutions have been created for sustainable development at both European and Member State levels. Given that the overall goal of economic activity, and one of the key objectives of both the EU Sustainable Development Strategy and 6th FP, is quality of life, and the contribution of health to that, it would seem appropriate if similar institutional arrangements were to be adopted for environment and health.

Another question is the difficulty for researchers to accept the active involvement of policy-makers in some parts of the procedure which was emphasized by the Belgian MS representative¹. At the moment, research results tend to be published only when projects finish whereas, in order to ensure timely policy response, it may be necessary to translate science into policy along the way. For the time being, there seems to be too much focus on the last part of the research. What is needed is a dialogue between policy makers and scientists before, during and after research projects. This entails the involvement of policy makers much earlier in the process; that research evolves as a dialogue between researchers and policy makers; and the presentation of interim results at workshops or similar earlier in the process etc. Prevention cannot afford to await the establishment of definite relationships of causality as delays in decision-making would then lead to the spread of toxic exposures – and the increase of long-term, harmful consequences².

Finally, there is a problem regarding the gap between “research” and “information” also reproduced in the Action Plan - as the first part is dedicated to information whereas the second is focused on research. **This is a common but regrettable distinction that many research authorities draw** and this often results in no support for research proposals that have large monitoring components.

This dividing line has, for instance, been one of the main obstacles to the HBM pilot project under action 3 in the Action Plan and has in fact prevented it from obtaining funding from the 1st call of the FP7. That this outcome was foreseeable does not diminish its serious implications. Much monitoring, and particularly HBM, provides the data and knowledge for the associated research into the initial causes of much disease and dysfunction; to distinguish between them prevents much knowledge from being created. HBM, and associated “omics” sciences, help to bridge the gaps between “effects” and “adverse effects”: this is a continuum, rather than a dichotomous division, that invites earlier action at the “effects” end of the disease process as knowledge about the pathways to disease expands. HBM data when stored in Biobanks, as in a few member states, provides a valuable basis for both retrospective and prospective research, as the NHANES system in the US illustrates³.

¹ Pointed out in interview with Pierre Biot, Belgian Environment and health Cell

² Faroes Statements p. 75. in Basic & Clinical Pharmacology & Toxicology, Vol. 102, no2. p.97, February 2008

³ <http://www.cdc.gov/nchs/nhanes.htm>

If precautionary action is to really prevent much of the disease and dysfunction that arises from the four priorities of the Action Plan (asthma and respiratory diseases, neurological diseases, endocrine mediated diseases; and cancer), it needs to be supported by more and better HBM data and knowledge. Such HBM data can therefore make a vital contribution to the establishment of sufficient evidence for the “*early action on E&H problems*”, that yields “*benefits (from) preventive and precautionary measures*” which the EU Council of Ministers has recently called for¹.

This finally leads us to the key question, which is how to actually improve the link between research and policy. There is a need to **pull together and widely disseminate the past, current and emerging scientific knowledge on environment and health from the different European research programmes as well as MS research in such a way that it would become “Evidence for Action”**. There are significant implications of multi-causality and biological complexity for the strength of evidence needed to justify early precautionary and preventive actions to reduce environmental exposures (and therefore risks), particularly when the potential harm originates in foetal life and has lifetime consequences.

In general, the main implication of multi-causality and biological complexity is that lower strengths of evidence need to be used to justify precautionary and preventive actions. This is because it is more difficult to draw firm conclusions about causality now compared to when biological reality was perceived as simpler, with fewer recognised but more dominant health stressors, such as smoking and alcohol. For example, a recent summary of this knowledge on the foetal origins of disease, and its implication for “evidence for action”, was published in the scientific journal “Basic and Clinical Pharmacology and Toxicology”² but there is a lot more emanating from DG Research projects, e.g. CREDO³, Newgeneris⁴, and many other research projects relevant to environment and health, which need to be more widely disseminated.

A wider and enhanced dissemination of research knowledge would make a significant contribution to the ultimate goal of the EU Strategy and Action Plan of the development of a cause-effect framework. This means that precautionary approach as well as the communication of knowledge need rethinking. In fact these two elements provide the basis for a strengthening of the “response” part of the Action Plan - a response which will be further elaborated upon in section 4.4.4.

4.4.2 Ensuring a holistic approach

Before turning to the elaboration of the distinctions between prevention and precaution policy, we find it valuable to elaborate on the issue of a more holistic approach entailing integration as regards the different fields of environment and health, the integration of stakeholders and the integration of citizens.

¹ http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/envir/97852.pdf Para16

² Grandjean P: “*Late insights into early origins*”, in Basic & Clinical Pharmacology & Toxicology, Vol. 102, no2. p.97, February 2008

³ CREDO (The Cluster for Research on Endocrine Disruptions), see more on EU website: http://ec.europa.eu/research/endocrine/projects_clusters_en.html

⁴ NewGeneris Project on Newborns and Genotoxic Exposure Risks: see website: <http://www.newgeneris.org/>

The question of how the traditionally independent and partially isolated research areas of environment and health will be integrated is central for the fundamental premise of the Action Plan. As the Belgian representative points out, the cultures of health and environment and their way of functioning are fundamentally different. Where DG Environment is used to working with a wide range of stakeholders demanding a great deal of transparency, DG SANCO works more in closed, scientific groups¹. This has

Leading experts in the field are concerned about the clarity of the theoretical framework from which common scientific approaches must be derived. Jacques Kummer says: “We need to develop a theory on how to develop complex frameworks for transdisciplinary causalities between these two fields”². He stresses how “multidisciplinary” can be a misleading concept that does not foster a coherence oriented discourse. Instead “transdisciplinarity” denotes the systematic approach that is needed to successfully implement the objectives outlined in the Action Plan.

The so-called “holistic problem” is not confined to the scientific challenges of finding way through uncharted territory in the academic no-mans-land that lies between environment and health, it is also closely related to the difficulties of teaching people (citizens as well as politicians) what complexity is and how it impacts the research made and the lives we have to live. When the simple causal connection is exchanged with complex probabilities, people are not as easily convinced to change their ways – whether it is the regulation or the daily routines that need changing. Thus, there seems to be a consensus that education is needed. One option is to explore the possibilities for incorporating these issues in the general curricula. On a policy-makers’ level a broad communication strategy needs to be developed so that decisions are made on an informed basis.

The Action Plan in a way reflects these views. For instance it seems that legislative action has been postponed so that research and education can pave the way for general awareness. The political and informed awareness of these matters may also lead to a change of behaviour. Environmental groups have regretted that the Action Plan has not “foreseen any legislative action” and has missed the opportunity to support regulations. “Instead the European Commission prefers to listen to self-interested stories from the chemicals industry rather than to propose action to protect children from chemical contamination”³.

The reasonable defence of the strategy of the Action Plan is two-fold: Firstly, as mentioned, it presupposes that information must go before the change of policies. Secondly, it seems to build on the belief that if people change their needs and demands, the industry will change along with them. Professor Kummer points to the progressive changes that are already seen in the industry’s perspective on some matters, such as the REACH initiative, seeing products as waste, the interest in life cycle analyses, the possibilities in re-use of products, etc. If consumption changes, production forms will change with it. During recent years, parts of industry have realized that it may also be good business to comply with the rising demand for sustainable profiles. This economic motivation is probably the most effective and creative way of changing things in the industry. Senior Researcher Lars Gunnarsen backs up the Action Plan’s emphasis on knowledge before legislative action: “Force through premature regulation may actually lead to non-cooperative reactions due to misapprehensions”⁴. He explains how building techniques for houses, for example, have changed slowly in pace with the knowledge available and parallel to the culture of the workers doing the job.

¹ Interview with Pierre Biot, the Federal Public Service (FPS) Health, Food Chain Supply and Environment in Belgium, February 25th 2008. This is most likely also due to the fact that the Aarhus convention prescribes transparency and public participation in environmental matters.

² Interview with Jacques Kummer, ULB, January 11th 2008

³ Stefan Scheuer from the European Environmental Bureau. Quoted from EurActiv.com – Environment and Health strategy (SCALE).

⁴ Interview with Lars Gunnarsen, SBI, January 11th 2008

As mentioned in the assessment of the Action Plan, integrating the two fields are perhaps one of the true achievements of the Action Plan, although the integration could be strengthened through further activities such as, for instance, annual Environment and Health councils, conferences etc. A coordination unit, as discussed above, would also contribute significantly to promoting this integration along with the prioritization from the Commissioners themselves.

A strengthened involvement of both **stakeholders and citizens** will also be necessary to reach the full potential of the Action Plan.

Regarding the involvement of citizens, it was raised in the assessment of the Mid-Term Review that because environment and health issues are often within the domestic sphere, it is a very sensitive issue and thus difficult to legislate about. What is needed is efficient communication and awareness raising. Disseminating research knowledge could be an example of activities that would help address the link between the research and the response part of the Action Plan. Much more effort is needed to retrieve relevant knowledge from research activities and ‘translate’ it into information tailored to the needs of different target groups among consumers and the public to help them make better informed choices. The recent developments, such as the EU Health portal with its ‘My environment’ component provides a good starting point.

An example of this kind of information could be lists of “Chemicals and other Environment and Health Stressors of Concern”, derived from the research field, and made available to stakeholders, including consumers, in order to enable them to act on the information, if they so wish. The experience of some Member States and the US with such information has been positive. Using stakeholders to disseminate information is also an important means to ensure local ownership and transparency. These aspects should be priorities for consideration when discussing priorities for the second cycle of the Action Plan.

4.4.3 Strengthening European prevention policy

Though life expectancy within the EU is increasing, there is still a significant level of early mortality and preventable morbidity due to accidents and injuries, mental disorders, some types of cancers, circulatory diseases, infections and respiratory illnesses. In the EU, the health status of the population is often linked with individual health behaviour (nutrition, physical activity, smoking), with living conditions (housing, environment), and with socio-economic and working conditions. According to Health-EU, information is a key role in improving health by helping people to make healthier choices and encouraging healthier behaviours¹. However, to integrate the complexities of environmental impacts on health, more investigation is needed on how this can be done. This will be the focus of this section.

In order to be able to influence both individuals and MS, it is vital that the Commission places premium on health and environment issues by presenting a more coherent and targeted prevention policy in line with the “Evidence for Action” approach suggested above which contains added value for the MS. Otherwise, there is a risk that the Member States will dismiss a coordinated approach and seek own solutions. In relation to that, it is also essential that the Commission and the responsible commissioners will prioritize these issues and engage themselves actively in the process in order to create EU added value and a prevention policy which will be taken into account by Member States. Furthermore, an enforced Action Plan with a clear suggestion for a European prevention policy will be an opportunity for EU to exercise leadership in environment and health protection.

¹ http://ec.europa.eu/health-eu/health_in_the_eu/prevention_and_promotion/index_en.htm

With a renewed EU initiative enforcing high standards, EU could also be agenda-setting at a global level. It is clear, though that the approach outlined above needs further elaboration to be incorporated into a distinctly European structure.

Widely disseminated summaries of the “Evidence for Action” approach as described in section 4.4.1. would also help with the wider and wiser use of the Precautionary Principle (PP). Multi-causality, biological complexity and the scientific knowledge that illustrates this reality provides evidence for earlier actions to both reduce harm from the environment and to promote the improvements in health that arises from a healthy environment, including green spaces and eco-systems. Both the prevention of harm and the promotion of health are particularly relevant to the elderly and children.

There is much misunderstanding about the PP due in part to the absence of a definition in the EU Treaty and to the untransparent and unfocused definitions in the International Treaties. Also in the Action Plan, there is an apparent indistinctness or vagueness of the PP. It states that “Only when sufficiently clear evidence is available, also inline with the precautionary principle, can appropriate policy options be developed¹”. However, this principle support the exact opposite argument (as the note also included in the Action Plan reveals when investigating): “Where there is uncertainty as to the existence or extent of risks of serious or irreversible damage to the environment, or injury to human health, adequate protective measures must be taken without having to wait until the reality and seriousness of those risks become fully apparent²”. The principle, contrary to the one outlined in the Action Plan, is often measured against the principle of proportionality, which stresses the protection of the citizen against premature actions or unbalanced restrictive measures or punishment in the name of a just cause – it is for example instinctively disproportionate and thus unjust to lock a man up for littering even though the state support a clean environment. The precaution of the Action Plan entails not to take legislative action until a more coherent and empirically tested “cause-and effect-framework” has been developed that captures the actual complexity of the new trans-disciplinary knowledge gap. However the precaution therefore consist in “not taking action before entirely sure” – not in “taking action before it is too late”, thus being cautious about the environment or our health. This vagueness must be clarified and agreed upon by all stakeholders in order to create a European approach to prevention and precaution.

In order to facilitate dialogues on the PP that are based on a common understanding of its value and implementation, the EEA has produced a working definition which could be useful as a starting point for debates with stakeholders. It is reproduced below.

*“The PP provides justification for public policy actions in situations of **scientific complexity, uncertainty and ignorance**, where there may be a need to act in order to avoid, or reduce, potentially serious or irreversible **threats** to health or the environment, using an **appropriate level of scientific evidence**, and taking into account the likely **pros and cons** of action and inaction”³.*

What is needed at both a theoretical and at a more practical level, is a clear distinction between prevention and precaution. While prevention is about preventing known risks from happening or arising, precaution is a measure taken in advance to prevent factors not yet known to us from happening⁴.

¹ The European Environment and Health Action Plan 2004-2010 (SEC(2004) 729) p. 5

² <http://www.sustainable-design.ie/arch/precautionaryprinciple.htm>

³ Source: EEA, arising from discussions around “Late Lessons from Early Warnings: the Precautionary Principle, 1896-2000”, 2001

⁴ Concise Oxford English Dictionary, Eleventh Edition, Edited by Catherine Soanes and Angus Stevenson, Oxford University Press. (p.1128)

Prevention will thus often simply come too late. As Phillippe Grandjean shows in the case of the developmental origins of human disease, the delay in preventing hazardous exposures has undoubtedly resulted in major costs to society¹.

The problem lies not only with policy makers but as mentioned above also with scientists who often recommend further research instead of reacting on tentative hypotheses². At the same time, the absence of universally accepted evidence demonstrating damage or harm has often been misinterpreted as evidence of safety³. This means the PP finds its importance in including imperfect evidence⁴. This approach has gained ground within the last decades within the environmental sector but a relatively new and somewhat controversial phenomenon in health sciences and policy making⁵. Furthermore, current risk assessments and standard setting are often based on limited information on single hazards⁶. This is partly because current research tends to focus on simplified model systems not taking into account multiple exposures.

The conclusion of the above must be that it is necessary to revise the prevention policies of EU and its Member States in such a way that it reflects the latest knowledge and fully incorporates PP as principle. Decisions should not be based on an assumed certainty of the scientific information available but rather on an estimate of the *uncertainty*^{7,8}. It will be necessary to look at and coordinate actions with other organisations, most notably the WHO, but also a close dialogue with and participation from scientists and stakeholders. Scientists should provide the information and research that will make it possible for policy makers to evaluate these risks. Furthermore, researchers could also help the communication of such a preventive policy by emphasizing studies measuring societal impacts and benefits of preventive actions⁹. Stakeholders, civil society organisations and NGO's should be included to ensure and increase the usefulness, awareness and dissemination of both research and information activities and to ensure the provisions of the Aarhus Convention on public participation. This kind of integrated, holistic approach where research via evidence will be fed into action could provide a sound basis and structure for an environment and health 'cause-effect' framework that will provide the necessary information for the development of Community policy dealing with sources and the impact pathway of health stressors.

¹ Grandjean P: "Late insights into early origins", in Basic & Clinical Pharmacology & Toxicology, Vol. 102, no2. p.97, February 2008

² Grandjean P: "Late insights into early origins", in Basic & Clinical Pharmacology & Toxicology, Vol. 102, no2. p.97, February 2008

³ Grandjean P: "Implications of the Precautionary Principle in Research and Policymaking", in American Journal of Industrial Medicine 45, pp 382, 2004,

⁴ Grandjean P.: "Seven deadly Sins of Environmental Epidemiology and the Virtues of Precaution", in Epidemiology, vol.19. no 1, January 2008

⁵ Interview with Maureen Butter, Dutch Platform Environment & Health, January 29th 2008

⁶ Grandjean P: "Implications of the Precautionary Principle in Research and Policymaking", in American Journal of Industrial Medicine 45, pp 385, 2004,

⁷ Grandjean P: "Implications of the Precautionary Principle in Research and Policymaking", in American Journal of Industrial Medicine 45, pp 385, 2004.

⁸ This means that type II errors in the statistical wording,, that is overlooking a true hazard, becomes essential in the decision-making processes.

⁹ Grandjean P: "Implications of the Precautionary Principle in Research and Policymaking", in American Journal of Industrial Medicine 45, pp 385, 2004.

5. Conclusions

The **Action Plan**'s three-step approach is well conceived to ensure that risk management decisions by public policy makers are taken on the basis of appropriate information. Thus, awareness-raising in the broad sense to the public as well as in the narrow sense to the decision makers are realised through communication and coordination of integrated research. The 'expanding cycle' rationale seems logical and realistically reasonable. Further, the objective and aims of the Action Plan are reasonable.

However, the Action Plan **lacks a detailed implementation strategy**. It is difficult to predict what should and will be done when it is not pinned out how, when, and with what kind of funding the overall actions are implemented.

These shortcomings also make it difficult to evaluate the Action Plan; there are few clear indicators or deadlines. In short: The intentions are good and the idea to integrate disciplines so that coherence of complex causal relationships can create the foundation for action is necessary. But an Action Plan should include a comprehensive implementation strategy regarding how to reach the objectives in a manageable and realistic way.

Two recurring conclusions arise from our assessment of the various actions of the Action Plan:

First of all, there is too much attention to the two first sections within the Action Plan, namely information and research, while the **responses** (reviewing of policies and improving communication) to these are **underdeveloped and largely inadequate**. There is a lack of clear focus, targeting and making sure that the data gathered is relevant and subsequently used properly.

Secondly, there seems to be a **lack of resources** allocated, as regards both the financial and human resources to ensure the proper implementation of the Action Plan. The issue of funding has not been given sufficient attention. For Action 3 on bio-monitoring, the lack of financing can be critical. This means also that the Action Plan depends on other sources and EU initiatives, primarily funding from research programmes which is not always constructive, as other priorities (e.g. research vs. monitoring in the research programmes) may cause the Action Plan initiatives to not receive the necessary or expected funding.

The lack of human resources is perhaps the gravest problem as it obstructs the whole implementation of the Action Plan. It prevents the proper use of the information and research obtained which means that results are not translated into actual policy. It is also difficult for Member States to act as there is **no clear delegation of authority and responsibility**. What is needed seems to be a clear focal point – a coordination unit - to coordinate research and monitoring, to analyse information gathered, initiate the review of existing legislation and propose potential new legislation. Furthermore, a revision and rethinking of the implementation schedule is necessary in order to achieve the goals set out.

The **Mid-Term Review** was supposed to 'identify the appropriate follow-up of the actions originally set out in the Action Plan'. However, the Mid-Term Review to a large extent fails to set up new priorities with regard to both the remaining 3-year period and discussion of priorities relating to the second cycle.

As regards the health aspects of **climate change**, there are a number of recent and planned Commission initiatives, including the recent publication of the Green Paper "Adapting to climate change in Europe – options for EU action" in which health is a focus area, and a number of initiatives are planned for 2008. Thus, there seems to be no lack of initiative.

However, the task of designing and enforcing an integrated policy addressing climate change is associated with a high degree of fragmentation of expertise and of responsible authorities. A general recommendation is therefore that the focus area climate change and health should be integrated to a higher degree into the Action Plan in order to safeguard commitment to this area as well as to strengthen the coordination of the policy area. The need for a strengthened coordination mechanism within this area is emphasised by several stakeholders.

On **indoor air quality**, the conclusion is that little progress has been achieved in terms of turning the existing evidence into practice. This conclusion may be a result of the difficulties to assess progress in the lack of any performance indicators, but it is also clear that policy-making within the area is met with a number of barriers, including subsidiarity, fragmentation of expertise and stakeholder interests, differences in climatic and social conditions across the EU, the difficulties of making policy for the private sphere, the clash with energy efficiency requirements, and difficulties of monitoring.

REACH has been, and still is, a controversial piece of legislation, and there is not much agreement on what – if anything - can be done to strengthen the link between REACH and the Action Plan. However, it is clear that there is, as a minimum, a need for more resources for co-ordination and exchange of knowledge between the two initiatives, preferably in the form of a dedicated co-ordination unit set up by the Commission. It has also been proposed that a “trigger mechanism” could be developed under the auspices of the Action Plan whereby new evidence of links between substance exposure and damage to human health would trigger control under the relevant legal instrument.

Finally, it has been discussed how the link between research and policy making could be improved in order to achieve the ultimate goal of the Action Plan. It will be necessary to revise the prevention policies of EU and its MS, in order for them to reflect the latest scientific knowledge and fully incorporate the Precautionary Principle in such a way that it would become an “**Evidence for Action**” approach. This means that decisions should not be based on an assumed certainty of the scientific information available but rather on an estimate of the *uncertainty*.

6. Recommendations

The Action Plan

1. In order to ensure real health benefits from the Action Plan, it is necessary to move forward from research into policy making. It is therefore recommended to push for the next cycle of the Action Plan to include **more concrete action, such as legal instruments**.
2. Having found that lack of human resources is one of the greatest barriers to implementation of the Action Plan, it is recommended that financial and human resources are devoted to the **establishment of a Coordinating Unit** for environment and health issues.
3. In order to identify and initiate activities to procure proper financing of the Action Plan, it is recommended that a **financial plan** for the implementation of the priority actions of the Action Plan be produced. In the short-term perspective, **ensuring Community funding for the bio-monitoring pilot project** is urgent.
4. For the purpose of ensuring that the relevant priorities for the second cycle of the Action Plan implementation process are made, it is recommended to arrange **conferences/events, involving all relevant actors, to set the agenda for the continued work**. This would also create a second opportunity for stakeholders and NGOs to give input to the process. Given that many NGOs, involved in the consultative process, seem to be of the opinion that the Action Plan has deviated from the intended course, a second opportunity for consultation seem relevant. Annual meetings (Councils) of European Health and Environment Ministers could also be an option to strengthen the integration of health and environmental fields.

Climate change and health

5. The course taken towards more extensive adaptation strategies should be maintained. For example, it is relevant to initiate a concerted European action on a **pan-European heat warning system**. In general, the inclusion of this endeavour in the Action Plan would increase the commitment to action.

Efficient indoor air quality policy

6. It is recommended that a **Green Paper on policy options on IAQ** is produced as the first step of further EU legislation, addressing other pollutants than environmental tobacco smoke. Gathering the results, and policy recommendations, of already accomplished studies and projects in a green paper would strengthen the commitment to policy action as well as give input to an open debate on the way forward.
7. Given the high degree of fragmentation within the field, it is recommended that the different services of the European Commission regularly keep the European Parliament informed about the development of **Action 12 on the Action Plan** in order to strengthen the dialogue between institutions and co-ordination among researchers, stakeholders and policymakers.

REACH

8. The Action Plan focuses on multiple exposures, whereas REACH measures only single substances. Thus, it is recommended that the new Regulation on Chemicals will interact with this Action Plan to create a better understanding on the consequences of multiple exposures on human health. Furthermore, there is a need to strengthen the co-ordination between the risk assessment community and risk managers.

Prevention Policy

9. It is recommended to revise the prevention policies of the EU and its Member States, in order for them to reflect the latest scientific knowledge and fully incorporate the Precautionary Principle in such a way that it would become an “**Evidence for Action**” approach. This means that decisions should not be based on an assumed certainty of the scientific information available but rather on an estimate of the *uncertainty*.
10. In order to maintain focus on the area of environment and health, as well as ensuring continued commitment to progress in relation to the action plan, it is recommended that **another mid-term review of the Action Plan is made at the end of 2008**. This would also facilitate the assessment of progress within the different areas of action.

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8. List of interviews

The table below provides details of the interviews carried out for this study, followed by a brief presentation of the organisations involved.

The contribution of Dr. Bettina Menne, WHO, was delivered orally during the panel of experts Workshop organised in the European Parliament on 6 March 2008 on the same subject.

Interview Number	Title	Name	Organisation	Interview date
1	Senior Researcher	Lars Gunnarsen	SBi	January 11, 2008
2	Professor	Jacques Kummer	ULB	January 11, 2008
3	Senior Fellow & Head of the Environmental Governance Programme	Marc Pallemmaerts	IEEP	January 17, 2008
4	Policy Officer	Christian Farrar-Hockley	HEAL	January 21, 2008
5	EU Policy Officer for Industrial Policies and Chemicals	Catherine Ganzleben	EEB	January 21, 2008 (email)
6	Doctor	Maureen Butter	Dutch Platform Health and Environment	January 29, 2008
7	Professor in experimental toxicology and Member of ESbio Implementation Group	Lisbeth E. Knudsen	Institute of Public Health, University of Copenhagen	January 31, 2008
8	Manager, Emerging Science / Policy Issues	Loredana Ghinea	Cefic	February 4, 2008
8	Executive director	Gernot Klotz	Cefic	February 4, 2008
9	Director	Paul Harrison	IEH	February 7, 2008
10	Chairman of WG	Christian Puppink	CEEP	February 7, 2008
11	Advisor, Health and Environment Interactions	Peter Pärt	JRC	February 21, 2008
12	Environment and Health expert	Pierre Biot	The Federal Public Service (FPS) Health, Food Chain Supply and Environment in Belgium (Federal DG Environment Belgium)	February 25, 2008
13	Project Manager, Environment and Health	Dorota Jarosinska	EEA	February 27, 2008
13	Project Manager, emerging environmental issues and scientific liaison	David Gee	EEA	February 27, 2008
14	Chief Advisor	Lars Fock	the Danish Environmental Protection Agency	February 26, 2008
15	Dr., Health and Alloys Manager	Violaine Verougstraete	Eurometaux	February 25, 2008

SBi¹

SBi is the Danish national building research institute, a government research institute affiliated with Aalborg University. SBi develops research-based knowledge to improve buildings and the built environment. SBi identifies issues that are important for professionals and decisions-makers involved with building and the built environment and subsequently communicate their knowledge to these groups.

ULB²

Université Libre de Bruxelles (ULB) was created in 1834 and is today a multicultural institution which has 7 faculties and a range of schools and institutes and is, at the same time, a comprehensive university providing academic tuition in all disciplines and study cycles.

The ULB is involved in numerous international research and development programmes and cutting edge research projects. It has been honoured by many awards, including three Nobel Prizes (Jules Bordet, Nobel Prize for Medicine in 1919; Albert Claude, Nobel Prize for Medicine in 1974; and Ilya Prigogine, Nobel Prize for Chemistry in 1977). The ULB has 7 Faculties among these Philosophy and Literature, Law, Medicine and Applied Sciences / Engineering School. Furthermore ULB contains 4 schools and Institutes; School of Public Health, Institute for Motor Sciences, Institute of Pharmacy and institute for European Studies.

IEEP³

IEEP is an independent not for profit institute advancing an environmentally sustainable Europe through policy analysis, development and dissemination. IEEP undertake research and consultancy work on the development, implementation and evaluation of environmental and environment-related policies in Europe. IEEP seeks to engage directly with relevant policy debates and works closely with the full range of policy actors from international agencies, and the EU institutions, to national government departments, NGOs and academics. The Institute seeks both to raise awareness of European environmental policy and to advance policy-making along sustainable paths.

HEAL⁴

HEAL is The Health and Environment Alliance, formerly EPHA Environment Network (EEN). HEAL is an international non-governmental organisation advocating greater protection of the environment as a means to improving the health and well being of European citizens. The aims of HEAL is to raise awareness of how environmental protection improves health. It achieves this by creating opportunities for better representation of citizens' and health experts' perspectives in the environment and health-related European policy-making. HEAL includes a network of 54 members across Europe where 11 of the members are international or European organizations and where 43 of the members work at national or local level in 22 different countries.

¹ <http://www.en.sbi.dk/about-sbi>

² <http://www.ulb.ac.be/docs/ulb-prestige/ulb-brefuk.html>

³ <http://www.ieep.eu/aboutieep/aboutieep.php>

⁴ <http://www.env-health.org/r/27>

EEB¹

The European Environmental Bureau (EEB) aims to promote knowledge and understanding of the current and potential EU environmental and sustainable development policies amongst the general public in the EU, so that this will lead them generally to mobilise for continuous improvement. The EEB has consultative status at the Council of Europe and the United Nations, and has working relations with the Commission of the European Union, the Economic and Social Committee of the European Union, and the OECD.

Dutch Platform Health and Environment²

The Platform Health and Environment is a coalition of NGOs joining forces for a more health-conducive environment. The Platform's main activity is to seek to influence national and EU policy making, inform citizens and to organize debate, roundtables, workshops, and conferences. Members achieve synergy by sharing expertise and drawing upon each others' networks on themes like Children, Health and Environment, risks of nanotechnology, electric hypersensitivity. The Platform is situated in the Netherlands and has been a full member of HEAL since 2004.

Institute of Public Health, University of Copenhagen³

The Institute of Public Health is placed under the Department of Occupational and Environmental Health at the University of Copenhagen. The purpose of the institute is to carry out research and teaching and to act as a consultant within the area of public health. The aim of public health research is to create a scientific foundation for improving the health of the population. This research investigates the health status of the population, efforts being made to improve the health of the population and the endeavours of society to reduce morbidity and mortality. The research is multi-disciplinary and performed by researchers trained in medicine, natural science, social science, and the humanities. The Institute has approx. 120 employees where 60-80 of them are researchers.

Cefic⁴

European Chemical Industry Council (Cefic) is the Brussels-based organization representing the European chemical industry. Cefic is a member of the International Council of Chemical Associations (ICCA), a council of leading industry associations representing chemical manufacturers' associations worldwide. Cefic represents, directly or indirectly, about 29,000 large, medium and small chemical companies.

IEH, Cranfield University⁵

IEH is the Institute of Environment and Health, which build on and extend the scope of the activities successfully developed at the Leicester-based, Medical Research Council's Institute for Environment and Health (MRC-IEH). IEH is situated at Cranfield University and its principal objective is the promulgation of better knowledge and understanding of the impact of environmental factors on human health and the wider environment. The Institute aims to promote a healthier environment through facilitating information exchange, identifying and evaluating environment and health issues and managing research programmes on the adverse effects of chemicals.

¹ http://www.eeb.org/how_the_EEB_works/Index.htm

² <http://www.gezondheidsmilieu.nl/>

³ http://pubhealth.ku.dk/ifsv_en/omos/

⁴ <http://www.cefic.be/Templates/shwStory.asp?NID=479&HID=108>

⁵ <http://www.silsoe.cranfield.ac.uk/ieh/about/history.html>

CEEP¹

The European Centre of Enterprises with Public Participation and of Enterprises of General Economic (CEEP) was founded in 1961 in Brussels. CEEP is a European association to represent public enterprises and enterprises which carry out services of general economic interest, whatever their ownership or status. CEEP is one of the three social partners (UNICE and CEEP as employers' associations and ETUC as employee's association) on European level, recognized by the European Commission and it represents public sector employers in the European Social Dialogue.

The European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest is representing through the European association enterprises and employers' organisations with public participation and enterprises carrying out activities of general economic interest, whatever their legal ownership or status.

Federal Public Service (FPS) Health, Food Supply Chain and Environment, Belgium²

The Federal Public Service (FPS) Health, Food Chain Safety and Environment were created in 2001. It was a emerging of the former Ministry of Social Affairs, Health and Environment and the regionalized Ministry of Agriculture. The mission of FPS is to develop a transparent, dynamic and scientifically-based policy which for example takes care of people's health, provides a better environment for everyone, both today and in the future.

EEA³

EEA, European Environment Agency, has been operational since 1994 and the agency aims to support sustainable development and to help achieve significant and measurable improvement in Europe's environment. The European Environment Agency belongs under EU and the agency is dedicated to provide sound, independent information on the environment. The EEA is an independent information provider, an analyst and assessor, dependent upon strong networks to carry out its work etc.

JRC⁴

The European Commission Joint Research Centre (JRC) is a Directorate-General of the European Commission. JRC has seven institutes located in Belgium, Germany, Italy, the Netherlands and Spain. The JRC has app. 2700 employees, is allocated an annual budget of around €30 million for direct support to EU institutions from the Seventh Framework Programme (FP7). It earns up to a further 15% from competitive activities (participation in collaborative projects, technology transfer and work for third parties - including industry and regional authorities).

The Danish Environmental Protection Agency, Danish Ministry of the Environment⁵

The Danish Environmental Protection Agency aims to prevent and combat water, soil and air pollution and good living conditions for humans, animals and the nature. The EPA contains of six divisions, which all belongs under the Danish Ministry of the Environment.

¹ http://www.ceep.org/about/who_we_are

² https://portal.health.fgov.be/portal/page?_pageid=56,512476&_dad=portal&_schema=PORTAL

³ <http://www.eea.europa.eu/>

⁴ <http://ec.europa.eu/dgs/jrc/index.cfm?id=2260>

⁵ <http://glwww.mst.dk/homepage/>

Eurometaux¹

Eurometaux was created in 1957 as a pursuant to the Rome Treaty and was at that time known as the "Comité de Liaison des Industries de Métaux Non Ferreux de la Communauté Economique Européenne". In 1988, it changed name to Eurometaux and became the Brussels-based association which represents the European non-ferrous metals industry. Today, Eurometaux constitutes the relationship between the European non-ferrous metals industry and the European authorities and international or intergovernmental bodies.

¹ <http://www.eurometaux.org/content/showmission.asp?level=1&menuid=71>

List of abbreviations

CASHh project	climate Change and Adaptation Strategies for Human health in Europe
CEEP	The European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest
Cefic	European Chemical Industry Council
CHEST	Children's Health, Environment and Safety Training
COMEAP	Committee of the Medical Effects of Air Pollution
DG ECHO	The European Commission's Humanitarian Aid Development
DG RELEX	The Directorate General for External Relations
DG SANCO	The Directorate General for Health and Consumer Affairs
ECCP	European Climate Change Program
ECHA	European Chemical Agency
ECOHEIS	European Community Health and Environment Information System, WHO-project
ECTP	The European Construction Technology Platform
EDEN	European Distance and E-learning Network
EEA	European Environment Agency
EEB	European Environmental Bureau
EEN	European Public Health Alliance Network
EMF	Electro Magnetic Field
EMG	Electromyography
ENHIS	European Environment and Health Information System
ENVI	The Committee on Environment, Public Health and Food Safety of the European Parliament
Envirisk	Assessing the risks of environmental stressors: Contribution to the development of integrating methodology
EPPC	Ethnics and Public Policy Centre
ESBIO-project	Expert team to Support Bio-monitoring in Europe
ETS	Educational Testing Service
ETUC	The European Trade Union Confederation
HBM	Human bio-monitoring
HEAL	The Health and Environment Alliance
HEMITSA	Health and environment integrated methodology and toolbox for scenario assessment

IAQ	Indoor Air Quality
IEEP	Institute for European Environmental Policy
IEH	Institute of Environment and Health , Cranfield University
IMPART	The Integrated Mentor Program in Addictions Research Training
INDEX	Critical Appraisal of the Setting and Implementation of Indoor Air Exposure Limits in the EU
INTARESE	Integrated assessment of health risks from environmental stressors in Europe
JRC	DG Joint Research Centre
MS	Member States
METHODEX	Methods and data on environmental and health externalities: harmonising and sharing of operational estimates
NGO	Non governmental organisation
Nomiracle	Novel methods for integrated risk assessment of cumulative stressors in Europe
PINCHE	Policy Interpretation Network on Children's Health and Environment, a EU co-funded projects
PP	Precautionary Principle
REACH	The Registration, Evaluation, Authorisation and Restriction of Chemical substances
SBi	Danish National Building Research Institute
SCALE	Science, Children, Awareness, Legislation and Evaluation, The European Environment and Health Strategy
SCENIHR	The Scientific Committee on Emerging and Newly Identified Health Risks
SCHER	Scientific Committee on Health and Environmental Risk
SVHC	Substances of very high concern
THADE	Towards Healthy Air in Dwellings in Europe, a EU co-funded project
TWG	Technical working groups
ULB	Université Libre de Bruxelles
VITO	Independent and customer-oriented research organisation
WWF	World Wide Fund for Nature

Appendix: General interview guide

NB! This interview guide contains only the “generic” or general questions which have been put to all interview respondents. Since the questions span very widely across different topics, most respondents were not able to answer all the questions. Furthermore, as respondents had different areas of knowledge, more specific follow-up questions were asked depending on the focus of the interviews. These are not listed here.

Questions regarding the Action Plan

- What is your general view of the Action Plan? (Strengths and weaknesses)
- The Action Plan has three focus areas: information/monitoring, research and communication? What is your view on choosing these areas as priorities?
- The precautionary principle has been much debated in relation to this environment and health Action Plan. What is your understanding of the precautionary principle? And how do you think it has been applied in the Action Plan?
- One could argue that a ‘research before action’ strategy has been chosen for this environment and health Action Plan? To what degree do you agree on that? To what extent do you find this approach appropriate?
- In relation to the above - do you think that some degree of legislation is a premature action? Are there any areas in particular where some sort of intervention would be appropriate (bio-monitoring, indoor air quality etc.)?
- What is your impression of the progress achieved here at its midterm review?
- There are three main areas and 13 action points. Could/would you highlight any particular actions where interesting steps and initiatives have been taken? Or the opposite, where the results have been disappointing? (i.e. biomonitoring, development of methodological systems, risk reduction measures, indoor air quality)

Broader questions of a more general nature

- How to improve the link between environment and health research and policy? How to turn research results into coherent EU policy? (in particular how to link “health in all policies” to a more primary preventive policy that has EU added value)
- How to link the question of climate change to health issues? Or the other way around – how to integrate health issues in the climate change debate?
- How to ensure that all actors are involved in a more holistic approach, in particular as regards climate change mitigation and adaptation? (for example linking air pollution abatement policy to climate change policy)
- With REACH into force, how to link the Environment and Health Action Plan and REACH? And how to ensure that the Environment and Health Action Plan will be the mechanism by which information from REACH implementation is used?
- How to create an efficient EU policy related to indoor air quality and health outcomes? Suggestions to concrete actions?
- How can the EU prevention policy be strengthened in the abovementioned areas in order to support a healthier lifestyle? Should it be strengthened at all?