Foresight Capacity Building

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Executive summary

The present report provides an overview of the development, content, evaluation, and outcomes of the 'Public Health Foresight Studies' Training course, also referred to as the 'Foresight Capacity Building' training course or the 'course'. The Foresight Capacity Building course aims at leveling capacity in Public Health Foresight Studies from PHIRI's participating Member States (MS).

Building foresight capacity through this training course is the main output of Task 9.2 of Work Package 9 (WP9) of the PHIRI project. This course was shaped taking into account the foresight capacity needs of MS as reported in the survey carried out in the first quarter of 2021 (during Task 9.1). The course prepares professionals of MS to carry out their own foresight study with the support of WP9 team and from each other.

The Foresight Capacity Building course followed a didactive approach consisting of theory on the concepts covered, practical examples, and practical exercises. In addition to the foresight project team of lectures, guest lecturers contributed to specific topics. The course consisted of 5 modules: a general module, followed by three advanced modules deepening on several foresight elements, and a final module revisiting the concepts learned throughout the course and introducing participants to the next task: developing scenarios.

Throughout the course, participants gave their feedback through evaluation forms. Where possible, we used this feedback to better address participant's expectations and improve the course along the way. Overall, the course was well appreciated by participants. However, we also encountered some challenges. These mostly related to issues of time in an era of high work load: difficulty finding lecturers, the small time window for preparing the course, and a gap between registration and actual participation. Also, fitting enough opportunity for small-group-discussion into each session was a challenge.

More than 70 participants from 21 MS attended (at least one module of) the course. Videos of the course are available on the PHIRI website. Participants that were not able to attend the full course were recommended to watch the videos. To stay in touch, they were encouraged to join the LinkedIn group created during the course to interact with other professionals and experts.

The course (Task 9.2), allowed those not familiar with public health foresight to develop a basic level of foresight capacity and those with preexisting experience to deepen their knowledge. The course participants are ready to plan and conduct their own Public Health Foresight Study in the next phase of our PHIRI work (Task 9.3).

All professionals interested in public health foresight studies are invited to check out the course and join us. It will also be made available on the European Health Information Portal, as part of the 'European School on Health Information'.

Key points

1. PHIRI aims to support research across Europe to underpin public health policy decisions. The PHIRI 'Foresight Capacity Building' course aims to build and level capacity in Member States (MS) in the field of Public Health Foresight studies.

2. The course followed a didactive approach consisting of theory on the concepts covered, practical examples, guest lectures, and practical exercises.

3. The course reached more than 70 participants from 21 MS, developing, thus, a certain level of capacity in the field of public health foresight.

4. A limitation on the development of this course included the lack of availability of lecturers. In addition to lack of time of potential lecturers, difficulties finding potential lecturers sheds some light on the need to develop more foresight expertise across Europe.

5. The course is the second stage of a four-step approach. It builds on the first step of collecting information on current foresight activities and capacity needs in Europe and prepares for the third step of countries developing their own public health foresight study.

6. Given the current COVID-19 pandemic, it is important that MS make use of foresight tools to explore its plausible impacts in order to develop and implement proper strategies and policies to mitigate COVID-19's short- and long-term health effects.

Building capacity in foresight

This report describes PHIRI work package 9 deliverable 9.2

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I.   Introduction

A.   The PHIRI project and why we do public health foresight studies

This report describes work carried out within the PHIRI (Population Health Information Research Infrastructure for COVID-19) project. The PHIRI project aims to develop and implement a research infrastructure in which countries work together to exchange knowledge and expertise on population health issues to boost research and support policy making. It operates by the idea that well-coordinated European efforts across national and European stakeholders will generate the best available evidence on health and well-being of populations impacted by COVID-19.

The PHIRI work on foresight addresses the overarching PHIRI goals by supporting countries in planning and conducting their own research, i.e. public health foresight studies (PHFS). Use of foresight tools enables a better understanding of the possible ways the future will take shape. This allows better present-day decision-making and thereby better short-term and long-term preparedness in European Union (EU) Member States (MS) and the European region for possible next pandemics and health crises. The current pandemic has made clear that PHFS are more necessary than ever to get a better understanding of possible (health) impacts of the current COVID-19 outbreak in the near and long-term futures.

PHFS provide methodologically consistent insights into the most important societal challenges for public health and health care in a country or region. Foresight studies try to answer questions like:

- What are the most important future trends and developments regarding health and health care?
- Which scenarios for the future of public health and health care are plausible?
- What are expected to be the biggest population health challenges in the future?
- What could we do to target these challenges?

The PHIRI work on foresight takes a four-step approach, an overview of which can be found on PHIRI's website[1]. The first step (Task 9.1), comprised an inventory of foresight activities and initiatives in European MS and on European level. This inventory was built after a desktop search, a systematic literature review, and a survey shared among MS. The results of Task 9.1[2] showed that

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only few countries have a well-established and developed capacity in public health foresight and most MS have limited or no capacity in foresight. Additionally, through the survey used in Task 9.1, respondents from MS shared in which areas and topics of foresight they lacked capacity. They highlighted the need to learn more about the process of developing a PHFS in a structured way, about data and how to use them, how to use PHFS in the policy cycle and how to advocate for them.

Learning from the results from step one on the actual capacity and the needs to further develop foresight capacity in Europe, the aim of the current Task (Task 9.2) was to level the knowledge of MS on public health foresight. In this light, we developed a training course, to build capacity among EU MS in PHFS, with a special focus on the impacts of COVID-19 on population health.

B.   Aim of this report and how to read it

This report provides an overview of the activities performed and lessons learned during the Public Health Foresight training course. We discuss how the course was developed, its structure, participation and outcomes. We reflect on lessons learned while planning and carrying out the course.

II.   Course Development

The PHIRI 'Foresight Capacity Building' course was a collaboration of experts in the field of public health and foresight studies from the Netherlands, Portugal, and Belgium. The course was developed by partners and team members of Work Package 9 (WP9) of the PHIRI project. The first step in developing the course was creating the course structure. It was decided to work with one general module introducing the topic, followed by three advanced modules and one final, closing module (see

Figure *1*).
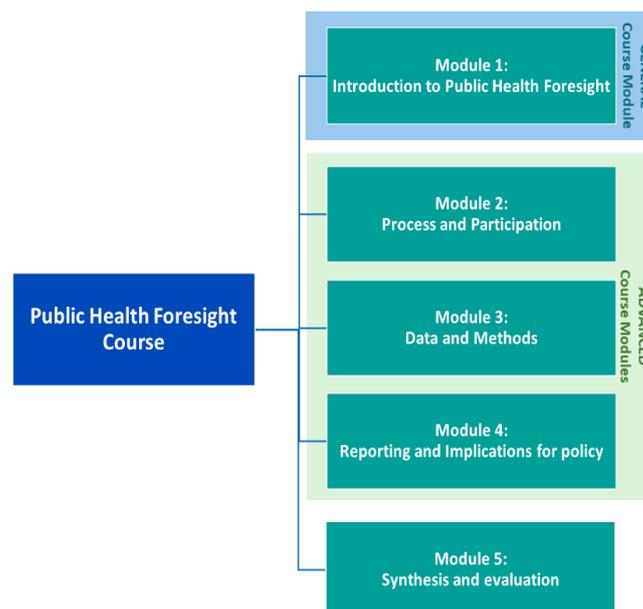
Figure 1. PHIRI foresight capacity building course structure

A. Learning objectives and didactive approach

The Foresight Capacity Building course followed PHIRI's objectives of organising capacity building to support research. In this context, the course aimed at building and levelling the knowledge needed for performing foresight, improving collaboration within MS on foresight studies and reducing information inequalities.

The course had the following objectives:

- To build capacity in Public Health Foresight across EU MS by providing the necessary knowledge and tools.
- To provide a solid basis for interested participants to plan and carry out their own foresight study in their country.

The learning objectives for the participants were to understand what public health foresight is, to be able to follow a structured approach, to gain more in-depth knowledge of selected facets and elements of foresight studies, and to develop the skills to plan their own public health foresight study.

The course followed a didactive approach consisting of theory on the concepts covered, practical examples, guest lectures and practical exercises. In the theoretical sections of the modules, experts introduced and explained concepts and terminology used in foresight, as well as the methodology and approaches used when planning and conducting foresight studies. The examples had the purpose of showing participants what foresight studies entail in practice and how diverse they are, as well as demonstrating the different concepts covered in the theory in actual foresight studies. Finally, various group exercises were given to encourage interaction and discussions between participants and to foster the thinking process on planning a foresight study. To enhance the learning experience, participants received assignments before the modules.

B. Preparatory materials and assignments

Participants had access to the course booklet (see Appendix 1) via the PHIRI website. The booklet was developed to provide general information about the course, specific information of each module, reading materials and preparation materials, and information about the lecturers. Each module had reading materials to prepare participants for the module. Details on the reading materials can be found in the booklet (Section XI. Reading Materials of Appendix 1).

Additionally, Modules 1, 2, and 3 had simple assignments to introduce participants to the module. Before Module 1, participants were invited to prepare for the session by reading relevant materials to the course and through a thinking exercise (see Appendix 3, Exercise 1.1) – called 'Thinking about the future' - about what they think a future heading in a newspaper would say. The objective of this exercise was to get participants to think about the future. We received 55 assignments out of 62 participants. This exercise fed some slides of the lecture where we shared the results of the exercise.

Before Modules 2 and 3, participants were requested to prepare for the module by going through reading materials. For Module 2, participants were requested to explain, from each of the reading materials, what was the objective and main topic of the study. We received 13 assignments out of 43 participants. For Module 3, participants were instructed to mention the time horizon, the type of scenario logics followed by the authors of each study, and to mention the names of the scenarios

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used by the authors. We received 13 assignments out of 41 participants. These exercises aimed at helping participants to recognize the different components of a foresight study.

C. Availability of Course Materials

At the end of each module, participants received the slides of the lectures. Also, all modules were recorded and cut into separate videos covering the different lectures. All materials – slides, recordings, reading materials, and the booklet - were made available from the PHIRI website so that participants and professionals that could not attend the course could (re)visit the lectures as much as needed.

Once the advanced modules started, the participants were provided with a predefined template covering the different sections explained in the modules. The template follows a stepwise approach and outlines all components of a foresight study and mentions in which modules that component was addressed. Participants were invited to use this template to guide their thinking process and plan their own study. Details on the template can be found in the booklet (Annex 1 of the Booklet (Appendix 1)).

D. Lecturers

The main lecturers of the course were experts on public health and foresight studies from the PHIRI team. In addition to the main lecturers, guest speakers were invited to share their knowledge and experience on the specific topic at hand in the advanced modules. Guest lectures included experts on stakeholder participation, public health data, knowledge translation, and European foresight studies from EUHealthNet, Sciensano, Hertie School, and the Aix Marseille School of Economics. More information on the lecturers and the team can be found in the booklet (Section VIII. Biographies of Lecturers and Team of Appendix 1).

E. Evaluation

After each module, participants were invited to complete an evaluation form to provide feedback on the module but also to mention topics and concepts they wished to see covered in the following modules. All advanced modules and the final module considered this feedback at the time they were discussed and developed. An example of an evaluation form can be found in Appendix 2.

F. Timeline and frequency

The course was offered from March 2021 to October 2021 to participants from all (interested) EU MS. Module 1 was offered 3 times during March and April and each session lasted 4 hours. Module 2 and 3 were each offered twice during the months of May and June respectively. Modules 4 and 5 were offered only once in September and October, respectively. Modules 2 to 5 lasted 3 hours each session.

III. Course Content

The PHIRI foresight capacity building course consists of five modules (as described in

Figure *1* above). The first module provided a general introduction to public health foresight studies. Modules 2, 3, and 4 were advanced modules addressing specific topics and components of foresight studies in more depth. Finally, the Module 5 was a synthesis of the previous modules and introduction to the next phase of the work, where participants will have the opportunity to plan and develop their own foresight study (Task 9.3).

The description and detailed content of the course and each module can be found in the booklet attached to this report (Appendix 1). Here, we briefly provide a summarized description of each module: its lectures and exercises.

A. Module 1 – General Module

1. Lectures

The general module – Module 1 - provided an introduction to foresight studies covering: basic definitions and terminology, the various steps and necessary skills, expertise, data, and methods in doing a foresight study. This module provided an introduction to the topics and themes to be covered throughout the course in addition to some examples of foresight studies.

2. Exercises

During the general module, 3 different exercises were carried out, in addition to the homework ('Thinking about the future' – Appendix 3, Exercise 1.1), whose results were shown during the presentation.

The first exercise was a 'DESTEP' exercise carried out in breakout groups. In this exercise, participants were requested to list and discuss 2 - 4 trends per category: demography, economy, socio-cultural, technology, environmental, political-institutional, and other (Appendix 3, Exercise 1.2 – DESTEP).

Two other exercises were included in this module that were carried out using Mentimeter, an interactive presentation platform, using live polls, quizzes, word clouds or Q&As. In the exercise 'Values', participants were asked to think and list important value(s) to consider for Public Health in the future (Appendix 3, Exercise 1.3 – Values). In the exercise 'Knowledge Translation', participants were asked to write down in 3-4 words what they think it is a good knowledge translation practice (Appendix 3, Exercise 1.4 – Knowledge Translation).

B. Module 2 – Advanced module on Process and Participation

1. Lectures

The (advanced) Module 2 provided further information on understanding the value of foresight studies, defining its aims and objectives, and the importance of the participation of different stakeholders. It covered aspects related to the process, resources, considerations, and steps to follow when planning and doing a foresight study.

2. Exercises

In Module 2, three exercises were developed; 2 of these were carried out in breakout sessions, while the other used Mentimeter.

In the first exercise 'Formulating an Objective and Target Groups' was carried out in breakout sessions. During this exercise, participants were set to discuss and think about the topic of a (fictional) foresight study and define the main issue and sub-issues of the PHFS, as well as the main target groups. (Appendix 3, Exercise 2.1 – Formulating an objective and target groups).

The second exercise 'Values, Coalitions & Enemies', carried out in Mentimeter, focused on the different values that participants and/or stakeholders might have on a certain topic in public health. (Appendix 3, Exercise 2.2 – Values, Coalitions & Enemies).

The third exercise 'Mapping of Stakeholders', carried out in breakout sessions, invited participants to list the most important stakeholders to take part in their (fictional) PHFS (Appendix 3, Exercise 2.3 – Mapping of stakeholders).

C. Module 3 – Advanced module on Data & Methods

1. Lectures

The (advanced) Module 3 provided detailed information to identify the data and information necessary to carry out foresight studies, understanding the different methods used, data analysis, and interpretation of results. It covered the different sources of data, the logics to develop scenarios, and the different tools and instruments for scenario analysis and projection.

2. Exercises

In Module 3, two exercises were developed and carried out in breakout sessions.

In the first exercise, the results of the DESTEP exercise in Module 1 were used. Using the application MURAL, and before going into breakout sessions, participants were invited to vote each DESTEP trend: first on their relevance, and second on their uncertainty. After voting, participants discussed these voting results in breakout sessions (Appendix 3, Exercise 3.1 – DESTEP: relevance and uncertainty).

During the second exercise, also in breakout sessions, participants were requested to map the data needed for a PHFS by identifying indicators (~4) and the data needs to substantiate the case, while also naming (possible) data sources to be used. Participants were provided with a template to fill-in (document sent via mail), with one topic per group, and requested to report back the results (Appendix 3, Exercise 3.2 – Data Mapping).

D. Module 4 – Advanced module on Knowledge translation and Implications for Policy

1. Lectures

The (advanced) Module 4 focused on reporting foresight studies and the implications of these studies into the policy cycle. This module also addressed knowledge translation and dissemination strategies to create products that communicate results and their implications to stakeholders and policy makers and other end users.

2. Exercise

In Module 4, only one exercise was developed with the aid of the Mural application: 'Dissemination Strategy'. This exercise was carried out in two different parts in breakout groups. Participants were requested to think about a dissemination strategy. During the first part of the exercise, the participants were requested to think, discuss, and decide on the 'who, when, and why' of their strategy. During the second part, the participants were requested to think, discuss, and decide on the 'what' (the product) and 'how' of their dissemination strategy (Appendix 3, Exercise 4.1 – Dissemination Strategy).

E. Module 5 – Synthesis and looking forward

1. Content

The final module of this course – Module 5 – focused on revising core concepts learned throughout the whole course and address standing questions. It also provided feedback and recommendations when doing a foresight study based on lessons learned from challenges faced while doing foresight studies. It also introduced the next phase of our work - actually developing a foresight study (Task 9.3) - as a component to strengthen and putting in practice the knowledge and skills acquired in the course.

2. Exercise

In Module 5, the purpose of the exercise 'What do you need for your PHFS' was to learn the possible topics of studies, barriers and enablers for carrying out a PHFS, and the expectations of participants on the support they can get to carry out their first PHFS. The exercise was carried out in breakout sessions using the application Mural (Appendix 3, Exercise 5.1 – What do you need for your PHFS).

IV. Course evaluation

After each session of each module, participants were asked to fill in an evaluation form for the module (example in Appendix 2). The evaluation forms allowed participants to rate the overall content of the module, each lecture, and the exercises. It also provided participants with an opportunity to indicate improvements or topics they would like to see addressed in next sessions. This section describes outcomes of this feedback. For each module, we provide first an overview of the course attendance followed by the rating and summary of the feedback we received for that module.

A. Module 1 (General Module): Introduction to Foresight Studies

This module was delivered 3 times: 25th March 2021, 15th April 2021, and 22nd April 2021.

1. Attendance

In total, 64 participants attended the module out of 97 participants registered (approximately 66% attendance rate) (more details in Appendix 4) from 21 MS (see Figure 2 below). We received 51 responses to the evaluation form on Module 1 out of 61 participants that attended (83% response rate).
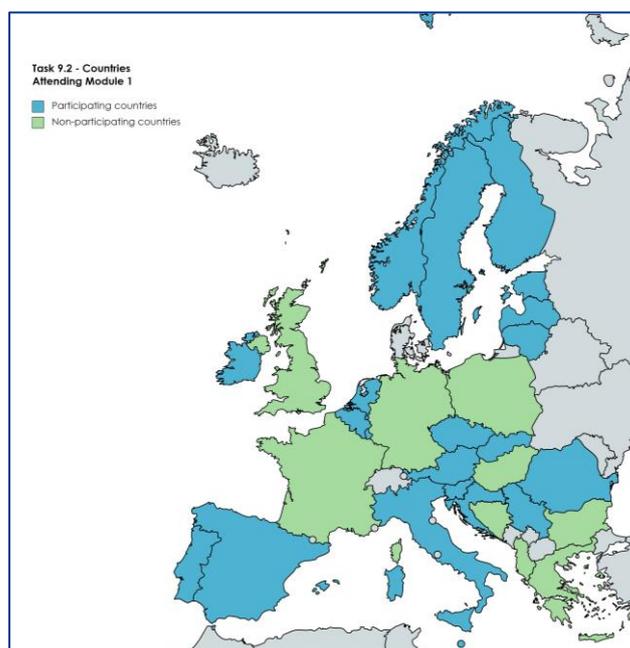

Figure 2. Countries attending the General Module 1 (in blue)
Source: Authors, using mapchart.net

2. Preparation information and materials

Summary: Most participants received the materials and information on time. However, we received the suggestion to send the materials and homework information with more time in advance. Some

participants also suggested to provide the presentation and a reference list in advance. Only one participant said that he/she did not receive the materials and information in time before the session.

3. Lectures

Summary: Overall we received positive feedback on the presentations. Participants found it, although basic, also well focused, clear, concise, interesting and a good introduction to foresight. We received more focused comments on section 1B: where the examples presented were found to be very interesting; however, comments included suggestions to make this section more concise (less examples, more focused, and with less information/content on the slides).

Average Rating per session:

Content	25th March 2021	15th April 2021	22nd April 2021	Average
Overall	9.2	9.0	8.6	8.9
1A: Purpose and Methodology	9.3	9.3	9.0	9.2
1B: Examples of Foresight Studies	8.7	8.4	7.9	8.4
1C: Process and Participation	9.2	9.1	8.9	9.1
1D: Products and Communication	9.4	9.3	8.8	9.2

4. Exercises

Summary: Participants mostly welcomed the exercises. However, there was a clear preference for the break-out session (DESTEP exercise). Participants enjoyed the break-out session to interact with colleagues and get feedback from the lecturers during the exercise. Thus, they found Mentimeter exercises nice, but they were rated lower than the break-out exercise (See Appendix 3, Exercise 1.1, Exercise 1.2, Exercise 1.3, and Exercise 1.4).

Average rating per session:

Content	25th March 2021	15th April 2021	22nd April 2021	Average
Thinking about the future	9.5	9.2	8.6	9.1
DESTEP	9.2	9.0	8.1	8.8
Values	8.5	8.5	7.9	8.4
Knowledge Translation	8.3	8.5	7.9	8.3

5. Feedback to Shape Advanced Modules

Summary: participants were keen to participate in the advanced modules. It was suggested to follow a step wise approach – learn more in detail about all the steps to carry out a foresight study with a practical approach, following an example and including possible challenges and barriers. Common

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topics of interest were data, methods and technical skills, define scope of study, communication to policy makers and policy involvement, implementation.

Most participants reported being interested in attending the advanced modules. Only two participants reported not being interested in joining and one other participant did not respond.

6.   Networking and Staying in Contact

Most participants showed interest to stay in contact as an opportunity to be able to reach out to experts and network with colleagues. Only five participants did not show interest in becoming part of a group or keeping contact with other colleagues and lecturers.

Eighteen participants suggested the use of a LinkedIn group for networking and staying in contact.

Eight participants suggested the use of a WhatsApp group.

Six participants mentioned that any other app will be a good option too; some suggestions included: (just) email, Teams, Slack, Twitter, Google group.

B.   Module 2 (Advanced Module): Process & Participation

The (advanced) Module 2 was delivered on two different dates: 20th May 2021 and 25th May 2021.

1.   Attendance

In total, 43 participants attended the module out of 57 participants registered (approximately 75% attendance rate) (more details in Appendix 4) from 20 MS (see Figure 3 below). From this module, we received 17 responses to the evaluation form out of the 43 participants that attended Module 2 (39% response rate).
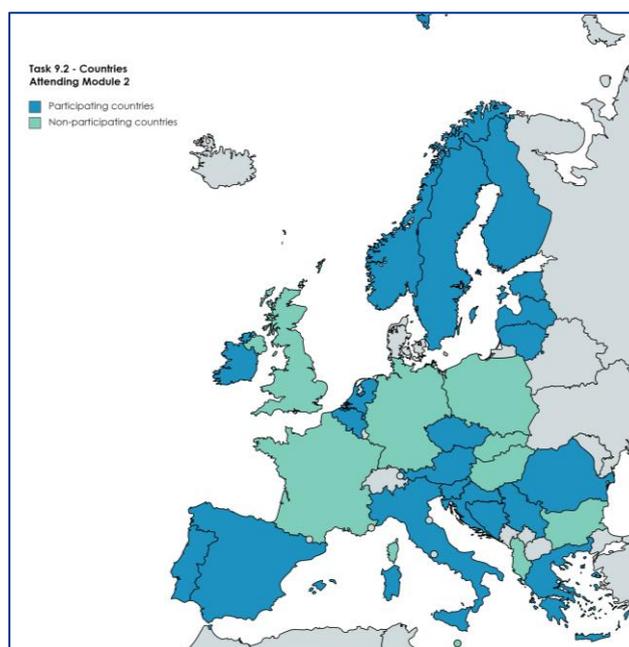
Figure 3. Countries attending the Advanced Module 2 (in blue)
Source: Authors, using mapchart.net

2. Preparation information and materials

Summary: 16 participants declared that they received all information and reading materials in a clear and timely manner; only one participant reported that he/she did not. Two participants mentioned that the instructions for the homework were unclear.

3. Lectures

Summary: Overall, Module 2 was well graded by participants. Section E. had lower assessments from the participants, particularly during the 20th May session, in comparison with the other sections of the session. One participant noted that it was difficult to follow one of the presentations, suggesting that information in slides could be summarized in tables. One other participant mentioned that he/she was expecting that the presentation would be more oriented to tools and hands-on activities rather than only theories and examples.

Average Rating per session:

Content	20th May 2021	25th May 2021	Average
Overall	9.0	9.1	9.0
A. Summary – Introduction to Foresight	9.1	9.5	9.3
B. Process & Participation: objectives, governance, scoping	9.1	9.4	9.2
C. Examples on Process & Participation	8.1	9.2	8.7
D. Process & Involvement of Stakeholders	9.5	9.4	9.4
E. Examples on Process & Involvement of Stakeholders	7.8	9.3	8.7

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F. Process & Involvement of Stakeholders – Experience from EuroHealthNet	9.1	9.3	9.2

4. Exercises

Summary: The exercises received lower grades than the presentations, particularly the exercise 'Values, Coalitions, & Enemies', which was conducted in Mentimeter. Overall, the comments from participants on the exercises focused on the lack of time to complete the exercises during breakout groups. However, despites the issues with the lack of time, the participants found the exercises useful. One participant also commented that, during the exercises, the presence of a glossary to define terminology might be useful to prevent confusion and misunderstanding (See Appendix 3, Exercise 2.1, Exercise 2.2, and Exercise 2.3).

Average Rating per session:

Content	20th May 2021	25th May 2021	Average
Formulating an Objective and Target Groups	8.7	8.7	8.7
Values, Coalitions & Enemies	6.7	8.4	7.7
Mapping of Stakeholders	8.7	9.1	8.9

5. Feedback to Shape Advanced Modules

Summary: All participants reported to be interested and that were planning to join the following modules. Only one participant did not show interest in Module 5. Participants were interested in learning about presentation tools and tactics, knowledge transfer, methods for different scaled studies, practical analytical examples, and how to link the stakeholders discussion results into a forecasting approach, with a more hands-on approach. One participant mentioned that he/she would like to revise (in Module 5) and discuss about the proximity to the project/interest weighing on defining why this is important and how to counter potential bias.

Participants reporting that they will attend the following modules:

- 17 participants reported that they plan to attend Module 3
- 17 participants reported that they plan to attend Module 4
- 16 participants reported that they plan to attend Module 5

6. Networking and Staying in Contact

16 participants reported that they wanted to remain in contact with other participants, the lecturers, and the team organizing the workshops. Staying in contact with participants was decided to happen through a LinkedIn group.

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C. Module 3 (Advanced Module): Data & Methods

The (advanced) Module 3 was delivered on two different dates: 25th June 2021 and 29th June 2021.

1. Attendance

In total, 41 participants attended the module out of 71 participants registered (approximately 58% attendance rate) (more details in Appendix 4) from 17 MS (see Figure 4 below). We received 16 responses to the evaluation form out of the 41 participants that attended Module 3 (39% response rate).
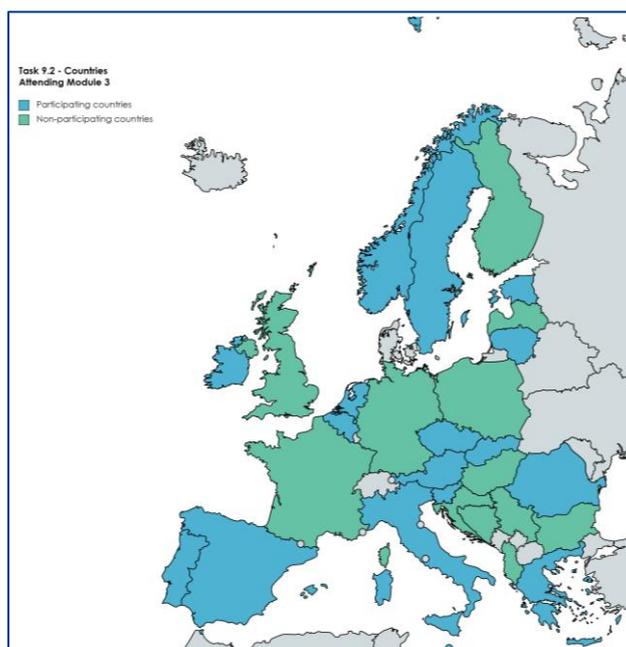

Figure 4. Countries attending the Advanced Module 3 (in blue)
Source: Authors, using mapchart.net

2. Preparation information and materials

Summary: All participants reported that they received the materials and information for the session in due time.

3. Lectures

Summary: Overall the content of this module was well rated, with average ratings of 9.00. Participants did not provide many comments for improvement.

Average Rating per session:

Content	25th June 2021	29th June 2021	Average
Overall	9.0	9.0	9.0

A. Summary Module 1, future trends, driving forces, conceptual model	9.1	8.8	9.0
B. Scenario logics	9.0	8.8	8.9
C. Examples on scenarios	9.1	9.3	9.2
D. Examples on data	8.8	9.3	9.0
E. Data & Indicators	9.0	9.1	9.0
F. Tools & Instruments	8.9	8.8	8.8

4.   Exercises

Summary: In general, the exercises were rated 8.2 – lower than the content. The exercises received lower scores during the 2nd session of Module 3 (29th June 2021). A general comment from participants to improve the exercises was to provide more time for these. However, it is worth noting that during Module 3, exercises had 30 minutes time slots. One participant also noted that the instructions for the activities during the breakout sessions for the DESTEP exercise were not clear. As for the mapping exercise, one participant suggested to share the image of indicators, which would have aided during the exercise (See Appendix 3, Exercise 3.1, and Exercise 3.2).

Average Rating per session:

Content	25th June 2021	29th June 2021	Average
Exercise 1 – DESTEP	8.3	8.0	8.2
Exercise 2 – Data mapping	8.8	7.3	8.3

5.   Feedback to Shape Advanced Modules

Summary: Most participants were interested in joining the following modules. Only two participants commented on topics they would like to address or revise during the following modules.

Participants reporting that they will attend the following modules:

- 11 participants reported planning to attend Modules 4 and 5
- 1 participant reported planning to attend only Module 4
- 1 participant reported planning to attend only Module 5
- 2 participants did not report on being interested or planning to attend the following modules

6.   Networking and Staying in Contact

12 participants reported being interested to remain in contact with other participants and with the organizing team and lecturers. 3 participants did not report interest in staying in contact with the other participants and the organizing team and lecturers. All participants have been provided with the link to the LinkedIn group and have been invited to join.

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D. Module 4 (Advanced Module): Reporting Foresight Studies

The (advanced) Module 4 was delivered on 23rd September 2021.

1. Attendance

In total, 13 participants attended the module out of 27 participants registered (approximately 48% attendance rate) (more details in Appendix 4) from 9 MS (see Figure 5 below). We received 4 responses to the evaluation form out of the 13 participants that attended Module 4 (30% response rate).
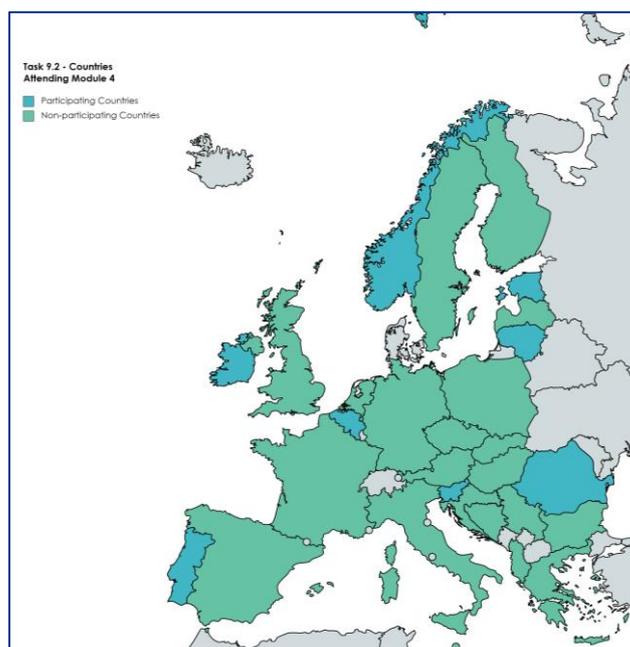

Figure 5. Countries attending the Advanced Module 4 (in blue)
Source: Authors, using mapchart.net

2. Preparation information and materials

Summary: All participants reported that they received the materials and information for the session in due time. One participant mentioned that although the breakout sessions were appreciated, they felt that the lecturer presentation seemed cramped due to the amount of information.

3. Lectures

Summary: Overall the content of this module was well rated, with average ratings of 9.0. Participants did not provide many comments for improvement.

Average Rating per session:

Content	23rd September 2021

Overall	9.0
A. Summary of Module 1: Introduction to Foresight & Foresight in the Policy Cycle	8.5
B. Using foresight studies in the policy cycle	9.2
C. Evidence-informed policymaking: Communicating with policymakers	9.7
D. Products for audiences other than policy makers	9.7
E. Evaluation and Impact	9.7

4. Exercises

Summary: Overall, the participants rated the exercise 8.1. The first part of the exercise (part 1.A) was rated 8.2, while the second part of the exercise (part 1.B) was rated 8.0. We received only one comment from a participant pointing out that workshops with stakeholders are not products for knowledge translation but a medium of dissemination (See Appendix 3, Exercise 4.1).

Average Rating per session:

Content	23rd September 2021
Overall	8.1
Exercise 1.A - Creating a dissemination strategy: Who, When, Why	8.2
Exercise 1.B - Creating a dissemination strategy: What, How	8.0

5. Feedback to Share the Following Module

Summary: The 4 participants responding to the evaluation form reported being interested in attending Module 5. Of these, 2 participants mentioned to be interested in revising scenario building based on a real life case study and about communication with the media.

Participants reporting that they will attend the following modules:

- 4 participants reported planning to attend Module 5

Topics to revise in Module 5:

- Presentation of scenario building based on a real life case study, proposed by the lecturers or participants. As much as can be done in a one day course.
- Communication with the media

6.   Networking and Staying in Contact

3 participants reported being interested to remain in contact with other participants and with the organizing team and lecturers; only 1 participant reported not being interested in maintaining contact with the other participants and the organizing team and lecturers. All participants have been provided with the link to the LinkedIn group and have been invited to join.

E.   Module 5 (Closing Module): Synthesis and Evaluation.

The Module 5 was delivered on 28th October 2021.

1.   Attendance

In total, 18 participants attended the module out of 26 participants registered (approximately 69% attendance rate; more details in Appendix 4) from 11 MS (see Figure 6). We received 6 responses to the evaluation form out of the 18 participants that attended Module 5 (33% response rate).
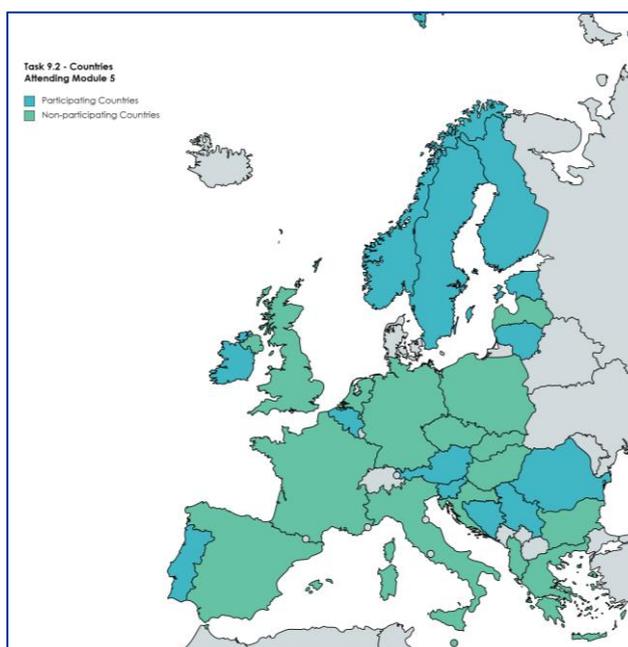
Figure 6. Countries attending the Closing Module 5 (in blue)
Source: Authors, using mapchart.net

2.   Preparation information and materials

Summary: All participants reported that they received the materials and information for the session in due time.

3.   Lectures

Summary: Only one participant commented that it was very useful to get the succinct overview of the entire course, and the Do's and Don'ts.

Average Rating per session:

Content	28th October 2021
Overall	9.5
A. Summary of course	8.5
B. Experiences in the field: FRESHER	9.0
C. Round Table: Do's and Don'ts	8.8
D. Scenario Development – Introduction to Task 9.3	8.3

4.   Exercise

Summary: One participant provided feedback to the exercise commenting that there was not enough time to complete it (participants had 30 minutes to complete the exercise). This participant felt that there was a lack of team spirit and willingness to cooperate among participants of their breakout group. This participant suggested that it could help to emphasize to all participants the importance of participating during breakout groups. (See Appendix 3, Exercise 5.1)

Average Rating per session:

Content	28th October 2021
Exercise – What do you need for your PHFS?	7.7

5.   Networking and Staying in Contact

All 6 responding participants reported being interested to remain in contact with other participants and with the organizing team and lecturers. All participants have been provided with the link to the LinkedIn group and have been invited to join.

F.   Evaluation of the total course

Using the Evaluation Form of Module 5, we asked participants to rate the overall course. On this, we only received responses from 6 participants. In this section we present their responses.

In average, the participants gave the course an 8.8 rate. Out of the 6 participants responding to the evaluation form: 3 of them attended all 5 modules; 2 participants attended Modules 1, 2, 3, and 5; and 1 participant attended Modules 1, 2, and 5.

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To assess the course and the get comments on its content, we asked the participants:

- What did you like?
- What could be improved?
- What did we miss during the course that you would have liked to learn?

1. What did you like?

Three participants answered this question. Two participants agreed that the course provided a comprehensive view of foresight studies and on what is needed to prepare and carry out a foresight study, including its complexity. One participant mentioned that Module 1 (General Module) was interesting and called the attention of participants into this field. Additionally, the welcoming atmosphere was appreciated.

2. What could be improved?

Three participants answered to this question. One participant commented that the time for team work was insufficient and suggested to have additional modules to work on pilot projects of a foresight study as an exercise; another participant suggested to have in place an accompanying 'homework project' to help participants to 'close the gap between theory and practice'. One other participant commented that the suggestion of sharing an English version of the Dutch legislation on foresight studies required should be followed up.

3. What did we miss during the course that you would have liked to learn?

Three participants answered to this question. Two participants pointed out that it would be useful to have a more clear idea of the resources (human, financial, other) needed to put in place a foresight study in addition to associated costs of buying foresight support elsewhere. One participant felt that more interactive real-life scenarios with data presentation were missing in the lectures. One other participant felt that there was much information pending to be presented, as he/she feels reluctant to present what was learnt to their department.

V. Reflections, lessons learned, implications and limitations

A. Reflections on the course

WP9 follows a step-wise approach for the development of foresight studies and scenario development to explore the effects and impacts of COVID-19 in the future. WP9 previously provided an overview of foresight studies and capacity across European MS (Task 9.1[3]). Particularly, through the survey, we learned more what participants wanted and needed to learn in order to develop their foresight capacity. With that information in mind, we developed a training course to develop foresight capacity across MS (Task 9.2). This capacity and knowledge will subsequently be put in practice

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(Task 9.3). WP9 prepared a guide for planning and developing a foresight study following a structured approach. MS will be invited to plan their own foresight study. Participants will receive guidance through the whole process towards feasible and successful studies and also help each other.

The main purpose of Task 9.2 and the development of the training course was to bring participants from a wide coverage of MS toward similar levels of knowledge in foresight and prepare them to actually carry out a foresight study. Accounting for all modules, the course reached more than 70 participants across 21 MS. There were 6 participants that attended all modules; these participants were from Belgium, Estonia, Norway, Portugal, and Slovenia. More than 60 participants joined at least one module; however, since the videos of the modules are available in PHIRI's website, participants that did not attend all modules have the opportunity to learn through these.

Given the participation in the course, at least 30 participants from at least 13 countries (Austria, Belgium, Bosnia and Herzegovina, Czech Republic, Estonia, Greece, Ireland, Lithuania, Netherlands, Norway, Portugal, Romania, Slovenia, and Sweden) have attended at least 3 modules of the course. The level of knowledge and expertise can be further developed for those participants in those countries when carrying out their own foresight study in Task 9.3.

Throughout the whole course, after each module, participants were asked to provide feedback on the module, its content, and the lecturers. The modules and the course in general received high grades (grades between 8 and 9), which means that the course provided a good overview in foresight and proper training for those participants giving their feedback. After each module, we used the feedback to improve the following module, trying to address the needs, questions, and criticism from participants. In general, participants appreciated the practical exercises, as well as perspectives and examples provided by external speakers.

A recurring recommendation was to give more time to the exercises, which encouraged discussions, participation, and applying the concepts just learned. As we progressed with the course, we tried to give enough time to exercises (e.g. going from 15min exercises to 30min exercises), resulting in more thorough thinking processes from the participants and interesting results that were reported back and discussed with the lecturers. Other common feedback related to the examples, as some participants felt that the lectures teaching the examples were long and/or not concrete enough. As we progressed with the course, we tried to make sure that the examples were concrete and directly addressing the topic at hand.

As previously mentioned, we developed a template to help and guide participants to realize the concepts learned and start a thinking process to plan their (real or fictitious) foresight study. In Module 5, we learned that 7 participants used and followed the template: 4 participants found it useful, while 3 participants found it still confusing. Although we could not learn why participants found the template confusing or did not know how to use it, we still learned that those participants using the template found it useful as a tool to guide the planning of a foresight study. This template will be further developed and turned into a more explicit guide in Task 9.3.

Six countries did not participate in the course. Some of these countries might have some foresight capacity already (e.g. France and Germany), since studies on foresight and/or using some foresight methods (e.g. forecasting, modelling, etc.) have been conducted on those countries already. However, there are other countries where no foresight studies were found (e.g. Albania) and that did

not participate in the course (please refer to the report of Task 9.1[4]). We encourage members of these MS to check all the videos in PHIRI's website and get some level of training in public health foresight. They can contact the WP9 team to address questions and engage in conversations in the LinkedIn group[5]. Likewise, we encourage these countries to participate in Task 9.3 and develop their first foresight study with the support of WP9 team.

B.   Implications

The aim of Task 9.2 was to develop a training course in public health foresight and offer this course to members of MS in order to develop foresight capacity. The WP9 team and partners developed a comprehensive course addressing the different aspects and components of a foresight study, keeping into consideration information learned through the survey in Task 9.1 on aspects that participants wanted to focus on. At the end of the course, particularly for those participants completing all modules and assignments, the participants can start planning their own foresight study. Since all training materials are available from the PHIRI website, former participants and professionals interested in the topics and the field can always check these videos and get some training in foresight. Having the course recorded and making the videos available through the PHIRI website and the European Health Information Portal, as part of the 'European School on Health Information' will allow more professionals to learn about the field of foresight in public health and thus the sustainable development and strengthening to the field.

Providing foresight capacity and knowledge to participants from the different MS allows the field of public health foresight to expand and further develop across Europe. To turn this into practice and nourish the field, participants from this training course can become members of the Public Health Foresight Network. Furthermore, networking and participation can be further developed via the LinkedIn group[5]. As countries continue developing foresight capacity and engaging in the field of public health foresight, MS and the European region will be able to better understand trends and public health developments and enable better policies and interventions aiming at healthier futures.

The training that participants have received can now be put into practice. Our next phase (Task 9.3) provides a good starting point and forum to apply and solidify the acquired knowledge; we will support the development of actual foresight studies and exchange experiences with each other.

C.   Limitations and lessons learned

Developing a training course in a short period of time in a virtual format is challenging.

Engaging participants comes with challenges. Most participants were selective and did not join all modules (only 6 participants joined all modules). Attendance was highest for the first three modules. A likely reason for this is that the interest of most participants was covered by these modules. Through the evaluation forms of the General Module (Module 1), we learned that most participants were interested to learn about a step-wise approach on defining and planning a PHFS, data needs, and methods. Another limitation was that quite a high number of participants registered for a module

but did not show up. For the advanced modules, the actual participation was, on average, 63% of the registrations.

Additionally, the time available for a session can be seen as a limitation. Advanced modules were limited to 3 hours. During those three hours, we provided theory, examples, and carried out exercises. Some participants felt that the time allocated for exercises was sometimes short. We tried to accommodate this after the first round of feedback but compressing all information and exercises in the three-hour time frame of the session kept being somewhat of a challenge. We hope that the reading materials provided complemented the information given. As well, it is expected that participants joining Task 9.3 will receive more information and will further develop their skills by actually doing and planning their first foresight study and by consulting with experts and getting their questions answered.

Striving for a wide variety of lecturers – experts on the field or related fields – that can bring a wide range of perspectives comes with challenges. Some experts were interested in the course but unable to contribute their expertise due to other priorities. This is highly understandable in times of a pandemic, but nonetheless unfortunate. Likewise, we found identifying potential lecturers a challenge. In addition to busy schedules and their unavailability, the fact that we identified few potential lecturers – i.e. experts in foresight and related topics – may indicate the need to comprehensively develop the field of foresight and bring together foresight experts across Europe.

Finally, the whole course was carried out online due to the current pandemic restrictions and measures. Besides the mishaps that could arise from bad web connections, the main limitations we encountered when doing a course online was the interaction between lecturers and participants, the active contribution of participants, and some logistics, for example, while doing group exercises. We felt that larger groups in an online setting might refrain people from actively participating. We did see very active participation and discussions among participants while doing the exercises on the breakout sessions. However, participation during Q&A sessions was more limited. However, we expect that during Task 9.3, more (concrete) questions will arise accompanied with vivid and interesting discussions and exchange of experiences.

We believe that having the course in a face-to-face forma could have had some advantages. Instead of several sessions throughout several months, the course could have had longer sessions on a multi-day presential format at one location. This format is more personal and allows better interactions and networking between participants during breaks (for example). As well, face-to-face interactions during exercises could have been more vivid, as well as the interactions between lecturers and participants. However, considerations to attend this course, such as taking time off work and traveling, might have been the limitations in attendance and outreach of the course. Online and face-to-face training courses have advantages and disadvantages. Therefore, when planning and preparing future courses and activities, we need to be flexible when adapting to each format depending on the situation we are at and consider their advantages and disadvantages.

VI. Conclusions and recommendations

From March to October 2021, the WP9 team delivered the 'Foresight Capacity Building' course to more than 70 participants of 21 MS. The course consisted of 5 modules covering basic theory and the different steps, approaches, elements, and methodologies used to plan and carry out a foresight study. Participants attending and actively participating in the course are expected to have developed

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the basic skills and acquired the necessary knowledge and mindset to think about exploring the future and develop their own public health foresight study.

We encourage course participants to join and actively participate in our next phase (Task 9.3). They will be able to strengthen the skills acquired during the course by putting them in real practice. They will receive support and guidance to plan and develop their foresight study. This support will be further strengthened by active discussions with fellow participants and by helping one another to find solutions to (common) issues.

For those participants unable to attend some of the modules (or the whole course), we strongly recommend watching the videos of the course available in PHIRI's website, be in touch with the WP9 team and engage in the LinkedIn group.

Foresight studies are important tools to explore the future and understand the possible effects of changes to society, such as the current COVID-19 pandemic. Given the current pandemic, it is important that MS consider its potential impacts in order to develop and implement proper strategies and policies to mitigate the short- and long-term health effects of the pandemic.

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Foresight capacity building for EU Member States

PHIRI WP9, version 05 November 2021

www.phiri.eu

Table of Contents

I.   Introduction on PHIRI and Foresight capacity

This Introduction course to Foresight Studies is part of the PHIRI project. PHIRI (Population Health Information Research Infrastructure) is the implementation of the research infrastructure on population health information to facilitate and generate the best available evidence for research on health and well-being of populations as impacted by COVID-19. PHIRI will allow for better coordinated European efforts across national and European stakeholders to generate the best COVID-19 population health knowledge. In doing so, PHIRI will lay the foundation to build a Distributed Infrastructure on Population Health (DIPoH) to be used to overcome future crises and ensuring the sustainability of the project. The intent is to support research across Europe in the identification, access, assessment and reuse of population health and non-health data as well as through capacity building, to underpin public health policy decisions. One of the goals of PHIRI is to engage countries in foresight studies, by for example building capacity on foresight and applying this within the Member States. PHIRI is a close collaboration with 41 partners across 30 countries over a period of 36 months starting in November 2020. The project is divided in 9 ambitious work packages with three transversal topics. PHIRI builds on the achievements of the BRIDGE Health and the Joint Action on Health Information (InfAct) projects. Foresight studies are part of WP9, which aims at promoting better preparedness, better planning with proper support of foresight tools, and the use of modelling to support short-term decision-making.

II.   Why do we build foresight capacity?

Public Health Foresight Studies (PHFS) provide methodologically consistent insights into the most important societal challenges for public health and health care in a country or region. Foresight studies try to answer questions like:

- What are the most important future trends and developments regarding health and health care?
- Which scenarios for the future of public health and health care are plausible?
- What are expected to be the biggest population health challenges in the future?
- What could we do to target these challenges?

A better understanding of possible future developments and impacts are essential for policy makers to anticipate and possibly influence these trends. The current pandemic makes clear that Public Health Foresight Studies may be more necessary than ever to get a better understanding of possible (health) impacts of the current COVID-19 outbreak, e.g. changes in regular health care services delivery, in lifestyle and in socio-economic developments. This helps to prepare Europe for possible next pandemics.

III. Overall aim and set-up of the PHIRI Foresight Capacity Building course

Through the Foresight Capacity Building course, we aim to develop and provide foresight capacity for all European Member States. The goal of capacity building is directed at levelling the knowledge needed for performing foresight and reducing information inequalities. A second aim is to improve collaboration within MS on foresight studies.

IV. Course Objective and Aims

The course entitled "PHIRI Foresight capacity building" has the following objectives:

- To build capacity in Public Health Foresight across EU Member States by providing the necessary knowledge and tools.
- To provide a solid basis for interested participants to plan and carry out their own foresight study in their country.
- At the end of the course, participants should be able to:
  o Understand the different methods used in foresight studies
  o Understand what Public Health Foresight entails and how can it be applied
  o Recognize the data, resources, and other considerations necessary to carry out foresight studies
  o Have more in-depth understanding of selected facets of doing a foresight study, such involving stakeholders, as knowledge translation and data & analysis.
  o Prepare and take the first steps towards planning scenarios in their countries.

V. Course Structure and programme

The course consists of three parts, a general introduction module, a set of advanced modules, and a module supporting participants to start with a foresight study in their own country (see figure below). The sessions for the introduction module took place in March and April and are meant for various researchers and policy makers from the EU Member States who want to learn about foresight. The advanced modules will take place in May, June, and September and are offered to all participants of the introduction module. This whole course will enable and engage MS to develop scenarios, which is also part of the PHIRI project. The content of the advanced modules is based on a survey that has been done in March and on the feedback received after each session. The final module revises the capacity build in all modules, and will focus on how the acquired foresight capacity can be used to initiate a foresight study.

Timetable with overview of the modules:

General module	Advanced modules			
Module 1: General module	Module 2 (Advanced)	Module 3 (Advanced)	Module 4 (Advanced)	Module 5: Closing module
• March 25th • April 15th • April 22nd	• May 20th • May 25th	• June 25th • June 29th	• September 23th	• October 28th

The course will take place online. We apply a minimum attendance of around 5-10 persons, for pedagogic reasons the maximum is between 30 and 40. The general course might have a higher attendance than the advanced courses, which are more in-depth, and where we also aim at somewhat smaller groups to work with.

The course has a self-learning character. We will record all sessions and the videos and background materials will be made available through the PHIRI website.

Participants of all sessions will be asked to fill out an evaluation form to provide their feedback in order to fine-tune the content of the next modules.

The figure below (Figure 1) shows the general course structure.
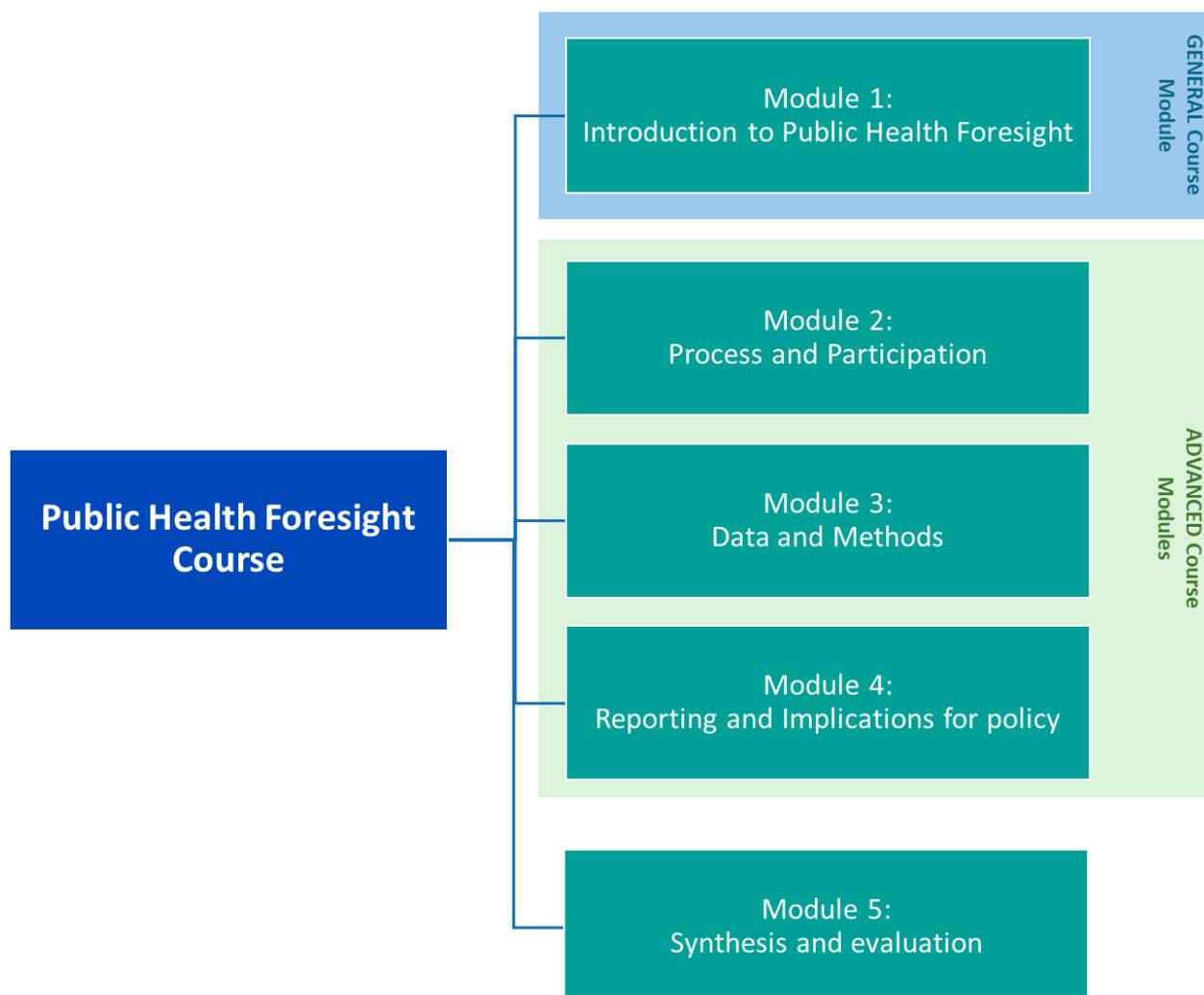
Figure 1. Public Health Foresight Course Structure
Source: Authors

VI. Course lecturers and moderators

For the general module we have lectures from three different countries, the Netherlands, Portugal, and Belgium. The lecturers have a long experience in foresight and are capable to explain all aspects of doing a foresight study. See section 'biographies of lecturers' for detailed information on the lecturers.

For the advanced module, we aim to have contributions from other organizations as well (for example, from policy makers who have used or are planning to use foresight studies). Details about the lecturers for the advanced module will be provided through the PHIRI website and under 'Biographies of lectures and Team' (Section VIII) in this booklet.

VII. Detailed description of the modules

A. General Module: Introduction to Public Health Foresight

This module gives a general overview of various aspects of doing a foresight study. It covers the three elements: Purpose & Methodology (why and how?), Process & Participation (how and with whom?) and Product and communication (what and for whom?).

Overview general module

Module 1
Lecturers
Henk Hilderink (RIVM), Luís Lapão (UNL), Marie Delnord (Sciensano)
Learning Objectives
- Provide a general introduction to what Public Health Foresight is.   - To provide participants with basic definitions and terminology.
Content (brief summary)

This module focuses on providing participants an introduction to basic concepts and definitions in Public Health Foresight. This module covers three elements:
 	
1. Purpose & Methodology (why and how?)
    • Why: Understanding uncertainty
    • How: Six Step approach
    • Examples of population health foresight studies
 	
2. Process & Participation (how and with whom?)
    • Normative uncertainties
    • Involving Stakeholders
    • Data and analysis
 	
3. Product and communication (what and for whom?)
    • Population health reporting and evidence-informed policy making
    • Knowledge translation
    • Options for products (report, website, infographics)
    • Data-information-knowledge-wisdom pyramid
    • Policy cycle and evidence-informed policy making

Training methodologies
Lectures, interactive exercises and discussion (plenary and break out groups). A set of materials will be provided before the course started. Additional materials will be shared during the course.
Learning Materials
For course preparation
https://www.oecd.org/strategic-foresight/ https://www.rivm.nl/en/foresight-studies The Dutch Public Health Foresight Study 2018: an example of a comprehensive foresight exercise
Further reading materials
- Delnord, M., et al., How can we monitor the impact of national health information systems? Results from a scoping review. Eur J Public Health, 2020. 30(4): p. 648-659. - Blessing, V., A. Davé, and P. Varnai, Evidence on mechanisms and tools for use of health information for decision-making., in Health Evidence Network (HEN) synthesis report 54. 2017, WHO Regional Office for Europe: Copenhagen.

- Ferreria Maia, M., Foresight Exercises as a tool for decision-making: the example of two case studies in health. Enterprise and Work Innovation Studies, 2013. 9(IET): p. 39-66.
- Graham, I.D., et al., Lost in knowledge translation: time for a map? J Contin Educ Health Prof, 2006. 26(1): p. 13-24.
- Gregorio, J., A. Cavaco, and L. Velez Lapao, A scenario-planning approach to human resources for health: the case of community pharmacists in Portugal. Hum Resour Health, 2014. 12: p. 58.
- Lapão, L., The Future of Healthcare: The Impact of Digitalization on Healthcare Services Performance, in The Internet and Health in Brazil, A. Pereira Neto and M. Flynn, Editors. 2019, Springer, Cham
- Mayer, R.E., L. Fiorella, and A. Stull, Five ways to increase the effectiveness of instructional video. Educational Technology Research and Development, 2020. 68(3): p. 837-852.
- Verschuuren, M., H.B.M. Hilderink, and R.A.A. Vonk, The Dutch Public Health Foresight Study 2018: an example of a comprehensive foresight exercise. European Journal of Public Health, 2019. 30(1): p. 30-35.
- Rees, G.H., et al., The promise of complementarity: Using the methods of foresight for health workforce planning. Health Services Management Research, 2018. 31(2): p. 97-105.

Course evaluation

At the end of the general module, participants will receive an evaluation form (survey) and will be requested to give their input and feedback on what they want to learn to further develop the following (tailored) modules.

This general module is given in sessions of 4 hours each, on three occasions.

Program general module
Thursday 1 (25 March 2021), Thursday 2 (15 April 2021), Thursday 3 (22 April 2021)

Time (CET)	What	Description	Who
10:00 – 10:10	Welcome	Introduction of the general module objectives, participants	Mariken Tijhuis
10:10 – 10:20	Exercise: Thinking about the future	Mental move to the future (headline exercise)	Henk Hilderink
10:20 – 10:45	1A: Purpose and methodology	Participants will learn why and how foresight studies are done	Henk Hilderink
10:45 – 11:15	Exercise: DESTEP, Incl. reporting back	List the most important driving forces and trends	Henk Hilderink
11:15 – 12:00	1B: Examples of Foresight studies	The results of the inventory of Task 9.1 will be presented	Luís Lapão
12:00 – 12:30	Break		
12:30 – 12:45	Exercise Values	Participants will learn about different values and normative aspects regarding health	Henk Hilderink
12:45 – 13:15	1C: Process and participation	Overview of the process of doing a foresight study (general), stakeholders, data needs.	Henk Hilderink
13:15 – 13:20	1D: Exercise: Knowledge Translation	Participants will interactively discuss various forms of knowledge translation	Marie Delnord
13:20 – 13:50	Products and communication	Target audience, DIKW pyramid, Knowledge transfer	Marie Delnord
13:50 – 14:00	Next steps	Feedback round and overview of following modules	Mariken Tijhuis
14:00-14:30	Open space networking	Time to meet participants/lecturers, ask questions or discuss topics	All

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B. Advanced Modules: In depth modules on specific foresight topics

Module 2: Advanced Module on Process and Participation

This module aims to provide further information on understanding the value of foresight studies, define its aims and objectives, and the importance of the participation of different stakeholders.

Overview Module 2

Module 2
Lecturers
Henk Hilderink (RIVM), Caroline Costongs (EuroHealthNet), Luís Lapão (UNL)
Learning Objectives
- Understanding the scientific and policy value of foresight studies   - Knowing how to define foresight objectives and aims   - Understanding different (policy) perspectives to consider these in a Foresight study   - Knowing techniques for involving different stakeholders   - Identifying different governance structures
Content (brief summary)
This module focuses on providing participants in-depth information on the process, resources, considerations and steps to consider when carrying out foresight studies for Public Health. 1. Summary of introduction to Foresight module   6-Step approach in Foresight   - Process of conducting Foresight Studies (Governance, stakeholders)   - Resources and considerations   2. General process   - Why we should do foresight in public health?   - General overview of conducting a PHFS   - Focus on two examples of existing foresight studies   3. Process; involvement of stakeholders   - Importance of stakeholder engagement   - Examples of stakeholder engagements   - Different values/perspectives   - Stakeholders participation (why, whom, why)   - Mapping stakeholders
Training methodologies
Lectures, interactive exercises and discussion (plenary and break out groups). A set of materials will be provided before the course started.
Learning Materials
For course preparation
Participants will be asked to prepare an assignment before this advanced module. This assignment and accompanying material will be sent 1-2 weeks in advance.
Further reading materials
- Gregorio, J., A. Cavaco, and L. Velez Lapão, A scenario-planning approach to human resources for health: the case of community pharmacists in Portugal. Hum Resour Health, 2014. 12: p. 58. - Hage, M. and Leroy, P. The Stakeholder Participation Guidance for the Netherlands Environmental Assessment Agency. 2008, Netherlands Environmental Assessment Agency and Radboud University Nijmegen.

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- RIVM. Public Health Foresight study, the light of COVID-19. 2020; Available from: https://www.volksgezondheidtoekomstverkenning.nl/english. - UEG, Healthcare in Europe 2040: Scenarios and implications for digestive and liver diseases. 2014, United European Gastroenterology	

Course evaluation

At the end of this advanced module, participants will receive an evaluation form (survey) and will be requested to give their input and feedback.

Participants will be invited to complete a concise report (a template) to assimilate the knowledge of the three advanced modules (see Annex 1). After Module 2, participants will be able to define the objectives and aims, and mapping of stakeholders for their own Foresight Study.

This advanced module is given in sessions of 3 hours each, on two occasions.

Program Module 2
20th May 2021 and 25th May 2021.

Time (CET)	What	Description	Who
09:30 – 09:40	Welcome and Opening	Introduction of the Module 2 - objectives, participants	Mariken Tijhuis
09:40 – 09:55	A. Summary of Module 1	Brief summary of the general module on process and participation	Henk Hilderink
09:55 – 10:05	B. General: Process & participation	Participants will learn about objectives, governance, and scoping of foresight studies	Henk Hilderink
	C. Examples	Examples used for the homework are discussed: Dutch PHFS and D&L 2040	Luís Lapão, Marit de Vries
10:20 – 10:45	Exercise 1	Formulating objective and target groups	Henk Hilderink
10:45 – 10:55	Break		
10:55 – 11:35	D. Process and involvement of stakeholders: introduction	Participants will learn about different stakeholders and their relevance in fore sight studies	Henk Hilderink
	Exercise 2 (15min)	Values, coalitions, and enemies	Henk Hilderink
	E. Examples (10min)	Examples from WP9.1 on involvement of stakeholders will be presented	Luís Lapão
11:35 – 12:00	Exercise 3	Mapping stakeholders	Henk Hilderink
12:00 - 12:20	F. Experience from EuroHealthNet (20min)	Participants will get perspectives from EUHealthNet on process and participation of stakeholders in a foresight study	Caroline Costongs
12:20 – 12:30	Further considerations and closure	Feedback round and overview of following modules	Mariken Tijhuis

Module 3: Advanced Module on Data & Methods

This module will provide further information to identify the data and information necessary to carry out foresight studies, understanding different methods used, data analysis and interpretation of results.

Overview Module 3

Module 3
Lecturers
Henk Hilderink (RIVM), Mariana Peyroteo Santos (UNL), Brecht Devleesschauwer (Sciensano)
Learning Objectives
• Identify the most important future trends • Understand the different methods used in foresight studies, their importance and applications • Identify the data necessary to carry out foresight studies
Content (brief summary)

1. Summary of introduction to Foresight module
   • 6-Step approach in Foresight
   • DESTEP approach and conceptual model
   • Data, tools and instruments
   • For impact broad definition of health
   • Conceptual model as thinking model
 	
2. Scenario Logics
   • DESTEP
   • Indicators
   • Explaining uncertainty/likelihood and impact
   • Different types of scenarios addressing uncertainty
 	
3. Data (determinants, morbidity, mortality, demography)
   • Data need for your foresight study
   • Data sources
   • Data providers (i.e. EUROSTAT)
 	
4. Tools and Instruments for Scenario Analysis and Projection
   • Methods used in health foresight studies
   • From quantitative analysis (historical data) to possible futures
   • Projection methods: demographic projection, epidemiological projections, model-based projection

Training methodologies
Lectures, interactive exercises and discussion (plenary and break out groups). A set of materials will be provided before the course started. Additional materials will be shared during the course. Participants will receive homework to make in preparation for the session.
Learning Materials
For course preparation
Participants will be asked to prepare an assignment before this advanced module. This assignment and accompanying material will be sent 1-2 weeks in advance.
Further reading materials
- Gregorio, J., A. Cavaco, and L. Velez Lapao, A scenario-planning approach to human resources for health: the case of community pharmacists in Portugal. Hum Resour Health, 2014. 12: p. 58. - RIVM. Public Health Foresight study, the light of COVID-19. 2020; Available from: https://www.volksgezondheidtoekomstverkenning.nl/english

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	Course evaluation

At the end of this advanced module, participants will receive an evaluation form (survey) and will be requested to give their input and feedback.

Participants will be invited to complete a concise report (a template) to assimilate the knowledge they will receive throughout the three advanced modules (see Annex 1). After Module 3, participants will be able to identify the driving forces of their study to start defining the types of scenarios to build, the data needed, and the methods and tools to be used.

This advanced module is given in sessions of 3 hours each, on two occasions.

Program Module 3
25th June 2021 and 29th June 2021.

Time (CET)	What	Description	Who
09:30 – 09:40	Welcome and Opening	Introduction of the Module 3 - objectives, participants	Mariken Tijhuis
09:40 – 10:00	A. Summary of Module 1 & Future trends and driving forces, including conceptual model	Brief summary of the general module on data and methods. Participants will be introduces to concepts of future trends and driving forces, including the conceptual model	Henk Hilderink
10:00 – 11:00	Exercise 1	DESTEP relevance and uncertainty	Henk Hilderink
	B. Scenario logics	From DESTEP to the different types of scenarios addressing uncertainty	Henk Hilderink
	C. Examples	Examples from WP9.1 on different types of scenarios	Mariana Peyroteo
11:00 – 11:15	Break		
11:15 – 12:25	D. Data & indicators	Participants will get an overview of different sources of data and considerations on indicators	Brecht Devleesschauwer
	Exercise 2	Data mapping	Henk Hilderink
	E. Examples	Examples from WP9.1 on data mapping	Mariana Peyroteo
	F. Tools & instruments	Participants will learn about different methods used in foresight studies, including projection methods	Henk Hilderink
11:25 – 12:30	Further considerations and closure	Feedback round and overview of following modules	Mariken Tijhuis

Module 4: Advanced Module on Reporting Foresight Studies and Implications for Policy

This module will focus on reporting foresight studies and the implications of these studies into the policy cycle. As well, the module will address dissemination strategies to create products that communicate results and their implications to stakeholders and policy makers.

Module 4
Lecturers
Henk Hilderink (RIVM), Marie Delnord (Sciensano), Tugce Schmitt (Hertie School)
Learning Objectives
• Interpreting results of foresight studies and identify the implication of these results into informing policy • Understand the importance of foresight studies in informing and shaping policy • Reporting foresight studies with a focus into informing policy makers • Understand the importance of dissemination strategies to communicate findings and implications of foresight studies to policy makers and other relevant audiences
Content (brief summary)
1. Foresight and the Policy Cycle • 6-Step approach in Foresight • The use of foresight in the policy cycle **2. Products** • Communicating foresight studies' results and implications • Products oriented to policy makers • Products oriented to non-policy makers **3. Evaluation and impact** • Evaluating knowledge translation strategies • Impact on the implementation of foresight studies in policy and practice • Addressing gaps in communication and knowledge translation
Training methodologies
Lectures, interactive exercises and discussion (plenary and break out groups). A set of materials will be provided before the course started. Additional materials will be shared during the course.
Learning and Reading Materials
For course preparation
- Delnord, M., et al., How can we monitor the impact of national health information systems? Results from a scoping review. Eur J Public Health, 2020. 30(4): p. 648-659 - Eljiz, K., et al., Improving knowledge translation for increased engagement and impact in healthcare. BMJ Open Qual, 2020. 9(3). - Jull, J., A. Giles, and I.D. Graham, Community-based participatory research and integrated knowledge translation: advancing the co-creation of knowledge. Implement Sci, 2017. 12(1): p. 150. - Lundkvist, A., et al., Policy-makers' views on translating burden of disease estimates in health policies: bridging the gap through data visualization. Arch Public Health, 2021. 79(1): p. 17.
Course evaluation
At the end of this advanced module, participants will receive an evaluation form (survey) and will be requested to give their input and feedback. Participants will be invited to complete a concise report (a template) to assimilate the knowledge they will receive throughout the three advanced modules (see Annex 1). After Module 4, participants will be able to realize the impact and use of a foresight study into the policy cycle. They will also be able to plan a dissemination strategy.

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This advanced module is given in a 3 hours session.

Program Module 4
23rd September 2021

Time (CET)	What	Description	Who
09:25 – 09:40	Welcome and Opening	Introduction of Module 4 - objectives, participants	Mariken Tijhuis
09:40 – 10:10	A. Summary of Module 1 & Foresight in the policy cycle B. Examples + Q&A	Brief summary of the general module and the use of foresight studies into the policy cycle Examples of foresight studies used in policy	Henk Hilderink
10:10 – 10:45	Exercise 1.A	Creating a dissemination strategy: When, Who, Why	Marie Delnord
10:45 – 11:00	Break		
11:00 – 11:25	C. Products 1 D. Products 2	Products that can be used by decision/policy makers Products by end users outside policy	Tugce Schmitt Marie Delnord Henk Hilderink
11:25 – 12:05	Exercise 1.B	Creating a dissemination strategy: What, How	Marie Delnord
12:05 – 12:25	E. Evaluation and impact Discussion	Evaluating dissemination strategies and their impact Discussing examples, experiences, and lessons learned	Marie Delnord
12:25 – 12:30	Further considerations and closure	Feedback round and looking forward	Mariken Tijhuis

C. Closing Module: Synthesis and Evaluation. Introduction to Task 9.3: Scenario Development

The aim of this module is to synthesize the lessons learned, evaluate the course, and address any questions that participants might have about foresight studies and how to plan and conduct their own study. Participants will be invited and introduced to Task 9.3: Scenario Development.

Overview Closing Module

Module 5
Lecturers
Henk Hilderink (RIVM), Bruno Ventelou (AMSE), Mariana Peyroteo Santos (UNL)
Learning Objectives
- To revise core concepts and components of foresight studies in public health   - To revise steps and requirements to start planning and conducting foresight studies   - To learn from experts experiences when conducting a foresight study
Content (brief summary)
1. Summary of main concepts and components of Public Health Foresight Studies   6-Step approach in Foresight   - DESTEP   - Data & Methods   - Stakeholders and target audience   - Communication and Knowledge translation   **2. Experiences of carrying out a Foresight study**   - Experiences and challenges faced while carrying out a foresight study   **3. Planning and conducting your own PHFS on COVID-19 – Introducing Task 9.3**   - Introduction to Task 9.3 - Scenario Building: - Objectives/aim of Task 9.3   - Public Health Foresight Template   - Developing your own Public Health Foresight Study (PHFS)
Training methodologies
Lectures, interactive exercises and discussion (plenary and break out groups). A set of materials will be provided before the course started. Additional materials will be shared during the course.
Learning and Reading Materials
For course preparation
- Revise the Public Health Foresight Template
- Devaux, M., et al., How will the main risk factors contribute to the burden of non-communicable diseases under different scenarios by 2050? A modelling study. PLoS One, 2020. 15(4): p. e0231725. - Devaux, M., et al., Assessing the potential outcomes of achieving the World Health Organization global non-communicable diseases targets for risk factors by 2025: is there also an economic dividend? Public Health, 2019. 169: p. 173-179. - Goryakin, Y., et al., Assessing the future medical cost burden for the European health systems under alternative exposure-to-risks scenarios. PLoS One, 2020. 15(9): p. e0238565
Course evaluation
At the end of this advanced module, participants will receive an evaluation form (survey) and will be requested to give their input and feedback.

Participants will be invited to complete a concise report (a template) to assimilate the knowledge they will receive throughout the three advanced modules (see Annex 1). After Module 5, participants will have the tools and information to plan a foresight study.

This advanced module is given in a 3 hours session.

Program Closing Module
28th October 2021

Time (CET)	What	Description	Who
09:25 – 09:40	Welcome and opening	Introduction of Module 5 – objectives	Mariken Tijhuis
09:40 – 10:10	A. Summary of course: doing Foresight studies	Brief summary of core concepts learned throughout the course	Henk Hilderink
10:10 – 10:25	B. Experiences in the field – FRESHER	Experiences and lessons learned while participating in the FRESHER project	Bruno Ventelou
10:25 – 10:55	C. Round Table: Do's & Don'ts	Challenges and good practices while conducting foresight studies	Mariana Peyroteo Bruno Ventelou Henk Hilderink
10:55 – 11:10	Break		
11:10 – 11:30	D. Introducing Task 9.3	Objectives and topics of study	Daniela Moye
11:30 – 12:00	Exercise	Feasibility, needs, and expectations of participants while conducting their first foresight study	Henk Hilderink Daniela Moye Mariken Tijhuis
12:00 - 12:10	D. Introducing task 9.3 (continued)	Guide, tracks, expectations, and support	Daniela Moye
12:20 – 12:30	Further considerations and closure	Feedback round and looking forward	Mariken Tijhuis

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VIII. Biographies of Lecturers and Team

Dr. H.B.M. **(Henk) Hilderink** is Senior Scientific Advisor Population Health Foresight at the Dutch National Institute for Public Health and the Environment (RIVM National Institute for Public Health and the Environment). He studied Mathematics and obtained his PhD in Demography. He has been working at RIVM National Institute for Public Health and the Environment since 2014 and was project leader of two Public Health Foresight Studies. Before that, he worked on various national, European and global scenario studies, such as the Sustainability Outlook, OECD Environmental Outlook and the UNEP Global Environmental Outlook, where he contributed with the modelling of demography and population health. He is also working on Burden of Disease (BoD) estimates for the Netherlands.

Luís Lapão, Habilitation, PhD, MSc, Professor of Digital Public Health at Instituto de Higiene e Medicina Tropical at Universidade Nova de Lisboa. Visiting Professor of Healthcare Management at Karolinska Institutet and at Dubai University. Member of the World Health Organization Collaborating Centre for Health Workforce Policy and Planning. He was Director of the PACES program (within the Ministry of Health) in Management and Leadership for Primary Healthcare Managers (2008-10). Auditor of the European Commission on Healthcare Information Systems and Associated Editor of the BMC Medical Informatics and Decision-Making. He is president of the General Council of the Lisbon Nursing School. He works in Digital Public Health, Health innovation and health information systems, mainly on implementation, Design Science, business models and telemedicine. He is the Principal Investigator in three research projects: INFACT-EU-WP6 (Co-Lead) - Health information flagship training program (2018-2021); HAITool-EEAGrants and Elemental_Diabetics and PRIMARYCARE@COVID-19. He is author of more than 140 papers and six books.

Marie Delnord, MA MSc, PhD is a EU public health researcher and epidemiologist currently working at Sciensano, the Belgian Institute of Health. Her current research is focused on methods to strengthen population health monitoring, the uptake of data innovations in the health system, and the use of scientific evidence in policy and practice. She is active in several EU projects on cancer, COVID-19, and perinatal health. She holds an MA in Child Development from Tufts University, a MSc in Paediatrics and community health from University College London, a PhD in Epidemiology from Paris Descartes University, and an Executive Diploma in Diplomatic Practice from UNITAR. Prior to joining Sciensano, she was project manager at INSERM, the French National Institute of Health and Medical Research, coordinating a maternal and child health surveillance network active in 31 countries. She is a Marie-Skłodowska Curie Research Fellow, Section editor for Archives of Public Health, International Scientific Committee member for the European Public Health Association, and member of the OECD-Global Science Forum Expert group on Mobilising Science in Crises.

Caroline Costongs, MSc is Director of EuroHealthNet, a European Partnership for improving health, equity and wellbeing, based in Brussels (www.eurohealthnet.eu). She leads a multi-disciplinary team that acts on EU and national policy, advocacy, research and capacity building. Caroline represents the Partnership at various European events and platforms of EU Institutions, is part of the WHO Coalition of Partners on strengthening public health services, supports APHEA (Agency on Public Health Accreditation) and is member of the International Congress Council for the 16th World Congress on Public Health in Rome in 2020. Being at EuroHealthNet since 2000, she has facilitated numerous meetings, presented at key events and led many EC co-funded projects on health inequalities, sustainable development, healthy ageing, HiAP, social inclusion and health promotion.

Dr. Brecht Devleesschauwer is a senior epidemiologist at Sciensano (the Belgian institute for health) and visiting professor in Risk Analysis at Ghent University. He conducts policy-driven public health research in the domain of composite measures of population health and health inequalities. As a member of the World Health Organization Foodborne Disease Burden Epidemiology Reference Group (WHO/FERG), he contributed to the estimation of the global burden of foodborne disease. Currently, he is coordinating the Belgian National Burden of Disease Study, and chairing the European Burden of Disease Network (COST Action CA18218). Brecht holds PhD degrees in Public Health and Veterinary Sciences, and MSc degrees in Biostatistics and Veterinary Medicine.

Mariana Peyroteo dos Santos, Msc, is a researcher at the Comprehensive Health Research Centre (CHRC) from NOVA Medical School, Universidade NOVA de Lisboa. She has a degree in Biomedical Sciences from the University of Algarve and a Master in Public Health and Development from the Institute of Hygiene and Tropical Medicine (Universidade NOVA de Lisboa). Currently, she is enrolled in a PhD Program in Industrial Engineering at the NOVA School of Science and Technology from Universidade NOVA de Lisboa. Her work focuses on Digital Health and Health Information Systems, with the goal of defining the value of information in Digital Primary Health Care, using Design Science Research Methodology. Her main focus of interest is based on improving clinical management and quality of life for patients with chronic diseases, using the Goal-Oriented Care Model.

Tugce Schmitt is a Research Associate in Health Governance at the Hertie School in Berlin. She has an educational background in public health (M.Sc., Charité University Medicine Berlin) and public policy (M.Sc., University of Bath). She has spent eight years in evidence-informed health policymaking, more specifically in quality in healthcare. In Berlin, she first worked as a researcher at the German Agency for Quality in Medicine; a non-profit organisation owned by the German Medical Association and the National Association of Statutory Health Insurance Physicians. Afterwards, she was employed at the National Association of Statutory Health Insurance Dentists in the Department of Quality Assurance. In her capacity as a policy officer, she represented the organisation at the Federal Joint Committee, in the relevant working groups of the German Health Targets (gesundheitsziele.de) and in national medical guideline development groups. In Brussels, she has worked for the European Observatory and two European multi-stakeholder platforms for health. Tugce is an external PhD candidate at Maastricht University in the Department of International Health.

Bruno Ventelou is a research professor at the CNRS (Centre National de la Recherche Scientifique – Aix Marseille School of Economics UMR 7316). He obtained his PhD from the EHESS at the Paris School of Economics (DELTA) in Paris, France. He is specialized in macroeconomics applied to health issues. His research activity covers computational methods in health economics, epidemic traps, studies in health services research, and health and wealth relationships.

Dr. Mariken J. Tijhuis, Dutch National Institute for Public Health and the Environment (RIVM), Dept of Health Knowledge Integration. She contributes to various national and international health information activities aiming to underpin evidence-informed health policies. Among others, she coordinates the Dutch contribution to the EU Joint action on Health Information (InfAct), the EU Population Health Information Research Infrastructure (PHIRI) and the WHO European Health Information Initiative (EHII). Mariken holds a Master's degree in Health Sciences (Maastricht University), a PhD degree in Nutrition (Wageningen University) and is a board-certified post-doctoral epidemiologist. She is interested in a great range of topics from cell to society and inspired by multidisciplinary teamwork. Integration of information and concepts from different scientific areas have been recurring components of her work. Past/current topics include gene-environment interactions, benefit-risk analysis and health indicators.

Dr. Daniela Moye Holz, international health researcher at Dutch National Institute for Public Health and the Environment (RIVM) since 2020. She has a background in Pharmaceutical Chemistry, International Health, and got her PhD in Global Health and Health Policies. She has a mixed background after working in the private pharmaceutical industry, the academia, and the public sector. She has carried out health policy research for the WHO, WHO Collaborating Centers, the OECD, among others. Research interests include health inequalities and inequities, global health policies and the SDGs, access to healthcare and health technologies, and the access and use of health information to inform policy.

Marit de Vries, Msc, is a researcher at the Dutch National Institute for Public Health and the Environment (RIVM), Dept of Health Knowledge Integration, The Netherlands. Marit has a background in Urban Geography and Planning, and has worked as a lecturer at the University of Amsterdam in Human Geography and International Development Studies before she joined the RIVM in 2014. At the RIVM she has contributed to various national and international foresight studies, with a focus on scenario development and expert workshops on future trends. Marit enjoys working in multidisciplinary teams and is interested in a range of research topics, such as Healthy Urban Living, GIS analysis and international and regional differences in health and healthcare.

IX. Reading Materials

- Blessing, V., Davé, A., & Varnai, P. (2017). Evidence on mechanisms and tools for use of health information for decision-making. (Health Evidence Network (HEN) synthesis report 54, Issue.

- Delnord, M., Tille, F., Abboud, L. A., Ivankovic, D., & Van Oyen, H. (2020). How can we monitor the impact of national health information systems? Results from a scoping review. Eur J Public Health, 30(4), 648-659. https://doi.org/10.1093/eurpub/ckz164

- Devaux, M., Lerouge, A., Giuffre, G., Giesecke, S., Baiocco, S., Ricci, A., Reyes, F., Cantarero, D., Ventelou, B., & Cecchini, M. (2020). How will the main risk factors contribute to the burden of non-communicable diseases under different scenarios by 2050? A modelling study. PLoS One, 15(4), e0231725. https://doi.org/10.1371/journal.pone.0231725

- Devaux, M., Lerouge, A., Ventelou, B., Goryakin, Y., Feigl, A., Vuik, S., & Cecchini, M. (2019). Assessing the potential outcomes of achieving the World Health Organization global non-communicable diseases targets for risk factors by 2025: is there also an economic dividend? Public Health, 169, 173-179. https://doi.org/10.1016/j.puhe.2019.02.009

- Eljiz, K., Greenfield, D., Hogden, A., Taylor, R., Siddiqui, N., Agaliotis, M., & Milosavljevic, M. (2020). Improving knowledge translation for increased engagement and impact in healthcare. BMJ Open Qual, 9(3). https://doi.org/10.1136/bmjoq-2020-000983

- Ferreria Maia, M. (2013). Foresight Exercises as a tool for decision-making: the example of two case studies in health. Enterprise and Work Innovation Studies, 9(IET), 39-66.

- Goryakin, Y., Thiebaut, S. P., Cortaredona, S., Lerouge, M. A., Cecchini, M., Feigl, A. B., & Ventelou, B. (2020). Assessing the future medical cost burden for the European health systems under alternative exposure-to-risks scenarios. PLoS One, 15(9), e0238565. https://doi.org/10.1371/journal.pone.0238565

- Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: time for a map? J Contin Educ Health Prof, 26(1), 13-24. https://doi.org/10.1002/chp.47

- Gregorio, J., Cavaco, A., & Velez Lapao, L. (2014). A scenario-planning approach to human resources for health: the case of community pharmacists in Portugal. Hum Resour Health, 12, 58. https://doi.org/10.1186/1478-4491-12-58

- Hage, M., & Leroy, P. (2008). The Stakeholder Participation Guidance for the Netherlands Environmental Assessment Agency.
https://www.pbl.nl/sites/default/files/downloads/550032007.pdf

- Jull, J., Giles, A., & Graham, I. D. (2017). Community-based participatory research and integrated knowledge translation: advancing the co-creation of knowledge. Implement Sci, 12(1), 150. https://doi.org/10.1186/s13012-017-0696-3

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-   Lapão, L. (2019). The Future of Healthcare: The Impact of Digitalization on Healthcare Services Performance. In A. Pereira Neto & M. Flynn (Eds.), The Internet and Health in Brazil. Springer, Cham. https://doi.org/https://doi.org/10.1007/978-3-319-99289-1_22

-   Lundkvist, A., El-Khatib, Z., Kalra, N., Pantoja, T., Leach-Kemon, K., Gapp, C., & Kuchenmuller, T. (2021). Policy-makers' views on translating burden of disease estimates in health policies: bridging the gap through data visualization. Arch Public Health, 79(1), 17. https://doi.org/10.1186/s13690-021-00537-z

-   Mayer, R. E., Fiorella, L., & Stull, A. (2020). Five ways to increase the effectiveness of instructional video. Educational Technology Research and Development, 68(3), 837-852. https://doi.org/10.1007/s11423-020-09749-6

-   OECD. What is Strategic Foresight? OECD. Retrieved 3 March from https://www.oecd.org/strategic-foresight/

-   Rees, G. H., Crampton, P., Gauld, R., & MacDonell, S. (2018). The promise of complementarity: Using the methods of foresight for health workforce planning. Health Services Management Research, 31(2), 97-105. https://doi.org/10.1177/0951484818770408

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-   UEG. (2014). Healthcare in Europe 2040: Scenarios and implications for digestive and liver diseases. https://ueg.eu/files/776/8c6744c9d42ec2cb9e8885b54ff744d0.pdf

-   Verschuuren, M., Hilderink, H. B. M., & Vonk, R. A. A. (2019). The Dutch Public Health Foresight Study 2018: an example of a comprehensive foresight exercise. European Journal of Public Health, 30(1), 30-35. https://doi.org/10.1093/eurpub/ckz200

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Annex 1. Planning a foresight study – building on your own template

Introduction

Within the PHIRI Project WP9, capacity building on public health foresight in EU Member States is an important objective. To fulfil this objective, we developed a Public Health Foresight course. This training consists of different modules, the first one covering more general aspects of foresight, 3 subsequent advanced modules elaborating on specific topics, and a final summary module synthesizing all acquired knowledge on foresight into a practical approach to do your own foresight study (see Figure 1). To support you in creating your own overview and to help you consolidate the foresight knowledge you acquired, we have constructed a foresight template.
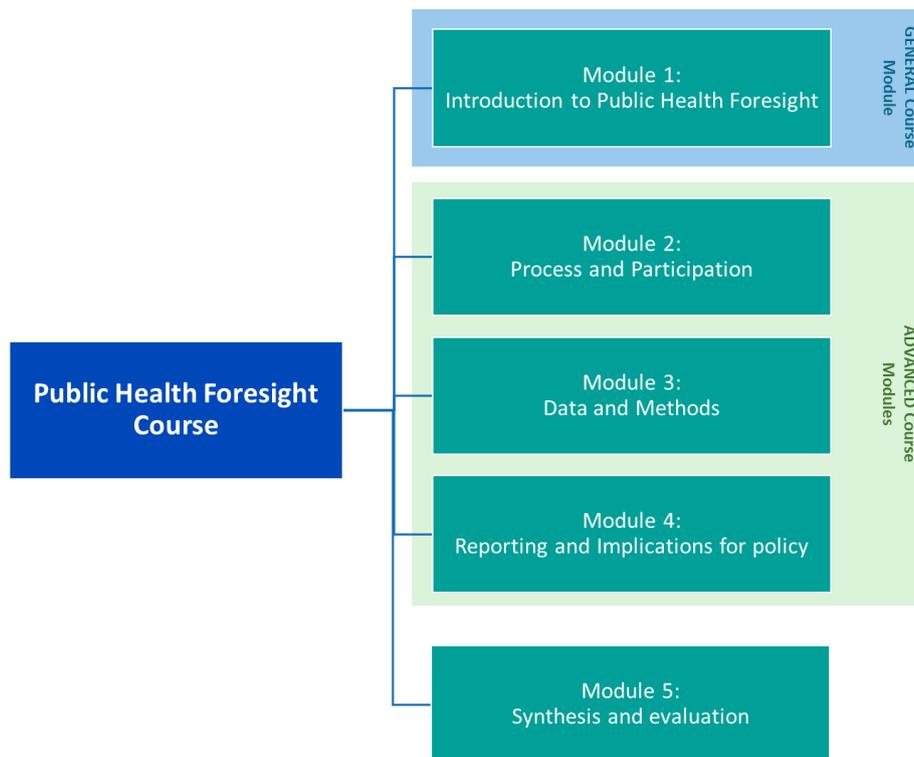
Figure 1: Public Heath Foresight course structure

The Public health foresight template

To support your training on foresight, we ask you to work towards a completed version of the "Public health foresight template". This template covers the most important topics to address when doing a foresight study. It is based upon the six-step approach referring to the *Purpose & Methodology- why and how* (see Figure 2) that we have introduced in the general module of the course. In the general module also, the *Process & Participation-How and with whom*, and the *Product & Communication – what and for whom* were covered. The template connects to the specific topics in the advanced modules.
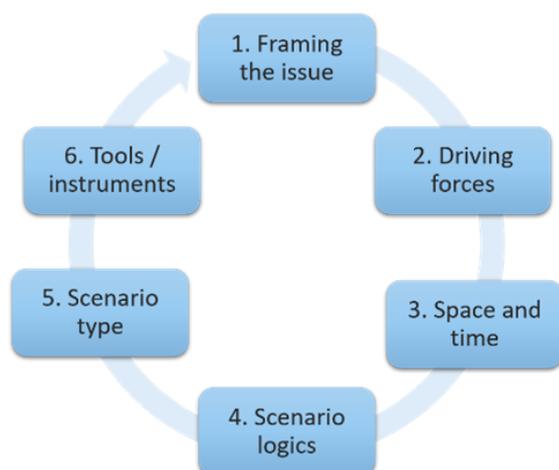
Figure 2: Six-step approach towards a foresight study

Learning objectives

All the modules have learning objectives that are linked to the stepwise approach, as depicted in Figure 2. In the course booklet on the PHIRI website you can find the learning objectives per module. With this template you can test your understanding of the topics addressed in each module. Please, note that not all topics mentioned in the template will be covered into detail in the advanced modules.

Please consider your own organization or country as a reference when filling in the template.

Public Health Foresight Template

Name: Country: Affiliation:	Topic is addressed in:
Objective of the foresight study **Topic** **General issue:** **Sub issues:**	Module 2
Main target group(s)	Module 2
Conceptual model	Module 3
Indicators (e.g. input, output. outcome, impact)	Module 3
Driving Forces (by impact and uncertainty, DESTEP)	Module 3
Time horizon	Module 3
Spatial unit	Module 3
Most important uncertainties (cognitive and normative)	Module 2/3
Scenario logics (how many scenarios, what kind of scenarios)	Module 3
Scenario type (quantitative, qualitative)	Module 2
Stakeholders (mapping)	Module 2
Data (indicators and sources)	Module 3
Tools and instruments	Module 3
Projection Method(s)	Module 3
Reporting (paper report, website, seminar)	Module 4
Communication & Interaction with potential users	Module 4
Implementation of Foresight study – Knowledge transfer and following up	Module 4
Evaluation and impact of knowledge translation and communication	Module 4
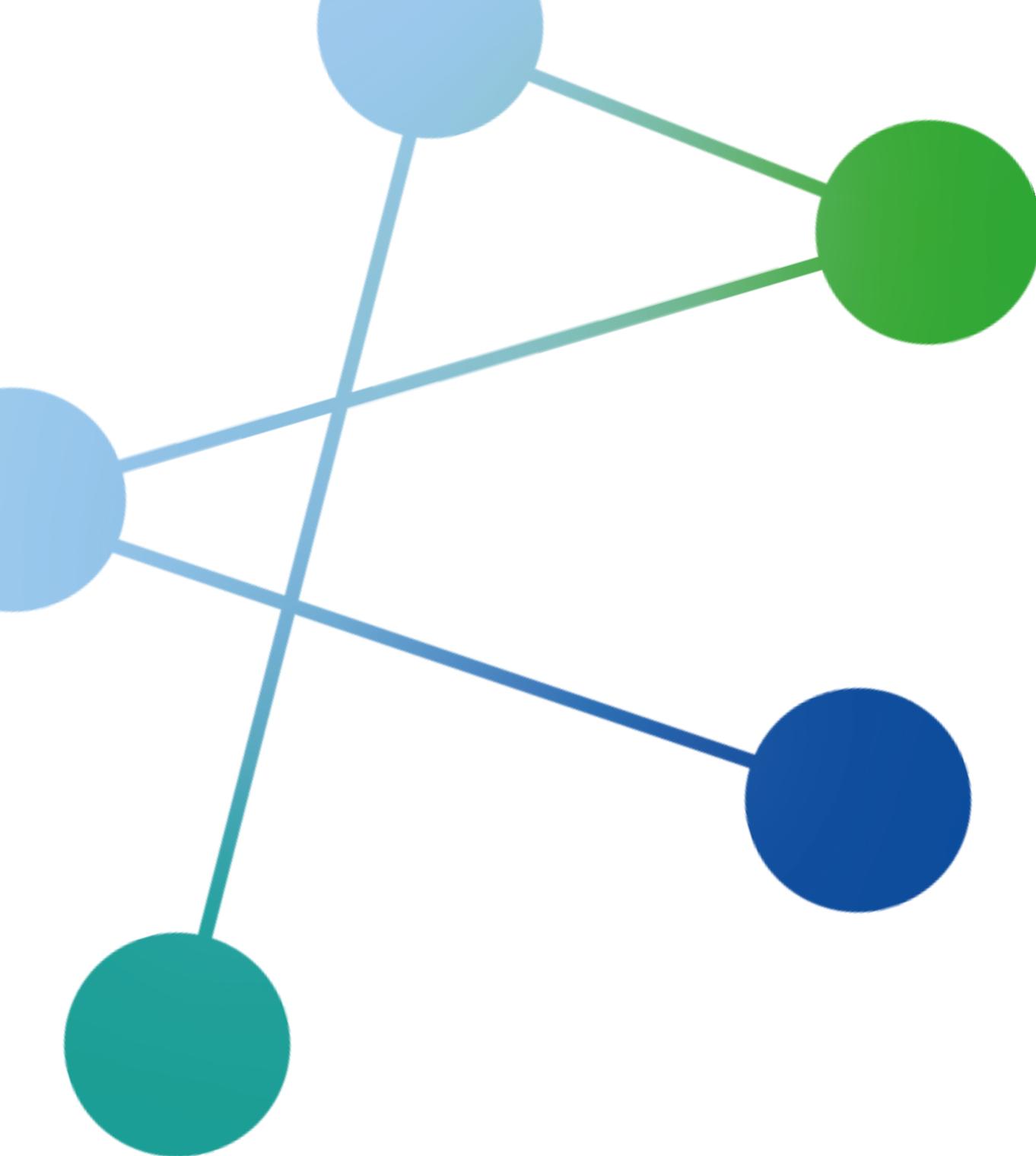
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Appendix 2. Example of an Evaluation Form

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Foresight Capacity Building
Training Course - *Module 1*

Evaluation Form

Thank you for your participation in **Foresight Capacity Building: Training Course - *Module 1*.** To improve this module and the upcoming advanced modules, we appreciate your feedback and input on the *Module 1*.

If you have any questions about the course and/or this evaluation form, please contact PHIRI.NL@rivm.nl.
For more information about the PHIRI project, please visit: https://www.phiri.eu/

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* **-** Input is required

[Next >>] [To confirmation page >>]

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Foresight Capacity Building
Training Course - *Module 1*

Evaluation Form

Session Preparation

Did you receive all information and materials in a clear and timely manner?
*

☐ Yes
○ No

Would you like to add any feedback on the session preparation?

Content & Presentations

Please let us know what you think about the content of the several presentations in this session by rating each presentation and providing your comments and feedback (1=very bad; 10 = very good)

How would you rate the overall content of the session? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
How would you rate the content of section *1A: Purpose and methodology* by Henk Hilderink? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
How would you rate the content of section *1B: Examples of Foresight studies* by Luís Lapão? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
How would you rate the content of section *1C: Process and participation* by Henk Hilderink? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
How would you rate the content of section *1D: Products and communication* by Marie Delnord? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
Would you like to add any feedback on the content and / or presentations of the general module?

Exercises

Please let us know what you think about the different exercises carried our throughout this session by rating each exercise and providing your comments and feedback (1 - Not interesting or useful; 10 - Very interesting and useful)

How would you rate the *Exercise: Thinking about the future* ? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
How would you rate the *Exercise: DESTEP* ? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
How would you rate the *Exercise: Values* ? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
How would you rate the *Exercise: Knowledge Translation* ? *   ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10
Would you like to add any feedback on the exercises of the general module?

Upcoming Advanced Modules

Are you planning to join the advanced modules addressing more in-depth and specific information on how to carry out foresight studies?

○ Yes
○ No

Please define which (specific) topics you would like to see addressed in the advanced modules

Networking - Staying in Contact with Colleagues and Lecturers

Would you like to stay in contact with the lecturers and the other participants of the course to discuss foresight related topics?

○ Yes
○ No

Page 2/2

* **-** Input is required

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Appendix 3. Exercises in the Course Modules

Exercise 1.1 - Thinking about the future

The world in 25 years...

Exercise:

- Write your own headline about what could be the news in 2044

- Save the slide and send it back before 24 March to: PHIRI.NL@rivm.nl

THE LATEST NEWS & PICTURES

European Times

3-DAY FORECAST

VOLUME XXII - NO. 1255   Evening edition   20 November 2044

Breaking news

The intellectual property rights for the cars riding with water have expired!

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Exercise 1.2 – DESTEP

This exercise was carried out using googledocs in a power point format.

DESTEP

What are the most important trends and driving forces regarding future population health?

Breakout group 1

1

Instructions

- All members of the group can **work simultaneously** in this file
- Use "**Ask for help**" in the WebEx Break out session to get assistance

Assignment

List per DESTEP category 2 - 4 **trends** that are important for future public health in Barataria (imaginary, average European country);

1) 10 minutes to enter the trends
2) 15 minutes discussion and adjustment
3) 5 minutes reporting back (in plenary session)

NB! The listed trend should contain a direction, f.e.: *Life expectancy will continue to increase*

2

Demography

- Ageing society
- Low fertility
- Increasing immigration from low-income countries

Economy

- Lack of funding for public health
- Increase in income cap between population sub-groups
-

3

Social-cultural

- Increased ethic diversity of the population through migration
- Increased level of education of the population

Technological

- Real-time health monitoring, health gadgets, via 5G
- Digital twins

4

Environmental

- EU's zero pollution goal in respect to exposure to environmental chemicals
-
- Air, clean water

Political-institutional

- Access to health care
- Bureaucracy

5

Other

-
-

6

Exercise 1.3 – Values

This exercise was carried out using Mentimeter.

Exercise 1.4 – Knowledge Translation

This exercise was carried out using Mentimeter.

Exercise 2.1 – Formulating an objective and target groups

This exercise was carried out using googledocs in a power point format.

Slide 1

Main issue and target groups of a PHFS

What are the main issue and target groups of your Public Health Foresight Study?

1

Slide 2

Exercise 1: Instructions

- All members of the group can **work simultaneously** in this file
- Use "**Ask for help**" in the WebEx Breakout session to get assistance

Assignment

Think of the main issue, sub-issues and target groups of your Public Health Foresight Study.

1) Think of the topic you would like to address. You can choose from the examples below or think of a topic yourselves. (2 minutes)
   - Future of public health and healthcare in the light of on ageing population
   - The long term effects of COVID-19 pandemic on national health and health care
   - The sustainability of the national/regional healthcare system
1) List the main issue and sub issues of your PHFS (7 minutes)
2) List your main target groups (5 minutes)
3) Reporting back (in plenary session) (6 minutes)

2

Slide 3

Topic

Please enter the topic you have chosen here

Forecast and mitigate burden of disease from environmental pollution

3

Slide 4

Main issue

How does the health burden from environmental pollution evolve under different scenarios?

Sub issues

- Health Inequalities
  - E.g. in mental health, …
  - Effect of the COVID-19 pandemic on Health Inequalities, Mental Health, … .
- How do the inequalities evolve under different scenario's?
  - Effect of the COVID-19 pandemic on those scenario's (e.g. risk of increased pollution and health burden by shift from public transport to private vehicle transport : observed in China)
- …

4

Slide 5

Target groups

- Healthcare Professionals
- Policy Makers and Government Institutions
- The general public

5

Exercise 2.2 – Values, Coalitions & Enemies

This exercise was carried out using Mentimeter.
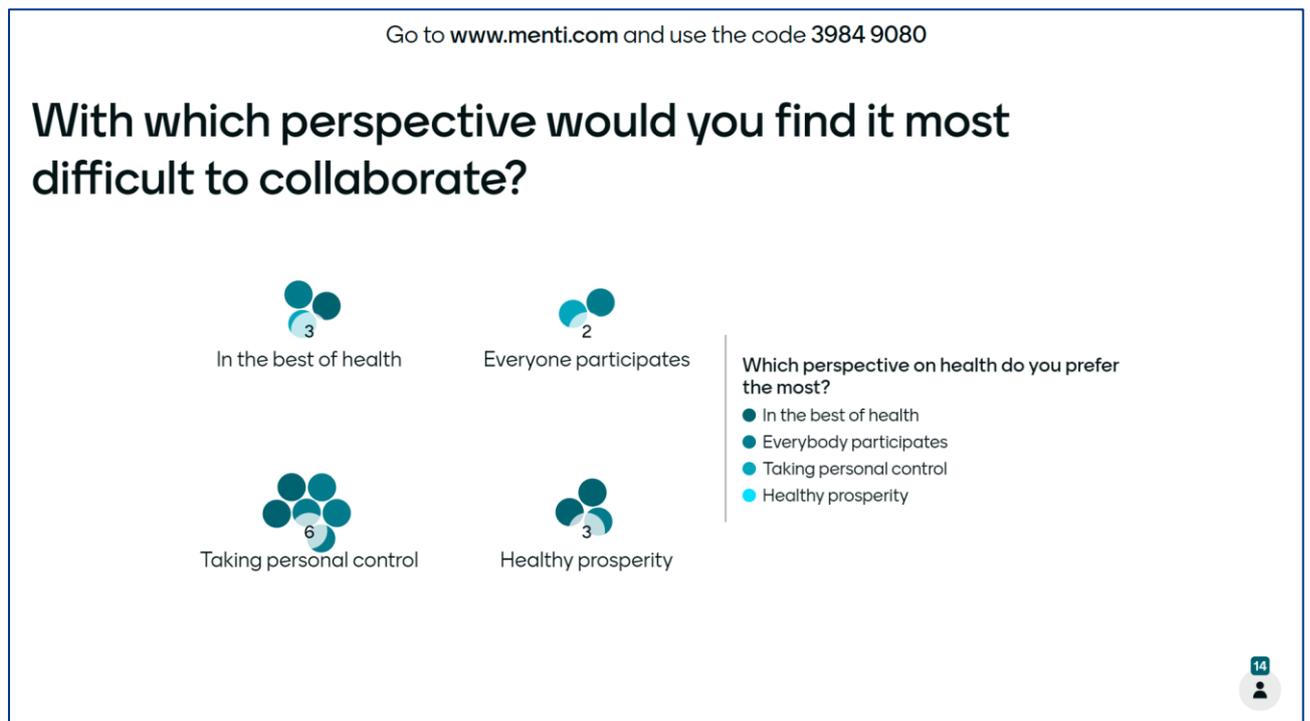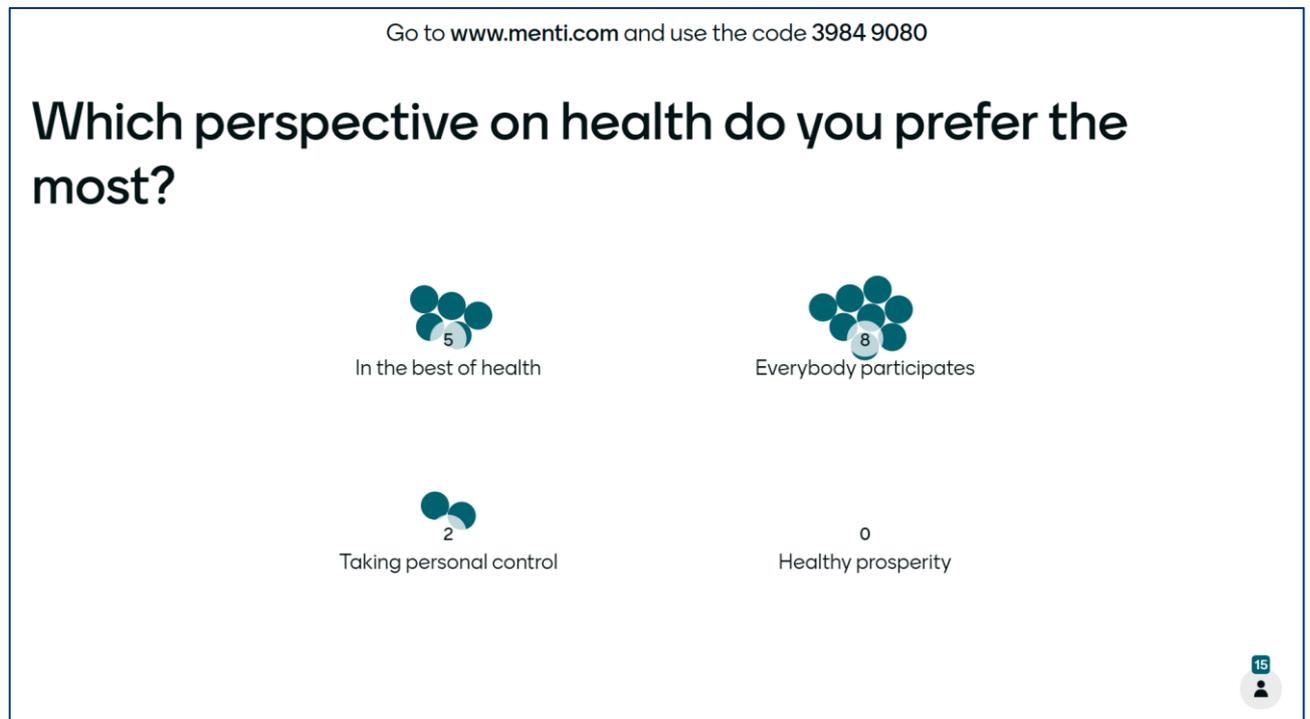
Exercise 2.3 – Mapping of stakeholders

This exercise was carried out using googledocs in a power point format.

Exercise 3.1 – DESTEP: relevance and uncertainty

This exercise was carried out through a voting exercise in Mural.

DESTEP

Demography

Aging Population	Increase in Non-Communicable Diseases (NCDs)	Increasing migration and increase in minority groups in society
Increasing urbanization	Changes in population growth	Increasing mental health issues resulting from COVID-19

Economy

Increasing the income gap between socio-economic groups	Increasing economic growth	Increasing unemployment
Increasing international trade and global competitiveness	Rising national debts	Increasing expansion & influence of powerful (multinational) companies

Socio-Cultural

Increasing ethnic diversity within societies	Increasing influence of religion	Increasing globalization of societies
Decreasing gender inequalities	Increasing social discontent & cultural identity crisis	Increasing individualization (individual mindset instead of community wellbeing)

Technological

Increasing use of Artificial Intelligence (AI)	Increasing use of technology in health and telemedicine	Increasing influence of social media and communication networks
Increasing importance in addressing cyber-security and privacy regulation	Increasing dependance on technology for everyday activities	Increasing use of GMO
Increasing access to information (accurate and inaccurate, including misinformation and fake news)		

Environmental

Increasing impact of global warming and climate change	Increase in population and environmental degradation (air, water, soil, noise, etc.)	Increase impact of Antimicrobial Resistance (AMR)
Increase use of renewable energy and decrease of CO2 emissions	Decrease in animal diversity and increase in extinction of species	Increase in the appearance and impact of biohazards
Increasing environmental and natural disasters		

Political - Institutional

Increase in nationalism and populism; raise in conservatism	Increasing political polarization and fragmentation	Increasing international cooperation (e.g. EU)
Increasing influence of Geo-political block and emerging economies	Incresing privatization of resources and services	Increasing chances of large-scale wars (WWIII or another Cold War)

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Exercise 3.2 – Data Mapping

For this exercise, participants received via email the following Word document to fill-in. After the exercise, participants reported back and sent back (via email) their results. Below, we present, as example, the results of the breakout group 1.

Exercise data mapping Module 3

As part of your Public health foresight study, you want to explore data needs and requirements. Therefore, we have described 4 cases that could be a theme of your PHFS. In the exercise you are going to work on one of these cases the specify the data needs, the data mapping. You can make use of the conceptual model, existing indicator collection such as ECHI to substantiate the case of your choice. On page 2 an example is worked out for the case increasing health impacts of climate change.

BOG 1 and 5: Increasing burden of disease and societal impact of dementia

BOG 2 and 6: Increasing health inequalities

BOG 3: Increasing pressure on mental health due to societal trends

BOG 4: Increasing pressure on the health care system

For each case consider, for example, relevant determinants and risk factors, outcome indicators (e.g. mortality, morbidity, population health indicators), contextual factors (e.g. employment, local living environment) and/or vulnerable populations (e.g. household types, elderly).

Instructions

1) Assign a person to keep notes
2) Identify indicators (~4) and the data needs to substantiate the case
3) Specify for each indicator what data sources might be used (if you don't know data sources leave this open, don't delete the indicator)
4) Prepare a 1 minute pitch to give in the plenary session

Case: *Increasing burden of disease and societal impact of dementia*

Indicator	Data needed	Data Source
Ageing	*Population by sex and age*	*Eurostat*
Prevalence of dementia	*Prevalence projections*	*Review of evidence / peer reviewed journals*
Cost of illness of dementia	*Medication sales* *Health care consumption, hospitalizations* *Financial support for people with disabilities*	*NHIS, Claims data* *Social service*
Impact on quality of life of dementia	*Utility/QALY tables*	*Review of evidence / peer reviewed journals*

Example

Case: *increase of health impacts related to climate change*

Indicator	Data needed	Data Source
Temperature	*Temperature increase in degrees Celsius, 2020-2050*	*IPCC*
Ageing	*Population by sex and age*	*Eurostat / NSO*
Heat-stress	*Cardiovascular mortality by sex and age*	*Eurostat / NSO*
Living alone	*Household size*	
Green / blue spaces	*Land cover/ m2 green*	*EEA, http://www.eea.europa.eu/data-and-maps/data/urban-atlas*

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Exercise 4.1 – Dissemination Strategy

This exercise was carried out through a voting exercise in Mural.

Dissemination Strategy for a PHFS

BOG = 3
Case = Increasing pressure on mental health due to societal trends

Isolation due to COVID-19 crisis (teleworking, quarantine)

General Instructions
1. **Choose one person from your group to be the rapporteur to take notes**
2. You will prepare a dissemiantion strategy in two different rounds.
3. In the *first round* you will discuss who your target audience is, why are your results important to communicate, and when is the right moment to disseminate the results of your study.
4. In the *second round* you will discuss which products best suits your dissemination strategy and how are you going to communicate your message.
5. Fill in the table boxes below and write down your decisions on to whom, why, when, what product, and how to disseminate your message.
6. At the end of the second round, prepare a **1-minute pitch** to explain your dissemination strategy. Use this mural in your pitch. Explain your product and how do you envision it together with your dissemination strategy

WHO?
Local authorities (as they have the capacity / resources and authority to act)

WHEN?
Between problem definition and policy formulation (of the Health Policy Cycle) and between formulation and implementation, in the process of adoption/public debate In this moment because it is time when decision makers and auhorities are strategizing, it is the time we can provide different scenarios to support an optimal strategy

WHY?
Drive change in local policies and regulations regarding isolation measures and psychological and socioeconomic and logistic support for specific groups

WHAT?
Presentation of the scenarios and options to faciliate this scenarios (solutions) to be presented at a workshop; more engaging, participants know each other; Recordings of the workshop/booklet could be distributed

HOW?   Workshop (face to face)

Partners:
- local decisionmakers
- employer representatives
- health professionals (e.g. GPs)
- social services

Exercise 5.1 – What do you need for your PHFS

This exercise was carried out through a voting exercise in Mural.
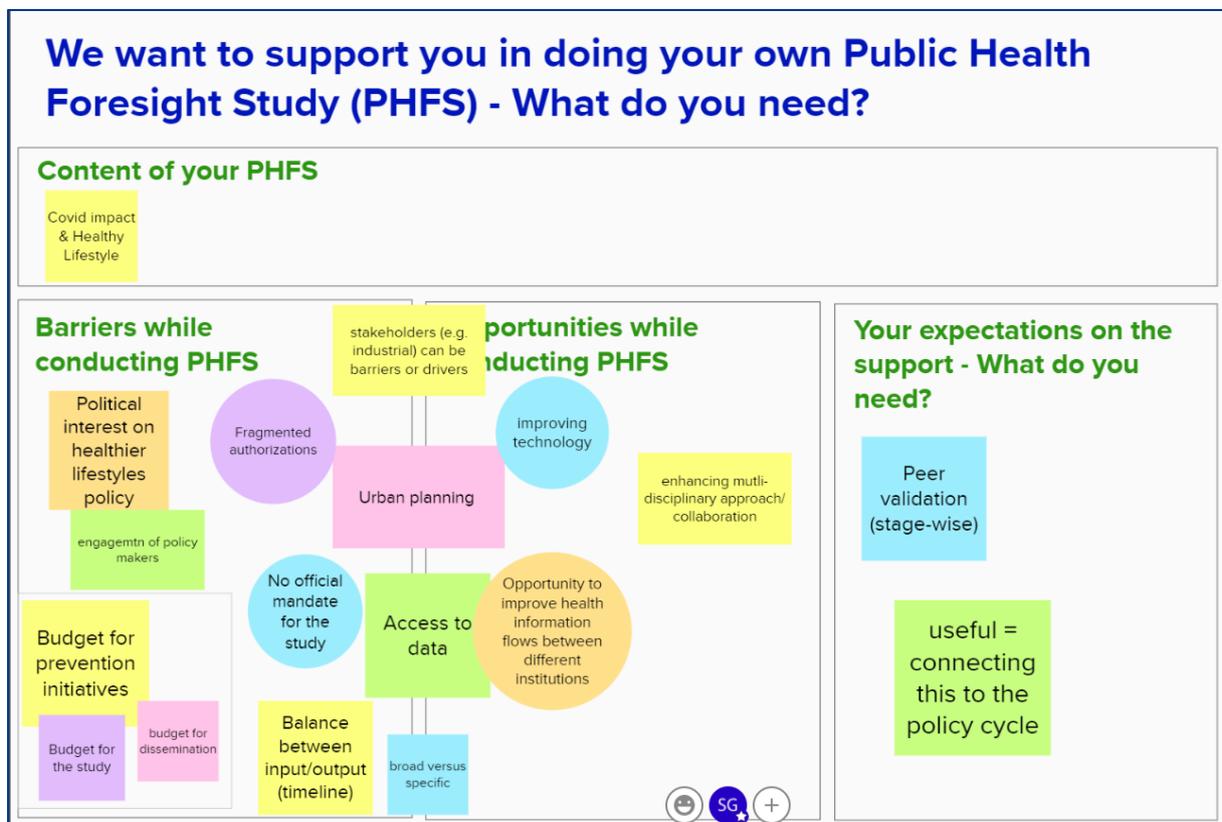
# Appendix 4. Course attendance and participation

Member State	Participants Attending the Module				
	Module 1	Module 2	Module 3	Module 4	Module 5
Albania					
Austria	3	2	3		1
Belgium	13	10	9	2	2
Bosnia and Herzegovina		1		1	1
Bulgaria					
Croatia	2	1			
Czech Republic	3	1	2		
Estonia	1	1	1	1	1
Finland	2	1			1
France					
Germany					
Greece	1	1	1		
Hungary					
Ireland	5	1	2	1	3
Italy	1	1	1		
Latvia	1	1			
Lithuania	6	5	2	3	2
Luxembourg	2				
Malta	1		1		
Norway	2	2	1	1	1
Poland					
Portugal	6	5	6	2	3
Romania	2	1	1	1	
Serbia	2	1			1
Slovak Republic	2		2		
Slovenia	3	2	2	1	1
Spain	2	3	4		
Sweden	5	5	6		1
The Netherlands	1	1	1		
United Kingdom					
Total	64	43	41	13	18
Participating countries	21	20	17	9	11

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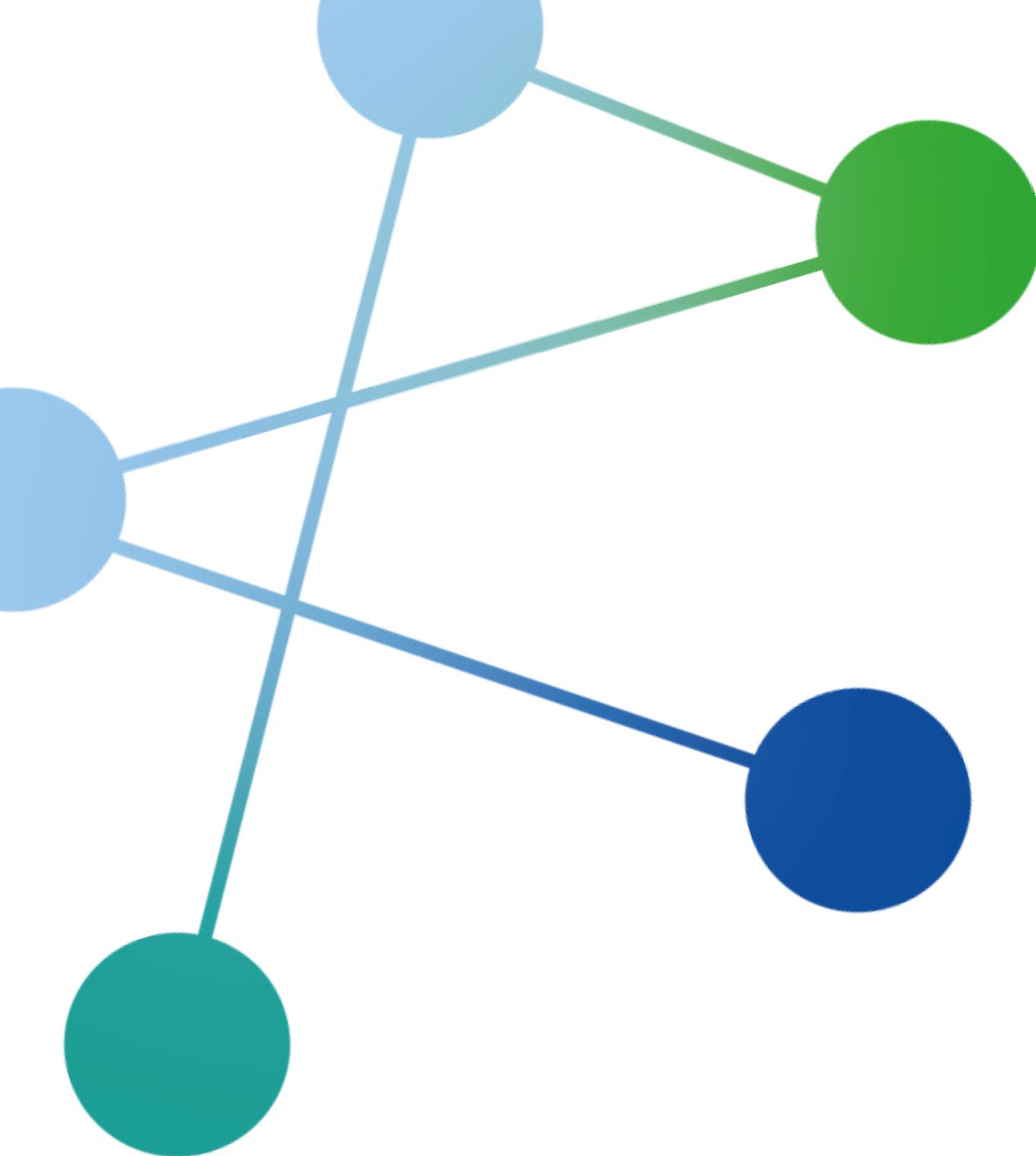
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