

Training Course

Air Quality and Health

Methods, Tools and Practices for Better Air Quality Action Planning

"I hear and I forget; I see and I remember; I do and I understand." Confucius

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Prepared for the Urban Agenda Partnership on Air Quality

by



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Preface

The training course on *Air Quality and Health - Methods, Tools and Practices for Better Air Quality Action Planning* has been **prepared for the Urban Agenda Partnership on Air Quality with support from the Directorate–General for Regional and Urban Policy of the European Commission.**

The **general objective** of the training course is to contribute to help EU cities, regions, and Member States overcome the challenge of air pollution and reduce its negative impact on health, by making cities and human settlements inclusive, safe, resilient and sustainable.

The Partnership recognised that the mere compliance to EU limit values – although fundamental – will not by itself ensure a healthy city. Reaching the WHO recommended health targets is a more ambitious goal recommended to improve the health of the citizens. As more needs to be done, the Partners decided to focus on ‘The Healthy City’ as a shared vision to address that emerging challenge through:

- Alignment between EU limit values and WHO recommended health standards,
- Better integration of air quality measures with measures from other relevant policy sectors (mobility, energy, climate, agriculture, rural, regional and urban development, etc.),
- Multi-governance level approach, based on close cooperation between different governance levels (local, regional, national, European) on air quality issues.

The **shared vision of *The Healthy City* encompasses five main components**, defining the areas of work of the Partnership, as illustrated below.



After four years of cooperation in the areas above, the Partners have produced an **integrated package of deliverables** to make the shared vision of The Healthy City a reality. They are presented in the following table per each component.

Component of 'The Healthy City' vision	Partnership's deliverable / tool
Legislation and implementation	A Political statement embedding the vision of The Healthy City into the Fitness Check of EU Ambient Air Quality Directives
Public funding and financing	Guidance on Financing Air Quality Plans for cities and local authorities
Planning	A Code of Good Practice for Cities' Air Quality Plans
Measuring impact	A Health Impact Assessment tool
Communicating	A Communication Toolbox to better inform and engage citizens and stakeholders on air quality

Each deliverable represents a fundamental contribution to building 'The Healthy City', and is now ready to be shared with, customized and taken up by other interested stakeholders (cities, local authorities, regions, member states).

The Partnership believes that it is **essential that the methodology used for transferring the knowledge developed by the Partnership in a training is consistent with the holistic approach to air quality and health that underpins the whole package and that has inspired the Partnership's work from the start.**

To that end, we propose a training concept based on the production of a **simplified, tailored, user-friendly scenario for The Healthy City**, where trainees would be enabled to interact with the Partners to acquire the knowledge made available by the Partners in an organic manner, discovering the work done by the Partners component by component and acquiring / customising tools, methods and practices along the process.

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1. Introduction

The training course on *Air Quality and Health - Methods, Tools and Practices for Better Air Quality Action Planning* has been **prepared for the Urban Agenda Partnership on Air Quality with support from the Directorate–General for Regional and Urban Policy of the European Commission.**

The **general objective** of the training course is to contribute to help EU cities, regions, and Member States overcome the challenge of air pollution and reduce its negative impact on health, by making cities and human settlements inclusive, safe, resilient and sustainable.

The **specific objective** of the training course is to offer individuals from public administrations of cities, regional, and national authorities the opportunity to learn, apply and further develop the methods, tools and practices that the Urban Agenda Partnership on Air Quality has delivered with contributions from cities, regions, Member States, the European Commission (as an observer) and other stakeholders during three years of research, study and cooperation.

The **core methodology** of the training course is based on a tailored co-design approach, which enables an effective, user-centred, hands-on knowledge transfer and is highly engaging for trainees. The training course is thus designed as a **scenario-building experience**, which trainees progressively develop during the different steps of the training by discovering and directly adjusting the knowledge produced by the Partnership to their specific needs.

The **training course is structured in five chapters**. Following this **introduction**, in **chapter 2** the general methodology is explained. **Chapter 3** illustrates the main features of the training course's structure and content. **Chapter 4** presents a list of the training material required. Last, but not least, **chapter 5** provides a template of a post-training evaluation form to help gather participants' feedback on the relevance and added value of the training provided.

The **scope** of the training course is limited to provide the Urban Agenda Partnership on Air Quality with a methodological approach, structure and contents for dissemination of all the existing deliverables of the Partnership to a tailored (non-country specific) target audience, and suitable to be used at a training event (e.g. transnational peer-to-peer workshop), as well as for dissemination purposes at other events of strategic and/or thematic relevance for the Partnership. Therefore, when preparing for a specific training or dissemination event (e.g. TAIEX-REGIO-P2P, TAIEX-EIR-P2P, international conference, forum, etc), the **organisers may need to modify the training course according to their specific needs.**

2. Co-design scenario building concept

Co-design is a well-established approach to creative practice, particularly within the public sector. Co-design is often used as an umbrella term for participatory, co-creation and open design processes¹.

The co-design approach enables a wide range of people, even if from different backgrounds (e.g. climate, mobility, energy) and with different agenda to make a creative contribution in the formulation and solution of a problem. **This approach goes beyond consultation** by building and deepening equal collaboration between stakeholders affected by, or attempting to, resolve a particular challenge. A key tenet of co-design is that **users, as 'experts' of their own experience, become central to the design process**.

The role of facilitation (in this case undertaken by the Partners) is an essential component of a successful co-design project. Facilitators provide ways for people to engage with each other as well as providing ways to communicate, be creative, share insights and test out new ideas.

The **immediate benefits of employing a co-design approach** include:

1. Generation of better ideas with a high degree of originality and user value
2. Improved knowledge of stakeholder needs
3. Immediate validation of ideas or concepts
4. Higher quality, better differentiated solutions
5. More efficient decision making
6. Lower development costs and reduced development time
7. Better cooperation between different people or organisations, and across disciplines.
8. Synergies and complementarities more easily identified between different policies/programmes.

The **longer-term benefits** include:

- Higher degrees of satisfaction of stakeholders involved
- Increased levels of support and enthusiasm for innovation and change
- Better relationships between the main knowledge providers (the Partners) and their peers (the target audience for the training).

¹ Steen, M., Manschot, M., & De Koning, N. (2011). Benefits of co-design in service design projects. *International Journal of Design*, 5(2), 53-60.

3. Training course structure

3.1. Overall presentation of the training course

The training course on *Air Quality and Health - Methods, Tools and Practices for Better Air Quality Action Planning* offers individuals from public administrations of cities, regional, and national authorities the opportunity to learn directly from the members of the Partnership on Air Quality - who are leading experts and managers in the field of air quality - enabling participants to develop skills and understanding on how to successfully introduce valuable methods, tools and practises into their organisation.

During the training course participants can **converse with experts – such as the members of the Urban Agenda Partnership on Air Quality - in highly engaging sessions; learn from materials developed by the Partnership and share ideas with other participants.**

The training programme is **aimed at individuals who already have some knowledge of air quality policies and who are keen to extend their knowledge and put their ideas and experience into action, in order to create and deliver benefits in terms of citizens' health, better air quality and economic opportunities.**

The training course goes beyond the basics, giving participants an understanding in the main components of *'The Healthy City'*, the innovative approach developed by the Urban Agenda Partnership on Air Quality to **combine air quality planning and health improvements** through:

- Alignment between EU limit values and WHO recommended health standards,
- Better integration of air quality measures with measures from other relevant policy sectors (mobility, energy, climate, agriculture, rural, regional and urban development, etc.),
- Multi-governance level approach, based on close cooperation between different governance levels (local, regional, national, European) on air quality issues.

The **training course is structured in modules that focus on the different components of the Partnership's approach** and allow to acquire unique knowledge and tools in the areas of air quality legislation and implementation, public funding and financing, planning, measuring impact, communicating and raising awareness.

By using the training course, members of the Urban Agenda Partnership on Air Quality can share insight into the areas of work highlighted above and give practical advice on how to overcome barriers and make the case for change within the target audience's organisation.

At the training course, participants will get:

- Access to use state-of-the-art tools and techniques developed by the Urban Agenda Partnership on Air Quality to analyse their own ideas for introducing innovations in their air quality planning practices;
- The chance to co-design a personalized bespoke scenario integrating their own experience and needs into the areas of air quality legislation and implementation, public funding and financing, planning, measuring impact, and communication, including insight from local and national peers from the members of the Partnership;
- Access to a wide range of inspiring examples of success from local and national administrations across Europe who have realised new economic, social and environmental value in the areas of work covered by the Partnership.

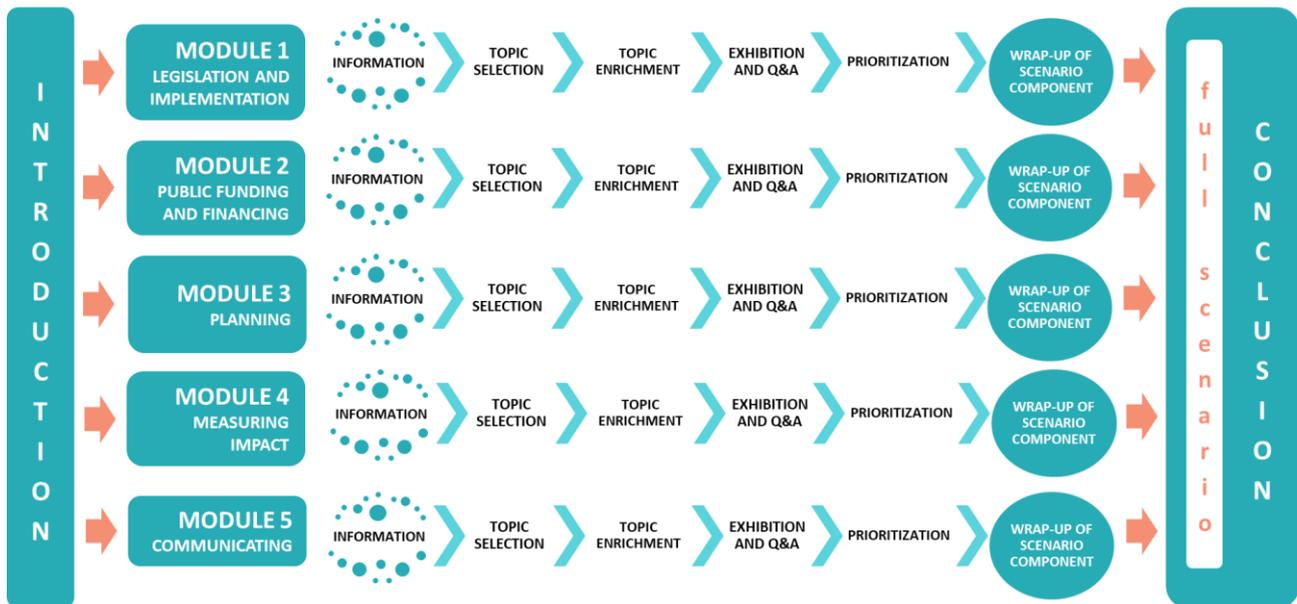
3.2. Training format

The **proposed format for the training course** is as follows:

- Introduction
- Module 1 – Legislation and implementation (outcome: development of a scenario component)
- Module 2 – Public funding and Financing (outcome: development of a scenario component)
- Module 3 – Planning (outcome: development of a scenario component)
- Module 4 – Measuring Impact (outcome: development of a scenario component)
- Module 5 – Communicating (outcome: development of a scenario component)
- Integration of modules' outcomes (outcome: full-scenario)
- Conclusion

The next figure illustrates the **key steps of the overall co-design scenario building process** applied to the training course.

CO-DESIGN SCENARIO BUILDING PROCESS



The process is described in details the following sections.

The proposed training format concept is provided as an **indicative suggestion**. Organizers may modify it according to their needs.

3.2.1. Introduction

The training course opens with an **introduction**. During this first session, the audience is introduced to the challenges tackled by the Partnership and to the solutions found.

The main details of the experience of the Urban Agenda (UA) Partnership on Air Quality are also illustrated, together with the results ready for uptake and further development.

The proposed approach to knowledge exchange is explained, as well as the structure of the training.

As a supporting material for this session, we have prepared a PowerPoint presentation, based on the content of this document, as well as on existing material produced by the Partnership. The presentation is available in ANNEX 1.

The introduction is then followed by training modules, the exact number of which (between one and five) will depend on the nature of the specific training event, as the organisers may decide to provide all of

them, or to rather focus the training on a limited selection. The outcome of each module is a customised scenario component of 'The Healthy City'.

The section below first illustrates the general format of the five training modules; it then outlines the details of the content proposed for each one of them.

3.2.2. Training modules

3.2.2.1. Preparation

To assist training organizers in identifying the relevant topics for each training module, which is fundamental for achieving a high level of engagement from participants, we suggest that **a preparatory activity be carried out before the training**, as follows.

*First, **a brief is sent to participants with:***

- **short introduction to the training course,**
- **list of topics for each module** they are expected to work on,
- explanation of the **scope** of the training.

The registration form should explain that at the training course **participants will get the chance to analyse their own ideas for introducing innovations in their air quality planning practices and that they will get to co-design a personalized scenario integrating their own experience and needs into the areas of work covered by the Partnership.**

Secondly, to ensure that the training is demand-driven, **participants should be invited to indicate a preference of modules and of topics for each module that they would like to develop at the training,** choosing from the options indicated in the sections from 2.2.2.3 to 2.2.2.7 below.

Thirdly, participants should also be informed that **their feedback contributes to the selection of the topics selected for the discussions.**

Although it remains preferable to apply the three steps above for the sake of achieving maximum trainee engagement, organisers may skip the second and third steps whenever they decide not to open the selection of modules / topics to the target trainees, e.g. for organisational reasons or to comply with the requirements imposed by the programme funding a specific training event.

The preparation activities described above make it easier to:

- assist the organizers in **understanding which modules/topics are a priority for the target audience,**

- contribute to fine-tuning the training programme and the template for the co-design scenario building exercise, taking into account participants' feedback.

In addition, they ensure that participants come prepared at the training and with useful ideas and topics to discuss, thus making the overall knowledge exchange more effective and interactive.

3.2.2.2. Execution

The proposed format for each training module consists of a process of six steps, inspired by co-design practices (information, topic selection, topic enrichment, exhibition and Q&A, prioritization, and wrap-up).



Each step is thoroughly described below.

<i>Step number. STEP NAME (indicative duration)</i>	<i>Description</i>
1. INFORMATION (15 minutes)	<p>A short introduction by a representative of the hosting organisation will be the lick-off of the module, inviting participants to engage.</p> <p>At the opening of each training module relevant previous work of the UA Partnership on Air Quality on each topic is introduced, as well as the structure and scope of the training module and the proposed knowledge-exchange approach.</p> <p>The Moderator also illustrates how throughout each training module, participants will be able to contribute to develop a personalized scenario integrating their own experience and needs into the selected topics, drawing on relevant previous work done by the Partnership.</p> <p>Participants are informed about their role in the training, and that their input is appreciated and valuable.</p> <p>A presentation of the key topics, selected also on the basis of their feedback gathered during the preparation (§2.2.2.1), is given (the necessary documents are sent to them earlier and made available at the venue).</p>
2. TOPIC SELECTION (30 minutes)	<p>Participants are divided in groups – possibly mixing stakeholders categories (cities, local authorities, regions, and national representatives) to work on the different topics that must be developed during the session. The audience shifts from plenary to co-designing mode.</p> <p>Each group sits at a round table. As a general rule, the tables will have the same number of topics (ideally no more than 10 participants at each table).</p> <p>Each group is assisted by a Table Facilitator. Table Facilitators could be identified among the participants before the training, and properly briefed. This will enhance the engagement of participants even further, as well as the ownership of the results</p>

Step number. STEP NAME (indicative duration)	Description
	<p>achieved. Alternatively, Table Facilitators can be identified by the organisers among themselves or third parties.</p> <p>All topics available for the module are put on the wall, for instance on an A3 sheet / flipchart (template in ANNEX 2).</p> <p>The Moderator explains how the work in round-tables will be carried out.</p> <ol style="list-style-type: none"> First each table has to choose a specific topic from the wall: ‘Please be aware that this is a decision you need to take together. We give you some time pressure – you only have around 15 minutes for this – because we want you to get to a result fast, so that we can dedicate more time to the development of the topics. The best is to decide by consensus – but if not possible, then you should make a vote at your table.’ In the groups, participants brainstorm of their immediate thoughts about the topics they are going to deal with. It may be words, sentences, current trends, future perspectives or whatever pops up in their mind. Participants write down on post-its one or two topics they can see perspectives in. Each participant gets the chance to give his/her point of view, which can help finding one topic the entire group can accept to work with. When a group has decided which topic it prefers to work on, it receives by the Table Facilitator the corresponding A3 sheet from the wall. If consensus cannot be reached, the Table Facilitator facilitates a vote. If the Moderator sees that participants cannot find an agreement on the topic to develop, he/she asks the respective group to begin voting and the decision is taken by majority. If some of the participants strongly express a wish to work on a different topic than the one decided at the table, the Moderator aims at flexibly accommodating the participant’s request placing this person(s) at the table of preference, if possible.
<p>3. TABLE DISCUSSIONS TO ENRICH TOPICS (1 round: 60 minutes)</p>	<p>Each Table Facilitator triggers discussions by asking a series of tailored questions on the topic. Table Facilitators can make variations in the way questions and answers are given. An example of question/answer session could be that participants discuss in pairs.</p> <p>Outcomes that will enrich the topics are noted on the A3 paper/flipchart by each group. Each participant puts down his/her two best arguments on a post-it.</p> <p>This is followed by a brainstorming with post-its on the A3 paper/flipchart to further define the selected topic.</p>
<p>4. EXHIBITION OF ENRICHED TOPICS IN PLENARY AND Q&A SESSION (45 minutes)</p>	<p>During this step, with the audience reassessed in plenary, the A3 sheets/flipchart with the inputs from each group on the different topics are again placed on the wall.</p> <p>A person from each group (chosen during the previous step) briefly reports on what his/her group has produced.</p> <p>After this, a Q&A session is facilitated to discuss the findings and cross-fertilise them with feedback from the entire audience – even those who did not take part in round-tables on a specific topic.</p>
<p>5.</p>	<p>To contribute further to make the outputs of participants’ discussions usable for the development of a scenario, the audience is led to rank the topics enriched.</p>

<i>Step number. STEP NAME (indicative duration)</i>	<i>Description</i>
INTERACTIVE PRIORITISATION OF TOPICS (20 minutes)	<p>The Moderator explains the prioritization rules, and prompts the participants to consider other topics than their own.</p> <p>This is about giving priority to those inputs of the day that really should end up in a scenario.</p> <p>This will ensure that the training is effective at:</p> <ul style="list-style-type: none"> → producing valuable contributions to influence the agenda of local, regional and national authorities / stakeholders for ensuring a healthy city and → identifying needs for future exchange and cooperation with other stakeholders. <p>Each participant gets two post-its/stickers and place these on the wall on the enriched topic/-s he/she finds the best and most important.</p> <p>Sli.do (or other software) online live polling could also be used to allow each participant to vote for up to two topics he/she finds the relatively most important.</p> <p>If this option is used, the results of the live polling are displayed on a screen and made visible on participants' mobile devices (smartphones/tables/laptops).</p>
6. WRAP-UP OF A SCENARIO COMPONENT (10 minutes)	<p>In the final step of the training module, the corresponding scenario component that has been developed is briefly illustrated together with the main outcomes of the co-design work.</p> <p>After this, the Moderator informs the participants that their inputs (i.e. written findings per every selected topic, directly enriched by training participants on the basis of their specific needs and experience, and ranked per relative importance) will be integrated into the overall scenario that will be assembled with the outcomes of the other modules during the following session.</p> <p>He/she then closes the work on the training module.</p> <p>The training course then continues with the next training module in the programme, repeating the steps indicated above, as appropriate. When all training modules have been executed, the session dedicated to the integration of all scenario components follows.</p>

Organizers may decide upon the exact sequencing of the modules, and/or modify the proposed number and content of the modules at every specific training event according to their needs and the target participants'.

3.2.2.3. Content of training module 1 - Legislation and implementation

MODULE 1

Legislation and implementation

1. Introduction and identification of major topics

This training module focuses on **legislation and implementation in the area of air quality**.

Air quality is a complex issue due to the unique impact of different pollutants and emission sources as well as to the influence of atmospheric chemistry, meteorological conditions (including climate change effects on meteorological parameters), and transboundary dispersions (also depending on topography and meteo-climatic conditions). To achieve clean air, accurate monitoring, relevant legislation and effective controls and enforcement are required.

Of those pollutants routinely monitored, particulate matter less than 2.5 microns in diameter (PM_{2.5}), nitrogen dioxide (NO₂) and ozone (O₃) have been identified as particularly harmful to human health across the EU. The importance of polyaromatic hydrocarbons (PAH) is increasing as is the role of specific components of particulate matter such as ultrafine particles and black carbon, either directly or as indirect indicators of other harmful pollutants. Both ambient and short-term peak exposure to these pollutants adversely impact health, with susceptible populations such as children, pregnant women, unborn babies, the elderly and those with pre-existing respiratory or heart conditions at increased risk of experiencing harmful effects. There is strong evidence that long term exposure to air pollution can also lead to chronic health effects including diabetes, cognitive impairment, dementia and cancer.

Given the complexity and evolving nature of the issues affecting air quality, the European Union has introduced a series of legislative controls intended to reduce emissions and improve air quality. These currently include the Ambient Air Quality Directives (AAQD), the National Emission Ceilings Directive (NECD) and a series of source-specific regulatory instruments such as the Industrial Emissions Directive (IED), the Medium Combustion Plant Directive (MCPD) and EURO standards for road transport.

The Partnership on Air Quality considers Air Quality Plans (as EU legislation do) as fundamental tools to meet the EU AQ limit values. By means of Air Quality Plans, a city could add to the overarching (regional and national) air quality planning instruments important local specific measures that cannot be managed at higher level of governance, counting on its peculiar tasks and powers. In the meantime, a number of measures defined as 'necessary to reach the targets' during the elaboration of a city AQP cannot be solved solely at an urban level and should address different sectors whose enforcement and implementation could be of competence of overarching authorities, such as Metropolitan area or Agglomeration, Regions, Members States or EU institutions. Thus, co-operation between different level of governance and integration of planning regarding different sectors is a key factor for a real improvement of air quality in cities.

Starting from April 2019 local authorities should consider the National Air Pollution Control Plan (NAPCP) compulsorily published by Member States as part of the Dir. 2016/2284/EU, the so-called National Emission Ceiling Directive (NECD). Since each Member State should draw up, adopt and implement a NAPCP with a view to complying with its emission reduction commitments, and to contributing effectively to the achievement of the air quality objectives, it is expected that adopted NAPCP should

contribute to the successful implementation of Air Quality Plans established under Article 23 of Directive 2008/50/EC.

Currently, the air quality regulations direct member states, regions and cities towards a focus on meeting air quality limit values.

The Partnership would like to see this approach complemented by a focus on health improvement, as for certain pollutants, principally PM₁₀ and PM_{2.5}, but also ozone and sulphur dioxide (SO₂), the current EU limit values are higher than the guideline values suggested by the World Health Organisation (WHO).

With regards to legislation and implementation in the area of air quality, the Partnership has found that:

- As poor air quality in our cities and Member states is caused by local, national and transboundary emissions, improvement requires action at all levels. Therefore there is a need for greater co-operation at all levels of authority, including for the exchange of knowledge and experience.
- The current EU legislation is lacking in certain areas, including regulation of increasingly relevant emission sources, such as automotive brake and tyre wear and consideration of pollutants such as PAHs, ultrafine particles and black carbon. A consideration of emissions under realistic future use scenarios is essential in designing effective measures from both cost and health perspectives.
- The impact on air quality and health should be evaluated at the early stages of any activity that may have a negative impact on either one. Measures to reduce the negative impact on air quality are often more effective and less burdensome when introduced early in the process and the Partnership recommends a precautionary approach where necessary.

The **main topics proposed for this Module** are:

- (1.1.) How is the cooperation between local, regional and national levels on air quality legislation currently implemented? How could its design and implementation be improved for my organisation?
- (1.2.) What are the existing gaps in addressing pollution sources, and what solutions can my organisation envisage to deal with them, as well as with implementation pitfalls? Who should be involved?
- (1.3.) How can an integrated approach combining different policy areas (i.e. mobility, energy, climate, etc) produce greater economic and health benefits than separate measures, while minimising/eliminating conflicts for my administration? Who should be involved?

2. Learning Objectives

- Understanding how multi-level governance could be tailored to generate better legislation of air quality controls and implementation.
- Identifying existing legislative gaps in existing EU and national legislation on air quality, related implementation pitfalls and possible solutions
- Understanding how a multi-sector integrated approach, like the one promoted by the Partnership, can be more effective and economically convenient at delivering health benefits to citizens than separate measures.

3. Learning methods
<ul style="list-style-type: none"> • Sharing of knowledge codified in the Partnership’s Political statement embedding the vision of The Healthy City into the Fitness Check of EU Ambient Air Quality Directives. • Co-design scenario building exercise.
4. Content
<ul style="list-style-type: none"> • Presentation of training module • Co-design scenario simulation on Legislation and Implementation • Union source-based air pollution control legislation overview (ANNEX 3) • Requirements to AQ monitoring in Europe (ANNEX 4)
5. Length of Training
About 3 hours
6. Target Learners
<p>The training programme is aimed at individuals from public administration of cities, regional, and national authorities who already have some knowledge of air quality policies and who are keen to extend their knowledge and put their ideas and experience into action, in order to create and deliver benefits in terms of citizens’ health, better air quality and economic opportunities.</p>
7. Format (Programme)
<p>Co-design scenario building, structured in the following steps:</p> <ol style="list-style-type: none"> 1. Information 2. Topic selection 3. Topic enrichment 4. Exhibition and Q&A 5. Prioritization 6. Wrap-up <p>The findings developed during the wrap-up are to be integrated with the ones derived from the other modules to compose the full scenario in the Conclusion session of the training course.</p>
8. References
Partnership’s <i>Position paper on the Fitness Check of EU Ambient Air Quality Directives</i> (ANNEX 6).

3.2.2.4. Content of training module 2 - Public funding and financing

MODULE 2

Public funding and financing

1. Introduction and identification of major topics

This training module focuses on **public funding and financing for air quality plans and measures**.

Improving air quality and curbing air pollution requires the deployment of significant resources, not least financial. EU and national funds are available to prepare and implement national, regional and local policies to tackle air pollution. However, at present, programmes are rarely dedicated to improvements in air quality by financially supporting measures that tackle the issue directly. Improvements in air quality are often regarded as additional outcomes of measures originally aimed at other specific objectives (e.g. improvement of public transport, energy efficiency, etc.). They are rarely considered as the sole purpose of any programme or intervention, with a few exceptions.

Cities are in demand of more possibilities to integrate existing EU/MS/regional funds for implementing air quality measures, as well as of an increase in the relevant funding options for urban projects/plans to carry out air quality management solutions (i.e. Cities Air Quality Plans). This issue is particularly sensitive for those urban areas where the costs of local abatement measures for EU limit values compliance are remarkable (stronger measures and wider range of action to be taken).

Air Quality Plans (AQPs), the main administrative tool for a city administration to act on air quality, can draw upon a wide range of interventions to reach their intended objectives. For instance, it is possible to nudge citizens towards more environmentally friendly behaviours via incentives (e.g. charges, tax credits, etc.). Alternatively, the actors introducing the AQP may directly support an investment plan targeted at air quality improvement (e.g. transport infrastructure planning, energy efficiency improvements, etc.). All these activities require resources to be deployed coherently with the available financial resources as well as the timeframes and aims of the AQP measures.

The **main topics proposed for this Module** are:

- (2.1.) What sources of public funding and financing are available for AQP measures? What connections can be envisaged with mobility policy, climate policy, ..
- (2.2.) How could my administration design air quality measures to be financially sustainable?

2. Learning Objectives

- Understanding the measures inside Air Quality Plans and how they can be financed.
- Understanding how air quality single measures or multi-sector investment programmes can be designed to be financially sustainable.

3. Learning methods

- Sharing of knowledge codified in the EIB Advisory Hub '*Financing Air Quality Plans – guidance for cities and local authorities*', delivered in cooperation with the UA Partnership on Air Quality.

- Co-design scenario building exercise.

4. Content

- Presentation of training module
- Co-design scenario simulation on Public funding and Financing

5. Length of Training

About 3 hours

6. Target Learners

The training programme is aimed at individuals from public administration of cities, regional, and national authorities who already have some knowledge of air quality policies and who are keen to extend their knowledge and put their ideas and experience into action, in order to create and deliver benefits in terms of citizens' health, better air quality and economic opportunities.

7. Format (Programme)

Co-design scenario building, structured in the following steps:

1. Information
2. Topic selection
3. Topic enrichment
4. Exhibition and Q&A
5. Prioritization
6. Wrap-up

The findings developed during the wrap-up are to be integrated with the ones derived from the other modules to compose the full scenario in the Conclusion session of the training course.

8. References

Financing Air Quality Plans – guidance for cities and local authorities, EIB Advisory Hub (ANNEX 6).

3.2.2.5. Content of training module 3 - Planning

MODULE 3

Planning

1. Introduction and identification of major topics

This training module focuses on **planning Air Quality Plans**.

Cities are places where exposure to air pollution exposure is higher. They also remain the immediate level of intervention for dealing with threats to human health coming from pollutants such as nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}) and ground-level Ozone (O₃).

The Air Quality Plan is a strategic planning instrument introduced by the Ambient Air Quality Directive 2008/50/EC (AAQD). The drafting on an Air Quality Plan (AQP) is compulsory for any 'zone' or 'agglomeration' within which the concentrations of pollutants in ambient air 'exceed any Limit value or Target value' designed for the protection of human health. The AAQD legislation requires that an Air Quality Plan sets out appropriate, cost-effective measures to achieve compliance with air quality Limit or Target values while keeping the period of exceedance 'as short as possible'.

The adoption of an Air Quality Plan has some direct environmental and societal benefits such as the improvement of the health of residents and city users - with reduction of the associated economic impact - and positive feedback for climate change effects mitigation. The implementation of an Air Quality Plan can have also other additional benefits for quality of life in cities, contributing to reach many of the United Nations Sustainable Development Goals for the 2030 Agenda.

It is not easy to find guidelines on how to draft and implement AQP at local level that could be used by cities of different EU Member States, due to different approaches adopted at national level for implementing Dir. 2008/50/EC. Existing guidelines are not recent or mainly focus on tools for the elaboration of a plan, rather than on the legal and management processes that have to be followed for its preparation, adoption and implementation. This is the reason why the Partnership has focused part of its work on drafting a Code that is specifically designed to help cities and local authorities in charge of planning Air Quality plans comply with EU legislation and better protect the health of citizens and the environment.

The **main topics proposed for this Module** are:

- (3.1.) Why should my administration develop a city AQP? What could be the pro's and con's?
- (3.2.) What content should my city AQP include and what is the best way to structure it?
- (3.3.) What is the process that my administration should follow to develop an AQP?
- (3.4.) What are the methodologies and tools available for developing an AQP?

2. Learning Objectives

- Understanding the benefits of developing a city AQP
- Identifying the core elements that a AQP should possess and understanding how is best to structure it

- Understanding the five main steps to develop an AQP, notably 1) preparation, 2) elaboration, 3) adoption, 4) implementation and 5) monitoring, reporting and reviewing.

3. Learning methods

- Sharing of knowledge codified in the Partnership's *Code of Good Practice for Cities' Air Quality Plans*
- Co-design scenario building exercise.

4. Content

- Presentation of training module
- Co-design scenario simulation on Planning

5. Length of Training

About 3 hours

6. Target Learners

The training programme is aimed at individuals from public administration of cities, regional, and national authorities who already have some knowledge of air quality policies and who are keen to extend their knowledge and put their ideas and experience into action, in order to create and deliver benefits in terms of citizens' health, better air quality and economic opportunities.

7. Format (Programme)

Co-design scenario building, structured in the following steps:

1. Information
2. Topic selection
3. Topic enrichment
4. Exhibition and Q&A
5. Prioritization
6. Wrap-up

The findings developed during the wrap-up are to be integrated with the ones derived from the other modules to compose the full scenario in the Conclusion session of the training course.

8. References

Partnership's *Code of Good Practice for Cities' Air Quality Plans* (ANNEX 6).

3.2.2.6. Content of training module 4 – Measuring impact

MODULE 4

Measuring impact

1. Introduction and identification of major topics

This training module focuses on **measuring impact of a change in air pollution on citizens' health**.

With approximately two thirds of the European population living in cities, it is of great importance to keep improving the liveability of urban areas. A large improvement can be achieved by tackling environmental risk factors, since these factors comprise a great contribution to the total global burden of disease. Of the environmental risk factors, air pollution causes the greatest disease burden with over 400,000 premature deaths in Europe per year.

Consequently, an effective way for improvement is implementing air quality policy. It has been proven that intervention often leads to a reduction in public health risks. The effectiveness of these interventions can be assessed by so-called called air pollution accountability studies². By assessing the effects of past intervention, air pollution accountability works as a framework that can be used in future implementation of air quality policy.

Current policy on air quality is mostly focused on avoidance of exceeding limit values. The aim of the Partnership's work in this area is to develop a method to quantify the effects of air pollution on citizens' health. This facilitates a shift towards policy where health is a key feature to take into account.

A way to focus on public health is to use Health Impact Assessment (HIA). HIA is a method for quantifying the impact of air pollution on citizens' health.

Unfortunately, HIA tools are not always used, as there often is limited data available to estimate the reductions of concentrations to be achieved by specific measures and/or there is a lack of understanding of the tools and/or the lack of clear instructions.

The Partners believe that it is desirable to investigate and create a way to make HIA more prominent in air quality policy regulated by municipalities of European cities. Accordingly, they focused on a pragmatic approach on the use of HIA tools in European cities, developing the **PAQ2018** tool.

The PAQ2018 is an uncomplicated HIA tool with clear instructions to be implemented by as many institutions as possible throughout regulatory processes, helping users (cities and/or other stakeholders) to present objective results to support air quality policy by contributing to estimate the health benefit of a certain intervention. The tool makes it also possible to calculate the health impact of one or several pollutants at one moment in time.

To conduct a simulation with the PAQ2018 at the training course, the following data on your city/region of interest is the least required:

- Total number of citizens in city/region of interest

² Henneman, L. R., Liu, C., Mulholland, J. A., & Russell, A. G. (2017). Evaluating the effectiveness of air quality regulations: A review of accountability studies and frameworks. *Journal of the Air & Waste Management Association*, 67(2), 144-172.

- At least one of the annual mean concentrations of PM₁₀, PM_{2.5}, NO₂ or EC

The following data is desired for analysis that is more accurate:

- The age structure of the population of interest
- Annual mean concentrations for PM₁₀, PM_{2.5}, NO₂ and EC
- Baseline incidence rates of the health indicators.

The strengths of this tool are the pragmatic usability, its rich model output and its capability of conducting many analyses at once after which all the results become visible at a glance.

The **main topics proposed for this Module** are:

- (4.1.) What HIA tools could my organisation use for calculating the benefits/loss of a certain policy intervention?
- (4.2) How could HIA enhance my administration’s capacity of identifying the measures that would result in the largest improvement of public health for the local population?

2. Learning Objectives

- Understanding what HIA tools are there that my administration could use to measure the impact of a measure on air quality and health
- Understanding what the health benefits of a certain policy implementation on my city are
- Identifying which air quality measures will result in the largest improvement of public health for my city
- Understanding how scientific evidence can be more easily found to communicate the urge of reducing air pollution to the public and to policy-makers.

3. Learning methods

- Sharing of knowledge codified in *The PAQ2018 tool – Factsheet and step-by-step instructions*, in *The use of Health Impact Assessment tools in European Cities*; and in *The PAQ2018 tool*.
- Co-design scenario building exercise.

4. Content

- Presentation of training module
- Co-design scenario simulation on Measuring impact

5. Length of Training

About 3 hours

6. Target Learners

The training programme is aimed at individuals from public administration of cities, regional, and national authorities who already have some knowledge of air quality policies and who are keen to extend

their knowledge and put their ideas and experience into action, in order to create and deliver benefits in terms of citizens' health, better air quality and economic opportunities.

7. Format (Programme)

Co-design scenario building, structured in the following steps:

1. Information
2. Topic selection
3. Topic enrichment
4. Exhibition and Q&A
5. Prioritization
6. Wrap-up

The findings developed during the wrap-up are to be integrated with the ones derived from the other modules to compose the full scenario in the Conclusion session of the training course.

8. References

Partnership's *The PAQ2018 tool – Factsheet and step-by-step instructions*; *The use of Health Impact Assessment tools in European Cities*; *The PAQ2018 tool* (Excel file) (ANNEX 6).

3.2.2.7. Content of training module 5 - Communicating and raising awareness

MODULE 5

Communicating and raising awareness

1. Introduction and identification of major topics

This training module focuses on **Communicating and raising awareness**.

In spite of the work carried out by the EU institutions, the Member States, and by many cities and grass-root movements in Europe, the general public is often still not engaging enough in air quality policy initiatives and the level of awareness and knowledge of the effects of poor air quality on health is often low. Likewise, the general public has in some instances a low appreciation and acceptance of the measures adopted to improve air quality (e.g. traffic bans). The general public is often not aware of the impact of personal behaviour on air quality and on their own health³.

In accordance with the Ambient Air Quality Directive (art. 26) and with Directive 2003/35/EC (Public Participation Directive - PPD) the process of drafting an AQP must be open to public participation at all stages of development. To prepare for this public dialogue, to improve acceptability of the proposed measures and to increase efficacy on their implementation, a good practice for cities administration, starting since the first steps of the AQP process, would be to raise citizens awareness on AQ issues through transparent and more accessible information on AQ monitored data, health effects related to poor air quality and disseminate good practices in transport, energy and other related sectors to reduce citizens responsibility in emission production.

The Partnership has found that differences in the level of awareness about the negative impacts of pollution on health represent a barrier to the effectiveness of air quality policy measures.

Such differences, however, could be alleviated by sharing examples of successful measures to trigger participation and to coproduce solutions. Increased public awareness about health benefits of clean air is therefore essential for improving social acceptance of and support for air quality management measures, and the Partnership agrees that providing cities with improved communication strategies and tools and with relevant examples of inspiring practices could contribute to deliver that result.

The Partnership has therefore developed a toolkit to provide hands-on examples of how communication on air quality, the health links and (policy and behavioural) changes take place, as an inspiration particularly for urban authorities wanting to communicate on clean air.

The toolkit does not provide any ranking or judging of the various communication activities presented by the cities. It is a mere snapshot of an area of work, which is hardly looked into by researchers, policy-makers, or experts working on air quality, and there are no agreed upon best practices on (successful) communication.

³ In a 2013 Eurobarometer survey on Attitudes towards Europeans on Air quality, six out of ten respondents said they did not feel informed about air quality issues in their country. See: http://ec.europa.eu/commfrontoffice/publicopinion/flash/fl_360_sum_en.pdf

Participants should bring an example of one of their communication activities, such as the city website or a material that they produced, so that the conversation can include those examples and relate to what is included in the Partnership Toolkit.

The **main topics proposed for this Module** are:

- (5.1.) What are the best tools/practices that my administration can use to inform residents on the status of air quality, in particular during pollution peaks? What experience is already available?
- (5.2.) How can my administration raise awareness about the importance of air quality and health, and how to raise public acceptance of air quality measures that can be experienced as ‘inconvenient’ by citizens and local businesses, i.e. Local Emission Zones (LEZs), building restrictions or biomass burning restrictions?
- (5.3.) How can my administration design an effective communication strategy targeting air quality and health?

2. Learning Objectives

- Understanding pros and cons of a wide range of tools and practices in use to inform citizens and stakeholders on air quality, in particular about pollutant concentrations, health-related issues, and pollution peaks (Directive 2008/50/EC; art.19, 24, Annex XVI).
- Understanding triggers, tools, methods and practices to raise public acceptance of air quality measures that can be perceived as ‘inconvenient by citizens and local businesses.
- Understanding how air quality strategies and information campaigns can be designed to provoke behavioural changes in residents and other stakeholders.

3. Learning methods

- Sharing of knowledge codified in the Partnership’s *Toolkit - Communicating on air quality and health. Inspiring practices, challenges and tips.*
- Co-design scenario building exercise.

4. Content

- Presentation of training module
- Co-design scenario simulation on Communicating and raising awareness

5. Length of Training

About 3 hours

6. Target Learners

The training programme is aimed at individuals from public administration of cities, regional, and national authorities who already have some knowledge of air quality policies and who are keen to extend their knowledge and put their ideas and experience into action, in order to create and deliver benefits in terms of citizens’ health, better air quality and economic opportunities.

7. Format (Programme)

Co-design scenario building, structured in the following steps:

1. Information
2. Topic selection
3. Topic enrichment
4. Exhibition and Q&A
5. Prioritization
6. Wrap-up

The findings developed during the wrap-up are to be integrated with the ones derived from the other modules to compose the full scenario in the Conclusion session of the training course.

8. References

Partnership's Toolkit - *Communicating on air quality and health. Inspiring practices, challenges and tips* (ANNEX 6).

3.2.3. Integration of all scenario components (Full-Scenario)

Each training module leads to the production of a personalised specific scenario component, consisting of written findings per every selected topic, directly enriched by training participants on the basis of their specific needs and experience, and ranked per relative importance.

When this is achieved for all modules, training participants still have to compose the full scenario by integrating the five specific scenario components with each other. This happens in a **dedicated session**.

The composition of the fully integrated scenario, encompassing all the areas is of fundamental importance as it allows to visualise the outcome of their practical work to discover, learn and adjust the holistic approach to air quality, health and integrated urban planning promoted by the Partnership on Air Quality.

Moreover, this session provides training participants with the **opportunity to immediately simulate the transfer of the knowledge, methods, tools and practices acquired and customised during the previous work to their respective organisation, city, Member State.**

The integration of the scenario components is **organised as follows**.

1. The five **scenario components are combined** on the wall or on a screen to produce a complete visualisation of the fully integrated scenario.
2. The **main features of the customised scenario are summarized**, highlighting how the full scenario matches or not the vision of *The Healthy City* envisaged by the Partnership on Air Quality. The key

aspects covered during the training course are reminded. An interactive discussion with the training participants follows focusing, for instance, on

- which parts of the full integrated scenario (if any) already correspond to the situation you have at hand?
 - to what extent do you feel that the adoption of an integrated scenario, such as the one resulting from the joint co-design work, could bring benefits to your organisation?
 - which topics and corresponding needs have you identified through the training that are critical to advance air quality improvement and health in your organisation / city / Member state?
3. Next the joint work focuses on **planning for achieving the implementation of the customised scenario**, addressing for instance the following topics:
- Definition of roles and responsibilities (e.g. who does what)
 - Identification of organisations/departments external stakeholders that need to be involved
 - Identification of resources (e.g. technical, human, financial)
 - definition of a timeline (e.g. what measures have to be taken in the next 1-3-5 years),
 - Identification of barriers to change and driving factors
 - Other operational aspects.

To animate the exchange with the training participants **Sli.do (or other software) online live polling** could be used to allow them to answer to the questions raised. If this option is used, the results of the live polling are displayed on a screen and made visible on participants' mobile devices (smartphones/tables/laptops).

The **indicative duration** of this session is about two hours.

It is important that at the end of this session, one or two persons take on the responsibility to communicate the results within the organisation and take the responsibility to make sure that the results get a follow-up in the organisation.

3.2.4. Conclusion

After the facilitated exchange on the fully integrated scenario has been completed, the organisers make a **closing address including the main takeaway points for training participants**, including:

- alignment between EU limit values and WHO recommended health standards allows to produce policies that significantly improve the quality (and duration) of life for humans and the environment by reducing the following effects of air pollution⁴:
 - Health problems include serious effects on the cardiovascular and respiratory systems leading to reduced lung function, asthma, chronic bronchitis and premature deaths.
 - Acidification of soils and sources of water damages plant and animal life in forests, lakes and rivers, as well as buildings and historical sites.
 - Eutrophication – an excess of nutrients, such as nitrogen oxides and ammonia, in water or soil – threatens biodiversity through the excessive growth of simple plants which damage other plants and animals in soils, rivers and lakes.
 - Physical damage to buildings and monuments, due to corrosion and soiling of their surfaces, can result from particulates and acidification).
- a better integration of air quality measures with measures from other relevant policy sectors (mobility, energy, climate, agriculture, rural, regional and urban development, etc.) allows for smarter allocation of resources, and greater effectiveness and impacts of overall policy action
- a multi-governance level approach, based on close cooperation between different governance levels (local, regional, national, European) on air quality issues is key to properly identify the air quality-related challenges for human health and the environment, as well as to design and implement relevant policy and regulatory responses.

The closing address may also include a **call to action for future cooperation and networking**.

Last but not least, **the post-training feedback forms are handed over** (See Chapter 5 below) and participants informed about how to return them when they have filled them in.

⁴ The effects of air pollution have been defined by European Commission, Cleaner air for all, Factsheet KH-03-13-031-EN-C, ISBN 978-92-79-29811-0.

4. Training material required

The **basic material required** for the training modules is the following:

- A3 sheets or flipcharts
- Tape
- Post-its
- Pens, Markers
- Round tables (1 every 10 participant)
- Wall/screens/flipcharts.

5. Post-training feedback

A **Post-training feedback form** – to be distributed to participants at the training or by email – has been produced (ANNEX 5) to allow the training organizers to gather participants’ feedback about the training.

The form addresses the following aspects:

- The objectives of the training
- The quality of the facilitation/presentations
- The content of the training
- The training materials
- The co-design scenario building exercise
- The level of interactivity and engagement experienced
- The appropriateness of the length of the training.

The form also aims at **gathering the following inputs from participants:**

- The three things that impressed them or interested them most
- The topics or issues that were not clear to them
- The topics that they would like to see included in the training course
- If they would recommend this training course to colleagues (with explanation)
- Suggestions to improve the training course.

The **form is to be collected either at the end of the training course or by email**. A notice has been added at the end of the form with instructions regarding the modalities for participants to return the forms to the organisers.



ANNEX 1 – Presentation on *‘Training course - Air Quality and Health - Methods, Tools and Practices for Better Air Quality Action Planning’*



ANNEX 2 – A3 sheets per module and per topic



ANNEX 3 – Union source legislation overview



ANNEX 4 – Requirements to AQ monitoring in Europe

ANNEX 5 – Post-training feedback form

POST-TRAINING FEEDBACK FORM

Title of training: Air Quality and Health - Methods, Tools and Practices for Better Air Quality Action Planning

Date of training: _____ **Location of training:** _____

INSTRUCTIONS: Please tick your level of agreement with the statements listed below					
	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	DON'T KNOW
1. The objectives of the training were met	<input type="checkbox"/>				
2. The facilitators/presenters were well prepared and able to answer the questions	<input type="checkbox"/>				
3. The content of the course was easy to follow and understand	<input type="checkbox"/>				
4. The training materials were relevant	<input type="checkbox"/>				
5. The scenario building was helpful and relevant	<input type="checkbox"/>				
6. The training was interactive and engaging	<input type="checkbox"/>				
7. The training length was appropriate	<input type="checkbox"/>				

8. The three things that impressed me or interested me most were ...

→

→

→

9. The topics or issues that were not clear to me were ...

10. The topics that I would like to see included in this training course are ...

11. I will recommend this training course to colleagues... *(Please explain why)*

YES NO

12. Do you have any suggestions to improve this training course?

THANK YOU FOR COMPLETING THIS FEEDBACK FORM!
INPUTS RECEIVED WILL BE USED TO IMPROVE FUTURE TRAINING EVENTS.
THIS FORM SHOULD BE HANDED TO THE ORGANISERS AT THE END OF THE TRAINING.
ALTERNATIVELY THIS FORM CAN BE SUBMITTED TO rene.korenromp@minienw.nl .



ANNEX 6 – Partnership’s deliverables and existing presentations